

IBM Tivoli Composite Application Manager for Applications
Version 7.1

*WebSphere MQ Monitoring Agent
User's Guide*



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Note:

Before using this information and the product it supports, read the information in "Notices" on page 655.

This edition applies to version 7.1 of WebSphere MQ Monitoring agent (product number 5724-V09 on Windows, UNIX, Linux, and i5/OS systems; product number 5698-B23 on z/OS systems) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this publication

This change applies to version 7.0.1 or later. The name of IBM® WebSphere® MQ Monitoring agent that runs on distributed systems is changed to IBM Tivoli® Composite Application Manager (ITCAM) agent for WebSphere MQ. The agent name on z/OS® systems remains the same: WebSphere MQ Monitoring agent.

In this publication, the information is applicable to both these agents, but the agent is referred to as WebSphere MQ Monitoring agent. For users of distributed systems, this agent name is equivalent to ITCAM agent for WebSphere MQ.

WebSphere MQ Monitoring agent is an agent that is delivered as part of ITCAM for Applications and ITCAM for the SOA Platform. With the WebSphere MQ Monitoring agent, you can easily collect and analyze WebSphere MQ-specific data for all your remote and local queue managers from a single vantage point.

This publication describes the features and capabilities of WebSphere MQ Monitoring agent and explains how to use it to monitor your network.

Intended audience

This publication provides information for all users of the WebSphere MQ Monitoring agent.

Chapter 2, “Customizing monitoring options,” on page 11 is intended for system administrators. It is included in this publication for convenience in cross-referencing the features that are directly controlled by certain monitoring option parameters.

This publication is designed to complement the online help that is provided with the product.

Requirement: Before you can follow any of the instructions in this publication, you must install and configure IBM Tivoli Monitoring and WebSphere MQ Monitoring agent in your environment. For instructions, see the installation and configuration documents listed in “Publications.”

Publications

This section lists publications that are available for WebSphere MQ Monitoring agent and related documents. The section also describes how to access Tivoli publications online and how to order Tivoli publications.

Library for the WebSphere MQ Monitoring agent

The following documents are available in the library for the WebSphere MQ Monitoring agent:

- *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520*

Describes how to install WebSphere MQ Monitoring agent, WebSphere MQ Configuration agent, and WebSphere Message Broker Monitoring agent on Windows, UNIX, Linux, and i5/OS™ systems.

- *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Upgrade and Migration Guide, SC14-7522*
Provides information about how to upgrade or migrate from previous versions of WebSphere MQ Monitoring agent, WebSphere MQ Configuration agent, and WebSphere Message Broker Monitoring agent to version 7.1.
- *IBM Tivoli Composite Application Manager Agent for WebSphere MQ User's Guide, SC14-7523*
Provides instructions for using the features of WebSphere MQ Monitoring agent.
- *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Troubleshooting Guide, GC14-7521*
Provides problem determination and resolution information for the issues most commonly encountered when using WebSphere MQ Monitoring agent, WebSphere MQ Configuration agent, and WebSphere Message Broker Monitoring agent.

Prerequisite publications

To use the information in this publication effectively, you must have some prerequisite knowledge, which you can obtain from the following publications:

- *IBM Tivoli Monitoring Installation and Setup Guide, SC32-9407*
Provides instructions for installing and configuring IBM Tivoli Monitoring components on Windows, Linux, and UNIX systems.
- *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520*
Describes how to install WebSphere MQ Monitoring agent, WebSphere MQ Configuration agent, and WebSphere Message Broker Monitoring agent on Windows, UNIX, Linux and i5/OS systems.

Related publications

The following documents also provide useful information:

- *IBM Tivoli Monitoring Administrator's Guide, SC32-9408*
Describes the support tasks and functions required for the Tivoli Enterprise Portal Server and clients, including Tivoli Enterprise Portal user administration.
- *Tivoli Enterprise Portal User's Guide, SC32-9409*
Provides hands-on lessons and detailed instructions for all Tivoli Enterprise Portal features.
- *IBM Tivoli Monitoring Troubleshooting Guide, GC32-9458*
Provides information and messages to help you troubleshoot problems with IBM Tivoli Monitoring.
- *IBM Tivoli Monitoring Command Reference, SC23-6045*
Provides detailed syntax and parameter information, as well as examples, for the commands you can use in IBM Tivoli Monitoring.

Accessing terminology online

The IBM Terminology website consolidates the terminology from IBM product libraries in one convenient location. You can access the Terminology website at <http://www.ibm.com/software/globalization/terminology>.

Accessing publications online

The documentation CD contains the publications that are in the product library. The format of the publications is PDF, HTML, or both. Refer to the readme file on the CD for instructions on how to access the documentation.

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Documentation Central website at <http://www.ibm.com/tivoli/documentation>.

Tip: If you print PDF documents on other than letter-sized paper, set the option in the **File > Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

Ordering publications

You can order many Tivoli publications online at <http://www.ibm.com/e-business/weblink/publications/servlet/pbi.wss>.

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, contact your software account representative to order Tivoli publications. To locate the telephone number of your local representative, perform the following steps:

1. Go to <http://www.ibm.com/e-business/weblink/publications/servlet/pbi.wss>
2. Select your country from the list and click **Go**.
3. Click **About this site** in the main panel to see an information page that includes the telephone number of your local representative.

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For additional information, see Appendix A, “Accessibility,” on page 629.

Tivoli technical training

For Tivoli technical training information, see the following IBM Tivoli Education website at <http://www.ibm.com/software/tivoli/education>.

Tivoli user groups

Tivoli user groups are independent, user-run membership organizations that provide Tivoli users with information to assist them in the implementation of Tivoli Software solutions. Through these groups, members can share information and learn from the knowledge and experience of other Tivoli users. Tivoli user groups include the following members and groups:

- 23,000+ members
- 144+ groups

Access the link for the Tivoli Users Group at www.tivoli-ug.org.

Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

Online

Go to the IBM Software Support site at <http://www.ibm.com/software/support/probsub.html> and follow the instructions.

IBM Support Assistant

The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The ISA provides quick access to support-related information and serviceability tools for problem determination. To install the ISA software, go to <http://www.ibm.com/software/support/isa>.

Troubleshooting Guide

For more information about resolving problems, see the *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Troubleshooting Guide, GC14-7521* for this product.

Conventions used in this publication

This publication uses several conventions for special terms and actions.

Typeface conventions

This publication uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:**, and **Operating system considerations:**)
- Keywords and parameters in text

Italic

- Citations (examples: titles of publications, diskettes, and CDs)
- Words defined in text (example: a nonswitched line is called a *point-to-point line*)
- Emphasis of words and letters (words as words example: "Use the word *that* to introduce a restrictive clause."; letters as letters example: "The LUN address must start with the letter *L*.")
- New terms in text (except in a definition list): a *view* is a frame in a workspace that contains data.
- Variables and values you must provide: ... where *myname* represents....

Monospace

- Examples and code examples
- Message text and prompts addressed to the user
- Text that the user must type

Revision bars

Revision bars are used in this book. Compared with the last version, changed and new information is indicated by a vertical bar (|) in the left margin.

Chapter 1. Introducing WebSphere MQ Monitoring agent

With WebSphere MQ Monitoring agent, you can easily collect and analyze data that is specific to WebSphere MQ for all your remote and local queue managers from a single vantage point. You can then track trends in the data that is collected and troubleshoot system problems using the product provided workspaces.

The information provided by WebSphere MQ Monitoring agent can be used to do the following tasks:

- Monitor the performance of each system that is managed by WebSphere MQ, solve problems by identifying bottlenecks, and fine-tune the system for better performance.
- Select the most effective threshold values for monitored attributes and trigger a warning situation when the attributes exceed the value.
- View status information related to a particular resource when a change in its state is detected.

New in version 7.1

Version 7.1 of WebSphere MQ Monitoring agent has the following enhancements:

- An Event Archive workspace is provided to view archived WebSphere MQ events that are reported to a queue manager. You can also use the search function in this workspace to search for specific archived WebSphere MQ events. For detailed information, see “Event Archive workspace” on page 200 and “Searching for WebSphere MQ events” on page 125.
- The WebSphere MQ Monitoring agent can provide the channel summary data on both the queue manager level and on the channel level. New attributes are added to the Current Queue Manager Status attribute group to provide the summary channel data on the queue manager level. A new attribute group, Channel Summary, is provided for the summary data on the channel level, which is useful for server connection channels. For detailed information about the related attribute groups, see “Current Queue Manager Status attributes” on page 400 and “Channel Summary attributes” on page 390.
- The Current Queue Manager Status workspace is updated with new data that can help you understand the overall activity and health of the queue manager in real time. For information about the new health indicator attributes that you can see in this workspace, see “Current Queue Manager Status attributes” on page 400.
- Self-describing agent application support installation is supported for WebSphere MQ Monitoring agent. With this self-describing capability, you do not have to manually install the agent application support on IBM Tivoli Monitoring components (monitoring server and portal server). For detailed instructions, see *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520*.
- The 64-bit integer attribute support is provided for accounting and statistics attributes on distributed systems, which solves the overflow problems that might happen previously.
- Support of WebSphere MQ V7.1 and WebSphere MQ V7.5 is provided on distributed systems.

- Cognos® data models and sample reports for WebSphere MQ Monitoring agent are provided to work with Tivoli Common Reporting V2.1.1. For more details, see Chapter 9, “Running Reports with Tivoli Common Reporting,” on page 97.

Supported versions of WebSphere MQ

WebSphere MQ Monitoring agent supports the following versions of WebSphere MQ:

- On distributed systems:
 - WebSphere MQ 6.0
 - WebSphere MQ 7.0
 - WebSphere MQ 7.0.1
 - WebSphere MQ 7.1
 - WebSphere MQ 7.5
- On z/OS systems:
 - WebSphere MQ 6.0
 - WebSphere MQ 7.0
 - WebSphere MQ 7.0.1
 - WebSphere MQ 7.1

Remember: WebSphere MQ server and client components must exist on the same system where the WebSphere MQ Monitoring agent is installed and running.

WebSphere MQ Monitoring agent overview

With WebSphere MQ Monitoring agent, you can expect the following benefits:

- *Increase knowledge* with extensive reporting capabilities that provide real-time access to reliable, up-to-the-minute data. Thus, you can make faster, better-informed operating decisions.
- *Enhance system performance* by integrating, monitoring, and managing your system, environment, console, and critical applications. For example, WebSphere MQ Monitoring agent can alert you when conditions in your environment meet or exceed the thresholds that you set. These alerts notify your system administrator to limit and control system traffic.
- *Simplify application and system management* by managing applications, systems, and resources across your system.

User interface

WebSphere MQ Monitoring agent uses the Tivoli Enterprise Portal interface. By providing a consolidated view of your environment, you can monitor and resolve performance problems throughout your enterprise by using Tivoli Enterprise Portal. The characteristics of this user interface include the following items:

- A *Navigator view* of your enterprise. When a condition that you are monitoring exceeds the thresholds that you define, an alert, which is a round red mark with white cross in the center, is displayed in the physical Navigator view to notify you.

In this example, Queue Manager Status for the QM_AUTO_3 queue manager is flagged with an alert.

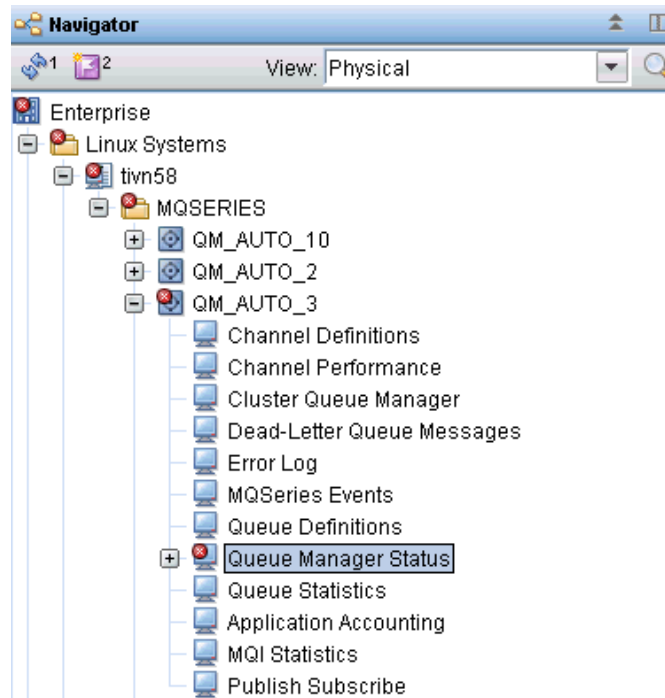


Figure 1. An alert flagged in a Navigator view

- *Workspaces* that contain various types of information. When a condition that you are monitoring exceeds the thresholds that you define, an alert is displayed in the WebSphere MQ Monitoring agent workspace to notify you. The following figure is an example of such an alert displayed in the table view of a workspace.

Queue Manager Status							
	QMgr Name	Host Name	QMgr Subsys	Host Jobname	Start Date & Time	QMgr Status	QMgr Type
	QM_AUTO_3	tivn58			n/a	QueueManager Not Available	Linux

Figure 2. An example of an alert in the WebSphere MQ Monitoring agent workspace

For more information about predefined workspaces included with WebSphere MQ Monitoring agent, see Chapter 10, “Monitoring with workspaces,” on page 107, and the online help of WebSphere MQ Monitoring agent.

- *Attributes* that you can use to create situations that monitor areas of particular interest and issue alerts when specified conditions are met.
- *Predefined situations* that you can use immediately to begin monitoring or that you can use as templates to create specific situations.

For more information about predefined situations included with WebSphere MQ Monitoring agent and how to create custom situations, see Chapter 3, “Using situations and Take Action commands,” on page 53

Attributes

WebSphere MQ Monitoring agent gathers data about the managed systems of your network and stores the data as system elements called attributes. You can use these attributes to do the following things:

- Build situations to monitor the performance of the managed systems that you are concerned with

- Create queries and use the resulting data to build custom views

Related attributes are grouped into attribute groups or attribute tables.

You can use attributes to create situations that monitor the state of your system, database, or application. A situation describes a condition that you want to test. When you start a situation, Tivoli Enterprise Portal compares the values that you assign for the attributes of the situation with the values that are collected by WebSphere MQ Monitoring agent and registers an *event* if the condition is met. You are alerted to events by indicator icons that are displayed in the Navigator physical view.

Chart and table views use queries to specify which attribute values to request from the monitoring agents. You can use the Query editor to create a new query, modify an existing one, or apply filters and set styles to define the content and appearance of a view based on an existing query.

For complete descriptions of the attributes that are provided with WebSphere MQ Monitoring agent, see “Attributes” on page 288

Event indicator and event workspace

When the conditions of a situation are met, the situation evaluates true, which causes an event indicator to be displayed in the Navigator view. You can investigate the cause of an event in its event workspace by clicking the workspace link icon next to the situation name.

Two table views are displayed in the event workspace, one with the values of the attributes when the situation evaluates true, and the other with the current values of the attributes.

A view with any expert advice that is written by the author of the situation is also available in the event workspace. The advice is displayed as web text and any links that you define are active. The Take Action view is also displayed in the event workspace, so you can send a command to the application that is started on that system.

Figure 3 on page 5 is an example Navigator with raised event indicators: red indicators for critical conditions and yellow indicators for warnings. If both a warning and a critical condition occur for the same workspace, the indicator always displays the highest level alert.

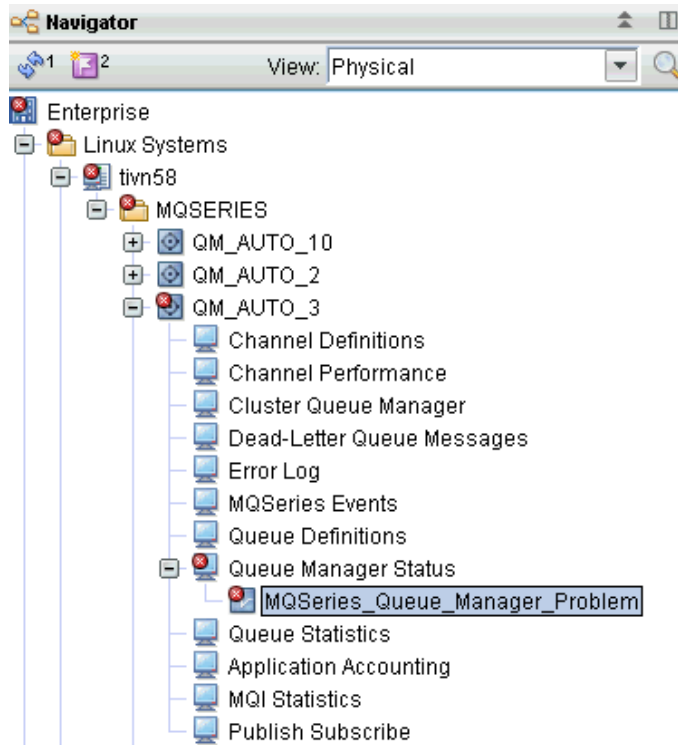


Figure 3. Navigator item for an event workspace

When you see an alert icon overlaying a Navigator icon, open the event workspace and drill down to investigate the cause of the alert. Figure 4 is an example event workspace for WebSphere MQ Monitoring agent.

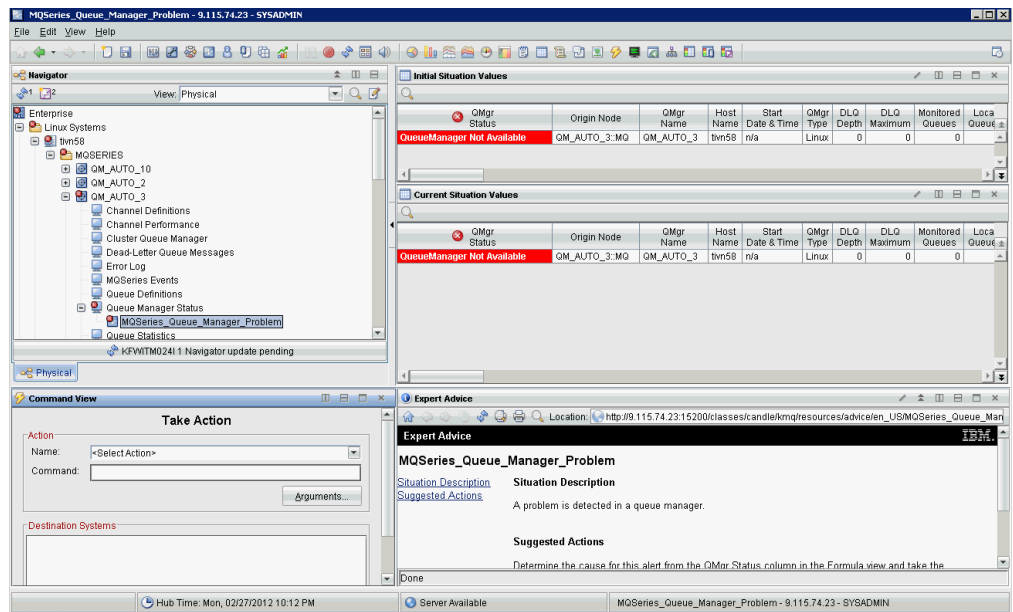


Figure 4. Event workspace

By looking at this workspace, you can determine the situation that raised the event and the attributes whose values are contributing to the alert. You can also review available advice and take appropriate actions.

Acknowledgments

When you see an event indicator in the Navigator, you can create an acknowledgment by right-clicking the navigator item with the event indicator and clicking **Acknowledge Event**. An acknowledgment notifies other users that you have taken ownership of the problem that is related to the event and are working on it. When you acknowledge an event, a blue check mark is displayed next to the situation in the event flyover list. If you opened the event workspace, a blue check mark is also displayed over the situation item in the Navigator. If the situation is still true when the acknowledgment expires, the indicator changes accordingly. You can also cancel the acknowledgment before it expires. This changes the indicator, so that users can see that the acknowledgment is removed, although the situation remains true.

IBM Tivoli Monitoring

IBM Tivoli Monitoring manages system and network applications on a variety of operating systems and keeps track of the availability and performance of all parts of your enterprise. It provides IBM Tivoli OMEGAMON[®] XE products and IBM Tivoli Composite Application Manager products with a common agent-server-client architecture:

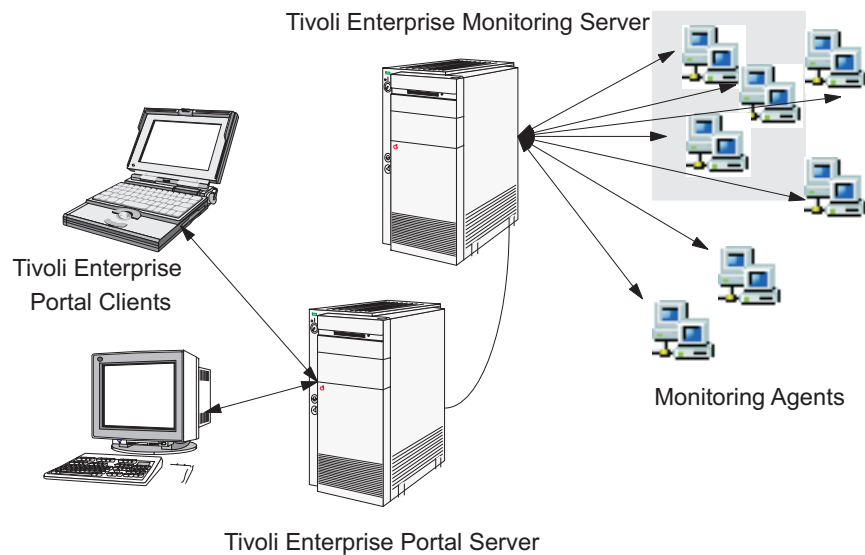


Figure 5. Agent-Server-Client architecture

Client

The IBM Tivoli Monitoring client, Tivoli Enterprise Portal, is a Java[™] based user interface for viewing and monitoring your enterprise network. Depending on how it is installed, you can start Tivoli Enterprise Portal as a desktop application (desktop mode) or through your browser (browser mode).

Server

The Tivoli Enterprise Portal client connects to the Tivoli Enterprise Portal Server. The Tivoli Enterprise Portal Server provides a range of software services for the client that enables retrieval, manipulation and analysis of data obtained by monitoring agents in the enterprise.

The Tivoli Enterprise Portal Server connects to the main, or *hub* Tivoli Enterprise Monitoring Server. The Tivoli Enterprise Monitoring Server acts as a collection and control point for alerts that are received from monitoring agents, and collects performance and availability data from them. The hub monitoring server correlates data that is collected by monitoring agents and remote monitoring server and passes it to the Tivoli Enterprise Portal Server for presentation in the Tivoli Enterprise Portal user interface and your evaluation.

Agent

Monitoring agents are installed on systems whose resources or applications you want to monitor. The agent collects monitoring data from managed systems and passes the data to the Tivoli Enterprise Monitoring Server that it connects to. The Tivoli Enterprise Portal gathers the current values of the attributes and produces reports, which are displayed in tables and charts. It can also test values against thresholds and display an alert icon when the thresholds are exceeded or a value is matched. These tests are called *situations*.

Agent Management Services

WebSphere MQ Monitoring agent that runs on a Windows, Linux, or UNIX computer can be managed by IBM Tivoli Monitoring 6.2.2's Agent Management Services. These services are available in the IBM Tivoli Monitoring OS Monitoring Agent for Windows, Linux, and UNIX, and are designed to keep WebSphere MQ Monitoring agent available and to provide information about its status to the Tivoli Enterprise Portal. More information about Agent Management Services can be found at this URL: http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/topic/com.ibm.itm.doc_6.2.2/itm_agentmgmtsvcs_intro.htm.

IBM Tivoli OMEGAMON DE

The IBM Tivoli OMEGAMON DE feature package for Tivoli Enterprise Portal offers a process-driven view of your enterprise. You can use this feature package to pull together information from disparate sources, including a range of operating systems, servers, databases, mainframes, and network and Web components, in a single workspace. The Tivoli OMEGAMON DE provides a single point of control from which you can manage all the resources that your business-critical applications rely on.

Tivoli OMEGAMON DE extends the capabilities of Tivoli OMEGAMON XE to include the following items:

- Enterprise-specific Navigator views
The Navigator physical view displays the hierarchy of your managed enterprise that is organized by systems and types of monitoring agents. The Navigator business view offered by Tivoli OMEGAMON DE displays the hierarchy of any managed objects. You can also define Navigator views for any logical grouping, such as a business process or a departmental hierarchy.
- Views of data from different types of monitoring agents in one workspace
In a single workspace, you can build a table or chart with data from one type of monitoring agent, and another table or chart with data from a different agent. Within that workspace, you can display views from as many different agent types as are included on that branch of the Navigator.
- Linking application workspaces
You can define a link from a workspace that is associated with one type of monitoring agent to a workspace that is associated with another type of agent.

Details of operation

With Tivoli OMEGAMON DE, you can easily change the parameters of specific WebSphere MQ objects (queue managers, queues, channels, and other objects) by providing cross-product access to the Tivoli OMEGAMON DE version of WebSphere MQ Configuration agent.

Upgrading to the optional DE feature gives you a more integrated view of your WebSphere MQ environment. You can select the attributes of a WebSphere MQ resource that are displayed in the workspaces of WebSphere MQ Monitoring agent and you can easily modify these attributes to meet your needs. Your changes take effect immediately.

For example, you are using the Channel Performance workspace, and you notice a problem with a SYSTEM.DEF.SENDER channel. You can select the channel, right-click it, and then click **Configure Channel**.

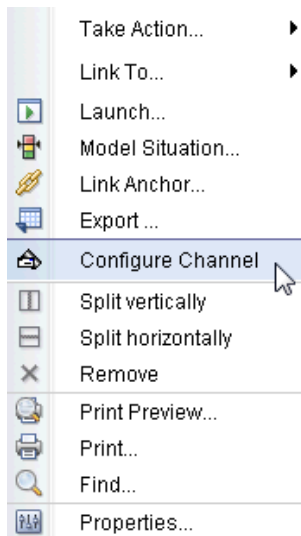


Figure 6. Configuring a channel with IBM Tivoli OMEGAMON DE

The setting list of WebSphere MQ Configuration agent for the channel opens. On the list you can change the parameters of the channel, save your changes, and update your actual WebSphere MQ configuration.

Any WebSphere MQ resource that you want to configure by using WebSphere MQ Configuration agent must already be completely defined in the configuration database of WebSphere MQ Configuration agent. If the resource is not defined, the following message is displayed:

KCF0045E The requested object does not exist in the configuration database.

Table 1 lists the workspaces in which these additional actions are available.

Table 1. IBM Tivoli OMEGAMON DE workspaces and actions

Workspace in IBM Tivoli OMEGAMON DE for WebSphere MQ Monitoring agent	Action that can be performed
Channel Definitions	Configure Channel
Channel Performance	Configure Channel

Table 1. IBM Tivoli OMEGAMON DE workspaces and actions (continued)

Workspace in IBM Tivoli OMEGAMON DE for WebSphere MQ Monitoring agent	Action that can be performed
Cluster Queue Manager	Configure Channel
Namelist Detail	Configure Namelist
Queue Definitions	Configure Queue
Queue Manager Status	Configure Queue Manager
Queue Statistics	Configure Queue

Your user ID must have the permission of modifying WebSphere MQ Configuration agent to use this feature.

Policy management

The Tivoli Enterprise Portal Policy Management solution incorporates all the features of Tivoli OMEGAMON DE and adds automation capabilities by means of the Workflow editor. In the Workflow editor you can design sets of automated system processes, called policies, to resolve system problems. A policy performs actions, schedules work to be performed by users, or automates manual tasks.

Where to find more information

For more information about IBM Tivoli Monitoring, see Tivoli Enterprise Portal online help and the books of IBM Tivoli Monitoring library.

Chapter 2. Customizing monitoring options

You can create multiple instances of the WebSphere MQ Monitoring agent to monitor multiple queue managers on the same computer. You can also change the monitoring options of local and remote agents on supported operating systems to suit the needs of your environment.

Creating multiple instances of the WebSphere MQ Monitoring agent

By default, the WebSphere MQ Monitoring agent monitors a single queue manager. You can create multiple instances of the agent to monitor multiple queue managers on the same computer.

Creating multiple instances on Windows systems

The first instance of the agent, which is created during installation, is called the primary agent. Any other agent instances that you create on the same computer are secondary agents.

Remember:

- You cannot use the following process to create multiple instances of WebSphere MQ Monitoring agent if the agent is deployed remotely instead of being installed locally.
- Names of WebSphere MQ Monitoring agent instances are not case-sensitive, but names of WebSphere MQ queue managers are case-sensitive. Therefore, avoid using WebSphere MQ queue manager names that are different only by case. For example, if you have a queue manager named `qm_apple`, do not name another queue manager `QM_APPLE`.

To create multiple instances of the WebSphere MQ Monitoring agent:

1. Click **Start > Programs > IBM Tivoli Monitoring > Manage Tivoli Monitoring Services** to open the Manage Tivoli Enterprise Monitoring Services window.
2. Right-click **WebSphere MQ Monitoring Agent** and click **Create Multi-Instance**.

A window displays the queue managers that are not monitored by WebSphere MQ Monitoring agent. They are displayed in the **Available Instances** list. You can use **Instance Filter** to specify criteria for filtering queue managers in the **Available Instances** list. The filter can only be used to filter queue managers that begin with a specific string. The asterisk (*) and question mark (?) wildcard characters are not supported by the filter.

3. Select the queue managers that you want to monitor from **Available Instances**, and click the add symbol (>>) to add them to **Selected Instances**. Click **OK**.

New agent instances are created and listed on the Manage Tivoli Enterprise Monitoring Services window. The agents are configured and ready to start.

Configuration files are created for each new agent instance. The configuration files are located in the `install_dir/TMAITM6` directory and their names are in the format of `mq_qmgr.cfg`, where `install_dir` is the installation directory of IBM Tivoli Monitoring and `qmgr` is the name of the monitored queue manager.

Creating multiple instances on UNIX and Linux systems

By default, the WebSphere MQ Monitoring agent that is created during installation monitors the default queue manager on your system. It is called the primary agent instance. You can create agent instances to monitor other queue managers on your system.

A WebSphere MQ Monitoring agent instance monitors a single queue manager.

Restriction: You cannot use the following process to create instances of the WebSphere MQ Monitoring agent if the agent is deployed remotely instead of installed locally.

Do the following steps to create instances of the WebSphere MQ Monitoring agent:

1. Run the following commands to open the Manage Tivoli Enterprise Monitoring Services window:

```
cd install_dir/bin
./itmcmd manage
```

where *install_dir* is the installation directory of IBM Tivoli Monitoring. The default directory is /opt/IBM/ITM.

2. In the Manage Tivoli Enterprise Monitoring Services window, right-click **WebSphere MQ Monitoring Agent** and click **Create MultiInstance**. The Specify Queue Manager window is displayed.

The queue managers on this computer are displayed in the **Available Instances** list. You can use **Instance Filter** to specify criteria for filtering queue managers in the **Available Instances** list. The filter can only be used to filter queue managers that begin with a specific string. The asterisk (*) and question mark (?) wildcard characters are not supported by the filter.

3. Select the queue manager that you want the new agent instance to monitor, click **Add**, and click **OK**.

Configuration files are created for each new agent instance. The configuration files are in the *install_dir*/config directory and their file names have the following format:

```
hostname_mq_qmgrname.cfg
```

where *hostname* is the name of the host system and *qmgrname* is the name of the queue manager that is monitored by the agent instance.

Creating multiple instances on i5/OS systems

If you want to create multiple instances of WebSphere MQ Monitoring agent, do the following steps. The first instance is automatically assigned suffix 00001, the second instance is automatically assigned suffix 00002, and so on.

1. From an i5/OS system command line, enter this command:

```
WRKOMAMQ
```

The Add OMEGAMON Agent for WebSphere MQ window is displayed.

(If this is not the first access, a different window is displayed; press F6 to display the Add OMEGAMON Agent for WebSphere MQ window.)

2. Enter the name and a text description of the Queue Manager that this agent monitors and press Enter.

The configure TEMA (CFGOMAMQ) dialog box is displayed.

3. Enter your preferred values for the displayed parameters using the guidelines in Table 2.

Table 2. Parameters for The configure TEMA(CFGOMAMQ) Dialog

Parameter	Description
TEMS SNA location	The SNA location of the Tivoli Enterprise Monitoring Server that this agent reports to. If you do not use SNA, enter *NONE. If the correct SNA location is already defined, enter *SAME to retrieve it. If you need to define a new SNA location (which can be the Control Point Name or the remote location name) enter the new location name (for example: S10B6322).
TEMS TCP/IP address	The TCP/IP address. If you do not use TCP/IP, enter *NONE. If the correct TCP/IP address is already defined, enter *SAME to retrieve it. If you need to define a different TCP/IP address, enter the new address (for example: 129.0.132.45).
TEMS IP.PIPE Address	If the WebSphere MQ Monitoring agent must connect to the Tivoli Enterprise Monitoring Server through a firewall, you must use IP.PIPE. Specify the IP.PIPE address. If you do not use IP.PIPE, enter *NONE.
Secondary TEMS SNA location	The SNA location of a secondary Tivoli Enterprise Monitoring Server that this agent reports to if it cannot communicate with the primary Tivoli Enterprise Monitoring Server at startup.
Secondary TEMS IP address	The TCP/IP address of the system where a secondary Tivoli Enterprise Monitoring Server is. The agent reports to this Tivoli Enterprise Monitoring Server if it cannot communicate with the primary Tivoli Enterprise Monitoring Server at startup.
Secondary TEMS IP.PIPE Address	The IP.PIPE address of the system where a secondary Tivoli Enterprise Monitoring Server is. The agent reports to this Tivoli Enterprise Monitoring Server if it cannot communicate with the primary Tivoli Enterprise Monitoring Server at startup.
Partition Name	This is required only by sites with firewalls that use address translation. The name of the partition that this instance of the WebSphere MQ Monitoring agent is in (up to 32 alphanumeric characters).
Firewall in use	If the WebSphere MQ Monitoring agent must connect to the Tivoli Enterprise Monitoring Server through a firewall, enter *YES. If not, retain the default of *NO.
TEMS TCP/IP port address	The listening port of the Tivoli Enterprise Monitoring Server that this agent reports to (usually 1918). If your site uses SNA or IP.PIPE, ignore this field. If the correct port address is already defined, enter *SAME to retrieve it. If you need to specify a different Tivoli Enterprise Monitoring Server port address, enter the new address (up to 6 numeric characters).
TEMS SNA port address	The listening port of the Tivoli Enterprise Monitoring Server that this agent reports to (usually 1918). If your site uses TCP/IP or IP.PIPE, ignore this field. If the correct port address is already defined, enter *SAME to retrieve it. If you need to specify a different Tivoli Enterprise Monitoring Server port address, enter the new address (up to 6 numeric characters).
TEMS IP.PIPE port address	The listening port of the Tivoli Enterprise Monitoring Server that this agent reports to (usually 1918). If your site uses TCP/IP or SNA, ignore this field. If you need to specify a different Tivoli Enterprise Monitoring Server port address, enter the new address (up to 6 numeric characters).

Table 2. Parameters for The configure TEMA(CFGOMAMQ) Dialog (continued)

Parameter	Description
Action user profile	The user authority under which user action must be administered. Retain the default value of QAUTOMON to grant user system operator authority.
SNA transaction program	This prompt is displayed only if you enter a value (or *SAME) for Tivoli Enterprise Monitoring Server SNA location. The name of the SNA transaction program. Retain the default value of KDTMSNAP.
Library	This prompt is displayed only if you enter a value (or *SAME) for SNA location. The name of the SNA transaction program library. Retain the default value of KMSCMS.
Transaction program (backup)	This prompt is displayed only if you enter a value (or *SAME) for Secondary Tivoli Enterprise Monitoring Server SNA location. The name of the SNA transaction program. Retain the default value of KDTMSNAP.
Library	This prompt is displayed only if you enter a value (or *SAME) for Secondary Tivoli Enterprise Monitoring Server SNA location. The name of the SNA transaction program library. Retain the default value of KMSCMS.

4. Read the Options choices and Function Key choices that are available for each window to determine which keys to press to save and exit the window.
If you are reconfiguring the agent, the changes take effect the next time the agent is started.

Changing monitoring options

Instructions about changing monitoring options for each supported system.

Changing monitoring options on z/OS systems

On z/OS systems, you can use any of the following methods to change monitoring options:

- Enter basic options using the Configuration tool. You can only use this method to customize monitoring options for the DEFAULT group.
- Dynamically specify options from the MVS™ console. You can use this method to change monitoring options for any monitoring group.
- Edit the KMQUSER monitoring file. This is the best method to make long-term changes to monitoring options for one or more monitoring groups.

Entering options using the Configuration tool

When you configure WebSphere MQ Monitoring agent using the Configuration tool, a panel is displayed listing a set of commonly customized options for a monitoring group named DEFAULT. If you are using the DEFAULT monitoring group and you want to change its monitoring options, restart the Configuration tool and enter new values on this panel. For more information about accessing the Configuration tool, see *IBM Tivoli OMEGAMON XE for Messaging on z/OS: Planning and Configuration Guide*, SC23-7951.

The values on this panel are saved in a file named KMQSTART, which is read when the monitoring agent is started.

Restriction: Do not manually edit the KMQSTART file; otherwise, unexpected consequences might occur.

Dynamically specifying options from the MVS console

You can use this method to change monitoring options for any monitoring group. You can dynamically specify the options when the monitoring agent is running. However, this method makes only temporary changes; for example, for testing purposes. The changes are in effect only until the agent is restarted. Permanent changes must be made in the KMQUSER monitoring file (see “Editing the monitoring file”).

To dynamically specify options from the MVS console, do the following steps: These steps assume that you configured the monitoring agent in a separate address space from the Tivoli Enterprise Monitoring Server.

1. If you are unfamiliar with the various monitoring options, see the descriptions of the options in “Monitoring options” on page 23.
2. Run the following command to display the monitoring options that are currently in effect:

```
F CANSMQ,KMQCMD DISPLAY SETTINGS MGRNAME(qmgrname)
```

where *CANSMQ* is the name of your started task for the monitoring agent and *qmgrname* is the name of the queue manager. The **MGRNAME** parameter is optional; if you omit it, the option settings for all monitored queue managers are displayed.

3. Run the following command to change any options that you want:

```
F CANSMQ,KMQCMD command
```

where *CANSMQ* is the name of your started task for the monitoring agent and *command* is the command syntax for the monitoring option that you want to enable.

Continue to issue commands as needed.

The changes that you make with this method remain in effect until the monitoring agent is restarted.

Editing the monitoring file

The KMQUSER monitoring file is run through the KMQSTART file (see “Entering options using the Configuration tool” on page 14). The KMQUSER monitoring file is in your RKANCMD data set (for example, `WBI.CCC.V600.RKANCMD(KMQUSER)`).

Editing the KMQUSER file is the best method to use for making long-term changes to monitoring options. Because this file is read when the agent is started (through the KMQSTART file), you must restart the agent after making your changes.

If you are unfamiliar with the various monitoring options to enable them, see the descriptions of these options in “Monitoring options” on page 23.

To edit the KMQUSER monitoring file, do the following steps:

1. Edit the KMQUSER file and enter the statements to enable the monitoring options that you require. The following guidelines apply:
 - Lines in the monitoring file cannot exceed 80 characters. If a command is longer than 80 characters, you must write it on two lines.
 - Before continuing a command on an additional line, append a hyphen (-) to the end of the current line.
 - A single parameter must be written on the same line.
 - A single parameter value must be written on the same line.
 - Parameters that you set when you are grouping objects are effective for all the objects in the group.

- You can override parameters for an object in a group by defining parameters for that object.
2. Verify that the queue manager and its command server are running.
 3. Use the following commands to stop and restart the monitoring agent for the changes to take effect:


```
STOP CANSMQ
START CANSMQ
```

 where *CANSMQ* is the name of your started task for the monitoring agent.

Changing monitoring options on UNIX and Linux systems

On UNIX and Linux systems, you can change monitoring options by editing the *mq.cfg* monitoring file. The *mq.cfg* file is located in the *install_dir/config* directory, where *install_dir* is the IBM Tivoli Monitoring installation directory. The default directory is */opt/IBM/ITM*. If your site has multiple queue managers, you might have created multiple instances of the monitoring agent, each with its own uniquely named monitoring file pointing to a single queue manager. The monitoring file for an instance of the WebSphere MQ Monitoring agent has the following naming convention: *Hostname_mq_queue_manager_name.cfg*. You can customize monitoring options in any or all of these monitoring files.

If you are unfamiliar with the various monitoring options, see the descriptions of the options in “Monitoring options” on page 23.

To change the monitoring options, do the following steps:

1. Edit the monitoring file as your site requires. The following guidelines apply:
 - Lines in the monitoring file cannot exceed 80 characters. If a command is longer than 80 characters, you must write it on two lines.
 - Before continuing a command on an additional line, append a hyphen (-) to the end of the current line.
 - A single parameter must be written on the same line.
 - A single parameter value must be written on the same line.
 - Parameters that you set when you are grouping objects are effective for all the objects in the group.
 - You can override parameters for an object in a group by defining parameters for that object.
2. Verify that the queue manager and its command server are running.
3. Restart each monitoring agent for your changes to take effect.

Remember: If you want to collect historical data for attribute groups whose data is sampled by the agent, you must set the **HISTORY** option to YES on the “PERFORM STARTMON” on page 43 statement in the monitoring file. (For information about using the historical data collection function, see Chapter 5, “Collecting historical data,” on page 73. For information about sampled and on-demand attribute groups, see “Sampled and on-demand tables” on page 163).

Changing monitoring options on Windows systems

On Windows system, you can change monitoring options by editing the *mq.cfg* monitoring file. If your site has multiple queue managers, you might have created multiple instances of the monitoring agent, each with its own uniquely named monitoring file pointing to a single queue manager. You can customize monitoring options in any or all of these monitoring files.

If you are unfamiliar with the various monitoring options, review the descriptions of the options in “Monitoring options” on page 23.

Do the following steps to edit the monitoring file for an agent instance:

1. Click **Start > Programs > IBM Tivoli Monitoring > Manage Tivoli Monitoring Services**.
2. In the Manage Tivoli Enterprise Monitoring window, select **WebSphere MQ Monitoring Agent -- instance**, where *instance* is the name of the agent instance for which you want to change monitoring options.

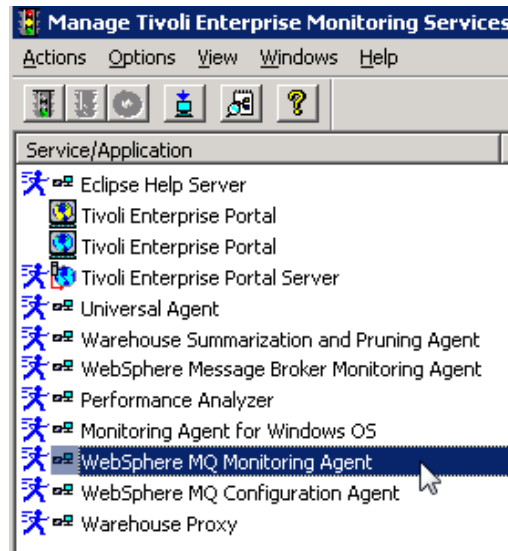


Figure 7. WebSphere MQ Monitoring Agent selection

3. Click **Actions > Reconfigure**.

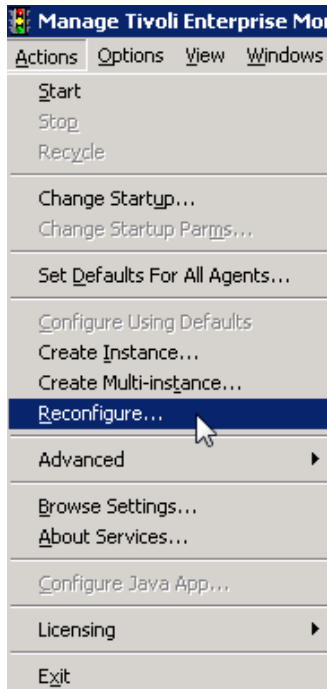


Figure 8. Websphere MQ Monitoring Agent reconfiguration

4. Verify settings or changes as needed, and click **OK**.
5. Click **Yes** when you are asked whether you want to update the `mq_instance.file`.
6. Click **OK**.
A Notepad session opens.

```

*****
*
* Licensed Materials - Property of IBM
*
* (C) Copyright IBM Corp. 1996, 2008 All Rights Reserved.
*
* US Government Users Restricted Rights - Use, duplication or
* disclosure restricted by GSA ADP Schedule Contract with
* IBM Corp.
*
*****

SET GROUP NAME (GROUP1) -
  DEFAULT(YES) -
  RETAINHIST(120) -
  COMMAND (YES) -
  MSGACCESS(DESC) -
  EVENTS(REMOVE) -
  ACCOUNTINGINFO(REMOVE) -
  STATISTICSINFO(REMOVE)
SET MANAGER NAME(QM1)
SET QUEUE NAME(*) MGRNAME(QM1) QDEFTYPE(PREDEFINED)
SET CHANNEL NAME(*) MGRNAME(QM1)
PERFORM STARTMON SAMPINT(300) HISTORY(YES)
  
```

Figure 9. An opened notepad session after the `mq_instance.file` update

7. Add, delete, or modify monitoring options as required for your site. The following guidelines apply:
 - Lines in the monitoring file cannot exceed 80 characters. If a command is longer than 80 characters, you must write it on two lines.
 - Before continuing a command on an additional line, append a hyphen (-) to the end of the current line.
 - A single parameter must be written on the same line
 - A single parameter value must be written on the same line.
 - Parameters that you set when you are grouping objects are effective for all the objects in the group.
 - You can override parameters for an object in a group by defining parameters for that object.
8. Close the Notepad.
9. At the next prompt, click **Yes** to continue.
10. Verify that your queue manager and its command server are running.
11. Restart the agent for the changes to take effect.

Remember: If you want to collect historical data for attribute groups whose data is sampled by the agent, you must set the **HISTORY** option to YES on the “PERFORM STARTMON” on page 43 statement in the monitoring file. (For information about using the historical data collection function, see Chapter 5, “Collecting historical data,” on page 73. For information about sampled and on-demand attribute groups, see “Sampled and on-demand tables” on page 163).

Changing monitoring options on i5/OS systems

On i5/OS systems, you can use the agent management program to change monitoring options. (You can also use the agent management program to start, stop, delete, replicate, view status, display the log for, or change Tivoli Enterprise Monitoring Server configuration for one or more WebSphere MQ Monitoring agents on the same i5/OS system.)

If you are unfamiliar with the various monitoring options and the statements to enable them, review the descriptions of the options in “Monitoring options” on page 23.

To edit the monitoring file, do the following steps:

1. When you are ready to customize the monitoring file, enter the following command on an i5/OS command line:

```
WRKOMAMQ
```

The main panel for working with the WebSphere MQ Monitoring agent is displayed.

```
Work with monitoring agent for WebSphere MQ System MYSYSTEM
```

```
Type Option, press Enter
```

```
2=Change, 4=Delete, 5=Display agent Log, 14=Start, 15=End
```

Option	Agent for MQ Manager...	Suffix	Status
	MYSYSTEM	00001	Not Started
	MQITMISDE1	00002	Started

Tip: If you click the **Display agent Log** option and a message is not issued, enter the following command on the command line:

```
wrkmsg msgq(kmqlib/KMSOMLOG)
```

On the panel, one or more monitoring agents are listed. These agents on an i5/OS system (and the unique monitoring file associated with each agent) are differentiated by a unique 5-character numeric suffix. The first agent added is automatically assigned suffix 00001, the second agent added is automatically assigned suffix 00002, and so on.

2. Enter 2 in the Option column next to the agent whose monitoring file you want to change.

The panel for changing the WebSphere MQ Monitoring agent is displayed.

3. Press F8 to change the monitoring file associated with the agent.

An editing panel is displayed.

4. Insert, delete, or modify monitoring option commands, as your site requires. The following guidelines apply:

- Lines in the monitoring file cannot exceed 80 characters. If a command is longer than 80 characters, you must write it on two lines.
- Before continuing a command on an additional line, append a hyphen (-) to the end of the current line.
- A single parameter must be written on the same line.
- A single parameter value must be written on the same line.
- Parameters that you set when you are grouping objects are effective for all the objects in the group.
- You can override parameters for an object in a group by defining parameters for that object.

5. When you finish customizing the monitoring file, press F3 to save your changes and exit. Press F3 another two times to exit the interface.

6. Verify that the queue manager and its command server are running.

7. Restart the agent for your changes to take effect.

Remember: If you want to collect historical data for attribute groups whose data is sampled by the agent, you must set the **HISTORY** option to YES on the "PERFORM STARTMON" on page 43 statement in the monitoring file. (For information about using the historical data collection function, see Chapter 5, "Collecting historical data," on page 73. For information about sampled and on-demand attribute groups, see "Sampled and on-demand tables" on page 163).

Monitoring a multi-instance queue manager

If you are using WebSphere MQ version 7.0.1 or later versions, you can create multi-instance queue managers to improve availability and use the WebSphere MQ Monitoring agent to monitor these multi-instance queue managers.

Multi-instance queue managers improve availability by automatically switching to a standby server if the active server fails. The active and standby servers are multiple instances of the same queue manager; they share the same queue manager data. When the active instance fails you need to transfer its journal to the standby that takes over so that the queue manager can rebuild its queues. You can create multi-instance queue managers on Windows, UNIX, or Linux systems. For more detailed information about multi-instance queue managers, see WebSphere MQ documentation.

To avoid confusion when multiple monitoring agents and queue managers exist in your environment, add the **SET AGENT** statement to the mq.cfg file. The **SET AGENT** statement specifies the middle qualifier of the managed system name, which can

distinguish the managed system names for queue managers. For detailed information about this statement, see “SET AGENT” on page 45.

Windows system requirements

To use the WebSphere MQ Monitoring agent to monitor multi-instance queue managers on Windows systems, make sure that the following requirements are met in your environment:

- The **DataPath** parameter of the multi-instance queue manager is set to a UNC name, for example, \\host1\MQHA\data\QM1.

The **DataPath** parameter is in the following path in the registry, where *<qm_name>* is the name of the multi-instance queue manager:

```
HKEY_LOCAL_MACHINE\SOFTWARE\IBM\MQSeries\CurrentVersion\Configuration\
QueueManager\<qm_name>
```

- The WebSphere MQ Monitoring agent is started by a user account that has access to the shared queue manager data.

You can specify the user account that is used to start the agent by doing the following steps:

1. Open the Manage Tivoli Enterprise Monitoring Services window.
2. Right-click the WebSphere MQ Monitoring agent instance, and click **Change Startup**.
3. In the Service Startup for WebSphere MQ Monitoring Agent window, select **This Account** in the **Log on As** section.
4. Type the user ID and password of the account that you want to use to start the agent.
5. Click **OK** to close the window.

UNIX or Linux system requirements

To use the WebSphere MQ Monitoring agent to monitor multi-instance queue managers on UNIX or Linux systems, check the location of the `mqs.ini` file. If the `mqs.ini` file is not located in the default location, set the **AMQ_MQS_INI_LOCATION** parameter in the `mq.ini` file to the full path of the `mqs.ini` file that the multi-instance queue manager uses. For example, `AMQ_MQS_INI_LOCATION=/user1/mqs.ini`. The `mq.ini` file is located in the `ITM_HOME/config` directory, where `ITM_HOME` is the directory where IBM Tivoli Monitoring is installed.

WebSphere MQ multi-installation requirements

If you have more than one copy of WebSphere MQ installed on the system and the latest version of WebSphere MQ on the system is not a primary installation, you must specify the **KMQ_LATEST_WMQ_INSTALLPATH** parameter in the `kmqenv` file for a Windows system or in the `mq.ini` file for a UNIX or Linux system.

For more information about how to set this parameter, see the configuration section about specifying multiple installation paths of WebSphere MQ in the *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520*.

Configuring remote agents

On distributed systems, the configuration file is encoded using UTF-8 and can contain non-English characters. On these operating systems you can use the remote agent configuration function instead of editing this file directly. You can configure a remote agent through the Tivoli Enterprise Portal or from the command line.

Restriction: This function is not available on i5/OS and z/OS systems.

Before you can remotely configure the WebSphere MQ Monitoring agent, identify the operating system where you want to remotely configure the agents and ensure that the following requirements are fulfilled in your monitoring environment:

- An OS agent is installed or deployed on the computer where the WebSphere MQ Monitoring agent that you want to remotely configure is installed. For example, if you want to configure the WebSphere MQ Monitoring agent on the computer where the Windows operating system is running, you must have the monitoring agent for Windows OS installed on that computer. For information about how to install the OS agent, see *IBM Tivoli Monitoring: Installation and Setup Guide*.
- The agent depot is populated on the Tivoli Enterprise Monitoring Server from which you configure agents across your environment. For example, if you want to remotely configure the WebSphere MQ Monitoring agent, you must have the agent depot for the WebSphere MQ Monitoring agent populated on the Tivoli Enterprise Monitoring Server. For detailed information about how to populate the agent depot, see "Population your agent depot" in Chapter 12, Deploying monitoring across your environment from a central location in the *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520*.

Configuring remote agents through Tivoli Enterprise Portal

Before you configure a remote WebSphere MQ Monitoring agent, ensure that an OS agent is installed or deployed on the computer where the remote WebSphere MQ Monitoring agent you want to configure is installed, and the agent depot is populated on the Tivoli Enterprise Monitoring Server from which you configure agents across your environment. See "Configuring remote agents" for detailed information about these prerequisites.

Do the following steps to configure the WebSphere MQ Monitoring agent remotely through the Tivoli Enterprise Portal:

1. Log on to the Tivoli Enterprise Portal.
2. Navigate to the system where the agent that you want to configure is installed.
3. Select the agent.
4. Right-click the agent, and then click **Configuration**.
5. Modify the parameters as needed.
6. Click **OK** to save the changes.
7. In the displayed window, click **View Status Workspace** to view the configuration status, or click **OK** to close the window.

All the parameters available for remote configuration are described in "Parameters for remote configuration through Tivoli Enterprise Portal" on page 607.

Configuring remote agents from the command line

Before you configure a remote WebSphere MQ Monitoring agent, ensure that an OS agent is installed or deployed on the computer where the remote WebSphere

MQ Monitoring agent you want to configure is installed, and the agent depot is populated on the Tivoli Enterprise Monitoring Server from which you configure agents across your environment. See “Configuring remote agents” on page 22 for detailed information about these prerequisites.

Do the following steps to configure the WebSphere MQ Monitoring agent remotely from the command line:

1. Run the following command to log on to the Tivoli Enterprise Monitoring Server:

```
tacmd login -s TEMS_name -u user_ID -p password
```

where *TEMS_name* is the host name of the monitoring server that you want to log in, *user_ID* is the user ID, and *password* is the corresponding password.

2. Run the following command to configure the remote agent:

```
tacmd configureSystem -m system  
                    -p SECTION.NAME=VALUE
```

where *system* is the name of the managed system, *SECTION.NAME* is the monitoring option that you want to modify, and *VALUE* is the new value for the monitoring option.

For detailed descriptions about the configuration parameters, see “Monitoring options.”

For further information about the **tacmd CLI** commands, including parameter descriptions, see *IBM Tivoli Monitoring: Installation and Setup Guide* and *IBM Tivoli Monitoring: Command Reference*.

The following example changes the level of user access to messages in queues for the specified queue manager to DATA:

```
tacmd configureSystem -m QM_App::MQ -p MANAGER.MSGACCESS=DATA
```

Tip: Use the **tacmd listSystems** command to list the existing managed systems. The following command lists all the systems in your enterprise with the product code *MQ* (WebSphere MQ Monitoring agent).

```
tacmd listSystems -t MQ
```

Monitoring options

WebSphere MQ Monitoring agent provides monitoring options that you can modify to suit the needs of your environment. The monitoring options are defined in a command file, which is referred to as the monitoring file. When the WebSphere MQ Monitoring agent is started, the parameter values in the monitoring file are read and the commands in it are issued. The actual file name and location varies by operating system. After reading the following descriptions of monitoring options, see “Monitoring options” for information about how to change monitoring options on different operating systems and the rules for correctly specifying and changing monitoring options.

For example, you can configure the following settings by editing the monitoring file:

- Define the queue managers, queues, and channels that you want to monitor
- Specify the interval for collecting WebSphere MQ data
- Manage the disposal of event messages from an event queue
- Specify whether you want to collect historical monitoring data and how long you want the data to be available

By default, the WebSphere MQ Monitoring agent monitors the following objects:

- On a z/OS system:
 - all predefined queues
 - all channels for all queue managers
 - all WebSphere MQ applications
- On a UNIX, Linux, Windows, or i5/OS system:
 - all predefined queues
 - all channels on a single default queue manager

SET GROUP

The **SET GROUP** command defines a group of queue managers that have common monitoring characteristics. It defines the default monitoring options for all queue managers that are in the group. You can use the **SET MANAGER** command to override some of those parameters for a given queue manager in the group.

At least one **SET GROUP** command is required.

Syntax

```
SET GROUP NAME(group-name)
    [DEFAULT(YES|NO)]
    [AGGRHIST(aggregation-samples)]
    [COMMAND(YES|NO)]
    [ERRLOGCYCLE(sampling-interval)] (distributed systems only)
    [ERRLOGMAX(max-messages-in-memory)] (distributed systems only)
    [EVENTS(REMOVE|BROWSE|NO)]
    [HLQ(high-level-qualifier)]
    [ICYCLE(interval-cycle)] (z/OS systems only)
    [LIKE(like-group-name)]
    [ACCOUNTINGINFO(REMOVE|BROWSE)] (distributed systems only)
    [RECENTACCOUNTINGSAMPLES(recent-sample-count)]
        (distributed systems only)
    [STATISTICSINFO(REMOVE|BROWSE)] (distributed systems only)
    [RECENTSTATISTICSSAMPLES(recent-sample-count)]
        (distributed systems only)
    [ACTIONAUTHUSERS (user-name-mask-list)]
    [ACTIONACCOUNT (UIUSER|MQAGENT|USER=user-id)]
    [MSGACCESS(NONE|DESC|RETRY|DATA|DELETE|USEQACCESS)]
    [RETAINHIST(historical-retention-value)]
    [RQMODEL(reply-to-queue's-model-queue)]
```

Parameters

NAME(*group-name*)

A 1- through 48-character group name. Subsequent commands refer to the group and its parameter settings by this name. This parameter is required.

DEFAULT(YES|NO)

Specifies whether this is the default group. If this parameter is set to yes, the settings in this statement apply to any **SET MANAGER** statement that omits the **GROUP** parameter. The default group is named DEFAULT.

AGGRHIST(*aggregation-samples*)

Specifies the number of samples to maintain in recent history for all queue managers in this group. The default value is 15.

COMMAND(YES|NO)

Controls the MQ Command feature. For more details, see the description of the **COMMAND** parameter in “SET MANAGER” on page 26.

ERRLOGCYCLE*(sampling-interval)*

Specifies, in seconds, the interval of the error log collection cycle. For more details, see the description of the **ERRLOGCYCLE** parameter in “SET MANAGER” on page 26.

ERRLOGMAX*(max-messages-in-memory)*

Specifies the maximum number of error messages that are held in memory and displayed in the Error Log workspace. For more details, see the description of the **ERRLOGMAX** parameter in “SET MANAGER” on page 26.

EVENTS**(REMOVE | BROWSE | NO)**

Specifies how to access system event queues. For more details, see the description of the **EVENTS** parameter in “SET MANAGER” on page 26.

HLQ*(high-level-qualifier)*

Specifies the high-level qualifier for queue names. The default value is KMQ. For more details, see the description of the **HLQ** parameter in “SET MANAGER” on page 26.

ICYCLE*(interval-cycle)*

This parameter applies only to z/OS systems.

Specifies the number of sample interval cycles to wait before queue manager performance data is gathered. For more details, see the description of the **ICYCLE** parameter in “SET MANAGER” on page 26.

LIKE*(like-group-name)*

The name of a previously defined queue manager group. Parameter values that have similar names are copied from the values in the named group definition.

ACCOUNTINGINFO**(REMOVE | BROWSE | NO)**

This parameter is not valid for z/OS systems.

Specifies how WebSphere MQ Monitoring agent accesses the accounting application and queue data that is produced by the queue manager. For more details, see the description of the **ACCOUNTINGINFO** parameter in “SET MANAGER” on page 26.

RECENTACCOUNTINGSAMPLES*(recent-sample-count)*

This parameter is not valid for z/OS systems.

Specifies the number of recent records that WebSphere MQ Monitoring agent keeps in memory for the application or queue accounting data. For more details, see the description of the **RECENTACCOUNTINGSAMPLES** parameter in “SET MANAGER” on page 26.

STATISTICSINFO**(REMOVE | BROWSE | NO)**

This parameter is not valid for z/OS systems.

Specifies how WebSphere MQ Monitoring agent accesses the statistics data that is produced by the queue manager. For more details, see the description of the **STATISTICSINFO** parameter in “SET MANAGER” on page 26.

RECENTSTATISTICSSAMPLES*(recent-sample-count)*

This parameter is not valid for z/OS systems.

Specifies the number of recent records that the WebSphere MQ Monitoring agent keeps in memory for queue managers, queues or channel statistics data. For more details, see the description of the **RECENTSTATISTICSSAMPLES** parameter in “SET MANAGER” on page 26.

ACTIONAUTHUSERS(*user-name-mask-list*)

This parameter is only applicable to the manual Take Action command.

Specifies that the Tivoli Enterprise Portal user ID must match one of the user name mask lists, before the Take Action command can be issued. For more details, see the description of the **ACTIONAUTHUSERS** parameter in "SET MANAGER."

ACTIONACCOUNT(**UIUSER** | **MQAGENT** | **USER=user-id**)

This parameter is only applicable to the Take Action commands that are provided with WebSphere MQ Monitoring agent.

Specifies that WebSphere MQ Monitoring agent uses the **ACTIONACCOUNT** value as an alternate user ID to interact with WebSphere MQ for message manipulation. For more details, see the description of the **ACTIONACCOUNT** parameter in "SET MANAGER."

UIUSER: The agent uses the Tivoli Enterprise Portal user ID to interact with WebSphere MQ.

MQAGENT: The agent uses the monitoring agent account to interact with WebSphere MQ.

USER=user-id: The agent uses the predefined account ("user-id") to interact with WebSphere MQ.

MSGACCESS(**NONE** | **DESC** | **RETRY** | **DATA** | **DELETE** | **USEQACCESS**)

Specifies the level of user access to messages in queues. For more details, see the description of the **MSGACCESS** parameter in "SET MANAGER."

RETAINHIST(*historical-retention-value*)

Number of minutes that queue manager objects (such as channels and queues) that are no longer defined in the queue manager are retained in agent memory and returned for display in workspaces, so that it is easier to link to historical data about the object. You can decrease the **RETAINHIST** value if you want less data to be maintained in memory for these objects that are no longer defined. The default value is 120 (2 hours). This parameter is only valid for channels and local queues.

RQMODEL(*reply-to-queue's-model-queue*)

Specifies the 1- through 48-character name of a model queue to use as a model for the reply-to queue for this product. If this parameter is not specified, the standard system default model is used. For more details, see the description of the **RQMODEL** parameter in "SET MANAGER."

Example

To define a manager group named MYGROUP with new values for aggregation and historical retention, specify the following statement:

```
SET GROUP NAME(MYGROUP) LIKE(DEFAULT) -
AGGRHIST(20) RETAINHIST(2400)
```

SET MANAGER

The **SET MANAGER** statement specifies the queue managers that you want to monitor.

Syntax

```
SET MANAGER NAME(manager-name-mask)
    [GROUP(group-name)]
    [ACTIVE(YES|NO)]
    [AGGRHIST(aggregation-samples)]
```

[COMMAND(YES|NO)]
 [ERRLOGCYCLE(*sampling-interval*)] (distributed systems only)
 [ERRLOGMAX(*max-messages-in-memory*)] (distributed systems only)
 [EVENTS(REMOVE|BROWSE|NO)]
 [HLQ(*high-level-qualifier*)]
 [ICYCLE(*interval-cycle*)] (z/OS systems only)
 [LIKE(*like-manager-name*)]
 [ACCOUNTINGINFO(NO|REMOVE|BROWSE)] (distributed systems only)
 [RECENTACCOUNTINGSAMPLES(*recent-sample-count*)] (distributed systems only)
 [STATISTICSINFO(NO|REMOVE|BROWSE)] (distributed systems only)
 [RECENTSTATISTICSSAMPLES(*recent-sample-count*)] (distributed systems only)
 [ACTIONAUTHUSERS (*user-name-mask-list*)]
 [ACTIONACCOUNT (UIUSER|MQAGENT|USER=*user-id*)]
 [MSGACCESS (NONE|DESC|RETRY|DATA|DELETE|USEQACCESS)]
 [NICKNAME(*nickname*)]
 [RETAINHIST(*historical-retention-value*)]
 [RQMODEL(*reply-to-queue's-model-queue*)]
 [STATUS(ADD|DELETE|RESET)]
 [SYSNAME(*z/OS-system-id*)]
 [REMOTE(YES|NO)]

Parameters

NAME(*manager-name-mask*)

On z/OS systems, this parameter value is the 1- through 4-character specific or generic name of the queue managers that you want to monitor. To specify a generic name, enter a character string followed by an asterisk (*). For example, to monitor all z/OS system queue managers, specify NAME(*). This parameter is required on z/OS systems.

On distributed systems, specify the full name of the queue manager that you want to monitor without any asterisks. If you do not specify this parameter, the default queue manager is monitored.

GROUP(*group-name*)

A previously defined group that has parameter defaults that apply to this queue manager. The name must exactly match the name that is specified on a prior **SET GROUP** statement. The default group that is provided is named DEFAULT.

ACTIVE(YES|NO)

Indicates whether to actively monitor this queue manager. YES is the default.

AGGRHIST(*aggregation-samples*)

Specifies the number of samples to maintain in storage for monitored objects that are associated with the queue manager. This number of samples is displayed for the object in recent workspaces.

COMMAND(YES|NO)

Specifies if passing WebSphere MQ commands to the queue manager from Tivoli Enterprise Portal is available. Valid values are:

YES: Enables the MQ Command feature. You can then pass WebSphere MQ commands to the queue manager from Tivoli Enterprise Portal. YES is the default value.

NO: Disables the MQ Command feature.

ERRLOGCYCLE(*sampling-interval*)

Specifies, in seconds, the interval of the error log collection cycle. The default value is 10.

Specifying the value 0 turns off error log collection for the queue manager and disables the Error Log monitoring feature.

See “Error Log monitoring (distributed systems only)” on page 117 for more information about the Error Log monitoring feature.

ERRLOGMAX(*max-messages-in-memory*)

Specifies the maximum number of error messages that are held in memory and displayed in the Error Log workspace. The default value is 100.

EVENTS(**REMOVE**|**BROWSE**|**NO**)

Specifies how to access system event queues. Valid values are:

REMOVE: Read and remove messages from the system event queues. This setting provides the most accurate event reporting. The value that is configured automatically during the installation and configuration process is **REMOVE**. When **REMOVE** is specified, the agent opens the event queues for exclusive access.

To provide support for multiple applications to read event queues, use the **SET EVENTQIN** and **SET EVENTQOUT** commands as described in “**SET EVENTQIN**” on page 39 and “**SET EVENTQOUT**” on page 41.

BROWSE: Browse (read without removing) messages in the system event queues. Specify this value if more than one application (WebSphere MQ Monitoring agent or another application) reads the event queues. In this case, you must run a separate application to clean the queues, such as **CSQUTIL** with the **EMPTY** function.

Remember: If you specify **EVENTS**(**BROWSE**) and other applications perform destructive reads against the event queues, WebSphere MQ Monitoring agent might miss some or all event messages.

NO: Do not monitor system event queues.

HLQ(*high-level-qualifier*)

Specifies the high-level qualifier for queue names that are created by WebSphere MQ Monitoring agent. The default value is **KMQ**.

If you predefine queues with the following names, WebSphere MQ Monitoring agent uses these names:

On z/OS systems:

hlq.COMMAND.REPLY
hlq.REPLY

On other operating systems:

hlq.IRA.AGENT.QUEUE

where *hlq* is the value that is specified by the **HLQ** parameter of the **SET MANAGER** or the **SET GROUP** command.

If you do not predefine queues with these names, WebSphere MQ Monitoring agent creates dynamic queues using the model queue that is specified by the **RQMODEL** parameter on the **SET MANAGER** or the **SET GROUP** command. In this case, the names of the dynamic queues are as follows.

On z/OS systems:

hlq.COMMAND.REPLY.*dynamic suffix*
hlq.REPLY.*dynamic suffix*

On other operating systems:

hlq.IRA.AGENT.QUEUE.dynamicsuffix

where *hlq* is the value that is specified using the **HLQ** parameter of the **SET MANAGER** or the **SET GROUP** command, and *dynamicsuffix* is the standard dynamic suffix that is provided by WebSphere MQ.

ICYCLE(*interval-cycle*)

This parameter applies only to z/OS systems.

This optional parameter specifies the number of sample interval cycles to wait before gathering performance data for the specified queue managers. The default value is 1 minute. You can use this parameter to lengthen the sampling interval for a specific queue manager or a group of queue managers whose data collection is less critical and can be performed less frequently. For example, if the sample interval (**SAMPINT**) for a queue manager is set to 60 and its interval cycle (**ICYCLE**) is set to 5, interrogative processing for that queue manager is performed on only every fifth cycle; every five minutes instead of every minute.

If you do not specify the **ICYCLE** parameter, or if it is not specified on a prior **SET GROUP** statement, the default value is 1; queue manager data is gathered once every sample interval (**SAMPINT**).

LIKE(*queue-manager-name*)

The name or the nickname of a previously defined queue manager. Parameter values that are not specified in this **SET MANAGER** statement are copied from the corresponding values for the named queue manager.

ACCOUNTINGINFO(**NO** | **REMOVE** | **BROWSE**)

This parameter is not valid on z/OS systems.

Specifies how WebSphere MQ Monitoring agent accesses the accounting application and queue data that is produced by the queue manager. Valid values are as follows:

NO: The agent does not monitor accounting application and queue data.

REMOVE : The agent reads and removes messages from the system accounting queues. This setting provides the most accurate event reporting. The value that is configured automatically during the installation and configuration process is **REMOVE**. When **REMOVE** is specified, the agent opens the system accounting queues for exclusive access.

BROWSE: The agent browses (reads without removing) messages in the system accounting queues. Specify this value if more than one application (WebSphere MQ Monitoring agent or another application) reads the accounting queues. If this is the case, you must run a separate application to clean the queues.

RECENTACCOUNTINGSAMPLES(*recent-sample-count*)

This parameter is not valid for z/OS systems.

Specifies the number of recent records that WebSphere MQ Monitoring agent keeps in memory for the application or queue accounting data. If this parameter is not specified, 5 is the default value.

STATISTICSINFO(**NO** | **REMOVE** | **BROWSE**)

This parameter is not valid on z/OS systems.

Specifies how WebSphere MQ Monitoring agent accesses the statistics data that is produced by the queue manager (queue manager, queue and channel). Valid values are as follows:

NO: The agent does not monitor statistics data (queue manager, queue and channel).

REMOVE: The agent reads and removes messages from the system statistics queues. This setting provides the most accurate event reporting. The value that is configured during the installation and configuration process is REMOVE. When REMOVE is specified, the agent opens the system statistics queues for exclusive access.

BROWSE: The agent browses (reads without removing) messages in the system statistics queues. Specify this value if more than one application (WebSphere MQ Monitoring agent or another application) read the statistics queues. If this is the case, you must run a separate application to clean the queues.

RECENTSTATISTICSSAMPLES(*recent-sample-count*)

This parameter is not valid on z/OS systems.

Specifies the number of recent records that WebSphere MQ Monitoring agent keeps in memory for queue managers, queues, or channel statistics data. If this parameter is not specified, 5 is the default value. The following workspaces are affected by this parameter:

- Recent MQI Statistics
- Recent MQ Queue Statistics
- Recent MQ Channel Statistics

ACTIONAUTHUSERS(*user-name-mask-list*)

This parameter is only applicable to the manual Take Action command.

Specifies that the Tivoli Enterprise Portal user ID must match one of the user name mask lists before the Take Action command can be issued.

If the **ACTIONAUTHUSERS** parameter value is specified as empty [], it indicates that **ACTIONAUTHUSERS** is not defined in the parameters list. This **ACTIONAUTHUSERS** parameter is ignored.

If the **ACTIONAUTHUSERS** parameter value is set to a user name mask list, it specifies which Tivoli Enterprise Portal users are authorized to issue the Take Action commands that are associated with this WebSphere MQ Monitoring agent. There can be multiple entries that are associated with this parameter. Separate each entry with a comma (.). An entry can be a mask that includes the asterisk (*) and question mark (?) wildcard characters. A Tivoli Enterprise Portal user that has an ID that matches any masks in this list is authorized to issue the Take Action commands. Tivoli Enterprise Portal user IDs are defined within the Tivoli Enterprise Monitoring Server and do not necessarily exist on the node on which the WebSphere MQ Monitoring agent is running.

ACTIONACCOUNT(**UIUSER** | **MQAGENT** | **USER=user-id**)

This parameter is only applicable to the Take Action commands that are provided with WebSphere MQ Monitoring agent.

Specifies that WebSphere MQ Monitoring agent uses the **ACTIONACCOUNT** value as an alternate user ID when interacting with WebSphere MQ. The **ACTIONACCOUNT** parameter specifies whether the authorization should use the Tivoli Enterprise Portal user ID, the monitoring agent account, or the predefined account. Valid values are as follows:

(): Overrides the value defined on the **SET GROUP** or **SET MANAGER** command.

UIUSER: The agent uses the Tivoli Enterprise Portal user ID to interact with WebSphere MQ.

MQAGENT: The agent uses the monitoring agent account to interact with WebSphere MQ.

USER=user-id: The agent uses the predefined account ('user-id') to interact with WebSphere MQ.

If a value other than these values is specified, the value is not valid; the **ACTIONACCOUNT** parameter is regarded as not being defined on the command.

For the reflex automation, only the ID that is specified in ACTIONACCOUNT(USER=user_id) is used to issue the WebSphere MQ command; otherwise, the MQ agent user ID is used to issue the WebSphere MQ command.

MSGACCESS(NONE | DESC | RETRY | DATA | DELETE | USEQACCESS)

Controls the level of user access to messages in queues for the specified queue managers.

NONE: No access to message functions is permitted for the specified queue managers, including the ability to list messages on a queue or collect message statistics.

DESC: Message descriptor browse is permitted for message summary workspaces, message detail workspaces, or message statistics workspaces and situations. This is the default level.

RETRY: DLQ retry and message descriptor browse are permitted.

DATA: Message data (contents) browse, message descriptor browse, and DLQ retry are permitted.

DELETE: Deletion of messages and all other message functions are permitted.

USEQACCESS: Specifies that all the queues that belongs to the current group or queue manager *must* be defined by a new **SET QACCESS** command to grant message access rights. The queues that belong to the current group and that are not defined by a **SET QACCESS** command have the message access level NONE.

NICKNAME(nickname)

A 1- through 48-character nickname (alternate name) for this queue manager. Subsequent commands can refer to the manager by its manager name or by this nickname. This parameter is optional.

RETAINHIST(historical-retention-value)

Number of minutes that queue manager objects (such as channels and queues) that are no longer defined in the queue manager are retained in agent memory and returned for display in workspaces, so that it is easier to link to historical data about the objects. You can decrease the **RETAINHIST** value if you want less data to be maintained in memory for these objects that are no longer defined. This parameter is only valid for channels and local queues.

RQMODEL(reply-to-queue's-model-queue)

Specifies the 1- through 48-character name of a model queue to use as a model for the reply-to queue of WebSphere MQ Monitoring agent, if you did not predefine queues. If you require dynamic queues, see the description of the **HLQ** parameter.

If you do not specify a value for the **RQMODEL** parameter, the following standard system default models are used as a model for the reply-to-queue of WebSphere MQ Monitoring agent.

On z/OS systems:

SYSTEM.COMMAND.REPLY.MODEL

On other operating systems:

SYSTEM.DEFAULT.MODEL.QUEUE

If the queue that you specify as a model has a definition type of permanent dynamic [DEFTYPE(PERMDYN)], some unused reply-to-queues might accumulate. These have the names in the following forms:

On z/OS systems:

hlq.COMMAND.REPLY.*dynamicsuffix*

hlq.REPLY.*dynamicsuffix*

On other operating systems:

hlq.IRA.AGENT.QUEUE.*dynamicsuffix*

where the *hlq* value is the value that is specified on the **HLQ** parameter on the **SET MANAGER** or the **SET GROUP** command, and the *dynamicsuffix* value is the standard dynamic suffix that is provided by WebSphere MQ.

STATUS(ADD | DELETE | RESET)

Specifies what to do if this **SET MANAGER** command was previously specified with the same name.

If this parameter is omitted, the manager definition is added if it is a new name; it is modified if the same name was specified previously.

ADD: Creates a new manager definition.

DELETE: Deletes the manager definition and all associated historical data.

RESET: Resets the monitoring parameters that are associated with this queue manager to their original values (as defined on the original **SET MANAGER** command for this manager name).

SYSNAME(z/OS-system-id)

This parameter applies only to z/OS systems.

The SMF system ID where this queue manager runs. If this parameter is omitted, this **SET MANAGER** command applies to any z/OS systems.

REMOTE(YES | NO)

Specifies whether the queue manager is a remote queue manager or a local one.

If this parameter is omitted, the queue manager is a local queue manager.

YES: The queue manager is a remote queue manager.

NO: The queue manager is a local queue manager.

Example

- To monitor all z/OS system queue managers that have names that begin with MQM, specify the following statement

```
SET MANAGER NAME(MQM*)
```

- To monitor the queue manager named PAYROLL, specify the following statement

```
SET MANAGER NAME(PAYROLL)
```
 - To set the number of recent samples to 30 and the retention interval for historical displays to 10 hours for the MGRA queue manager, specify the following statement:

```
SET MANAGER NAME(MGRA) AGGRHIST(30) RETAINHIST(600)
```
 - To sample the error log every 20 seconds and display up to 200 error log events for the queue manager named QMGRA, specify the following statement:

```
SET MANAGER NAME(QMGRA) ERRLOGCYCLE(20) ERRLOGMAX(200)
```
 - To specify three queue managers with nicknames, specify the following statements:

```
SET MANAGER NAME(MGRD) NICKNAME(DALLAS) EVENTS(REMOVE)
SET MANAGER NAME(MGRA) NICKNAME(ATLANTA) EVENTS(NO)
SET MANAGER NAME(MGRS) NICKNAME(SANFRAN) EVENTS(BROWSE)
```
- Because the **GROUP**, **AGGRHIST**, and **RETAINHIST** parameters are omitted, the values that are specified on the **SET GROUP** command for the default group are in effect for those parameters. Each manager defines a different access to the system event queues.
- To specify an effective sample interval of 1 minute for the z/OS system queue manager named QM01 and 5 minutes for the z/OS system queue manager named QM02, specify the following statements:

```
SET MANAGER NAME(QM01)
SET MANAGER NAME(QM02) ICYCLE(5)
PERFORM STARTMON SAMPINT(60)
```

SET QACCESS

Use the **SET QACCESS** statement to specify a set of queues that have group level or manager level message access rights specified. Follow the guidelines that are described in “Changing monitoring options” on page 14 when changing this monitoring option.

Syntax

```
SET QACCESS NAME(queue-name-mask)
                MSGAUTHUSERS(user-name-mask-list)
                MSGACCOUNT(UIUSER|MQAGENT|USER=user-id)
                MSGACCESS(NONE|DESC|RETRY|DATA|DELETE)
                MGRNAME(mgr-name)|GROUP(group-name)
                [STATUS(ADD|DELETE)]
```

Parameters

NAME(*queue-name-mask*)

Specifies a 1- through 48-character specific or generic queue name that is used to specify access authorization. To specify a generic name, enter a characters string followed by an asterisk (*). This parameter is required.

If the queue-name-mask is empty (set to ()), this **SET QACCESS** statement is ignored, and the next statement is processed. A warning message is displayed on the console (this error message is not recorded in the IBM Tivoli Monitoring log files).

MSGAUTHUSERS(*user-name-mask-list*)

Defines the Tivoli Enterprise Portal clients that are authorized to manipulate messages according to the associated **MSGACCESS** parameter.

There can be multiple entries associated with this parameter. Separate each entry with a comma (.). An entry can be a mask, which includes the asterisk (*) and question mark (?) wildcard characters. A Tivoli Enterprise Portal user that has an ID that matches any masks in this list is authorized to issue the **MSGACCESS** command (Description, Retry, Data, and Delete) that is handled by the WebSphere MQ Monitoring agent. Tivoli Enterprise Portal user IDs are defined within the Tivoli Enterprise Monitoring Server, and do not necessarily exist on the node on which the agent is running.

There is no default value for this parameter.

If the user name mask list is empty (set to ()), this **SET QACCESS** statement is ignored and the next statement is processed. A warning message is logged.

MSGACCOUNT(UIUSER|MQAGENT|USER=user-id)

Defines the user ID that WebSphere MQ Monitoring agent uses to interact with WebSphere MQ. When there is a requirement for message manipulation, and a predefined account or the monitoring agent account is authorized to interact with WebSphere MQ, the user ID defined by the **MSGACCOUNT** parameter is used.

If the value of the **MSGACCOUNT** parameter is not valid, this **SET QACCESS** statement is ignored and the next statement is processed. A warning message is logged.

MSGACCESS(NONE|DESC|RETRY|DATA|DELETE)

Controls the level of user access to messages for specified queues.

NONE: No access to message functions is permitted for these specified queues, including the ability to list messages on a queue or collect message statistics.

DESC: Message descriptor browse is permitted for message summary workspaces, message detail workspaces, or message statistics workspaces and situations. This is the default level.

RETRY: DLQ retry and message descriptor browse are permitted

DATA: Message data (contents) browse, message descriptor browse, and DLQ retry are permitted.

DELETE : Deletion of messages and all other message functions are permitted.

If the **MSGACCESS** value is not **NONE**, **DESC**, **RETRY**, **DATA**, or **DELETE**, this **SET QACCESS** statement is ignored and the next statement is processed. A warning message is issued.

MGRNAME(manager-name)

Associates this **SET QACCESS** statement with a queue manager that was defined on a previous **SET MANAGER** command. You can use the name or the nickname of the manager. The name must exactly match the name that is specified on the corresponding **SET MANAGER** command. This parameter is required if the **GROUP** parameter is not specified.

If the **MGRNAME** parameter is empty, the queue manager is the default queue manager.

GROUP(group-name)

Associates this **SET QACCESS** statement with a group of queues that were defined on a previous **SET GROUP** command. The name must exactly match the name specified on the corresponding **SET GROUP** command. This parameter is required if the **MGRNAME** name is not specified.

If both the **MGRNAME** and **GROUP** parameters are not defined, this **SET QACCESS** statement is ignored and the next statement is processed. A warning message is issued.

STATUS(ADD|DELETE)

Specifies what to do if this **SET QACCESS** command was previously specified with the same queue name mask and user name mask list.

If this parameter is omitted, the queue access definition is added if a **SET QACCESS** command was not previously specified with the same name for both the queue name mask and user name mask list, or it is modified if the same name was previously specified for both the queue name mask and user name mask list.

ADD: Creates a new queue access definition. If this **SET QACCESS** command was previously specified with the same name for both queue name mask and user name mask list, it is not modified and an error message is issued.

DELETE : Deletes a queue access definition.

Example

- To set message manipulation for all queues to DATA, specify the following statements:

```
SET GROUP NAME (GROUP1) -
    DEFAULT (YES) -
    COMMAND (YES) -
    MSGACCESS (USEQACCESS)
SET QACCESS NAME(*) -
    MSGAUTHUSERS(*) -
    MSGACCOUNT(MQAGENT) -
    MSGACCESS(DATA) GROUP(GROUP1)
```

- To give the DELETE MSGACCESS privilege to all queues that have the **queue1** prefix and belong to the QM1 manager , to give the NONE MSGACCESS privilege to all other queues that belong to the QM1 manager, and to give the DATA MSGACCESS privilege to all queues that belong to the QM2 manager, specify the following statements:

```
SET GROUP NAME(GROUP1) DEFAULT(YES) COMMAND(YES) MSGACCESS(DATA)
SET MANAGER NAME(QM1) MSGACCESS(USEQACCESS)
SET MANAGER NAME(QM2)
SET QACCESS NAME(queue1*) -
    MSGAUTHUSERS(*) -
    MSGACCOUNT(MQAGENT) -
    MSGACCESS(DELETE) -
    MGRNAME(QM1)
SET QACCESS NAME(q1*) -
    MSGAUTHUSERS(*) -
    MSGACCOUNT(MQAGENT) -
    MSGACCESS(DELETE) -
    MGRNAME(QM2)
```

- To give the DESC privilege to all queues that have the **q1** prefix, and give the DATA privilege to all queues that have the **q2** prefix, specify the following statements:

```
SET GROUP NAME(GROUP1) DEFAULT(YES)
SET MANAGER NAME(QM1) MSGACCESS(USEQACCESS)
SET QACCESS NAME(q1*) -
    MSGAUTHUSERS(A*, B?C) -
    MSGACCOUNT(UIUSER) -
    MSGACCESS(DESC) -
    MGRNAME(QM1)
```

```

SET QACCESS NAME(q2*) -
    MSGAUTHUSERS(John) -
    MSGACCOUNT (USER=mqoperator) -
        MSGACCESS(DATA) -
    MGRNAME(QM1)

```

SET QUEUE

Use the SET QUEUE statement to specify the queues to be monitored.

Agent behavior change: Beginning with V7.0.1 Fix Pack 1, the WebSphere MQ Monitoring agent monitors only the dead-letter queue by default. To monitor other system or application queues, specify them with the SET QUEUE statement. For previous releases, the WebSphere MQ Monitoring agent monitors all the queues on the specified queue manager by default.

Syntax

```

SET QUEUE NAME(queue-name-mask)
    MGRNAME(manager-name) | GROUP(group-name)
    [QDEFTYPE(PREDEFINED|PERMDYN|TEMPDYN|ALL)]
    [STATISTICS(YES|NO)]
    [STATUS(ADD|DELETE)]
    [QTYPE (ALL|QLOCAL|QALIAS|QCLUSTER|QREMOTE|QMODEL)]
    [DEFSAMP CYCLE(n-sample-interval)] (z/OS systems only)

```

Parameters

NAME(*queue-name-mask*)

Specifies a 1- through 48-character specific or generic name of the queues that you want to monitor. To specify a generic name, enter a character string followed by an asterisk (*). This parameter is required.

If you leave this parameter empty (set to ()), the WebSphere MQ Monitoring agent monitors only the dead-letter queue or all the queues on the queue manager, depending on the agent version. If the agent version is V7.0.1 Fix Pack 1 or later, the agent monitors only the dead-letter queue. When you are working with V7.0.1 Fix Pack 1 or later and you want to monitor all queues on the queue manager, set this parameter to *.

MGRNAME(*manager-name*)

Associates this **SET QUEUE** statement with a queue manager that was defined on a previous **SET MANAGER** statement. You can use the name or nickname of the manager. The name must exactly match the name that is specified on the corresponding **SET MANAGER** command. This parameter is required if the **GROUP** parameter is not specified.

GROUP(*group-name*)

Associates this **SET QUEUE** statement with a group of queue managers that were defined on a previous **SET GROUP** statement. The name must exactly match the name that is specified on the corresponding **SET GROUP** statement. This parameter is required if the **MGRNAME** parameter is not specified.

QDEFTYPE(PREDEFINED|PERMDYN|TEMPDYN|ALL)

Indicates which types of queues to monitor. Specify any or all of the following definition types:

PREDEFINED: Monitor only predefined queues that match the specific or generic queue name. This is the default value.

PERMDYN: Monitor only permanent dynamic queues that match the specific or generic queue name.

TEMPDYN: Monitor only temporary dynamic queues that match the specific or generic queue name.

ALL: Monitor all queues that match the specific or generic queue name.

Remember: This option does not affect workspaces that contain on-demand data. For example, the Real-time Queue Definitions and Real-time Queue Data workspaces display information that is related to all queues regardless of this attribute.

STATISTICS(YES | NO)

Specifies whether to collect queue statistics using WebSphere MQ Reset Queue Statistics command processing.

YES: Collect statistics using Reset Queue Statistics command processing for queues that match the specific or generic queue name.

NO: Do not collect statistics using Reset Queue Statistics command processing for queues that match the specific or generic queue name. This is the default value. See Chapter 7, “Collecting queue statistics data,” on page 87 for a description of the Queue Statistics feature.

STATUS(ADD | DELETE)

Specifies what to do if this **SET QUEUE** command was previously specified with the same name.

If this parameter is omitted, the queue definition is added if it is a new name; it is modified if the same name was previously specified.

ADD: Creates a new queue definition. If this **SET QUEUE** command was previously specified with the same name, it is not modified and an error message is issued.

DELETE: Deletes a queue definition and all associated historical data.

QTYPE (ALL | QLOCAL | QALIAS | QCLUSTER | QREMOTE | QMODEL)

Specifies what types of queues to monitor. Specify any or all of the following queue types:

ALL: Monitor all types of queues. This is the default value.

QLOCAL: Monitor only the local queues.

QALIAS: Monitor only the alias queues.

QCLUSTER: Monitor only the cluster queues.

QREMOTE: Monitor only the remote queues.

QMODEL: Monitor only the model queues.

Remember: This parameter does not affect the workspaces that contain on-demand data. For example, the Real-time Queue Definitions and Real-time Queue Data workspaces display information about all queues regardless of this parameter value. You can specify multiple types, such as QTYPE(QLOCAL,QREMOTE).

DEFSAMPCYCLE(*n-sample-interval*)

This parameter applies to z/OS systems only.

Specifies how often the queue definition data is to be sampled. The specified number, *n*, indicates that agent collects queue definition data every *n*-th sample. The default value is 1, which indicates that agent collects data at every sample interval. The value 0 indicates that the agent

collects the definitional data only at the first sample interval. After that, the definition data is refreshed only when the agent finds a new local queue.

Example

- To monitor all queues managed by the MGRA queue manager, specify the following statement:
SET QUEUE NAME(*) MGRNAME(MGRA) QDEFTYPE(ALL)
- To monitor a predefined queue named ACCOUNTS, specify the following statement:
SET QUEUE NAME(ACCOUNTS) MGRNAME(MGRA)
- To monitor and collect statistics using Reset Queue Statistics command processing for all predefined queues managed by the QMGRA queue manager, specify the following statement:
SET QUEUE NAME(*) MGRNAME(QMGRA) STATISTICS(YES)
- To monitor permanent dynamic queues on the MGRA queue manager and whose names start with PAYR, specify the following statement:
SET QUEUE NAME(PAYR*) MGRNAME(MGRA) QDEFTYPE(PERMDYN)
- To monitor predefined and temporary dynamic queues on the MGRC queue manager and whose names start with MARCH, specify the following statement:
SET QUEUE NAME(MARCH*) MGRNAME(MGRC) -
QDEFTYPE(PREDEFINED,TEMPDYN)

SET CHANNEL

Use the **SET CHANNEL** statement to specify the channels to be monitored.

Syntax

```
SET CHANNEL NAME(channel-name-mask)  
MGRNAME(manager-name) | GROUP(group-name)  
[STATUS(ADD|DELETE)]
```

Parameters

NAME(*channel-name-mask*)

Specifies a 1- through 20-character specific or generic name of the channels that you want to monitor. To specify a generic name, enter a string of characters followed by an asterisk (*). This field is required.

MGRNAME(*manager-name*)

Associates this **SET CHANNEL** statement with a queue manager that is defined on a previous **SET MANAGER** statement. You can use the name or nickname of the manager. The name must exactly match the name specified on the corresponding **SET MANAGER** statement. This parameter is required if the **GROUP** parameter is not specified.

GROUP(*group-name*)

Associates this **SET CHANNEL** statement with a group of queue managers defined on a previous **SET GROUP** statement. The name must exactly match the name specified on the corresponding **SET GROUP** statement. This parameter is required if the **MGRNAME** parameter is not specified.

STATUS(ADD|DELETE)

Specifies what to do if this **SET CHANNEL** statement was previously specified with the same name.

If this parameter is omitted, the result is the same as specifying ADD.

ADD: Creates a new channel definition. If this **SET CHANNEL** statement was previously specified with the same name, it is not modified and an error message is issued.

DELETE: Deletes a channel definition and all associated historical data.

Example

To monitor a channel named MONTANA on the SMONICA queue manager, specify the following statement:

```
SET CHANNEL NAME(MONTANA) MGRNAME(SMONICA)
```

SET EVENTLOG

Use the **SET EVENTLOG** statement to specify the size, location, and other attributes of the event log.

All parameters are optional; but, if the **SET EVENTLOG** statement is set, you must specify at least one parameter.

This statement applies to all systems except z/OS systems.

Syntax

```
SET EVENTLOG  
    [SIZE(n)]  
    [DIR(dir_name)]  
    [ARCHIVEFILE(arch_filename)]  
    [ARCHIVEOPTS(krarloff_options)]
```

Parameters

SIZE(*n*)

The *n* value is the maximum event log file size, in MBs. The default value is 10. Specify SIZE(0) to disable the event log.

DIR(*dir_name*)

The directory to write the event log file to. The default value is the value that is assigned to the `ctira_hist_dir` variable `@logpath@`, which is typically `C:\IBM\ITM\TMAITM6\logs\History\KMQ\instance_name` on Windows systems, and `install_dir/arch/mq/hist/instance_name` on UNIX and Linux systems. Where *instance_name* is the name of the queue manager that you want to monitor, *install_dir* is the IBM Tivoli Monitoring installation directory, and *arch* is the architecture code of the operating system. See *Installation and Setup Guide* for a complete list of architecture codes.

ARCHIVEFILE(*arch_filename*)

The archive directory and file name. The default value is `@logpath@\Qmeventh.arc`. If this file already exists, new data is appended to it.

ARCHIVEOPTS(*krarloff_options*)

If **ARCHIVEOPTS** is not specified, all *krarloff* defaults are taken. See the *IBM Tivoli Monitoring Administrator's Guide* for details of the **krarloff** (*krarloff*) command.

SET EVENTQIN

Use the **SET EVENTQIN** statement to specify the event queues that are monitored by the WebSphere MQ Monitoring agent for a queue manager or group of queue

managers, which includes the queue manager event queue, channel event queue, performance event queue, configuration event queue, command event queue, and logger event queue.

If there is not a **SET EVENTQIN** statement that applies to a queue manager, the following default WebSphere MQ event queues are monitored:

- SYSTEM.ADMIN.QMGR.EVENT
- SYSTEM.ADMIN.CHANNEL.EVENT
- SYSTEM.ADMIN.PERFM.EVENT
- SYSTEM.ADMIN.CONFIG.EVENT
- SYSTEM.ADMIN.COMMAND.EVENT
- SYSTEM.ADMIN.LOGGER.EVENT

Syntax

```
SET EVENTQIN
    MGRNAME(manager-name) | GROUP(group-name)
    [QMGRQ(queue-name)]
    [CHANNELQ(queue-name)]
    [PERFMQ(queue-name)]
    [CONFIGQ(queue-name)]
    [COMMANDQ(queue-name)]
    [LOGGERQ(queue-name)] (distributed systems only)
```

Parameters

MGRNAME(*manager-name*)

The queue manager that owns the specified event queues. You can use the name or nickname of the queue manager. The name must exactly match the name that is specified on the corresponding **SET MANAGER** statement. This parameter is required if the **GROUP** parameter is not specified.

GROUP(*group-name*)

A group of queue managers (as specified on a previous **SET GROUP** statement), each of which owns the specified event queues. The name must exactly match the name that is specified on the corresponding **SET GROUP** statement. This parameter is required if the **MGRNAME** parameter is not specified.

QMGRQ(*queue-name*)

Specifies the name of the queue manager event queue to monitor.

CHANNELQ(*queue-name*)

Specifies the name of the channel event queue to monitor.

PERFMQ(*queue-name*)

Specifies the name of the performance event queue to monitor.

CONFIGQ(*queue-name*)

Specifies the name of the configuration event queue to monitor. Configuration events occur on WebSphere MQ for distributed systems V7.0.1 and higher versions, or WebSphere MQ for z/OS systems V5.3 and higher versions only.

COMMANDQ(*queue-name*)

Specifies the name of the command event queue to monitor. Command events occur on WebSphere MQ for distributed systems V7.0.1 and higher versions, or WebSphere MQ for z/OS systems V6.0 and higher versions only.

LOGGERQ(*queue-name*)

This parameter is not valid on z/OS systems.

Specifies the name of the logger event queue to monitor. Logger events occur on WebSphere MQ for distributed systems V6.0 and higher versions only.

Example

- To read events from a performance event queue named PERFORMANCE.EVENTS.IN on the MQM3 queue manager instead of from the default WebSphere MQ performance event queue SYSTEM.ADMIN.PERFM.EVENT, specify the following statement:

```
SET EVENTQIN MGRNAME(MQM3) PERFMQ(PERFORMANCE.EVENTS.IN)
```

This example can apply to two possible scenarios:

- An application is reading from the default WebSphere MQ performance event queue and copying events to the PERFORMANCE.EVENTS.IN queue.
 - Your site has changed the default WebSphere MQ performance queue name from SYSTEM.ADMIN.PERFM.EVENT to PERFORMANCE.EVENTS.IN
- To read events from a channel event queue called CHANNEL.EVENTS.IN on the MQM2 queue manager and copy these events to a queue called CHANNEL.EVENTS.OUT, specify the following statements:

```
SET EVENTQIN MGRNAME(MQM2) CHANNELQ(CHANNEL.EVENTS.IN)
```

```
SET EVENTQOUT MGRNAME(MQM2) CHANNELQ(CHANNEL.EVENTS.OUT)
```

This example also uses the SET EVENTQOUT statement (see “SET EVENTQOUT”).

Remember: If the queues that you specify in the SET EVENTQIN statement do not exist in your WebSphere MQ environment, you must restart the agent after you create these queues in your environment.

SET EVENTQOUT

If you use the EVENTS(Remove) option on the **SET GROUP** or **SET MANAGER** statement, when WebSphere MQ Monitoring agent reads an event message from an event queue, it deletes the message from the event queue to ensure that it is processed only once. If another application that is running at your site requires access to event messages, you can use the **SET EVENTQOUT** to define output queues where these messages are copied and point the other application to these queues.

The **SET EVENTQOUT** statement identifies one or more output queues where queue manager event messages, channel event messages, performance event messages, configuration event messages, command event messages, and logger event messages are copied to.

If there is no **SET EVENTQOUT** statement that applies to a queue manager, the event messages are discarded after being processed.

Syntax

```
SET EVENTQOUT  
MGRNAME(manager-name) | GROUP(group-name)  
[QMGRQ(queue-name)]  
[CHANNELQ(queue-name)]  
[PERFMQ(queue-name)]
```

[CONFIGQ(*queue-name*)]
[COMMANDQ(*queue-name*)]
[LOGGERQ(*queue-name*)] (distributed systems only)

Parameters

MGRNAME(*manager-name*)

The queue manager that owns the specified output queues. You can use the name or nickname of the queue manager. The name must exactly match the name that is specified on the corresponding **SET MANAGER** statement. This parameter is required if the **GROUP** parameter is not specified.

GROUP(*group-name*)

The group of queue managers (as specified on a previous **SET GROUP** statement), each of which owns the specified event queues. The name must exactly match the name that is specified on the corresponding **SET GROUP** statement. This parameter is required if the **MGRNAME** parameter is not specified.

QMGRQ(*queue-name*)

Specifies the name of the local queue where queue manager events are copied after being processed. This queue must exist when the **SET EVENTQOUT** statement is processed.

CHANNELQ(*queue-name*)

Specifies the name of the local queue where channel events are copied after being processed. This queue must exist when the **SET EVENTQOUT** statement is processed.

PERFMQ(*queue-name*)

Specifies the name of the local queue where performance events are copied after being processed. This queue must exist when the **SET EVENTQOUT** statement is processed.

CONFIGQ(*queue-name*)

Specifies the name of the local queue where configuration events are copied after being processed. This queue must exist when the **SET EVENTQOUT** statement is processed. Configuration events occur on WebSphere MQ for distributed systems V7.0.1 and higher versions, or WebSphere MQ for z/OS systems V5.3 and higher versions only.

COMMANDQ(*queue-name*)

Specifies the name of the local queue where command events are copied after being processed. This queue must exist when the **SET EVENTQOUT** statement is processed. Command events occur on WebSphere MQ for distributed systems V7.0.1 and higher versions, or WebSphere MQ for z/OS systems V6.0 and higher versions only.

LOGGERQ(*queue-name*)

Specifies the name of the local queue where logger events are copied after being processed. This queue must exist when the **SET EVENTQOUT** statement is processed. Logger events occur on WebSphere MQ for distributed systems V6.0 and higher versions only.

Example

- To read events from the default queue manager SYSTEM.ADMIN.QMGR.EVENT event queue on the MQM1 queue manager, and copy them to a queue named QMGR.EVENTS.OUT, specify the following statement:
SET EVENTQOUT MGRNAME(MQM1) QMGRQ(QMGR.EVENTS.OUT)

- To read events from a channel event queue named CHANNEL.EVENTS.IN on the MQM2 queue manager, and copy these events to a queue called CHANNEL.EVENTS.OUT, specify the following statements:

```
SET EVENTQIN MGRNAME(MQM2) CHANNELQ(CHANNEL.EVENTS.IN)
```

```
SET EVENTQOUT MGRNAME(MQM2) CHANNELQ(CHANNEL.EVENTS.OUT)
```

This example also uses the SET EVENTQIN statement (see “SET EVENTQIN” on page 39).

Remember: If the queues that you specify in the SET EVENTQOUT statement do not exist in your WebSphere MQ environment, you must restart the agent after you create these queues in your environment.

PERFORM INCLUDE

The **PERFORM INCLUDE** statement points to an external file that contains customization commands. To issue the commands in this file while the agent is starting up, specify the **PERFORM INCLUDE** statement in the monitoring file of the agent.

Syntax

```
PERFORM INCLUDE LIST(file-ID)
```

Parameters

LIST(*file-ID*)

The name of the file that contains a list of WebSphere MQ Monitoring agent customization commands. On z/OS systems, *file-ID* must be a member of the RKANCMD data set. This parameter is required.

Example

- To issue a set of external commands in the remote.txt file, specify the following statement:

```
PERFORM INCLUDE LIST(remote.txt)
```

- To issue a set of external commands in the MYSET member of the RKANCMD data set on a z/OS system, specify the following statement:

```
PERFORM INCLUDE LIST(MYSET)
```

PERFORM STARTMON

Use the **PERFORM STARTMON** statement to initiate monitoring of WebSphere MQ objects, to specify the sampling interval for collecting WebSphere MQ data, and to specify whether historical data is collected.

The **PERFORM STARTMON** statement is required.

Syntax

```
PERFORM STARTMON
  SAMPINT(sample-interval)
  HISTORY (YES|NO)
  [ACTIVEONLY(YES|NO)]
  [ROWLIM(limit)]
  [SVRCONN(YES|NO)]
  [QSGCHKINTERVAL(sss)] (z/OS systems only)
  [GRPNAME(KMQQSG|ggggggg) (z/OS systems only)]
  [STAGGERSAMPLE(YES|NO)]
```

Parameters

SAMPINT(*sample-interval*)

How often, in seconds, WebSphere MQ Monitoring agent samples your queue managers for performance data. The default value is 300. The minimum is 10 seconds. The **SAMPINT** setting does not affect the amount of historical data that is produced.

If your site is monitoring a large number of queues or channels, you might experience a degradation in performance. If this occurs, increase the SAMPINT value to improve performance.

If your site is monitoring queue-sharing groups on z/OS systems, the sample interval must be the same for all the agents that monitor queue managers in queue-sharing groups.

You can modify the effective sampling interval for a specific queue manager or a group of queue managers with the **ICYCLE** parameter of the **SET MANAGER** or the **SET GROUP** statement. See **ICYCLE** in “SET MANAGER” on page 26 and **ICYCLE** in “SET GROUP” on page 24.

HISTORY(YES | NO)

Defines whether historical data is collected for attribute groups whose data is sampled by the agent. Set it to YES to collect historical data. On distributed systems and z/OS systems, the value that is configured automatically during the installation and configuration process is NO. (For information about using the historical data collection function, see Chapter 5, “Collecting historical data,” on page 73. For information about sampled and on-demand attribute groups, see “Sampled and on-demand tables” on page 163.)

ACTIVEONLY(YES | NO)

This parameter applies only to z/OS systems

This optional parameter indicates whether to monitor *only* active queue managers.

YES: Only queue managers that are running when the agent is started, or that become active while the agent is running, are referenced in situations and displayed in the Navigator physical view. You can set it to YES if your environment has a large number of queue managers defined but only some of them are in use.

NO: All defined queue managers, active or not, are referenced in situations and displayed in the Navigator physical view.

The default value is NO.

ROWLIM(*limit*)

This optional parameter specifies the maximum number of messages that are processed and returned by the agent when reading messages from a queue for report requests. The default value is 0 (zero), which means that the maximum number of messages is not limited.

SVRCONN(YES | NO)

This optional parameter indicates whether to collect server connection channel statistics that are displayed in the Channel Performance workspaces (and the short and long-term Channel Performance History workspaces). The default value is YES.

QSGCHKINTERVAL(*sss*)

This parameter applies only to z/OS systems

This optional parameter specifies how often, in seconds, WebSphere MQ Monitoring agent performs queue-sharing group monitoring activities. The default value is 300, which is a 5-minute interval. The minimum is 60 seconds. This value can be set to 0 to turn off queue-sharing group monitoring activities. If you turn this processing off, you must recycle the agent to turn this processing back on.

GRPNAME(KMQQSG | gggggggg)

This parameter applies only to z/OS systems

Use this optional parameter to specify an alternative sysplex XCF group name, *gggggggg* (1 - 8 characters), for the coexistence of multiple collection agents. The default value is KMQQSG. Typically, this parameter is not specified. By using this parameter that is intended for testing purposes, multiple agents can coexist while being tested.

Exception: Do not specify an XCF group name that is in use by other system components because unexpected consequences might occur.

STAGGERSAMPLE(YES | NO)

Specifies whether queue manager sample collection is done all at once or at staggered intervals.

YES: The sample collection for different queue managers is started at different times during the interval. When the agent is monitoring several queue managers, the value YES can help avoid a spike in CPU utilization at each sample interval.

NO: The sample collection for all queue managers is started at the same time.

The default value is NO.

Example

To start monitoring with a sampling interval of 120 seconds, and to explicitly specify that historical data and server connection channel statistics are to be collected, you can specify the following statement:

```
PERFORM STARTMON SAMPINT(120) HISTORY(YES) SVRCONN(YES)
```

SET AGENT

Use the **SET AGENT** statement to specify the middle qualifier that is used in the managed system name.

When the WebSphere MQ Monitoring agent is started, it registers the following managed system:

- On distributed system: *monitoredqueueanagername:agentid:MQ*
- On z/OS systems: *monitoredqueueanagername:agentid:MQESA*

where *monitoredqueueanagername* is the name of the queue manager that is monitored by the agent, *agentid* is the middle qualifier of the managed system name.

On distributed systems, if the *agentid* value is not specified, no value is used.

On z/OS systems, if the *agentid* value is not specified, the host name is used. If you specify this value, it is used only in the managed system names of subnodes.

For example, to avoid confusion and to enable multiple WebSphere MQ Monitoring agents, instead of issuing the default agent startup command `IRAMAN KMQAGENT START`, which starts a node named `hostname:MQIRA`, issue the modified agent startup command to start a node named `agentid:MQIRA`:

```
IRAMAN KMQAGENT START agentid
```

You can use the **SET AGENT** statement to do the following operations:

- Two active WebSphere MQ Monitoring agents that connect to the same hub monitoring server cannot have the same managed system name.
 - On distributed systems, if your site has multiple queue managers with the same name that are running on different nodes, you must specify the agent name for each queue manager. So that the WebSphere MQ Monitoring agent can create unique managed system name.
 - On distributed systems, If the length of the managed system name exceeds 32 characters, two different queue manager names might resolve to the same one because of truncation. To distinguish the managed system names for queue managers, specify the agent name for each queue manager.
- Group and identify queue manager names by something other than the host name and queue manager name, such as a high availability cluster name.
- Enable multiple agents that are connected to the same Tivoli Enterprise Monitoring Server to monitor the same queue manager.

Syntax

```
SET AGENT NAME(agentid)
```

Parameters

NAME(*agentid*)

The name to be used for the middle qualifier of the managed system name.

On distributed systems, the complete managed system name is `monitoredqueuemanagername:agentid:MQ`.

On z/OS systems, the complete managed system name is `monitoredqueuemanagername:agentid:MQESA`.

The maximum length for the complete managed system name is 32 characters, so the maximum length for *agentid* depends on the length of the queue manager name. If there are not enough characters to fit the full *agentid* that is specified, it is truncated to no less than 8 characters.

Example

To monitor a queue manager named `PERSONNEL` on the `AIX1` node when there is also a queue manager named `PERSONNEL` on a node named `HPUX2`, specify the following statements in the monitoring file for the `AIX1` node:

```
SET MANAGER NAME(PERSONNEL)
SET AGENT NAME(AIX1)
```

To simultaneously monitor the `PERSONNEL` queue manager on the `HPUX2` node, specify the following statements in the monitoring file for the `HPUX2` node:

```
SET MANAGER NAME(PERSONNEL)
SET AGENT NAME(HPUX2)
```


SET APPL (z/OS systems only)

Use the **SET APPL** statement to identify the z/OS system applications that are based on WebSphere MQ, CICS® transactions, and IMS™ programs that must be monitored for application debugging information and application statistics.

Use the **SET APPL** statement must be used in combination with the **SET MQIMONITOR** statement to activate the application debugging and application statistics features. See “SET MQIMONITOR (z/OS systems only)” on page 49 for a description of SET MQIMONITOR.

Syntax

```
SET APPL NAME(application-name)
           [TRANPGM(program-name)]
           [MGRNAME(manager-name)]
           [TRACE(NO|YES)]
           [TRACELIMIT(1000|number-of-trace-records)]
           [STATISTICS(NONE|NOQDATA|NODYNAMQ|ALL)]
           [STATUS(ADD|DELETE)]
```

Parameters

NAME(*application-name*)

A 1- through 8-character name of the z/OS system application to be monitored. To specify a generic name, enter a character string followed by an asterisk (*).

The application name format differs, depending on the monitored applications:

- For batch applications, it is the 1- through 8-character job name.
- For TSO applications it is the 1- through 7-character user ID of the TSO session.
- For CICS applications it is the 1- through 8-character VTAM® applid.
- For IMS applications it is the 1- through 4-character IMS subsystem ID that is prefixed with the characters IMS and padded with a blank.

This parameter is required.

TRANPGM(*program-name*)

Further identifies one or more programs to monitor, as follows:

- The 1- through 4-character name of the CICS transaction to monitor in the VTAM applid that is identified by the **NAME** parameter.
- The 1- through 8-character name of the IMS program in the IMS subsystem that is identified by the **NAME** parameter.
- The 1- through 8-character name of the batch or TSO program in the address space that is identified by the **NAME** parameter.

To specify a generic name, enter a character string followed by an asterisk (*). This parameter is optional. The default value is an asterisk (*).

MGRNAME(*manager-name*)

The name of one or more z/OS system queue managers with applications that are to be monitored. To specify a generic name, enter a character string followed by an asterisk (*). The name must exactly match the name specified on the corresponding **SET MANAGER** statement. This parameter is optional. The default value is an asterisk (*).

TRACE(NO|YES)

Specifies whether to record WebSphere MQ tracing information for this application. This parameter is optional. The default value is NO.

TRACELIMIT(1000 | *number-of-trace-records*)

Specifies the number of trace records to save for later viewing. After this value is reached, trace recording for this application is stopped. The maximum value is 12000; the default value is 1000. You can issue the **SET APPL** statement again with this parameter to resume trace recording after saving the maximum number of records. This parameter is optional.

STATISTICS(NONE | NOQDATA | NODYNAMQ | ALL)

Specify the level of statistical information to collect for the applications that is identified by the **NAME** parameter, as follows:

- NONE
No statistical information is collected for this application.
- NOQDATA
Application statistical information is not collected at the queue level; however, statistical information is still collected at the application and transaction levels.
- NODYNAMQ
Application statistical information is not collected for dynamic queues (temporary and permanent); however, statistical information is still collected for predefined queues. Specifying NODYNAMQ activates Application Queue Statistics monitoring. Specifying NODYNAMQ does not affect the collection of application statistics at the application and transaction level.
- ALL
Statistical information is collected at the application, transaction, and queue levels.

This parameter is optional. The default value is NODYNAMQ.

STATUS(ADD | DELETE)

Specifies what to do if this **SET APPL** statement was previously specified with the same name.

If this parameter is omitted, the application definition is added if it is a new name, it is modified if the same name was specified previously.

- ADD
Creates a new application definition. If this **SET APPL** statement was previously specified with the same name, it is modified and an error message is issued.
- DELETE
Deletes the application definition and all its associated historical data.

Example

To collect only application-level and transaction-level statistics and WebSphere MQ tracing information, specify the following statement for all the transactions that are running in the PAYR CICS region :

```
SET APPL NAME(PAYR) TRACE(YES) STATISTICS(NOQDATA)
```

SET MQIMONITOR (z/OS systems only)

The **SET MQIMONITOR** statement activates monitoring for the applications that you specify using the **SET APPL** statement. You must specify the **SET MQIMONITOR** statement to turn on monitoring after using **SET APPL** to specify the applications to monitor.

Use the **SET MQIMONITOR** statement with the **SET APPL** statement to activate the application debugging and application statistics features.

Syntax

```
SET MQIMONITOR STATUS(INSTALL|REMOVE|FREMOVE)
                MGRNAME(manager-name) | GROUP(group-name)
                BUFFERSIZE(initial-buffer-space)
                BUFFERSIZEMAX(max-buffer-space)
                BUFFERINCREMENTSIZ(increment-buffer-size)
```

Parameters

STATUS(INSTALL|REMOVE|FREMOVE)

This parameter is required. It specifies whether monitoring for the z/OS system applications, CICS transactions, and IMS programs that are identified on the SET APPL statement is turned on.

- **INSTALL**

Application monitoring is turned on for the z/OS system applications, CICS transactions, and IMS programs that are identified on the **SET APPL** statement. (If no **SET APPL** statement is specified, no data is collected.)

- **REMOVE**

Application monitoring is turned off for the applications that are identified on the **SET APPL** statement. If monitoring is not activated by a previous SET MQIMONITOR STATUS(INSTALL) statement, this request is ignored.

- **FREMOVE**

Use the FREMOVE option only when you are instructed to do so by IBM Software Support. This parameter removes and stops application monitoring.

MGRNAME(*manager-name*)

Application monitoring is turned on or off for the queue manager that is identified by a previous **SET MANAGER** statement. The name must exactly match the name that is specified on a previous **SET MANAGER** statement. This parameter is required if the **GROUP** parameter is not specified.

GROUP(*group-name*)

Application monitoring is turned on or off for the group of queue managers that are identified by a previous **SET GROUP** statement. The name must exactly match the name that is specified on a previous **SET GROUP** statement. This parameter is required if the **MGRNAME** parameter is not specified.

BUFFERSIZE(*initial-buffer-space*)

Applies only when the **STATUS(INSTALL)** statement is also specified. This parameter specifies the initial buffer size (in MBs) of buffer data space for monitoring WebSphere MQ applications.

This parameter is optional. The default value, if **BUFFERSIZE** is not specified on the **SET MQIMONITOR** command, is 32.

The maximum value is 2048 (2 GB of buffer storage).

BUFFERSIZEMAX(*max-buffer-space*)

This parameter specifies the maximum buffer size (in MBs) of buffer data space for monitoring WebSphere MQ applications. This parameter is optional.

The default value, if **BUFFERSIZEMAX** is not specified on the **SET MQIMONITOR** command, is 128 or the value of **BUFFERSIZE**, whichever is greater.

The maximum value is 2048 (2 GB of buffer storage). When the maximum data space size that is available is reached, the applications monitoring is temporarily disabled, and enabled again when the data space is available.

BUFFERINCREMENTSIZ(*increment-buffer-size*)

This parameter specifies the increment buffer size (in MBs) of buffer data space to be expanded when the data space usage reaches the threshold (75%). This parameter is optional.

The default value, if **BUFFERINCREMENTSIZ** is not specified on the **SET MQIMONITOR** command, is 32.

The maximum value is 2048 (2 GB of buffer storage).

Example

To begin collecting application debugging information and application statistics for the applications running for the PRD1 queue manager, with a buffersize of 32 MBs, specify the following statement:

```
SET MQIMONITOR STATUS(INSTALL) MGRNAME(PRD1) BUFFERSIZE(32) -  
BUFFERSIZEMAX(512) BUFFERINCREMENTSIZ(32)
```

SET QSG (z/OS systems only)

Use the **SET QSG** statement to specify the queue-sharing groups that the WebSphere MQ Monitoring agent on z/OS system monitors and the queue managers that the agent uses to collect queue-sharing group data. At any given time, for a particular queue-sharing group, WebSphere MQ Monitoring agent uses only one queue manager to gather data. If that queue manager becomes unavailable, another queue manager collects the data instead.

The **SET QSG** statement is optional. If this statement is not specified, the default behavior of the agent is to monitor *all* queue-sharing groups that are associated with monitored queue managers.

You can use the **SET QSG** statement to specify the following behaviors:

- No queue-sharing groups are monitored.
- A particular queue-sharing group is monitored.
- A particular queue manager is used to collect queue-sharing group data.

Syntax

```
SET QSG [NAME(nnnn)]  
        [MGRNAME(mmm)]  
        [MONITOR(NO|YES|TAKEOVER)]
```

Parameters

NAME(*nnnn*)

Specifies the name of a queue-sharing group. This parameter is optional. The default value is an asterisk (*).

MGRNAME(*mmmm*)

Specifies a queue manager name in a particular queue-sharing group. This parameter is optional. The default value is an asterisk (*).

MONITOR(NO | YES | TAKEOVER)

Specifies whether the agent monitors the specified combination of queue-sharing group and queue manager. It also specifies whether takeover processing is performed.

This parameter is optional. The default value is YES.

NO: The WebSphere MQ Monitoring agent does not monitor the indicated combination of queue-sharing group and queue manager.

YES: The WebSphere MQ Monitoring agent monitors the indicated combination of queue-sharing group and queue manager. This is the default behavior.

TAKEOVER: The WebSphere MQ Monitoring agent takes over monitoring the indicated queue-sharing group even if another WebSphere MQ Monitoring agent is already monitoring it. (Takeover processing does not occur if the other agent also specified TAKEOVER.)

Example

- To monitor no queue-sharing groups, specify the following statement:
SET QSG MONITOR(NO)
- To eliminate queue manager PMQ5 from queue-sharing group monitoring, specify the following statement:
SET QSG MONITOR(NO) MGRNAME(PMQ5)
- To direct queue-sharing group monitoring to the PMQ6 queue manager, specify the following statement:
SET QSG MONITOR(TAKEOVER) MGRNAME(PMQ6)
- To specify that a particular queue-sharing group is, or is not, monitored might require multiple **SET QSG** statements.

For example, suppose that you have three queue-sharing groups in your environment named QSGA, QSGB, and QSGC. To monitor only the QSGC queue-sharing group, specify the following statements:

```
SET QSG NAME(*) MONITOR(NO)
SET QSG NAME(QSGC) MONITOR(YES)
```

The following statements produce the same result:

```
SET QSG NAME(QSGA) MONITOR(NO)
SET QSG NAME(QSGB) MONITOR(NO)
SET QSG NAME(QSGC) MONITOR(YES)
```

However, if you specify only the following statement, all three queue-sharing groups, including QSGA and QSGB, are monitored. This is because the default behavior of the agent is to monitor all queue-sharing groups.

```
SET QSG NAME(QSGC) MONITOR(YES)
```

SET SUBSYSTEM (z/OS systems only)

Use the **SET SUBSYSTEM** statement to specify the subsystem that is used by the WebSphere MQ Monitoring agent on a z/OS system to collect application statistics data. A single subsystem used by the WebSphere MQ Monitoring agent can be shared among all WebSphere MQ Monitoring agents that are running on the same logical partition (LPAR).

The **SET SUBSYSTEM** command is optional. This statement must not be specified under typical circumstances. If this statement is not specified, the WebSphere MQ Monitoring agent uses the default subsystem named KMQ1 on a z/OS system.

You can use the **SET SUBSYSTEM** command under the following circumstances:

- The initialization of default subsystem KMQ1 failed and you do not want to wait for an initial program load (IPL).
- You want to use a separate subsystem for some WebSphere MQ Monitoring agents.

For more information about subsystem, see *IBM Tivoli OMEGAMON XE for Messaging on z/OS: Planning and Configuration Guide, SC23-7951*.

Syntax

```
SET SUBSYSTEM NAME(nnnn)
```

Parameters

NAME(*nnnn*)

The name of the subsystem that is used by the WebSphere MQ Monitoring agent. *nnnn* must be a valid subsystem identifier. It can be up to four characters long.

Example

- To use the KMQ2 subsystem as the subsystem for the WebSphere MQ Monitoring agent, specify the following statement:

```
SET SUBSYSTEM NAME(KMQ2)
```

Chapter 3. Using situations and Take Action commands

A set of predefined situations and Take Action commands are included with WebSphere MQ Monitoring agent.

Predefined situations

A situation is a logical expression involving one or more system conditions. Situations are used to monitor the condition of systems in your network. You can manage situations from Tivoli Enterprise Portal by using the Situation editor.

A set of predefined situations is included with WebSphere MQ Monitoring agent to check system conditions that are common to many enterprises. These predefined situations can also be used as templates for creating your own custom situations. Using predefined situations can improve the speed with which you can begin using WebSphere MQ Monitoring agent.

For a list of the predefined situations that are provided with WebSphere MQ Monitoring agent and the descriptions and formulas of these situations, see “Predefined situations” on page 611.

Restriction: Do not customize the predefined situations because they are overwritten when you install fix packs or upgrade to a later version of WebSphere MQ Monitoring agent, and the changes are lost.

Creating a situation using a predefined situation as a template

You can create your own custom situations to monitor conditions in your environment. To create a situation using a predefined one as a template, do the following steps:

1. In the Tivoli Enterprise Portal, click **Edit > Situation Editor** to open the Situation Editor window.
2. Right-click the predefined situation that you want to use as a template, and click **Create Another**.
3. Type a name that is different from the original one for the situation, change the default description, and click **OK**.
4. In the Situation Editor, select the tabbed pages to make appropriate changes.
5. When you finish composing or editing the situation, save your changes, and start the situation by clicking **Apply** to keep the editor open, or click **OK** to close the Situation editor.

Remember: When you use the Topic Status attribute group to define a condition that you want to monitor, if the **Topic String** attribute is not added to the situation, the situation filters only the topics that are displayed by default in the **Topic Status** view. If you want to filter all the topics, add the Query String == '# ' expression to the formula.

Take Action commands

By using the Take Action feature of Tivoli Enterprise Portal, you can issue a command to any system in your network where one or more monitoring agents are installed. You can implement commands from the Take Action view, from a situation (when it becomes true), from the Navigator, or from a row in a table view.

For a complete description of the predefined Take Action commands provided with this product, see “Predefined Take Action commands” on page 626.

Creating a custom Take Action command

Your user ID must have Modify permission for the Action feature.

Take the following steps to create a custom Take Action command:

1. Right-click the Navigator item that is associated with the application on which you want to run the command.
2. Click **Take Action > Create or Edit**.
3. In the Selection Action window, select **<Create new action>** and click **OK**.
4. In the Create New Action window, type a name and description for the command.
5. Select **MQSERIES** from the Monitored Application list.
6. Select the type of command.
 - System Command is for issuing a control command.
 - MQSERIES is for issuing an MQSC command.
7. In the Command field, type the command just as you would from the command line.

Remember: The character limit is 512 bytes, including the attribute substitution that you select in the next step.

8. If you want to insert an attribute variable, which will be replaced by its value at run time, click **Insert Attribute**, select one from the Select Attribute window and click **OK**.
9. Click **OK** to save the Take Action command.

Your user-defined Take Action command is now selectable from the list of Take Actions available for this agent.

To create a Take Action command to modify a queue manager to enable the collection of statistics monitoring information and set the collection interval, select **MQSERIES** in step 6 and enter `ALTER QMGR STATMQI(ON) STATINT(n)` in step 7, where *n* is a number ranging from 1 through 604800, which specifies how often (in seconds) statistics monitoring data is written to the monitoring queue.

To create a Take Action command to start a queue manager, select **System Command** in step 6 and enter `STRMQM (QMgr)` in step 7, where *QMgr* is the name of the queue manager that you want to start.

For information about how to issue a Take Action command, see “Sending a Take Action command” on page 55.

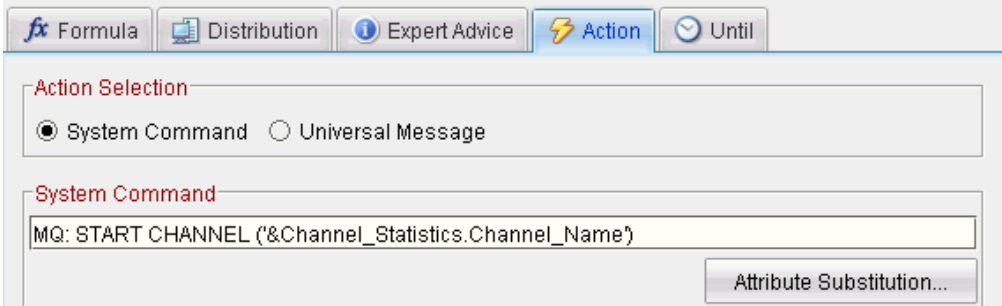
Sending a Take Action command

Do the following steps to send a Take Action command from the Tivoli Enterprise Portal to systems in your managed enterprise:

1. Select the Navigator item that is associated with the component or application on which you want to run the command.
2. Right-click the Navigator, or right-click a row in a table view or a bar in a bar chart.
3. Click **Take Action > Select**. The Take Action window is displayed.
4. In the **Name** field, click the arrow to display the list.
5. Select the command that you want to run from the **Name** list. The command is displayed in the field below.
6. For the commands that require argument values, enter or edit the values as needed:
 - If the Edit Argument Values window opens, enter a value to identify the item on which you want to run the selected commands, and click **OK**.
 - If the values are filled automatically and you want to change those values, click the **Arguments** button, edit the argument values, and click **OK**.
7. Click the host system in the **Destination Systems** field where the component is located and click **OK**.

Using Take Action commands in situations

To issue a command from a situation, enter the MQ: syntax form of the command on the Action tab of the Situation Editor. Figure 10 shows an example of the **MQ Start Channel** command used in a situation.



The screenshot shows a software interface with a top toolbar containing buttons for 'Formula', 'Distribution', 'Expert Advice', 'Action' (highlighted), and 'Until'. Below the toolbar, there are two main sections. The first section, titled 'Action Selection', contains two radio buttons: 'System Command' (which is selected) and 'Universal Message'. The second section, titled 'System Command', contains a text input field with the command 'MQ: START CHANNEL (&Channel_Statistics.Channel_Name)'. To the right of this field is a button labeled 'Attribute Substitution...'.

Figure 10. A Take Action command used in a situation

This example is from the MQ_Automation_Ch1Start predefined situation, which substitutes an attribute from the Channel Performance workspace. The **Attribute Substitution** button, visible in Figure 10, is used to select the attribute (this prevents misspellings and inserts the ampersand character (&) which is needed for attribute substitution). The single quotation marks enclosing the command parameter are required. When you are using a Take Action command in a situation, create a working, manual version of the Take Action command before you attempt to automate its use by adding it to a situation.

Chapter 4. Data collection for workspaces

Workspaces of the WebSphere MQ Monitoring agent present information about various aspects of your WebSphere MQ environment. The table views and graphs in each workspace report attribute information that you are monitoring. By default, most workspaces display correct data with the default configuration; however, some columns in the following workspaces might contain no data or incorrect data if you use the default configuration.

For information about how to collect data for these workspaces, read the following sections:

- Application Accounting workspace
- Application Debugging workspace
- Application Statistics workspaces
- Buffer Pool Statistics workspaces
- Channel Performance and Channel Status workspace
- Channel related workspaces
- Event Log workspace
- Queue Accounting workspace
- Queue Statistics workspace and Queue Statistics workspace on z/OS systems
- Queue Status workspace
- Log Manager workspaces
- Message Manager workspaces
- MQSeries Events workspace
- MQI Statistics workspace
- MQ Queue Statistics workspace
- MQ Channel Statistics workspace
- Queue related workspaces
- Topic Manager workspaces
- Historical workspaces

Collecting data for the Application Accounting workspace

Data in the Application Accounting workspace is retrieved from the accounting messages in a system queue of the queue manager. For this workspace to display correct data, you must configure the queue manager and the WebSphere MQ Monitoring agent.

Do the following steps to collect data for the Application Accounting workspace:

1. Configure the queue manager to collect application accounting information by doing one of the following steps:
 - Run the following MQSC command:
`ALTER QMGR ACCTMQI(ON)`
 - Send the command for collecting application accounting information to the queue manager by using the Take Action command. See “Sending a Take Action command” on page 55 for information about how to send a Take Action command to a managed system.

2. Set the interval over which the accounting data is collected in the queue manager by doing one of the following steps:
 - Run the following MQSC command:

```
ALTER QMGR ACCTINT(n)
```

where *n* is the number of seconds over which the accounting data is collected in the queue manager.
 - Send the command for setting the interval over which the accounting data is collected to the queue manager by using the Take Action command. For information about how to send a Take Action command to a managed system, see “Sending a Take Action command” on page 55.
3. Optional: Edit the monitoring file of the WebSphere MQ Monitoring agent to allow it to read messages from the system statistics queues. The ACCOUNTINGINFO attribute specifies how the WebSphere MQ Monitoring agent accesses the data that is produced by the queue manager. It is set to REMOVE by default. You can set it to BROWSE to suit the requirements of your environment. See “Changing monitoring options” on page 14 for information about how to change monitoring options.
4. If you changed the monitoring file of the WebSphere MQ Monitoring agent, restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the Application Debugging workspace

The Application Debugging workspace can help you debug your WebSphere MQ applications by providing debugging trace data. Data for the workspace is available only if application debug trace is collected on z/OS systems.

Do the following steps to configure the WebSphere MQ Monitoring agent to collect data for this workspace:

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on your operating system.
2. Set the TRACE monitoring option of the SET APPL statement in the monitoring file to YES to collect application trace information for applications that are specified by the SET APPL statement. See “SET APPL (z/OS systems only)” on page 47 for information about how to use the SET APPL statement.
3. Use the SET MQIMONITOR statement to activate monitoring for the applications that you specified in the SET APPL statement. See “SET MQIMONITOR (z/OS systems only)” on page 49 for information about how to use the SET MQIMONITOR statement.
4. Restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the Application Statistics workspaces

The Application Statistics workspaces provide statistics about WebSphere MQ applications that are running on z/OS systems. Data for these workspaces is available only if application statistics are being collected on z/OS systems.

Do the following steps to configure the WebSphere MQ Monitoring agent to collect data for these workspaces:

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on your operating system.
2. Use the SET APPL statement to collect the application statistics information and specify for which applications and which queues the application statistics information is collected. See “SET APPL (z/OS systems only)” on page 47 for information about how to use the SET APPL statement.

Tip: By default, all application statistics are collected for predefined queues. To change the default or add more specific SET APPL statements, you can manually tailor the KMQUSER Member.

3. Use the SET MQIMONITOR statement to activate monitoring for the applications that you specify in the SET APPL statement. See “SET MQIMONITOR (z/OS systems only)” on page 49 for information about how to use the SET MQIMONITOR statement.
4. Restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the Buffer Pool Statistics workspaces

The Buffer Pool Statistics workspaces display current buffer manager performance information for all monitored queue managers on a z/OS system. Data in these workspaces are collected from WebSphere MQ performance statistics that are written as SMF (System Management Facility) type 115 records.

Do the following steps to collect data for the Buffer Pool Statistics workspaces:

1. Use SMF to collect data for monitored queue managers. To record performance statistics (record type 115) to SMF, specify the following in the SMFPRMxx member of SYS1.PARMLIB:
SYS(TYPE(115))

You can also use the **SETSMF** z/OS operator command for this.

2. Ensure that SMF is running.
3. Specify YES on the SMFSTAT (SMF STATISTICS) parameter of the CSQ6SYSP macro to customize the monitored queue managers.
4. Optional: Specify the interval at which statistics records are produced by setting the STATIME parameter of the CSQ6SYSP macro. If you set the STATIME parameter to zero, statistics records are produced at the SMF global accounting interval.
5. Restart the queue managers for the changes to take effect.

Collecting data for the Channel Performance and Channel Status workspace

By default, the values of some columns in the Channel Performance and Channel Status workspace are n/a or blank. If you want the values that are produced by the queue manager for real-time channel monitoring to be displayed in these workspaces, you must enable real-time monitoring for the channel at the queue manager. Depending on the value of the MONCHL attribute of the channel, do one of the following things:

- If the value is OFF, change its value to LOW, MEDIUM, or HIGH by running the following MQSC command:

```
ALTER CHANNEL(channel_name) MONCHL(collection_level)
```

Where *channel_name* is the name of the channel and *collection_level* specifies the collection level of monitoring data for the channel. Here you can set it to LOW, MEDIUM, or HIGH to suit the requirement of your environment.

- If the value is QMGR, change the MONCHL attribute of its queue manager to LOW, MEDIUM, or HIGH by running the following MQSC command:

```
ALTER QMGR MONCHL(collection_level)
```

Where *collection_level* specifies the collection level of monitoring data for the channels on the queue manager whose MONCHL attribute is set to QMGR. Here you can set it to LOW, MEDIUM, or HIGH to suit the requirement of your environment.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for channel related workspaces

By default, the following channel related workspaces are configured to monitor all channels on the monitored queue manager:

- Channel Definitions
- Channel Definitions for Sender Type
- Channel Definitions for Server Type
- Channel Definitions for Receiver Type
- Channel Definitions for Requester Type
- Channel Definitions for Client Connection Type
- Channel Definitions for Server Connection Type
- Channel Definitions for Cluster Receiver Type
- Channel Definitions for Cluster Sender Type
- Channel Performance
- Channel Performance by Type/Status
- Channel Performance for Current Channels
- Channel Performance for Transmitting Channels
- Channel Performance for Channels with XmitQ Depth
- Channel Performance for In-Doubt Channels
- Channel Summary

If you want these workspaces to display data for channels with specific channel names, do the following steps to configure the WebSphere MQ Monitoring agent:

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on your operating system.
2. Set the NAME monitoring option of the SET CHANNEL command in the monitoring file to a 1- through 20-character specific or generic name of the channels that you want to monitor. To specify a generic name, enter a character string followed by an asterisk (*).

Remember: This option does not affect workspaces that contain on-demand data. For example, the Real-time Channel Definitions workspace displays information that is related to all queues regardless of this attribute.

For example, the following command sets the NAME monitoring option to monitor all the channels on the queue manager QMGR that match the generic name "MARCH*":

```
SET CHANNEL NAME(MARCH*) MGRNAME(QMGR)
```

Collecting data for the Event Log workspace

With the default queue manager configuration, the following types of events are not monitored and displayed in the Event Log workspace:

- Authority events
- Channel events
- Command events
- Configuration events
- IMS Bridge events
- Inhibit events
- Local events
- Logger events
- Performance events
- Remote events
- SSL events
- Start and Stop events

Depending on the events that you want to be displayed in the Event Log workspace, run one or more of the following commands:

- To enable the queue manager to emit authority events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR AUTHOREV(ENABLED)
```
- To enable the queue manager to emit channel events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR CHLEV(ENABLED)
```
- To enable the queue manager to emit command events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR CMDEV(ENABLED)
```
- To enable the queue manager to emit configuration events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR CONFIGEV(ENABLED)
```
- To enable the queue manager to emit IMS Bridge events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR BRIDGEV(ENABLED)
```

- To enable the queue manager to emit local events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR LOCALEV(ENABLED)
```
- To enable the queue manager to emit logger events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR LOGGEREV(ENABLED)
```
- To enable the queue manager to emit performance events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR PERFMEV(ENABLED)
```
- To enable the queue manager to emit remote events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR REMOTEV(ENABLED)
```
- To enable the queue manager to emit SSL events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR SSLEV(ENABLED)
```
- To enable the queue manager to emit start and stop events so that they are displayed in the Event Log workspace, run the following command:

```
ALTER QMGR STRSTPEV(ENABLED)
```

You do not need to restart the queue manager for the changes to take effect.

Collecting data for the Queue Accounting workspace

Data in the Queue Accounting workspace is retrieved from the accounting messages in a system queue of the queue manager. For the workspace to display correct data, you must configure the queue manager and the WebSphere MQ Monitoring agent.

Do the following steps to collect data for the Queue Accounting workspace:

1. Configure the queue manager to collect queue accounting information by doing one of the following steps:
 - Run the following MQSC command:

```
ALTER QMGR ACCTQ(ON)
```
 - Send the command for configuring the queue manager to collect queue accounting information by using the Take Action command. See “Sending a Take Action command” on page 55 for information about how to send a Take Action command to a managed system.
2. Set the interval over which the accounting data is collected in the queue manager by doing one of the following steps:
 - Run the following MQSC command:

```
ALTER QMGR ACCTINT(n)
```

where *n* is the number of seconds over which the accounting data is collected in the queue manager.
 - Send the command for setting the interval over which the accounting data is collected to the queue manager by using the Take Action command. For information about how to send a Take Action command to a managed system, see “Sending a Take Action command” on page 55.
3. If necessary, enable accounting information collection for the queues for which you want accounting data by doing one of the following steps:

- Run the following MQSC command:
ALTER QLOCAL(*queue_name*) ACCTQ(QMGR)

where *queue_name* is the name of the queue for which you want to enable accounting information collection. You can also specify a generic name by entering a character string that is followed by an asterisk (*).

- Send the command to enable accounting information collection for the queues by using the Take Action command. For information about how to send a Take Action command to a managed system, see “Sending a Take Action command” on page 55.
4. Optional: Edit the monitoring file of the WebSphere MQ Monitoring agent to allow it to read messages from the system statistics queues. The **ACCOUNTINGINFO** attribute specifies how the WebSphere MQ Monitoring agent accesses the data that is produced by the queue manager. It is set to REMOVE by default. You can set it to BROWSE to suit the requirements of your environment. For information about how to change monitoring options, see “Changing monitoring options” on page 14.
 5. If you changed the monitoring file of the WebSphere MQ Monitoring agent, restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the Queue Statistics workspace

By default, if the WebSphere MQ Monitoring agent is running on a distributed platform, the following columns of the Queue Statistics workspace display zero:

- Highest Depth
- Messages Put
- Messages Put per Sec
- Messages Read
- Messages Read per Sec
- Time to Full Queue (Secs)
- Time to Zero Msgs (Secs)

Do the following steps to configure the WebSphere MQ Monitoring agent to collect the data that is displayed in these columns:

Important: Review Chapter 7, “Collecting queue statistics data,” on page 87 before making any changes.

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on your operating system.
2. Set the STATISTICS monitoring option of the SET QUEUE command in the monitoring file to YES. For example, the following command sets the STATISTICS monitoring option for all queues on the queue manager QMGR to YES:
SET QUEUE NAME(*) MGRNAME(QMGR) QDEFTYPE(PREDEFINED) STATISTICS(YES)
3. Restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the Queue Statistics workspace on z/OS systems

If the WebSphere MQ Monitoring agent is running on a z/OS system, by default, the following columns in the Queue Statistics workspace have no data:

- Average MQ Response Time
- Average Application Time Between Calls
- Input Message Size Average
- Messages Put
- Messages Read
- Messages Browsed
- Number of Transaction/Programs
- Output Message Size Average

Some of these columns are the same as the columns that are described in “Collecting data for the Queue Statistics workspace” on page 63. If you enable both ways on a z/OS system, the Queue Statistics data that are enabled in the “Collecting data for the Queue Statistics workspace” on page 63 section are used for these columns.

Do the following steps to configure the WebSphere MQ Monitoring agent to collect data for these columns:

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on your operating system.
2. Use the SET MQIMONITOR statement with the SET APPL statement to activate the application debugging and application statistics functions. See “SET APPL (z/OS systems only)” on page 47 and “SET MQIMONITOR (z/OS systems only)” on page 49 for information about how to use the SET APPL and SET MQIMONITOR statement.
3. Restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the Queue Status workspace

By default, the values of some columns in the Queue Status workspace are n/a or blank. To ensure that the data that is displayed in the Queue Status workspace is complete and accurate, you must enable real-time monitoring for the queue.

Do the following steps to enable real-time monitoring for one or multiple queues so that the Queue Status workspace displays complete and accurate data:

1. Display the value of the MQNQ attribute of the queue or queues by doing one of the following steps:
 - Run the following MQSC command:
`DISPLAY QLOCAL(queue_name) MONQ`

where *queue_name* is the name of the queue. You can also specify a generic name by entering a character string that is followed by an asterisk (*).

- Send the command for displaying the value of the MQNQ attribute of a queue by using the Take Action command. For information about how to send a Take Action command to a managed system, see “Sending a Take Action command” on page 55.
2. Depending on the value of the MONQ attribute of the queue, do one of the following things:
 - If the value is OFF, change its value to LOW, MEDIUM, or HIGH by running the following MQSC command:


```
ALTER QLOCAL(queue_name) MONQ(collection_level)
```

where *queue_name* is the name of the queue and *collection_level* specifies the collection level of monitoring data for the queue. You can set it to LOW, MEDIUM, or HIGH to suit the requirements of your environment.

- If the value is QMGR, change the MONQ attribute of the queue manager to LOW, MEDIUM, or HIGH by running the following MQSC command:


```
ALTER QMGR MONQ(collection_level)
```

where *collection_level* specifies the collection level of monitoring data for the queues whose MONQ attribute is set to QMGR. You can set it to LOW, MEDIUM, or HIGH to suit the requirements of your environment.

Remember: You do not have to restart the queue manager for these changes to take effect.

Collecting data for the Log Manager workspaces

The Log Manager workspaces provide information about the logging activity (such as I/O levels and the number of times that a WebSphere MQ application is delayed because no logging buffers are available) for each monitored queue manager on a z/OS system. Data in these workspaces are collected from WebSphere MQ performance statistics that are written as SMF (System Management Facility) type 115 records.

Do the following steps to collect data for the Log Manager workspaces:

1. Use SMF to collect data for monitored queue managers. To record performance statistics (record type 115) to SMF, specify the following in the SMFPRMxx member of SYS1.PARMLIB:


```
SYS(TYPE(115))
```

You can also use the **SETSMF** z/OS operator command for this.

2. Ensure that SMF is running.
3. Specify YES for the SMFSTAT (SMF STATISTICS) parameter of the CSQ6SYSP macro to customize the monitored queue managers.
4. Optional: Specify the interval at which statistics records are produced by setting the STATIME parameter of the CSQ6SYSP macro. If you set the STATIME parameter to zero, statistics records are produced at the SMF global accounting interval.
5. Restart the queue managers for the changes to take effect.

Collecting data for the Message Manager workspaces

The Message Manager workspaces provide information about how frequently calls to the WebSphere MQ application programming interface (API) are made on a z/OS system. Data in these workspaces are collected from WebSphere MQ performance statistics that are written as SMF (System Management Facility) type 115 records.

Do the following steps to collect data for the Message Manager workspaces:

1. Use SMF to collect data for monitored queue managers. To record performance statistics (record type 115) to SMF, specify the following in the SMFPRMxx member of SYS1.PARMLIB:
SYS(TYPE(115))

You can also use the **SETSMF** z/OS operator command for this.

2. Ensure that SMF is running.
3. Specify YES for the SMFSTAT (SMF STATISTICS) parameter of the CSQ6SYSP macro to customize the monitored queue managers.
4. Optional: Specify the interval at which statistics records are produced by setting the STATIME parameter of the CSQ6SYSP macro. If you set the STATIME parameter to zero, statistics records are produced at the SMF global accounting interval.
5. Restart the queue managers for the changes to take effect.

Collecting data for the MQSeries Events workspace

By default, the MQSeries® Events workspace does not display events such as the Queue Full, Queue Depth High, Queue Service Interval High, Bridge Stopped, Channel Stopped, and Channel Not Activated event with the default configuration of a queue manager. If you want to use event monitoring, you must configure the queue manager to emit the events.

To enable channel and bridge events so that they are displayed in the MQSeries Events workspace, run the following MQSC commands:

```
ALTER QMGR CHLEV(ENABLED)
ALTER QMGR BRIDGEEV(ENABLED)
```

To enable Queue Service Interval High events with a service interval time of 10 seconds (10 000 milliseconds), run the following MQSC commands:

```
ALTER QMGR PERFMEV(ENABLED)
ALTER QLOCAL('queue_name') QSVCINT(10000) QSVCIEV(HIGH)
```

where *queue_name* is the name of the queue.

To enable Queue Depth High events on a specific queue, run the following MQSC commands:

```
ALTER QMGR PERFMEV(ENABLED)
ALTER QLOCAL('queue_name') QDPHIEV(ENABLED)
```

To enable Queue Depth Low events on a specific queue, run the following MQSC commands:

```
ALTER QMGR PERFMEV(ENABLED)
ALTER QLOCAL('queue_name') QDPLOEV(ENABLED)
```

To enable Queue Depth Full events on a specific queue, run the following MQSC commands:

```
ALTER QMGR PERFMEV(ENABLED)
ALTER QLOCAL('queue_name') QDPMAXEV(ENABLED)
```

Collecting data for the MQI Statistics workspace

Data in the MQI Statistics workspace is retrieved from the statistics messages in a system queue of the queue manager. To display correct data, you must configure the queue manager and the WebSphere MQ Monitoring agent for the workspace.

Do the following steps to collect data for the MQI Statistics workspace:

1. Configure the queue manager to collect MQI statistics information by doing one of the following steps:

- Run the following MQSC command to configure the queue manager:

```
ALTER QMGR STATMQI(ON)
```

- Send the command for collecting MQI statistics information by using the Take Action command. See “Sending a Take Action command” on page 55 for information about how to send a Take Action command to a managed system.

2. Set the interval over which the statistics information is collected by doing one of the following steps:

- Run the following MQSC command:

```
ALTER QMGR STATINT(n)
```

where *n* is the number of seconds over which the statistics information is collected.

- Send the command for setting the interval to the queue manager by using the Take Action command.

3. Optional: Edit the monitoring file of the WebSphere MQ Monitoring agent to allow it to read messages from the system statistics queues. The STATISTICSINFO attribute specifies how the WebSphere MQ Monitoring agent accesses the data that is produced by the queue manager. It is set to REMOVE by default. You can set it to BROWSE to suit the requirements of your environment. For information about how to change monitoring options, see “Changing monitoring options” on page 14.

4. If you changed the monitoring file of the WebSphere MQ Monitoring agent, restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the MQ Channel Statistics workspace

Data in the MQ Channel Statistics workspace is retrieved from the statistics messages in a system queue of the queue manager. To display correct data, you must configure the queue manager and the WebSphere MQ Monitoring agent for the workspace.

Do the following steps to collect data for the MQ Channel Statistics workspace:

Important: The commands in the following instructions set the level of statistics that is produced at the queue manager level. You can also set that level at the

individual channel level. For detailed commands about how to set the level of statistics that is produced at the channel level, see the WebSphere MQ documentation.

1. Configure the queue manager to collect channel statistics information by doing one of the following steps:
 - Run the following MQSC command:

```
ALTER QMGR STATCHL(collection_level)
```

where *collection_level* is the collection level of channel statistics information. You can set it to LOW, MEDIUM, or HIGH to suit the requirements of your environment.
 - Send the command for configuring the queue manager to collect channel statistics information by using the Take Action command. For information about how to send a Take Action command to a managed system, see “Sending a Take Action command” on page 55.
2. Set the interval over which the accounting data is collected by doing one of the following steps:
 - Run the following MQSC command:

```
ALTER QMGR STATINT(n)
```

where *n* is the number of seconds over which the accounting data is collected.
 - Send the command for setting the interval by using the Take Action command.
3. Enable the statistics information collection for the channels for which you want to collect statistics information by doing one of the following steps:
 - Run the following MQSC command:

```
ALTER CHANNEL(channel_name) STATCHL(QMGR)
```

where *channel_name* is the name of the channel for which you want to collect statistics information. You can also specify a generic name by entering a character string that is followed by an asterisk (*).
 - Send the command for enabling statistics information collection for the channels by using the Take Action command.
4. Optional: Edit the monitoring file of the WebSphere MQ Monitoring agent to allow it to read messages from the system statistics queues. The STATISTICSINFO attribute specifies how the WebSphere MQ Monitoring agent accesses the data that is produced by the queue manager. It is set to REMOVE by default. You can set it to BROWSE to suit the requirements of your environment. See “Changing monitoring options” on page 14 for information about how to change monitoring options.
5. If you changed the monitoring file of the WebSphere MQ Monitoring agent, restart the agent for the changes to take effect.

Remember: You do not need to restart the queue manager for these changes to take effect.

Collecting data for the MQ Queue Statistics workspace

Data in the MQ Queue Statistics workspace is retrieved from the statistics messages in a system queue of the queue manager. To display correct data, you must configure the queue manager and the WebSphere MQ Monitoring agent for the workspace.

Do the following steps to collect data for the MQ Queue Statistics workspace:

Important: The commands in the following instructions set the level of statistics that is produced at the queue manager level. You can also set that level at the individual queue level. For detailed commands about how to set the level of statistics that is produced at the queue level, see the WebSphere MQ documentation.

1. Configure the queue manager to collect queue statistics information by doing one of the following steps:
 - Run the following MQSC command:
`ALTER QMGR STATQ(ON)`
 - Send the command for configuring the queue manager to collect queue statistics information by using the Take Action command. For information about how to send a Take Action command to a managed system, see “Sending a Take Action command” on page 55.
2. Set the interval over which the accounting data is collected by doing one of the following steps:
 - Run the following MQSC command:
`ALTER QMGR STATINT(n)`

where *n* is the number of seconds over which the accounting data is collected.
 - Send the command for setting the interval by using the Take Action command.
3. Enable statistics information collection for the queues for which you want to collect statistics information by running the following MQSC command:
`ALTER QLOCAL(queue_name) STATQ(QMGR)`

where (*queue_name*) is the name of the queue for which you want to collect statistics information. You can also specify a generic name by entering a character string that is followed by an asterisk (*).
4. Edit the monitoring file of the WebSphere MQ Monitoring agent to allow it to read messages from the system statistics queues. The STATISTICSINFO attribute specifies how the WebSphere MQ Monitoring agent accesses the data that is produced by the queue manager. Here you can set it to REMOVE or BROWSE to suit the requirements of your environment. For information about how to change monitoring options, see “Changing monitoring options” on page 14.
5. If you changed the monitoring file of the WebSphere MQ Monitoring agent, restart the agent for the changes to take effect.

Remember: You do not have to restart the queue manager for these changes to take effect.

Collecting data for queue related workspaces

By default, the following queue related workspaces are configured to display data about all predefined queues on the monitored queue manager:

- Queue Definitions
- Queue Statistics
- Queue Statistics for Monitored Queues with Messages
- Queue Statistics for Monitored Open Queues

- Queue Statistics for Monitored Transmission Queues

If you want them to display data for queues of other types and with specific queue names, do the following steps to configure the WebSphere MQ Monitoring agent:

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on your operating system.
2. Set the QDEFTYPE monitoring option of the SET QUEUE command in the monitoring file to one of following values:
 - **PREDEFINED:** Monitor only predefined queues that match the specific or generic queue name. This is the default value.
 - **PERMDYN:** Monitor only permanent dynamic queues that match the specific or generic queue name.
 - **TEMPDYN:** Monitor only temporary dynamic queues that match the specific or generic queue name.
 - **ALL:** Monitor all queues that match the specific or generic queue name.

Remember: This option does not affect workspaces that contain on-demand data. For example, the Real-time Queue Definitions and Real-time Queue Data workspaces display information that is related to all queues regardless of this attribute.

3. Set the NAME monitoring option of the SET QUEUE command in the monitoring file to a 1- through 48-character specific or generic name of the queues that you want to monitor. To specify a generic name, enter a character string followed by an asterisk (*).

Remember: This option does not affect workspaces that contain on-demand data. For example, the Real-time Queue Definitions and Real-time Queue Data workspaces display information that is related to all queues regardless of this attribute.

For example, the following command sets the QDEFTYPE monitoring option to monitor all the queues on the queue manager QMGR that match the generic name “MARCH*” in NAME option:

```
SET QUEUE NAME(MARCH*) MGRNAME(QMGR) QDEFTYPE(ALL)
```

Collecting data for the Topic Manager workspaces

The Topic Manager workspaces provide information about the publication and subscription activities (such as how frequently subscriptions are made and how many subscriptions have expired) for each monitored z/OS system queue manager. Data in these workspaces are collected from WebSphere MQ performance statistics written as SMF(System Management Facility) type 115 records.

Do the following steps to collect data for the Topic Manager workspaces:

1. Use SMF to collect data for monitored queue managers. To record performance statistics (record type 115) to SMF, specify the following in the SMFPRMxx member of SYS1.PARMLIB:
SYS(TYPE(115))

You can also use the **SETSMF** z/OS operator command for this.

2. Ensure that SMF is running.

3. Specify YES on the SMFSTAT (SMF STATISTICS) parameter of the CSQ6SYSP macro to customize the monitored queue managers.
4. Optional: Specify the interval at which statistics records are produced by setting the STATIME parameter of the CSQ6SYSP macro. If you set the STATIME parameter to zero, statistics records are produced at the SMF global accounting interval.
5. Restart the queue managers for the changes to take effect.

Chapter 5. Collecting historical data

In addition to the real-time reports that are provided by Tivoli Enterprise Portal workspaces, you can set up historical data collection to store and save WebSphere MQ Monitoring agent data. You can specify the following items:

- Attribute groups for historical data collection
- Data collection intervals
- Data warehousing interval (if you choose to write your data to a data warehouse)
- Storage time of the collected data
- Type of the reports that are generated from the data
- Storage location for the collected data (Historical data can be stored either at the location of the monitoring agent or on the Tivoli Enterprise Monitoring Server.)

To ensure that data samplings are saved to populate your predefined historical workspaces, you must first configure and start historical data collection. This requirement does not apply to workspaces that use attribute groups that are historical in nature and display all their entries without your starting data collection separately.

Important: Historical data collection requires additional disk space. You should ensure that there is enough space on the computer when configuring historical data collection, otherwise there is no data displayed in the related workspaces. The attribute history tables, default file names, default tables collected, and the estimated disk space required per 24-hour period for the historical data collected for WebSphere MQ Monitoring agent are listed in Appendix D, “Disk space requirements for historical data tables,” on page 637.

Remember: If you choose to collect historical data for the Error Log attribute group, check the Error Log workspace periodically and take immediate actions to fix the errors that are displayed in this workspace, otherwise, the short-term historical file for Error Log grows rapidly and occupies a large amount of your disk space, which might eventually cause the agent to become offline.

There are several tables containing historical data, some contain sampled data and some contain real-time on-demand data. Some sampled and on-demand tables contain similar attributes. If you enable historical data collection for both sampled and on-demand tables, this increases the historical data collection overhead unnecessarily. Instead, select one table depending on whether you want sampled or on-demand data to be displayed in historical workspaces.

For more information about which tables contain sampled data and which are on-demand, see “Sampled and on-demand tables” on page 163

Enabling historical data collection

To view historical data for attribute groups whose data is sampled by the agent, you must first enable historical data collection by editing the configuration file of the WebSphere MQ Monitoring agent.

Enabling historical data collection on Windows systems

On Windows systems, do the following steps to enable historical data collection for attribute groups whose data are sampled by the agent:

1. Open the Manage Tivoli Enterprise Monitoring Services window.
2. Right-click the agent for which you want to enable historical data collection.
3. Click **Reconfigure**.
4. Click **OK** on both of the two configuration windows that are displayed.
5. Click **Yes** when asked whether you want to edit the configuration file. The file opens in the default text editor. A window containing a message that indicates that configuration waits until you close the text editor is also displayed.
6. Click **OK**.
7. Look for the **HISTORY** parameter in the configuration file; the parameter is followed by either a YES or NO value enclosed in brackets. If the value is NO, change it to YES. The resulting line in the configuration file is displayed similarly to the following statement:

```
PERFORM STARTMON SAMPINT(300) HISTORY(YES)
```
8. Optional: You can change the value of the **SAMPINT** parameter to specify the frequency with which historical data is sampled (in seconds). However, the more frequently data is sampled, the greater the performance overhead of collecting historical data.
9. Save and close the file.
10. Click **Yes** when asked whether you want to perform configuration. Historical data collection is now enabled.

For information about configuring historical data collection on z/OS systems, see *IBM Tivoli OMEGAMON XE for Messaging on z/OS: Planning and Configuration Guide, SC23-7951*.

Important: You must ensure that the date and time of the operating systems on all systems running monitoring agent, Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal Server are synchronized, otherwise no historical data is displayed in historical workspaces.

Enabling historical data collection on UNIX and Linux systems

On UNIX and Linux systems, do the following steps to enable historical data collection for attribute groups whose data are sampled by the agent:

1. Navigate to the following directory:

```
install_dir/config
```

where *install_dir* is the IBM Tivoli Monitoring installation directory. The default directory is /opt/IBM/ITM.
2. Open the configuration file of the agent for which you want to enable historical data collection.
3. Look for the **HISTORY** parameter in the configuration file; the parameter is followed by either a YES or NO value enclosed in brackets. If the value is NO, change it to YES. The resulting line in the configuration file is displayed similarly to the following statement:

```
PERFORM STARTMON SAMPINT(300) HISTORY(YES)
```
4. Optional: You can change the value of the **SAMPINT** parameter to specify the frequency with which historical data is sampled (in seconds). However, the more frequently data is sampled, the greater the performance overhead of collecting historical data.

5. Save and close the file.

For information about configuring historical data collection on z/OS systems, see *IBM Tivoli OMEGAMON XE for Messaging on z/OS: Planning and Configuration Guide, SC23-7951*.

Important: You must ensure that the date and time of the operating systems on all systems running monitoring agent, Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal Server are synchronized, otherwise no historical data is displayed in historical workspaces.

Enabling historical data collection on i5/OS systems

On i5/OS systems, do the following steps to enable historical data collection for attribute groups whose data are sampled by the agent:

1. At the i5/OS command line, enter the following command:

```
WRKOMAMQ
```

The main dialog box for working with the WebSphere MQ Monitoring agent is displayed as follows:

```
Work with Tivoli Monitoring Agent for WebSphere MQ System MYSYSTEM
Type Option, press Enter
    2=Change, 4=Delete, 5=Display monitoring agent Log, 14=Start, 15=End
```

Option	Agent for MQ Manager...	Suffix	Status
	MYSYSTEM	00001	Not Started
	MQITMISDE1	00002	Started

Multiple instances of the WebSphere MQ Monitoring agent might be listed in this window. These can be distinguished by their unique 5-character numeric suffix. The first instance of the agent that is installed is automatically assigned the suffix 00001, the second is assigned suffix 00002, and so on. The files that are associated with each instance have corresponding suffixes. The monitoring file for each instance is named in the form: MQnnnnn, where nnnnn is the 5-character numeric suffix.

2. In the Option column next to the monitoring file that you want to change, enter 2 (change). The panel for changing the WebSphere MQ Monitoring agent is displayed.
3. Press F8 to change the monitoring file associated with the agent. A file editing panel is displayed.
4. In the configuration file, look for the **HISTORY** parameter; the parameter is followed by either a YES or NO value enclosed in brackets. If the value is NO, change it to YES.
5. When you finish customizing the monitoring file, press F3 to save your changes and exit. Press F3 twice more to exit the interface.
6. Ensure that the queue manager and its command server are running.
7. Restart the agent for the changes to take effect.

For information about configuring historical data collection on z/OS systems, see *IBM Tivoli OMEGAMON XE for Messaging on z/OS: Planning and Configuration Guide, SC23-7951*.

Important: You must ensure that the date and time of the operating systems on all systems running monitoring agent, Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal Server are synchronized, otherwise no historical data is displayed in historical workspaces.

Starting historical data collection

To start collecting historical data for one or more attribute groups, do the following steps:

Remember: You must do this task regardless of whether the data collection type of the attribute group is sampled, on-demand, or background-collected.

1. Click **Edit > History Configuration** in the Tivoli Enterprise Portal to open the History Collection Configuration window.
2. Click **WebSphere MQ** on the left side of the window.
3. Click **Create new collection setting** at the upper left corner of the window. The Create New Collection Settings window is opened.
4. In the **Name** field, enter a name of up to 256 characters.
5. Optional: In the **Description** field, enter a description of up to 64 characters for the collection.
6. Select an attribute group from the Attribute Group list. Only attribute groups that are appropriate for historical collection and reporting are displayed in the list. See A mapping table for attribute groups and historical workspaces for a list of attribute groups that are available for historical collection.
7. Click **OK**. The configuration tabs for historical collection are displayed.
8. Complete the following fields in the **Basic** tab page:
 - **Collection Interval** is the frequency of data transmission to the short-term history file on the computer where the data is saved (Tivoli Enterprise Monitoring Agent or Tivoli Enterprise Monitoring Server). The options are every one, five, 15, or 30 minutes, every hour, or once per day. The default interval is 15 minutes. The shorter the interval is, the faster and larger the history file grows. A short interval should be used only for an attribute group that is critical in your work.
 - **Collection Location** is where the short-term history data file resides: at the TEMA (Tivoli Enterprise Monitoring Agent) or the TEMS (Tivoli Enterprise Monitoring Server). The default location is TEMA, which minimizes the performance impact on the Tivoli Enterprise Monitoring Server from historical data management.
 - **Warehouse Interval** determines whether the collected data is warehoused and how often. The options are 15 minutes, 30 minutes, 1 hour, 12 hours, 1 day or Off.
9. In the **Distribution** tab page, select the managed systems for which you want to start historical data collection from the Available Systems list and click the left arrow to move them to the **Start collection on** list.
10. Click **OK** to start historical data collection on the selected managed systems.

Stopping historical data collection

Your user ID must have Configure History permission to open the History Collection Configuration window. If you do not have this permission, you will not see the tool for historical configuration.

You can edit historical collection for an attribute group to stop data collection on some or all of the managed systems in the distribution list. The managed systems that remain in the distribution list continue to collect historical data. To stop historical data collection on one or more managed systems, do the following steps:

Remember: You must do this task regardless of whether the data collection type of the attribute group is sampled, on-demand, or background-collected.

1. Click **Edit > History Configuration** in the Tivoli Enterprise Portal to open the History Collection Configuration window.
2. Click the plus sign (+) to expand the **WebSphere MQ** branch on the left side of the window.
3. Click the collection that the managed system for which you want to stop historical data collection is assigned to.
4. Click the **Distribution** tab.
5. In the **Start collection on** list, select the managed system for which you want to stop historical data collection and click the right arrow to move it to the **Available** list.
6. To save your changes, click **Apply** to keep the window open or **OK** to close it.

Historical data collection is stopped on the managed systems that you move out of the **Start collection on** list for the historical collection definition.

Viewing historical data for a selected time frame

In historical workspaces, you can choose to display only historical data that is collected over a period of time in which you are interested. To do this, do the following steps:

1. Navigate to the historical workspace for which you want to view data from a particular period of time.
2. Click the **Specify Time Span for Query** button, which is located in the top left of each view in the historical workspace. The Select the Time Span window is displayed.
3. Select the data that you want to be displayed in the table. Available options are as follows:
 - **Real time.** If you select this option, only the data that is collected during the most recent sampling period is displayed in the table.
 - **Last X hours.** If you select this option, you can choose to display all historical data that goes back to a certain date and time. For example, all data collected over the past 24 hours.
 - **Custom.** If you select this option, you can specify the exact period for which you want historical data to be displayed.
4. If you selected the **Last X hours** option, enter the time period for which you want data to be displayed in the provided field, and select the units in which it is specified (for example, hours or days). You can also specify the following parameters:
 - **Use Detailed data.** If you select this option, the data from the detailed data tables is displayed in the table without summarization. You can also select the column that is used to determine whether data falls within the selected period from the Time list of columns containing timestamps.
 - **Use summarized data.** If you select this option, the data from the summarized data tables is displayed in the table. This data is aggregated by the time frame that is configured in the Historical Collection Configuration

window. If you configured shift times when you install IBM Tivoli Monitoring, you can also select for which shifts and days the data is displayed. See your IBM Tivoli Monitoring documentation for further information.

5. If you selected the **Custom** option, you can specify the following parameters:
 - **Use Detailed data.** If you select this option, the data from the detailed data tables is displayed in the table without summarization. You can also select the column that is used to determine whether data falls within the selected period from the Time column list of columns containing timestamps.
 - **Use summarized data.** If you select this option, the data from the summarized data tables is displayed in the table. From the Interval list, select the time period over which you want the data to be aggregated. If you configured shift times when you install IBM Tivoli Monitoring, you can also select for which shifts and days the data is displayed. See your IBM Tivoli Monitoring documentation for further information.
 - In the Start time and End time fields, select the time period for which you want the data to be displayed.
6. To apply the time span to all other views in this workspace that use the same query, select the **Apply to all views associated with this view's query** check box.
7. Click **OK** to exit the Select the Time Span window. The workspace is refreshed to reflect the time span that you selected.

For more information about this function, see your IBM Tivoli Monitoring documentation.

Tables available for historical data collection

For a complete list of tables that support historical data collection, see “Historical table record sizes” on page 639.

A mapping table for attribute groups and historical workspaces

You can use the mapping table to decide which attribute group to choose when configuring historical data collection for a workspace.

You can use the following mapping table to decide which attribute group to choose when configuring historical data collection for a workspace:

Table 3. A mapping table for attribute groups and historical workspaces

Attribute group name	Workspace name	Note
Application Accounting	Historical Application Accounting workspace	distributed systems only
Application Connections	Historical Application Connections workspace	distributed and z/OS systems
Application Long-Term History	Application Statistics by ApplID workspace	z/OS systems only
Application Queue Long-Term History	Historical Tran/Pgm Statistics by Queue workspace	z/OS systems only
Application Transaction/Program Long-Term History	Historical Application Statistics by Tran/Pgm workspace	z/OS systems only

Table 3. A mapping table for attribute groups and historical workspaces (continued)

Attribute group name	Workspace name	Note
Buffer Manager Long-Term History	Historical Buffer Pool Performance workspace	z/OS systems only
Channel Data	Real-time Channel Definitions workspace	distributed and z/OS systems
Channel Definitions	Channel Definitions workspace	distributed and z/OS systems
Channel Initiator Detail	Channel Initiator Status workspace	z/OS systems only
Channel Long-Term History	Historical Channel Performance workspace	distributed and z/OS systems
Channel Status	Channel Status workspace	distributed and z/OS systems
Channel Summary	Channel Summary workspace	distributed and z/OS systems
Connection Objects	Connection Objects workspace	distributed and z/OS systems
Current Queue Manager Status	Current Queue Manager Status workspace	distributed and z/OS systems
Error Log	Error Log workspace	distributed systems only
Event Archive	Event Archive workspace	distributed and z/OS systems
Listener Status	Listener Status workspace	distributed and z/OS systems
Log Data Set Status	Log Data Set Status workspace	distributed and z/OS systems
Log Manager Long-Term History	Historical Log Manager Performance workspace	z/OS systems only
MQ Action Log	MQ Action Log workspace	distributed and z/OS systems
MQ Channel Statistics	Historical MQ Channel Statistics workspace	distributed systems only
MQ Queue Statistics	Historical MQ Queue Statistics workspace	distributed systems only
MQI Call Statistics Details	Historical MQI Call Statistics workspace	distributed systems only
MQI Message Statistics Details	Historical MQI Message Statistics workspace	distributed systems only
MQI Statistics	Historical MQI Statistics workspace	distributed systems only
Message Manager Long-Term History	Historical Message Manager Performance workspace	z/OS systems only
Message Statistics	Historical Message Statistics workspace	distributed and z/OS systems
Page Set Long-Term History	Historical Page Set Statistics workspace	z/OS systems only
QSG Channels	Queue Sharing Group Channel Statistics workspace	z/OS systems only

Table 3. A mapping table for attribute groups and historical workspaces (continued)

Attribute group name	Workspace name	Note
QSG Coupling Facility Structure Backups	Queue Sharing Group CF Structure Backup Statistics workspace	z/OS systems only
QSG Coupling Facility Structure Connections	Queue Sharing Group CF Structure Connection Statistics workspace	z/OS systems only
QSG Coupling Facility Structures	Queue Sharing Group CF Structure Statistics workspace	z/OS systems only
QSG Qmgrs	Queue Sharing Group Queue Manager Status workspace	z/OS systems only
QSG Queues	Queue Sharing Group Queue Statistics workspace	z/OS systems only
Queue Accounting	Historical Queue Accounting workspace	distributed systems only
Queue Data	Real-time Queue Data workspace	distributed and z/OS systems
Queue Definitions	Queue Definitions workspace	distributed and z/OS systems
Queue Handle Status	Open Queue Handles workspace	distributed and z/OS systems
Queue Long Term History	Historical Queue Statistics workspace	distributed and z/OS systems
Queue Status	Queue Status workspace	distributed and z/OS systems
Topic Manager Long-Term History	Historical Topic Manager Performance workspace	z/OS systems only

Chapter 6. Manipulating WebSphere MQ messages

By using the message manipulation features of WebSphere MQ Monitoring agent, you can manipulate queued WebSphere MQ messages in the following ways:

- Browse the head and contents of a message
- Delete a message from a queue
- Forward a message from one queue to another
- The browse and delete messages functions that apply to messages on DLQs are accessed from the Dead-Letter Queue Messages workspace (see “Dead-Letter Queue Messages Workspaces” on page 115)
- The forward message function that applies to messages on DLQs is accessed from the Dead-Letter Queue Messages workspace (see “Dead-Letter Queue Messages Workspaces” on page 115)
- The browse and delete messages functions that apply to messages on other queues are accessed from the Queue Messages workspace (see “Queue Messages workspace” on page 140)
- The forward message function that applies to messages on other queues are accessed from the Queue Messages workspace (see “Queue Messages workspace” on page 140)

Settings for controlling access to WebSphere MQ messages

Because of their potential for serious damage, there are special security considerations for message manipulation. You can specify authorization level of access to Websphere MQ messages for all user IDs or for a specific ID.

Control the level of user access to queue manager messages with the following settings:

- The **MSGACCESS** parameter (at the QMGR and GROUP levels) and **SET QACCESS** monitoring settings in the configuration file of the WebSphere MQ Monitoring agent.

These elements set restrictions on the monitoring agent. The **MSGACCESS** parameter of the **SET GROUP**, **SET MANAGER**, and **SET QACCESS** monitoring options specify the level of message access that a Tivoli Enterprise Portal user ID has to messages on queues in the specified queue managers. Use the **SET QACCESS** options to specify which user account is used for message manipulation. When the WebSphere MQ Monitoring agent performs the message manipulate operation, it uses the message manipulation account as the user account to communicate with WebSphere MQ.

- The WebSphere MQ security setting on message manipulation account.

You can set restrictions on the message manipulation account that is passed to WebSphere MQ when the monitoring agent manipulates messages. For this level of security, you must do the following operations:

- Set up WebSphere MQ security on each system where WebSphere MQ is running.
- Enable and customize the WebSphere MQ API resource security feature.

Setting the message access authorization level

WebSphere MQ Monitoring agent can be configured to set message access authorization level when one of the following accounts is used:

- The Tivoli Enterprise Portal user ID as the account (default setting).
- The account of the WebSphere MQ Monitoring agent.
- The predefined account.

If you are unfamiliar with how to change monitoring options for an agent instance, review the steps in “Changing monitoring options” on page 14. If you are unfamiliar with the monitoring options used, review the descriptions of the options in “Monitoring options” on page 23

Do the following steps to set message access authorization level

1. Modify the **MSGACCESS** parameter in the **SET MANAGER** statement for a queue manager as needed, to specify the message manipulation authorization level. If not specified, this setting for the applicable **SET GROUP** statement is used.
 - If you specify the **MSGACCESS** parameter as NONE, DESC, RETRY, DATA, or DELETE, the **SET QACCESS** statement is ignored, and the message manipulation account is the same as the Tivoli Enterprise Portal user ID.
 - If you specify the value of USEQACCESS on the **MSGACCESS** parameter, the message manipulation account is defined on the **SET QACCESS** statement. If you do not specify the **SET QACCESS** statement, or if the **SET QACCESS** statement does not accommodate the specified Tivoli Enterprise Portal user ID for the specified queue name, the Tivoli Enterprise Portal user ID has the default message manipulation right of NONE; the specified Tivoli Enterprise Portal user ID cannot perform any message manipulation on the specified queue.
 - a. Use the **SET QACCESS** statement to define multiple rules so that different Tivoli Enterprise Portal user IDs can have different message manipulation authorization levels. In this case, the message manipulation account can be specified. Table 4 shows the outcomes when a Tivoli Enterprise Portal user attempts to manipulate a message on a specified queue name. (These outcomes assume that the specified queue name passes the **NAME** parameter value check that is defined in **SET QACCESS** statement).

Table 4. Message manipulation on a specified queue name

MSGACCOUNT value	Tivoli Enterprise Portal user ID matches the MSGAUTHUSERS parameter value?	Rule result	Message Manipulation Account
UIUSER	YES	SUCCESS	Tivoli Enterprise Portal user ID
	NO	FAIL	N/A
MQAGENT	YES	SUCCESS	monitoring agent Account
	NO	FAIL	N/A
USER=user-id	YES	SUCCESS	user ID
	NO	FAIL	N/A

If the rule result in the above table is FAIL, the given **SET QACCESS** settings are ignored for the current request, and other SET QACCESS settings are

checked. If none apply (all result in FAIL), the resultant access is NONE.

- b. Optional: Use multiple **SET QACCESS** statements to impose the strictest rules on a particular Tivoli Enterprise Portal user for a particular queue. If you issue multiple **SET QACCESS** commands that specify different manipulation access settings, and more than one of the access settings applies to a given Tivoli Enterprise Portal user, WebSphere MQ Monitoring agent assigns the lowest manipulation access to that user. The order of manipulation access settings from lowest to highest is: NONE, DESC, RETRY, DATA, DELETE.

2. Save your settings.

If you issue the following commands, the user SYSADMIN potentially has the manipulation access of DESC:

- SET GROUP NAME(GROUP1) DEFAULT(YES) COMMAND(YES) MSGACCESS(DATA)
- SET MANAGER NAME(QM1) MSGACCESS(USEQACCESS)
- SET QACCESS NAME(DEMO*) MSGAUTHUSERS(*) MSGACCOUNT(MQAGENT) MSGACCESS(DELETE) MGRNAME(QM1)
- SET QACCESS NAME(D*) MSGAUTHUSERS(SYS*) MSGACCOUNT(USER=DEMOUSER) MSGACCESS(DESC) MGRNAME(QM1)

Assume that the Tivoli Enterprise Portal user SYSADMIN wants to manipulate messages on the DEMO.QUEUE1 queue. The first manipulation access that applies to this user is DELETE, and the message manipulation account is the agent account (MQAGENT). However, the manipulation access of DESC also applies to this user, and the message manipulation account is DEMOUSER. WebSphere MQ Monitoring agent assigns the message manipulation access of DESC to this user, because that is the lowest manipulation access that applies. If this Tivoli Enterprise Portal user attempts to delete a message, the following message is displayed: (KMQW008E) Not allowed By MSGACCESS, and the WebSphere MQ Monitoring agent prevents the user from deleting the message. See Chapter 2, “Customizing monitoring options,” on page 11 for more detailed description.

Interrelationship of Message Manipulation Access and Message Manipulation Account settings

You do not need to use the WebSphere MQ security feature; you can use only the **MSGACCESS** parameter settings on the **SET GROUP** and **SET MANAGER** monitoring options to control access to queue manager messages. For example, you can accept the default setting of DESC; then users can browse message descriptors in summary or detail reports. Or, you can change the default to DATA so that users can browse message contents. However, these settings apply to all user IDs at your site. If someone at your site needs to delete messages, you must set **MSGACCESS** to DELETE, which gives all user IDs permission to delete messages.

Use the **SET QACCESS** statement in conjunction with WebSphere MQ security. The WebSphere MQ security settings on the **Message Manipulation Account** are passed to the monitoring agent. Using the two options together ensures that user IDs have only the message access that they need. If a user attempts to view a message report and the user does not have the permission to view that report, the following message is displayed:

```
(KMQW000W)2035-Not_Authorized
```

Table 5 shows the combinations of MSGACCESS settings and WebSphere MQ settings that a user ID needs for the different levels of access to queue manager messages.

Table 5. Combination of MSGACCESS settings and WebSphere MQ settings

Level of message access	The required MSGACCESS for the queue manager	The required MQ security access to the queue for the user ID
List the messages on a queue (display the Queue Messages workspace)	DESC, RETRY, DATA, or DELETE	MQGET (with the browse option)
Browse the descriptor of a message	DESC, RETRY, DATA, or DELETE	MQGET (with the browse option)
Retry a message on the dead-letter queue or forward a message on the dead-letter queue to another queue	RETRY, DATA, or DELETE	MQGET (without the browse option)
Browse the contents of a message	DATA or DELETE	MQGET (with the browse option)
Delete a message	DELETE	MQGET (without the browse option)

The following two sample are procedures for implementing security for your queue manager messages:

- Procedure 1: The simplest implementation for manipulating messages is the following statements:

```
SET GROUP NAME(GROUP1) DEFAULT(YES) COMMAND(YES) MSGACCESS(USEQACCESS)
SET MANAGER NAME(QM1)
SET QACCESS NAME(*) MSGAUTHUSERS(*) MSGACCOUNT(MQAGENT) MSGACCESS
-(DELETE) MGRNAME(QM1)
```

Any Tivoli Enterprise Portal user can browse, retry, view message content, and delete the messages on any queues on the QM1 queue manager through this configuration. There is no security check and your queue manager message protection is minimal.

- Procedure 2: The moderate implementation for manipulating messages is as follows:

```
SET GROUP NAME(GROUP1) DEFAULT(YES) COMMAND(YES) MSGACCESS(USEQACCESS)
SET MANAGER NAME(QM1)
SET QACCESS NAME(*) MSGAUTHUSERS(*) MSGACCOUNT(MQAGENT)
-MSGACCESS(DESC) MGRNAME(QM1)
SET QACCESS NAME(DEADQ*) MSGAUTHUSERS(A*) MSGACCOUNT(MQAGENT)
-MSGACCESS(RETRY) MGRNAME(QM1)
SET QACCESS NAME(DATAQ*) MSGAUTHUSERS(B*) MSGACCOUNT(USER=DATAOPR)
-MSGACCESS(DATA) MGRNAME(QM1)
SET QACCESS NAME(TEMP*) MSGAUTHUSERS(SYS*) MSGACCOUNT(MQAGENT)
-MSGACCESS(DELETE) MGRNAME(QM1)
```

This configuration has the following implications:

- Any Tivoli Enterprise Portal user can browse the description of any queue messages.
- A Tivoli Enterprise Portal user named A* (for example, Admin, Albert) can retry the messages that belong to queues named DEADQ* (for example, DEADQ1, DEADQ.BACKUP), and browse the message descriptions.

- The Tivoli Enterprise Portal user named B* (for example, Bob) can view the message contents that belongs to queues named DATAQ* (for example, DATAQ1, DATAQ.CUSTOMER1), browse the message descriptions, and retry the messages. When the WebSphere MQ Monitoring agent issues the message manipulation to WebSphere MQ, it uses the DATAOPR as the account to interact with the WebSphere MQ. DATAOPR can have the right to view the message at queues named DATAQ* when the WebSphere MQ security environment of each node is customized.
- A Tivoli Enterprise Portal user named SYS* (for example, SYSAdmin) has all the rights for the messages that belong to queues named TEMP* (for example, TEMP1).

Chapter 7. Collecting queue statistics data

The Queue Statistics feature provides additional current and historical information about message arrival and departure rates, high queue depth, and the time when most recent activity occurred.

You can better monitor queue activity with this information, such as determining whether activity is at expected levels, whether messages are being read from the queues within a reasonable time frame, or whether messages are being put on a queue and not retrieved.

This optional feature provides additional data in the Queue Statistics and Queue Manager Status workspaces, additional Queue Statistics attributes for use in situations, and data for the MQSeries_No_Queue_Messages_Read predefined situation. You must enable this optional feature first, otherwise the value of some attributes in the related workspaces is 0.

For details about attributes, predefined situations, and the workspaces that are provided with WebSphere MQ Monitoring agent, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help.

Enabling queue statistics monitoring

WebSphere MQ Monitoring agent uses the **Reset Queue Statistics** command to obtain queue statistics information. Queue statistics data is available only if it is collected for the queue or queues.

Monitoring for queue statistics data is turned off by default to ensure downward compatibility. To enable the queue statistics monitoring, do the following steps:

1. Optional: If you are unfamiliar with how to change monitoring options for an agent instance, review the steps in this section “Changing monitoring options” on page 14. If you are unfamiliar with the monitoring options used, review the descriptions of the options in “Monitoring options” on page 23.
2. Specify STATISTICS(YES) in the **SET QUEUE** statement for the queue or queues that you want to monitor.
3. Optional: To generate performance-related events, specify the **PERFMEV** attribute of the monitored queue manager as Enabled. For instructions about how to change attribute values of queue managers, see the *System Administration Guide* of WebSphere MQ.

Remember:

- Make sure that the WebSphere MQ Monitoring agent is the only application that issues the **Reset Queue Statistics** command.
- The **Reset Queue Statistics** command has an impact on the event data of generated performance events. If WebSphere MQ events are monitored by other applications that rely on the event data of performance events, do not specify STATISTICS(YES).

Queue Statistics feature consideration

Using the Queue Statistics feature affects other information processing. Review the information about the information processing that might be affected.

Queue service interval events monitoring

If you are monitoring queue service interval events for some queues, specify `STATISTICS(NO)` in the **SET QUEUE** statement for those queues. This configuration ensures that the queue service interval events continue to function correctly. However, some queue statistics are not available on these queues unless application queue statistics monitoring is active on z/OS systems (`SET APPL STATISTICS(ALL|NODYNAMQ)`).

Queue events information monitoring

When you are monitoring for queue events information and the following events occur, the same queue statistics are collected and reset:

- `Queue_Depth_High`
- `Queue_Depth_Low`
- `Queue_Full`

After the reset, the queue statistics information that the agent collects is incomplete. The agent attempts to get queue statistics from events, but the agent succeeds only if event monitoring is turned on. If event monitoring is not turned on, the collected information is incomplete. If you are monitoring for queue events, specify `EVENTS(BROWSE)` or `EVENTS(REMOVE)` on the **SET MANAGER** command to ensure the most accurate event reporting.

Another application using the Reset Queue Statistics command

When the **Reset Queue Statistics** command is issued, the queue statistics information is reset. As a result, if another application in addition to the WebSphere MQ Monitoring agent issues this command, the agent cannot provide complete and accurate statistics.

Coexistence with Application Statistics (z/OS systems only)

If Queue Statistics data that is collected by the Reset Queue Statistics command and the Application Statistics data are both being collected for a queue, the data used by the WebSphere MQ Monitoring agent is the same data that is collected by the Reset Queue Statistics command. The Reset Queue Statistics command provides data about all activities in a queue, but Application Statistics data provides information about the applications that are being monitored.

Chapter 8. Monitoring the publish and subscribe environment

The WebSphere MQ Monitoring agent provides a wide range of options for monitoring your WebSphere MQ publish and subscribe environment.

Important: Publish/subscribe related workspaces and features are only available when WebSphere MQ 7.0 or later is installed.

Subscription topology

You can use the WebSphere MQ Monitoring agent to get a clear overview of a particular topic and the subscriptions that are associated with it by viewing a graphical version of the topology. This view is a part of the Topic Status - Subscribers workspace.

The topology view contains information about subscriptions to a single topic. The topmost node in this view represents a topic, which is labeled with the topic string. The second tier of the view contains subscriptions to the topic, labeled with the subscription names. The third tier contains the applications and destination queues that are associated with each subscription. A single destination queue might be used by more than one application, and for more than one subscription. Only applications that are currently running are displayed.

The topic is labeled with the first 48 characters of the topic string. If the topic string is longer than 48 characters, it is truncated. Subscriptions are labeled with the subscription name by default. If a subscription has no name defined, the subscription ID is used instead.

An example of the topology view is shown in Figure 11.

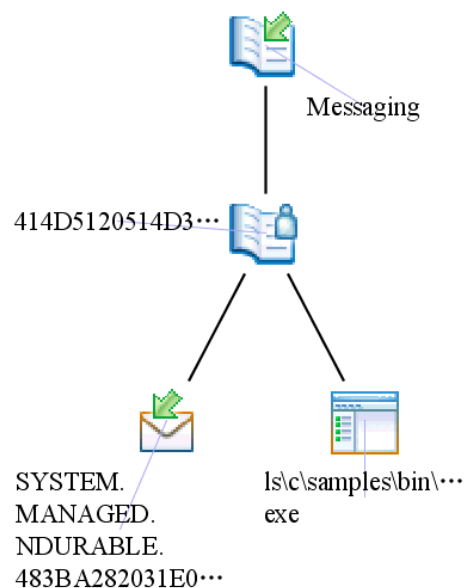


Figure 11. The subscription topology view

This topology shows subscriptions to the topic messaging, which is displayed in tier 1 of the diagram. Tier two contains the subscriptions to the topic. There is only one subscription to the Messaging topic. The subscription has no name value, and is labeled with its subscription ID. The third tier contains the destination queue and the application that subscribes to the topic. This subscription has a destination queue in which published messages are stored before being read by the application, and an application that subscribes to the topic. If the application with which the subscription is associated is not currently running, it is not displayed in the diagram.

For instructions about how to view the subscription topology, see “Viewing the subscription topology” on page 93

Situations for queue depth monitoring

The following two situations are available for monitoring the depth of destination queues that are used by subscriptions:

- MQSeries_Queue_Depth_High
- MQSeries_Local_DestQ_Depth_High

The first of these situations can be used to monitor the depth of any queue. The second can only be used to monitor the depth of queues that are used as destination queues by subscriptions. A comparison of the MQSeries_Queue_Depth_High situation and the MQSeries_Local_DestQ_Depth_High situation is shown in Table 6.

Table 6. Comparison of different situations for monitoring queue depth

Feature	MQSeries_Queue_Depth_High	MQSeries_Local_DestQ_Depth_High
Types of monitored queues	Any queue	Any destination queue that are used by a subscriber
Queue location	Local and remote queues	Local queues only
Identifies which subscriptions are affected	No	Yes

In most circumstances, use the MQSeries_Local_DestQ_Depth_High situation to monitor destination queues that are used by subscribers if the queue manager that manages the queue is running on the same system as the subscriber. This is advantageous because this situation provides additional functionality for identifying subscriptions that are affected by a queue that reaches its high depth threshold. The MQSeries_Queue_Depth_High situation does not.

If the queue does not run on the same system as its subscribers, the MQSeries_Local_DestQ_Depth_High situation cannot detect queue depth. In this case use the MQSeries_Queue_Depth_High situation. If the queue is not used as a destination queue by subscribers, use the MQSeries_Queue_Depth_High situation.

Searching for publish and subscribe information

This feature and related workspaces are only available when WebSphere MQ 7.0 or later is installed.

You can use the search function to search for specific topic string, topic name, and subscription name information. Search facilities are accessed from different workspaces, depending on the information that you want to search for.

When you perform a search operation from a workspace, the workspace is not closed. Instead, a search window in which you can enter search criteria is displayed. When the search is completed, the results are displayed in the original workspace in place of its original data.

Remember: Do not try modifying the properties of the workspace where the search results are displayed after you perform a search from a workspace; if you do, the original workspace is displayed even if you cancel the modification. If you want to modify the workspace properties, do it before you perform the search operation.

To search for topic string, topic definition, and subscription name information, do the following steps:

1. Navigate to the workspace containing the type of data that you want to search for. The following workspaces support searching:
 - Topic Status
 - Topic Status – Subscribers
 - Topic Definitions
 - Subscription Definitions
 - Enterprise Wide Subscription Definitions
2. Right-click the workspace; then click **MQ Search** to open the search window.
3. Enter the search criteria in the form of a topic string. The topic string can contain plus sign (+) and number sign (#) wildcard characters. These wildcard characters perform as follows:

plus sign (+)

Includes all nodes at the specified level of the hierarchy, but not their descendents. For example, the /STOCK/+ search string returns objects that are referenced by the /STOCK/NYSE topic string , but not /STOCK/NYSE/IBM.

number sign (#)

Includes all nodes at the specified level of the hierarchy, and their descendents. For example, the /STOCK/# search string returns both objects that are referenced by the /STOCK, /STOCK/NYSE, and /STOCK/NYSE/IBM topic strings.

4. Optional: If you want to enter advanced search criteria, click **Advanced**. In the **Conditions** section of the window, enter any search conditions that you want to specify. You can use advanced search criteria to specify extra conditions that limit the returned search results. The search window with advanced options displayed is shown in Figure 12 on page 92.

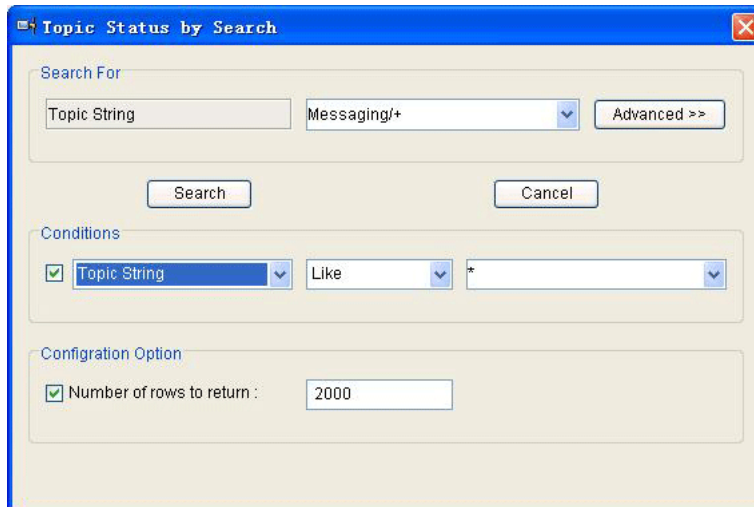


Figure 12. The search window with advanced options displayed

Available options are as follows:

- **Conditions** Use the Conditions options to limit the number of results that the search returns by specifying additional criteria. Do the following steps:
 - a. Select the check box on the left.
 - b. In the leftmost field, select the attribute for which you want to add a condition. Not all columns are available for use as search conditions.
 - c. In the middle field, select the comparison operator that you want to use. For example, **equals** or **less than**.
 - d. In the rightmost field, enter the value that you want to use against the data that you are searching. This field supports the asterisk wildcard (*) character representing any combination of alphanumeric characters at the end of the input string.

Remember: If the asterisk is not the last character in the input string, it is treated as a regular character and not as a wildcard character.

For example, you might enter the criteria shown in Figure 13.



Figure 13. Specifying conditions in the advanced options of the search window.

- **Number of rows to return** The value of this option determines the maximum number of rows that are returned by the search. If the number of items matching the search criteria exceeds this value, some items are omitted from the results. If this value is set too high, searching might be very slow.
5. Click **Search**.
 6. If you change the value of the **Number of rows to return** option and the value is greater than the default value (2000), a warning message is displayed reminding you that setting this value too high might cause the search to be very slow. Click **OK**.

After the search completes, the results are displayed in the workspace in place of the original data.

Viewing the subscription topology

To view the subscribe topology of a particular topic, do the following steps:

1. In the navigator view, right-click **Publish Subscribe**; then click **Topic Status** workspace.
2. In the table at the bottom of the workspace for which you want to view the topology, right-click the topic, and click **Link To > Topic Status - Subscribers**. The Topic Status - Subscribers workspace containing the topology view is displayed.

Requirement: The topic that you select in the Topic Status workspace must have at least one subscriber, otherwise no topology view is available. The number of subscribers to a topic is indicated in the **Subscriber count** field in the Topic Status workspace.

Preventing destination queues from overflowing

This feature and related workspaces are only available when WebSphere MQ 7.0 or later is installed.

You can use the WebSphere MQ Monitoring agent to alert you to destination queues used by subscriptions that are likely to overflow, and to take steps to resolve the problem before messages are lost.

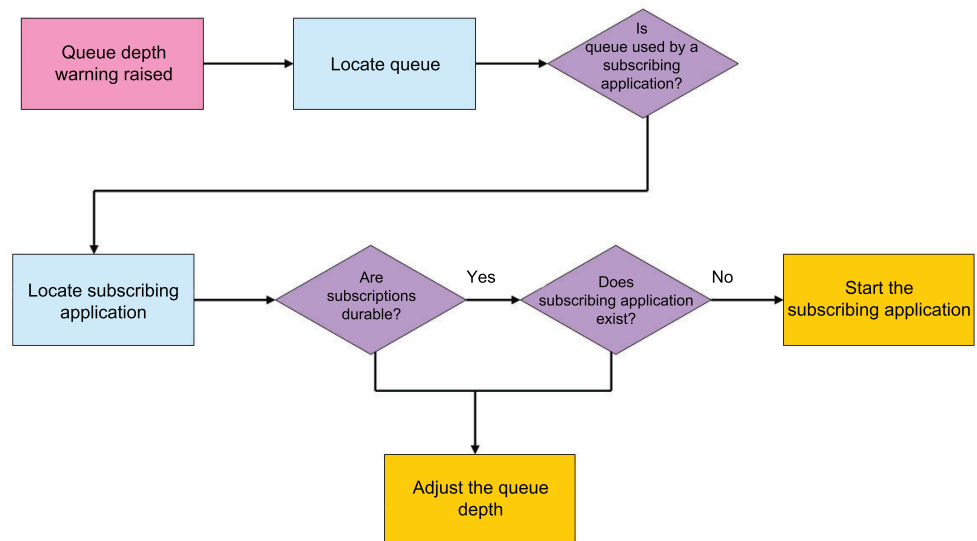


Figure 14. Preventing destination queues from overflowing

Do the following steps, as illustrated in Figure 14:

1. Use the MQSeries_Queue_Depth_High predefined situation to monitor the depth of subscription queues and to alert you that a queue becomes too full.

2. When the MQSeries_Queue_Depth_High situation is triggered because that a queue is too full, move the mouse over the situation icon in the navigator view. A window containing information about the situation and a link to further details is displayed. Click the link.
3. The detailed situation information that is displayed indicates which queue triggered the situation. In the table that represents the queue, right-click the row, and link to the Subscription Definitions or Enterprise Wide Subscription Definitions workspace to see which subscriptions are using the queue that triggered the situation.

The Subscription Definitions workspace contains information about all subscriptions. The Enterprise Wide Subscription Definitions workspace contains information about all system defined remote subscriptions. A remote subscription is a subscription that stores published messages in a queue that belongs to a queue manager other than the queue manager that hosts the subscription.
4. Right-click the subscription that uses the queue that triggered the situation, and link to the Subscription Status workspace. In the Subscription Status workspace, check whether the subscription is durable.
5. If the subscription is durable, in the Subscription Status workspace that contains information about the subscription that triggered the situation, right-click the row and link to the Application Connections workspace.
 - If the Application Connections workspace contains no data, the application is stopped and messages that are sent to the queue by the publisher are not removed from the queue. Start the application to resolve the problem.
 - If the Application Connections workspace contains data, messages are probably not being processed fast enough by the subscribing application. To resolve this problem, increase the depth of the subscription queue.
6. If the subscription is non-durable, the subscription application is not processing messages fast enough. To resolve this problem increase the depth of the subscription queue.

Remember: If this situation persists for a long time, the message queue eventually becomes full even after you increase its depth.

Resolving publishing failures

Publishing fails if a published message cannot be delivered to the destination queue that is used by a subscriber or to a dead letter queue. In this case, when the publishing application tries to publish the message, the application is notified that publishing failure occurs by WebSphere MQ.

The most likely cause of a publishing failure is that the destination queue is full. The procedure for resolving a publishing failure is illustrated in Figure 15 on page 95.

Publishing failure can occur when a message cannot be delivered to its destination queue or a dead letter queue. However, whether a publishing failure occurs in this situation depends on the values of two WebSphere MQ variables, NPMMSGDLV and PMSGDLV. If these variables are configured incorrectly, you can ignore the publishing failure. For more information about these two variables, see your WebSphere MQ documentation.

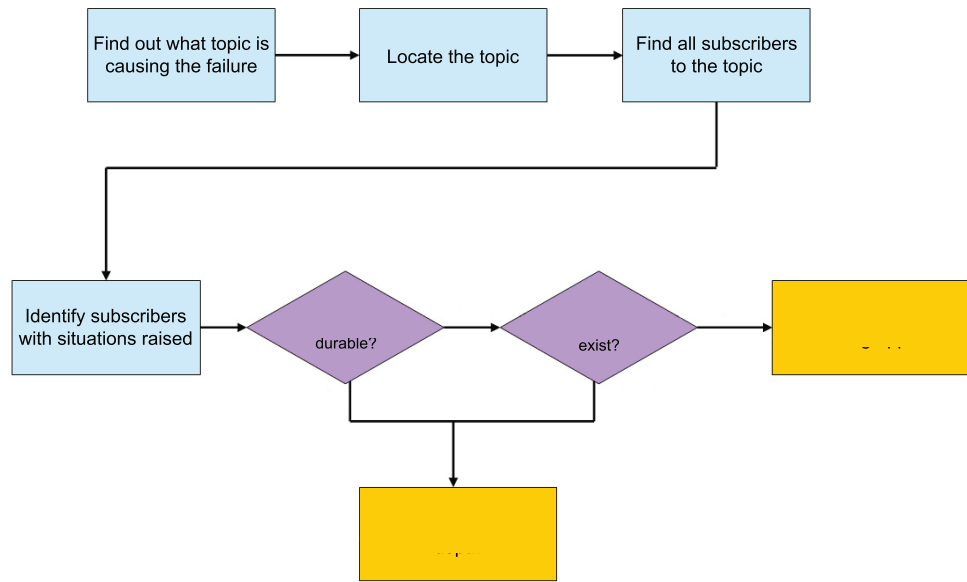


Figure 15. Resolving publishing failure

To find the cause of publishing failure and resolve the problem, do the following steps:

1. Locate the subscription for which publishing failure occurred by searching for the topic string using the Topic Status by Search option. The topic string is probably written to a log by the publishing application (although this depends on how the application is written). For more information about searching, see “Searching for publish and subscribe information” on page 90.
2. In the Topic Status workspace that contains information about the subscription for which publishing failed, right-click the row, and link to the Subscription Definitions workspace.
3. Right-click the subscription that is associated with the queue that triggered the situation, and link to the Subscription Status workspace. In the Subscription Status workspace, check whether the subscription is durable.
4. If the subscription is durable, in the Subscription Status workspace that contains information about the subscription that caused the publishing failure, right-click the row, and link to the Application Connections workspace.
 - If the Application Connections workspace contains no data, the application is stopped and messages that are sent to the queue by the publisher are not removed from the queue. Start the application to resolve the problem.
 - If the Application Connections workspace contains data, messages are probably not being processed fast enough by the subscribing application. To resolve this problem, increase the depth of the subscription queue.
5. If the subscription is non-durable, messages are probably not being processed fast enough by the subscribing application. To resolve this problem, increase the depth of the subscription queue.

Remember: If this situation persists for a long time, the message queue eventually becomes full even after you increase its depth.

Chapter 9. Running Reports with Tivoli Common Reporting

Tivoli Common Reporting is a reporting feature available to users of Tivoli products, and provides a consistent approach to viewing and administering reports. Cognos data model and sample reports for WebSphere MQ Monitoring agent are provided in a report package for use with Tivoli Common Reporting 2.1.1. The report package is a set of historical reports for both raw and summarized data that is collected in Tivoli Data Warehouse. You can use the sample reports to create your own reports on the data model.

Prerequisite

Before you can run reports with Tivoli Common Reports, make sure that the following requirements are met in your environment.

- The WebSphere MQ Monitoring agent is installed and running.
- The Warehouse Proxy Agent is started.
- The Summarization and Pruning Agent is started.
- Historical data collection is enabled for the related attribute group.
- Summarized tables and views are created and populated in the Tivoli Data Warehouse.

Tips:

- To check whether the required summarized tables and views have been created, run the following queries against Tivoli Data Warehouse. If the tables and views have been correctly created, you can see the result sets that contain HV, DV, WV, QV, and YV in each base table, for example, Channel_Status, Channel_Status_HV, Channel_Status_DV, Channel_Status_WV, Channel_Status_MV, Channel_Status_QV, and Channel_Status_YV.
 - DB2

```
select distinct "TABNAME" from SYSCAT.TABLES where
  "TABSHEMA" = 'ITMUSER'
```
 - Oracle

```
select distinct "TABLE_NAME" from USER_TABLES
```
 - SQL Server

```
select TABLE_NAME "VIEWNAME" from INFORMATION_SCHEMA.TABLES
```
- Cognos reports can be run against yearly, quarterly, monthly, weekly, daily, and hourly summarization intervals. You can decide which summarization interval is important to you to run reports against, and enable summarization for the related attribute group.
 - Application Accounting
 - Application Connections
 - Application Long-Term History
 - Application Queue Long-Term History
 - Application Transaction/Program Long-Term History
 - Buffer Manager Long-Term History
 - Channel Data
 - Channel Definitions
 - Channel Initiator Detail

- | - Channel Long-Term History
- | - Channel Status
- | - Channel Summary
- | - Connection Objects
- | - Current Queue Manager Status
- | - Error Log
- | - Listener Status
- | - Log Data Set Status
- | - Log Manager Long-Term History
- | - MQ Action Log
- | - MQ Channel Statistics
- | - MQ Event Statistics
- | - MQ Queue Statistics
- | - MQI Call Statistics Details
- | - MQI Message Statistics Details
- | - MQI Statistics
- | - Message Manager Long-Term History
- | - Message Statistics
- | - Page Set Long-Term History
- | - QSG Channels
- | - QSG Coupling Facility Structure Backups
- | - QSG Coupling Facility Structure Connections
- | - QSG Coupling Facility Structures
- | - QSG QMgrs
- | - QSG Queues
- | - Queue Accounting
- | - Queue Data
- | - Queue Definitions
- | - Queue Handle Status
- | - Queue Long Term History
- | - Queue Status
- | - Topic Manager Long-Term History

Installing Cognos reports for WebSphere MQ Monitoring agent

Installing Cognos reports for the WebSphere MQ Monitoring agent includes installing agent-specific reports, configuring Cognos data source, and creating Tivoli Reporting and Analytics Model (TRAM) dimensions. The Cognos reports for the WebSphere MQ Monitoring agent must be installed on Tivoli Common Reporting server.

A report package for the WebSphere MQ Monitoring agent is provided in a folder named REPORTS on the installation disk. Use one of the following folders within the REPORTS folder to install Cognos reports depending on the database type of Tivoli Data Warehouse:

- DB2[®] and SQL Server: ITCAM_Agents_for_WebSphere_Messaging_v71
- Oracle: ITCAM_Agents_for_WebSphere_Messaging_v71_for_Oracle

1. If the report package folder is on a remote system, do one of the steps depending on the operating system where the Tivoli Common Reporting server is installed:
 - Windows: Map the remote folder to a local drive.
 - Systems other than Windows: Mount the remote system.
2. In the report folder, start the installation program by doing one of the following steps:
 - Windows: Double-click the `setup_windows.exe` file.
 - Systems other than Windows: Run the `setup_<platform>.bin` file.
3. Select the language of the installation program and click **OK**.
4. In the Welcome window, click **Next**.
5. In the Choose the Installation Folder window, specify the path to the Tivoli Common Reporting component directory and click **Next**.

Important: After this step, you cannot step back to this window to change the installation folder again. If you want to change the installation folder afterwards, cancel the installation program and start it again from Step 2.

6. In the Choose the reports for the installation window, select **WebSphere MQ Monitoring Agent Reports** and click **Next**.
7. In the Cognos Engine Configuration window, type the Tivoli Common Reporting user name and password, and then click **Next**.
8. In the Cognos Data Source TDW Configuration window, provide all required database information to define the Cognos data source, and click **Next**.

Remember: If you choose to skip this step, you must configure the connection to a database to access your data after the installation is complete. For instructions about how to configure a data connection, see Tivoli Common Reporting documentation.

9. In the Data Script runDbScript Configuration window, provide all required database information to create TRAM dimensions and click **Next**.

Important: The user ID that is used to run the database script must have administrator access to the IBM_TRAM schema. The script requires the administrator access to delete the IBM_TRAM schema related objects and re-create them.

Remember: Do not skip this step, otherwise, you must manually add TRAM dimensions, which are required for running Cognos reports and using the data model.

10. Review the installation information and click **Install**.
11. After the installation is complete, click **Done** to exit.

Working with reports

Topics in this section provide instructions about how to run Cognos reports. If you did not use the installation wizard to install Cognos reports (see “Installing Cognos reports for WebSphere MQ Monitoring agent” on page 98), you must do the following steps before you can run Cognos reports:

1. Save the report package for WebSphere MQ Monitoring agent to the `TCR_component_dir\cognos\deployment` directory.

2. Import the WebSphere MQ Monitoring agent report package to Tivoli Common Reporting.
3. Create the Cognos data source for your report.

Tips:

- The report package for the WebSphere MQ Monitoring agent is provided as a compressed file named WebSphereMQReports.zip on the installation disk in the following folders:
 - For DB2 and SQL Server: REPORTS\
ITCAM_Agents_for_WebSphere_Messaging_v71\reports\cognos_reports\
Messaging\packages\WebSphereMQReports.zip
 - For Oracle: REPORTS\ITCAM_Agents_for_WebSphere_Messaging_v71_for_Oracle\
reports\cognos_reports\Messaging\packages\
WebSphereMQReports_Oracle.zip
- For more information about how to work with reports using IBM Cognos 8 Business Intelligence Reporting, see the IBM Tivoli Common Reporting Information Center.

Creating or editing web-based reports

You can create and customize your own reports using the Cognos Report Studio, which is a web-based report editor.

1. Log on to the Tivoli Common Reporting interface, and go to **Common Reporting**.
2. In the Work with reports window on the right, select **Report Studio** from the **Launch** list.
3. Use the menu controls to create a report or edit existing reports by formatting the layout and manipulating the data that appears in the report.
4. Save your report, and run it anytime you want to present on its underlying data.

Creating ad hoc reports

After you import the report package provided for the WebSphere MQ Monitoring agent, you can create ad hoc reports by using simple queries and formatting.

To create ad hoc reports, perform the following steps:

1. Log on to the Tivoli Common Reporting interface, and go to **Common Reporting**.
2. In the Work with reports window on the right, select **Query Studio** from the **Launch** list.
3. Select the WebSphere MQ Monitoring Agent package. A new window is open and you can create a report.
4. From the navigation on the left, drag the data items that you want to include in your report.

Remember: Always drag the attributes that belong to the same query to your report. If you drag two attributes from different queries, the resulting data might be wrong. However, you can drag any time-related attributes from the Time identifier to your report.

5. Once you finish editing the report data and appearance, save the report by specifying a name, and optionally a description, and a screen tip.

Tip: When you do an ad hoc query, you can either see the live data as you drag the items, or switch the mode to show placeholders for the data and then run the report.

Some other things that you can do in a report

- Combining metrics in one table

You can combine different metrics into one table. For example, you can drag Connection Name from the Channel Long-Term History table, and In-Doubt Status from the Channel Status table to the same table.

- Grouping data

You can group the data by clicking the Type column and then the Group icon



- Creating a chart

To create a chart, click the Chart icon . A chart is created for each section with appropriate groups.

For more information about using Query Studio, see Query Studio User Guide at the IBM Cognos 8 v4 Business Intelligence Information Center.

Data model of WebSphere MQ Monitoring agent

The data model for the WebSphere MQ Monitoring agent is a star schema with dimensions or identifiers that are separated from facts or metrics. Metrics are measurable (numeric) attributes, which can be aggregated by identifiers. The relationship among the metric tables is defined using two common identifiers, resources and time.

The WebSphere MQ Monitoring agent collects various metrics. All the metrics are modeled for the agent. The metrics are classified into two categories, key metrics and extended metrics.

Key metrics

The key metrics are the most important or the most frequently used metrics. The key metrics are divided into three groups, Resource Usage, Performance, and Availability. You can either see the raw metrics or summarized (daily and hourly) metrics.

Extended metrics

In addition to the key metrics, the extended metrics include all the other metrics of the WebSphere MQ Monitoring agent.

Identifiers

Identifiers are used to link metrics data across different agents. The two primary identifiers that are used by the WebSphere MQ Monitoring agent are resource and time.

Resource identifiers include execution group and host name. Time identifiers include various attributes of time, by which the metrics can be grouped, such as standard timestamp, date, minute, hour, day, week of year, month, quarter, or year.

Attributes

Attributes describe the identifiers. For example, the detailed information about a channel can be described by the attributes, such as channel type, query type, or command level.

Sample reports

Six sample reports are provided in the report package for the WebSphere MQ Monitoring agent. For the agent to get data to display in the sample reports, historical data collection must be enabled for the related attribute groups.

Table 7. Historical attribute groups for sample reports

Sample report	Attribute group
"Queue Manager Daily Availability report" on page 104	Current Queue Manager Status (detailed data)
"Queue Manager Weekly Availability report" on page 104	
"Channel Daily Availability report"	Channel Status (detailed data)
"Channel Weekly Availability report" on page 103	
"Top N Queue Full report" on page 104	Queue Long Term History (summarized data)
"Queue Full Detail Report" on page 103	

Channel Daily Availability report

This report shows the daily availability of the channel that you specified, including the availability of the whole day and the availability of each hour during the day. Use this report to check the channel status in one day.

Table 8. Parameters of Channel Daily Availability report

Parameter group	Parameter name	Usage
Date Range	Report Period	Select the day that you want to check the channel status for.
Sampling Interval	Sampling Interval	Select the collection interval on the History Collection Configuration panel of Tivoli Enterprise Portal.
Resource Selection	Host Name	Specify the host name of the channel that you want to check.
	Queue Manager Name	Specify the name of the queue manager.
	Channel Name	Specify the name of the channel.
Status	Warning	Specify an integer as the warning threshold. If the channel availability percentage is less than the specified value, it is marked as warning status.
	Critical	Specify an integer as the critical threshold. If the channel availability percentage is less than the specified value, it is marked as critical status.

Channel Weekly Availability report

This report shows the weekly availability of the channel that you specified, including the availability of a whole week and the availability of each day in the week. Use this report to check the channel status in one week.

Table 9. Parameters of Channel Weekly Availability report

Parameter group	Parameter name	Usage
Date Range	Report Period	Select one day in a week that you want to check the channel status for.
Sampling Interval	Sampling Interval	Select the collection interval on the History Collection Configuration panel of Tivoli Enterprise Portal.
Resource Selection	Host Name	Specify the host name of the channel that you want to check.
	Queue Manager Name	Specify the name of the queue manager.
	Channel Name	Specify the name of the channel.
Status	Warning	Specify an integer as the warning threshold. If the channel availability percentage is less than the specified value, it is marked as warning status.
	Critical	Specify an integer as the critical threshold. If the channel availability percentage is less than the specified value, it is marked as critical status.

Queue Full Detail Report

This report displays the utilization of a specified queue over a time period.

Table 10. Parameters of Queue Full Detail report

Parameter group	Parameter name	Usage
Date Range	Report Period	Specify a time range for the report, such as Last Week, Current Month, Last 30 Days.
	Start Date	Select a start date from the calendar and start time from the time widget. Both date and time have to be specified.
	End Date	Select an end date from the calendar and end time from the time widget. Both date and time have to be specified.
Sampling Interval	Summarization Type	Specify the collection interval on the History Collection Configuration panel of Tivoli Enterprise Portal.
	Include shift period	Select to see data during peak hours, off-peak hours, or both.
	Include vacation period	Select to see data during the working days, vacations, or both.
Resource Selection	Host Name	Specify the name of the host that you want to check.
	MQ Manager Name	Specify the name of the queue manager that runs on the specified host.
	Queue Name	Specify the name of the queue within the specified queue manager.

Queue Manager Daily Availability report

This report shows the daily availability of the queue manager that you specified, including the availability of the whole day and the availability of each hour during the day. Use this report to check the queue manager status in one day.

Table 11. Parameters of Queue Manager Daily Availability report

Parameter group	Parameter name	Usage
Date Range	Report Period	Select the day that you want to check the queue manager status for.
Sampling Interval	Sampling Interval	Select the collection interval on the History Collection Configuration panel of Tivoli Enterprise Portal.
Resource Selection	Host Name	Specify the host name of the queue manager that you want to check.
	Queue Manager Name	Specify the name of the queue manager.
Status	Warning	Specify an integer as the warning threshold. If the queue manager availability percentage is less than the specified value, it is marked as warning status.
	Critical	Specify an integer as the critical threshold. If the queue manager availability percentage is less than the specified value, it is marked as critical status.

Queue Manager Weekly Availability report

This report shows the weekly availability of the queue manager that you specified, including the availability of a whole week and the availability of each day in the week. Use this report to check the queue manager status in one week.

Table 12. Parameters of Queue Manager Weekly Availability report

Parameter group	Parameter name	Usage
Date Range	Report Period	Select one day in a week that you want to check the queue manager status for.
Sampling Interval	Sampling Interval	Select the collection interval on the History Collection Configuration panel of Tivoli Enterprise Portal.
Resource Selection	Host Name	Specify the host name of the queue manager that you want to check.
	Queue Manager Name	Specify the name of the queue manager.
Status	Warning	Specify an integer as the warning threshold. If the queue manager availability percentage is less than the specified value, it is marked as warning status.
	Critical	Specify an integer as the critical threshold. If the queue manager availability percentage is less than the specified value, it is marked as critical status.

Top N Queue Full report

This report shows the top n queues with the biggest queue full percentage. The queue full percentage is calculated by dividing the current queue depth by the

maximum queue depth, and then multiplying the result by 100. The number, n , can be customized as an input parameter. By default the report displayed top 10 queues.

Table 13. Parameters of Top N Queue Full report

Parameter group	Parameter name	Usage
Date Range	Report Period	Specify a time range for the report, such as Last Week, Current Month, Last 30 Days.
	Start Date	Select a start date from the calendar and start time from the time widget. Both date and time have to be specified.
	End Date	Select an end date from the calendar and end time from the time widget. Both date and time have to be specified.
Sampling Interval	Summarization Type	Specify the collection interval on the History Collection Configuration panel of Tivoli Enterprise Portal.
	Include shift period	Select to see data during peak hours, off-peak hours, or both.
	Include vacation period	Select to see data during the working days, vacations, or both.
Resource Selection	Number of Systems to Display	Specify an integer to filter the number of top resources that you want to see.
Status	Warning	Specify an integer as the warning threshold. If the queue full percentage exceeds the specified value, it is marked as warning status.
	Critical	Specify an integer as the critical threshold. If the queue full percentage exceeds the specified value, it is marked as critical status.

Known problems and workarounds

This section contains problems that might occur when you work with Cognos reports.

Arithmetic overflow errors in ad hoc querying

If you drag certain columns in an ad hoc query and it returns an arithmetic overflow error, switch to Limited Data or No Data preview and add Standard Timestamp to the query.

Certain columns might average or sum up to a number that is larger than the size supported by the database. So the SQL error of arithmetic overflow is returned. If you see the data by hourly timestamp or daily timestamp, or set a query to limit the data, the aggregated value is forced to be within the supported size.

No data available message in ad hoc querying on two tables

The No data available message is displayed in an ad hoc querying on two tables, but the resulting data indicates that the two tables are queried.

This error occurs because there is no relationship defined between the two tables. Make sure all your ad hoc queries have at least one identifier.

Errors of missing table or attribute

Make sure that all the prerequisites are met and the warehouse is collecting historical data. If you enable historical data collection appropriately, you are able to use the data model for WebSphere MQ Monitoring agent.

If you have all the required tables but still get this error, it might be because the WebSphere MQ Monitoring agent is not compatible with the version that is used in the generic model.

To check the query that runs, open the report in the Report Studio. Click **Tools > Show Generated SQL/MDX**. The queries in the report are displayed. You can view the native SQL.

The table schema is not ITMUser

If the table schema that you use is not ITMUser, use the framework manager to update the schema to what you used.

1. Extract the report package to your local system that the framework manager is installed on.
2. In the model\WebSphere MQ Monitoring Agent v7.1 Data Model folder, open the WebSphere MQ Monitoring Agent v7.1 Data Model.cpf file with the framework manager.
3. In the Project Viewer view, expand **Data Sources** and click **TDW**.
4. In the Property view, change the schema property from ITMUser to the schema that you used and save the changes.
5. In the Project Viewer view, expand **Packages**, right-click the WebSphere MQ Monitoring Agent package and click **Publish Packages** to publish the package to the Cognos server.

Chapter 10. Monitoring with workspaces

WebSphere MQ Monitoring agent is installed with default views that are displayed in workspaces. Where applicable, links are provided within the workspace to link from a parent view to a more detailed view about a selected row, or to a related workspace (for example, a workspace containing historical information).

You can customize the following settings for views in a workspace in the Time Span window:

- Time span for data presented in the views: real time, a specific time frame, or a custom time period
- Granularity of the data: summarized data or detailed data

Important: When you change these settings for one view in a workspace, make sure that you select the **Apply to all views associated with this view's query** check box at the bottom of the Select the Time Span window; otherwise, the data that is displayed in the workspace might be inaccurate.

Creating custom workspaces

WebSphere MQ Monitoring agent displays information in workspaces. A workspace is the working area of the Tivoli Enterprise Portal application window and is made up of one or more views. A view is a pane in the workspace, typically a chart or table, which displays data that is collected by monitoring agents.

A workspace can be linked to other workspaces. A link is usually context-sensitive; right-click a row in a table or a data series in a chart to link to another workspace that provides more detailed information about one of the attributes in the row or data series.

As you select items in the Navigator view, the workspace presents views that are relevant to your selection. Every workspace has at least one view, and every workspace has a set of properties that are associated with it. You can customize a workspace by working in the Properties editor to change the style and content of each view. Another way to customize a workspace is to change the type of view or to add views to the workspace.

Predefined workspaces

A set of predefined workspaces is included with WebSphere MQ Monitoring agent. Predefined workspaces make it easy for you to quickly start using WebSphere MQ Monitoring agent effectively to monitor your environment. They can also be used as templates to create your own custom workspaces.

A high-level overview of the types of workspaces that are included with WebSphere MQ Monitoring agent is provided.

For a complete list of the predefined workspaces that are included with WebSphere MQ Monitoring agent, see “Workspaces” on page 167.

For information about creating and customizing views and workspaces, see “Creating a workspace using a predefined workspace as a template” on page 108.

Remember: Do not customize the predefined workspaces because they are overwritten when you install fix packs or upgrade to a later version of WebSphere MQ Monitoring agent and the customized changes are lost.

Creating a workspace using a predefined workspace as a template

Do the following steps to create your new workspace using a predefined one as a template:

1. Open the predefined workspace that you want to use as a template.
2. Click **File > Save Workspace As** to create a copy of the predefined workspace.
3. Enter a workspace name and, optionally, a description. The workspace name is displayed on the title bar.
4. Optional: Select one or more of the following workspace options:
 - Assign as default for this Navigator Item: Select this option if you want this workspace to be displayed when this navigator item is clicked.
 - Do not allow modifications: Select this option to prevent this workspace from being modified in the future.
 - Only selectable as the target of a workspace link: Select this option if you do not want this workspace to be displayed unless it is linked to from another workspace.
 - Assign as Home Workspace: Select this option if you want this workspace to be displayed as the home workspace by default.
5. Click **OK**. A copy of the predefined workspace is created with the name that you entered.
6. Open the new workspace and customize it to meet your requirements.

Exceptions: You cannot create your own workspaces based on the following predefined workspaces:

- Enterprise Wide Subscription Definitions
- Topic Definitions
- Topic Status
- Topic Status - Publishers
- Topic Status - Subscribers
- Subscription Definitions
- Subscription Status

Application Accounting workspaces (distributed systems only)

The Application Accounting workspaces can help you monitor accounting messages that are generated by queue managers to record information about the MQI operations that are performed by the WebSphere MQ applications, or to record information about the activities that occur in a WebSphere MQ system.

The Application Accounting workspaces apply to WebSphere MQ V6.0 and later versions only.

You can access these workspaces from the **Application Accounting** item for the selected queue manager in the Navigator physical view.

You need to enable WebSphere MQ before the application accounting data is shown in the Application Accounting workspaces. The following examples of commands are used to enable the Application Accounting messages.

ALTER QMGR ACCTMQI(ON)

Enable MQI accounting information collection.

ALTER QLOCAL(Q1) ACCTQ(ON)

Enable accounting information collection for the Q1 queue.

ALTER QMGR ACCTQ(ON)

Enable accounting information collection for all queues that specify the ACCTQ queue attribute as QMGR.

ALTER QMGR ACCTCONO(ENABLED)

Enable accounting overrides per connection.

ALTER QMGR ACCTINT(900)

Change the accounting interval to 900 seconds (15 minutes) from the default of 1800 seconds (30 minutes).

ALTER QMGR STATMQI(ON)

Enable MQI statistics

ALTER QLOCAL(Q1) STATQ(ON)

Enable statistics information collection for the Q1 queue.

ALTER QMGR STATQ(ON)

Enable statistics information collection for all queues that specify the STATQ queue attribute as QMGR.

ALTER CHANNEL(QM1.TO.QM2) CHLTYPE(SDR) STATCHL(MEDIUM)

Enable statistics information collection, with a medium level of detail, for the QM1.TO.QM2 sender channel .

ALTER QMGR STATCHL(MEDIUM)

Enable statistics information collection, at a medium level of detail, for all channels that specify the STATCHL channel attribute as QMGR.

ALTER QMGR STATACLS(MEDIUM)

Enable statistics information collection, at a medium level of detail, for all automatically defined cluster-sender channels.

ALTER QMGR STATINT(900)

Change the statistics interval to 900 seconds (15 minutes) from the default of 1800 seconds (30 minutes).

Guide for action

Use the Application Accounting workspaces to assist you with the following activities:

- Monitor application resource usage
- Record application activities
- Detect problems in your queue manager network
- Determine the causes of problems in your queue manager network
- Improve the efficiency of your queue manager network
- Familiarize yourself with the running of your queue manager network
- Confirm that your queue manager network is running correctly

These workspaces might include application connections which were active, but are not currently active. It might not include the currently active application

connections, in cases where the application connections are new and for which accounting data is not published by the queue manager.

Application Debugging workspaces (z/OS systems only)

Use these workspaces to debug your WebSphere MQ applications by viewing and sorting debugging trace data.

Data for these workspaces is available only if Application Debug Trace is collected on a z/OS system. You can collect application statistics by using the **TRACE** parameter of the **SET APPL** monitoring option. See Chapter 2, “Customizing monitoring options,” on page 11 for details.

Access these workspaces from the **Application Debugging** item for the selected queue manager in the Navigator physical view.

Guide for action

Use the Application Debugging workspaces to trace a WebSphere MQ application that is running on a z/OS system. The Application Statistics workspaces show you the applications, CICS transactions, or programs that are experiencing or causing bottlenecks in your WebSphere MQ system; the Application Debugging workspaces can help you trace what went wrong in an application and correct it.

Application Statistics workspaces (z/OS systems only)

The Application Statistics workspaces provide statistics about WebSphere MQ applications that are running on z/OS systems only.

Data for these workspaces is available only if Application Statistics are collected on a z/OS system. This can be activated using the **STATISTICS** parameter of the **SET APPL** monitoring option. See “Monitoring options” on page 23 for details.

You can access these workspaces from the **Application Statistics** item for the selected queue manager in the Navigator physical view.

Application Statistics feature (z/OS systems only)

The application statistics feature provides detailed statistical information on an application's use of WebSphere MQ resources. Application statistics feature collects data as MQI events occur, compiling the data into statistics at each sample cycle. This data is extremely useful when analyzing performance problems. By isolating the WebSphere MQ portion of a transaction's total response time, the performance analyst can identify which subsystem experienced a slowdown and focus their diagnostic effort accordingly.

This feature provides data for the Application Debugging workspaces and Application Statistics workspaces.

Application Statistics data is available only if it is being collected for the queue manager and the applications. Monitoring for application statistics is turned off by default to prevent excessive system resource consumption. You can activate monitoring by specifying **SET MQIMONITOR** and **SET APPL** statements for the queue manager and application. You also need to set up an WebSphere MQ Monitoring subsystem. For descriptions of monitoring options, see “**SET MQIMONITOR (z/OS systems only)**” on page 49 and “**SET APPL (z/OS systems only)**” on page 47.

For the instructions about how to set up the WebSphere MQ Monitoring subsystem, see *IBM Tivoli OMEGAMON XE for Messaging on z/OS: Configuration Guide*.

Guide for action

Use the information in the Application Statistics workspaces for trend analysis, performance history, and security checking. For billing purposes, for example, you might want to check how often a particular application runs. To streamline the workload, compare current and historical queue and queue manager usage across different page sets.

You can check the following things when viewing the data in these workspaces:

- Examine the number of puts versus the number of gets.
If they are not equal, where is the data flow breaking down? If one queue has a large number of puts, you might want to alter the queue definition to use a different page set.
- Whether the average MQPUT and MQGET response times meet your objectives:
If one application is running significantly faster than another, you might want to use a different page set to provide better processing time.
- The number of queues that are being browsed, the reason that they are being browsed, and the applications that are browsing them:
Verify that restricted queues (such as a payroll queue) are not being browsed without proper authority.
- Review the average message size for your queues; whether messages are typically the maximum size (see the MaxMsgLength queue attribute.):
If messages are usually at maximum size, there might be a problem in an application or a queue definition.

You can use these workspaces in conjunction with the Application Debugging workspaces to help you locate and correct problems in your WebSphere MQ applications.

Buffer Pool Statistics workspaces (z/OS systems only)

You can use the Buffer Pool Statistics workspaces to ensure that buffer managers are performing efficiently.

These workspaces display current buffer manager performance for all monitored queue managers on a z/OS system. You can also drill down to display information about a specific buffer pool to isolate recent or historical performance trends.

Access these workspaces from the **Buffer Pool Statistics** item for the selected queue manager in the Navigator physical view.

Guide for action

Each queue manager on a z/OS system includes a buffer manager. The buffer manager uses the buffers in a buffer pool to hold WebSphere MQ objects, including messages. When your buffer pools are allocated correctly, you can access messages more efficiently because they are retrieved from buffers in storage, rather than from disk.

To enhance buffer pool performance, monitor the following conditions:

- Examine the ratio of pages that are read from DASD to retrieved pages. The ratio indicates the efficiency of page retrieval within buffer pool storage. The objective is to keep this ratio low.

The ratio of pages that are not found in the buffer pool to retrieved pages is another measure of how efficiently pages are retrieved.

The number of asynchronous write-processor starts indicates how many times more than 85% of the buffer pool is waiting for write I/Os or how many times less than 15% of the buffer pool is available for read. The objective is to keep the number of these starts low.

For any of these problems, first increase the buffer pool size. If the ratio remains high, pages are not reaccessed frequently enough. This might result in long delays between putting messages and subsequently getting them for a WebSphere MQ application.

The ratio of pages that are updated to pages that are written to DASD indicates the efficiency of the asynchronous write processor. The objective is to keep this ratio high. To increase this ratio, increase buffer pool size.

- Monitor the number of updates that are done synchronously. A synchronous update occurs when more than 95% of the pages in the buffer pool are waiting for write I/Os or when less than 5% of the buffer pool is available for read. The objective is to maintain zero synchronous updates. Monitor the number of times there are no buffers available for page gets. If this number is ever nonzero, WebSphere MQ is under severe stress.

In these cases, increase buffer pool size, and then look at I/O contention on the DASD page sets.

You can also consult the Page Set Statistics workspace to review the performance of the page sets associated with a specific buffer pool ID (see “Page Set Statistics workspaces (z/OS systems only)” on page 126).

Channel Definitions workspaces

The Channel Definitions workspaces provide you with information about the channels for each monitored queue manager. Included in this information is the channel type (sender, receiver, server, or requestor) and other definition data. The Real-time Channel Definitions workspace contains on-demand data that is collected in real-time, when you open or refresh the workspace. If you have many channels defined, the real-time workspace can have a slow response time and consume more resources to retrieve the data. All other workspaces contain sampled data.

You can access these workspaces from the **Channel Definitions** item for the selected queue manager in the Navigator physical view.

The Channel Definitions Summary chart that is contained in the Real-time Channel Definitions workspace does not necessarily match the data that is displayed in the table at the bottom of this workspace. It is intended only to give an overview of the sampled data at the queue manager level according to the current parameters of the agent. The data that is displayed in the table is on-demand data, which is collected when the workspace is opened or refreshed, whereas the data on which the chart is based is sampled during standard sampling intervals.

Tip: The key for the Channel Definitions Summary chart is read from top to bottom and corresponds to the columns of the chart when read from left to right.

Guide for action

Use the Channel Definitions workspaces to check channel definitions and channel parameters. You can often solve channel problems by correcting channel definitions.

You might need to define multiple channels to accommodate high message traffic, different message priorities, or different queue types.

Channel Initiator Status workspaces (z/OS systems only)

The Channel Initiator Status workspaces apply only to the queue managers on z/OS systems. These workspaces provide information about the following items:

- Channel connection status (the number of current, maximum, active, starting, stopping, and retrying channels)
- Whether the channel initiator, TCP/IP listener, and LU62 listener are active
- The status of adapter subtask and dispatcher activity

Channel Initiator Status information can also be stored historically. See Chapter 5, “Collecting historical data,” on page 73 for information about how to enable historical data collection.

Access the top-level workspace from the **Channel Initiator Status** item for the selected queue manager in the Navigator physical view.

Guide for action

Use the Channel Initiator Status workspaces to improve your processing capacity and to detect errors in your communication system.

- Compare the number of adapter subtasks that are currently active to the number of adapter subtasks that are requested in the channel initiator parameters.
If the numbers are different, some adapter subtasks fail and do not restart, which reduces processing capacity.
- Compare the number of dispatchers that are currently active to the number of dispatchers that are requested in the channel initiator parameters.
If the numbers are different, some dispatchers fail and do not restart. The number of current TCP/IP and LU 6.2 channels that are available are reduced proportionately, and other processing capacity might be reduced.
- Compare the numbers of channel connections that are current, active, maximum, starting, stopping, and retrying.
- Check whether the channel initiator, TCP/IP listener, TCP/IP group listener, LU 6.2 listener, and LU 6.2 group listener are active.
If a listener was started, and was not deliberately stopped, this might indicate an error in the communications system.

On z/OS systems, TCP/IP listeners can be started many times with different combinations of port number and address. If this occurs, the TCP/IP Listener Active and Port Number columns in this workspace display the most recent TCP/IP listener information that is provided by WebSphere MQ. To access the TCP/IP Started Listeners workspace and display all started TCP/IP listeners, right-click a row that contains an active TCP/IP listener.

Channel Performance workspaces

The Channel Performance workspaces provide performance information about the monitored channels on each monitored queue manager. Included in this information is whether each channel is in doubt, current, or inactive, and the channel type.

The Channel Status workspace provides on-demand, the most current, real time information about channels in the queue manager.

Client connection channel definitions do not produce statistics, therefore they are not listed in any of the Channel Performance workspaces.

You can access these workspaces from the **Channel Performance** item for the selected queue manager within the Navigator physical view.

The Channel Performance Summary chart that is contained in these workspaces does not necessarily match the data that is displayed in the table at the bottom of this workspace. It is intended only to give an overview of the sampled data at the queue manager level according to the current parameters of the agent. The data that is displayed in the table represents only a subsection of collected data, whereas the data that is displayed in the chart provides a summary of all sampled data.

Guide for action

A channel provides a communication path between two queue managers (on the same system or on different systems). It shields the application programs from the complexities of the underlying network protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

When using these workspaces, you can check for the following things:

- The depth of the transmission queue
If this number remains high, consider assigning more channels. You might need to define multiple channels to accommodate high message traffic, different message priorities, or different queue types. Sequence number and logical unit-of-work data can help you with channel recovery and restart.
- Use the information in the Channel Performance workspace to examine and compare channel performance among the selected channels. Look for patterns in resource activity, traffic, or time of day.
- Use the information in the Recent Channel Performance workspace to investigate recent trends in the performance of the selected channels. Look for patterns in time of day, channel type, or transmission rate.
- Use the information in the Channel Parameters workspace to check the defined parameters for the selected channel.
- Use the information in the Channel Summary workspace to get the summary data about all the channel instances per channel.

Cluster Queue Manager workspaces

The Cluster Queue Manager workspaces provide information about explicitly and automatically defined cluster channels and the cluster queue manager that is associated with them. The Cluster Queue Manager workspace contains sampled data and the Real-time Cluster Queue Manager workspace contains on-demand data that is collected in real-time when the workspace is opened or refreshed.

You can access these workspaces from the **Cluster Queue Manager** item for the selected queue manager in the Navigator physical view.

The Cluster Queue Manager Summary chart that is contained in the Real-time Cluster Queue Manager workspace does not necessarily match the data that is displayed in the table at the bottom of this workspace. It is intended only to give an overview of the sampled data at the queue manager level according to the current parameters of the agent. The data that is displayed in the table is on-demand data, which is collected when the workspace is opened or refreshed, whereas the data on which the chart is based is sampled during standard sampling intervals.

Guide for action

Use the Cluster Queue Manager workspaces to determine clustering activity and definitions for monitored queue managers. For example, the workspaces provides you with the following information:

- The number of automatically defined cluster-defined channels that exist
- Cluster queues and cluster queue managers that are associated with cluster channels
- The queue managers that are repositories for the cluster

Dead-Letter Queue Messages Workspaces

Use the Dead-Letter Queue Messages workspaces to list and to examine the messages that a queue manager queues to its dead-letter queue (DLQ) because the messages cannot be delivered. Use these workspaces to manage the dead-letter queues and to ensure that you maintain the efficiency and integrity of your business application data. With these workspaces, you can recover important messages or resend them to their original destinations, delete obsolete messages, and identify problem applications.

You can access these workspaces from the **Dead-Letter Queue Messages** item for the selected queue manager in the Navigator physical view.

Guide for action

Whether you can access and use Dead-Letter Queue Messages workspaces depends on certain parameter settings. See “Settings for controlling access to WebSphere MQ messages” on page 81.

WebSphere MQ puts a message on the dead-letter queue when it cannot deliver the message to the requested queue. Messages cannot be delivered when the message is too long, the queue name is not valid, or the queue is full.

You can use these workspaces as follows:

- Select a message to view its header or application data, delete it, or retry its delivery.

- If a queue is full, you can use the Queue Messages workspace to delete unnecessary messages (as described in “Queue Messages workspace” on page 140). Then, you can use the Dead-Letter Queue Messages workspace to retry delivering those messages that fails because the queue is full.

When you confirm a delete or retry, a return code and message are returned. For an explanation of numeric return codes, see *IBM WebSphere MQ Application Programming Reference* manual.

Deleting a message from the dead-letter queue

Do the following steps to delete a message from the dead-letter queue:

1. In the Dead-Letter Queue Messages workspace, right-click the message that you want to delete; then click **MQ Commands > Delete**
2. A message is displayed asking whether you want to delete the message. To delete the message, click **Yes**.

Remember: If you delete a segmented or grouped message, WebSphere MQ Monitoring agent deletes the entire logical message.

3. The status of your delete request is displayed showing whether it is successful. To remove the status message, click **OK**.

Forwarding a message on the dead-letter queue to another queue

Do the following steps to forward a message on the dead-letter queue to a destination queue that you specify and delete it from the dead-letter queue. Deleting the message after you forward it prevents the message from being displayed more than once on the dead-letter queue if it becomes undeliverable again.

The message can be forwarded to a queue on any queue manager that is known to the WebSphere MQ system.

1. In the Dead-Letter Queue Messages workspace, right-click the message that you want to forward; then click **MQ Commands > Forward**
2. In the dialog box that displays the original destination queue of the message and the current queue manager, complete the following fields:
 - In the **Queue name** field, enter the name of the queue to send the message to.
 - In the **Queue Manager** field, enter the name of the queue manager for the queue that you specified in the **Queue name** field.
3. Click **Yes**. The message is forwarded and then deleted from the dead-letter queue.

Remember: If you forward a segmented or grouped message, WebSphere MQ Monitoring agent forwards the entire logical message.

4. The status of your forward request is displayed; click **OK** to clear the status message.

Error Log workspaces (distributed systems only)

Use this workspace to view and monitor WebSphere MQ error log data that is retrieved from a monitored queue manager (distributed systems only). It does not provide error log data that is associated with unknown queue managers or with client applications.

Error Log data is available for display only if the data is collected for the queue manager. See “Error Log monitoring (distributed systems only).” Error Log data can also be stored historically. See Chapter 5, “Collecting historical data,” on page 73 for information about how to enable historical data collection.

You can access this workspace from the **Error Log** item for the selected queue manager in the Navigator physical view.

Error Log monitoring (distributed systems only)

By using the Error Log monitoring, you can view and monitor WebSphere MQ error log data that is retrieved from a monitored queue manager. Error Log monitoring does not provide error log data that is associated with unknown queue managers or with client applications.

This feature provides data for the Error Log workspace, provides you with Error Log attributes that you can use in situations, and provides the MQSeries_Channel_Out_Of_Sync predefined situation .

For details about attributes, predefined situations, and the workspace provided with WebSphere MQ Monitoring agent, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help.

Error Log data is available only if it is collected for the queue manager. Monitoring of the queue manager error log is active by default. However, you can deactivate the error log monitoring feature using the **ERRLOGCYCLE** parameter of the **SET MANAGER** or **SET GROUP** monitoring option. You can also adjust the maximum number of messages that are displayed in the Error Log workspace using the **ERRLOGMAX** parameter of the **SET MANAGER** or **SET GROUP** monitoring option. For details of these monitoring options, see “Monitoring options” on page 23.

WebSphere MQ Monitoring agent monitors error logs that are in the following default locations.

- On i5/OS systems:
`/QIBM/UserData/mqm/qmgrs/qmname/errors`
where *qmname* is the name of the queue manager.
- On UNIX and Linux systems:
`/var/mqm/qmgrs/qmname/errors`
where *qmname* is the name of the queue manager.
- On Windows systems:
`MQ WorkPath/qmgrs/qmname/errors`
where *MQ WorkPath* is obtained from the `\Software\IBM\MQSeries\CurrentVersion\WorkPath` NT Registry Key and *qmname* is the name of the queue manager.

After you create a queue manager, error log files that are read by WebSphere MQ Monitoring agent are automatically created when the queue manager needs them. The files are named as follows:

- AMQERR01.LOG
- AMQERR02.LOG
- AMQERR03.LOG

Each of these error log files has a capacity of 256 KB. As error messages are generated, they are placed in the AMQERR01 file. When the AMQERR01 file gets bigger than 256 KB, it is copied to the AMQERR02 file. Before the AMQERR01 file is copied, the AMQERR02 file is copied to the AMQERR03 file. The previous contents of the AMQERR03 file (if any) are discarded.

The latest error messages are always placed in the AMQERR01 file. The monitoring agent monitors the AMQERR01 file.

Guide for action

The Error Log table view provides you with the most recent WebSphere MQ error log data that is retrieved from a monitored (distributed systems only) queue manager. Use the information in this workspace to resolve queue manager problems in a timely manner. Only error log entries that are recorded after the start of the monitoring agent are displayed.

Log Data Set Status workspace (z/OS systems only)

The Log Data Set Status workspace provides you with information about the log data sets. The log is made up of log records, each of which is a set of log data that is treated as a single unit. A log record is identified either by the relative byte address (RBA) of the first byte of its header, or by its log record sequence number (LRSN).

This is a secondary workspace; in the Navigator physical view, you can access it by right-clicking the **Queue Manager Status** item for the selected queue manager and clicking **Workspace > Log Data Set Status**.

For the complete list of predefined workspaces that are included with WebSphere MQ Monitoring agent, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help.

Guide for action

Use the information in the Log Data Set Status workspace to identify whether there is an outstanding unit of work (UOW) for the following items:

- Currently active UOWs
- Page set updates that are not flushed from the buffer pools to disk
- CF structure backups and whether the log of this queue manager contains required information in any recovery operation that is using them

Log Manager Performance workspaces (z/OS systems only)

These workspaces provide information about the logging activity (such as I/O levels and the number of times a WebSphere MQ application is delayed because no logging buffers are available) for each monitored queue manager on a z/OS system.

Access these workspaces from the **Log Manager Performance** item for the selected queue manager in the Navigator physical view.

Guide for action

Use the information in the Log Manager Performance workspaces to monitor recent and long-running activities for a particular queue manager on a z/OS system, or to compare log manager performance of queue managers on z/OS systems.

The log entries are used to roll back an incomplete logical unit of work or to recover messages after a queue manager or system failure. For best performance, eliminate contention for DASD log files, provide sufficient buffer and log file capacity, and maintain correct log buffer thresholds.

Use the Log Manager Performance workspaces to monitor the following conditions:

- Check the number of times that a task is suspended because all buffers are waiting to be written to the active log data set.

Ensure that the active log is available for writing. If it is available, you can increase the value of the **OUTBUFF** parameter within the CSQ6LOGP log.

- Whether the ratio of reads that are satisfied from the archive data set to all of the read requests is excessive. Most log reads should come from the output buffer or the active log.

To satisfy requests for a rollback, unit-of-recovery records are read from the in-storage buffer, the active log, and the archived logs. Also, the ratio of log reads to log writes can indicate how much work must be backed out.

A long-running unit of recovery might require that log records be spread across many different logs. This degrades performance because extra work is required to recover the log records.

Request that the WebSphere MQ application reduce the unit-of-recovery length. Also, consider increasing the size of the active log. Statistics that are produced immediately after system startup might show significant log activity because the log is used to roll back inflight logical units of work. Check that log activity subsides after startup.

Message Manager Performance workspaces (z/OS systems only)

The Message Manager Performance workspaces provide information on how frequently calls to the WebSphere MQ application programming interface (API) are made on a z/OS system. These rates can help you determine how frequently messages are passed to and pulled from a particular queue manager.

Access these workspaces from the **Message Manager Performance** item for the selected queue manager within the Navigator physical view.

Guide for action

Use the information in these workspaces to determine how frequently the following operations are performed on the monitored queue manager on a z/OS system:

- Queues are opened (MQOPEN calls).
- Queues are closed (MQCLOSE calls).
- Messages are put to queues (MQPUT calls).
- Messages are pulled from queues (MQGET calls).
- A single API call is used to open a queue, queue a message, and then close the queue (MQPUT1 calls).

- Object characteristics are queried (MQINQ calls).
- Object characteristics are modified (MQSET calls).
- subscriptions are registered to certain topics (MQSUB routines).
- requests on subscriptions are made (MQSUBRQ routines).
- callbacks are called by WebSphere MQ when certain events occur (MQCB routines).
- controlling actions are performed on the object handles opened for a connection (MQCTL routines).
- status information are retrieved (MQSTAT routines) .
- WebSphere MQ handles are closed independently of WebSphere MQ API calls.

Message Statistics workspaces

Use the Message Statistics workspaces to closely monitor the messages on a particular queue.

Access these workspaces from the **Queue Definitions** item (or from the **Queue Statistics** item) for the selected queue manager in the Navigator physical view.

For example, from the Queue Definitions workspace, if you right-click a table row and select **Link To**, you can select one of the following workspaces:

- Current Message Statistics
- Current Message Statistics by Application Name
- Current Message Statistics by Correlation ID
- Current Message Statistics by Group ID
- Recent Message Statistics

For the complete list of predefined workspaces that are included with WebSphere MQ Monitoring agent, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help.

Message Statistics feature

The Message Statistics feature provides summarized statistics about all messages on a particular queue.

This feature provides data for the Message Statistics workspaces (for an overview, see “Message Statistics workspaces”), and provides you with Message Statistics attributes that you can use in situations, and provides MQSeries_Delayed_Message_Group and MQSeries_High_Delayed_Messages predefined situation.

You can also store message statistics historically. The data that is kept historically for message statistics is determined by the active situations for the Message Statistics attribute group.

For details about attributes, predefined situations, and the workspaces that are provided with WebSphere MQ Monitoring agent, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help.

Details of operation

Message statistics are collected only when requested and a sampling interval is not used. When these statistics are requested, each message in the specified queue is read and processed to provide the summarized message statistics.

WebSphere MQ Monitoring agent requests message statistics data collection whenever you open or refresh one of the Current Message Statistics workspaces (that is, whenever you query the Message Statistics attribute group).

To view the Current Message Statistics workspaces, the WebSphere MQ Security Access level to the selected queue for your Message Manipulation Account for specified Tivoli Enterprise Portal Logon user ID must be MQGET (with the browse option). Additionally, users must have access to the messages that are in the queue. You can modify user access during customization using the **MSGACCESS** parameter of the **SET GROUP**, **SET MANAGER**, and **SET QACCESS** monitoring options. Any value other than **MSGACCESS (NONE)** results in the collection of message statistics. If you attempt to view one of the Current Message Statistics workspaces without the correct access, no data is returned. For information about how to configure the Message Manipulation Account for a specific Tivoli Enterprise Portal Logon user ID, see “Setting the message access authorization level” on page 82.

The Recent Message Statistics workspace displays all rows that are associated with the requested queue that are waiting to be written to the historical data warehouse. This workspace only contains data if the following two conditions are met:

- Historical data collection of the attributes that belong to the Message Statistics attribute group must be enabled. See Chapter 5, “Collecting historical data,” on page 73 for information about enabling historical data collection.
- One of the following situations must be triggered:
 - MQSeries_Delayed_Message_Group
 - MQSeries_High_Delayed_Messages

After the data is stored in the data warehouse, it is no longer displayed in the Recent Message Statistics workspace.

WebSphere MQ Monitoring agent also requests message statistics data collection whenever a situation uses the Message Statistics attributes. A situation drives the collection of message statistics data for a particular queue name. The queue name is a required input attribute for message statistics situations, and if it is not specified, no data is collected. The Queue Name attribute must specify an individual queue name; no wildcard characters can be used. You must create a separate situation for every queue that is to be monitored. Because of the overhead of collecting message statistics data, it should be collected only for those queues that need to be closely monitored. For situations, the user ID of the monitoring agent is used to access the queue.

Many of the message statistics are calculated using the put-date-and-time attribute of the message in the queue. If the queue has messages with a put-date-and-time attribute that does not reflect accurately the date and time that the message is put into the input queue, the statistics is correspondingly inaccurate. Put-date-and-time attributes are not accurate indicators when origin context is preserved or set for a message during the putting operation by an application to the queue. Inaccurate dates and times are common when an application is a message mover that moves messages from one queue to another, or when any application passes or sets origin context for a message.

If no data is returned for Message Statistics situations or workspaces, see the agent log to determine the reason. The KMQMI209E and KMQMI210E messages are associated with this feature.

Guide for action

Whether you can access and use the Message Statistics workspaces depends on the certain parameter settings. See “Message Statistics feature” on page 120.

Use the information in the Message Statistics workspaces to determine how many messages of different priorities reside on a particular queue and to determine whether messages for a particular queue are processed in an acceptable amount of time.

The following examples show the type of message statistics that you can access.

- Average message time (the average number of seconds that messages is on the queue)
- Delayed messages (the number of messages that are not processed within a time threshold)
- Oldest message time (the number of seconds that the oldest message is on the queue)
- Priority 0 – Priority 9 messages (the number of messages in each priority group on the queue)
- Total messages

MQ Action Log workspace

The MQ Action Log workspace provides information about actions performed by end users. The described actions refer to message manipulation actions and actions that are performed by issuing Take Action commands.

Important: Make sure that you select the MQ_Action_Log group in the History Collection Configuration window to start collecting historical data for this attribute group before viewing data in this workspace. The MQ_Action_Log group is started by default in the History Collection Configuration.

This workspace contains information only if Take Action commands or message manipulation actions are issued since WebSphere MQ Monitoring agent is installed or since historical data for this log is cleared or warehoused. If no actions occur since installation, the MQ Action Log view is empty, and the KFWITM217E error message is displayed at the bottom of the workspace. However, after the first Take Action command is issued, this message is no longer displayed and the contents of the Take Action log are displayed correctly.

This workspace contains information only if the date, time and time zone settings of the systems on which the Tivoli Enterprise Portal Server and Tivoli Enterprise Monitoring Server run are the same.

This is a secondary workspace. In the Navigator physical view, you can access it by right-clicking the Queue Manager Status item for the selected queue manager and clicking **Workspace > MQ Action Log**.

For the complete list of predefined workspaces that are included with WebSphere MQ Monitoring agent, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help.

Guide for action

Use the information in the MQ Action Log workspace to view message manipulation actions and actions that are performed by issuing Take Action commands.

This workspace provides the following information about the actions performed by issuing Take Action commands:

- Name of the action that is performed
- Name of the object on which the action is performed
- ID of the user who performs the action
- Time that the action is performed
- Result of the action

The following information about message manipulation actions is provided:

- Type of the action, whether delete, retry, or forward
- The queue manager, queue, and message, on which the message manipulation action is performed
- ID of the user who performs the action
- Time that the action is performed
- Result of the action

MQI Statistics workspaces (distributed systems only)

These workspaces monitor the statistics messages that are used to record information about the activities that occur in a WebSphere MQ system.

These workspaces apply to WebSphere MQ V6.0 and later versions.

Access these workspaces from the **MQI Statistics** item for the selected queue manager in the Navigator physical view.

You need to enable WebSphere MQ before the MQI statistics is displayed in the MQI Statistics workspaces. The following examples of commands are used to enable the MQI statistics messages.

ALTER QMGR ACCTMQI(ON)

Enable MQI accounting information collection.

ALTER QLOCAL(Q1) ACCTQ(ON)

Enable accounting information collection for the queue, Q1.

ALTER QMGR ACCTQ(ON)

Enable accounting information collection for all queues that specify the ACCTQ queue attribute as QMGR.

ALTER QMGR ACCTCONO(ENABLED)

Enable accounting overrides per connection.

ALTER QMGR ACCTINT(900)

Change the accounting interval to 900 seconds (15 minutes) from the default of 1800 seconds (30 minutes).

ALTER QMGR STATMQI(ON)

Enable MQI statistics

ALTER QLOCAL(Q1) STATQ(ON)

Enable statistics information collection for the Q1 queue.

ALTER QMGR STATQ(ON)

Enable statistics information collection for all queues that specify the STATQ queue attribute as QMGR.

ALTER CHANNEL(QM1.TO.QM2) CHLTYPE(SDR) STATCHL(MEDIUM)

Enable statistics information collection, with a medium level of detail, for the QM1.TO.QM2 sender channel.

ALTER QMGR STATCHL(MEDIUM)

Enable statistics information collection, at a medium level of detail, for all channels that specify the STATCHL channel attribute as QMGR.

ALTER QMGR STATACLS(MEDIUM)

Enable statistics information collection, at a medium level of detail, for all automatically defined cluster-sender channels.

ALTER QMGR STATINT(900)

Change the statistics interval to 900 seconds (15 minutes) from the default of 1800 seconds (30 minutes).

Guide for action

Use the information in the MQI Statistics workspaces to review the messages that are used to record information about the activities occurring in a WebSphere MQ system.

The information that is contained in statistics messages can be used for the following purposes:

- Account for application resource use
- Record application activity
- Plan capacity
- Detect problems in your queue manager network
- Assist in determining the causes of problems in your queue manager network
- Improve the efficiency of your queue manager network
- Familiarize yourself with the running of your queue manager network
- Confirm that your queue manager network is running correctly

Use the MQI Statistics workspaces to review the following items:

- MQI statistics data for a queue manager, which includes all queues
- New statistics data for individual queues within a queue manager
- Data of channels within a queue manager

MQSeries Events workspaces

The MQSeries Events workspaces provide information about the following six events for each monitored queue manager:

- Channel Stopped
- Queue Full
- Queue Depth High
- Queue Service Interval High
- Bridge Stopped
- Channel Not Activated

These events require prompt resolution. The statistics are reported for local queue managers (managers that belong to the system that WebSphere MQ Monitoring agent is monitoring) and for remote queue managers. To have events reported for remote queue managers, you must define the event queues of these remote queue managers to be local to the system that WebSphere MQ Monitoring agent is monitoring.

The Event Log workspace provides a log of all recent events that are produced by the queue manager in monitored event queues. For both workspaces to have data, WebSphere MQ must be enabled for the various types of events, and the monitoring agent parameters must be properly set to capture the events. See “SET GROUP” on page 24 and “SET MANAGER” on page 26 for information about how to set these parameters to capture the events.

The Event Archive workspace provides an audit log of events that are recorded historically with detailed data. All the data that is associated with an event is included in a readable XML format attribute. You can see this XML format attribute without linking to anywhere else.

Remember: The APPL ID of CICS events that are displayed in the Event Log workspace is always CICS applid and transactions.

Access these workspaces from the **MQSeries Events** item for the selected queue manager in the Navigator physical view.

Guide for action

Use the information in the MQSeries Events workspace to review the exception conditions that are currently on the event queue. Exception conditions, such as Queue Full, Channel Stopped, and other conditions, continue to be reported in this workspace until another condition occurs and resets them. For example, a Queue Service Interval High condition continues to be reported in this workspace until a Service Interval OK event occurs for that queue.

Events can occur on the local queue manager or on any remote queue manager, only if the following things are true:

- The remote queue manager supports events.
- Events are activated and enabled on the remote queue manager or local queue manager.
- The system event queues in the remote queue manager are defined as remote.
- The system event queues for the remote queue manager are local to a monitored queue manager.

To maintain good performance, investigate the problems that are displayed on these workspaces. Look for patterns in time of day, day of week, and resource that are used. You can use the information in the Event Parameters workspace to review more detailed information about a specific event. The data displayed in this workspace varies depending on the event.

Searching for WebSphere MQ events

In the Event Archive workspace, you can use the search function to search for specific archived WebSphere MQ events that are reported to the selected queue manager.

Before you can use the search function in the Event Archive workspace, enable historical data collection for the Event Archive attribute group.

To search for specific WebSphere MQ events, do the following steps:

1. Navigate to the Event Archive workspace.
2. Right-click any row in the Event Archive table and click **MQ Event Search**. The Event Archive by Search window opens.
3. Specify the search criteria in the **Conditions** section. You can set a search condition for the following attributes:
 - Event (The name of the WebSphere MQ event)
 - Event MQ Host Name (The name of the host where the event occurred)
 - Event MQ Manager Name (The name of the queue manager on which the event occurred)
 - Resource Name (The name of the WebSphere MQ resource that the event occurred on, such as a queue or channel name)
 - a. In the leftmost field, select the check box that is next to the attribute name.
 - b. In the middle field, select the comparison operator to use for the attribute.
 - c. In the rightmost field, enter the value to use against the data that you are searching for.
4. Optional: To search for the WebSphere MQ events that occur in a certain period of time, enter the search criteria in the **Search Option** section.
 - a. In the leftmost field, select the check box.
 - b. In the middle field, enter an integer in the range of 1 - 31.
 - c. In the rightmost field, select the time unit, hour, day, or month.
5. Click **Search**.

After the search is completed, the search results replace the original data in the workspace.

Page Set Statistics workspaces (z/OS systems only)

These workspaces provide information about the uses and allocation of page sets for each monitored queue manager on a z/OS system.

Access these workspaces from the **Page Set Statistics** item for the selected queue manager in the Navigator physical view.

Guide for action

A queue manager that is running on WebSphere MQ for z/OS systems uses page sets to store object definitions and queue messages. Use the Page Set Statistics workspaces to monitor the following conditions:

- Examine the percentage of pages in use and the total number of pages to ensure that no page sets are reaching capacity.

When a page set is full, applications cannot put messages on a queue that is mapped to that page set. This situation is especially critical when the full page set is the number 0, because all object definitions that are required by the queue manager are stored there.

If a page set is full, expand that page set, or balance the load between page sets by moving queues from one page set to another.

- Examine the number of buffers in the buffer pool that is being used.

If the buffer pool efficiency is poor and a page set is responsible for most of the activity, try increasing the buffer pool size or assigning that page set to another buffer pool.

Publish Subscribe workspaces

The Publish Subscribe workspaces provide the information for monitoring the WebSphere MQ publish and subscribe environment. The Topic Status workspace provides information about the root level of topic nodes. The Topic Definitions workspace provides information about all system-defined topics. The Subscriptions Definitions workspace contains the information about all system-defined subscriptions. The Enterprise Wide Subscription Definitions workspace contains information about all system-defined remote and local subscriptions.

Access these workspaces from the **Publish Subscribe** item in the Navigator physical view.

Tip: If you want to include Publish Subscribe in the Navigator logical view for a MQSERIES agent, the agent node of higher level should also be included in the Navigator tree; otherwise, some dynamic workspace link cannot work.

Guide for action

Use the information in the Publish Subscribe workspaces to monitor your WebSphere MQ publish and subscribe environment by performing the following tasks:

- Use the search function to search for specific topic string, topic name, and subscription name information.
- Use the subscription topology view in the Publish Subscribe workspaces to get a clear overview of a particular topic and the subscriptions associated with it.
- Prevent the destination queues that are used by subscriptions from overflowing.

For detailed instructions about how to perform these tasks, see Chapter 8, “Monitoring the publish and subscribe environment,” on page 89.

Queue Definitions workspaces

The Queue Definitions workspaces provide information about the queues that are defined in the queue manager. The Real-time Queue Definitions and Real-time Queue Definitions for Queues with Messages workspaces contain on-demand data that is collected in real time when the workspaces are opened or refreshed, note that if you have many queues defined, the real-time workspace can have a slow response time, and consume more resources to retrieve the data. Other Queue Definitions workspaces contain sampled data.

Access these workspaces from the **Queue Definitions** item for the selected queue manager in the Navigator physical view.

The Queue Definitions Summary chart that is contained in the Real-time Queue Definitions and Real-time Queue Definitions for Queues with Messages workspaces does not necessarily match the data displayed in the table at the bottom of this workspace. It is intended only to give an overview of data that is sampled at the queue manager level according to the current parameters of the agent. The data displayed in the table is on-demand data, collected when the workspace is opened or refreshed, whereas the data on which the chart is based is sampled during standard sampling intervals.

Guide for action

Use the information in the Queue Definitions workspaces to compare queue definitions among your monitored queue managers.

The following application and system queue characteristics must be defined to WebSphere MQ:

- Whether applications can retrieve messages from the queue
- Whether applications can put messages on the queue
- Whether access to the queue is exclusive or shared
- The maximum number of messages that can be stored on the queue
- The maximum length of messages that can be put on the queue

Application queues can be local, alias, or model. System queues can be initiation, transmission, channel, dead-letter, system-command input, event, or system default.

Remember: On z/OS systems, the alias queue and the remote queue are considered as predefined queues by default and therefore are displayed in this workspace. To display the model queue in this workspace, the **QDEFTYPE** parameter must be specified with the value of PREDEFINED.

Queue Manager Status workspaces

These workspaces display the status of the monitored queue managers in your network and give basic descriptive information about each monitored queue manager. Workspaces in this area also report on application connections to the queue manager and listener status.

Access these workspaces from the **Queue Manager Status** item for the selected queue manager in the Navigator physical view.

Tip: To include Queue Manager Status in the Navigator logical view for a MQSERIES agent, include the agent node of higher level in the Navigator tree; otherwise, some dynamic workspace link cannot work.

Guide for action

Use the information in the Queue Manager Status workspaces to compare the status and activity of your queue managers and to look for patterns in resource usage, status, or time of day.

Check the following factors:

- Dead-letter queue depth
- The status of each queue manager (Active, Queue Manager Not Available, Command Server Not Responding, Dynamic Queue Allocation Error, Cluster Repository Not Available, Standby, Running Elsewhere)

Note: Standby and Running Elsewhere apply to multi-instance queue managers only.

Remember: The time and date that the queue manager is started are available on UNIX, Linux, and z/OS systems only.




Application topology view

The Application Topology view in the Application Connections workspace provides a graphical representation of connections between the monitored queue manager, the applications that are connected to it, and the queues that are opened by the applications.

In the navigator view, you can access the Application Connections workspace by right-clicking the **Queue Manager Status** node and clicking **Workspace > Application Connections**.

See Table 14 for information about the icons that are used to represent queue managers, applications, and queues:

Table 14. Icons used in the Application Topology view

Resource type	Icon
Application	
Queue	
Queue manager	

The Application Topology view can be displayed in the following modes:

- “Mode 1: Compact mode for application connections”
- “Mode 2: Drill-down mode for an application connection” on page 130
- “Mode 3: drill-down mode for all application connections” on page 131
- “Mode 4: browse mode for connections to a queue” on page 132

Mode 1: Compact mode for application connections

By default, when you open the Application Connections workspace, the Application Topology view only displays connections between the monitored queue manager and applications that are connected to it, as shown in Figure 16 on page 130. This is called the compact mode for application connections. You can see how many application connections are active by examining the Application Topology view in this mode.

The top node in this view represents the monitored queue manager, labeled with the name of the queue manager. The second tier contains applications that are connected to it, labeled with the name of each application.

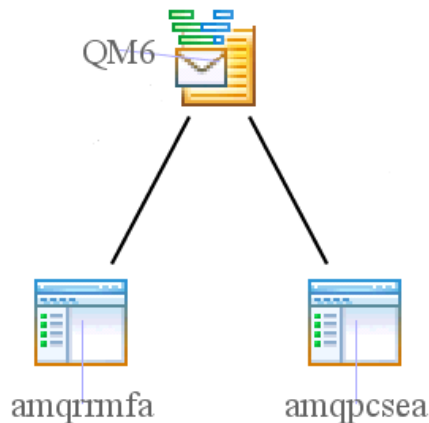


Figure 16. Compact mode for application connections

Tip: When the Application Topology view is running in compact mode for application connections, the name of the monitored queue manager is displayed in the workspace footer.

Mode 2: Drill-down mode for an application connection

To view connections between a specific application and the queues that it opens, in addition to its connection to the monitored queue manager, in the Application Topology view, right-click the application node, and click **Link To > Application Topology for Selected Application**. The connection between the monitored queue manager and the selected application, and connections between the selected application and all the queues that it opens are displayed in the Application Topology view. This is called the drill-down mode for an application connection.

If any of the queues that are opened by the selected application are also opened by other applications, connections between these applications and the queues are also displayed, regardless of the type of application. Connections between these applications and other queues that are opened by them are not displayed.

In this mode, the Application Topology view looks similar to Figure 17 on page 131, which displays the connection between the selected application and the queue manager that it connects to, and the connections between the application and the queues that it opens.

The topmost node represents the queue manager that the selected application connects to, labeled with its name. The second tier contains the selected application and other applications if they are using the queues that are opened by the selected application, labeled with the name of each application. The third tier contains queues that are opened by the selected application, labeled with the name of each queue.

If the application that you want to select is not displayed as a node in the Application Topology view, you can right-click it in the Application Connections table of the Application Connections workspace, and click **Link To > Application Topology for Selected Application**.

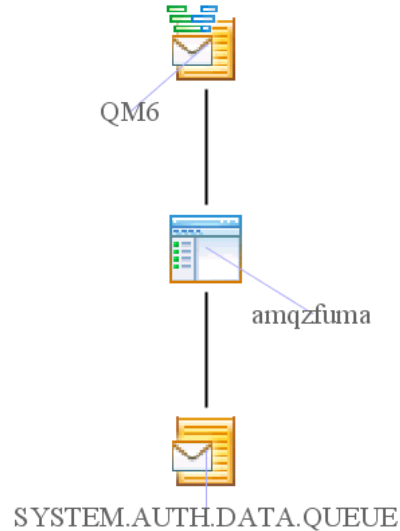


Figure 17. Drill-down mode for an application connection

Tip: When the Application Topology view is in drill-down mode for an application connection, the name of the selected application is displayed in the workspace footer.

Remember: The **Application Topology for Selected Applications** link is designed to support the application node only. If you right-click a node other than the application node to access the Application Topology view in this mode, the last accessed application node is used to present the Application Topology view.

Mode 3: drill-down mode for all application connections

In the drill-down mode for all application connections, connections between the monitored queue manager and the applications that are connected to it, and connections between these applications and the queues that are opened by them are displayed in the Application Topology view.

To access the Application Topology view in this mode, in the Application Topology view, right-click any application node or the monitored queue manager node, and click **Link To > Application Topology for All Applications**.

With all application connections displayed in the Application Topology view, you can get a clear overview of the whole application topology. However; if there is a large number of application connections, especially when the **MaxRow_AppTop** parameter is set to a value larger than the default, updating the Application Topology view is time-consuming. For information about the **MaxRow_AppTop** parameter, see “Controlling the number of displayed connections” on page 132.

In this mode the Application Topology view looks similar to Figure 18 on page 132:

The topmost node represents the monitored queue manager, labeled with its name. The second tier contains the applications that are connected to it, labeled with the name of each application. The third tier contains the queues that are opened by these applications, labeled with the name of each queue.

the **MaxRow_AppTop** parameter is set to a value greater than the default value, the Application Topology view might take a long time to refresh.

Tip:

- If the application topology that is displayed in the Application Topology view is incomplete, in other words, if there are nodes with no connection to other nodes or connections with a node at only one end, increase the value of the **MaxRow_AppTop** parameter.
- It is not recommended to change the default value. If the **MaxRow_AppTop** parameter must be changed, change the value with a user ID other than SYSADMIN.

Do the following steps to change the value of the **MaxRow_AppTop** parameter:

1. In the Application Topology view, right-click a node; then click **Link to > Link Wizard**.
2. Select **Modify an existing link** in the Workspace Link Wizard - Welcome window, and click **Next**, as shown in Figure 20.

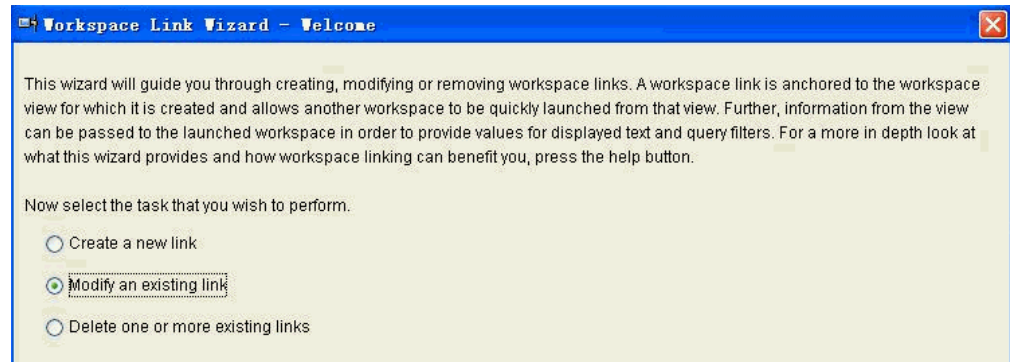


Figure 20. Workspace Link Wizard - Welcome

3. Select the link that you want to modify in the Workspace Link Wizard - Link to Modify window and click **Next**. For example, if you want to change the maximum number of rows that are returned for Application Topology for All Applications, select Application Topology for All Applications, as shown in Figure 21.

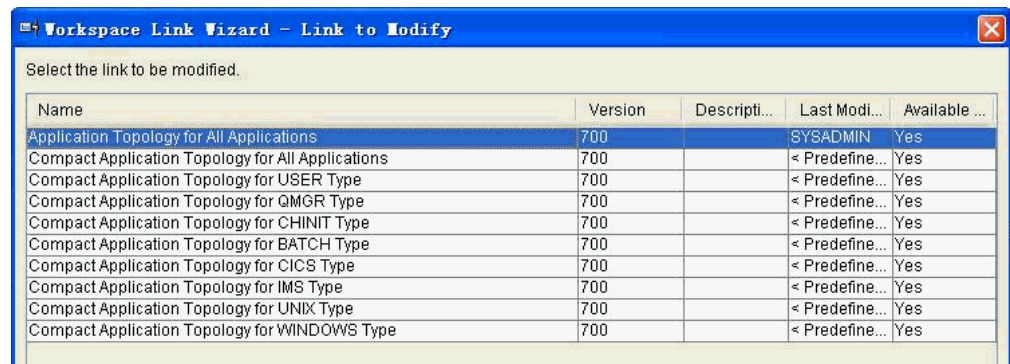


Figure 21. Workspace Link Wizard - Link to Modify

4. In the Workspace Link Wizard - Link Name window, click **Next** without changing the name of the link.

- In the Workspace Link Wizard - Parameters window, click the plus sign (+) next to **TargetWorkspace**, as shown in Figure 22.

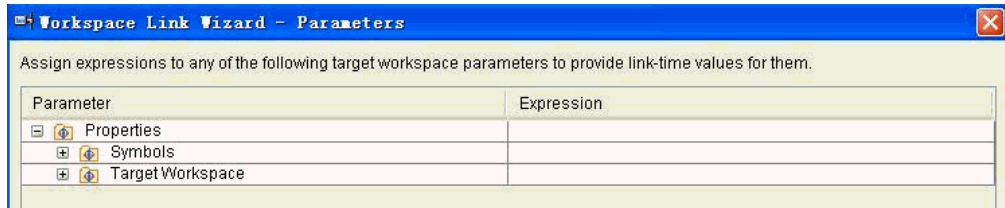


Figure 22. Workspace Link Wizard - Parameters

- In the Workspace Link Wizard - Parameters window, click the plus sign (+) next to **Query - Application Topology** under **TargetWorkspace**.
- In the Workspace Link Wizard - Parameters window, click the plus sign (+) next to **Symbols** under **Query - Application Topology**.
- In the Workspace Link Wizard - Parameters window, double-click **MaxRow_AppTop**, as shown in Figure 23:

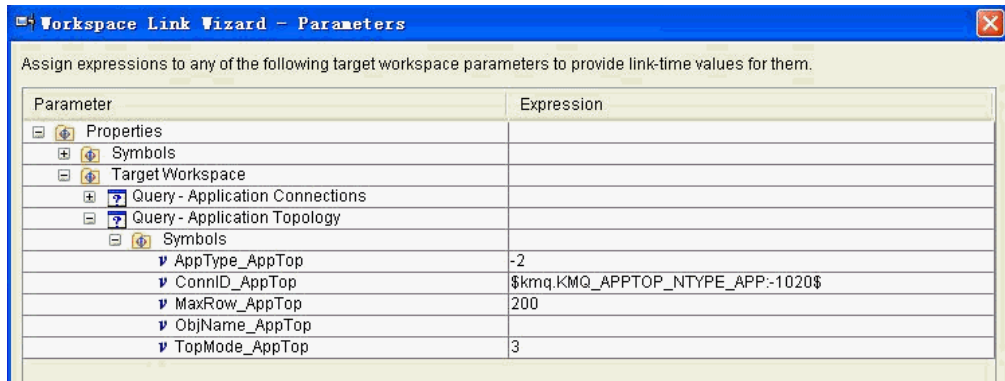


Figure 23. Workspace Link Wizard - Parameters

- In the Expression Editor window, change the value of **MaxRow_AppTop**, and click **OK**.
- In the Workspace Link Wizard - Parameters window, click **Next**.
- Review the changes in the Workspace Link Wizard - Summary window, as shown in Figure 24 on page 135, and click **Finish**.

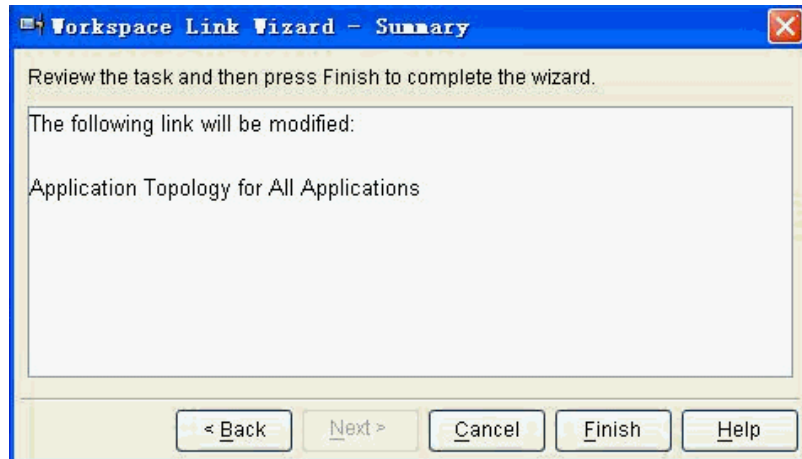


Figure 24. Workspace Link Wizard - Summary

You do not need to restart the agent for the change to take effect. The value of the **MaxRow_AppTop** parameter applies to all instances of the WebSphere MQ Monitoring agent.

Predefined links in the Application Topology view

Predefined links are available at the queue manager, application, and queue nodes in the Application Topology view. Use them to view the Application Topology view that contains the information you want.

Predefined links at the queue manager node: The following links are predefined for the queue manager node:

- Compact Application Topology for All Applications
- Compact Application Topology for USER Type
- Compact Application Topology for UNIX Type
- Compact Application Topology for WINDOWS Type
- Compact Application Topology for BATCH Type
- Compact Application Topology for CICS Type
- Compact Application Topology for IMS Type
- Compact Application Topology for QMGR Type
- Compact Application Topology for CHINIT Type
- Application Topology for All Applications

For example, if the currently displayed Application Topology view displays connections between the monitored queue manager and all applications but you want to view only connections between the queue manager and Windows system applications, you can right-click the queue manager node, and click **Link To > Compact Application Topology for WINDOWS Type**. After the Application Topology view refreshes, it contains only connections between the queue manager and Windows system applications.

To view connections between the queue manager and all types of applications as well as connections between applications and the queues that are opened by them, right-click the queue manager node, and click **Link To > Application Topology for All Applications**.

To view connections between the monitored queue manager and a certain type of application that is not listed in the predefined links, create your own link using the predefined links as a template.

Predefined links at the application node: The following links are predefined for the application node:

- Application Topology for All Applications
- Application Topology for Selected Application
- Compact Application Topology for All Applications
- Compact Application Topology for USER Type
- Compact Application Topology for UNIX Type
- Compact Application Topology for WINDOWS Type
- Compact Application Topology for BATCH Type
- Compact Application Topology for CICS Type
- Compact Application Topology for IMS Type
- Compact Application Topology for QMGR Type
- Compact Application Topology for CHINIT Type
- Connection Objects

To view connections between a specific application and the queues that it opens, in addition to its connection to the monitored queue manager, in the Application Topology view, right-click the application node, and click **Link To > Application Topology for Selected Application**.

To view detailed information about connections of the selected application, right-click the application node, and click **Link To > Connection Objects**.

Predefined links at the queue node: The following links are predefined for the queue node:

- Application Topology for Selected Queue
- Queue Messages
- Queue Parameters
- Queue Status

To view the status of a specific queue, right-click the queue node, and click **Link To > Queue Status**. The Queue Status workspace displays the status of the selected queue.

To view connections between a specific queue and all the applications that are connected to it, right-click the queue node, and click **Link To > Application Topology for Selected Queue**.

To view the messages on a specific queue, right-click the queue node, and click **Link To > Queue Messages**.

Queue Statistics workspaces

The Queue Statistics workspaces provide usage information about all monitored queues and queue managers (such as the number of open queues, how full they are, whether messages are prohibited from being put into or got out of the queues, and the number of messages currently on the dead-letter queue of each queue manager). Alternative Queue Statistics workspaces include the Queue Status, Open

Queue Handles, Real-Time Queue Data for Queues with Messages, and Real-Time Queue Data for Open Queues workspaces. They provide the most current, on-demand real time information about queues in the queue manager. Note that if you have many queues, the real-time workspace can have a slow response time, and consume more resources to retrieve the data.

The Queue Statistics workspace is the default top-level workspace. You can access it from the **Queue Statistics** item for the selected queue manager in the Navigator physical view.

Both the Queue Statistics and Queue Statistics for Monitored Temporary Dynamic Queues workspaces do not contain information that is related to model queues. This is because model queues are templates from which queues can be created, not physical queues about which statistics can be collected.

The Queue Statistics Summary chart that is contained in these workspaces does not necessarily match the data that is displayed in the table at the bottom of this workspace. It is intended only to give an overview of sampled data at the queue manager level according to the current parameters of the agent. The data that is displayed in the table represents only a subsection of collected data, whereas the data that is displayed in the chart provides a summary of all sampled data.

Purging a local queue

You can delete all messages from a local queue in the Queue Statistics workspace.

Remember: If there is uncommitted messages in the queue, these messages will not be deleted.

Perform the following steps to delete all messages from a local queue in the Queue Statistics workspace:

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on a specific operating system.
2. Add the following command to the monitoring file to allow deletion of messages from the queue:

```
SET QACCESS NAME(queue_name) MSGACCESS(DELETE) MGRNAME(qmgr_name)
```

where *queue_name* is the name of the queue whose messages you want to delete and *qmgr_name* is the name of the queue manager that the queue belongs to.
3. Restart the WebSphere MQ Monitoring agent for the changes to take effect.
4. Click **Queue Statistics** in the Navigator physical view to open the Queue Statistics workspace.
5. In the **Queue Statistics for Monitored Queues with Messages** table, right-click the row that corresponds to the queue whose messages you want to delete, and click **Purge Queue (MQGET)**. A message is displayed, asking if you want to purge all messages from the selected queue.
6. Click **Yes**.

All the messages on the queue are deleted.

Clearing a local queue

You can clear a local queue in the Queue Statistics workspace.

Remember: You cannot clear a queue and get an error message in the following circumstances:

- There are uncommitted messages that have been put on the queue under syncpoint.
- An application currently has the queue open.

To avoid this error, use the Purge Queue option to delete messages from a local queue (see “Purging a local queue” on page 137). When you purge a queue, the message is gotten and deleted one by one. The message, which cannot be deleted, will be discarded.

Do the following steps to delete all messages from a local queue in the Queue Statistics workspace:

1. Open the monitoring file of the WebSphere MQ Monitoring agent. See “Changing monitoring options” on page 14 for information about how to open the monitoring file on a specific operating system.
2. Check the value of the ACTIONACCOUNT monitoring option in the monitoring file:
 - If the value is UIUSER, which indicates that the WebSphere MQ Monitoring agent uses the Tivoli Enterprise Portal user ID to interact with WebSphere MQ, ensure that this user ID matches one of the user name mask lists in the ACTIONAUTHUSERS monitoring option.
 - If the value is MQAGENT or USER = *user_id*, where *user_id* is a predefined user ID, go to step 4.
3. Restart the WebSphere MQ Monitoring agent for the changes to take effect.
4. Click **Queue Statistics** in the Navigator physical view to open the Queue Statistics workspace.
5. In the **Queue Statistics for Monitored Queues with Messages** table, right-click the row that corresponds to the queue that you want to clear, and click **Clear Queue**. A message is displayed, asking if you want to clear all messages from the selected queue.
6. Click **Yes**.

Guide for action

Use the Queue Statistics workspaces to compare activity and parameter definitions among your queues. Look for activity and usage trends.

To maximize message integrity, you must minimize dead-letter queue depth. Determine how many open queues you have and review their patterns of activity. Also, check to determine how many undeliverable messages fell into the dead-letter queue.

The following issues can adversely affect performance:

- Lengthy logical units of work
- A CICS transaction or a program that is consuming resources

You can use the SCAN and STR functions with the Queue Name column of the Queue Status attribute group. You can create workspaces based on queries that include only queues with names containing certain strings, such as those that include the word SYSTEM. In addition, you can use these functions to create a situation that can be triggered by the same subset of queues, instead of creating a new situation for each queue that you want to trigger the situation.

For example, to create a situation that can be triggered by any queue with a name field beginning with SYSTEM and a depth exceeding 100 messages, use the following formula.

```
IF STR(Queue_Name) == 1, SYSTEM AND Current_Depth > 100 THEN [situation event occurs]
```

Because the performance overhead of these functions is relatively high, when creating a query, include additional filtering thresholds to reduce the number of times these functions are used. In particular, if you are creating your own query, you can include a condition that includes only queues with a current depth attribute of greater than zero, eliminating all queues that do not currently contain messages. The default query already includes this condition.

To create a new version of the queue status workspace containing only a filtered subset of the queues that are listed in the original workspace, do not modify the original workspace and the queries on which it is based. Instead, create copies of both the workspace and query, and modify the copies. The query must be copied because the original query is read-only and cannot be modified. Predefined workspaces that are included with the WebSphere MQ Monitoring agent must not be modified, because this causes problems when upgrading to future versions.

For more information about using the SCAN and STR functions, see the Formula functions appendix in the *IBM Tivoli Monitoring User's Guide*.

Queue-Sharing Group workspaces (z/OS systems only)

Access these workspaces from the **Queue-Sharing Group** item (at the same level as the MQSERIES item) in the Navigator physical view tree.

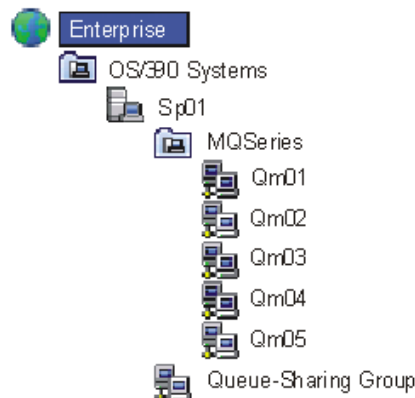


Figure 25. Access QSG workspaces from the Queue-Sharing Group item

See “Queue-Sharing Group Monitoring (z/OS systems only)” on page 140.

Guide for action

Use the information in the Queue-Sharing Group workspaces to examine the following items:

- The status of each queue manager in the queue-sharing group
- The status of the Coupling Facility (CF) application structures that store the essential data of the queue-sharing group. You can also see the date and time that these CF application structures were last backed up

- The status of shared queues and channels that are used by the queue-sharing group

Queue-Sharing Group Monitoring (z/OS systems only)

Use the Queue-Sharing Group monitoring feature to monitor and display data that is unique to WebSphere MQ queue managers in a sysplex. The queue managers must be configured to form queue-sharing groups.

This feature provides workspaces on z/OS systems only, provides additional Queue Statistics attributes for use in situations, and provides data for predefined situations (named in the form **MQSeries_QSG_***).

For details about attributes, predefined situations, and workspaces that are provided with WebSphere MQ Monitoring agent, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help. For a navigational introduction to the Queue-Sharing Group workspaces, see “Queue-Sharing Group workspaces (z/OS systems only)” on page 139.

If no queue-sharing groups that are associated with your queue managers, you cannot use the Queue-Sharing Group Monitoring feature.

To successfully monitor queue-sharing groups, install a WebSphere MQ Monitoring agent on the host system of each queue manager that participates in the queue-sharing group, and ensure that the agent is configured to monitor those queue managers.

The default behavior of the agent is to monitor *all* queue-sharing groups that are associated with monitored queue managers. You can modify the default, if necessary (see the **SET QSG** monitoring option and the **QSGCHKINTERVAL** and **GRPNAME** parameters of the “PERFORM STARTMON” on page 43 monitoring option). Also, use the same sample interval length for all WebSphere MQ Monitoring agents that monitor queue managers in queue-sharing groups (see the **SAMPINT** parameter of the “PERFORM STARTMON” on page 43 monitoring option).

For information about queue-sharing groups see *IBM WebSphere MQ for z/OS System Concepts and Planning Guide*.

Queue Messages workspace

Use Queue Messages workspaces to do the following things:

- Display queue contents.
- List queued messages.
- Display message descriptor information.
- Display message application data (that is, message contents).
- Delete messages.
- Forward messages to other queues.

With these tools, you can balance queue usage, test and debug applications, and delete obsolete messages.

Access these workspaces from the **Queue Definitions** item (or from the Queue Statistics item) for the selected queue manager in the Navigator physical view.

To access the Queue Messages workspace, from the top-level Queue Definitions workspace, right-click a table row and select **Link To**.

For the complete list of predefined workspaces that are included with this product, see the WebSphere MQ Monitoring agent section of the Tivoli Enterprise Portal online help.

Guide for action

Whether you can access messages in the Queue Messages workspaces to perform the described actions that follow depends on certain parameter settings. See “Settings for controlling access to WebSphere MQ messages” on page 81.

Use the Queue Messages workspace to get detailed information about the messages, to delete a message from a queue, or to forward a message to another queue.

After you confirm a message deletion or forwarding operation, a return code and a message are displayed. The value 0 indicates a successful completion. A nonzero value indicates a problem. The workspace is automatically refreshed after you delete or forward a message. For an explanation of nonzero return codes, see *IBM WebSphere MQ Application Programming Reference*.

For detailed instructions about how to delete messages, see “Deleting a message from a queue.”

For detailed instructions about how to forward messages, see “Forwarding a message to another queue.”

Deleting a message from a queue

Do the following steps to delete a message from the selected queue:

1. Open the Queue Messages workspace.
2. Right-click the message that you want to delete, and click **Delete**.
A confirmation message showing the current queue and current queue manager is displayed.
3. To delete the message that has parameters match those in the confirmation message, click **Yes**.

The matching message is deleted. The status of your delete request is displayed; click **OK** to clear the status message.

Important: If you delete a segmented or grouped message, WebSphere MQ Monitoring agent deletes the entire logical message.

Forwarding a message to another queue

Perform the following steps to forward a message on the selected queue to a destination queue that you specify.

The message can be forwarded to a queue on any queue manager that is known to the WebSphere MQ system.

1. In the Queue Messages workspace, right-click the message that you want to forward, and click **Forward**.
2. You are prompted for the destination queue and queue manager. Complete the following fields:

- In the **Queue** field, enter the name of the queue to send the message to.
 - In the **Queue manager** field, enter the name of the queue manager for the queue that you specified in the **Queue** field.
3. Click **Yes**. The message is forwarded to its destination queue. The status of your forward request is displayed; click **OK** to clear the status message.

Important: If you forward a segmented or grouped message, WebSphere MQ Monitoring agent forwards the entire logical message.

Topic Manager Performance workspaces(z/OS systems only)

The Topic Manager Performance workspaces provide information about the publication and subscription activities (such as how frequently subscriptions are made and how many subscriptions are expired) for each monitored z/OS system queue manager.

Access the top-level workspace from the **Topic Manager Performance** item for the selected queue manager in the Navigator physical view.

Guide for action

Use the information in the Topic Manager Performance workspaces to monitor recent and long-running publications and subscription activities for a particular z/OS system queue manager from the following items:

- Subscription and publication rate per second
- Number range of subscriptions and publications
- The number of expired subscriptions
- The maximum number of subscriptions for a specific publication and the number of publications that have no subscribers
- Time performing the publication request

Additional workspace information

With Queue Statistics, Queue Definitions, Channel Performance, and Channel Definitions workspaces, if there are too many queues or channels, they are listed in an unsorted order. You can use the sort function only on the current page for the Tivoli Enterprise Portal table. To easily find the queue that you want to work with, you can set those queues in the `mq.cfg` file.

Exception: Some attributes are not available for WebSphere MQ 5.3. Unavailable numerical attributes are displayed as "n/a" in the table view and "-1" in the chart view of the workspaces.

Chapter 11. Configuring in a cluster environment on Windows systems

You can configure the WebSphere MQ Monitoring agent to run in a Microsoft Cluster Service (MSCS) cluster environment on Windows systems. The WebSphere MQ Monitoring agent supports both active/active and active/passive clustering. If you are configuring the agent in an active/active cluster environment, see “Active/active clustering” on page 144 for instructions. If you are configuring the agent in an active/passive cluster environment, see “Active/passive clustering” on page 149 for instructions.

MSCS clusters are different from WebSphere MQ clusters, as follows:

WebSphere MQ clusters

WebSphere MQ clusters are groups of two or more queue managers running on one or more computers, providing automatic interconnection, and allowing queues to be shared for load balancing and redundancy.

MSCS clusters

MSCS clusters are groups of two or more computers, connected together and configured in such a way that, if one fails, MSCS performs a failover, transferring the state data of applications from the failing computer to another computer in the cluster and starting their operation there.

You can use MSCS to connect servers into a cluster, giving higher availability of data and applications, and making it easier to manage the system. MSCS can automatically detect and recover from server or application failures.

Introducing MSCS clusters

By using the Microsoft Cluster Service (MSCS), you can connect servers into a cluster, giving higher availability of data and applications, and making it easier to manage the system. MSCS can automatically detect and recover from server or application failures.

MSCS supports failover of virtual servers, which correspond to applications, Web sites, print queues, or file shares (including their disk spindles, files, IP addresses, and other items).

Looking at a two-computer cluster. A two-computer cluster comprises two computers (for example, A and B) that are jointly connected to a network for client access using a virtual IP address. They might also be connected to each other by one or more private networks. A and B share at least one disk for each of the two computers to use for server applications. There is also another shared disk, which must be a redundant array of independent disks (RAID) Level 1, for the exclusive use of MSCS; this is known as the quorum disk. MSCS monitors both computers to check that the hardware and software are running correctly.

In a setup such as this, both computers have all the applications installed on each of them, but only computer A runs with live applications; computer B is just running and waiting. If computer A encounters any one of a range of problems, MSCS shuts down the disrupted application in an orderly manner, transfers its

state data to the other computer, and starts the application there. This is known as a failover. Applications can be made cluster-aware so that they interact fully with MSCS and failover smoothly.

A typical setup for a two-computer cluster is as shown in Figure 26.

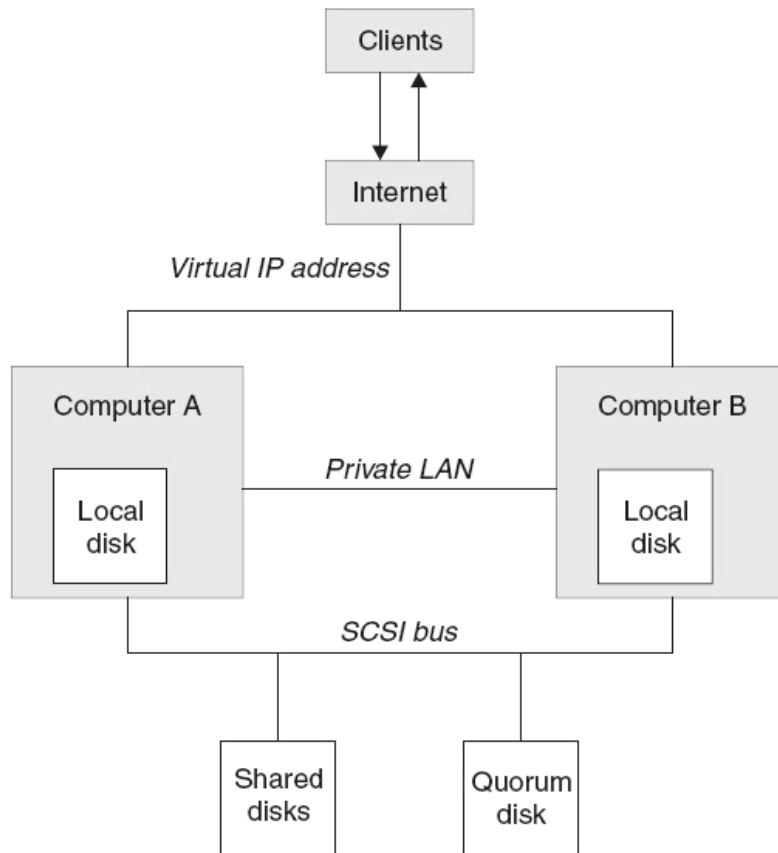


Figure 26. A two-computer MSCS cluster

Each computer can access the shared disks, but only one at a time, under the control of MSCS. In the event of a failover, MSCS switches the access to the other computer. The shared disk itself is usually a RAID, but need not be.

Each computer is connected to the external network for client access, and each has an IP address. However an external client, communicating with this cluster, sees only one virtual IP address, and MSCS routes the IP traffic within the cluster appropriately.

MSCS also performs its own communications between the two computers, either over one or more private connections or over the public network, in order to monitor their states using the heartbeat, synchronize their databases, and to do other things.

Active/active clustering

Configure the WebSphere MQ Monitoring agent to run in an active/active environment.

Prerequisites

Before you begin configuring the WebSphere MQ Monitoring agent to run in a cluster environment, ensure that the two systems that host the WebSphere MQ Monitoring agents are correctly configured. Ensure that both systems meet the following requirements:

- Microsoft Windows 2003 Server is installed. This includes Microsoft Cluster Server (MSCS), which is used to manage your cluster environment.
- You have used MSCS to configure both systems as cluster nodes.
- WebSphere MQ is installed and configured to run in a domain environment. See your WebSphere MQ documentation for information about how to install WebSphere MQ in a cluster environment.
- Queue managers to be monitored are created.
- The IBM Tivoli Monitoring framework is installed. This must be installed separately on both cluster nodes. For instructions about how to install IBM Tivoli Monitoring in a cluster environment, see your IBM Tivoli Monitoring documentation.
- The WebSphere MQ Monitoring agent version 7.0 or later is installed. This must be installed separately on both cluster nodes. See *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520* for installation instructions.

Also ensure that you have two separate logical drives in the cluster environment that are available for storing log and historical data that is collected from the agents. These drives are referenced as drives R and S in the following procedure.

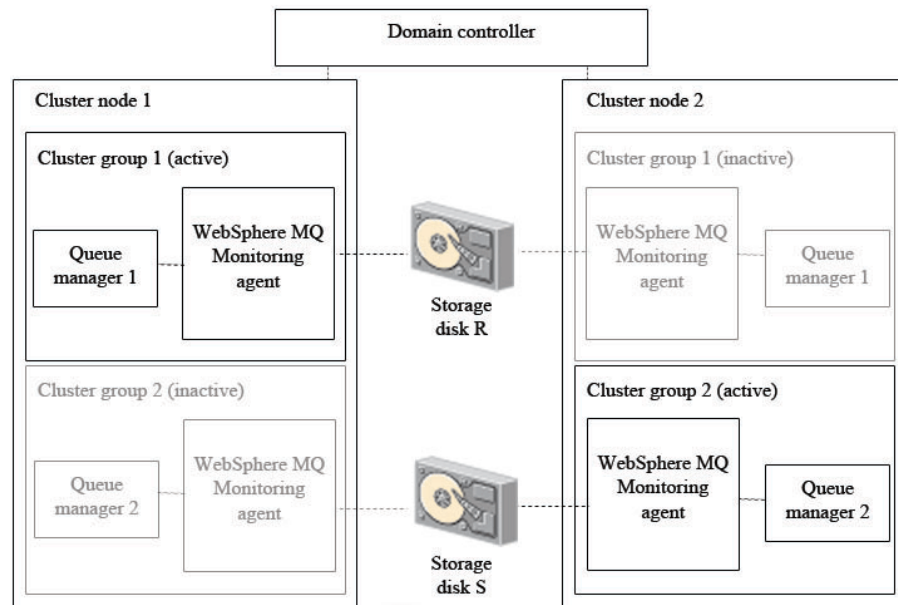


Figure 27. An example cluster environment architecture with one cluster group active on each cluster node

An example of a cluster environment is shown in Figure 27. The environment consists of two cluster nodes on separate physical systems. Each cluster node hosts two cluster groups. The cluster groups that are hosted by each system are the same, so between them there are two identical copies of cluster group 1 and two

identical copies of cluster group 2. Each cluster group contains one queue manager and a single instance of the WebSphere MQ Monitoring agent to monitor the queue manager.

Only one copy of each cluster group can be active simultaneously. For example, if cluster group 1 is active on cluster node 1 (as in Figure 27 on page 145), the copy of cluster group 1 on cluster node 2 is inactive. In most environments with two cluster nodes and two cluster groups where both cluster nodes are running correctly, one cluster group runs on each cluster node, balancing the load between the two systems. If one of the nodes fails, the second cluster group on the node that is still active is started to continue the work of the cluster group that was active on the node that failed.

Information that is shared between different copies of the same agent, such as logs, is stored on a separate disk that can be accessed by all copies of the agent that are running on different cluster nodes. If the node that hosts the active agent fails and a copy of the agent on the other node is started, shared information such as log files can still be read and written to the disk as if the same copy of the agent was still running. The agent is installed separately on each cluster node.

Configuring the WebSphere MQ Monitoring agent

To configure the WebSphere MQ Monitoring agent to run in a cluster environment, complete the following procedure:

Important: The following procedure assumes that you have two cluster groups on each cluster node, as this is the most common scenario. If you have more than two cluster groups, create additional instances of the WebSphere MQ Monitoring agent to monitor the queue managers in each additional cluster group.

1. Run the following commands on both cluster nodes to move the configuration information and log files of each queue manager to the R and S drives :

```
hamvmqm /m QM1 /dd "R:\WMQ" /ld "R:\WMQ\log"
hamvmqm /m QM2 /dd "S:\WMQ" /ld "S:\WMQ\log"
```

Remember: Make sure that the paths in the commands do not contain any spaces.

2. Run the following command in the *WMQInstall/bin* directory on both cluster nodes to register the **IBM MQSeries MSCS** resource type, where *WMQInstall* is the installation directory of WebSphere MQ:

```
haregtyp.exe /r
```

3. Use the **Cluster Administrator** to add the **IBM MQSeries MSCS** type resource that named QM1 to cluster group 1.
4. Use the **Cluster Administrator** to add the **IBM MQSeries MSCS** type resource that named QM2 to cluster group 2.
5. Create new instances of the WebSphere MQ Monitoring agent by doing the following steps on both cluster nodes:
 - a. Start Manage Tivoli Enterprise Monitoring Services.
 - b. Right-click the WebSphere MQ Monitoring agent, and then click **Create Instance** to create a new instance of the WebSphere MQ Monitoring agent to monitor the QM1 queue manager.
 - c. Enter a name for the instance when prompted. In this procedure, assume that you entered KMQ1. Click **OK**.
 - d. Right-click the KMQ1 instance, and then click **Change Startup**.

- e. In the Service Startup for WebSphere MQ Monitoring Agent window, select **Manual**, and click **OK**.
- f. Right-click the WebSphere MQ Monitoring agent, and click **Create Instance** again to create a second new instance of the WebSphere MQ Monitoring agent to monitor the QM2 queue manager .
- g. Enter a name for the instance when prompted. In this procedure, assume that you entered KMQ2. Click **OK**.
- h. Right-click the KMQ2 instance, and then click **Change Startup**.
- i. In the Startup Type window, select **Manual**, and click **OK**.
- j. Edit the configuration file for the KMQ1 instance to configure it to monitor the queue manager QM1.
- k. Edit the configuration file for the KMQ2 instance to configure it to monitor the queue manager QM2.
- l. Stop the primary instance of the WebSphere MQ Monitoring agent.

Remember: Do not use the primary WebSphere MQ Monitoring agent to monitor queue managers in a cluster environment.

- 6. Set local variables by doing the following steps on each cluster node:
 - a. Right-click the KMQ1 instance, and click **Advanced > Edit Variables**.
 - b. In the Override Local Variable Settings window, add the variables in Table 15, which specify where the data that is saved by the KMQ1 agent is stored. The value of each variable is the location on drive R where you want the data to be stored. You must specify a different location for each variable.

Table 15. Overriding local variables

Variable	Details
CTIRA_SIT_PATH	The location where situation data is stored.
CTIRA_LOG_PATH	The location where log data is stored.
CTIRA_HIST_DIR	The location where historical data is stored.

For example, you might set the variables as follows:

```
CTIRA_SIT_PATH=R:\WMQ\kmc\QM1\sitpath
CTIRA_LOG_PATH=R:\WMQ\kmc\QM1\logs
CTIRA_HIST_DIR=R:\WMQ\kmc\QM1\logs\History\@CanProd@\@CanTask@
```

This is illustrated in Figure 28 on page 148.

Remember:

- 1) Variable paths cannot contain spaces. For example, CTIRA_LOG_PATH = R:\Websphere MQ\kmc\log is not valid.
- 2) Each agent must have its own logical drive on which to store data. More than one agent cannot share a single drive.

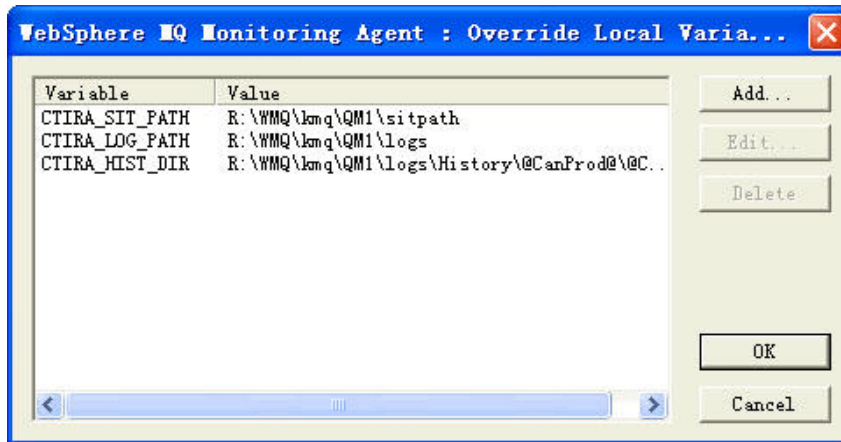


Figure 28. Setting local variables

- c. Click **OK** to close the window.
 - d. Right-click the KMQ2 instance, and click **Advanced > Edit Variables**.
 - e. In the Override Local Variable Settings window, add same variables as specified in step b to specify the location on drive S where you want data saved by the agent KMQ2 to be stored. For example, you might set the variables as follows:


```
CTIRA_SIT_PATH=S:\WMQ\kmq\QM2\sitpath
CTIRA_LOG_PATH=S:\WMQ\kmq\QM2\logs
CTIRA_HIST_DIR=S:\WMQ\kmq\QM2\logs\History\@CanProd@\@CanTask@
```
 - f. Click **OK** to close the window.
 - g. Change the start mode of both the KMQ1 and KMQ2 instances to manual startup.
7. Configure the Tivoli Enterprise Portal Server to list agents that are running in cluster groups by cluster name instead of by host system name in Tivoli Enterprise Portal:
- a. Open Manage Tivoli Enterprise Monitoring Services, and right-click the name of the agent instance.
 - b. Click **Reconfigure**. The `mq.instance_name.cfg` file is opened, where `instance_name` is the name of the agent instance.
 - c. Add the following line at the bottom of the file:


```
SET AGENT NAME($cluster_name)
```

 where `cluster_name` is the name of the MSCS cluster.
 - d. If the portal server is running on a Windows system, do the following steps:
 - 1) Stop the portal server if it is running.
 - 2) In the Manage Tivoli Enterprise Monitoring Services window, right-click the Tivoli Enterprise Portal Server icon, and then click **Advanced > Edit Variables**.
 - 3) In the Tivoli Enterprise Portal Server Override Local Variable Setting window, click **Add**.
 - 4) In the **Variable** menu of the Add Environment Setting Override window, look for the **KFW_TOPOLOGY_CLUSTER_LIST** variable. If it exists, append `AFF_MVS_MQM` to any existing values, separated by a space. If it does not already exist, create the variable and set its value to `AFF_MVS_MQM`.

- 5) Reconfigure and recycle the portal server.
- e. If the Tivoli Enterprise Portal Server is running on a UNIX or Linux system, do the following steps:
 - 1) Stop the portal server if it is running.
 - 2) Navigate to the following directory: *ITM_HOME/config/*, where *ITM_HOME* is the IBM Tivoli Monitoring installation directory.
 - 3) Open the *cq.ini* file in a text editor.
 - 4) Look for the **KFW_TOPOLOGY_CLUSTER_LIST** parameter. If it already exists, add **AFF_MVS_MQM** to any existing values, separated by a space. If the parameter does not already exist, add the following line to the file:
`KFW_TOPOLOGY_CLUSTER_LIST=AFF_MVS_MQM`
 - 5) Save and close the file.
 - 6) Reconfigure and recycle the portal server.
8. Use **Cluster Administrator** to add a type **Generic Service** resource with the name **KMQ1** to cluster group 1, a **Physical Disk** type resource with the name **R** to cluster group 1, a **Generic Service** type resource with the name **KMQ2** to cluster group 2, and a **Physical Disk** type resource with the name **S** to cluster group 2.
9. Use **Cluster Administrator** to set the group owner of cluster group 1 to cluster node 1 and the group owner of cluster group 2 to cluster node 2.
10. Use **Cluster Administrator** to start the queue manager and the WebSphere MQ Monitoring agent in each cluster group .

The configuration of the WebSphere MQ Monitoring agent to monitor queue managers in a cluster environment is completed.

Active/passive clustering

Configure the WebSphere MQ Monitoring agent to run in an active/passive environment.

Prerequisites

Before you begin configuring the WebSphere MQ Monitoring agent to run in a cluster environment, ensure that the two systems that host the WebSphere MQ Monitoring agents are correctly configured. Ensure that both systems meet the following requirements:

- Microsoft Windows 2003 Server is installed. This includes Microsoft Cluster Server (MSCS), which is used to manage your cluster environment.
- You have used MSCS to configure both systems as cluster nodes.
- WebSphere MQ is installed and configured to run in a domain environment. See your WebSphere MQ documentation for information about how to install WebSphere MQ in a cluster environment.
- Queue managers to be monitored are created.
- The IBM Tivoli Monitoring framework is installed. This must be installed separately on both cluster nodes. For instructions about how to install IBM Tivoli Monitoring in a cluster environment, see your IBM Tivoli Monitoring documentation.
- The WebSphere MQ Monitoring agent version 7.0 or later is installed. This must be installed separately on both cluster nodes. See *IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520* for installation instructions.

Also ensure that you have a separate logical drive in the cluster environment available for storing log and historical data collected from the agents. The drive is referenced as drive R in the following procedure.

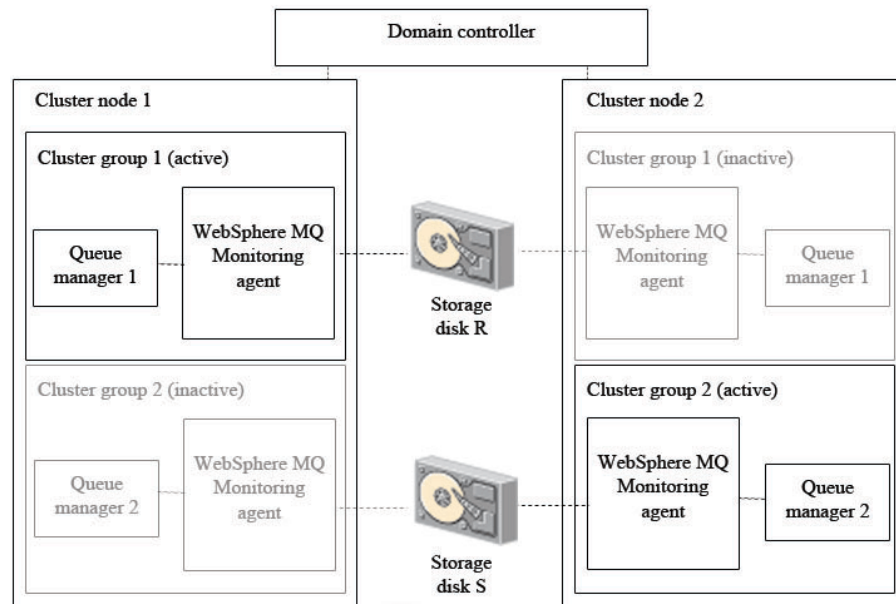


Figure 29. An example cluster environment architecture with a cluster group active on one cluster node and inactive on the other node

An example of a cluster environment is shown in Figure 29. The environment consists of two cluster nodes on separate physical systems. Each cluster node hosts one cluster group (There is no limit to the number of cluster groups that can be hosted by a cluster node). The cluster groups that are hosted by each system are the same, so between them there are two identical copies of cluster group 1. Each cluster group contains one queue manager and a single instance of the WebSphere MQ Monitoring agent to monitor the queue manager.

Only cluster groups on one cluster node are active at one time. For example, if cluster group 1 is active on cluster node 1 (as in Figure 29), the copy of cluster group 1 on cluster node 2 is inactive. In an active/passive cluster environment with two cluster nodes, only cluster groups on the active cluster node run. If the active node fails, the cluster groups on the other node is started to continue the work of the cluster groups that were active on the node that failed.

Information that is shared between different copies of the same agent, such as logs, is stored on a separate disk that can be accessed by all copies of the agent that are running on different cluster nodes. If the node that hosts the active agent fails and a copy of the agent on the other node is started, shared information such as log files can still be read and written to the disk as if the same copy of the agent was still running. The agent is installed separately on each cluster node. Shared disks store logs and historical information that must be accessed by different copies of the same agent.

Configuring the WebSphere MQ Monitoring agent

To configure the WebSphere MQ Monitoring agent to run in a cluster environment, do the following steps:

Important: The following procedure assumes that you have one cluster group on each cluster node. If you have more than one cluster group, create additional instances of the WebSphere MQ Monitoring agent to monitor the queue manager in each additional cluster group.

1. Run the following command on both cluster nodes to move the configuration information and log files of the queue manager to the drive R:

```
hamvmqm /m QM1 /dd "R:\WMQ" /ld "R:\WMQ\log"
```

Remember: Make sure that the paths in the command do not contain any spaces.

2. Run the following command in the *WMQInstall/bin* directory on both cluster nodes to register the **IBM MQSeries MSCS** resource type, where *WMQInstall* is the installation directory of WebSphere MQ:

```
haregtyp.exe /r
```

3. Use the **Cluster Administrator** to add a **IBM MQSeries MSCS** type resource with the name QM1 to cluster group 1.
4. Create a new instance of the WebSphere MQ Monitoring agent by completing the following procedure on both cluster nodes:
 - a. Start Manage Tivoli Enterprise Monitoring Services.
 - b. Right-click the WebSphere MQ Monitoring agent, and click **Create Instance** to create a new instance of the WebSphere MQ Monitoring agent to monitor the QM1 queue manager.
 - c. Enter a name for the instance when prompted. In this procedure, assume that you entered KMQ1. Click **OK**.
 - d. Right-click the KMQ1 instance, and click **Change Startup**.
 - e. In the Startup Type window is displayed. Select **Manual** and click **OK**.
 - f. Edit the configuration file of KMQ1 to configure it to monitor the QM1 queue manager.
 - g. Stop the primary instance of the WebSphere MQ Monitoring agent.

Remember: Do not use the primary WebSphere MQ Monitoring agent to monitor queue managers in a cluster environment.

5. Set local variables by doing the following steps on each cluster node:
 - a. Right-click the KMQ1 instance, and click **Advanced > Edit Variables**.
 - b. In the Override Local Variable Settings window, add the variables in Table 16, which specify where data that is saved by the WebSphere MQ Monitoring agent is stored. The value of each variable is the location on the R drive where you want the data to be stored. You must specify a different location for each variable.

Table 16. Overriding local variables

Variable	Details
CTIRA_SIT_PATH	The location where situation data is stored.
CTIRA_LOG_PATH	The location where log data is stored.
CTIRA_HIST_DIR	The location where historical data is stored.

For example, you might set the variables as follows:

```
CTIRA_SIT_PATH=R:\WMQ\kmq\QM1\sitpath
CTIRA_LOG_PATH=R:\WMQ\kmq\QM1\logs
CTIRA_HIST_DIR=R:\WMQ\kmq\QM1\logs\History\@CanProd\@CanTask@
```

This is illustrated in Figure 30 on page 152.

Remember: Variable paths cannot contain spaces. For example, CTIRA_LOG_PATH = R:\Websphere MQ\kmc\log is not valid.

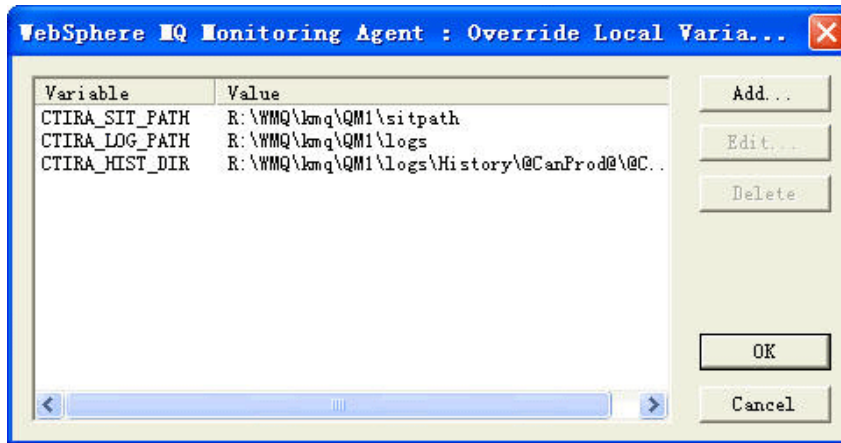


Figure 30. Setting local variables

- c. Click **OK** to close the window.
- d. Change the start mode of the KMQ1 instance to manual startup.
6. Configure the Tivoli Enterprise Portal Server to list agents that are running in cluster groups by cluster name instead of by host system name in Tivoli Enterprise Portal:
 - a. Open Manage Tivoli Enterprise Monitoring Services, and right-click the name of the agent instance.
 - b. Click **Reconfigure** from the displayed menu. The `mq.instance_name.cfg` file is opened, where `instance_name` is the name of the agent instance.
 - c. Add the following line at the bottom of the file:


```
SET AGENT NAME($cluster_name)
```

 where `cluster_name` is the name of the MSCS cluster.
 - d. If the Tivoli Enterprise Portal Server is running on a Windows system, do the following steps:
 - 1) Stop the portal server if it is running.
 - 2) In the Manage Tivoli Enterprise Monitoring Service window, right-click the Tivoli Enterprise Portal Server icon, and click **Advanced > Edit Variables**.
 - 3) In the Tivoli Enterprise Portal Server Override Local Variable Setting window, click **Add**.
 - 4) From the **Variable** menu of the Add Environment Setting Override window, look for the **KFW_TOPOLOGY_CLUSTER_LIST** variable. If the variable exists, append `AFF_MVS_MQM` to any existing values, separated by a space. If the variable does not already exist, create it and set its value to `AFF_MVS_MQM`.
 - 5) Reconfigure and recycle the portal server.
 - e. If the Tivoli Enterprise Portal Server is running on a UNIX or Linux system, do the following steps:
 - 1) Stop the portal server if it is running.
 - 2) Navigate to the following directory: `ITM_HOME/config/`, where `ITM_HOME` is the IBM Tivoli Monitoring installation directory.

- 3) Open the `cq.ini` file in a text editor.
- 4) Look for the **KFW_TOPOLOGY_CLUSTER_LIST** parameter. If the parameter already exists, add `AFF_MVS_MQM` to any existing values, separated by a space. If the parameter does not already exist, add the following line to the file:

```
KFW_TOPOLOGY_CLUSTER_LIST=AFF_MVS_MQM
```
- 5) Save and close the file.
- 6) Reconfigure and recycle the portal server.
7. Use **Cluster Administrator** to add a **Generic Service** type resource with the name `KMQ1` and a **Physical Disk** type resource with the name `R` to cluster group 1.
8. Use **Cluster Administrator** to set the group owner of cluster group 1 to cluster node 1.
9. Use **Cluster Administrator** to start the queue manager and the WebSphere MQ Monitoring agent in cluster group 1 on cluster node 1 or cluster node 2.

The configuration of the WebSphere MQ Monitoring agent to monitor queue managers in a cluster environment is completed.

Chapter 12. Configuring in a cluster environment on AIX systems

You can configure the WebSphere MQ Monitoring agent to run in a cluster environment on AIX[®] systems that are using High Availability Cluster Multi Processing (HACMP[™]). For information about how to configure hardware such as redundant power supplies, redundant disk controllers, disk mirroring or multiple network or adapter configurations, see your HACMP documentation. For information about configuring IBM Tivoli Monitoring to run in a cluster environment, see the individual documentation of each product .

The WebSphere MQ Monitoring agent can be configured to run in either an active/active or active/passive environment. See “Active/active clustering” and “Active/passive clustering” on page 157 for configuration information.

Active/active clustering

Before you begin configuring the WebSphere MQ Monitoring agent to run in an HACMP active/active cluster environment, ensure that the two systems that form the cluster nodes in the environment are correctly configured. Both systems must meet the following requirements:

- HACMP product is installed and your HACMP cluster environment is correctly configured.
- Both cluster nodes have access to a minimum of two shared disks, on which historical information that is shared between copies of the WebSphere MQ Monitoring agent that are running on different cluster nodes is stored. You must have a separate shared disk available in your cluster environment for each instance of the agent. If you want to have more than two agents running on each cluster node, increase the number of shared disks accordingly.
- WebSphere MQ is installed and configured to run in an HACMP cluster environment. See your WebSphere MQ documentation for information about how to install WebSphere MQ in a cluster environment.
- The queue managers that you want to manage are created on both cluster nodes within the HACMP cluster environment. Ensure that failover occurs correctly. See your WebSphere MQ documentation for more information about failover.

An example of a cluster environment is shown in Figure 31 on page 156. The environment consists of two cluster nodes that are running on separate physical systems. Each cluster node hosts two cluster groups. The cluster groups that are hosted by each system are the same, so between them there are two identical copies of cluster group 1 and two identical copies of cluster group 2. Each cluster group contains one or more queue managers and an instance of the WebSphere MQ Monitoring agent to monitor each queue manager.

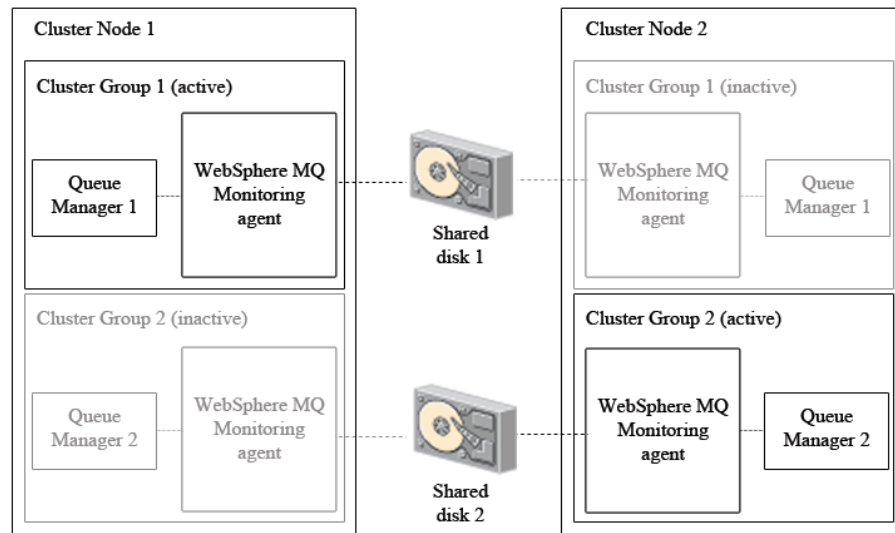


Figure 31. An example active-active cluster environment architecture with one cluster group active on each cluster node

Only one copy of each cluster group can be active simultaneously. For example, if cluster group 1 is active on cluster node 1 (as in Figure 31), the copy of cluster group 1 on cluster node 2 is inactive. In most environments with two cluster nodes and two cluster groups where both cluster nodes are running correctly, one cluster group runs on each cluster node, balancing the load between the two systems. If one of the nodes fails, the second cluster group on the node that is still active is started to continue the work of the cluster group that was active on the node that failed.

Information that is shared between different copies of the same agent, such as historical data files, is stored on a separate disk that can be accessed by all copies of that agent that are running on different cluster nodes. In active/active clustering, at least two instances of the agent run on each cluster node, each requiring a separate shared disk to store shared information. If the node that hosts the active agent fails and a copy of the agent on the other node is started, shared information such as historical data files can still be read and written to the disk as if the same copy of the agent was still running.

Note: Using a shared disk is preferred over using a Network File System (NFS) mounted file system because results are unpredictable when the NFS mounted file system is not available.

To install and configure the WebSphere MQ Monitoring agent, repeat the procedure in “Configuring the WebSphere MQ Monitoring agent” on page 158 for each instance of the WebSphere MQ Monitoring agent in your environment.

Remember: You must repeat this procedure for different copies of the same agent instance that are running on different cluster nodes.

Active/passive clustering

Before you begin configuring the WebSphere MQ Monitoring agent to run in an HACMP active/passive cluster environment, ensure that the two systems that form the cluster nodes in the environment are correctly configured. Both systems must meet the following requirements:

- HACMP product is installed and your HACMP cluster environment is correctly configured.
- Both cluster nodes have access to a shared disk, on which historical information that is shared between copies of the WebSphere MQ Monitoring agent that are running on different cluster nodes is stored.
- WebSphere MQ is installed and configured to run in an HACMP cluster environment. See your WebSphere MQ documentation for information about how to install WebSphere MQ in a cluster environment.
- The queue managers that you want to manage are created on both cluster nodes within the HACMP cluster environment. Ensure that failover occurs correctly. See your WebSphere MQ documentation for more information about failover.

An example of an active/passive cluster environment is shown in Figure 32. The environment consists of two cluster nodes that are running on separate physical systems. The cluster groups that are hosted by each system are the same, so between them there are two identical copies of cluster group 1. Each cluster group contains one or more queue managers and an instance of the WebSphere MQ Monitoring agent to monitor each queue manager.

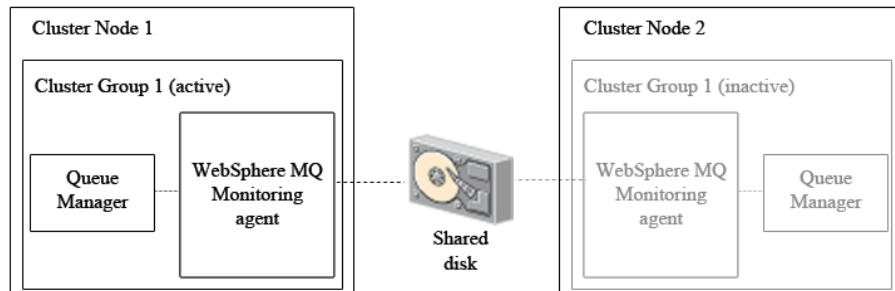


Figure 32. An example active-passive cluster environment architecture

Only cluster groups on one cluster node are active at one time. For example, if cluster group 1 is active on cluster node 1 (as in Figure 32), the copy of cluster group 1 on cluster node 2 is inactive. In an active/passive cluster environment with two cluster nodes, only cluster groups on the active cluster node run. If the active node fails, the cluster groups on the other node is started to continue the work of the cluster groups that were active on the node that failed.

Information shared between different copies of the same agent, such as historical data files, is stored on a separate disk that can be accessed by all copies of the agent that are running on different cluster nodes. If the node that hosts the active agent fails and a copy of the agent on the other node is started, shared information such as historical data files can still be read and written to the disk as if the same copy of the agent was still running. The agent is installed separately on each cluster node.

Note: Using a shared disk is preferred over using a Network File System (NFS) mounted file system because results are unpredictable when the NFS mounted file system is not available.

To install and configure the WebSphere MQ Monitoring agent, repeat the procedure in “Configuring the WebSphere MQ Monitoring agent” for each instance of the WebSphere MQ Monitoring agent in your environment.

Remember: You must repeat this procedure for different copies of the same agent instance that are running on different cluster nodes.

Configuring the WebSphere MQ Monitoring agent

To install and configure the WebSphere MQ Monitoring agent for use in an HACMP cluster environment, do the following steps:

1. Install the WebSphere MQ Monitoring agent on the cluster node on which you want the agent to run. See *Installation and Setup Guide* for installation instructions.
2. Create new instances of the WebSphere MQ Monitoring agent for each queue manager that you want to monitor by doing the following steps:
 - a. Navigate to the *ITM_HOME/config* directory, where *ITM_HOME* is the directory where the IBM Tivoli Monitoring is installed. The default directory is */opt/IBM/ITM*.
 - b. Create a new configuration file for each instance of the WebSphere MQ Monitoring agent by copying the *mq.cfg* default configuration file to the *hostname_mq_instance_name.cfg* file, where the *hostname* is the host name of the cluster node and *instance_name* is the queue manager name.
 - c. Edit each of the newly created configuration files as follows:

- 1) Locate the **SET MANAGER NAME** parameter and change it as follows:

```
SET MANAGER NAME(instance_name)
```

where *instance_name* is the name of the queue manager that you want to monitor.

- 2) Locate the **SET QUEUE NAME** parameter and change it as follows:

```
SET QUEUE NAME(*) MGRNAME(instance_name) QDEFTYPE(PREDEFINED)
```

where *instance_name* is the name of the queue manager that you want to monitor.

- 3) Locate the **SET CHANNEL NAME** parameter and change it as follows:

```
SET CHANNEL NAME(*) MGRNAME(instance_name)
```

where *instance_name* is the name of the queue manager that you want to monitor.

3. Set local variables by doing the following steps:
 - a. Navigate to the *ITM_HOME/config* directory, where *ITM_HOME* is the directory where IBM Tivoli Monitoring is installed.
 - b. Open the *mq.ini* file.
 - c. Locate the **\$CTIRA_SIT_PATH** variable and change it as follows:

```
CTIRA_SIT_PATH=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/sit$INSTANCE_HISTORY$
```

Tip: Using the `$INSTANCE_HISTORY$` variable in the `mq.ini` file distinguishes the instances of the WebSphere MQ Monitoring agent on the cluster node.

- d. Save and close the `mq.ini` file.
4. Create the directories where historical and situation data files are stored by doing the following steps on each cluster node:
 - a. Create the following directory for storing situation data:

```
ITM_HOME/aix523/mq/sit
```

where `ITM_HOME` is the directory in which IBM Tivoli Monitoring is installed. The user ID that is used to run the agent must have write access to this directory.

- b. Create the following directories for storing historical and situation data from each agent instance on the shared disk.
 - For storing historical data: `disk_name/kmq/hist/instance_name`
 - For storing situation data: `disk_name/kmq/sit/instance_name`

where `disk_name` is the name of the shared disk on which historical data is stored and `instance_name` is the name of the queue manager that you want to monitor. The user ID that is used to run the agent must have write access to these directories.

- c. Create a link to the shared disk on which historical data is stored by running the following command:

```
ln -sf disk_name/kmq/hist/instance_name  
ITM_HOME/aix523/mq/hist/instance_name
```

where `disk_name` is the name of the shared disk, `ITM_HOME` is the directory in which IBM Tivoli Monitoring is installed, and `instance_name` is the name of the queue manager that you want to monitor.

Remember: The symbolic link definition is used to equate the `mq.ini` specification to a directory on the shared disk on which historical and situation data is stored.

- d. Create a link to the shared disk on which situation data is stored by running the following command:

```
ln -sf disk_name/kmq/sit/instance_name  
ITM_HOME/aix523/mq/sit/instance_name
```

where `disk_name` is the name of the shared disk, `ITM_HOME` is the directory in which IBM Tivoli Monitoring is installed, and `instance_name` is the name of the queue manager that you want to monitor.

Remember: The symbolic link definition is used to equate the `mq.ini` specification to a directory on the shared disk on which historical and situation data is stored.

- e. Optional: If you have multi-instance queue managers in your WebSphere MQ environment, create a link to the shared disk where agent data related to the queue manager is stored by running the following command:

```
ln -sf disk_name/kmq/agent/instance_name  
ITM_HOME/aix523/mq/agent/instance_name
```

where `disk_name` is the name of the shared disk, `ITM_HOME` is the directory in which IBM Tivoli Monitoring is installed, and `instance_name` is the name of the queue manager that you want to monitor.

Remember: The symbolic link definition is used to equate the mq.ini specification to a directory on the shared disk on which historical and situation data is stored.

5. Configure the Tivoli Enterprise Portal Server to list agents running in cluster groups by cluster name instead of host system name in Tivoli Enterprise Portal:
 - a. Open the agent configuration file. The filename is `hostname_mq_instance_name.cfg`, where `hostname` is the host name of cluster node, `instance_name` is the queue manager name. Add the following line at the bottom of the file:

```
SET AGENT NAME($cluster_name)
```

where `cluster_name` is the name of the HACMP cluster. This name must be the same as the name that is assigned to the failover agent in the other cluster group.

- b. If the Tivoli Enterprise Portal Server is running on a Windows system, do the following steps:
 - 1) Stop the Tivoli Enterprise Portal Server if it is running.
 - 2) Right-click the Tivoli Enterprise Portal Server icon in Manage Tivoli Enterprise Monitoring Services, and click **Advanced** > **Edit Variables**.
 - 3) In the Tivoli Enterprise Portal Server Override Local Variable Setting window, click **Add**.
 - 4) From the **Variable** menu of the Add Environment Setting Override window, look for the **KFW_TOPOLOGY_CLUSTER_LIST** variable. If the variable exists, append `AFF_MVS_MQM` to any existing values, separated by a space. If the variable does not already exist, create it and set its value to `AFF_MVS_MQM`.
 - 5) Reconfigure and recycle the Tivoli Enterprise Portal Server.
 - c. If the Tivoli Enterprise Portal Server is running on a UNIX or Linux system, do the following steps:
 - 1) Stop the Tivoli Enterprise Portal Server if it is running.
 - 2) Navigate to the `ITM_HOME/config/` directory, where `ITM_HOME` is the IBM Tivoli Monitoring installation directory.
 - 3) Open the `cq.ini` file in a text editor.
 - 4) Look for the **KFW_TOPOLOGY_CLUSTER_LIST** parameter. If the parameter already exists, add `AFF_MVS_MQM` to any existing values, separated by a space. If the parameter does not already exist, add the following line to the file:

```
KFW_TOPOLOGY_CLUSTER_LIST=AFF_MVS_MQM
```
 - 5) Save and close the file.
 - 6) Reconfigure and recycle the Tivoli Enterprise Portal Server.
6. Create a file containing the startup script that is used to start the agent by doing the following steps:
 - a. Create a new text file and enter the following lines:
 - To start the queue manager:

```
MC91_install/bin/hamqm_start QM_name
```
 - To start the WebSphere MQ Monitoring agent:

```
ITM_HOME/bin/itmcmd agent -o instance_name start mq
```

where:
`ITM_HOME` is the directory in which IBM Tivoli Monitoring is installed.

MC91_install is the directory in which WebSphere MQ supportpac MC91 is installed.

QM_name is the name of the queue manager.

instance_name is the name of the WebSphere MQ Monitoring agent instance.

WebSphere MQ supportpac MC91 was installed when you installed WebSphere MQ in the HACMP cluster environment. See your WebSphere MQ documentation for further information about WebSphere MQ supportpac MC91.

- b. Save the file as `kmq_start.sh`.

Remember: When writing a startup script, ensure that the queue manager is started before the WebSphere MQ Monitoring agent.

7. Create a file containing the shutdown script that is used to stop the agent:

- a. Create a new text file and enter the following lines:

- To stop the WebSphere MQ Monitoring agent:

```
ITM_HOME/bin/itmcmd agent -o instance_name stop mq
```

- To stop the queue manager:

```
MC91_install/bin/hamqm_stop QM_name 5
```

where:

ITM_HOME is the directory in which IBM Tivoli Monitoring is installed.

MC91_install is the directory in which WebSphere MQ supportpac MC91 is installed.

QM_name is the name of the queue manager.

instance_name is the name of the WebSphere MQ Monitoring agent instance.

WebSphere MQ supportpac MC91 was installed when you installed WebSphere MQ in the HACMP cluster environment. See your WebSphere MQ documentation for further information about WebSphere MQ supportpac MC91.

- b. Save the file as `kmq_stop.sh`.
 - c. When writing a shutdown script, ensure that the WebSphere MQ Monitoring agent is stopped before the queue manager.
8. Do the following steps to set the scripts that is used to start and stop the agent in the HACMP environment:
 - a. Open the cluster group in the HACMP cluster software.
 - b. Under Application Server, set the start script as `kmq_start.sh`.
 - c. Under Application Server, set the stop script as `kmq_stop.sh`.

Remember: You must repeat this procedure for different copies of the same agent instance that are running on different cluster nodes.

The WebSphere MQ Monitoring agent is configured to operate in an HACMP cluster environment.

Chapter 13. Reference

Reference information includes topics about the WebSphere MQ Monitoring agent, such as the data collection mode, object configuration, and attribute groups.

Data collection mode

WebSphere MQ Monitoring agent uses two data collection modes: sampling mode and on-demand mode.

In the sampling mode, the agent collects data in the background on an interval basis. Each time that you open a workspace containing a table that is based on sampling data, the data that is displayed in the table was gathered from the most recent interval. For example, if the sampling interval is set to 5 minutes (300 seconds), the displayed data might be collected up to 5 minutes ago. Sampling mode has the advantage of being able to aggregate data and calculate rates because the new sample can be compared to the old sample and deltas can be taken.

In the on-demand mode, the agents collect data at the exact time that a query is issued to it for the data. Each time that you open a workspace containing a table that is based on on-demand data, a query for data collection is issued to the agent and the data is collected in real-time at the time of the query. On-demand mode has the advantage of providing the most current data.

For information about which workspaces use the sampling mode and which use the on-demand mode, see "Sampled and on-demand tables."

Sampled and on-demand tables

Sampled and on-demand tables list the tables that are used in WebSphere MQ Monitoring agent, their data collection mode, and their supported operating systems. Data collection is categorized as follows:

Sampled

This data is collected regularly at a specific time interval. Data that is returned by a query that uses sampled data represents values that are recorded during the sampling intervals queried.

On-demand

This data is collected by the agent in real-time when the query is issued, and reflects the most recent data values.

Background-collected

This data is collected in the background when it is published by the queue manager (in events or accounting and statistics reports). Querying this data results in a maximum of one row of data per event or queue manager report returned (depending on the query parameters). Most of this data is optionally produced by the queue manager according to the parameter settings in the queue manager. Some of the data is produced by the queue manager on an interval basis, and there are parameters for the queue manager that control the length of the interval. See Chapter 4, "Data collection for workspaces," on page 57 for more information about setting queue manager parameters to produce this data.

Table 17. Sampled and on-demand tables

Table name	Data collection type	Supported operating systems
Application Accounting	Background Collected	Distributed systems
Application Connections	On-demand	All
Application Debug Trace	Sampled	z/OS systems
Application Debug Trace Details	Sampled	z/OS systems
Application Debug Trace Selection	Sampled	z/OS systems
Application Long-Term History	Sampled	z/OS systems
Application Statistics	Sampled	z/OS systems
Application Queue Long-Term History	Sampled	z/OS systems
Application Queue Short-Term History	Sampled	z/OS systems
Application Queue Statistics	Sampled	z/OS systems
Application Short-Term History	Sampled	z/OS systems
Application Topology	On-demand	All
Application Transaction/Program Long-Term History	Sampled	z/OS systems
Application Transaction/Program Short-Term History	Sampled	z/OS systems
Application Transaction/Program Statistics	Sampled	z/OS systems
Buffer Manager Long-Term History	Sampled	z/OS systems
Buffer Manager Short-Term History	Sampled	z/OS systems
Buffer Pools	Sampled	z/OS systems
Channel Data	On-demand	All
Channel Definitions	Sampled	All
Channel Definition Details	On-demand	All
Channel Initiator Detail	Sampled	z/OS systems
Channel Long-Term History	Sampled	All
Channel Short-Term History	Sampled	All
Channel Statistics	Sampled	All
Channel Status	On-demand	All
Channel Summary	Sampled	All
Connection Objects	On-demand	All
Current Events	Background-collected	All

Table 17. Sampled and on-demand tables (continued)

Table name	Data collection type	Supported operating systems
Current Queue Manager Status	On-demand	All
Data Manager Long-Term History	Sampled	z/OS systems
Data Manager Short-Term History	Sampled	z/OS systems
Error Log	Background-collected	Distributed systems
Event Archive	Background-collected	All
Event details	Background-collected	All
Event History	Background-collected	All
Listener Status	On-demand	Distributed systems
Log Data Set Status	On-demand	z/OS systems
Log Manager Long-Term History	Sampled	z/OS systems
Log Manager Short-Term History	Sampled	z/OS systems
Managers	Sampled	All
Manager Definition Details	Sampled	All
Message Data	On-demand	All
Message Delete	On-demand	All
Message Details	On-demand	All
Message Manager Long-Term History	Sampled	z/OS systems
Message Manager Short-Term History	Sampled	z/OS systems
Message Retry	On-demand	All
Message Statistics	On-demand	All
Message Summary	On-demand	All
MQSeries Events	Background-collected	All
MQ Action Log	Background-collected	All
MQ Channel Statistics	Background Collected	Distributed systems
MQ Queue Statistics	Background Collected	Distributed systems
MQI Call Statistics Details	Background Collected	Distributed systems
MQI Message Statistics Details	Background Collected	Distributed systems
MQI Statistics	Background Collected	Distributed systems
Namelist	On-demand	All
Object Attribute Details	On-demand	All
Page Sets	Sampled	z/OS systems
Page Set Long-Term History	Sampled	z/OS systems
Page Set Short-Term History	Sampled	z/OS systems
Publish Subscribe Status	On-demand	All

Table 17. Sampled and on-demand tables (continued)

Table name	Data collection type	Supported operating systems
QSG Coupling Facility Structure Backups	Sampled	z/OS systems
QSG Coupling Facility Structure Connections	Sampled	z/OS systems
QSG Coupling Facility Structures	Sampled	z/OS systems
QSG Channels	Sampled	z/OS systems
QSG QMgrs	Sampled	z/OS systems
QSG Queues	Sampled	z/OS systems
Queue Accounting	Background Collected	Distributed systems
Queue Data	On-demand	All
Queue Definition Details	On-demand	All
Queue Definitions	Sampled	All
Queue Handle Status	On-demand	All
Queue Long-Term History	Sampled	All
Queue Short-Term History	Sampled	All
Queue Statistics	Sampled	All
Queue Status	On-demand	All
SMF Data	Sampled	z/OS systems
Subscription Definitions	On-demand	All
Subscription Status	On-demand	All
TCPIP Started Listeners	Sampled	z/OS systems
Topic Definitions	On-demand	All
Topic Manager Long-Term History	Sampled	z/OS systems
Topic Manager Short-Term History	Sampled	z/OS systems
Topic Publishers	On-demand	All
Topic Status	On-demand	All
Topic Subscribers	On-demand	All

Object Configuration

If you install the WebSphere MQ Configuration agent and the WebSphere MQ Monitoring agent, you can access some configuration options through the workspaces of WebSphere MQ Monitoring agent. You can use these options to modify the settings list of an object, or to update an object in your environment from the object in the defined view, without entering the Configuration view in Tivoli Enterprise Portal. Different workspaces provides shortcuts to configure different types of objects, as shown in Table 18 on page 167.

Table 18. Objects configuration from different workspaces in WebSphere MQ

Workspace	Object that can be Configured
Channel Performance	Channel
Channel Definitions	Channel
Cluster Queue Managers	Channel
Queue Definitions	Queue
Queue Statistics	Queue
Queue Manager Status	Queue Manager

To configure an object from a workspace of the WebSphere MQ Monitoring agent, do the following steps:

1. Navigate to one of the workspaces that are listed in Table 18.
2. In the workspace that contains information about the object that you want to configure, right-click the row.
3. Select **Configure X**, where *X* is the type of object that you select in the table. For example, if you select a queue manager in the table, select **Configure Queue Manager** from the menu.
4. If you have two or more items with the same name in your defined environment (viewable in the Defined view in the WebSphere MQ Configuration agent), you are prompted to select the one that you want to modify. Select the one that you want to modify.
5. Modify the attributes of the object as you would in the Configuration view.
6. Click **Update Actual and Save** to update your actual environment with any changes that you have made to the object.

Important: You can only update your actual environment if the configuration agent is running, otherwise this operation fails.

For more information about the WebSphere MQ Configuration agent and modifying the setting list of an object, see *IBM Tivoli Composite Application Manager Configuration Agent for WebSphere MQ User's Guide, SC14-7525*.

Workspaces

The predefined workspaces present information about various aspects of your WebSphere MQ environment. The table views and graphics within each workspace report the attribute information that you are monitoring. You can use them to do the following things:

- Investigate attribute information relating to a change in a state
- Monitor your system performance to identify bottlenecks and to evaluate tuning decisions
- Select the most effective threshold values for situations that you create

In addition to table views and graphics, a workspace might contain other views, such as a browser view or a take action view that you can use to send commands to the operator console. Note that the descriptions of each workspace apply to the default settings (the components of the workspace in its original configuration). Any changes or updates that you make to a workspace will not be reflected in the description of the workspace. For additional details about customizing workspaces, see the Tivoli Enterprise Portal Help and documentation.

Data collection mode

The WebSphere MQ Monitoring agent uses two types of data collection mode, which are sampling mode and on-demand mode.

In sampling mode, the agent collects data in the background on an interval basis. Each time you open a workspace with a table based on sampling data, the data displayed in the table is from the most recent interval. For example, if the sampling interval is set to 5 minutes (300 seconds), the data displayed might have been collected up to 5 minutes ago. Sampling mode has the advantage of being able to aggregate data and calculate rates because the new sample can be compared to the old sample and deltas can be taken.

In on-demand mode, the agents collects data at the exact time that a query is issued to it for the data. Each time you open a workspace with a table based on on-demand data, a query for data collection is issued to the agent and the data displayed is collected real time at the time of the query. On-demand mode has the advantage of providing the most current data possible.

For information about which workspace uses sampling mode and which uses on-demand mode, see Appendix: Sampling and on-demand tables in WebSphere MQ Monitoring Agent User's Guide.

Application Accounting workspace

The Application Accounting workspace is the primary workspace for monitoring application connections to queue managers within the WebSphere MQ environment. Note that the workspace might include application connections which were once active, but are not currently active. It also *might not* include application connections that are currently active, in cases where the application connection is new and data collection has not yet begun.

Predefined views

The Application Accounting workspace includes the following predefined views:

- **Application Accounting** This table contains information about the number of WebSphere MQ API (MQI) requests made by applications to a queue manager. Information about all application connections is displayed, with the name of the queue manager at the bottom of the table. For details about the individual attributes displayed in this table, see Application Accounting attribute group.
- **Normal Rate** This view contains a bar chart that shows the numbers of the following operations performed over each sampling period for which records exist. Sampling periods are identified by their end times, which are plotted along the x-axis of the chart:
 - Open rate
 - Close rate
 - Put rate
 - Put1 rate
 - Put byte rate
 - Get rate
 - Get byte rate
 - Browse rate
 - Browse byte rate

- Commit rate
- Backout rate
- Inquire rate
- Set rate
- **Fail Rate** This view contains a bar chart that shows the numbers of the following operations that failed to complete correctly over each sampling period for which records exist. Sampling periods are identified by their end times, which are plotted along the x-axis of the chart:
 - Open fail rate
 - Close fail rate
 - Put fail rate
 - Put1 fail rate
 - Get fail rate
 - Browse fail rate
 - Commit fail rate
 - Inquire fail rate
 - Set fail rate

For more information on the attributes listed in the tables of this workspace, see “Application Accounting attributes (distributed systems only)” on page 289.

Predefined links

You can link to the following workspaces from the Application Accounting workspace:

- MQI Call Statistics Details
- MQI Message Statistics Details
- Queue Accounting
- Recent Application Accounting
- Historical Application Accounting

Application Connections workspace

The Application Connections workspace is available for WebSphere MQ version 6.0 and later only.

The Application Connections workspace provides information about the state of connections and operations being performed by applications, such as the progress of outstanding units of work. This information can be particularly useful in decision making, for instance when deciding when to stop a queue manager.

Predefined views

The Application Connections workspace includes the following predefined views:

- **Application Topology** The Application Topology view provides a graphical representation of connections between the monitored queue manager, the applications that are connected to it, and the queues opened by the applications. For details of the individual attributes displayed, see “Application Topology attributes” on page 332.

- **Application Connections** This table displays the attributes of application connections that exist within your WebSphere MQ environment. There are two different ways to arrive at this workspace, which result in different data being displayed in the table:
 - When the Application Connections workspace is opened as a primary workspace, information about all application connections is displayed in this view, with the name of the queue manager at the bottom.
 - When you link to the Application Connections workspace from a row within another workspace, only a single row containing information about the selected application connection is displayed, with the name of the application at the bottom.

For more information on the attributes listed in the tables of this workspace, see “Application Connections attributes” on page 293.

Predefined links

You can link to the following workspace from the Application Connections workspace:

- Connection Objects

In addition to the above workspace, the following workspaces are available in specific circumstance:

- If you have OMEGAMON for CICS on z/OS installed, you can also link to the CICS Transaction Analysis workspace. This workspace can only be link to from rows with an Appl Type value of CICS. The CICS Transaction Analysis workspace provides a comprehensive view of CICS transactions which you can use to identify problem transactions across CICS regions and z/OS images for the CICSplex. For more information about this workspace, see OMEGAMON for CICS on z/OS online help.
- If you have IBM Tivoli Monitoring OS agent installed on your system, you can also link to Process workspace of IBM Tivoli Monitoring OS agent. The Process workspace provides you with the details of the specific process that is holding the connection. For more information about this workspace, see IBM Tivoli Monitoring online help.
- If you have OMEGAMON XE for z/OS installed, you can also link to the Address Space CPU Usage workspace by using ASID.

For more information about this workspace, see OMEGAMON XE on z/OS online help.

Application Debugging by TaskID workspace

The Application Debugging by TaskID workspace is available on z/OS systems only.

Use the Application Debugging by TaskID workspace to view the task IDs associated with an application ID, transaction or program. You can use this workspace and the other debugging related workspaces to trace bottlenecks within an application that might be adversely affecting performance.

Predefined views

The Application Debugging by TaskID workspace includes the following predefined views:

- **Application Debugging by TaskID** The Application Debugging by TaskID view provides you with a list of task IDs associated with the current application ID, transaction, or program. For details of the individual attributes displayed in this table, see “Application Debug Trace Selection attributes (z/OS systems only)” on page 313.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

Predefined links

You can link to the following workspace from the Application Debugging by TaskID workspace:

- Application Debugging Trace workspace

Application Debugging by Tran/Pgm workspace

The Application Debugging by Tran/Pgm workspace is available on z/OS systems only.

Use the Application Debugging by Tran/Pgm workspace to view and debug the transactions and programs currently using a queue manager. You can use this workspace and the other debugging related workspaces to trace bottlenecks within an application that might be adversely affecting performance.

Predefined views

The Application Debugging by Tran/Pgm workspace includes the following predefined views:

- **Application Debugging by Tran/Pgm** The Application Debugging by Tran/Pgm view provides you with a list of the transactions and programs currently using a queue manager. The option to trace program or transaction execution is also provided. When debugging, select the transaction or program you want to debug from the list and link to the Application Debugging by TaskID Workspace to display greater information about it. For details of the individual attributes displayed in this table, see “Application Debug Trace Selection attributes (z/OS systems only)” on page 313.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

Predefined links

You can link to the following workspace from the Application Debugging by Tran/Pgm workspace:

- Application Debugging by TaskID workspace

Application Debugging Trace workspace

The Application Debugging Trace workspace is available on z/OS systems only.

The Application Debugging Trace workspace displays the results of transaction and program traces. You can use this workspace and the other debugging related workspaces to trace bottlenecks within an application that might be adversely affecting performance.

Predefined views

The Application Debugging Trace workspace includes the following predefined views:

- **Application Debugging Trace** The Application Debugging Trace view provides you with trace results based on the entities that were selected when it was linked to. For details of the individual attributes displayed in this table, see “Application Debug Trace attributes (z/OS systems only)” on page 297.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

Predefined links

You can link to the following workspace from the Application Debugging Trace workspace:

- Trace Detail Parameters workspace

Application Debugging workspace

The Application Debugging workspace is available on z/OS systems only.

Use the information provided by the Application Debugging workspace to help you debug your WebSphere MQ applications. You can use this workspace and the other debugging related workspaces to trace bottlenecks within an application that might be adversely affecting performance.

Note that application debugging information is only available if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

Predefined views

The Application Debugging workspace includes the following predefined views:

- **Application Debugging** The Application Debugging view displays a list of application identifiers. Select an application ID from the list and link to the Application Debugging by Tran/Pgm workspace to display more detailed debugging information. For details of the individual attributes displayed in this table, see “Application Debug Trace Selection attributes (z/OS systems only)” on page 313.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

Predefined links

You can link to the following workspace from the Application Debugging workspace:

- Application Debugging by Tran/Pgm workspace

Application Statistics by ApplID workspace

The Application Statistics by ApplID workspace is available on z/OS systems only.

The Application Statistics by ApplID workspace provides information about monitored applications, organized by application IDs, in both tabular and chart form.

Note that the application statistics by ApplID workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Application Statistics by ApplID workspace includes the following predefined views:

- **Application Statistics by ApplID** This view provides statistics for all monitored applications using the selected queue manager. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; on CICS it is the VTAM Application ID; on IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require. For a detailed description of the data shown in this view, see “Application Statistics attributes (z/OS systems only)” on page 330.
- **Application Statistics Summary** This view shows, as a bar chart, the number of applications (listed by ID), CICS transactions and programs, queues, and tasks (listed by ID) currently active and using the selected queue manager. This view is a part of all workspaces that contain application statistics.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. This view is a part of all workspaces that contain application statistics.

Predefined links

You can link to the following workspaces from the Application Statistics by ApplID workspace:

- Tran/Pgm Statistics by ApplID
- Queue Access Statistics by ApplID
- Recent Application Statistics by ApplID
- Historical Application Statistics by ApplID

Application Statistics by Tran/Pgm workspace

The Application Statistics by Tran/pgm workspace is available on z/OS systems only.

The Application Statistics by Tran/pgm workspace provides information about monitored applications, organized by transaction or program, in both tabular and chart form.

Note that the application statistics by Tran/pgm workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Application Statistics by Tran/pgm workspace includes the following predefined views:

- **Application Statistics by Tran/pgm** This view provides statistics for all monitored applications using the selected queue manager. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; on CICS it is the VTAM Application ID; on IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require. For a detailed description of the data shown in this view, see “Application Statistics attributes (z/OS systems only)” on page 330.
- **Application Statistics Summary** This view shows, as a bar chart, the number of applications (listed by ID), CICS transactions and programs, queues, and tasks (listed by ID) currently active and using the selected queue manager. This view is a part of all workspaces that contain application statistics.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. This view is a part of all workspaces that contain application statistics.

Predefined links

You can link to the following workspaces from the Application Statistics by ApplID workspace:

- Tran/Pgm Statistics by ApplID
- Queue Access Statistics by ApplID
- Recent Application Statistics by ApplID
- Historical Application Statistics by ApplID

Application Statistics for Active Applications workspace

The Application Statistics for Active Applications workspace is available on z/OS systems only.

The Application Statistics for Active Applications workspace provides information about monitored applications which are currently active, organized by application IDs, in both tabular and chart form.

Note that the Application Statistics for Active Applications workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

Predefined views

The Application Statistics for Active Applications workspace includes the following predefined views:

- **Application Statistics for Active Applications** This view provides statistics for the active applications using the selected queue manager. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; on CICS it is the VTAM Application ID; on IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require. For a detailed description of the data shown in this view, see “Application Statistics attributes (z/OS systems only)” on page 330.
- **Application Statistics Summary** This view shows, as a bar chart, the number of application (listed by ID), CICS transactions and programs, queues, and tasks (listed by ID) currently active and using the selected queue manager. This view is a part of all workspaces that contain application statistics.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. This view is a part of all workspaces that contain application statistics.

Predefined links

You can link to the following workspaces from the Application Statistics for Active Applications workspace:

- Tran/Pgm Statistics by ApplID
- Queue Access Statistics by ApplID
- Recent Application Statistics by ApplID
- Historical Application Statistics by ApplID

Application Statistics for CICS Jobs workspace

The Application Statistics for CICS Jobs workspace is available on z/OS systems only.

The Application Statistics for CICS Jobs workspace provides information about monitored applications that are CICS applications, organized by application IDs, in both tabular and chart form.

Note that the Application Statistics for CICS Jobs workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

Predefined views

The Application Statistics for CICS Jobs workspace includes the following predefined views:

- **Application Statistics for CICS Jobs** This view provides statistics for the monitored applications that are CICS applications using the selected queue manager. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; on CICS it is the VTAM Application ID; on IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require. For a detailed description of the data shown in this view, see “Application Statistics attributes (z/OS systems only)” on page 330.
- **Application Statistics Summary** This view shows, as a bar chart, the number of application (listed by ID), CICS transactions and programs, queues, and tasks (listed by ID) currently active and using the selected queue manager. This view is a part of all workspaces that contain application statistics.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. This view is a part of all workspaces that contain application statistics.

Predefined links

You can link to the following workspaces from the Application Statistics for CICS Jobs workspace:

- Application Statistics by Tran/Pgm
- Queue Access Statistics by ApplID
- Recent Application Statistics by ApplID
- Historical Application Statistics by ApplID

Application Statistics for IMS Jobs workspace

The Application Statistics for IMS Jobs workspace is available on z/OS systems only.

The Application Statistics for IMS Jobs workspace provides information about monitored applications that are IMS applications, organized by application IDs, in both tabular and chart form.

Note that the Application Statistics for IMS Jobs workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

Predefined views

The Application Statistics for IMS Jobs workspace includes the following predefined views:

- **Application Statistics for IMS Jobs** This view provides statistics for the monitored applications that are IMS applications using the selected queue manager. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; on CICS it is the VTAM Application ID; on IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require. For a detailed description of the data shown in this view, see “Application Statistics attributes (z/OS systems only)” on page 330.
- **Application Statistics Summary** This view shows, as a bar chart, the number of application (listed by ID), CICS transactions and programs, queues, and tasks

(listed by ID) currently active and using the selected queue manager. This view is a part of all workspaces that contain application statistics.

- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. This view is a part of all workspaces that contain application statistics.

Predefined links

You can link to the following workspaces from the Application Statistics for IMS Jobs workspace:

- Tran/Pgm Statistics by ApplID
- Queue Access Statistics by ApplID
- Recent Application Statistics by ApplID
- Historical Application Statistics by ApplID

Application Statistics for MVS Batch Jobs workspace

The Application Statistics for MVS Batch Jobs workspace is available on z/OS systems only.

The Application Statistics for MVS Batch Jobs workspace provides information about monitored applications that are MVS Batch applications, organized by application IDs, in both tabular and chart form.

Note that the Application Statistics for MVS Batch Jobs workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

Predefined views

The Application Statistics for MVS Batch Jobs workspace includes the following predefined views:

- **Application Statistics for MVS Batch Jobs** This view provides statistics for the monitored applications that are MVS Batch applications using the selected queue manager. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; on CICS it is the VTAM Application ID; on IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require. For a detailed description of the data shown in this view, see “Application Statistics attributes (z/OS systems only)” on page 330.
- **Application Statistics Summary** This view shows, as a bar chart, the number of application (listed by ID), CICS transactions and programs, queues, and tasks (listed by ID) currently active and using the selected queue manager. This view is a part of all workspaces that contain application statistics.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. This view is a part of all workspaces that contain application statistics.

Predefined links

You can link to the following workspaces from the Application Statistics for MVS Batch Jobs workspace:

- Tran/Pgm Statistics by ApplID
- Queue Access Statistics by ApplID
- Recent Application Statistics by ApplID
- Historical Application Statistics by ApplID

Buffer Pool Statistics workspace

The Buffer Pool Statistics workspace is available on z/OS systems only.

The Buffer Pool Statistics workspace contains performance information about the buffer pools used by the selected queue manager on z/OS systems. Use it to analyze and compare queue manager buffering performance.

Predefined views

The Buffer Pool Statistics workspace includes the following predefined views:

- **Buffer Pool Statistics** The Buffer Pool Statistics view shows you the performance of the buffer pools used by the selected queue manager. Select a buffer pool from this list to view further information about its performance.
- **Buffer Pool Statistics Summary** This view shows the percentage of buffers available to the queue manager when buffer usage was at its highest, the percentage of total GetPage I/O operations performed by the selected queue manager that were executed using buffers, and the percentage of GetPage I/O operations that were performed without using buffers.
- **Buffer Availability** This view shows, as a bar chart, the number of buffers available for use by the selected queue manager in each buffer pool.
- **GetPage I/O** This view shows, as a bar chart, the percentage of total GetPage I/O operations performed by each buffer pool used by the selected queue manager. Use this view to compare the percentages of GetPage I/O operations performed by different buffer pools used by the queue manager.

For more information on the attributes listed in the tables of this workspace, see “Buffer Pools attributes (z/OS systems only)” on page 347.

Predefined links

You can link to the following workspaces from the Buffer Pool Statistics workspace:

- Historical Buffer Pool Performance
- Recent Buffer Pool Performance
- Page Set Statistics
- Historical Buffer Pool Statistics

Channel Definitions for Client Connection Type workspace

The Channel Definitions for Client Connection Type workspace provides information about the characteristics, number and performance of the monitored channels of client connection type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Client Connection Type workspace includes the following predefined views:

- **Channel Definitions for Client Connection Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of client connection type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see "Channel Definitions attributes" on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Client Connection Type workspace:

- Channel Parameters
- Channel Status

Channel Definitions for Cluster Receiver Type workspace

The Channel Definitions for Cluster Receiver Type workspace provides information about the characteristics, number and performance of a queue manager's monitored channels of cluster receiver type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Cluster Receiver Type workspace includes the following predefined views:

- **Channel Definitions for Cluster Receiver Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of cluster receiver type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see "Channel Definitions attributes" on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Cluster Receiver Type workspace:

- Channel Parameters

- Channel Status

Channel Definitions for Cluster Sender Type workspace

The Channel Definitions for Cluster Sender Type workspace provides information about the characteristics, number and performance of a queue manager's monitored channels of cluster sender type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Cluster Sender Type workspace includes the following predefined views:

- **Channel Definitions for Cluster Sender Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of cluster sender type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see "Channel Definitions attributes" on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Cluster Sender Type workspace:

- Channel Parameters
- Channel Status

Channel Definitions for Receiver Type workspace

The Channel Definitions for Receiver Type workspace provides information about the characteristics, number and performance of a queue manager's monitored channels of receiver type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Receiver Type workspace includes the following predefined views:

- **Channel Definitions for Receiver Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of receiver type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Receiver Type workspace:

- Channel Parameters
- Channel Status

Channel Definitions for Requester Type workspace

The Channel Definitions for Requester Type workspace provides information about the characteristics, number and performance of a queue manager's monitored channels of requester type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Requester Type workspace includes the following predefined views:

- **Channel Definitions for Requester Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of requester type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Requester Type workspace:

- Channel Parameters
- Channel Status

Channel Definitions for Sender Type workspace

The Channel Definitions for Sender Type workspace provides information about the characteristics, number and performance of a queue manager's monitored channels of sender type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Sender Type workspace includes the following predefined views:

- **Channel Definitions for Sender Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of sender

type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.

- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Sender Type workspace:

- Channel Parameters
- Channel Status

Channel Definitions for Server Connection Type workspace

The Channel Definitions for Server Connection Type workspace provides information about the characteristics, number and performance of a queue manager's monitored channels of server connection type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Server Connection Type workspace includes the following predefined views:

- **Channel Definitions for Server Connection Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of server connection type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Server Connection Type workspace:

- Channel Parameters
- Channel Status

Channel Definitions for Server Type workspace

The Channel Definitions for Server Type workspace provides information about the characteristics, number and performance of a queue manager's monitored channels of server type. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions for Server Type workspace includes the following predefined views:

- **Channel Definitions for Server Type** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels of server type. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions for Server Type workspace:

- Channel Parameters
- Channel Status

Channel Definitions workspace

The Channel Definitions workspace provides information about the characteristics, number and performance of a queue manager's monitored channels. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Channel Definitions workspace includes the following predefined views:

- **Channel Definitions** This view contains a table summarizing the characteristics of the selected queue manager's monitored channels. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Channel Definitions workspace:

- Channel Parameters
- Channel Status

Channel Initiator Status workspace

The Channel Initiator Status workspace is available on z/OS systems only.

The Channel Initiator Status workspace provides you with information about channel connection states. Use this view to monitor adapter subtask and dispatcher activity, and detect errors in the communications system that might be adversely affecting processing capacity.

Channel Initiator Status information can be stored to allow the viewing of historic data collected over a long period of time (such as the lifetime of the system). For this data to be stored, historical collection must be enabled in History Collection Configuration.

Predefined views

The Channel Initiator Status workspace includes the following predefined views:

- **Channel Initiator Status** This view contains a table that provides you with statistics related to the state of channel connections, including the number of connections with the following statuses: current, maximum, active, starting, stopping, and retrying. Use this view to identify problems occurring in adapter subtask and dispatcher activity. You can also perform the following tasks to detect errors in the communications system that might be adversely affecting processing capacity:
 - Compare the number of adapter sub-tasks that are currently active to the number of adapter sub-tasks defined in the channel initiator parameters. If the numbers differ, this indicates that some adapter sub-tasks have failed and not restarted, reducing processing capacity.
 - Compare the number of dispatchers that are currently active to the number of dispatchers defined in the channel initiator parameters. If the numbers differ, this indicates that some dispatchers have failed and not restarted. The number of current TCP/IP and LU 6.2 channels used will be reduced proportionately, adversely affecting performance and reducing processing capacity.
 - Compare the relationships between the numbers of channel connections that are current and active, and the maximum number of channels that can be active simultaneously.
 - Review the status of the channel initiator, TCP/IP listener, TCP/IP group listener, LU 6.2 listener, and LU 6.2 group listener.

On z/OS systems, many TCP/IP listeners can be used simultaneously with different combinations of port number and address. Under these circumstances, the TCP/IP Listener Active and Port Number columns in this view correspond to the last set of TCP/IP listener information provided by WebSphere MQ.

- **Channel Initiator Status Summary** This view shows selected columns from the Channel Initiator Status view in the form of a bar chart to provide a visual comparison of data.

- **TCP/IP Started Listeners** This view provides you with data about all started TCP/IP listeners, including the IP address, port number, and the inbound disposition of messages received by the listener.

For more information on the attributes listed in the tables of this workspace, see “Channel Initiator Detail attributes (z/OS systems only)” on page 359.

Predefined links

No other workspaces can be linked to from the Channel Initiator Status workspace.

Channel Parameters Workspace

The Channel Parameters table view shows the parameters of the selected monitored channel.

Predefined views

The Channel Parameters workspace includes the following predefined views:

- **Channel Parameters** This view shows the parameters of the selected monitored channel. Data displayed in this table is collected on-demand.
- **Message Log** The message log gives you an overview of changes in situation status on your monitored network. For more information about this view, see Tivoli Enterprise Portal Help.

Predefined links

No other workspaces can be linked to from the Channel Parameters workspace.

For more information on the attributes listed in the tables of this workspace, see “Channel Definition Details attributes” on page 351.

Channel Performance by Type/Status workspace

The Channel Performance by Type/Status workspace displays a summary of channel activity information for the selected queue manager, and performance and transmission rate information in chart form. Note that client connection channel definitions do not produce statistics and therefore are not listed in any of the Channel Performance workspaces.

Predefined views

The Channel Performance by Type/Status workspace includes the following predefined views:

- **Channel Performance by Type/Status** This view provides a summary of channel activity information for the selected queue manager. Channels are grouped according to a combination of their channel type *and* channel status attributes (for example, channels of type = SVRCONN and status = inactive are grouped together). One row is displayed for every unique channel type and status combination. Select a particular channel type/channel status group from this list to view its performance statistics.
- **Channel Performance Summary** This view contains a bar chart showing, by defined type, the total number of active and inactive monitored channels running on the selected queue manager.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels.

For more information on the attributes listed in the tables of this workspace, see the attributes described at the bottom of “Channel Statistics attributes” on page 382.

Predefined links

You can link to the following workspace from the Channel Performance by Type/Status workspace:

- Channel Performance

Channel Performance for Channels with XmitQ Depth workspace

Use the Channel Performance for Channels with XmitQ Depth workspace to view performance information related to the channels whose transmission queue depth is greater than 0 in the WebSphere MQ environment. Based on the information provided, you can make changes to improve performance, set up situations, and verify that changes made are improving performance.

A channel provides a communications link between two queue managers (running on the same or different platforms) and shields application programs from having to deal with the complexities of a network's underlying protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

Predefined views

The Channel Performance for Channels with XmitQ Depth workspace includes the following predefined views:

- **Channel Performance for Channels with XmitQ Depth** This view displays a list of channels whose transmission queue depth is greater than 0. Select a channel in this view to display its individual performance statistics.
- **Channel Performance Summary** This view contains a bar chart showing, by defined type, the total number of active and inactive monitored channels running on the selected queue manager.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels.

For more information on the attributes listed in the tables of this workspace, see “Channel Statistics attributes” on page 382.

Predefined links

You can link to the following workspaces from the Channel Performance for Channels with XmitQ Depth workspace:

- Channel Parameters
- Recent Channel Performance
- Historical Channel Performance
- Channel Status

Channel Performance for Current Channels workspace

Use the Channel Performance for Current Channels workspace to view performance information related to the current channels in the WebSphere MQ

environment. Based on the information provided, you can make changes to improve performance, set up situations, and verify that changes made are improving performance.

A channel provides a communications link between two queue managers (running on the same or different platforms) and shields application programs from having to deal with the complexities of a network's underlying protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

Predefined views

The Channel Performance for Current Channels workspace includes the following predefined views:

- **Channel Performance for Current Channels** This view displays a list of current channels. Select a channel in this view to display its individual performance statistics.
- **Channel Performance Summary** This view contains a bar chart showing, by defined type, the total number of active and inactive monitored channels running on the selected queue manager.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels.

For more information on the attributes listed in the tables of this workspace, see "Channel Statistics attributes" on page 382.

Predefined links

You can link to the following workspaces from the Channel Performance for Current Channels workspace:

- Recent Channel Performance
- Channel Parameters
- Historical Channel Performance
- Channel Status
- Channel Summary
- Channel Summary by Connection Name

Channel Performance for In-Doubt Channels workspace

Use the Channel Performance for In-Doubt Channels workspace to view performance information related to the in doubt channels in the WebSphere MQ environment. Based on the information provided, you can make changes to improve performance, set up situations, and verify that changes made are improving performance.

A channel provides a communications link between two queue managers (running on the same or different platforms) and shields application programs from having to deal with the complexities of a network's underlying protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

Predefined views

The Channel Performance for In-Doubt Channels workspace includes the following predefined views:

- **Channel Performance for In-Doubt Channels** This view displays a list of in doubt channels. Select a channel in this view to display its individual performance statistics.
- **Channel Performance Summary** This view contains a bar chart showing, by defined type, the total number of active and inactive monitored channels running on the selected queue manager.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels.

For more information on the attributes listed in the tables of this workspace, see “Channel Statistics attributes” on page 382.

Predefined links

You can link to the following workspaces from the Channel Performance for In-Doubt Channels workspace:

- Channel Parameters
- Recent Channel Performance
- Historical Channel Performance

Channel Performance for Transmitting Channels workspace

Use the Channel Performance for Transmitting Channels workspace to view performance information related to the transmitting channels in the WebSphere MQ environment. Based on the information provided, you can make changes to improve performance, set up situations, and verify that changes made are improving performance.

A channel provides a communications link between two queue managers (running on the same or different platforms) and shields application programs from having to deal with the complexities of a network's underlying protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

Predefined views

The Channel Performance for Transmitting Channels workspace includes the following predefined views:

- **Channel Performance for Transmitting Channels** This view displays a list of transmitting channels. Select a channel in this view to display its individual performance statistics.
- **Channel Performance Summary** This view contains a bar chart showing, by defined type, the total number of active and inactive monitored channels running on the selected queue manager.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels.

For more information on the attributes listed in the tables of this workspace, see “Channel Statistics attributes” on page 382.

Predefined links

You can link to the following workspaces from the Channel Performance for Transmitting Channels workspace:

- Channel Parameters
- Recent Channel Performance
- Historical Channel Performance
- Channel Summary
- Channel Summary by Connection Name

Channel Performance Workspace

Use the Channel Performance workspace to view performance information related to the monitored channels in the WebSphere MQ environment. Based on the information provided, you can make changes to improve performance, set up situations, and verify that changes made are improving performance.

A channel provides a communications link between two queue managers (running on the same or different systems) and shields application programs from having to deal with the complexities of a network's underlying protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

Note that statistics are not collected from client connection channel definitions and therefore these are not listed in any of the Channel Performance workspaces.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of report data or up to 24 hours of historical data for each component of the workspace.

Predefined views

The Channel Performance workspace includes the following predefined views:

- **Channel Performance** This view displays a list of monitored channels. Select a channel in this view to display its individual performance statistics.

To view the activity of all monitored channels on a selected queue manager right-click the Channel Performance item under the selected queue manager in the Navigator Physical view and select **Workspace > Channel performance**. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this.

Use this view to monitor the depth of the transmission queue. If this becomes very deep and remains so for a long time, consider assigning more channels to the queue to improve performance. Use the information related to sequence numbers and logical units-of-work when performing channel recovery or restart operations.

- **Channel Performance Summary** This view contains a bar chart showing, by defined type, the total number of active and inactive monitored channels running on the selected queue manager.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels.

For more information on the attributes listed in the table of this workspace, see "Channel Statistics attributes" on page 382.

Predefined links

You can link to the following workspaces from the Channel Performance workspace:

- Recent Channel Performance
- Channel Parameters
- Historical Channel Performance
- Channel Status
- Channel Summary
- Channel Summary by Connection Name

Channel Status workspace

The Channel Status workspace provides on-demand information about the status of a queue manager's monitored channels. You can use it to review channel status. It is an alternative workspace of the Channel Performance navigator item, you can access it by clicking Channel Performance in the navigator view and selecting Workspace from the View menu.

Predefined views

The Channel Status workspace includes the following predefined views:

- **Channel Status** This view contains a table summarizing the status of a selected queue manager's monitored channels. Data displayed in this table is collected on-demand.
- **Channel Status (chart)** This view shows a chart representation of a subsection of the information from the Channel Status table view.

For more information on the attributes listed in the tables of this workspace, see "Channel Status attributes" on page 375.

Predefined links

You can link to the following workspaces from the Channel Status workspace:

- Queue Status workspace (This link is visible only if the value of DESTQMGR is equal to "" or the value of QMNAME.)
- Recent Channel Performance Workspace
- Channel Parameters
- Channel Summary
- Channel Summary by Connection Name

Channel Summary by Connection Name workspace

Use the Channel Summary by Connection Name workspace to get the summarized information at a connection level about all the channel instances for a specified multi-instance channel. You can also use the predefined situations to detect problems of application client connections and channels. The Channel Summary by Connection Name table in this workspace is a sampled table, and is not eligible for historical data collection.

You can link to this workspace from one of the workspaces for the specified channel name and channel type:

- Channel Performance

- Channel Performance for Current Channels
- Channel Performance for Transmitting Channels
- Channel Status
- Channel Summary

For more information on the attributes that are listed in the table of this workspace, see “Channel Summary attributes” on page 390.

Predefined views

The Channel Summary by Connection Name workspace includes the following predefined views:

- **Channel Summary by Connection Name** This table view presents the channel summary data for each connection of the specified multi-instance channel. After the historical data collection is enabled for this table, you can set a time span for retrieving historical data and gathering useful metrics about the monitored channel.
- **Server-connection Channel Resource Usage Rates** This bar chart presents the information about the usage of the channel instances from each connection of the specified server-connection channel.
- **Server-connection Channel Transmission Rates** This bar chart presents the information about the highest and average transmission rates among all channel instances from each connection of the specified server-connection channel.

Channel Summary workspace

Use the Channel Summary workspace to get the summarized information about all the channel instances for a specified channel. You can also use the predefined situations to detect problems of application client connections and channels. The Channel Summary table in this workspace is a sampled table, and is eligible for historical data collection. To enable the historical data collection, use the History Collection Configuration window on Tivoli Enterprise Portal.

You can link to this workspace from one of the workspaces for the specified channel name and channel type:

- Channel Performance
- Channel Performance for Current Channels
- Channel Performance for Transmitting Channels
- Channel Status

For more information on the attributes that are listed in the table of this workspace, see “Channel Summary attributes” on page 390.

Predefined views

The Channel Summary workspace includes the following predefined views:

- **Channel Summary** This table view presents the summarized data for the specified channel name and channel type. After the historical data collection is enabled for this table, you can set a time span for retrieving historical data and gathering useful metrics about the monitored channel.
- **Server-connection Channel Resource Usage Rates** This bar chart presents the information about the usage of the channel instances for the specified server-connection channel.

- **Server-connection Channel Transmission Rates** This bar chart presents the information about the highest and average transmission rates among all the instances of the specified server-connection channel.

Predefined links

You can link to the following workspaces from the Channel Summary workspace:

- Channel Performance for Instances
- Channel Status for Instances
- Channel Summary by Connection Name

Cluster Queue Manager workspace

The Cluster Queue Manager workspace provides information about cluster queue managers associated with the selected queue manager and the channels used by them. Information about both explicit and automatically defined cluster sender channels is included.

Predefined views

The Cluster Queue Manager workspace includes the following predefined views:

- **Cluster Queue Manager** This view provides information about cluster queue managers associated with the selected queue manager and the channels used by them. Information about both explicitly defined and automatically defined cluster sender channels is included. You can select a queue manager/channel from this table to view and edit its definition.
- **Cluster Queue Manager Summary** This view shows, as a bar chart, the number of the following types of cluster channels used by the selected queue manager:
 - Auto-defined cluster channels
 - Cluster queue manager automatic cluster sender channels
 - Cluster queue manager explicit cluster sender channels
 - Cluster queue manager cluster receiver channels

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Cluster Queue Manager workspace:

- Channel Parameters

Connection Objects workspace

The Connection Objects workspace is available for WebSphere MQ version 6.0 and later only.

The Connection Objects workspace contains information about the objects that exist inside a single connection, and is useful for identifying which objects are related to which connection within the WebSphere MQ environment. Select the connection for which you want to view objects in the Application Connections workspace and link to this workspace to display its objects.

Predefined views

The Connection Objects workspace includes the following predefined views:

- **Connection Objects** This view contains information about the objects that exist inside a single connection, and is useful for identifying which objects are related to which connection within the WebSphere MQ environment.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Connection Objects attributes” on page 395.

Predefined links

No other workspaces can be linked to from the Connection Objects workspace.

Current Message Statistics by Application Name workspace

The Current Message Statistic by Application Name displays message statistics, such as message wait times, related to the selected queue. Statistics are grouped by application name.

Important: The data contained within this workspace is collected *on-request-only*, not during the standard sampling interval. *Each time you open, link to, or refresh this workspace*, the monitoring agent queries WebSphere MQ and collects the requested data. Therefore, for performance reasons, this workspace must *not* be placed in a short interval automatic refresh mode.

To view this workspace, your Tivoli Enterprise Portal Logon user ID's WebSphere MQ Security Access for the selected queue must be set to MQGET (with the browse option enabled). Additionally, user access to messages stored on the queue must be enabled. This can be adjusted using the **MSGACCESS** parameter in the SET GROUP and SET MANAGER monitoring options. Any value other than MSGACCESS(NONE) enables collection of message statistics. The default setting of MSGACCESS(DESC) enables all users to browse message statistics using this workspace. If you attempt to view the current message statistics workspace without the required access permission, no data is displayed.

Many of the message statistics are based on the put date and time of the message stored in the queue. If the queue contains messages with put dates and times that do not accurately reflect when they were put into the input queue, then the statistics calculated will be correspondingly inaccurate. Put dates and times might be inaccurate if the origin context of a message is preserved or set when the message is put into the queue by an application. This commonly occurs when an application is a message mover that moves messages from one queue to another, or when any application passes or sets the origin context of a message.

Predefined views

The Current Message Statistics by Application Name workspace includes the following predefined views:

- **Current Message Statistics by Application Name** This view displays message statistics for the selected queue, grouped by application name. If you attempt to display the statistics of a queue with no messages, a single row is displayed

containing 0 values for all message counts and times. If no rows are displayed in this workspace, this might indicate that an error occurred during message statistics collection. Refer to the agent log and look for message code KMQMI210E. This message provides additional information about the cause of the problem. In this view the Message Group Identifier column contains the application name by which messages have been grouped.

- **Message Count by Application Name** This view shows, as a bar chart, the percentage of messages delayed for each application.
- **Message Duration by Application Name** This view shows, as a bar chart, the length of time in seconds that messages from a particular application have been waiting in the queue in terms of oldest message, average message, newest message and highest priority message wait times. The data is repeated for each application using the queue.

For more information on the attributes listed in the tables of this workspace, see “Message Statistics attributes” on page 480.

Predefined links

No other workspaces can be linked to from the Current Message Statistics by Application Name workspace.

Current Message Statistics by Correlation ID workspace

The Current Message Statistics by Correlation ID displays message statistics, such as message wait times, related to the selected queue. Statistics are grouped by correlation ID.

Important: The data contained within this workspace is collected *on-request-only*, not during the standard sampling interval. *Each time you open, link to, or refresh this workspace*, the monitoring agent queries WebSphere MQ and collects the requested data. Therefore, for performance reasons, this workspace must *not* be placed in a short interval automatic refresh mode.

To view this workspace, your Tivoli Enterprise Portal Logon user ID's WebSphere MQ Security Access for the selected queue must be set to MQGET (with the browse option enabled). Additionally, user access to messages stored on the queue must be enabled. This can be adjusted using the **MSGACCESS** parameter in the SET GROUP and SET MANAGER monitoring options. Any value other than MSGACCESS(NONE) enables collection of message statistics. The default setting of MSGACCESS(DESC) enables all users to browse message statistics using this workspace. If you attempt to view the current message statistics workspace without the required access permission, no data is displayed.

Many of the message statistics are based on the put date and time of the message stored in the queue. If the queue contains messages with put dates and times that do not accurately reflect when they were put into the input queue, then the statistics calculated will be correspondingly inaccurate. Put dates and times might be inaccurate if the origin context of a message is preserved or set when the message is put into the queue by an application. This commonly occurs when an application is a message mover that moves messages from one queue to another, or when any application passes or sets the origin context of a message.

Predefined views

The Current Message Statistics by Correlation ID workspace includes the following predefined views:

- **Current Message Statistics by Correlation ID** This view displays message statistics for the selected queue, grouped by correlation ID. If you attempt to display the statistics of a queue with no messages, a single row is displayed containing 0 values for all message counts and times. If no rows are displayed in this workspace, this might indicate that an error occurred during message statistics collection. Refer to the agent log and look for message code KMQMI210E. This message provides additional information about the cause of the problem. In this view the Message Group Identifier column contains the correlation ID by which messages have been grouped.
- **Message Count by Correlation ID** This view shows, as a bar chart, the percentage of messages delayed for each correlation ID.
- **Message Duration by Correlation ID** This view shows, as a bar chart, the length of time in seconds that messages have been waiting in the queue in terms of oldest message, average message, newest message and highest priority message wait times. The chart is organized by correlation ID.

For more information on the attributes listed in the tables of this workspace, see “Message Statistics attributes” on page 480.

Predefined links

No other workspaces can be linked to from the Current Message Statistics by Correlation ID workspace.

Current Message Statistics by Group ID workspace

The Current Message Statistics by Group ID displays message statistics, such as message wait times, related to the selected queue. Statistics are grouped by group ID.

Important: The data contained within this workspace is collected *on-request-only*, not during the standard sampling interval. *Each time you open, link to, or refresh this workspace*, the monitoring agent queries WebSphere MQ and collects the requested data. Therefore, for performance reasons, this workspace must *not* be placed in a short interval automatic refresh mode.

To view this workspace, your Tivoli Enterprise Portal Logon user ID's WebSphere MQ Security Access for the selected queue must be set to MQGET (with the browse option enabled). Additionally, user access to messages stored on the queue must be enabled. This can be adjusted using the **MSGACCESS** parameter in the SET GROUP and SET MANAGER monitoring options. Any value other than MSGACCESS(NONE) enables collection of message statistics. The default setting of MSGACCESS(DESC) enables all users to browse message statistics using this workspace. If you attempt to view the current message statistics workspace without the required access permission, no data is displayed.

Many of the message statistics are based on the put date and time of the message stored in the queue. If the queue contains messages with put dates and times that do not accurately reflect when they were put into the input queue, then the statistics calculated will be correspondingly inaccurate. Put dates and times might be inaccurate if the origin context of a message is preserved or set when the message is put into the queue by an application. This commonly occurs when an

application is a message mover that moves messages from one queue to another, or when any application passes or sets the origin context of a message.

Predefined views

The Current Message Statistics by Group ID workspace includes the following predefined views:

- **Message Count by Group ID** This view displays message statistics for the selected queue, grouped by Group ID. If you attempt to display the statistics of a queue with no messages, a single row is displayed containing 0 values for all message counts and times. If no rows are displayed in this workspace, this might indicate that an error occurred during message statistics collection. Refer to the agent log and look for message code KMQMI210E. This message provides additional information about the cause of the problem. In this view the Message Group Identifier column contains the group ID by which messages have been grouped.
- **Message Count by Group ID** This view shows, as a bar chart, the percentage of messages delayed for each Group ID.
- **Message Duration by Group ID** This view shows, as a bar chart, the length of time in seconds that messages with a particular Group ID have been waiting in the queue in term of oldest message, average message, newest message and highest priority message wait times. This data is repeated for each Group ID.

For more information on the attributes listed in the tables of this workspace, see “Message Statistics attributes” on page 480.

Predefined links

No other workspaces can be linked to from the Current Message Statistics by Group ID workspace.

Current Message Statistics workspace

The Current Message Statistics displays message statistics, such as message wait times, related to the selected queue.

Important: The data contained within this workspace is collected *on-request-only*, not during the standard sampling interval. *Each time you open, link to, or refresh this workspace*, the monitoring agent queries WebSphere MQ and collects the requested data. Therefore, for performance reasons, this workspace must *not* be placed in a short interval automatic refresh cycle.

To view this workspace, your Tivoli Enterprise Portal Logon user ID's WebSphere MQ Security Access for the selected queue must be set to MQGET (with the browse option enabled). Additionally, user access to messages stored on the queue must be enabled. This can be adjusted using the **MSGACCESS** parameter in the SET GROUP and SET MANAGER monitoring options. Any value other than MSGACCESS(NONE) enables collection of message statistics. The default setting of MSGACCESS(DESC) enables all users to browse message statistics using this workspace. If you attempt to view the current message statistics workspace without the required access permission, no data is displayed.

Many of the message statistics are based on the put date and time of the message stored in the queue. If the queue contains messages with put dates and times that do not accurately reflect when they were put into the input queue, then the statistics calculated will be correspondingly inaccurate. Put dates and times might

be inaccurate if the origin context of a message is preserved or set when the message is put into the queue by an application. This commonly occurs when an application is a message mover that moves messages from one queue to another, or when any application passes or sets the origin context of a message.

Predefined views

The Current Message Statistics workspace includes the following predefined views:

- **Current Message Statistics** This view displays message statistics for the selected queue. If you attempt to display message the statistics of a queue with no messages, a single row is displayed containing 0 values for all message counts and times. If no rows are displayed in this view, this might indicate that an error occurred during message statistics collection. Refer to the agent log and look for KMQMI210E message code. This message provides additional information about the cause of the problem.
- **Message Count** This view shows, as a bar chart, the number of delayed messages in the selected queue in comparison to the total number of messages.
- **Message Duration** This view shows, as a bar chart, the length of time in seconds that messages from all applications combined have been waiting in the queue, in terms of oldest message, average message, newest message and highest priority message wait times.

For more information on the attributes listed in the tables of this workspace, see "Message Statistics attributes" on page 480.

Predefined links

No other workspaces can be linked to from the Current Message Statistics workspace:

Current Queue Manager Status workspace

This workspace is similar to the Queue Manager Status workspace, but displays information about the *current* state of queue managers, in contrast to the Queue Manager Status view, which is based on historical data.

Predefined views

The Current Queue Manager Status workspace includes the following predefined views:

- **Current Queue Manager Status** This view provides the following information, among other statistics, about each monitored queue manager:
 - Its name and the host that owns the queue manager
 - Its status
 - The maximum number of messages that can be stored on the dead-letter queue
 - The current number of messages currently stored on the dead-letter queue
 - Its availability

From this table you can select a queue manager whose parameters you want to review. If a queue manager's status is "Running" but no statistics are displayed, check that the command server for the queue manager has been started.

Limitation: Due to the IBM Tivoli Monitoring limitation, the collected records can not be sorted by the Recording Time when you check the historical data.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Current Queue Manager Status attributes” on page 400.

Predefined links

No other workspaces can be linked to from the Current Queue Manager Status workspace.

Dead-Letter Queue Messages workspace

WebSphere MQ puts a message on the Dead-Letter Queue when it cannot be delivered to the requested destination queue. This can occur for various reasons, such as the message being too long, the destination specified in its queue name field being invalid, or the queue being full. Use the Dead-Letter Queue Messages workspace to view the status of dead messages and forward them to the desired location.

Predefined views

The Dead-Letter Queue Messages workspace includes the following predefined views:

- **Dead-Letter Queue Messages** This view supplies the following information about undeliverable messages:
 - the name of the application that created the message, the message itself, and the message's original time stamp and intended destination.
 - a reason code, which indicates why the message was not delivered.
 - the time that the message was put onto the DLQ.
 - whether the message has been segmented, is part of a group or both, and, if it is part of a group, the GroupID.

From this view, you can delete or resend dead messages, forward them to different destinations, or link to other workspaces to view message header information or message application data.

Note that if you delete or forward a group or segmented message, all messages belonging to the group or logical message will be deleted or forwarded.

Note that when using WebSphere MQ for Windows, the DLQ Appl Type attribute, which indicates the processing platform on which the queue manager is running, always has a value of MQPL_WINDOWS_NT.

- **Dead Letter Queue Messages Summary** This view shows, as a bar chart, the current depth of the dead-letter queue running on the selected queue manager, in comparison to its maximum depth.

For more information on the attributes listed in the tables of this workspace, see “Message Summary attributes” on page 483.

Predefined links

You can link to the following workspaces from the Dead-Letter Queue Messages workspace:

- Message Descriptor

- Message Contents

Enterprise Wide Subscription Definitions workspace

The Enterprise Wide Subscription Definitions workspace contains information about all system defined remote and local subscriptions. A remote subscription is a subscription that stores published messages in a queue that belongs to a queue manager other than the queue manager that hosts the subscription. You can also use the MQ Search function to search for specific remote subscription information in this workspace.

Predefined views

The Enterprise Wide Subscription Definitions workspace includes the following predefined views:

- **Enterprise Wide Subscription Definitions** This view contains information about all system defined remote subscriptions. A remote subscription is a subscription that stores published messages in a queue that belongs to a queue manager other than the queue manager that hosts the subscription.
- **Message Log** This view contains IBM Tivoli Monitoring system level information, such as agent status information.

For more information on the attributes listed in the tables of this workspace, see “Subscription Definitions attributes” on page 590.

Predefined links

You can link to the following workspaces from the Enterprise Wide Subscription Definitions workspace:

- Subscription Status

Error Log workspace

The Error Log workspace is available on non z/OS systems only.

The Error Log table workspace provides you with the latest WebSphere MQ error log data from the selected monitored queue manager. Use the information in this workspace to resolve queue manager problems.

Error log information is only available if it is being collected from the queue manager. Error log monitoring is enabled by default but can be disabled using the **ERRLOGCYCLE** parameter of the SET MANAGER monitoring option.

Remember: Make sure that the user ID that is used to start the WebSphere MQ Monitoring agent has appropriate authorities for error logs and has access to the directories where the error logs are stored. Otherwise, the Error Log workspace displays no data.

Predefined views

The Error Log workspace includes the following predefined views:

- **Error Log** This view displays the latest WebSphere MQ error log data from the selected monitored queue manager. Only error log entries recorded after the monitoring agent has started are displayed.
- **Take Action** Use the Take Action view to issue commands to the monitored queue manager.

For more information on the attributes listed in the tables of this workspace, see “Error Log attributes (distributed systems only)” on page 403.

Predefined links

No other workspaces can be linked to from the Error Log workspace.

Event Archive workspace

Use the Event Archive workspace to view archived WebSphere MQ events that are reported to a queue manager over the selected time period for which historical records are available. The details that are associated with an event are recorded with the event in a readable XML format attribute. You can see this XML format attribute in this workspace without having to link elsewhere.

To store the data, historical data collection must be enabled for the Event Archive attribute group in the History Collection Configuration window. The Event Archive attribute group is eligible for use with Tivoli Data Warehouse. If you enable historical data collection for this attribute group, use Tivoli Data Warehouse to store historical data if possible, because the amount of event data might be large.

In this workspace, you can search for some specific archived WebSphere MQ events. For detailed instructions, see “Searching for WebSphere MQ events” on page 125.

Remember:

- All data pages in the Event Archive table cannot be sorted by the **Event Date & Time** attribute in descending order. You can sort only the current page of this table in descending order.
- When you perform a search operation, WebSphere MQ events are searched within the time span that is set for the query in this workspace. If you want to change this time span, do it before you start the search function.

Predefined views

The Event Archive workspace includes the following predefined views:

- **Event Archive** The Event Archive view provides you with a list of WebSphere MQ events that are reported to the selected queue manager.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information about this view, see Tivoli Enterprise Portal help.

For more information about the attributes listed in the table of this workspace, see “Event Archive attributes” on page 404.

Event Log workspace

Use the Event Log workspace to monitor and analyze events occurring on a queue manager to identify trends and discover the root cause of problems resulting in event generation. This workspace displays both events that occurred locally and those that occurred on a remote queue manager reporting to the selected queue manager.

Predefined views

The Event Log workspace includes the following predefined views:

- **Event Log** The Event Log view shows you a list of events that were reported to the selected queue manager. Because it is possible to monitor events occurring on one queue manager from another queue manager, the Event QMgr Name and Event Host Name fields indicate where the event actually occurred. This view displays both events that occurred locally and those that occurred on a remote queue manager reporting to the selected queue manager. Select an event in this view to display more detailed information about it.

Use the information in this view to determine what events occurred on the queue manager over a period of time. This view can be used to search for patterns within the data, such as events that occur at certain times or on certain days, or that are generated for particular resources. To display descriptive and environmental information about an event, select the event from in the table.

Remember: If the value of the topic string attribute is longer than 256 bytes, only the leftmost 256 bytes are displayed in this workspace.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Event History attributes” on page 424.

Predefined links

You can link to the following workspace from the Event Log workspace:

- Event Parameters

Event Parameters workspace

The Event Parameters workspace displays the parameters of a selected event.

- **Event Parameters** This view displays the parameters of a selected event. You can see when, where, and on what resource the event occurred. The other parameters displayed vary depending on the type of event.

Remember:

- If the value of the topic string attribute is longer than 264 bytes, only the leftmost 264 bytes are displayed in this workspace.
- The DestQName of the subscriber is displayed as the QName for the Authority Event (Type 6).
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Event Parameters attributes” on page 411.

Predefined links

No other workspaces can be linked to from the Event Parameters workspace.

Historical Application Accounting workspace

The Historical Application Accounting workspace is the historical version of the Application Accounting workspace and displays statistics for the past 2 hours (the default setting is 2 hours). You can link to this workspace from the Application Accounting workspace.

Predefined views

The Historical Application Accounting workspace includes the following predefined views:

- **Historical Application Accounting** This table contains information about the number of MQI requests made by applications to a queue manager over the past 2 hours.

There are two different ways to arrive at this workspace, which affect the amount of data presented in the table:

- As a primary workspace, information about all application connections is displayed in the table view with the name of the queue manager at the bottom.
 - When you link to this workspace from a row within the Application Connections workspace, only a single row containing information about the selected application connection is displayed with the name of the application at the bottom.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Application Accounting attributes (distributed systems only)” on page 289.

Predefined links

You can link to the following workspaces from the Historical Application Accounting workspace:

- Historical MQI Call Statistics Details
- Historical MQI Message Statistics Details

Historical Application Statistics by Applid workspace

The Historical Application Statistics by Applid workspace is available on z/OS systems only.

The Historical Application Statistics by Applid workspace is the historical version of the Application Statistics by Applid workspace, and displays application data for up to the past 2 hours (the default setting is 2 hours). This workspace provides information about monitored applications, organized by application IDs, in both tabular and chart form.

Note that the Historical Application Statistics by Applid workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

Predefined views

The Historical Application Statistics by Applid workspace includes the following predefined views:

- **Historical Application Statistics by Applid** The Historical Application Statistics by Applid view displays historical WebSphere MQ usage statistics for all monitored applications using the selected queue manager. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require.
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed for the selected application over the specified historical reporting period.
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time for the selected application over the specified historical reporting period.

For more information on the attributes listed in the tables of this workspace, see “Application Long-Term History attributes (z/OS systems only)” on page 315.

Predefined links

No other workspaces can be linked to from the Historical Application Statistics by Applid workspace.

Historical Application Statistics by Tran/Pgm workspace

The Historical Application Statistics by Tran/Pgm workspace is available on z/OS systems only.

The Historical Application Statistics by Tran/Pgm workspace is the historical version of the Application Statistics by Tran/pgm workspace, and displays application data for up to the past 2 hours (the default setting is 2 hours). This workspace provides information about monitored applications, organized by transaction or program, in both tabular and chart form.

Note that the Historical Application Statistics by Tran/Pgm workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

Predefined views

The Historical Application Statistics by Tran/Pgm workspace includes the following predefined views:

- **Historical Application Statistics by Tran/Pgm** The Historical Application Statistics by Tran/Pgm view displays historical WebSphere MQ usage statistics for all monitored applications using the selected queue manager, organized by the transaction or program that generated the statistics. To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require.
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed for the selected application over the specified historical reporting period.

- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time for the selected application over the specified historical reporting period.

For more information on the attributes listed in the tables of this workspace, see “Application Transaction/Program Long-Term History attributes (z/OS systems only)” on page 336.

Predefined links

No other workspaces can be linked to from the Historical Application Statistics by Tran/Pgm workspace.

Historical Buffer Pool Performance workspace

The Historical Buffer Pool Performance workspace is available on z/OS systems only.

The Historical Buffer Pool Performance workspace is the historical version of the Buffer Pool Statistics workspace, and displays historical performance statistics for selected buffer pool. This workspace displays performance information about the buffer pools used by the selected queue manager on z/OS systems. Use it to analyze and compare queue manager buffering performance. Based on the information provided, you can recommend changes, set up situations, and verify that changes are improving performance.

Predefined views

The Historical Buffer Pool Performance workspace includes the following predefined views:

- **Historical Buffer Pool Performance** The Historical Buffer Pool Performance view shows you the performance of the buffer pools used by the selected queue manager, displayed in descending order of date and time. You can select a buffer pool whose performance you want to review from this list.
- **Buffer Availability** This view shows, as a bar chart, the number of buffers available in each buffer pool for use by the selected queue manager over the selected historical reporting period.
- **GetPage I/O** This view shows, as a bar chart, the percentage of total GetPage I/O operations performed by each buffer pool used by the selected queue manager over the selected historical reporting period. Use this view to compare the percentages of GetPage I/O operations performed by different buffer pools used by the queue manager.

For more information on the attributes listed in the tables of this workspace, see “Buffer Manager Long-Term History attributes (z/OS systems only)” on page 343.

Predefined links

No other workspaces can be linked to from the Historical Buffer Pool Performance workspace.

Historical Channel Initiator Status workspace

The Historical Channel Initiator Status workspace is available on z/OS systems only.

The Historical Channel Initiator Status workspace provides you with information about channel connection states, over the selected period of time for which historical records are available (maximum 24 hours if you don't customize the warehouse proxy). Use this view to monitor adapter subtask and dispatcher activity, and detect errors in the communications system that might be adversely affecting processing capacity.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace.

Predefined views

The Historical Channel Initiator Status workspace includes the following predefined views:

- **Historical Channel Initiator Status** This view contains a table that provides you with statistics related to the state of channel connections, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy), including the number of connections with the following statuses: current, maximum, active, starting, stopping, and retrying. Use this view to identify problems occurring in adapter subtask and dispatcher activity. You can also perform the following tasks to detect errors in the communications system that might be adversely affecting processing capacity:
 - Compare the number of adapter subtasks that are currently active to the number of adapter subtasks requested in the channel initiator parameters. If the numbers differ, this indicates that some adapter subtasks have failed and not restarted, reducing processing capacity.
 - Compare the number of dispatchers that are currently active to the number of dispatchers requested in the channel initiator parameters. If the numbers differ, this indicates that some dispatchers have failed and not restarted. The number of current TCP/IP and LU 6.2 channels allowed will be reduced proportionately adversely affecting performance, and other processing might be affected, also reducing processing capacity.
 - Compare the relationships between the numbers of channel connections that are current, active, maximum, starting, stopping, and retrying.
 - Review the status of the channel initiator, TCP/IP listener, TCP/IP group listener, LU 6.2 listener, and LU 6.2 group listener.
- On z/OS systems, TCP/IP listeners can be started many times with different combinations of port number and address. If this occurs, the TCP/IP Listener Active and Port Number columns in this workspace are set to the last set of TCP/IP listener information provided by WebSphere MQ.
- **Channel Initiator Status Summary** This view shows selected columns from the Channel Initiator Status view in the form of a bar chart to provide a visual comparison of data.
 - **TCP/IP Started Listeners** This view provides you with data about all started TCP/IP listeners, including the IP address, port number, and the inbound disposition of messages received by the listener.

For more information on the attributes listed in the tables of this workspace, see “Channel Initiator Detail attributes (z/OS systems only)” on page 359.

Predefined links

No other workspaces can be linked to from the Historical Channel Initiator Status workspace.

Historical Channel Performance workspace

The Historical Channel Performance workspace is the historical version of the Channel Performance workspace for the monitored channel selected, displaying channel performance information for up to the past 24 hours. Use this workspace to view performance information from monitored channels in the WebSphere MQ environment. Based on the information provided, you can make changes to improve performance, set up situations, and verify that changes made are improving performance.

If more than one active channel with the same name and connection name exist within the system and you try to view one of the channel's historical performance data, multiple sets of the data will be displayed, one for each active connection. This situation can occur when viewing data for receiver, cluster receiver, or server connection channels.

A channel provides a communications link between two queue managers (running on the same or different platforms) and shields application programs from having to deal with the complexities of a network's underlying protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

Note that statistics are not collected from client connection channel definitions and therefore these are not listed in any of the Channel Performance workspaces.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Channel Performance workspace includes the following predefined views:

- **Channel Performance** This view displays a list of monitored channels over a specified period of time. Select a channel in this view to display its individual performance statistics.
To view the activity of all monitored channels on a selected queue manager right-click the Channel Performance item under the selected queue manager in the physical view and select **Workspace > Channel performance**. If your system has a high volume of traffic, different message priorities or uses different types of queues, you might need to define multiple channels to handle this.
You can use this view to monitor the depth of the transmission queue. If this becomes very deep and remains so for a long time, consider assigning more channels to the queue to improve performance. This type of problem is especially common if your system has a high volume of traffic, different message priorities or uses different types of queues. You can use the sequence number and logical unit of work information when performing channel recovery and restart operations.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels over the specified time period.

For more information on the attributes listed in the tables of this workspace, see “Channel Long-Term History attributes” on page 361.

Predefined links

No other workspaces can be linked to from the Historical Channel Performance workspace.

Historical Log Manager Performance workspace

The Historical Log Manager Performance workspace is available on z/OS systems only.

The Historical Log Manager Performance workspace summarizes log manager performance activity for all your z/OS queue managers for a period of up to the past 24 hours. Use the information provided by this workspace to make changes to the system, set up situations, and verify that changes are improving performance.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Log Manager Performance workspace includes the following predefined views:

- **Historical Log Manager Performance** The Historical Log Manager Performance view summarizes log manager performance activity for all your z/OS queue managers for a period of up to the past 24 hours. From this list you can select a queue manager whose log manager performance history you want to review. This log can be used to back out messages in an incomplete logical unit of work or to recover messages after queue manager or system failure. For best performance, you should eliminate contention for DASD log files, provide sufficient buffer and log file capacity, and maintain correct log buffer thresholds.
- **Read/Writes** This view displays, as a bar chart, the number of times the log is read from or written to per minute for the selected period of time.

For more information on the attributes listed in the tables of this workspace, see “Log Manager Long-Term History attributes (z/OS systems only)” on page 435.

Predefined links

No other workspaces can be linked to from the Historical Log Manager Performance workspace.

Historical Message Manager Performance workspace

The Historical Message Manager Performance workspace is available on z/OS systems only.

The Historical Message Manager Performance workspace summarizes the rates at which messages are being passed to and retrieved from your monitored z/OS queue managers.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

Historical Message Manager Performance workspace includes the following predefined views:

- **Historical Message Manager Performance** This view summarizes the rates at which messages are being passed to and retrieved from your monitored z/OS queue managers, over the selected period of time for which historical records are available. Most of these are measured in terms of the frequency with which certain WebSphere MQ application programming interface (API) routines are called. From this table you can view the activity history of message managers. This table displays the frequency with which the following WebSphere MQ operations are performed:
 - queues are opened or closed (MQOPEN and MQCLOSE routines)
 - messages are put on or removed from queues (MQPUT and MQGET routines)
 - an MQPUT1 call is used to open a queue, put a message and then close the queue again in a single operation (MQPUT1 routine)
 - object attributes are queried or modified (MQINQ and MQSET routines)
 - subscriptions are registered to certain topics (MQSUB routines)
 - requests on subscriptions are made (MQSUBRQ routines)
 - callbacks are called by WebSphere MQ when certain events occur (MQCB routines)
 - controlling actions are performed on the object handles opened for a connection (MQCTL routines)
 - status information are retrieved (MQSTAT routines)
 - messages are put on queues, or distribution lists, or to topics.
 - Handles are closed independently of MQI calls
- **Requests** This view shows, as a bar chart, the frequency with which the following MQI methods have been called on the selected queue manager:
 - MQOPENS
 - MQCLOSEs
 - MQGETs
 - MQPUTs
 - MQPUT1s
 - MQINQs
 - MQSETs
 - MQSUBs
 - MQSUBRQs
 - MQCBs
 - MQCTLs
 - MQSTATs
 - Close handles per second

For more information on the attributes listed in the tables of this workspace, see “Message Manager Long-Term History attributes (z/OS systems)” on page 476.

Predefined links

No other workspaces can be linked to from the Historical Message Manager Performance workspace.

Historical Message Statistics workspace

The Historical Message Statistics workspace displays message statistics, such as message wait times, related to the selected queue over the specified period of time for which historical records are available.

To view this workspace, your Tivoli Enterprise Portal Logon user ID's WebSphere MQ Security Access for the selected queue must be set to MQGET (with the browse option enabled). Additionally, user access to messages on the queue must be enabled. This can be adjusted using the **MSGACCESS** parameter of the SET GROUP and SET MANAGER monitoring options. Any value other than MSGACCESS(NONE) allows collection of message statistics. The default setting of MSGACCESS(DESC) enables all users to browse message statistics using this workspace. If you attempt to view the current message statistics workspace without the proper access, no data is returned.

Many of the message statistics are using the put date and time of the message in the queue. If the queue contains messages with put dates and times that do not accurately reflect when they were put into the input queue, then the statistics calculated will be correspondingly inaccurate. Put dates and times are inaccurate if the origin context is preserved or set for a message when it is put into the queue by an application. This commonly occurs when the application putting the message into the queue is a message mover that moves messages from one queue to another, or when any application passes or sets the origin context of a message.

The WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Message Statistics workspace includes the following predefined views:

- **Historical Message Statistics** This view displays message statistics for the selected queue. If you attempt to display message statistics for a queue with no messages, a single row is displayed containing 0 values for all message counts and times. If no rows are displayed in this workspace, this might indicate that an error occurred during message statistics collection. Refer to the agent log and look for KMQMI210E message code. This message provides additional information about the cause of the problem.
- **Historical Message Count** This view shows, as a bar chart, the number of delayed messages in comparison to the total number of messages, over the selected period of time for which historical records are available.
- **Historical Message Duration** This view shows, as a bar chart, the length of time in seconds that messages have been waiting in the queue in term of oldest message, average message, newest message and highest priority message wait times, over the selected period of time for which historical records are available.

For more information on the attributes listed in the tables of this workspace, see "Message Statistics attributes" on page 480.

Predefined links

No other workspaces can be linked to from the Historical Message Statistics workspace.

Historical MQ Channel Statistics workspace

The Historical MQ Channel Statistics workspace displays channel statistics for monitored channels within a queue manager, over the selected period of time for which historical records are available (the default setting is 2 hours).

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical MQ Channel Statistics workspace includes the following predefined views:

- **Historical MQ Channel Statistics** This view displays channel statistics for monitored channels within a queue manager, including what data was transmitted by the queue manager using the channel,, over the selected period of time for which historical records are available (the default setting is 2 hours).
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQ Channel Statistics attributes (distributed systems only)” on page 509.

Predefined links

No other workspaces can be linked to from the Historical MQ Channel Statistics workspace.

Historical MQ Queue Statistics workspace

The Historical MQ Queue Statistics workspace displays statistics related to individual queues within a queue manager, over the selected period of time for which historical records are available (the default setting is 2 hours). It is a secondary workspace for the MQI Statistics navigation item.

The WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical MQ Queue Statistics workspace includes the following predefined views:

- **Historical MQ Queue Statistics** This view displays statistics related to individual queues within a queue manager, over the selected period of time for which historical records are available (the default setting is 2 hours).

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQ Queue Statistics attributes (distributed systems only)” on page 512.

Predefined links

You can link to the following workspaces from the Historical MQ Queue Statistics workspace:

- Historical MQI Message Statistics Details

Historical MQI Call Statistics Details workspace

The Historical MQI Call Statistics Details workspace displays statistical information relating to WebSphere MQAPI calls made by applications, over the selected period of time for which historical records are available (the default setting is 2 hours).

WebSphere MQ Monitoring agent also provides a current version of this workspace, which you can use to view the latest available report data.

Predefined views

The Historical MQI Call Statistics Details workspace includes the following predefined views:

- **Historical MQI Call Statistics Details** This view displays statistical information relating to WebSphere MQ API calls made by applications, over the selected period of time for which historical records are available (the default setting is 2 hours).
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQI Call Statistics Details attributes (distributed systems only)” on page 516.

Predefined links

No other workspaces can be linked to from the Historical MQI Call Statistics Details workspace.

Historical MQI Message Statistics Details workspace

The Historical MQI Message Statistics Details workspace displays statistical information relating to the messages passed between applications and WebSphere MQ via WebSphere MQ API calls, over the selected period of time for which historical records are available (the default setting is 2 hours).

The WebSphere MQ Monitoring agent also provides a current version of this workspace, which you can use to view the latest available report data.

Predefined Views

The MQI Historical Message Statistics Details workspace includes the following predefined views:

- **Historical MQI Message Statistics Details** This view displays statistical information relating to the messages passed between an application and WebSphere MQ via WebSphere MQ API calls, over the selected period of time for which historical records are available (maximum 24 hours if you don't customize the warehouse proxy).
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQI Message Statistics Details attributes (distributed systems only)” on page 518.

Predefined Links

No other workspaces can be linked to from the Historical MQI Message Statistics Details workspace.

Historical MQI Statistics workspace

The Historical MQI Statistics workspace displays statistical data related to the use of the WebSphere MQAPI by all queues within a queue manager, over the selected period of time for which historical records are available (the default setting is 2 hours).

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical MQI Statistics workspace includes the following predefined views:

- **Historical MQI Statistics** This view displays statistical data related to the use of the WebSphere MQ API by all queues within a queue manager, over the selected period of time for which historical records are available (the default setting is 2 hours).
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQI Statistics attributes (distributed systems only)” on page 519.

Predefined links

You can link to the following workspaces from the Historical MQI Statistics workspace:

- Historical MQI Call Statistics Details
- Historical MQI Message Statistics Details

Historical Page Set Statistics workspace

The Historical Page Set Statistics workspace is available on z/OS systems only.

The Historical Page Set Statistics workspace shows the performance of the page sets associated with the selected queue manager or buffer pool ID, over the selected period of time for which historical records are available (the default setting is 2 hours). Use it to monitor page and buffer pool usage.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Page Set Statistics workspace includes the following predefined views:

- **Historical Page Set Statistics** This view shows the performance of the page sets associated with the selected queue manager or buffer pool ID, over the selected period of time for which historical records are available (the default setting is 2 hours). Use it to monitor the following conditions:
 - Examine the percentage of pages in use and the total number of extents to ensure that no page sets are reaching capacity.
 - Examine the number of buffers from the buffer pool that are in used. If it is common for all buffers from the pool to be in use and a page set is responsible for most activity, then performance will adversely affected. Try increasing the size of the buffer pool or assigning the page set to another buffer pool.
- **Page Set Utilization** This view shows, as a bar chart, page set utilization for the page set IDs associated with the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Page Set Long-Term History attributes (z/OS systems only)” on page 533.

Predefined links

No other workspaces can be linked to from the Historical Page Set Statistics workspace.

Historical Queue Access Statistics by Applid workspace

The Historical Queue Access Statistics by Applid workspace is available on z/OS systems only.

The Historical Queue Access Statistics by Applid workspace provides you with queue usage statistics for all transactions or programs associated with a selected application ID, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy). Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.

No data will be available if the SET APPLICATION monitoring option has been selected with the STATISTICS parameter set to NOQDATA.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Queue Access Statistics by ApplID workspace includes the following predefined views:

- **Historical Queue Access Statistics by ApplID** This view provides you with queue usage statistics for all transactions or programs associated with the selected application ID (shown in the report's subheading), over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read or browsed on each queue used by the selected application, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time of each queue used by the selected application, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).

For more information on the attributes listed in the tables of this workspace, see "Application Queue Long-Term History attributes (z/OS systems only)" on page 320.

Predefined links

No other workspaces can be linked to from the Historical Queue Access Statistics by ApplID workspace.

Historical Queue Access Statistics by Tran/Pgm workspace

The Historical Queue Access Statistics by Tran/Pgm workspace is available on z/OS systems only.

Use the Historical Queue Access Statistics by Tran/Pgm workspace to view queue usage statistics for a specific transaction or program, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy). Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.

No data is available if the SET APPLICATION monitoring option has been selected with the **STATISTICS** parameter set to NOQDATA.

The WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Queue Access Statistics by Tran/Pgm workspace includes the following predefined views:

- **Historical Queue Access Statistics by Tran/Pgm** This view provides you with queue usage statistics for a specific transaction or program, over the selected

period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy). Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.

- **Message Counts** shows, as a bar chart, the total number of messages put, read, and browsed on each queue used by the selected transaction or program, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).
- **Average MQ Response Time** shows, as a bar chart, the average WebSphere MQresponse time on each queue used by the selected transaction or program, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).

For more information on the attributes listed in the tables of this workspace, see “Application Queue Long-Term History attributes (z/OS systems only)” on page 320.

Predefined links

No other workspaces can be linked to from the Queue Access Historical Statistics by Tran/Pgm workspace.

Historical Queue Accounting workspace

The Historical Queue Accounting workspace displays information about the queues used by application connections, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy). It might include queues used by application connections which were once active, but are not currently active. However, it *does not* include queues used by application connections that are currently active, in cases where the application connection is new and for which accounting data has not yet been published by the queue manager.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Queue Accounting workspace includes the following predefined views:

- **Historical Queue Accounting** This view displays information about the queues used by application connections, including data published by the queue manager, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Queue Accounting attributes (distributed systems only)” on page 545.

Predefined links

You can link to the following workspace from the Historical Queue Accounting workspace:

- Historical MQI Message Statistics Details

Historical Queue Statistics workspace

The Historical Queue Statistics workspace displays queue usage statistics for monitored queues running on the selected queue manager, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy). Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

The WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Queue Statistics workspace includes the following predefined views:

- **Historical Queue Statistics** This view displays queue usage statistics for monitored queues running on the selected queue manager, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy). Each local queue is only listed once, even if there are several alias queues mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:
 - Lengthy logical units of work
 - A resource intensive CICS transaction or program
- **Queue Utilization** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each queue managed by the selected queue manager's, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).

For more information on the attributes listed in the tables of this workspace, see "Queue Long Term History attributes" on page 565.

Predefined links

No other workspaces can be linked to from the Queue Statistics workspace.

Historical Topic Manager Performance workspace

The Historical Topic Manager Performance workspace is available on z/OS systems only.

The Historical Topic Manager Performance workspace summarizes the publication and subscription status of your monitored z/OS queue managers.

WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Topic Manager Performance workspace includes the following predefined views:

- **Historical Topic Manager Performance** This view summarizes the publication and subscription status of your monitored z/OS queue managers from the following aspects:
 - Subscription and publication rate per second
 - Number range of subscriptions and publications
 - The number of expired subscriptions
 - The maximum number of subscriptions for the same publication and the number of publications that have no subscribers
 - Time performing the publication request
- **Publications/Subscriptions** This view shows, as a bar chart, the publication and subscription status of the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Topic Manager Long-Term History attributes (z/OS systems only)” on page 598.

Predefined links

No other workspaces can be linked to from the Historical Topic Manager Performance workspace.

Historical Tran/Pgm Statistics by ApplID workspace

The Historical Tran/Pgm Statistics by ApplID workspace is available on z/OS systems only.

Use the Historical Tran/Pgm Statistics by ApplID workspace to view statistics for all CICS transactions and/or IMS programs associated with the current application ID, over the selected period of time for which historical records are available (maximum 24 hours if you don't customize the warehouse proxy).

No data is available if the SET APPLICATION monitoring option has been selected with the **STATISTICS** parameter set to NOQDATA.

The WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Tran/Pgm Statistics by ApplID workspace includes the following predefined views:

- **Historical Tran/Pgm Statistics by ApplID** This view displays statistics for all CICS transactions and/or IMS programs associated with the current application ID, over the selected period of time for which historical records are available (maximum 24 hours if you don't customize the warehouse proxy).
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).

For more information about the attributes listed in the tables of this workspace, see “Application Transaction/Program Long-Term History attributes (z/OS systems only)” on page 336.

Predefined links

No other workspaces can be linked to from the Historical Tran/Pgm Statistics by ApplID workspace.

Historical Tran/Pgm Statistics by Queue workspace

The Historical Tran/Pgm Statistics by Queue workspace is available on z/OS systems only.

Use the Historical Tran/Pgm Statistics by Queue workspace to view information about how the selected queue is being used by monitored transactions and programs, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).

No data is available if the SET APPLICATION monitoring option has been selected with the **STATISTICS** parameter set to NOQDATA.

The WebSphere MQ Monitoring agent also provides current and recent versions of this workspace, which you can use to view the latest available report data or a recent snapshot of data taken at a particular point in time.

Predefined views

The Historical Tran/Pgm Statistics by Queue workspace includes the following predefined views:

- **Historical Tran/Pgm Statistics by Queue** This view shows you how the selected queue is being used by monitored transactions and programs, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy). Any remote activity, such as applications on a different queue manager accessing a remotely defined queue, will be attributed to the channel initiator application (qmgrCHIN).
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed by each transaction or program using the selected queue, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time when servicing requests for each transaction or program using the selected queue, over the selected period of time for which historical records are available (maximum 24 hours if you do not customize the warehouse proxy).

For more information about the attributes listed in the tables of this workspace, see “Application Queue Long-Term History attributes (z/OS systems only)” on page 320.

Predefined links

No other workspaces can be linked to from the Historical Tran/Pgm Statistics by Queue workspace.

Listener Status workspace

The Listener Status workspace provides views to monitor the status of listeners. The workspace also displays definition of listeners, links channel status to listener status and provides take action commands to start or stop a listener.

This workspace does not have any chart views.

The workspace is positioned within the **Queue Manager Status** navigator item as an alternate workspace. You can access the Listener Status Workspace by clicking Workspace from the View menu.

The data will be collected on-demand when the workspace is entered or refreshed. Therefore it is not recommended that the workspace be refreshed continually, or that auto-refresh be placed on a low interval.

The workspace table display will be empty (no rows of data) when the queue manager version is before version 6.0. It will also be empty if selected for a z/OS queue manager.

Predefined views

The Listener Status workspace includes the following predefined views:

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Listener Status attributes (distributed systems only)” on page 432.

Predefined links

No other workspaces can be linked to from the Listener Status workspace.

Log Data Set Status workspace (z/OS only)

The Log Data Set Status workspace provides you with information about the log data sets. The log is made up of log records, each of which is a set of log data treated as a single unit. A log record is identified either by the relative byte address (RBA) of the first byte of its header, or by its log record sequence number (LRSN).

Predefined views

No predefined views are available in this workspace.

For more information on the attributes listed in the tables of this workspace, see “Log Data Set Status attributes (z/OS systems only)” on page 434.

Predefined links

You can link to the following workspace from the Log Data Set Status workspace:

- Application Connections Workspace (This link is visible only if the value of **ACTCONN** parameter is not equal to the **Not_Connected_to_QMgr** value.)

Log Manager Performance workspace

The Log Manager Performance workspace is available on z/OS systems only.

The Log Manager Performance workspace summarizes log manager performance activity for all your z/OS queue managers. Use the information provided by this workspace to make changes to the system, set up situations, and verify that changes are improving performance.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each component of this workspace.

Predefined views

The Log Manager Performance workspace includes the following predefined views:

- **Log Manager Performance** The Log Manager Performance view summarizes log manager performance activity for all your z/OS queue managers. From this list you can select a queue manager whose log manager performance history you want to review. This log can be used to back out messages in an incomplete logical unit of work or to recover messages after queue manager or system failure. For best performance, you should eliminate contention for DASD log files, provide sufficient buffer and log file capacity, and maintain appropriate log buffer thresholds.
- **Read/Writes** This view displays, as a bar chart, the number of times the log is read from or written to per minute.
- **Archive** This view shows the percentage of log reads that were resolved using an log archive data set.
- **Delayed** This view shows the percentage of log reads that were delayed because MAXRTU data sets were already allocated.

For more information on the attributes listed in the tables of this workspace, see “Managers attributes” on page 449.

Predefined links

You can link to the following workspaces from the Log Manager Performance workspace:

- Recent Log Manager Performance
- Historical Log Manager Performance

Message Contents workspace

Use the Message Contents workspace to view the application section of messages and review their contents.

There are currently two versions of this workspace. The version that is displayed when you open the workspace depends on what version of the WebSphere MQ Monitoring agent you are using. If you are using version 6.0.1 or later, the workspace includes additional columns containing information not available using previous versions of the agent. If you are using version 6.0 or earlier, another version of the workspace containing less information is displayed. See the following information about the Message Contents view for further details.

Predefined views

The Message Contents workspace includes the following predefined views:

- **Message Contents** This view shows the application section of the selected message, which contains the message contents, including the first four kilobytes of message data in character form. If you are using version 6.0.1 of the WebSphere MQ Monitoring agent or later, you can also view the information about the CCSIDs that are used to convert the message data to different forms, and whether conversion was successful. If the contents of one of the cells containing message data is too long to be contained within a single cell, the contents of a single message are displayed on multiple rows. This is indicated by an asterisk (*) displayed at either end of cells containing character or converted data.

The message content might contain one or more WebSphere MQ headers. The WebSphere MQ Monitoring agent processes these headers before it displays the message data in this workspace. For those WebSphere MQ headers that are supported by the WebSphere MQ Monitoring agent and are documented in the Message Descriptor workspace of this guide, the headers themselves will be stripped out from the message content. The attributes of the headers are displayed in the Message Descriptor workspace. For several WebSphere MQ headers, the agent treats them as normal data and displays them with the data following them in this workspace. In this situation, garbage data might be displayed in both the Character Data and Converted Data columns, because the agent cannot recognize the correct CCSID of the data following some headers.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Message Data attributes” on page 458.

Predefined links

No other workspaces can be linked to from the Message Contents workspace.

Message Descriptor workspace

Use the Message Descriptor workspace to view the contents of message header fields.

If multiple headers are generated, subsequent headers are prefixed with the WebSphere MQ ID of the associated header. For example, subsequent dead letter queue headers are prefixed with DLH and subsequent transmit queue headers are prefixed with XQH.

Predefined views

The Message Descriptor workspace includes the following predefined views:

- **Message Descriptor** This view lists the parameters in the message descriptor (MQMD) header of the WebSphere MQ message and additional WebSphere MQ headers that are available in the message. Not all WebSphere MQ headers are supported; the WebSphere MQ Monitoring agent currently supports the following WebSphere MQ headers:
 - MQMD (message descriptor)

- MQMDE (message descriptor extension)
- MQDLH (dead-letter header)
- MQXQH (transmission-queue header)
- MQRMH (reference message header)
- MQDH (distribution header)

Note: The distribution header (MQDH) is supported only on distributed systems.

The message descriptor (MQMD) is always present in a WebSphere MQ message. A WebSphere MQ message might contain zero, one, or more of the other headers. Therefore, you might not see all of the above headers for a given message.

The following fields are displayed for the message descriptor (MQMD) of the WebSphere MQ message:

- The name and type of the application that created the message
- The backout count. If this is high it might indicate a problem.
- The correlation and message IDs
- The message expiration time
- The message length
- The message type. Possible message types are request, reply, report and datagram
- The message persistence, which indicates whether or not the message is recoverable
- The message priority, which can be used for selective retrieval of messages from queues
- The date and time at which the message was created (relative to GMT). This is also known as the put data and time.
- The reply-to queue and queue manager names

The following fields are displayed for the message descriptor extension (MQMDE) if it exists in the WebSphere MQ message:

- The numeric encoding, character set identifier, and format name of the data that follows the MQMDE
- The group ID and the sequence number of logical message within the group

The following fields are displayed for the dead letter header (MQDLH) if it exists in the WebSphere MQ message:

- The original destination queue and queue manager names
- The name and type of the application that created the message
- The date and time when the message was put on dead-letter queue (relative to GMT).
- The numeric encoding, character set identifier, and format name of the data that follows the MQDLH

The following fields are displayed for the transmission-queue header (MQXQH) if it exists in the WebSphere MQ message:

- The destination queue and queue manager names
- Information of the original message descriptor (MQMD)

The following fields are displayed for the message reference header (MQRMH) if it exists in the WebSphere MQ message:

- The object type and object instance identifier

- | – The length and offset of source environment data
- | – The length and offset of source object name
- | – The length and offset of destination environment data
- | – The length and offset of destination object name
- | – The numeric encoding, character set identifier, and format name of the bulk data
- | – The length, low and high offset of the bulk data

The following fields are displayed for the distribution header (MQDH) if it exists in the WebSphere MQ message:

- | – The numeric encoding, character set identifier, and format name of the data that follows the array of put-message record (MQPMR) records
- | – The object name and object queue manager name if present
- | – The attributes of the MQPMR if present

Remember: The put date and time value in this table is relative to GMT. It is different from the Queue Messages table view, which displays the put date and time in local time relative to the location of your monitored system.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Message Details attributes” on page 471.

Predefined links

No other workspaces can be linked to from the Message Descriptor workspace.

Message Manager Performance workspace

The Message Manager Performance workspace is available on z/OS systems only.

The Message Manager Performance workspace summarizes the rates at which messages are being passed to and retrieved from your monitored z/OS queue managers.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Message Manager Performance workspace includes the following predefined views:

- **Message Manager Performance** This view summarizes the rates at which messages are being passed to and retrieved from your monitored z/OS queue managers. Most of these are measured in terms of the frequency with which certain WebSphere MQ application programming interface (API) routines are called. From this table you can view the activity history of message managers. This table displays the frequency with which the following WebSphere MQ operations are performed:
 - Queues are opened or closed (MQOPEN and MQCLOSE routines).

- Messages are put on or removed from queues (MQPUT and MQGET routines).
- An MQPUT1 call is used to open a queue, put a message and then close the queue again in a single operation (MQPUT1 routine).
- Object attributes are queried or modified (MQINQ and MQSET routines).
- Subscriptions are registered to certain topics (MQSUB routines).
- Requests on subscriptions are made (MQSUBRQ routines).
- Callbacks are called by WebSphere MQ when certain events occur (MQCB routines).
- Controlling actions are performed on the object handles opened for a connection (MQCTL routines).
- Status information are retrieved (MQSTAT routines).
- Messages are put on queues, or distribution lists, or to topics.
- Handles are closed independently of MQI calls.
- **Message Manager Performance Summary** This view shows, as a bar chart, the frequency with which the following MQI methods have been called on the selected queue manager:
 - MQOPENs
 - MQCLOSEs
 - MQGETs
 - MQPUTs
 - MQPUT1s
 - MQINQs
 - MQSETs
 - MQSUBs
 - MQSUBRQs
 - MQCBs
 - MQCTLs
 - MQSTATs
 - Close handles per second

For more information on the attributes listed in the tables of this workspace, see “SMF Data attributes” on page 585.

Predefined links

You can link to the following workspaces from the Message Manager Performance workspace:

- Recent Message Manager Performance
- Historical Message Manager Performance

MQ Action Log workspace

The MQ Action Log workspace provides you with information about actions performed by end users. The actions here include those performed by issuing Take Action commands and message manipulation actions.

This workspace will only contain information if Take Action commands have been issued since WebSphere MQ Monitoring agent was installed. If no Take Action commands have been issued, the Take Action view is empty, and the KFWITM217E

error message is displayed at the bottom. However, once the first take action command has been issued, this message will disappear and the contents of the Take Action log is displayed correctly.

This workspace only contains information if the date, time and time zone settings of the systems on which the Tivoli Enterprise Portal Server and Tivoli Enterprise Monitoring Server run are the same.

Remember: The Message ID, Correlation ID, Message Tag, Source Queue Name, Target QMgr Name, and Target Queue Name columns apply only to message manipulation actions. For this reason, these columns are blank if the **Action Type** value is MQ_Command.

Predefined views

The MQ Action Log workspace includes the following predefined views:

- **MQ Action Log** This view provides information about actions performed by end users. The actions described here refer to message manipulation actions and actions performed by issuing Take Action commands.
- **Message Log** This view provides IBM Tivoli Monitoring system level information, such as agent status information.

For more information on the attributes listed in the tables of this workspace, see “MQ Action Log attributes” on page 500.

Predefined links

No other workspaces can be linked to from the MQ Action Log workspace.

MQ Channel Statistics workspace

The MQ Channel Statistics workspace displays channel statistics for monitored channels within a queue manager. It applies to WebSphere MQ version 6.0 and later.

WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The MQ Channel Statistics workspace includes the following predefined views:

- **MQ Channel Statistics** This view displays channel statistics for monitored channels within a queue manager, including what data was transmitted by the queue manager using the channel, for the most recent sampling interval.
- **Average Net/Exit Time** shows, as a bar chart, the end date and time of the average recorded time spent executing a user exit in recording interval and the average latency of messages retrieved from the queue.
- **Message Rate** shows, as a bar chart, the end date and time of the rate per second of (non)persistent messages sent or received.
- **Total Byte Rate** shows, as a bar chart, the end date and time of Displays the rate per second of bytes sent or received for (non)persistent message.

For more information on the attributes listed in the tables of this workspace, see “MQ Channel Statistics attributes (distributed systems only)” on page 509.

Predefined links

You can link to the following workspaces from the MQ Channel Statistics workspace:

- Recent MQ Channel Statistics
- Historical MQ Channel Statistics

MQ Queue Statistics workspace

The MQ Queue Statistics workspace displays statistics related to individual queues within a queue manager. It is a secondary workspace for the MQI Statistics navigation item.

The MQ queue statistics include the data collected from the queue manager, about operations performed on that queue and the rates with which they occur. Entries are listed one line per queue for all queues in the system for which statistics were published by the queue manager during the most recent interval.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The MQ Queue Statistics workspace includes the following predefined views:

- **MQ Queue Statistics** This view displays statistics related to individual queues within a queue manager, including the data collected by the queue manager over the most recent sampling interval.
- **Normal Rate** This view shows, as a bar chart, the rate at which the following MQ API commands are successfully performed per second:
 - Put
 - Put1
 - Put byte
 - Get
 - Get byte
 - Browse
 - Browse byte
 - Expired msg
 - Non-queue msg
 - Purge
- **Fail Rate** This view shows, as a bar chart, the number of times that each of the following API commands fails each second:
 - Put
 - Put1
 - Get
 - Browse

For more information on the attributes listed in the tables of this workspace, see “MQ Queue Statistics attributes (distributed systems only)” on page 512.

Predefined links

You can link to the following workspaces from the MQ Queue Statistics workspace:

- MQI Message Statistics Details
- Queue Accounting
- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or to the **QMNAME** value.)
- Recent MQ Queue Statistics
- Historical MQ Queue Statistics

MQI Call Statistics Details Workspace

The MQI Call Statistics Details workspace displays statistical information about WebSphere MQ API calls that are made by an application.

The WebSphere MQ Monitoring agent also provides a historical version of this workspace containing up to 24 hours of statistical data for each workspace component.

Predefined views

The MQI Call Statistics Details workspace includes the following predefined views:

- **MQI Call Statistics Details** This view displays statistical information relating to WebSphere MQ API calls made by applications. It also provides details of the rates at which different operations are performed on different objects within the environment, in terms of per second and in total over the sampling period.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQI Call Statistics Details attributes (distributed systems only)” on page 516.

Predefined links

No other workspaces can be linked to from the MQI Call Statistics Details workspace.

MQI Message Statistics Details Workspace

The MQI Message Statistics Details workspace displays statistical information relating to the messages passed between applications and WebSphere MQ through WebSphere MQ API calls.

WebSphere MQ Monitoring agent also provides a historical version of this workspace containing up to 24 hours of statistical data for each workspace component.

Predefined views

The MQI Message Statistics Details workspace includes the following predefined views:

- **MQI Message Statistics Details** This view displays statistical information relating to the messages passed between an application and WebSphere MQ through WebSphere MQ API calls. Statistics are organized by message.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQI Message Statistics Details attributes (distributed systems only)” on page 518.

Predefined links

No other workspaces can be linked to from the MQI Message Statistics Details workspace.

MQI Statistics workspace

The MQI Statistics workspace displays statistical data related to the use of the WebSphere MQ API by all queues within a queue manager.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The MQI Statistics workspace includes the following predefined views:

- **MQI Statistics** This view displays statistical data related to the use of the WebSphere MQ API by all queues within a queue manager.
- **Normal Rate** This view shows, as a bar chart, the rate at which the following API commands are successfully performed per second:
 - Connection
 - Implicit disconn
 - Qmgr disconn
 - Normal disconn
 - Open
 - Close
 - Inquire
 - Set
 - Put
 - Put1
 - Put byte
 - Get
 - Get byte
 - Browse
 - Browse byte
 - Commit
 - Backout
 - Expired msg
 - Purge

- **Fail Rate** This view shows, as a bar chart, the number of times that each of the following API commands fails each second:
 - Connection
 - Open
 - Close
 - Inquire
 - Set
 - Put
 - Put1
 - Get
 - Browse
 - Commit

For more information on the attributes listed in the tables of this workspace, see “MQI Statistics attributes (distributed systems only)” on page 519.

Predefined links

You can link to the following workspaces from the MQI Statistics workspace:

- MQI Call Statistics Details
- MQI Message Statistics Details
- Recent MQI Statistics
- Historical MQI Statistics

MQSeries Events workspace

The MQSeries Events workspace provides you with a list the conditions that trigger an event on the event queue.

Predefined views

The MQSeries Events workspace includes the following predefined views:

- **MQSeries Events** This view provides you with a list the conditions that will trigger an event on the event queue. You can select an event from this list to display further information about it.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Current Events attributes” on page 397.

Predefined links

You can link to the following workspaces from the MQSeries Events workspace:

- Event Parameters
- Event Log

Namelist Detail workspace

Use this workspace to view the attributes of the selected namelist, including its contents.

Predefined views

The Namelist Detail workspace includes the following predefined views:

- **Namelist Detail** Use this view to view the attributes of the selected namelist, including its contents. Data displayed in this view is collected on demand. It provides you with the following information:
 - The date and time at which the namelist was last modified.
 - A description of the namelist (if given when the namelist was configured).
 - The number of names in the namelist.
 - A list of the actual names.
- **Remember:** Some names that are included in a namelist might be longer than the table column width. A single entry might be displayed over multiple rows.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Namelist attributes” on page 531.

Predefined links

No other workspaces can be linked to from the Namelist Detail workspace.

Open Queue Handles workspace

The Open Queue Handles workspace is only available on WebSphere MQ version 5.3 and later.

Use the Open Queue Handles workspace to help you determine which applications or users opened which queues, and for what purpose.

Important: The data contained within this workspace is collected *on-request-only*, not during the standard sampling interval. *Each time you open, link to, or refresh this workspace*, the monitoring agent queries WebSphere MQ and collects the requested data. Therefore, for performance reasons, this workspace should *not* be placed in a short interval automatic refresh mode.

To access this workspace, select the Queue Statistics item for the selected queue manager within the Navigator physical view and right-click, and click **Workspace > Open Queue Handles** from the menu.

Predefined views

The Open Queue Handles workspace includes the following predefined views:

- **Open Queue Handles** Use this view to help you determine which applications or users opened which queues, and for what purpose.

The Open Queue Handles view contains detailed application-related information, including the reasons why queues were opened, for a selected

queue manager. This table contains one row for each open queue handle, so if a queue has no open handles, the table will be empty. You can also use this table to view status information for a particular queue.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Queue Handle Status attributes” on page 561.

Predefined links

You can link to the following workspace from the Open Queue Handles workspace:

- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or to the **QMNAME** value.)

In addition to the above workspace, the following workspaces are available in specific circumstance:

- If you have OMEGAMON for CICS on z/OS system installed, you can also link to the CICS Transaction Analysis workspace. This workspace can only be link to from rows with an Appl Type value of CICS. The CICS Transaction Analysis workspace provides a comprehensive view of CICS transactions which you can use to identify problem transactions across CICS regions and z/OS images for the CICSplex. For more information about this workspace see OMEGAMON for CICS on z/OS online help.
- If you have IBM Tivoli Monitoring OS agent installed on your system, you can also link to Process Information workspace of IBM Tivoli Monitoring OS agent. The Process workspace provides you with the details of the process that opened the queue. For more information about this workspace, see IBM Tivoli Monitoring online help.
- If you have OMEGAMON XE for z/OS installed, you can also link to Sysplex workspace. The Sysplex workspace provides you with the information about the specific component of the sysplex. For more information about this workspace, see OMEGAMON XE on z/OS online help.
- If you have OMEGAMON XE for z/OS installed, you can also link to the following workspaces by using ASID:
 - Address Space Bottleneck Detail workspace
 - Address Space Bottleneck and Impact Analysis workspace
 - Address Space CPU Usage workspace
 - Address Space CPU Usage Details workspace
 - Address Space Storage for Job workspace

Theses workspaces provide you with the information about address space bottleneck, CPU and storage. For more information about these workspaces, see OMEGAMON XE for z/OS online help.

Page Set Statistics workspace

The Page Set Statistics workspace is available on z/OS systems only.

The Page Set Statistics workspace shows the performance of the page sets associated with the selected queue manager or buffer pool ID. Use it to monitor page and buffer pool usage.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Page Set Statistics workspace includes the following predefined views:

- **Page Set Statistics Detail** This view shows the performance of the page sets associated with the selected queue manager or buffer pool ID. Use it to monitor the following conditions:
 - Examine the percentage of pages in use and the total number of extents to ensure that no page sets are reaching capacity.
 - Examine the number of buffers from the buffer pool that are in used. If it is common for all buffers from the pool to be in use and a page set is responsible for most activity, then performance will adversely affected. Try increasing the size of the buffer pool or assigning the page set to another buffer pool.
- **Page Set Statistics Summary** This view shows, as a bar chart, the highest and average percentages of the Page Set in use on the selected queue manager over the sampling period.
- **Page Set Utilization** This view shows, as a bar chart, page set utilization for the page set IDs associated with the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Page Sets attributes (z/OS systems only)” on page 536.

Predefined links

You can link to the following workspaces from the Page Set Statistics workspace:

- Queue Statistics
- Recent Page Set Statistics
- Historical Page Set Statistics

Publish Subscribe Status workspace

The Publish Subscribe Status workspace contains status information about the publish-subscribe engine. For example, whether the publish-subscribe engine is running.

Predefined views

The Publish Subscribe Status workspace includes the following predefined views:

- **Publish Subscribe status** This view contains information about the status of the publish-subscribe engine.
- **Message Log** This view contains IBM Tivoli Monitoring system level information, such as agent status information.

For more information on the attributes listed in the tables of this workspace, see “Publish Subscribe Status attributes” on page 538.

Predefined links

No other workspaces can be linked to from the Publish Subscribe Status workspace.

QSG CF Structure Statistics workspace

The QSG CF Structure Statistics workspace is available on z/OS systems running the QSG environment only.

Use the QSG CF Structure Statistics workspace to view the current status of the Coupling Facility (CF) application structures that store your queue-sharing group's essential data. You can also check the date and time at which CF application structures were last backed up.

Predefined views

The QSG CF Structure Statistics workspace includes the following predefined views:

- **Queue Sharing Group CF Structure Backup Statistics** Displays information associated with backups done for coupling facility application structures in the queue-sharing group. Note that the administration structure, CSQ_ADMIN, is not included in this workspace.

For more information on the attributes displayed in this view, see “QSG Coupling Facility Structure Backups attributes (z/OS systems only)” on page 539.

- **Queue Sharing Group CF Structure Statistics** Lists one row of summary status information for each coupling facility application structure (and administration structure) in the queue-sharing group. Some information for administration structures is not provided, as specified in the “QSG Coupling Facility Structures attributes (z/OS systems only)” on page 542.

Predefined links

No other workspaces can be linked to from the QSG CF Structure Statistics workspace.

QSG Resources workspace

The QSG Resources workspace is available on z/OS systems running the QSG environment only.

Use the QSG Resources workspace to detect problems in shared channels and queues belonging to a queue-sharing group.

Predefined views

The QSG Resources workspace includes the following predefined views:

- **Queue Sharing Group Channel Statistics** This view lists each active shared channel in the queue-sharing group with key statistics, such as channel status. You can select a particular channel from the list to display its parameters. When you are prompted to select the queue manager that gathers these statistics, select a queue manager from within the group. This queue manager will then provide statistics about the group for this workspace. one queue manager can only monitor one group. If a queue manager monitors a QSG, this should be indicated in its kmq configuration file.

For more information on the attributes displayed in this view, see “QSG Channels attributes” on page 538.

- **Queue Sharing Group Queue Statistics** This view lists all shared queues in the queue-sharing group with key statistics, such as queue depth. Both shared queues and copy queues are included in the list. The copy queue statistics displayed are those of the queue manager with the highest current depth. You can select a particular shared or copy queue from the list to display its parameters or the messages currently stored on it. You will be prompted to select the queue manager that gathers these statistics.

For more information on the attributes listed in the tables of this workspace, see “QSG Queues attributes (z/OS systems only)” on page 545.

Predefined links

You can link to the following workspaces from the QSG Resources workspace:

- Queue Parameters
- Queue Messages
- Channel Parameters

Queue-Sharing Group workspace

The Queue-Sharing Group workspace is available on z/OS systems only.

Use this workspace to view the overall performance of the monitored queue-sharing group by viewing the status of each of its queue managers and queue manager to DB2 connection Coupling Facility (CF) data.

Predefined views

The Queue-Sharing Group workspace includes the following predefined views:

- **Queue Sharing Group Queue Manager Status** This view contains a table with one row of status information for each queue manager in the monitored queue sharing group. Select a queue manager from this list to display detailed information about its Queue Manager Parameters (MVS) and its Queue Manager Status. If no queue manager has been assigned to collect group statistics, you are prompted to select a queue manager from the group to gather the statistics.
This view displays data provided by the “QSG QMgrs attributes (z/OS systems only)” on page 544.
- **Queue Sharing Group CF Structure Connection Statistics** This view lists the queue manager connection status for each coupling facility application structure in the queue sharing group. Note that the CSQ_ADMIN administration structure is not included in this workspace. You can link to the QSG CF Structure Statistics workspace from this view.

For more information on the attributes listed in the tables of this workspace, see “QSG Coupling Facility Structure Connections attributes (z/OS systems only)” on page 541.

Predefined links

You can link to the following workspaces from the Queue-Sharing Group workspace:

- QSG CF Structure Statistics

- Queue Manager Parameters (MVS)
- Queue Manager Status

Queue Access Statistics by ApplID workspace

The Access Statistics by ApplID workspace is available on z/OS systems only.

The Queue Access Statistics by ApplID workspace provides you with queue usage statistics for all transactions or programs associated with a selected application ID. Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.

No data is available if the **STATISTICS** parameter is set to NOQDATA in the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Queue Access Statistics by ApplID workspace includes the following predefined views:

- **Queue Access Statistics by ApplID** This view provides you with queue usage statistics for all transactions or programs associated with the selected application ID (shown in the report's subheading).
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read or browsed on each queue used by the selected application.
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time of each queue used by the selected application.

For more information on the attributes listed in the tables of this workspace, see “Application Queue Statistics attributes (z/OS systems only)” on page 325.

Predefined links

You can link to the following workspaces from the Queue Access Statistics by ApplID workspace:

- Tran/Pgm Statistics by Queue
- Recent Queue Access Statistics by ApplID
- Historical Queue Access Statistics by ApplID

Queue Access Statistics by Tran/Pgm workspace

The Queue Access Statistics by Tran/Pgm workspace is available on z/OS systems only.

Use the Queue Access Statistics by Tran/Pgm workspace to view queue usage statistics for a specific transaction or program. Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.

No data will be available if the **STATISTICS** parameter set to NOQDATA in the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Queue Access Statistics by Tran/Pgm workspace includes the following predefined views:

- **Queue Access Statistics by Tran/Pgm** This view provides you with queue usage statistics for a specific transaction or program. Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.
- **Message Counts** shows, as a bar chart, the total number of messages put, read, and browsed on each queue used by the selected transaction or program.
- **Average MQ Response Time** shows, as a bar chart, the average WebSphere MQ response time on each queue used by the selected transaction or program.

For more information on the attributes listed in the tables of this workspace, see “Application Queue Statistics attributes (z/OS systems only)” on page 325.

Predefined links

You can link to the following workspaces from the Queue Access Statistics by Tran/Pgm workspace:

- Tran/Pgm Statistics by Queue
- Recent Queue Access Statistics by Tran/Pgm
- Historical Queue Access Statistics by Tran/Pgm

Queue Accounting workspace

The Queue Accounting workspace displays information about the queues used by application connections. It might include queues used by application connections which were once active, but are not currently active. However, it does not include queues used by application connections that are currently active, in cases where the application connection is new and for which accounting data has not yet been published by the queue manager.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Queue Accounting workspace includes the following predefined views:

- **Queue Accounting** This view displays information about the queues used by application connections, including data collected from the queue manager over the most recent sampling interval.
- **Normal Rate** This view shows, as a bar chart, the rate at which the following operations are successfully performed per second:
 - Open
 - Close
 - Put
 - Put1

- Put byte
- Get
- Get byte
- Browse
- Browse byte
- Generated msg
- **Fail Rate** This view shows, as a bar chart, the number of each of the following operations that fail each second:
 - Put
 - Put1
 - Get
 - Browse

For more information on the attributes listed in the tables of this workspace, see “Queue Accounting attributes (distributed systems only)” on page 545.

Predefined links

You can link to the following workspaces from the Queue Accounting workspace:

- MQI Message Statistics Details
- MQ Queue Statistics
- Recent Queue Accounting
- Historical Queue Accounting

Queue Definitions for Alias Queues workspace

The Queue Definitions for Alias Queues workspace summarizes the definitions of the alias queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

- **Queue Definitions for Alias Queues** This view summarizes the definitions of the alias queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Alias Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions for Cluster Queues workspace

The Queue Definitions for Cluster Queues workspace summarizes the definitions of the cluster queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions for Cluster Queues workspace includes the following predefined views:

- **Queue Definitions for Cluster Queues** This view summarizes the definitions of the cluster queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Cluster Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID

- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions for Local Queues workspace

The Queue Definitions for Local Queues workspace summarizes the definitions of the local queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions for Local Queues workspace includes the following predefined views:

- **Queue Definitions for Local Queues** This view summarizes the definitions of the local queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Local Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions for Model Queues workspace

The Queue Definitions for Model Queues workspace summarizes the definitions of the model queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions for Model Queues workspace includes the following predefined views:

- **Queue Definitions for Model Queues** This view summarizes the definitions of the model queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. **Purge Queue** deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Model Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions for Permanent Dynamic Queues workspace

The Queue Definitions for Permanent Dynamic Queues workspace summarizes the definitions of the permanent dynamic queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions for Permanent Dynamic Queues workspace includes the following predefined views:

- **Queue Definitions for Permanent Dynamic Queues** This view summarizes the definitions of the permanent dynamic queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Permanent Dynamic Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions for Predefined Queues workspace

The Queue Definitions for Predefined Queues workspace summarizes the definitions of the predefined queues managed by the selected queue manager. It is the default workspace at the Queue Definitions level. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions for Predefined Queues workspace includes the following predefined views:

- **Queue Definitions for Predefined Queues** This view summarizes the definitions of the predefined queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The

Clear Queue option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Predefined Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions for Remote Queues workspace

The Queue Definitions for Remote Queues workspace summarizes the definitions of the remote queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions for Remote Queues workspace includes the following predefined views:

- **Queue Definitions for Remote Queues** This view summarizes the definitions of the remote queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.

- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Remote Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions for Temporary Dynamic Queues workspace

The Queue Definitions for Temporary Dynamic Queues workspace summarizes the definitions of the temporary dynamic queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions for Temporary Dynamic Queues workspace includes the following predefined views:

- **Queue Definitions for Temporary Dynamic Queues** This view summarizes the definitions of the temporary dynamic queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions for Temporary Dynamic Queues workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Definitions workspace

The Queue Definitions workspace summarizes the definitions of the monitored queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Queue Definitions workspace includes the following predefined views:

- **Queue Definitions** This view summarizes the definitions of the monitored queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET. Data displayed in this table is collected on-demand.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** shows, as a bar chart, the number of queues by queue type for the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Queue Definitions workspace:

- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name

- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Messages with DLQ Header

Queue Manager Parameters (MVS) workspace

The Queue Manager Parameters (MVS) workspace is available on z/OS systems only.

Use the Queue Manager Parameters (MVS) workspace to view the defined, system and archive parameters of the selected queue manager, and its log.

Predefined views

The Queue Manager Parameters (MVS) workspace includes the following predefined views:

- The **Queue Manager System Parameters** This view displays the selected queue manager's current system parameter values. Data displayed in this view is collected on demand.
- The **Queue Manager System Log and Archive Parameters** This view displays the selected queue manager's system log and archive parameters (those parameters previously used on queue manager).
- The **Queue Manager Parameters** This view shows you the selected queue manager's defined parameters. It is often possible to solve a problem by correcting errors in a queue manager's definition.

For more information on the attributes listed in the tables of this workspace, see "Manager Definition Details attributes" on page 441.

Predefined links

No other workspaces can be linked to from the Queue Manager Parameters (MVS) workspace.

Queue Manager Parameters workspace

Use the Queue Manager Parameters workspace to view the defined parameters of the selected queue manager.

Predefined views

The Queue Manager Parameters workspace includes the following predefined views:

- **Queue Manager Parameters** This view displays the defined parameters of the selected queue manager. It is often possible to solve a problem by correcting errors in a queue manager's definition. Data displayed in this view is collected on demand.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see "Manager Definition Details attributes" on page 441.

Predefined links

No other workspaces can be linked to from the Queue Manager Parameters workspace.

Queue Manager Status workspace

Use the Queue Manager Status workspace to view statistical information about monitored queue managers within the WebSphere MQ environment.

Predefined views

The Queue Manager Status workspace includes the following predefined views:

- **Queue Manager Status** This view provides the following information, among other statistics, about each monitored queue manager:
 - Its name and the name of the host on which it runs
 - Its status, which might be active or inactive. If the queue manager is active, then the time and date that it was started is also displayed.
 - Its subsystem ID (z/OS queue managers only)
 - The maximum capacity, in terms of number of messages, of the dead-letter queue
 - The current number of messages on the dead-letter queue
 - The name of the batch job running the queue manager (z/OS queue managers only)
 - The WebSphere MQ release level
 - The operating system on which the queue manager is running.
 - The number of WebSphere MQ system commands issued to the queue manager that did not return a response within a reasonable period of time issued by the application. See your WebSphere MQ documentation for further details

From this table view you can select a queue manager whose definition parameters you want to review. If a queue manager status is "Active" but no statistics are being generated, check that the command server for the queue manager has been started.

- **Queue Summary** This view shows, as a bar chart, a summary of status information for each queue running on the selected queue manager.
- **Channel Summary** This view shows, as a bar chart, the number of each different type of channel associated with the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see "Managers attributes" on page 449.

Predefined links

You can link to the following workspace from the Queue Manager Status workspace:

- Queue Manager Parameters

Queue Messages with DLQ Header workspace

The Queue Messages with DLQ Header workspace enables you to browse messages with DLQ headers located in the selected queue that are not in the dead

letter queue for a queue manager and delete or forward them to another destination. To access this workspace, do the following steps:

1. Open the Queue Definitions workspace (or Queue Statistics workspace)
2. Right-click a row in the Queue Definitions table (or Queue Statistics table) and select **Link To > Queue Messages with DLQ Header** from the menu.

After you confirm that you want to delete or forward a message, a return code and message display. Zero indicates successful completion. Non zeros indicate a problem. For an explanation of non-zero return codes, refer to the *IBM WebSphere MQ Application Programming Reference* manual.

Deleting a message with DLQ Header

Use this procedure to delete a message with DLQ header from the selected queue:

1. Within the Queue Messages with DLQ Header workspace, right-click the message that you want to delete.
2. Select **MQ Commands > Delete** from the menu.
3. A confirmation window appears, asking if you want to delete the message. Click **Yes** to delete the message.
4. The status of your delete request appears. The return code zero indicates successful completion. Non zeros indicate a problem.
5. Click **OK** to close the status window.

Forwarding a message with DLQ header to another destination

Use this procedure to forward a message with DLQ header to another destination:

1. In the Queue Messages with DLQ Header workspace, right-click the message that you want to forward.
2. Select **MQ Commands > Forward** from the menu.
3. Enter the name of the destination queue and that of its queue manager in the window and click **Yes**.
4. The status of your forwarding request appears. The return code zero indicates successful completion. Non zeros indicate a problem.
5. Click **OK** to close the status window.

Predefined views

The Queue Messages with DLQ Header workspace includes the following predefined view:

- **Messages with DLQ Header** This view gives you an overview of messages with DLQ Header.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information about this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Message Summary attributes” on page 483.

Predefined links

You can link to the following workspaces from the Queue Messages with DLQ Header workspace:

- Message Descriptor
- Message Contents

Queue Messages workspace

Use the Queue Messages workspace to view descriptive information about messages located on the selected queue, and delete selective messages if required.

Predefined views

The Queue Messages workspace includes the following predefined views:

- **Queue Messages** This view lists the messages located on the selected queue and provides the following descriptive information about each one:
 - Message type, length, priority, persistence, and expiration time
 - The application that created the message and the time at which it was created
 - The number of times the message was backed out because of an incomplete logical unit of work
 - Whether the message is segmented, part of a group or both, and, if it is part of a group, the GroupID

Use this view to delete messages or view message headers and the first 4 kilobytes of a message application data.

Note that if you delete a group or segmented message, all messages that belong to that group or logical message are deleted.

Note that on WebSphere MQ for Windows, the processing platform on which the queue manager is running always has a value of MQPL_WINDOWS_NT.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Message Summary attributes” on page 483.

Predefined links

You can link to the following workspaces from the Queue Messages workspace:

- Message Descriptor
- Message Contents

Queue Parameters workspace

The Queue Parameters workspace displays the queue parameters and is used to verify the parameters of the selected queue.

Predefined views

The Queue Parameters workspace includes the following predefined views:

- **Queue Parameters** This view displays the name, description, type, and value of each of a queue's parameters. Use this information to verify the parameters of

the selected queue. It is often possible to solve a problem by correcting errors in a queues definition. Data displayed in this table is collected on-demand.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Queue Definition Details attributes” on page 558.

Predefined links

No other workspaces can be linked to from the Queue Parameters workspace.

Queue Statistics for Monitored Open Queues workspace

The Queue Statistics for Monitored Open Queues workspace displays queue usage statistics for open queues running on the selected queue manager. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

Predefined views

The Queue Statistics for Monitored Open Queues workspace includes the following predefined views:

- **Queue Statistics for Monitored Open Queues** This view displays queue usage statistics for open queues running on the selected queue manager. Each local queue is only listed once, even if there are several alias queues mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:
 - Lengthy logical units of work.
 - A resource intensive CICS transaction or program.

You can also delete messages from a queue by clicking **Clear Queue** or The **Purge Queue** option in the menu when you right-click on the selected queue. **Clear Queue** deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization for Monitored Open Queues** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored open queue managed by the selected queue manager.
- **Queue Statistics Summary** This view shows, as a bar chart, the following statistics about the selected queue manager:
 - Number of monitored queues
 - Number of open queues
 - Number of queues with high depth
 - Number of queues get-inhibited

- Number of queues put-inhibited

For more information on the attributes listed in the tables of this workspace, see “Queue Statistics attributes” on page 576.

Predefined links

You can link to the following workspaces from the Queue Statistics for Monitored Open Queues workspace:

- QSG CF Structure Statistics
- Queue Parameters
- Tran/Pgm Statistics by Queue
- Historical Queue Statistics
- Recent Queue Statistics
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or the value of **QMNAME**.)
- Queue Messages with DLQ Header

Queue Statistics for Monitored Permanent Dynamic Queues workspace

The Queue Statistics for Monitored Permanent Dynamic Queues workspace displays queue usage statistics for permanent dynamic queues running on the selected queue manager. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

Predefined views

The Queue Statistics for Monitored Permanent Dynamic Queues workspace includes the following predefined views:

- **Queue Statistics for Monitored Permanent Dynamic Queues** This view displays queue usage statistics for permanent dynamic queues running on the selected queue manager. Each local queue is only listed once, even if there are several alias queues mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:
 - Lengthy logical units of work
 - A resource intensive CICS transaction or program

You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization for Monitored Permanent Dynamic Queues** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored permanent queue managed by the selected queue manager.
- **Queue Statistics Summary** This view shows, as a bar chart, the following statistics about the selected queue manager:
 - Number of monitored queues
 - Number of open queues
 - Number of queues with high depth
 - Number of queues get-inhibited
 - Number of queues put-inhibited

For more information on the attributes listed in the tables of this workspace, see “Queue Statistics attributes” on page 576.

Predefined links

You can link to the following workspaces from the Queue Statistics for Monitored Permanent Dynamic Queues workspace:

- QSG CF Structure Statistics
- Queue Parameters
- Tran/Pgm Statistics by Queue
- Historical Queue Statistics
- Recent Queue Statistics
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or the value of **QMNAME**.)
- Queue Messages with DLQ Header

Queue Statistics for Monitored Predefined Queues workspace

The Queue Statistics for Monitored Predefined Queues workspace displays queue usage statistics for predefined queues running on the selected queue manager. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

Predefined views

The Queue Statistics for Monitored Predefined Queues workspace includes the following predefined views:

- **Queue Statistics for Monitored Predefined Queues** This view displays queue usage statistics for predefined queues running on the selected queue manager. Each local queue is only listed once, even if there are several alias queues mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:

- lengthy logical units of work.
- a resource intensive CICS transaction or program.

You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. **Clear Queue** deletes messages from a queue all together using MQSC command. **Purge Queue** deletes messages from a queue using MQGET.

Note:

1. If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
 2. If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization for Monitored Predefined Queues** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored predefined queue managed by the selected queue manager.
 - **Queue Statistics Summary** shows, as a bar chart, the following statistics about the selected queue manager:
 - Number of monitored queues
 - Number of open queues
 - Number of queues with high depth
 - Number of queues get-inhibited
 - Number of queues put-inhibited

For more information on the attributes listed in the tables of this workspace, see “Queue Statistics attributes” on page 576.

Predefined links

You can link to the following workspaces from the Queue Statistics for Monitored Predefined Queues workspace:

- QSG CF Structure Statistics
- Queue Parameters
- Tran/Pgm Statistics by Queue
- Historical Queue Statistics
- Recent Queue Statistics
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Status This link is visible only if the value of DESTQMGR is equal to "" or the value of QMNAME.

- Queue Messages with DLQ Header

Queue Statistics for Monitored Queues with Messages workspace

The Queue Statistics for Monitored Queues with Messages workspace displays queue usage statistics for monitored queues with messages running on the selected queue manager. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

Predefined views

The Queue Statistics for Monitored Queues with Messages workspace includes the following predefined views:

- **Queue Statistics for Monitored Queues with Messages** This view displays queue usage statistics for monitored queues with messages running on the selected queue manager. Each local queue is only listed once, even if there are several alias queues mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:
 - Lengthy logical units of work
 - A resource intensive CICS transaction or program

You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization for Monitored Queues with Messages** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored queue with messages managed by the selected queue manager.
- **Queue Statistics Summary** This view shows, as a bar chart, the following statistics about the selected queue manager:
 - Number of monitored queues
 - Number of open queues
 - Number of queues with high depth
 - Number of queues get-inhibited
 - Number of queues put-inhibited

For more information on the attributes listed in the tables of this workspace, see “Queue Statistics attributes” on page 576.

Predefined links

You can link to the following workspaces from the Queue Statistics for Monitored Queues with Messages workspace:

- QSG CF Structure Statistics
- Queue Parameters
- Tran/Pgm Statistics by Queue
- Historical Queue Statistics
- Recent Queue Statistics
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or the value of **QMNAME**.)
- Queue Messages with DLQ Header

Queue Statistics for Monitored Temporary Dynamic Queues workspace

The Queue Statistics for Monitored Temporary Dynamic Queues workspace displays queue usage statistics for temporary dynamic queues running on the selected queue manager. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

The Queue Statistics for Monitored Temporary Dynamic Queues workspace does not contain information related to model queues. This is because model queues are templates from which queues can be created, not physical queues about which statistics can be collected.

Predefined views

The Queue Statistics for Monitored Temporary Dynamic Queues workspace includes the following predefined views:

- **Queue Statistics for Monitored Temporary Dynamic Queues** This view displays queue usage statistics for temporary dynamic queues running on the selected queue manager. Each local queue is only listed once, even if there are several alias queues mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:
 - Lengthy logical units of work
 - A resource intensive CICS transaction or program

You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.

- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization for Monitored Temporary Dynamic Queues** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored temporary dynamic queue managed by the selected queue manager.
- **Queue Statistics Summary** This view shows, as a bar chart, the following statistics about the selected queue manager:
 - Number of monitored queues
 - Number of open queues
 - Number of queues with high depth
 - Number of queues get-inhibited
 - Number of queues put-inhibited

For more information on the attributes listed in the tables of this workspace, see “Queue Statistics attributes” on page 576.

Predefined links

You can link to the following workspaces from the Queue Statistics for Monitored Temporary Dynamic Queues workspace:

- QSG CF Structure Statistics
- Queue Parameters
- Tran/Pgm Statistics by Queue
- Historical Queue Statistics
- Recent Queue Statistics
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or the value of **QMNAME**.)
- Queue Messages with DLQ Header

Queue Statistics for Monitored Transmission Queues workspace

The Queue Statistics for Monitored Transmission Queues workspace displays queue usage statistics for transmission queues running on the selected queue manager. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

Predefined views

The Queue Statistics for Monitored Transmission Queues workspace includes the following predefined views:

- **Queue Statistics for Monitored Transmission Queues** This view displays queue usage statistics for transmission queues running on the selected queue manager. Each local queue is only listed once, even if there are several alias queues

mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:

- Lengthy logical units of work.
- A resource intensive CICS transaction or program.

You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization for Monitored Transmission Queues** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored transmission queue managed by the selected queue manager.
- **Queue Statistics Summary** This view shows, as a bar chart, the following statistics about the selected queue manager:
 - Number of monitored queues
 - Number of open queues
 - Number of queues with high depth
 - Number of queues get-inhibited
 - Number of queues put-inhibited

For more information on the attributes listed in the tables of this workspace, see “Queue Statistics attributes” on page 576.

Predefined links

You can link to the following workspaces from the Queue Statistics for Monitored Transmission Queues workspace:

- QSG CF Structure Statistics
- Queue Parameters
- Tran/Pgm Statistics by Queue
- Historical Queue Statistics
- Recent Queue Statistics
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Status This link is visible only if the **DESTQMGR** value is equal to "" or the value of **QMNAME**.
- Queue Messages with DLQ Header

Queue Statistics workspace

The Queue Statistics workspace displays queue usage statistics for monitored queues running on the selected queue manager. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

The Queue Statistics workspace does not contain information related to model queues. This is because model queues are templates from which queues can be created, not physical queues about which statistics can be collected.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Queue Statistics workspace includes the following predefined views:

- **Queue Statistics** This view displays queue usage statistics for monitored queues running on the selected queue manager. Each local queue is only listed once, even if there are several alias queues mapped to it. Select a queue from this list to view more information about it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:

- Lengthy logical units of work
- A resource intensive CICS transaction or program

You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization for Monitored Queues** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored queue managed by the selected queue manager.
- **Queue Statistics Summary** This view shows, as a bar chart, the following statistics about the selected queue manager:
 - Number of monitored queues
 - Number of open queues
 - Number of queues with high depth
 - Number of queues get-inhibited
 - Number of queues put-inhibited

For more information on the attributes listed in the tables of this workspace, see “Queue Statistics attributes” on page 576.

Predefined links

You can link to the following workspaces from the Queue Statistics workspace:

- QSG CF Structure Statistics
- Queue Parameters
- Tran/Pgm Statistics by Queue
- Historical Queue Statistics
- Recent Queue Statistics
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or the value of **QMNAME**.)
- Queue Messages with DLQ Header

Queue Status workspace

The Queue Status workspace is only available on WebSphere MQ version 5.3 and later.

The Queue Status workspace contains information about the status of the selected open queue, including whether or not the queue has uncommitted messages, the current number of messages on the queue, and information regarding the handles that currently have the queue open.

Important: The data contained within this workspace is collected *on-request-only*, not during the standard sampling interval. *Each time you open, link to, or refresh this workspace*, the monitoring agent queries WebSphere MQ and collects the requested data. Therefore, for performance reasons, this workspace should *not* be placed in a short interval automatic refresh mode.

You can use the SCAN and STR functions with the Queue Name column of the Queue Status attribute group. You can create workspaces based on queries that include only queues with names containing certain strings, such as those that include the word SYSTEM. In addition, you can use these functions to create a situation that can be triggered by the same subset of queues, instead of having to create a new situation for each queue that you want to be able to trigger the situation.

For example, if you want to create a situation that would be triggered by any queue with a name field beginning with SYSTEM and a depth exceeding 100 messages, you could use the following formula.

```
IF STR(Queue_Name) == 1, SYSTEM AND Current_Depth > 100 THEN [situation event occurs]
```

Because the performance overhead of these functions is relatively high, when creating a query try to include additional filtering thresholds to reduce the number of times these functions are used. In particular, if you are creating your own query, you can include a condition that includes only queues with a current depth

attribute of greater than zero, eliminating all queues that do not currently contain messages. The default query already includes this condition.

If you want to create a new version of the queue status workspace containing only a filtered subset of the queues listed in the original, do not modify the original workspace and the queries on which it is based. Instead, create copies of both the workspace and query and modify the copies. The query must be copied because the original query is read-only and so cannot be modified. Predefined workspaces included with the WebSphere MQ Monitoring agent must never be modified, because this will cause problems when upgrading to future versions.

For more information about using the SCAN and STR functions, see the Formula functions appendix in the *Tivoli Enterprise Portal User's Guide*.

There are no recent or historical versions of the Queue Status workspace.

Predefined views

The Queue Status workspace includes the following predefined views:

- **Oldest Messaging Age** This view shows, as a bar chart, the Age of oldest message in seconds of the queue.
- **Number of Messages** This view shows, as a bar chart, the current depth of the queue.
- **Queue Status** This view shows, as a single-row table, the following general queue status data for the selected monitored queue:
 - The queue name
 - Whether the queue contains uncommitted messages
 - The current depth of the queue
 - The number of input opens performed during the last sampling interval
 - The number of output opens performed during the last sampling interval
 - Whether the queue is part of a queue-sharing groupThis view contains data described in “Queue Status attributes” on page 583.
- **Number of Opens** This view shows, as a bar chart, the number of times the queue has been opened to perform input and output operations.
- **Open Handles for Queue** This view shows, as a table, detailed information about currently open queue handles. Multiple rows might be displayed depending on how many handles have been used to open the queue. This view contains data described in “Queue Handle Status attributes” on page 561.

Predefined links

You can link to the following workspace from the Queue Status workspace:

- Queue Definitions
- Recent Queue Statistics
- Queue Parameters
- Real-time Queue Data
- Application Topology View (Application Connections Workspace) This link is visible only if the **ACTCONN** value is not equal to Not_Connected_to_QMgr.

Real-time Channel Definitions workspace

The Real-time Channel Definitions workspace provides information about the characteristics, number and performance of the monitored channels of a queue manager. It is different from the Channel Definitions Workspace in that the data in its Real-time Channel Definitions view is on-demand, collected when the workspace is opened or refreshed. Use it to review channel performance and modify channel attributes when resolving problems.

Predefined views

The Real-time Channel Definitions workspace includes the following predefined views:

- **Real-time Channel Definitions** This view contains a table summarizing the characteristics of the monitored channels of the selected queue manager. It displays on-demand data, collected when the workspace is opened or refreshed. Select a channel from this list to review and edit its parameters. If your system has a high volume of traffic, or uses different types of queues or different message priorities, you might need to define multiple channels to handle this. Additionally, editing these parameters is often crucial to resolving problems.
- **Channel Definitions Summary** This view shows, as a bar chart, the total number of active and inactive channels of each type defined on the selected queue manager. The Channel Definitions Summary chart contained in this workspace does not necessarily match the data displayed in the table at the bottom of this workspace. It is intended only to give an overview of data sampled at the queue manager level according to the agent current parameters. The data displayed in the table is on-demand data, collected when the workspace is opened or refreshed, whereas the data on which the chart is based is sampled during standard sampling intervals.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Real-time Channel Definitions workspace:

- Channel Parameters
- Channel Status

Real-time Cluster Queue Manager workspace

The Real-time Cluster Queue Manager workspace provides information about cluster queue managers associated with the selected queue manager and the channels used by them. It is different from the Cluster Queue Manager workspace in that the data displayed in its Real-time Cluster Queue Manager view is on-demand data, collected when the workspace is opened or refreshed. Information about both explicit and automatically defined cluster sender channels is included.

Predefined views

The Real-time Cluster Queue Manager workspace includes the following predefined views:

- **Real-time Cluster Queue Manager** This view provides information about cluster queue managers associated with the selected queue manager and the channels

used by them. Information about both explicitly defined and automatically defined cluster sender channels is included. You can select a queue manager/channel from this table to view and edit its definition.

- **Cluster Queue Manager Summary** This view shows, as a bar chart, the number of the following types of cluster channels used by the selected queue manager:
 - Auto-defined cluster channels
 - Cluster queue manager automatic cluster sender channels
 - Cluster queue manager explicit cluster sender channels
 - Cluster queue manager cluster receiver channels

The Cluster Queue Manager Summary chart contained in this workspace does not necessarily match the data displayed in the table at the bottom of this workspace. It is intended only to give an overview of data sampled at the queue manager level according to the agent current parameters. The data displayed in the table is on-demand data, collected when the workspace is opened or refreshed, whereas the data on which the chart is based is sampled during standard sampling intervals.

For more information on the attributes listed in the tables of this workspace, see “Channel Definitions attributes” on page 356.

Predefined links

You can link to the following workspace from the Real-time Cluster Queue Manager workspace:

- Channel Parameters

Real-time Queue Data for Open Queues workspace

The Real-time Queue Data for Open Queues workspace summarizes the definitions of the open queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Real-time Queue Data for Open Queues workspace includes the following predefined views:

- **Real-time Queue Data for Open Queues** This view summarizes the definitions of the open queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET. The data displayed in this view is collected on demand.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.

- **Queue Utilization for Open Queues** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each open queue that is managed by the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Real-time Queue Data for Open Queues workspace:

- Queue Parameters
- Queue Messages
- Queue Messages with DLQ Header

Real-time Queue Data for Queues with Messages workspace

The Real-time Queue Data for Queues with Messages workspace summarizes the definitions of the monitored queues that have messages on them and managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Real-time Queue Data for Queues with Messages workspace includes the following predefined views:

- **Real-time Queue Data for Queues with Messages** This view summarizes the definitions of the monitored queues that have messages on them and managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET. The data that is displayed in this view is collected on demand.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the numbers of different types of queues defined on the selected queue manager.
- **Queue Utilization for Queues with Messages** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each monitored queue with messages which is managed by the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Real-time Queue Data for Queues with Messages workspace:

- Queue Parameters
- Queue Messages
- Queue Messages with DLQ Header

Real-time Queue Data workspace

The Real-time Queue Data workspace summarizes the definitions of the monitored queues managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues. You can access this workspace by right-clicking a row in the Queue Status workspace and clicking **Link to > Real-time Queue Data**.

Predefined views

The Real-time Queue Data workspace includes the following predefined views:

- **Real-time Queue Data** This view summarizes the definitions of the monitored queues managed by the selected queue manager. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. The data displayed in this view is collected on demand.

Remember:

- If a row in this table is highlighted in yellow, that means the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, that means the values of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Utilization** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each queue which is managed by the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Real-time Queue Data workspace:

- Queue Parameters
- Queue Messages
- Queue Messages with DLQ Header

Real-time Queue Definitions for Queues with Messages workspace

The Real-time Queue Definitions for Queues with Messages workspace summarizes the definitions of the queues with messages which are managed by the selected queue manager. Use it to resolve problems caused by incorrectly defined queues.

Predefined views

The Real-time Queue Definitions for Queues with Messages workspace includes the following predefined views:

- **Real-time Queue Definitions for Queues with Messages** This view summarizes the definitions of the queues with messages which are managed by the selected queue manager. Information displayed in the table is on-demand data, collected when the workspace is opened or refreshed. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** This view shows, as a bar chart, the number of queues by queue type for the selected queue manager. The Queue Definitions Summary chart does not necessarily match the data displayed in the table at the bottom of this workspace. It is intended only to give an overview of data sampled at the queue manager level according to the agent's current parameters. The data displayed in the table is on-demand data, collected when the workspace is opened or refreshed, whereas the data on which the chart is based is sampled during standard sampling intervals.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Real-time Queue Definitions for Queues with Messages workspace:

- Queue Messages with DLQ Header
- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Application Topology (Application Connections Workspace)

Real-time Queue Definitions workspace

The Real-time Queue Definitions workspace summarizes the definitions of the queues managed by the selected queue manager. Use it to resolve problems that are caused by incorrectly defined queues.

Predefined views

The Real-time Queue Definitions workspace includes the following predefined views:

- **Real-time Queue Definitions** This view summarizes the definitions of the queues managed by the selected queue manager. Information displayed in the table is on-demand data, collected when the workspace is opened or refreshed. Once you have isolated a queue that is causing problems, you can often resolve the problems by modifying its definition. Select a queue from the list to edit its definition. You can also delete messages from a queue by clicking **Clear Queue** or **Purge Queue** in the menu when you right-click on the selected queue. The **Clear Queue** option deletes messages from a queue all together using MQSC command. The **Purge Queue** option deletes messages from a queue using MQGET.

Remember:

- If a row in this table is highlighted in yellow, it indicates that the value of its **%Full** attribute is greater than zero and the value of its **Total Opens** attribute is equal to zero.
- If a row in this table is highlighted in red, it indicates that the value of its **%Full** attribute is greater than the value of its **High Depth Threshold** attribute.
- **Queue Definitions Summary** shows, as a bar chart, the number of queues by queue type for the selected queue manager. The Queue Definitions Summary chart does not necessarily match the data displayed in the table at the bottom of this workspace. It is intended only to give an overview of data sampled at the queue manager level according to the agent current parameters. The data displayed in the table is on-demand data, collected when the workspace is opened or refreshed, whereas the data on which the chart is based is sampled during standard sampling intervals.

For more information on the attributes listed in the tables of this workspace, see “Queue Definitions attributes” on page 553.

Predefined links

You can link to the following workspaces from the Real-time Queue Definitions workspace:

- Queue Messages with DLQ Header
- Queue Parameters
- Queue Messages
- Current Message Statistics
- Current Message Statistics by Correlation ID
- Current Message Statistics by Application Name
- Current Message Statistics by Group ID
- Recent Message Statistics
- Application Connections (by the predefined link named Application Topology)

Recent Application Accounting workspace

The Recent Application Accounting workspace is workspace used to monitor application connections to queue managers within the WebSphere MQ environment. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The workspace might include application

connections which were once active, but are not currently active. It also *might not* include application connections that are currently active, in cases where the application connection is new and data collection has not yet begun.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Application Accounting workspace includes the following predefined views:

- **Recent Application Accounting** This table contains information about the number of MQI requests made by applications to a queue manager. For details of the individual attributes displayed in this table, see Application Accounting.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Application Accounting attributes (distributed systems only)” on page 289.

Predefined links

You can link to the following workspaces from the Recent Application Accounting workspace:

- MQI Call Statistics Details
- MQI Message Statistics Details
- Historical Application Accounting

Recent Application Statistics by ApplID workspace

The Recent Application Statistics by ApplID workspace is available on z/OS systems only.

The Recent Application Statistics by ApplID workspace provides information about monitored applications, organized by application IDs, in both tabular and chart form. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

Note that the Recent Application Statistics by ApplID workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option. .

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Application Statistics by ApplID workspace includes the following predefined views:

- **Recent Application Statistics by ApplID** This view provides statistics for all monitored applications using the selected queue manager. The first row, Interval Summary, contains the values for the entire sampling period with more detailed

information displayed in subsequent rows. Different cells within this row contain different values depending on the attribute listed in the column. These values could be the most recent sample data, the sum of all values of that attribute sampled over the total period, or the average sampled value. Each application is identified by a unique ID (On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID). To view more detailed statistical information about a specific application, select the application in the table and link to the workspace you require.

- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed by the selected application. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information on the attributes listed in the tables of this workspace, see “Application Short-Term History attributes (z/OS systems only)” on page 317.

Predefined links

No other workspaces can be linked to from the Recent Application Statistics by ApplID workspace.

Recent Application Statistics by Tran/Pgm workspace

The Recent Application Statistics by Tran/Pgm workspace is available on z/OS systems only.

The Recent Application Statistics by Tran/Pgm table view provides statistics for all transactions or programs using the selected queue manager, in both tabular and chart form. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

Note that the application statistics by Tran/Pgm workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Application Statistics by Tran/Pgm workspace includes the following predefined views:

- **Recent Application Statistics by Tran/Pgm** This view provides statistics for all transactions and programs using the selected queue manager, organized by the transaction or program that generated the statistics. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the values for the entire sampling period with more detailed information displayed in subsequent rows. Different cells within this row contain different values depending on the

attribute listed in the column. These values could be the most recent sample data, the sum of all values of that attribute sampled over the total period, or the average sampled value.

- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed by the selected application. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use it to compare average response times between different active applications. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

This workspace displays data provided by the “Application Transaction/Program Short-Term History attributes (z/OS systems only)” on page 338.

Predefined links

No other workspaces can be linked to from the Recent Application Statistics by Tran/Pgm workspace.

Recent Buffer Pool Performance workspace

The Recent Buffer Pool Statistics workspace is available on z/OS systems only.

The Recent Buffer Pool Statistics workspace contains performance information about the buffer pools used by the selected queue manager on z/OS systems. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use it to analyze and compare queue manager buffering performance.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Buffer Pool Statistics workspace includes the following predefined views:

- **Recent Buffer Pool Statistics** The Buffer Pool Statistics view shows you the performance of the buffer pools used by the selected queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. You can select a buffer pool whose performance you want to review from this list.
- **Buffer Availability** This view shows, as a bar chart, the number of buffers available in each buffer pool for use by the selected queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **GetPage I/O** This view shows, as a bar chart, the percentage of total GetPage I/O operations performed by each buffer pool used by the selected queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use this view to compare the percentages of GetPage I/O operations performed by different buffer pools used by the queue manager.

For more information on the attributes listed in the tables of this workspace, see “Buffer Manager Short-Term History attributes (z/OS systems only)” on page 345.

Predefined links

No other workspaces can be linked to from the Recent Buffer Pool Statistics workspace.

Recent Channel Initiator Status workspace

The Recent Channel Initiator Status workspace is available on z/OS systems only.

The Recent Channel Initiator Status workspace provides you with information about channel connection states. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use this view to monitor adapter subtask and dispatcher activity, detect errors in the communications system that maybe adversely affecting processing capacity.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Channel Initiator Status workspace includes the following predefined views:

- **Recent Channel Initiator Status** This view contains a table that provides you with statistics related to the state of channel connections, including the number of connections with the following statuses: current, maximum, active, starting, stopping, and retrying. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use this view to identify problems occurring in adapter subtask and dispatcher activity. You can also perform the following tasks to detect errors in the communications system that might be adversely affecting processing capacity:
 - Compare the number of adapter subtasks that are currently active to the number of adapter subtasks requested in the channel initiator parameters. If the numbers differ, this indicates that some adapter subtasks have failed and not restarted, reducing processing capacity.
 - Compare the number of dispatchers that are currently active to the number of dispatchers requested in the channel initiator parameters. If the numbers differ, this indicates that some dispatchers have failed and not restarted. The number of current TCP/IP and LU 6.2 channels allowed will be reduced proportionately adversely affecting performance, and other processing might be affected, also reducing processing capacity.
 - Compare the relationships between the numbers of channel connections that are current, active, maximum, starting, stopping, and retrying.
 - Review the status of the channel initiator, TCP/IP listener, TCP/IP group listener, LU 6.2 listener, and LU 6.2 group listener.

On z/OS systems, TCP/IP listeners can be started many times with different combinations of port number and address. If this occurs, the TCP/IP Listener Active and Port Number columns in this workspace are set to the last set of TCP/IP listener information provided by WebSphere MQ.

- **Channel Initiator Status Summary** This view shows selected columns from the Channel Initiator Status view in the form of a bar chart to provide a visual comparison of data.

- **TCP/IP Started Listeners** This view provides you with data about all started TCP/IP listeners, including the IP address, port number, and the inbound disposition of messages received by the listener.

For more information on the attributes listed in the tables of this workspace, see Channel Initiator Status attribute group.

Predefined links

No other workspaces can be linked to from the Recent Channel Initiator Status workspace.

Recent Channel Performance Workspace

Use the Recent Channel Performance workspace to view performance information related to the monitored channels in the WebSphere MQ environment. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Based on the information provided, you can make changes to improve performance, set up situations, and verify that changes made are improving performance.

A channel provides a communications link between two queue managers (running on the same or different platforms) and shields application programs from having to deal with the complexities of a network underlying protocols. A channel consists of a transmission queue, a message channel agent (communications program), and a communications link.

Note that statistics are not collected from client connection channel definitions and therefore these are not listed in any of the Channel Performance workspaces.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Channel Performance workspace includes the following predefined views:

- **Recent Channel Performance** This view displays a list of monitored channels. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the averages of the attribute values listed in subsequent rows. If there are more than one active channels with the same channel and connection names, then multiple sets of recent history are displayed, one for each active connection. This can occur for receiver, cluster receiver, or server connection channels.
You can use this view to monitor the depth of the transmission queue. If this becomes very deep and remains so for a long time, consider assigning more channels to the queue to improve performance. This type of problem is especially common if your system has a high volume of traffic, different message priorities or uses different types of queues. Use the information related to sequence numbers and logical units of work when performing channel recovery or restart operations.
- **Transmission Rates** This view shows, as a bar chart, the average transmission rates of each of the selected monitored channels. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information on the attributes listed in the tables of this workspace, see “Channel Short-Term History attributes” on page 368.

Predefined links

No other workspaces can be linked to from the Recent Channel Performance workspace.

Recent Log Manager Performance workspace

The Recent Log Manager Performance workspace is available on z/OS systems only.

The Recent Log Manager Performance workspace summarizes log manager performance activity for all your z/OS queue managers. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use the information provided by this workspace to make changes to the system, set up situations, and verify that changes are improving performance.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Log Manager Performance workspace includes the following predefined views:

- **Recent Log Manager Performance** The Log Manager Performance view summarizes log manager performance activity for all your z/OS queue managers. It provides statistics collected over several sampling intervals, displayed in descending order of date and time, which you can use to view trends in the data. The first row, Interval Summary, contains the averages of the attribute values listed in subsequent rows. From this list you can select a queue manager whose log manager performance history you want to review. This log can be used to back out messages in an incomplete logical unit of work or to recover messages after queue manager or system failure. For best performance, you should eliminate contention for DASD log files, provide sufficient buffer and log file capacity, and maintain correct log buffer thresholds.
- **Read/Writes** This view displays, as a bar chart, the number of times the log is read from or written to per minute. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information on the attributes listed in the tables of this workspace, see “Log Manager Short-Term History attributes (z/OS systems only)” on page 438.

Predefined links

No other workspaces can be linked to from the Recent Log Manager Performance workspace.

Recent Message Manager Performance workspace

The Recent Message Manager Performance workspace is available on z/OS systems only.

The Recent Message Manager Performance workspace summarizes the rates at which messages are being passed to and retrieved from your monitored z/OS

queue managers. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

The maximum number of sample data sets displayed is determined by the sampling aggregate chosen for history reports in the SET MANAGER or SET GROUP monitoring option.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Message Manager Performance workspace includes the following predefined views:

- **Recent Message Manager Performance** This view summarizes the rates at which messages are being passed to and retrieved from your monitored z/OS queue managers. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. This table displays the frequency with which the following WebSphere MQ operations are performed:
 - Queues are opened or closed (MQOPEN and MQCLOSE routines).
 - Messages are put on or removed from queues (MQPUT and MQGET routines).
 - An MQPUT1 call is used to open a queue, put a message and then close the queue again in a single operation (MQPUT1 routine).
 - Object attributes are queried or modified (MQINQ and MQSET routines).
 - Subscriptions are registered to certain topics (MQSUB routines).
 - Requests on subscriptions are made (MQSUBRQ routines).
 - Callbacks are called by WebSphere MQ when certain events occur (MQCB routines).
 - Controlling actions are performed on the object handles opened for a connection (MQCTL routines).
 - Status information are retrieved (MQSTAT routines).
 - Messages are put on queues, or distribution lists, or to topics.
 - Handles are closed independently of MQI calls.
- **Requests** This view shows, as a bar chart, the same statistics shown as a table in the Recent Message Manager Performance workspace.

For more information on the attributes listed in the tables of this workspace, see “Message Manager Short-Term History attributes (z/OS systems only)” on page 478.

Predefined links

No other workspaces can be linked to from the Recent Message Manager Performance workspace.

Recent Message Statistics workspace

The Recent Message Statistics displays message statistics, such as message wait times, related to the selected queue.

This workspace displays all rows associated with the requested queue that are currently held by the agent waiting to be written to history. If there are no active situations associated with the Message Statistics attribute group for the selected queue, then No data is displayed.

Many of the message statistics use the put date and time of the message in the queue. If the queue contains messages with put dates and times that do not accurately reflect when they were put into the input queue, then the statistics calculated will be correspondingly inaccurate. Put dates and times are inaccurate if the origin context is preserved or set for a message when it is put into the queue by an application. This commonly occurs when an application is a message mover that moves messages from one queue to another, or when any application passes or sets origin context for a message.

Predefined views

The Recent Message Statistics workspace includes the following predefined views:

- **Recent Message Statistics** This view displays message statistics for the selected queue. If you attempt to display message statistics for a queue with no messages, a single row is displayed containing 0 values for all message counts and times. If no rows are displayed in this workspace, this might indicate that an error occurred during message statistics collection. Refer to the agent log and look for the KMQMI210E message code. This message provides additional information about the cause of the problem.
- **Recent Message Count** This view shows, as a bar chart, the number of delayed messages in comparison to the total number of messages .
- **Recent Message Duration** This view shows, as a bar chart, the length of time in seconds that messages have been waiting in the queue in term of oldest message, average message, newest message and highest priority message wait times.

For more information on the attributes listed in the tables of this workspace, see “Message Statistics attributes” on page 480.

Predefined links

No other workspaces can be linked to from the Recent Message Statistics workspace.

Recent MQ Channel Statistics workspace

The Recent MQ Channel Statistics workspace displays channel statistics for monitored channels within a queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent MQ Channel Statistics workspace includes the following predefined views:

- **Recent MQ Channel Statistics** This view displays channel statistics for monitored channels within a queue manager, including what data was

transmitted by the queue manager using the channel. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQ Channel Statistics attributes (distributed systems only)” on page 509.

Predefined links

You can link to the following workspaces from the Recent MQ Channel Statistics workspace:

- MQI Message Statistics Details
- Historical MQ Queue Statistics

Recent MQ Queue Statistics workspace

The Recent MQ Queue Statistics workspace displays statistics related to individual queues within a queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent MQ Queue Statistics workspace includes the following predefined views:

- **Recent MQ Queue Statistics** This view displays statistics related to individual queues within a queue manager, including the data published by the queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal online help.

For more information on the attributes listed in the tables of this workspace, see “MQ Queue Statistics attributes (distributed systems only)” on page 512.

Predefined links

You can link to the following workspaces from the Recent MQ Queue Statistics workspace:

- MQI Message Statistics Details
- Historical MQ Queue Statistics

Recent MQI Statistics workspace

The Recent MQI Statistics workspace displays statistical data related to the use of the WebSphere MQ API by all queues within a queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent MQI Statistics workspace includes the following predefined views:

- **Recent MQI Statistics** This view displays statistical data related to the use of the WebSphere MQAPI by all queues within a queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “MQI Statistics attributes (distributed systems only)” on page 519.

Predefined links

You can link to the following workspaces from the Recent MQI Statistics workspace:

- MQI Call Statistics Details
- MQI Message Statistics Details
- Historical MQI Statistics

Recent Page Set Statistics workspace

The Recent Page Set Statistics workspace is available on z/OS systems only.

The Recent Page Set Statistics workspace shows the performance of the page sets associated with the selected queue manager or buffer pool ID. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use it to monitor page and buffer pool usage.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Page Set Statistics workspace includes the following predefined views:

- **Recent Page Set Statistics Detail** This view shows the performance of the page sets associated with the selected queue manager or buffer pool ID. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the average of values listed in subsequent rows. Use it to monitor the following conditions:
 - Examine the percentage of pages in use and the total number of extents to ensure that no page sets are reaching capacity.

- Examine the number of buffers from the buffer pool that are in use. If it is common for all buffers from the pool to be in use and a page set is responsible for most activity, then performance will adversely be affected. Try increasing the size of the buffer pool or assigning the page set to another buffer pool.
- **Page Set Utilization** This view shows, as a bar chart, page set utilization for the page set IDs associated with the selected queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information on the attributes listed in the tables of this workspace, see “Page Set Short-Term History attributes (z/OS systems only)” on page 534.

Predefined links

No other workspaces can be linked to from the Recent Page Set Statistics workspace.

Recent Queue Access Statistics by ApplID workspace

The Recent Queue Access Statistics by ApplID workspace is available on z/OS systems only.

The Recent Queue Access Statistics by ApplID workspace provides you with queue usage statistics for all transactions or programs associated with a selected application ID. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.

No data is available if the **STATISTICS** parameter is set to NOQDATA in the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Queue Access Statistics by ApplID workspace includes the following predefined views:

- **Recent Queue Access Statistics by ApplID** This view provides you with queue usage statistics for all transactions or programs associated with the selected application ID (shown in the report's subheading). It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the values for the entire sampling period with more detailed information displayed in subsequent rows. Different cells within this row contain different values depending on the attribute listed in the column. These values could be the most recent sample data, the sum of all values of that attribute sampled over the total period, or the average sampled value.
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read or browsed on each queue used by the selected application. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time of each queue used by the selected application. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information on the attributes listed in the tables of this workspace, see “Application Queue Short-Term History attributes (z/OS systems only)” on page 322.

Predefined links

No other workspaces can be linked to from the Recent Queue Access Statistics by ApplID workspace.

Recent Queue Access Statistics by Tran/Pgm workspace

The Recent Queue Access Statistics by Tran/Pgm workspace is available on z/OS systems only.

Use the Recent Queue Access Statistics by Tran/Pgm workspace to view queue usage statistics for a specific transaction or program. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.

No data is available if the **STATISTICS** parameter is set to NOQDATA in the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Queue Access Statistics by Tran/Pgm workspace includes the following predefined views:

- **Recent Queue Access Statistics by Tran/Pgm** This view provides you with queue usage statistics for a specific transaction or program. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the values for the entire sampling period with more detailed information displayed in subsequent rows. Different cells within this row contain different values depending on the attribute listed in the column. These values could be the most recent sample data, the sum of all values of that attribute sampled over the total period, or the average sampled value. Note that data might be incomplete for those z/OS applications that started before MQI monitoring was enabled.
- **Message Counts** shows, as a bar chart, the total number of messages put, read, and browsed on each queue used by the selected transaction or program. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Average MQ Response Time** shows, as a bar chart, the average WebSphere MQ response time on each queue used by the selected transaction or program. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information on the attributes listed in the tables of this workspace, see “Application Queue Short-Term History attributes (z/OS systems only)” on page 322.

Predefined links

No other workspaces can be linked to from the Recent Queue Access Statistics by Tran/Pgm workspace.

Recent Queue Accounting workspace

The Recent Queue Accounting workspace displays information about the queues used by application connections. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. It might include queues used by application connections which were once active, but are not currently active. However, it *does not* include queues used by application connections that are currently active, in cases where the application connection is new and for which accounting data has not yet been published by the queue manager.

WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Queue Accounting workspace includes the following predefined views:

- **Recent Queue Accounting** This view displays information about the queues used by application connections. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information on the attributes listed in the tables of this workspace, see “Queue Accounting attributes (distributed systems only)” on page 545.

Predefined links

You can link to the following workspaces from the Recent Queue Accounting workspace:

- MQI Message Statistics Details
- Historical Queue Accounting

Recent Queue Statistics Workspace

The Recent Queue Statistics workspace displays queue usage statistics for monitored queues running on the selected queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. Use the statistics to compare the activity and parameters of different queues in order to resolve performance problems.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Queue Statistics workspace includes the following predefined views:

- **Recent Queue Statistics** This view displays queue usage statistics for monitored queues running on the selected queue manager. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the average of values listed in subsequent rows. Each local queue is only listed once, even if there are several alias queues mapped to it. Use the statistics provided to compare the activity and parameters of different queues. The following factors can adversely affect performance:
 - lengthy logical units of work.
 - a resource intensive CICS transaction or program.
- **Queue Utilization** This view shows, as a bar chart, the current utilization level (percentage of available space used) of each queue managed by the selected queue manager's. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information on the attributes listed in the tables of this workspace, see “Queue Short Term History attributes” on page 570.

Predefined links

No other workspaces can be linked to from the Recent Queue Statistics workspace.

Recent Topic Manager Performance workspace

The Recent Topic Manager Performance workspace is available on z/OS systems only.

The Topic Manager Performance workspace summarizes the publication and subscription status of your monitored z/OS queue managers.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Topic Manager Performance workspace includes the following predefined views:

- **Recent Topic Manager Performance** This view summarizes the publication and subscription status of your monitored z/OS queue managers from the following respect:
 - Subscription and publication rate per second
 - Number range of subscriptions and publications
 - The number of expired subscriptions
 - The maximum number of subscriptions for the same publication and the number of publications that have no subscribers
 - Time performing the publication request
- **Publications/Subscriptions** This view shows, as a bar chart, the publication and subscription status of the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “Topic Manager Short-Term History attributes (z/OS systems only)” on page 600.

Predefined links

No other workspaces can be linked to from the Recent Topic Manager Performance workspace.

Recent Tran/Pgm Statistics by ApplID workspace

The Recent Tran/Pgm Statistics by ApplID workspace is available on z/OS systems only.

Use the Recent Tran/Pgm Statistics by ApplID workspace to view statistics for all CICS transactions and/or IMS programs associated with the current application ID. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

No data is available if the **STATISTICS** parameter is set to NOQDATA in the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Tran/Pgm Statistics by ApplID workspace includes the following predefined views:

- **Recent Tran/Pgm Statistics by ApplID** This view displays statistics for all CICS transactions and/or IMS programs associated with the current application ID. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the values for the entire sampling period with more detailed information displayed in subsequent rows. Different cells within this row contain different values depending on the attribute listed in the column. These values could be the most recent sample data, the sum of all values of that attribute sampled over the total period, or the average sampled value.
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed by each transaction or program for the selected application. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time during the most recent sampling intervals for the selected transaction or program. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information about the attributes listed in the tables of this workspace, see “Application Transaction/Program Short-Term History attributes (z/OS systems only)” on page 338.

Predefined links

No other workspaces can be linked to from the Recent Tran/Pgm Statistics by ApplID workspace.

Recent Tran/Pgm Statistics by Queue workspace

The Recent Tran/Pgm Statistics by Queue workspace is available on z/OS systems only.

Use the Recent Tran/Pgm Statistics by Queue workspace to view information about how the selected queue is being used by monitored transactions and programs. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

No data is available if the **STATISTICS** parameter is set to NOQDATA in the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides current and historical versions of this workspace.

Predefined views

The Recent Tran/Pgm Statistics by Queue workspace includes the following predefined views:

- **Recent Tran/Pgm Statistics by Queue** This view shows you how the selected queue is being used by monitored transactions and programs. It provides statistics collected over several sampling intervals, which you can use to view trends in the data. The first row, Interval Summary, contains the values for the entire sampling period with more detailed information displayed in subsequent rows. Different cells within this row contain different values depending on the attribute listed in the column. These values could be the most recent sample data, the sum of all values of that attribute sampled over the total period, or the average sampled value. Any remote activity, such as applications on a different queue manager accessing a remotely defined queue, will be attributed to the channel initiator application (qmgrCHIN).
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed by each transaction or program using the selected queue. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time when servicing requests for each transaction or program using the selected queue. It provides statistics collected over several sampling intervals, which you can use to view trends in the data.

For more information about the attributes listed in the tables of this workspace, see “Application Queue Short-Term History attributes (z/OS systems only)” on page 322.

Predefined links

No other workspaces can be linked to from the Recent Tran/Pgm Statistics by Queue workspace.

Subscription Attribute Details workspace

The Subscriptions Attribute Details workspace is linked to from the Subscription Definitions workspace, and contains the full contents of several attributes that are often abbreviated in the Subscriptions Definitions workspace. The attributes are SUB name, User Data, and Selector.

Predefined views

The Subscription Attribute Details workspace includes the following predefined views:

- **Subscription Attribute Details** This view contains 2 columns: Attribute Name and Attribute Value. These rows contain information from Subscription-related attributes that might contain extra-long values. These attributes are as follows: Subscription Name, User Data, Topic String and Selector.
- **Message Log** This view contains IBM Tivoli Monitoring system level information, such as agent status information.

For more information on the attributes listed in the tables of this workspace, see “Object Attribute Details attributes” on page 532.

Predefined links

No other workspaces can be linked to from the Subscription Attribute Details workspace.

Subscription Definitions workspace

The Subscriptions Definitions workspace contains information about all system defined subscriptions. You can also use the MQ Search function to search for specific subscription definition information in this workspace.

Predefined views

The Subscription Definitions workspace includes the following predefined views:

- **Subscription Definitions** This view contains information about subscription definitions.
- **Message Log** This view contains IBM Tivoli Monitoring system level information, such as agent status information.

For more information on the attributes listed in the tables of this workspace, see “Subscription Definitions attributes” on page 590.

Predefined links

You can link to the following workspaces from the Subscription Definitions workspace:

- Subscription Status
- Subscription Attribute Details
- Topic Status - Subscribers (This link is visible when there is any active subscriber applications.)
- Queue Status (This link is visible only if the **DESTQMGR** value is equal to "" or the value of **QMNAME**.)

Subscription Status workspace

The Subscription Status workspace provides information about the status of subscriptions.

Predefined views

The Subscription Status workspace includes the following predefined views:

- **Subscription Status** This view contains information about the status of subscriptions.
- **Number of Messages** This bar chart view shows the number of messages that have been published to a particular subscription.

For more information on the attributes listed in the tables of this workspace, see “Subscription Status attributes” on page 593.

Predefined links

No other workspaces can be linked to from the Subscription Status workspace.

Topic Definitions workspace

The Topic Definitions workspace contains information about all system defined topics. You can also use the MQ Search function to search for specific topic definition information in this workspace.

Predefined views

The Topic Definitions workspace includes the following predefined views:

- **Topic Definitions** This view contains information about topic string definitions.
- **Message Log** This view contains IBM Tivoli Monitoring system level information, such as agent status information.

For more information on the attributes listed in the tables of this workspace, see “Topic Definitions attributes” on page 595.

Predefined links

You can link to the following workspaces from the Topic Definitions workspace:

- Topic String Details (This link is visible when **Publisher Count** value is equal to or greater than 0.)

Topic Manager Performance workspace

The Topic Manager Performance workspace is available on z/OS systems only.

The Topic Manager Performance workspace summarizes the publication and subscription status of your monitored z/OS queue managers.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Topic Manager Performance workspace includes the following predefined views:

- **Topic Manager Performance** This view summarizes the publication and subscription status of your monitored z/OS queue managers from the following respect:
 - Subscription and publication rate per second
 - Number range of subscriptions and publications
 - The number of expired subscriptions
 - The maximum number of subscriptions for the same publication and the number of publications that have no subscribers
 - Time performing the publication request

- **Topic Manager Performance Summary** This view shows, as a bar chart, the publication and subscription status of the selected queue manager.

For more information on the attributes listed in the tables of this workspace, see “SMF Data attributes” on page 585.

Predefined links

You can link to the following workspaces from the Topic Manager Performance workspace:

- Recent Topic Manager Performance
- Historical Topic Manager Performance

Topic Status - Publishers Workspace

The Topic Status - Publishers workspace is linked to from the Topic Status workspace, and contains detailed information about the publishers (message producing applications) that use a particular topic.

Predefined views

The Topic Status - Publishers workspace includes the following predefined views:

- **Topic Status - Publishers** This view contains topic status information that is displayed from the perspective of publishers.
- **Number of Publications** This view contains a bar chart showing the number of publications that are made by a publisher to a topic.

For more information on the attributes listed in the tables of this workspace, see “Topic Publishers attributes” on page 602.

Predefined links

No other workspaces can be linked to from the Topic Status - Publishers workspace.

Topic Status - Subscribers workspace

The Topic Status - Subscribers workspace is linked to from the Topic Status workspace, and contains detailed information about the subscribers to a particular topic. From this workspace you can also link to more detailed information about subscribers and subscriptions. You can also use the MQ Search function to search for specific topic subscriber information in this workspace.

Tip: Refresh button is disabled during the search, you can perform another new search when you want to get the updated data.

Predefined views

The Topic Status - Subscribers workspace includes the following predefined views:

- **Topic Status - Subscribers** This view contains information about topic status displayed from the perspective of subscribers.
- **Subscribe Topology** This graphical view represents the publish-subscribe topology, including the relationships between topic strings, destination queues, and applications.

- **Number of Messages** This bar chart view shows the number of messages that have been published to a particular subscription.

Tip: If the subscription ID or the subscription name that is displayed along the y-axis of the chart is very long, characters along the x-axis overlap, which makes the bar chart seem abnormal. In this case, maximizing this view can solve the problem.

For more information on the attributes listed in the tables of this workspace, see “Topic Subscribers attributes” on page 605.

Predefined links

You can link to the following workspaces from the Topic Status - Subscribers workspace:

- Application Connections. This link is visible only if the **ACTCONN** value of is not equal to `Not_Connected_to_QMgr`.
- Subscription Definitions

In addition, the following workspaces can be linked by right-clicking on nodes in the topology view:

- Links from subscriptions nodes:
 - Subscription Definitions
 - Subscription Status
- Links from local destination queue nodes (these links are not available from remote destination queue icons):
 - Application Topology for Selected Queue (Application Connections Workspace) (This link is visible only if the **ACTCONN** value is not equal to `Not_Connected_to_QMgr`.)
 - Queue Status (This link is visible only if the **DESTQMGR** value of is equal to "" or the value of **QMNAME**.)
- Links from application nodes:
 - Application Topology for Selected Applications (Application Connections Workspace) (This link is visible only if the **ACTCONN** value is not equal to `Not_Connected_to_QMgr`.)

Topic Status workspace

The Topic Status workspace contains information about the root level of topic nodes. You can also use the MQ Search function to search for specific topic status information in this workspace.

The Topic Status Workspace lists all immediate children of the topic selected in the workspace from which the Topic Status Workspace (topic status for next level topics) is linked to.

Predefined views

The Topic Status workspace includes the following predefined views:

- **Topic Status** This view contains information about the root level of topic nodes in tabular form.
- **Number of Publishers and Subscribers** This view contains a bar chart showing the number of publishing and subscribing applications.

For more information on the attributes listed in the tables of this workspace, see “Topic Status attributes” on page 603.

Predefined links

You can link to the following workspaces from the Topic Status Workspace:

- Topic Status-Subscribers (This link is visible when there is any active subscriber applications.)
- Topic Status-Publishers (This link is visible when there is any active publisher applications.)
- Topic Definitions (This link is visible only if the **Admin Node** value is not equal to "" or "n/a".)
- Topic Status (Topic Status for next level Topics). (This link is invisible if the **Admin Node** value is equal to SYSTEM.BASE.TOPIC.)
- Topic String Details (This link is visible when the **Publisher Count** value is equal to or greater than 0.)

Tip: If the **Link To** list is empty, refresh Tivoli Enterprise Portal and try again.

Topic String Details workspace

The Topic String Details workspace shows the complete topic string of the topic that is selected in the workspace from which it was linked to. This information is useful if the topic string is very long, because the full string will not be displayed in other workspaces.

Predefined views

The Topic String Details workspace includes the following predefined views:

- **Topic String Details** This view contains two columns: Attribute Name and Attribute Value. This table shows the topic string that was selected when the workspace was linked to. In this view the topic string is not truncated.
- **Message Log** This view contains IBM Tivoli Monitoring system level information, such as agent status information.

For more information on the attributes listed in the tables of this workspace, see “Object Attribute Details attributes” on page 532.

Predefined links

No other workspaces can be linked to from the Topic String Details workspace.

Trace Detail Parameters workspace

The Trace Detail Parameters workspace is available on z/OS systems only.

Use the Trace Detail Parameters workspace to view the parameters of all WebSphere MQ API (MQI) calls that have been performed

Predefined views

The Trace Detail Parameters workspace includes the following predefined views:

- **Trace Detail Parameters** This view provides you with a detailed list of trace parameters and corresponding values for each MQI call performed. For example, the parameters of an MQPUT call include the following ones:

- The object description (MQOD)
- Each MQOD field used and its value
- The main options structure (MQPMO)
- Each MQPMO field used and its value
- The message descriptor (MQMD)
- Each MQMD field used and its value
- **Message Log** The message log gives you an overview of changes in the status of your monitored system. It also provides information about the status of monitoring agents and other system events. For more information on this view, see Tivoli Enterprise Portal Help.

For more information about the attributes listed in the tables of this workspace, see “Application Debug Trace Details attributes (z/OS systems only)” on page 307.

Predefined links

No other workspaces can be linked to from the Trace Detail Parameters workspace.

Tran/Pgm Statistics by ApplID workspace

The Tran/Pgm Statistics by ApplID workspace is available on z/OS systems only.

The Tran/Pgm Statistics by ApplID table view provides statistics for all transactions or programs using the selected queue manager, in both tabular and chart form.

Note that the Tran/Pgm Statistics by ApplID workspace only contains information if application statistics are being collected. Statistics collection can be activated using the **STATISTICS** parameter of the SET APPLICATION monitoring option.

WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Tran/Pgm Statistics by ApplID workspace includes the following predefined views:

- **Tran/Pgm Statistics by ApplID** This view provides statistics for all transactions and programs using the selected queue manager, organized by the name of the transaction or program that generated the statistics.
- **Application Statistics Summary** This view shows, as a bar chart, the total number of applications (listed by ID), CICS transactions and programs, queues, and tasks (listed by ID) currently active and using the selected queue manager. This view is a part of all workspaces that contain application statistics.
- **Average MQ Response Time** This view shows, as a bar chart, average WebSphere MQ response times for each program using the queue manager. Use it to compare average response times between different active applications. This view is a part of all workspaces that contain application statistics.

This workspace displays data provided by the “Application Transaction/Program Statistics attributes (z/OS systems only)” on page 341.

Predefined links

You can link to the following workspaces from the Tran/Pgm Statistics by ApplID workspace:

- Queue Access Statistics by ApplID
- Recent Application Statistics by ApplID
- Historical Application Statistics by ApplID

Tran/Pgm Statistics by Queue workspace

The Tran/Pgm Statistics by Queue workspace is available on z/OS systems only.

Use the Tran/Pgm Statistics by Queue workspace to view information about how the selected queue is being used by monitored transactions and programs.

No data is available if the **STATISTICS** parameter is set to NOQDATA in the SET APPLICATION monitoring option.

The WebSphere MQ Monitoring agent also provides recent and historical versions of this workspace. You can view a recent snapshot of the report data or up to 24 hours of historical data for each workspace component.

Predefined views

The Tran/Pgm Statistics by Queue workspace includes the following predefined views:

- **Tran/Pgm Statistics by Queue** This view shows you how the selected queue is being used by monitored transactions and programs. Any remote activity, such as an application on a remote computer using a remote queue to access a queue on the queue manager is attributed to the channel initiator application (qmgrCHIN).
- **Message Counts** This view shows, as a bar chart, the total number of messages put, read, and browsed by each transaction or program using the selected queue.
- **Average MQ Response Time** This view shows, as a bar chart, the average WebSphere MQ response time when servicing requests for each transaction or program using the selected queue.

For more information about the attributes listed in the tables of this workspace, see “Application Queue Statistics attributes (z/OS systems only)” on page 325.

Predefined links

You can link to the following workspaces from the Tran/Pgm Statistics by Queue workspace:

- Recent Tran/Pgm Statistics by Queue
- Historical Tran/Pgm Statistics by Queue

Attributes

Use attributes of WebSphere MQ Monitoring agent to create situations that monitor for specific alerts or types of alerts. For example, you can create situations that monitor for alerts with a specific severity. When the values for attributes of alerts that are relayed to a Tivoli Enterprise Monitoring Server match the values that you specify in situations, the appearances of the managed objects that are associated

with the situations are changed, alerting you to problems. When building situations, specify attributes using the following format:

Group_Name.Attribute_Name

WebSphere MQ Monitoring agent provides a variety of default workspaces. A table view within a workspace corresponds to a group of attributes; in most cases, the columns in the table view correspond to the attributes that are available for the creation of situations.

For more information about workspaces, see “Workspaces” on page 167

Application Accounting attributes (distributed systems only)

The Application Accounting attributes are available on distributed systems only.

Use the Application Accounting attributes to view information related to the number of MQI requests that are executed using a connection to a queue manager. Use the Application Accounting attributes to create situations for monitoring concerned attributes of applications.

Application Name Name of the application. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Backout Count Number of backouts that are processed, including implicit backouts. Valid format is an integer.

Backout Rate The rate per second of backouts that are processed, including implicit backouts. The valid format is a floating point number.

Browse Byte Rate The rate per second of bytes that are got nondestructively. The valid format is a floating point number.

Browse Bytes Total number of bytes that are got non-destructively. Valid format is an integer.

Browse Bytes (Deprecated) Total number of bytes that are got nondestructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Browse Count Number of non-destructive gets for messages. The valid format is an integer.

Browse Fail Count Number of unsuccessful non-destructive gets. Valid format is an integer.

Browse Fail Rate Rate per second of unsuccessful non-destructive gets. The valid format is a floating point number.

Browse Rate Rate per second of non-destructive gets for messages. The valid format is a floating point number.

Channel Name Name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Close Count Number of objects that are closed. The valid format is an integer.

Close Fail Count Number of objects that are closed with failure. Valid format is an integer.

Close Fail Rate Rate per second of unsuccessful attempts to close queue objects. The valid format is a floating point number.

Close Rate Rate per second of objects that are closed. The valid format is a floating point number.

Command Level Command level of the queue manager. The valid format is an integer.

Commit Count Number of successful transactions. The valid format is an integer.

Commit Fail Count Number of unsuccessful attempts to complete a transaction. The valid format is an integer.

Commit Fail Rate Rate per second of unsuccessful attempts to complete a transaction. The valid format is a floating point number.

Commit Rate Rate per second of successful transactions. The valid format is a floating point number.

Connect Date & Time Date and time of the MQCONN operation. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Connection ID Connection identifier for the WebSphere MQ connection. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Connection Name Connection name for the client connection. The valid format is an alphanumeric string of up to 264 case-sensitive characters.

Disconnect Date & Time Date and time of the MQDISC operation. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute
SS Second
mmm Millisecond

Disconnect Type Type of disconnection. Valid values are as follows:

- Unknown = -1
- Normal = 0
- Implicit = 1
- QMgr = 2

Get Byte Rate Rate per second of bytes that are got destructively. The valid format is a floating point number.

Get Bytes Total number of bytes that are got destructively. The valid format is an integer.

Get Bytes (Deprecated) Total number of bytes that are got destructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Get Count Number of gets. Valid format is an integer.

Get Fail Count Number of unsuccessful destructive gets. The valid format is an integer.

Get Fail Rate Rate per second of unsuccessful destructive gets. The valid format is a floating point number.

Get Rate Rate per second of destructive gets. Valid format is a floating point number.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Inquire Count Number of successful inquiries for objects. The valid format is an integer.

Inquire Fail Count Number of unsuccessful attempts to inquire objects. The valid format is an integer.

Inquire Fail Rate Rate per second of unsuccessful attempts to inquire objects. The valid format is a floating point number.

Inquire Rate Rate per second of successful inquires for objects. Valid format is a floating point number.

Interval End Date & Time Date and time of the end of the monitoring period. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month

DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Start Date & Time Date and time of the start of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Time Seconds of interval time. The valid format is an integer.

Open Count Number of objects that are opened. The valid format is an integer.

Open Fail Count Number of objects that are opened with failure. Valid format is an integer.

Open Fail Rate Rate per second of unsuccessful attempts to open objects. The valid format is a floating point number.

Open Rate Rate per second of objects that are opened. The valid format is a floating point number.

Origin Node The name of the node that is assigned by the WebSphere MQ Monitoring agent. The data for the queue manager originates from this node.

On distributed systems, this name takes the form *qmgr::MQ*. If the *hostid* value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 32 case-sensitive characters.

Process ID Operating system process identifier of the application. The valid format is an integer.

Put Byte Rate Rate per second of bytes that are put for messages. The valid format is a floating point number.

Put Bytes Total number of bytes that are put for messages. The valid format is an integer.

Put Bytes (Deprecated) Total number of bytes that are put for messages. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Put Count Number of puts. Valid format is an integer.

Put Fail Count Number of unsuccessful attempts to put a message. The valid format is an integer.

Put Fail Rate Rate per second of unsuccessful attempts to put a message. The valid format is a floating point number.

Put Rate Rate per second of messages that are successfully put to a queue. The valid format is a floating point number.

Put1 Count Number of messages that are put by the MQPUT1 call. The valid format is an integer.

Put1 Fail Count Number of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is an integer.

Put1 Fail Rate Rate per second of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is a floating point number.

Put1 Rate Rate per second of messages that are put to queue by the MQPUT1 call. The valid format is a floating point number.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Query Type Type of a SQL query. Valid values are Current = 0, Recent = 1, and Historical = 2.

Sample Handle Handle for a sample data record. The valid format is an integer.

Sequence Number Sequence number. The valid format is an integer.

Set Count Number of successful MQSET calls. The valid format is an integer.

Set Fail Count Number of unsuccessful MQSET calls. The valid format is an integer.

Set Fail Rate Rate per second of unsuccessful MQSET calls. The valid format is a floating point number.

Set Rate Rate per second of successful MQSET calls. The valid format is a floating point number.

Thread ID Thread identifier of the connection in the application. The valid format is an integer.

User ID User identifier of the application. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Application Connections attributes

Use the Application Connections attributes to display connection information about the applications that are connected to the queue manager. Use these attributes to identify applications with long-running units of work.

Address Space ID (z/OS systems only) The address space identifier of the application that makes the connection. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Application Tag Tag of the application that is connected to the queue manager. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Appl Type Type of the application that is connected to the queue manager. The valid format is an integer. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,
- CICS_VSE = 10,
- WINDOWS_NT = 11,
- VMS = 12,
- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- USER = 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT = 30,
- WLM= 31,
- BATCH = 32,
- RRS_BATCH = 33,
- SIB= 34,
- SYSTEMEXT=35,
- SYSTEM= 101 (z/OS systems only),
- USER_FIRST = 65536

Asynchronous State The state of asynchronous consumption on this connection handle. Valid values are as follows:

- n/a = 255
- NONE = 0

- STARTED = 1
- STARTWAIT = 2
- STOPPED = 3
- SUSPENDED = 4

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

CICS Region Name (CICS applications on z/OS systems only) The CICS region name if the Appl Type attribute is CICS; otherwise, it is blank. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

CICS Task NO (z/OS systems only) A 7-digit CICS task number. This attribute is valid when the application type has the value CICS. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

CICS Trans ID (z/OS systems only) A 4-character CICS transaction identifier. This attribute is valid when the application type has the value CICS. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Conn ID Prefix\ (EXTCONN) Character hexadecimal representation of the prefix of connection ID. The valid format is an alphanumeric string of up to 32 characters.

Conn ID Suffix\ (CONN) Character hexadecimal representation of the suffix of connection ID. The valid format is an alphanumeric string of up to 16 characters.

Connection ID Identifier of the connections. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Connection Name The connection name that is associated with the channel that owns the connection. If there is no channel associated with the connection, this attribute is blank. The valid format is an alphanumeric string of up to 264 case-sensitive characters.

Connection Options The connection options that are currently in force for the application connection. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

External Unit of Recovery ID The external unit of recovery identifier that is associated with the connection. Its format is determined by the value of external unit of recovery type. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

External Unit of Recovery Type The type of unit of recovery that is identified by the queue manager. The external unit of recovery type identifies the external unit of recovery ID type and not the type of the transaction coordinator. When the external unit of recovery type is QMGR, the associated identifier is in the queue manager unit of recovery ID (and not the external unit of recovery ID). The valid format is an integer. Valid values are as follows:

- n/a = -1,
- QMGR = 0,
- CICS = 1,
- RRS = 2,

- IMS = 3,
- XA = 4

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

IMS PSB Name (z/OS systems only) The name of the program specification block (PSB) that is associated with the running IMS transaction. You can use the IMS PSD Name and IMS PST ID to purge the transaction using IMS commands. The attribute is valid only when the application type has the value IMS. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

IMS PST ID (z/OS systems only) The IMS program specification table (PST) region identifier for the connected IMS region. The attribute is valid only when the application type has the value IMS. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Origin Name (z/OS systems only) The origin name that identifies the originator of the unit of recovery. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Origin Node The name of the node that is assigned by the WebSphere MQ Monitoring agent. The data for the queue manager originates from this node.

On z/OS systems, this name takes the form, *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form, *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Origin UOW ID (z/OS systems only) The unit of recovery identifier that is assigned by the originator. Set only if the value of UOW state is UNRESOLVED. The valid format is an alphanumeric string of up to 16 case-sensitive characters.

Process ID (non Compaq NSK and z/OS systems) The process identifier of the application that is connected to the queue manager. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QMgr Unit of Recovery ID The unit of recovery identifier that is assigned by the queue manager. On z/OS systems, this is a 6-byte log Relative Byte Address (RBA), displayed as 12 hexadecimal characters. On systems other than z/OS systems, this is an 8-byte transaction identifier, displayed as *m.n*, where *m* and *n* are the decimal representation of the first and last 4 bytes of the transaction identifier. The valid format is an alphanumeric string of up to 32 case-sensitive characters.

Thread ID (non z/OS systems) The thread identifier within the application process that has opened the specified queue. The valid format is an integer.

UOW Log Start Date & Time The date and time that the transaction that is associated with the current connection first writes to the log. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

UOW Log Start Extent (non z/OS systems) The name of the first extent that is required to recover the transaction. The valid format is an alphanumeric string of up to 24 case-sensitive characters.

UOW State The state of the unit of work. The valid format is an integer. Valid values are as follows:

- n/a = -1,
- None = 0,
- Active = 1,
- Prepared = 2,
- Unresolved = 3.

UOW Start Date & Time The date and time that the transaction that is associated with the current connection is started. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

User ID The user identifier that is associated with the connection. The attribute does not have a value when the application type has the value SYSTEM. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

Application Debug Trace attributes (z/OS systems only)

The Application Debug Trace attributes are available on z/OS systems only.

Use the Application Debug Trace attributes to view debugging trace results, particularly MQI Call and Reason Code. These attributes are informational only; they cannot be used to create situations.

Appl ID The application identifier that is associated with the event or message. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Completion Code The completion code for this MQI call. The valid format is an integer. Valid values are 0-OK = 0, 1-WARNING = 1, and 2-FAILED = 2.

Host Name The name of the system on which this queue manager is running. On z/OS systems, the name is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Important Option The most important option. The valid format is an integer. Valid values are as follows:

- NONE = 0,
- BROWSE = 1,
- INPUT_AS_Q_DEF = 2,
- INPUT_SHARED = 3,
- INPUT_EXCLUSIVE = 4,
- INQUIRE = 5,
- OUTPUT = 6,
- SET = 7,
- DELETE = 10,
- DELETE_PURGE = 11,
- KEEP_SUB = 12,
- REMOVE_SUB = 13,
- QUIESCE = 14,
- SYNCPOINT = 20,
- BROWSE_FIRST = 21,
- BROWSE_NEXT = 22,
- MSG_UNDER_CURSOR = 23,
- WAIT = 24,
- SET_SIGNAL = 25,
- ALTERNATE_USER_AUTHORITY = 30,
- DEFAULT_CONTEXT = 31,
- PASS_IDENTITY_CONTEXT = 32,
- PASS_ALL_CONTEXT = 33,
- SET_IDENTITY_CONTEXT = 34,
- SET_ALL_CONTEXT = 35,
- NO_CONTEXT = 36,
- RETAIN = 37

MQI Call The specific MQI call that is issued. Some MQI calls generate multiple trace records. This happens for MQCONN, MQDISC, and MQGET calls with WAIT options if there is no message available at the time of the MQGET request, but a message becomes available prior to the expiration of the time interval that is specified in the MQGMO_WaitInterval attribute. The valid format is an integer. Valid values are as follows:

- MQOPEN = 1,
- MQCLOSE = 2,
- MQGET = 3,
- MQPUT = 4,
- MQPUT1 = 5,
- MQINQ = 6,
- MQINQL = 7,
- MQSET = 8,
- End_Wait = 9,
- Close_Handles = 10,

- Prepare = 11,
- MQCMIT = 12,
- MQBACK = 13,
- End_Thread = 14,
- Inquire_Indoubt = 15,
- Resolve_Commit = 16,
- Resolve_Backout = 17,
- Execute_Resolve = 18,
- MQCONN = 112,
- MQDISC = 124

Object Handle The token that is used by WebSphere MQ to identify an object. The valid format is an integer (up to 4 digits).

Object Name The name of the resource against which an MQI call is issued. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Object Type The type of WebSphere MQ resource to which the MQI call is issued. It can be a queue, a queue manager, a process, a namelist, or a channel. The valid format is an integer (up to 4 digits). Valid values are as follows:

- n/a = 0,
- QUEUE = 1,
- NAMELIST = 2,
- PROCESS = 3,
- QMGR = 5,
- CHANNEL = 6,
- AUTH_INFO = 7,
- TOPIC = 8,
- CF_STRUC = 10,
- LISTENER = 11,
- SERVICE = 12,
- ALL = 1001,
- ALIAS_Q = 1002,
- MODEL_Q = 1003,
- LOCAL_Q = 1004,
- REMOTE_Q = 1005,
- SENDER_CHANNEL = 1007,
- SERVER_CHANNEL = 1008,
- REQUESTER_CHANNEL = 1009,
- RECEIVER_CHANNEL = 1010,
- CURRENT_CHANNEL = 1011,
- SAVED_CHANNEL = 1012,
- SVRCONN_CHANNEL = 1013,
- CLNTCONN_CHANNEL = 1014.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Reason Code The WebSphere MQ reason code for which this MQI call fails. The valid format is an integer (up to 4 digits).

Valid values are as follows:

- 0-MQRC_NONE = 0,
- 2001-MQRC_ALIAS_BASE_Q_TYPE_ERROR = 2001,
- 2002-MQRC_ALREADY_CONNECTED = 2002,
- 2003-MQRC_BACKED_OUT = 2003,
- 2004-MQRC_BUFFER_ERROR = 2004,
- 2005-MQRC_BUFFER_LENGTH_ERROR = 2005,
- 2006-MQRC_CHAR_ATTR_LENGTH_ERROR = 2006,
- 2007-MQRC_CHAR_ATTRS_ERROR = 2007,
- 2008-MQRC_CHAR_ATTRS_TOO_SHORT = 2008,
- 2009-MQRC_CONNECTION_BROKEN = 2009,
- 2010-MQRC_DATA_LENGTH_ERROR = 2010,
- 2011-MQRC_DYNAMIC_Q_NAME_ERROR = 2011,
- 2012-MQRC_ENVIRONMENT_ERROR = 2012,
- 2013-MQRC_EXPIRY_ERROR = 2013,
- 2014-MQRC_FEEDBACK_ERROR = 2014,
- 2016-MQRC_GET_INHIBITED = 2016,
- 2017-MQRC_HANDLE_NOT_AVAILABLE = 2017,
- 2018-MQRC_HCONN_ERROR = 2018,
- 2019-MQRC_HOBJ_ERROR = 2019,
- 2020-MQRC_INHIBIT_VALUE_ERROR = 2020,
- 2021-MQRC_INT_ATTR_COUNT_ERROR = 2021,
- 2022-MQRC_INT_ATTR_COUNT_TOO_SMALL = 2022,
- 2023-MQRC_INT_ATTRS_ARRAY_ERROR = 2023,
- 2024-MQRC_SYNCPOINT_LIMIT_REACHED = 2024,
- 2025-MQRC_MAX_CONNS_LIMIT_REACHED = 2025,
- 2026-MQRC_MD_ERROR = 2026,
- 2027-MQRC_MISSING_REPLY_TO_Q = 2027,
- 2029-MQRC_MSG_TYPE_ERROR = 2029,
- 2030-MQRC_MSG_TOO_BIG_FOR_Q = 2030,
- 2031-MQRC_MSG_TOO_BIG_FOR_Q_MGR = 2031,
- 2033-MQRC_NO_MSG_AVAILABLE = 2033,
- 2034-MQRC_NO_MSG_UNDER_CURSOR = 2034,
- 2035-MQRC_NOT_AUTHORIZED = 2035,

- 2036-MQRC_NOT_OPEN_FOR_BROWSE = 2036,
- 2037-MQRC_NOT_OPEN_FOR_INPUT = 2037,
- 2038-MQRC_NOT_OPEN_FOR_INQUIRE = 2038,
- 2039-MQRC_NOT_OPEN_FOR_OUTPUT = 2039,
- 2040-MQRC_NOT_OPEN_FOR_SET = 2040,
- 2041-MQRC_OBJECT_CHANGED = 2041,
- 2042-MQRC_OBJECT_IN_USE = 2042,
- 2043-MQRC_OBJECT_TYPE_ERROR = 2043,
- 2044-MQRC_OD_ERROR = 2044,
- 2045-MQRC_OPTION_NOT_VALID_FOR_TYPE = 2045,
- 2046-MQRC_OPTIONS_ERROR = 2046,
- 2047-MQRC_PERSISTENCE_ERROR = 2047,
- 2048-MQRC_PERSISTENT_NOT_ALLOWED = 2048,
- 2049-MQRC_PRIORITY_EXCEEDS_MAXIMUM = 2049,
- 2050-MQRC_PRIORITY_ERROR = 2050,
- 2051-MQRC_PUT_INHIBITED = 2051,
- 2052-MQRC_Q_DELETED = 2052,
- 2053-MQRC_Q_FULL = 2053,
- 2055-MQRC_Q_NOT_EMPTY = 2055,
- 2056-MQRC_Q_SPACE_NOT_AVAILABLE = 2056,
- 2057-MQRC_Q_TYPE_ERROR = 2057,
- 2058-MQRC_Q_MGR_NAME_ERROR = 2058,
- 2059-MQRC_Q_MGR_NOT_AVAILABLE = 2059,
- 2061-MQRC_REPORT_OPTIONS_ERROR = 2061,
- 2062-MQRC_SECOND_MARK_NOT_ALLOWED = 2062,
- 2063-MQRC_SECURITY_ERROR = 2063,
- 2065-MQRC_SELECTOR_COUNT_ERROR = 2065,
- 2066-MQRC_SELECTOR_LIMIT_EXCEEDED = 2066,
- 2067-MQRC_SELECTOR_ERROR = 2067,
- 2068-MQRC_SELECTOR_NOT_FOR_TYPE = 2068,
- 2069-MQRC_SIGNAL_OUTSTANDING = 2069,
- 2070-MQRC_SIGNAL_REQUEST_ACCEPTED = 2070,
- 2071-MQRC_STORAGE_NOT_AVAILABLE = 2071,
- 2072-MQRC_SYNCPOINT_NOT_AVAILABLE = 2072,
- 2075-MQRC_TRIGGER_CONTROL_ERROR = 2075,
- 2076-MQRC_TRIGGER_DEPTH_ERROR = 2076,
- 2077-MQRC_TRIGGER_MSG_PRIORITY_ERR = 2077,
- 2078-MQRC_TRIGGER_TYPE_ERROR = 2078,
- 2079-MQRC_TRUNCATED_MSG_ACCEPTED = 2079,
- 2080-MQRC_TRUNCATED_MSG_FAILED = 2080,
- 2082-MQRC_UNKNOWN_ALIAS_BASE_Q = 2082,
- 2085-MQRC_UNKNOWN_OBJECT_NAME = 2085,
- 2086-MQRC_UNKNOWN_OBJECT_Q_MGR = 2086,
- 2087-MQRC_UNKNOWN_REMOTE_Q_MGR = 2087,
- 2090-MQRC_WAIT_INTERVAL_ERROR = 2090,

- 2091-MQRC_XMIT_Q_TYPE_ERROR = 2091,
- 2092-MQRC_XMIT_Q_USAGE_ERROR = 2092,
- 2093-MQRC_NOT_OPEN_FOR_PASS_ALL = 2093,
- 2094-MQRC_NOT_OPEN_FOR_PASS_IDENT = 2094,
- 2095-MQRC_NOT_OPEN_FOR_SET_ALL = 2095,
- 2096-MQRC_NOT_OPEN_FOR_SET_IDENT = 2096,
- 2097-MQRC_CONTEXT_HANDLE_ERROR = 2097,
- 2098-MQRC_CONTEXT_NOT_AVAILABLE = 2098,
- 2099-MQRC_SIGNAL1_ERROR = 2099,
- 2100-MQRC_OBJECT_ALREADY_EXISTS = 2100,
- 2101-MQRC_OBJECT_DAMAGED = 2101,
- 2102-MQRC_RESOURCE_PROBLEM = 2102,
- 2103-MQRC_ANOTHER_Q_MGR_CONNECTED = 2103,
- 2104-MQRC_UNKNOWN_REPORT_OPTION = 2104,
- 2105-MQRC_STORAGE_CLASS_ERROR = 2105,
- 2106-MQRC_COD_NOT_VALID_FOR_XCF_Q = 2106,
- 2107-MQRC_XWAIT_CANCELED = 2107,
- 2108-MQRC_XWAIT_ERROR = 2108,
- 2109-MQRC_SUPPRESSED_BY_EXIT = 2109,
- 2110-MQRC_FORMAT_ERROR = 2110,
- 2111-MQRC_SOURCE_CCSID_ERROR = 2111,
- 2112-MQRC_SOURCE_INTEGER_ENC_ERROR = 2112,
- 2113-MQRC_SOURCE_DECIMAL_ENC_ERROR = 2113,
- 2114-MQRC_SOURCE_FLOAT_ENC_ERROR = 2114,
- 2115-MQRC_TARGET_CCSID_ERROR = 2115,
- 2116-MQRC_TARGET_INTEGER_ENC_ERROR = 2116,
- 2117-MQRC_TARGET_DECIMAL_ENC_ERROR = 2117,
- 2118-MQRC_TARGET_FLOAT_ENC_ERROR = 2118,
- 2119-MQRC_NOT_CONVERTED = 2119,
- 2120-MQRC_CONVERTED_MSG_TOO_BIG = 2120,
- 2121-MQRC_NO_EXTERNAL_PARTICIPANTS = 2121,
- 2122-MQRC_PARTICIPANT_NOT_AVAILABLE = 2122,
- 2123-MQRC_OUTCOME_MIXED = 2123,
- 2124-MQRC_OUTCOME_PENDING = 2124,
- 2125-MQRC_BRIDGE_STARTED = 2125,
- 2126-MQRC_BRIDGE_STOPPED = 2126,
- 2127-MQRC_ADAPTER_STORAGE_SHORTAGE = 2127,
- 2128-MQRC_UOW_IN_PROGRESS = 2128,
- 2129-MQRC_ADAPTER_CONN_LOAD_ERROR = 2129,
- 2130-MQRC_ADAPTER_SERV_LOAD_ERROR = 2130,
- 2131-MQRC_ADAPTER_DEFS_ERROR = 2131,
- 2132-MQRC_ADAPTER_DEFS_LOAD_ERROR = 2132,
- 2133-MQRC_ADAPTER_CONV_LOAD_ERROR = 2133,
- 2134-MQRC_BO_ERROR = 2134,
- 2135-MQRC_DH_ERROR = 2135,

- 2136-MQRC_MULTIPLE_REASONS = 2136,
- 2137-MQRC_OPEN_FAILED = 2137,
- 2138-MQRC_ADAPTER_DISC_LOAD_ERROR = 2138,
- 2140-MQRC_CICS_WAIT_FAILED = 2140,
- 2141-MQRC_DLH_ERROR = 2141,
- 2142-MQRC_HEADER_ERROR = 2142,
- 2143-MQRC_SOURCE_LENGTH_ERROR = 2143,
- 2144-MQRC_TARGET_LENGTH_ERROR = 2144,
- 2145-MQRC_SOURCE_BUFFER_ERROR = 2145,
- 2146-MQRC_TARGET_BUFFER_ERROR = 2146,
- 2148-MQRC_IIH_ERROR = 2148,
- 2149-MQRC_PCF_ERROR = 2149,
- 2150-MQRC_DBCS_ERROR = 2150,
- 2151-MQRC_TRUNCATED = 2151,
- 2152-MQRC_OBJECT_NAME_ERROR = 2152,
- 2153-MQRC_OBJECT_Q_MGR_NAME_ERROR = 2153,
- 2154-MQRC_RECS_PRESENT_ERROR = 2154,
- 2155-MQRC_OBJECT_RECORDS_ERROR = 2155,
- 2156-MQRC_RESPONSE_RECORDS_ERROR = 2156,
- 2157-MQRC_ASID_MISMATCH = 2157,
- 2158-MQRC_PMO_RECORD_FLAGS_ERROR = 2158,
- 2159-MQRC_PUT_MSG_RECORDS_ERROR = 2159,
- 2160-MQRC_CONN_ID_IN_USE = 2160,
- 2161-MQRC_Q_MGR QUIESCING = 2161,
- 2162-MQRC_Q_MGR_STOPPING = 2162,
- 2163-MQRC_DUPLICATE_RECOV_COORD = 2163,
- 2173-MQRC_PMO_ERROR = 2173,
- 2182-MQRC_API_EXIT_NOT_FOUND = 2182,
- 2183-MQRC_API_EXIT_LOAD_ERROR = 2183,
- 2184-MQRC_REMOTE_Q_NAME_ERROR = 2184,
- 2185-MQRC_INCONSISTENT_PERSISTENCE = 2185,
- 2186-MQRC_GMO_ERROR = 2186,
- 2191-MQRC_TMC_ERROR = 2191,
- 2192-MQRC_PAGESET_FULL = 2192,
- 2193-MQRC_PAGESET_ERROR = 2193,
- 2194-MQRC_NAME_NOT_VALID_FOR_TYPE = 2194,
- 2195-MQRC_UNEXPECTED_ERROR = 2195,
- 2196-MQRC_UNKNOWN_XMIT_Q = 2196,
- 2197-MQRC_UNKNOWN_DEF_XMIT_Q = 2197,
- 2198-MQRC_DEF_XMIT_Q_TYPE_ERROR = 2198,
- 2199-MQRC_DEF_XMIT_Q_USAGE_ERROR = 2199,
- 2201-MQRC_NAME_IN_USE = 2201,
- 2202-MQRC_CONNECTION QUIESCING = 2202,
- 2203-MQRC_CONNECTION_STOPPING = 2203,
- 2204-MQRC_ADAPTER_NOT_AVAILABLE = 2204,

- 2206-MQRC_MSG_ID_ERROR = 2206,
- 2207-MQRC_CORREL_ID_ERROR = 2207,
- 2208-MQRC_FILE_SYSTEM_ERROR = 2208,
- 2209-MQRC_NO_MSG_LOCKED = 2209,
- 2216-MQRC_FILE_NOT_AUDITED = 2216,
- 2217-MQRC_CONNECTION_NOT_AUTHORIZED = 2217,
- 2218-MQRC_MSG_TOO_BIG_FOR_CHANNEL = 2218,
- 2219-MQRC_CALL_IN_PROGRESS = 2219,
- 2220-MQRC_RMH_ERROR = 2220,
- 2222-MQRC_Q_MGR_ACTIVE = 2222,
- 2223-MQRC_Q_MGR_NOT_ACTIVE = 2223,
- 2224-MQRC_Q_DEPTH_HIGH = 2224,
- 2225-MQRC_Q_DEPTH_LOW = 2225,
- 2226-MQRC_Q_SERVICE_INTERVAL_HIGH = 2226,
- 2227-MQRC_Q_SERVICE_INTERVAL_OK = 2227,
- 2233-MQRC_CHANNEL_AUTO_DEF_OK = 2233,
- 2234-MQRC_CHANNEL_AUTO_DEF_ERROR = 2234,
- 2235-MQRC_CFH_ERROR = 2235,
- 2236-MQRC_CFIL_ERROR = 2236,
- 2237-MQRC_CFIN_ERROR = 2237,
- 2238-MQRC_CFSL_ERROR = 2238,
- 2239-MQRC_CFST_ERROR = 2239,
- 2241-MQRC_INCOMPLETE_GROUP = 2241,
- 2242-MQRC_INCOMPLETE_MSG = 2242,
- 2243-MQRC_INCONSISTENT_CCSDS = 2243,
- 2244-MQRC_INCONSISTENT_ENCODINGS = 2244,
- 2245-MQRC_INCONSISTENT_UOW = 2245,
- 2246-MQRC_INVALID_MSG_UNDER_CURSOR = 2246,
- 2247-MQRC_MATCH_OPTIONS_ERROR = 2247,
- 2248-MQRC_MDE_ERROR = 2248,
- 2249-MQRC_MSG_FLAGS_ERROR = 2249,
- 2250-MQRC_MSG_SEQ_NUMBER_ERROR = 2250,
- 2251-MQRC_OFFSET_ERROR = 2251,
- 2252-MQRC_ORIGINAL_LENGTH_ERROR = 2252,
- 2253-MQRC_SEGMENT_LENGTH_ZERO = 2253,
- 2255-MQRC_UOW_NOT_AVAILABLE = 2255,
- 2256-MQRC_WRONG_GMO_VERSION = 2256,
- 2257-MQRC_WRONG_MD_VERSION = 2257,
- 2258-MQRC_GROUP_ID_ERROR = 2258,
- 2259-MQRC_INCONSISTENT_BROWSE = 2259,
- 2260-MQRC_XQH_ERROR = 2260,
- 2261-MQRC_SRC_ENV_ERROR = 2261,
- 2262-MQRC_SRC_NAME_ERROR = 2262,
- 2263-MQRC_DEST_ENV_ERROR = 2263,
- 2264-MQRC_DEST_NAME_ERROR = 2264,

- 2265-MQRC_TM_ERROR = 2265,
- 2280-MQRC_HCONFIG_ERROR = 2280,
- 2281-MQRC_FUNCTION_ERROR = 2281,
- 2282-MQRC_CHANNEL_STARTED = 2282,
- 2283-MQRC_CHANNEL_STOPPED = 2283,
- 2284-MQRC_CHANNEL_CONV_ERROR = 2284,
- 2285-MQRC_SERVICE_NOT_AVAILABLE = 2285,
- 2286-MQRC_INITIALIZATION_FAILED = 2286,
- 2287-MQRC_TERMINATION_FAILED = 2287,
- 2288-MQRC_UNKNOWN_Q_NAME = 2288,
- 2289-MQRC_SERVICE_ERROR = 2289,
- 2290-MQRC_Q_ALREADY_EXISTS = 2290,
- 2291-MQRC_USER_ID_NOT_AVAILABLE = 2291,
- 2292-MQRC_UNKNOWN_ENTITY = 2292,
- 2293-MQRC_UNKNOWN_AUTH_ENTITY = 2293,
- 2294-MQRC_UNKNOWN_REF_OBJECT = 2294,
- 2295-MQRC_CHANNEL_ACTIVATED = 2295,
- 2296-MQRC_CHANNEL_NOT_ACTIVATED = 2296,
- 2479-MQRC_PUT_NOT_RETAINED = 2479,
- 2480-MQRC_ALIAS_TARGTYPE_CHANGED = 2480,
- 2502-MQRC_PUBLICATION_FAILURE = 2502.

Splat Other parameter data to be parsed. The valid format is an alphanumeric string of up to 800 case-sensitive characters.

Task ID The task identifier. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Task Name (z/OS systems only) The name of the top-level program for this task. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Trace Date & Time The date and time that this MQI call is issued. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Tran Pgm The CICS transaction or the program name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

User ID The ID of the user that issues the WebSphere MQ request. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Debug Trace Details attributes (z/OS systems only)

The Application Debug Trace Details attributes are available on z/OS systems only.

Use the Application Debug Trace Details attributes to view trace parameters and the corresponding values for each MQI call. These attributes are informational only; they cannot be used to create situations.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS, it is the VTAM Application ID; in IMS, it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,

- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Parameter Name The name of the parameter. The valid format is an integer. Valid values are as follows:

- -MQIA_APPL_TYPE = 1,
- -MQIA_AUTHORITY_EVENT = 47,
- -MQIA_BACKOUT_THRESHOLD = 22,
- -MQIA_CHANNEL_AUTO_DEF = 55,
- -MQIA_CHANNEL_AUTO_DEF_EVENT = 56,
- -MQIA_CODED_CHAR_SET_ID = 2,
- -MQIA_COMMAND_LEVEL = 31,
- -MQIA_CPI_LEVEL = 27,
- -MQIA_CURRENT_Q_DEPTH = 3,
- -MQIA_DEF_INPUT_OPEN_OPTION = 4,
- -MQIA_DEF_PERSISTENCE = 5,
- -MQIA_DEF_PRIORITY = 6,
- -MQIA_DEFINITION_TYPE = 7,
- -MQIA_DIST_LISTS = 34,
- -MQIA_HARDEN_GET_BACKOUT = 8,
- -MQIA_HIGH_Q_DEPTH = 36,
- -MQIA_INDEX_TYPE = 57,
- -MQIA_INHIBIT_EVENT = 48,
- -MQIA_INHIBIT_GET = 9,
- -MQIA_INHIBIT_PUT = 10,
- -MQIA_LOCAL_EVENT = 49,
- -MQIA_MAX_HANDLES = 11,
- -MQIA_MAX_MSG_LENGTH = 13,
- -MQIA_MAX_PRIORITY = 14,
- -MQIA_MAX_Q_DEPTH = 15,
- -MQIA_MAX_UNCOMMITTED_MSGS = 33,
- -MQIA_MSG_DELIVERY_SEQUENCE = 16,
- -MQIA_MSG_DEQ_COUNT = 38,

- -MQIA_MSG_ENQ_COUNT = 37,
- -MQIA_NAME_COUNT = 19,
- -MQIA_OPEN_INPUT_COUNT = 17,
- -MQIA_OPEN_OUTPUT_COUNT = 18,
- -MQIA_PERFORMANCE_EVENT = 53,
- -MQIA_PLATFORM = 32,
- -MQIA_Q_DEPTH_HIGH_EVENT = 43,
- -MQIA_Q_DEPTH_HIGH_LIMIT = 40,
- -MQIA_Q_DEPTH_LOW_EVENT = 44,
- -MQIA_Q_DEPTH_LOW_LIMIT = 41,
- -MQIA_Q_DEPTH_MAX_EVENT = 42,
- -MQIA_Q_SERVICE_INTERVAL = 54,
- -MQIA_Q_SERVICE_INTERVAL_EVENT = 46,
- -MQIA_Q_TYPE = 20,
- -MQIA_REMOTE_EVENT = 50,
- -MQIA_RETENTION_INTERVAL = 21,
- -MQIA_SCOPE = 45,
- -MQIA_SHAREABILITY = 23,
- -MQIA_START_STOP_EVENT = 52,
- -MQIA_SYNCPOINT = 30,
- -MQIA_TIME_SINCE_RESET = 35,
- -MQIA_TRIGGER_CONTROL = 24,
- -MQIA_TRIGGER_DEPTH = 29,
- -MQIA_TRIGGER_INTERVAL = 25,
- -MQIA_TRIGGER_MSG_PRIORITY = 26,
- -MQIA_TRIGGER_TYPE = 28,
- -MQIA_USAGE = 12,
- -MQCA_APPL_ID = 2001,
- -MQCA_BACKOUT_REQ_Q_NAME = 2019,
- -MQCA_BASE_Q_NAME = 2002,
- -MQCA_CHANNEL_AUTO_DEF_EXIT = 2026,
- -MQCA_COMMAND_INPUT_Q_NAME = 2003,
- -MQCA_CREATION_DATE = 2004,
- -MQCA_CREATION_TIME = 2005,
- -MQCA_DEAD_LETTER_Q_NAME = 2006,
- -MQCA_DEF_XMIT_Q_NAME = 2025,
- -MQCA_ENV_DATA = 2007,
- -MQCA_INITIATION_Q_NAME = 2008,
- -MQCA_NAMELIST_DESC = 2009,
- -MQCA_NAMELIST_NAME = 2010,
- -MQCA_NAMES = 2020,
- -MQCA_PROCESS_DESC = 2011,
- -MQCA_PROCESS_NAME = 2012,
- -MQCA_Q_DESC = 2013,
- -MQCA_Q_MGR_DESC = 2014,

- -MQCA_Q_MGR_NAME = 2015,
- -MQCA_Q_NAME = 2016,
- -MQCA_REMOTE_Q_MGR_NAME = 2017,
- -MQCA_REMOTE_Q_NAME = 2018,
- -MQCA_STORAGE_CLASS = 2022,
- -MQCA_TRIGGER_DATA = 2023,
- -MQCA_USER_DATA = 2021,
- -MQCA_XMIT_Q_NAME = 2024,
- Call = 4001,
- Time_issued = 4002,
- Time_completed = 4003,
- MQ_Response_time_(ms) = 4004,
- Completion_Code = 4005,
- Reason_code = 4006,
- Possible_Causes = 4007,
- MQCONN/MQDISC_Stage = 4008,
- Selectors_Count = 4009,
- Buffer_Length = 4010,
- Data_Length = 4011,
- MAIN_OPTION_STRUCTURE = 4012,
- OBJECT_DESCRIPTION = 4013,
- MESSAGE_DESCRIPTOR = 4015,
- SELECTORS = 4016,
- -MQOD_Version = 4020,
- -MQOD_ObjectType = 4021,
- -MQOD_ObjectName = 4022,
- -MQOD_ObjectQMgrName = 4023,
- -MQOD_DynamicQName = 4024,
- -MQOD_AlternateUserID = 4025,
- -Object_Handle = 4026,
- -MQOO_BROWSE = 4031,
- -MQOO_OUTPUT = 4032,
- -MQOO_INQUIRE = 4033,
- -MQOO_SET = 4034,
- -MQOO_SAVE_ALL_CONTEXT = 4035,
- -MQOO_PASS_IDENTITY_CONTEXT = 4036,
- -MQOO_PASS_ALL_CONTEXT = 4037,
- -MQOO_SET_IDENTITY_CONTEXT = 4038,
- -MQOO_SET_ALL_CONTEXT = 4039,
- -MQOO_ALTERNATE_USER_AUTHORITY = 4040,
- -MQOO_FAIL_IF QUIESCING = 4041,
- -MQOO_INPUT_AS_Q_DEFINED = 4042,
- -MQOO_INPUT_SHARED = 4043,
- -MQOO_INPUT_EXCLUSIVE = 4044,
- -MQCO_NONE = 4050,

- -MQCO_DELETE = 4051,
- -MQCO_DELETE_PURGE = 4052,
- -MQGMO_WAIT = 4060,
- -MQGMO_SYNCPOINT = 4061,
- -MQGMO_NO_SYNCPOINT = 4062,
- -MQGMO_SET_SIGNAL = 4063,
- -MQGMO_BROWSE_FIRST = 4064,
- -MQGMO_BROWSE_NEXT = 4065,
- -MQGMO_ACCEPT_TRUNCATED_MSG = 4066,
- -MQGMO_MARK_SKIP_BACKOUT = 4067,
- -MQGMO_MSG_UNDER_CURSOR = 4068,
- -MQGMO_LOCK = 4069,
- -MQGMO_UNLOCK = 4070,
- -MQGMO_BROWSE_MSG_UNDER_CURSOR = 4071,
- -MQGMO_FAIL_IF QUIESCING = 4072,
- -MQGMO_CONVERT = 4073,
- -MQGMO_WaitInterval = 4074,
- -MQGMO_ResolvedQName = 4075,
- -MQGMO_SYNCPOINT_IF_PERSISTENT = 4076,
- -MQPMO_SYNCPOINT = 4080,
- -MQPMO_NO_SYNCPOINT = 4081,
- -MQPMO_DEFAULT_CONTEXT = 4082,
- -MQPMO_PASS_IDENTITY_CONTEXT = 4083,
- -MQPMO_PASS_ALL_CONTEXT = 4084,
- -MQPMO_SET_IDENTITY_CONTEXT = 4085,
- -MQPMO_SET_ALL_CONTEXT = 4086,
- -MQPMO_ALTERNATE_USER_AUTHORITY = 4087,
- -MQPMO_FAIL_IF QUIESCING = 4088,
- -MQPMO_NO_CONTEXT = 4089,
- -MQPMO_ResolvedQName = 4095,
- -MQPMO_ResolvedQMgrName = 4096,
- -MQMD_StrucId = 4100,
- -MQMD_Version = 4101,
- -MQMD_Report = 4102,
- -MQMD_MsgType = 4103,
- -MQMD_Expiry = 4104,
- -MQMD_Feedback = 4105,
- -MQMD_Encoding = 4106,
- -MQMD_CodedCharSetId = 4107,
- -MQMD_Format = 4108,
- -MQMD_Priority = 4109,
- -MQMD_Persistence = 4110,
- -MQMD_MsgId = 4111,
- -MQMD_CorrelId = 4112,
- -MQMD_BackoutCount = 4113,

- -MQMD_ReplyToQ = 4114,
- -MQMD_ReplyToQMgr = 4115,
- -MQMD_UserIdentifier = 4116,
- -MQMD_AccountingToken = 4117,
- -MQMD_ApplIdentityData = 4118,
- -MQMD_PutApplType = 4119,
- -MQMD_PutApplName = 4120,
- -MQMD_PutDate = 4121,
- -MQMD_PutTime = 4122,
- -MQMD_ApplOriginData = 4123,
- -MQRO_NONE = 4140,
- -MQRO_PASS_CORREL_ID = 4141,
- -MQRO_PASS_MSG_ID = 4142,
- -MQRO_COA = 4143,
- -MQRO_COA_WITH_DATA = 4144,
- -MQRO_COA_WITH_FULL_DATA = 4145,
- -MQRO_COD = 4146,
- -MQRO_COD_WITH_DATA = 4147,
- -MQRO_COD_WITH_FULL_DATA = 4148,
- -MQRO_EXPIRATION = 4149,
- -MQRO_EXPIRATION_WITH_DATA = 4150,
- -MQRO_EXPIRATION_WITH_FULL_DATA = 4151,
- -MQRO_EXCEPTION = 4152,
- -MQRO_EXCEPTION_WITH_DATA = 4153,
- -MQRO_EXCEPTION_WITH_FULL_DATA = 4154,
- -MQRO_DISCARD_MSG = 4155,
- -MQRO_PAN = 4156,
- -MQRO_NAN = 4157,
- -MQENC_DECIMAL_UNDEFINED = 4170,
- -MQENC_DECIMAL_NORMAL = 4171,
- -MQENC_DECIMAL_REVERSED = 4172,
- -MQENC_FLOAT_UNDEFINED = 4173,
- -MQENC_FLOAT_IEEE_NORMAL = 4174,
- -MQENC_FLOAT_IEEE_REVERSED = 4175,
- -MQENC_FLOAT_S390 = 4176,
- -MQENC_INTEGER_UNDEFINED = 4177,
- -MQENC_INTEGER_NORMAL = 4178,
- -MQENC_INTEGER_REVERSED = 4179.

Parameter Type The type of the parameter. The valid format is an alphanumeric string of up to 22 characters.

Parameter Value The value of the parameter. The valid format is an alphanumeric string of up to 256 characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Task ID The task identifier. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Trace Date & Time The date and time that this MQI call is issued. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Tran Pgm The CICS transaction or the program name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

UserID The user ID of the user that issues the WebSphere MQ request. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Debug Trace Selection attributes (z/OS systems only)

The Application Debug Trace Selection attributes are available on z/OS systems only.

Use the Application Debug Trace Selection attributes to view information that is associated with application debugging. Available attributes include application identifier and type, task name and identifier, trace entry count, and transaction program name. These attributes are informational only; they cannot be used to create situations.

of Trace Entries The count of trace records for given selection criteria.

Appl ID The application identifier that is associated with the event or message. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,

- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Origin Node The name of the node that is assigned by WebSphere MQ Monitoring agent. The data for the queue manager originates from this node.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Task ID The task identifier. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Task Name (z/OS systems only) The name of the top-level program for this task. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Tran Pgm The CICS transaction or the program name. Valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Long-Term History attributes (z/OS systems only)

The Application Long-Term History attributes are available on z/OS systems only.

Use the Application Long-Term History attributes to detect a high number of messages that are put or read, or response time problems for a specific application. These attributes are informational only; they cannot be used to create situations.

of Queues The number of queues that are accessed by an application that is running on this queue manager. The valid format is an integer.

of Task IDs The number of task IDs that are associated with this application that were active at the time of the last data sample. The valid format is an integer.

of Tran/Pgms The number of unique CICS transactions or program names. The valid format is an integer.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS, it is the VTAM Application ID; in IMS, it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,

- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Cur Act Whether this application is currently active during the last data sample. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages belonging to this queue, transaction, program, or application. The valid format is an integer.

Interval Length The interval time over which statistics were taken. The valid format is in the form MMM:SS, where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of messages successfully put (added to this queue) belonging to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Output Msg Size Avg The average size of all output messages belonging to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Application Short-Term History attributes (z/OS systems only)

The Application Short-Term History attributes are available on z/OS systems only.

Use the Application Short-Term History attributes to detect a high number of messages that are put or read, or response time problems for a specific application. These attributes are informational only; they cannot be used to create situations.

of Queues The number of queues that are accessed by an application running on this queue manager. The valid format is an integer.

of Task IDs The number of task IDs that are associated with this application that were active at the time of the last data sample. The valid format is an integer.

of Tran/Pgms The number of unique CICS transactions or program names. The valid format is an integer.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,

- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Cur Act Indicates whether this application is currently active during the last data sample. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages that belong to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Application Queue Long-Term History attributes (z/OS systems only)

The Application Queue Long-Term History attributes are available on z/OS systems only.

Use the Application Queue Long-Term History attributes to detect a high number of messages that are put or read, or a high number of opens per second. These attributes are informational only; they cannot be used to create situations.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS, it is the VTAM Application ID; in IMS, it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),

- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Length The interval time over which statistics are taken. It is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages that belong to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Opens Per Sec The number of opens per second that this application, transaction, or program is performing or has performed during the sampling interval. This number includes MQOPEN and MQPUT1 calls. The valid format is a decimal (formatted to 2 decimal places).

Origin Node The name of the node that is assigned by the WebSphere MQ Monitoring agent. The data for the queue manager originates from this node.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call of the application (MQOD_ObjectName). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Remote QMgr Name The queue manager that is used when an application opens a queue, and the MQOD_QmgrName value is different from the local queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Tran Pgm The CICS transaction or the program name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Queue Short-Term History attributes (z/OS systems only)

The Application Queue Short-Term History attributes are available on z/OS systems only. Use the Application Queue Short-Term History attributes to detect a high number of messages that are put or read, or a high number of opens per second. These attributes are informational only; they cannot be used to create situations.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS, it is the VTAM Application ID; in IMS, it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,

- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages that belong to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Opens Per Sec The number of opens per second that this application, transaction, or program is performing or has performed during the sampling interval. This number includes MQOPEN and MQPUT1 calls. The valid format is a decimal (formatted to 2 decimal places).

Origin Node The WebSphere MQ Monitoring agent assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call of the application (MQOD_ObjectName). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Remote QMgr Name The queue manager used when an application opens a queue, and the MQOD_QmgrName value is different from the local queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Tran Pgm The CICS transaction or the program name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Queue Statistics attributes (z/OS systems only)

The Application Queue Statistics attributes are available on z/OS systems only.

Use the Application Queue Statistics attributes to create situations for detecting a high number of messages that are put or read, or a high number of opens per second. You can also create situations for detecting response time problems for a specific queue. Application Queue Statistics is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS, it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,

- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Opens Per Sec The number of opens per second that this application, transaction, or program is performing or has performed during the sampling interval. This number includes MQOPEN and MQPUT1 calls. The valid format is a decimal (formatted to 2 decimal places).

Origin Node The WebSphere MQ Monitoring agent assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call (MQOD_ObjectName) of the application. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Remote Origin Node The origin node name of the queue manager. The valid format is an alphanumeric string of up to 128 characters.

Remote QMgr Name The queue manager that is used when an application opens a queue, and the MQOD_QmgrName value is different from the local queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Tran Pgm The CICS transaction or the program name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Short-Term History attributes (z/OS systems only)

The Application Short-Term History attributes are available on z/OS systems only.

Use the Application Short-Term History attributes to detect a high number of messages that are put or read, or response time problems for a specific application. These attributes are informational only; they cannot be used to create situations.

of Queues The number of queues that are accessed by an application running on this queue manager. The valid format is an integer.

of Task IDs The number of task IDs that are associated with this application that were active at the time of the last data sample. The valid format is an integer.

of Tran/Pgms The number of unique CICS transactions or program names. The valid format is an integer.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Cur Act Indicates whether this application is currently active during the last data sample. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages that belong to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

Application Statistics attributes (z/OS systems only)

The Application Statistics attributes are available on z/OS systems only.

Use the Application Statistics attributes to create situations for detecting a high number of messages that are put or read, or response time problems for a specific application. Application Statistics is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

of Queues The number of queues that are accessed by an application running on this queue manager. The valid format is an integer.

of Task IDs The number of task IDs that are associated with this application that were active at the time of the last data sample. The valid format is an integer.

of Tran/Pgms The number of unique CICS transactions or program names. The valid format is an integer.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application, for example CICS, MVS, or IMS. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,

- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Cur Act Indicates whether this application is currently active during the last data sample. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Application Topology attributes

The Application Topology attributes are used to display connections between the applications, the monitored queue manager, and the queues that are opened by these applications in the Application Topology view.

Address Space ID (z/OS systems only) The address space identifier of the application that makes the connection. It is only valid for nodes that are of the APP type. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Application Tag Tag of the application that is connected to the queue manager. It is only valid for nodes that are of the APP type. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Appl Type Type of the application that is connected to the queue manager. It is only valid for nodes that are of the APP type. The valid format is an integer. Valid values are as follows:

- All = -2
- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,

- CICS_VSE = 10,
- WINDOWS_NT = 11,
- VMS = 12,
- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- USER = 25,
- BROKER = 26,
- QMGR_PUBLISH = 27,
- JAVA = 28,
- DQM = 29,
- CHINIT = 30,
- WLM = 31,
- BATCH = 32,
- RRS_BATCH = 33,
- SIB = 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST = 65536

CICS Task No (z/OS systems only) A 7-digit CICS task number. This attribute is valid when the node is of the APP type and the application type has the value CICS. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

CICS Trans ID (z/OS systems only) A 4-character CICS transaction identifier. This attribute is valid when the node is of the APP type and the application type has the value CICS. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Connection ID Identifier of the connections. It is only valid for nodes that are of the APP type. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

% Full The current number of messages on the queue (the current depth) divided by the maximum number of messages for the queue and expressed as a percentage. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

High Depth Threshold Percent The percentage of the maximum message depth that triggers a Queue Depth High event for the current queue. This attribute is expressed as a percentage value to one decimal place.

IMS PSB Name (z/OS systems only) The name of the program specification block (PSB) that is associated with the running IMS transaction. You can use the IMS PSD Name and IMS PST ID to purge the transaction using IMS commands. The attribute is only valid for nodes that are of the APP type. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

IMS PST ID (z/OS systems only) The IMS program specification table (PST) region identifier for the connected IMS region. The attribute is only valid for nodes that are of the APP type. Valid format is an alphanumeric string of up to 8 case-sensitive characters.

Max Rows The maximum number of rows that are returned by the agent. The valid format is an integer.

Node ID The UUID of the node that is addressed by this row in the table. If the node is of the APP type, the Node ID is the value of the Connection ID attribute in the Application Connections workspace. If the node is of other type, it is assigned a unique ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Node Name The name of the node that is addressed by this row in the table. If the node is of the APP type, the Node Name is the value of the Application Tag attribute in the Application Connections workspace. If the node is of the OBJ_* type, the Node Name is the value of the Object Name attribute in the Connection Objects workspace. If the node is of the QMGR type, the Node Name is the name of the monitored queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Node Type The type of the node that is addressed by this row in the table. Valid values are as follows:

- KMQ_APPTOP_NTTYPE_QMGR
- KMQ_APPTOP_NTTYPE_APP_UNKNOWN
- KMQ_APPTOP_NTTYPE_APP_NOCONTEXT
- KMQ_APPTOP_NTTYPE_APP_CICS
- KMQ_APPTOP_NTTYPE_APP_MVS
- KMQ_APPTOP_NTTYPE_APP_IMS
- KMQ_APPTOP_NTTYPE_APP_OS2
- KMQ_APPTOP_NTTYPE_APP_DOS
- KMQ_APPTOP_NTTYPE_APP_UNIX
- KMQ_APPTOP_NTTYPE_APP_QMGR
- KMQ_APPTOP_NTTYPE_APP_OS400
- KMQ_APPTOP_NTTYPE_APP_WINDOWS
- KMQ_APPTOP_NTTYPE_APP_CICS_VSE
- KMQ_APPTOP_NTTYPE_APP_WINDOWS_NT
- KMQ_APPTOP_NTTYPE_APP_VMS
- KMQ_APPTOP_NTTYPE_APP_GUARDIAN
- KMQ_APPTOP_NTTYPE_APP_VOS
- KMQ_APPTOP_NTTYPE_APP_IMS_BRIDGE
- KMQ_APPTOP_NTTYPE_APP_XCF
- KMQ_APPTOP_NTTYPE_APP_CICS_BRIDGE
- KMQ_APPTOP_NTTYPE_APP_NOTES_AGENT
- KMQ_APPTOP_NTTYPE_APP_USER
- KMQ_APPTOP_NTTYPE_APP_CHINIT
- KMQ_APPTOP_NTTYPE_APP_BATCH
- KMQ_APPTOP_NTTYPE_APP_RRS_BATCH

- KMQ_APPTOP_NTTYPE_APP_USER_FIRST
- KMQ_APPTOP_NTTYPE_OBJ_QUEUE

Object Name The name of the object that the connection has opened. The attribute is valid only when the node is of the OBJ_* type. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Object Type The type of the object that the connection has opened. The attribute is valid only when the node is of the OBJ_* type. Valid values are as follows:

- n/a = -1,
- Queue = 1,
- NameList = 2,
- Process = 3,
- StorageClass = 4,
- QMgr = 5,
- Channel = 6,
- AuthInfo = 7.

Process ID The number specifying the process identifier of the application that is connected to the queue manager. It is only valid for nodes that are of the APP type. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Thread ID The number specifying the thread identifier within the application process that has opened the specified queue. It is only valid for nodes that are of the APP type. The valid format is an integer.

To Node ID The UUID of the node that is connected to the node addressed by this row in the table. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Topology mode A flag to enable the Application Topology view to switch to different modes. The valid format is an integer. Valid values are as follows:

- Compact Mode for Application Connections = 1
- Drill-Down Mode for an Application Connection = 2
- Drill-Down Mode for All Application Connections = 3
- Browse Mode for Connections to a Queue = 4

Origin Name (z/OS systems only) The origin name that identifies the originator of the unit of recovery. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

User ID The user identifier that is associated with the connection. The attribute does not have a value when the application type has the value SYSTEM. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

Application Transaction/Program Long-Term History attributes (z/OS systems only)

The Application Transaction/Program Long-Term History attributes are available on z/OS systems only.

Use the Application Transaction/Program Long-Term History attributes to detect a high number of messages that are put or read, or a high number of opens per second. These attributes are informational only; they cannot be used to create situations.

of Queues The number of queues that are accessed by an application running on this queue manager. The valid format is an integer.

of Task IDs The number of task IDs that are associated with this application that were active at the time of the last data sample. The valid format is an integer.

% MQI Failures The percent of MQI calls that failed for the related transaction or program. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS, it is the VTAM Application ID; in IMS, it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,

- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Cur Act Indicates whether this transaction is currently active during the last data sample. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belongs to this queue, transaction, program, or application. The valid format is an integer.

Interval Length The interval time over which statistics are taken. The valid format is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages that belong to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Opens Per Sec The number of opens per second that this application, transaction, or program is performing or has performed during the sampling interval. This number includes MQOPEN and MQPUT1 calls. The valid format is a decimal (formatted to 2 decimal places).

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Tran Pgm The CICS transaction or the program name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Transaction/Program Short-Term History attributes (z/OS systems only)

The Application Transaction/Program Short-Term History attributes are available on z/OS systems only.

Use the Application Transaction/Program Short-Term History attributes to detect a high number of messages that are put or read, or a high number of opens per second. These attributes are informational only; they cannot be used to create situations.

of Queues The number of queues that are accessed by an application running on this queue manager. The valid format is an integer.

of Task IDs The number of task IDs that are associated with this application that are active at the time of the last data sample. Valid format is an integer.

% MQI Failures The percent of MQI calls that failed for the related transaction or program. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Resp Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Cur Act Indicates whether this transaction is currently active during the last data sample. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Opens Per Sec The number of opens per second that this application, transaction, or program is performing or has performed during the sampling interval. This number includes MQOPEN and MQPUT1 calls. Valid format is a decimal (formatted to 2 decimal places).

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Tran Pgm The CICS transaction or the program name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Application Transaction/Program Statistics attributes (z/OS systems only)

The Application Transaction/Program Statistics attributes are available on z/OS systems only.

Use the Application Transaction/Program Statistics attributes to create situations for detecting a high number of messages that are put or read, or a high number of opens per second. You can also create situations for detecting a high percent of MQI failures or response time problems. Application Transaction/Program Statistics is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

of Queues The number of queues that are accessed by an application running on this queue manager. The valid format is an integer.

of Task IDs The number of task IDs that are associated with this application that were active at the time of the last data sample. The valid format is an integer.

% MQI Failures The percent of MQI calls that fail for the related transaction or program. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Appl ID The application identifier of the WebSphere MQ application that accesses the specific queue. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Type The type of monitored application. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,

- CICS = 1,
- MVS= 2,
- IMS = 3,
- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Avg Appl Time Between Calls The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time The average time that it takes for WebSphere MQ to respond to all MQI calls. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQGET Res Time The average time that it takes for WebSphere MQ to respond to MQGET requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQPUT Resp Time The average time that it takes for WebSphere MQ to respond to MQPUT requests. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Cur Act Indicates whether this application is currently active during the last data sample. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg The average size of all input messages that belong to this queue, transaction, program, or application. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Msgs Browsed The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. The valid format is an integer.

Msgs Put The number of successfully put messages that belong to this transaction, program, or application. The valid format is an integer.

Msgs Read The number of messages belonging to this queue, transaction, program, or application that are successfully read and removed from the queue. The valid format is an integer.

Opens Per Sec The number of opens per second that this application, transaction, or program is performing or has performed during the sampling interval. This number includes MQOPEN and MQPUT1 calls. Valid format is a decimal (formatted to 2 decimal places).

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Output Msg Size Avg The average size of all output messages that belong to this queue, CICS transaction, program, or application. The valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Tran Pgm The CICS transaction or the program name. Valid format is an alphanumeric string of up to 8 case-sensitive characters.

Buffer Manager Long-Term History attributes (z/OS systems only)

The Buffer Manager Long-Term History attributes are available on z/OS systems only.

Use the Buffer Manager Long-Term History attributes to detect performance problems within buffer pools. This attribute group provides buffer manager

performance statistics for buffer pools that belong to a queue manager on a z/OS system. These attributes are informational only; they cannot be used to create situations.

% of Bufrs Available The lowest percentage of available buffers across all buffer pools that belong to this queue manager. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

% GetPg Outside Pool The percentage of get-page requests that are not resolved from the buffer pool. Valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

%_Updated Pgs_Written The percentage of updated buffer pages that are written to page data sets on the disk. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Asynch Writes The number of times that the asynchronous write processor have to be started because fewer than 15% of the buffers are available. The valid format is an integer.

Available Buffers The number of available buffers in this buffer pool. The valid format is an integer.

DASD Page Reads/Sec The rate at which the buffer manager is reading buffer pages from page data sets on the disk. The valid format is a decimal (formatted to 1 decimal place).

DASD Page Writes/Sec The rate at which the buffer manager is writing buffer pages to page data sets on the disk. The valid format is a decimal (formatted to 1 decimal place).

GetPg IO % The percentage of get-page requests that resulted in I/O. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Hash Chain Changes Changes of the hash chain. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Length The interval time over which statistics are taken. It is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Low # Avail The lowest number of available buffers across all buffer pools that belong to this queue manager. The valid format is an integer.

Number Buffers The number of buffers in this buffer pool. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Page Sets Assigned The number of page sets that are assigned to this buffer pool. The valid format is an integer.

Pool ID The number of the current buffer pool (a 2-digit integer of 00, 01, 02, or 03).

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queues Assigned The number of monitored queues that are assigned to page sets that are assigned to this buffer pool. The valid format is an integer.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Synch Writes The number of times that pages are written out synchronously. The valid format is an integer.

Synch Wrt % Percentage of synchronous writes. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Updated Pgs/Wrt The average number of updated buffer pages that are written each time buffer pages are stored on the disk. The valid format is a decimal (formatted to 1 decimal place).

Zero Bufs Count The number of times that no buffers are available to satisfy a request for a page. The valid format is an integer.

Buffer Manager Short-Term History attributes (z/OS systems only)

The Buffer Manager Short-Term History attributes are available on z/OS systems only.

Use the Buffer Manager Short-Term History attributes to detect performance problems within buffer pools. This attribute group provides buffer manager

performance statistics for buffer pools that belong to a queue manager on a z/OS system. These attributes are informational only; they cannot be used to create situations.

% of Bufs Available The lowest percentage of available buffers across all buffer pools that belong to this queue manager. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

% GetPg Outside Pool The percentage of get-page requests that are not resolved from the buffer pool. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

% Updated Pgs Written The percentage of updated buffer pages that are written to page data sets on disk. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Asynch Writes The number of times that the asynchronous write processor must be started because fewer than 15% of the buffers are available. The valid format is an integer.

Available Buffers The number of available buffers in this buffer pool. The valid format is an integer.

DASD Page Reads/Sec The rate at which the buffer manager is reading buffer pages from page data sets on the disk. The valid format is a decimal (formatted to 1 decimal place).

DASD Page Writes/Sec The rate at which the buffer manager is writing buffer pages to page data sets on the disk. The valid format is a decimal (formatted to 1 decimal place).

GetPg IO % The percentage of get-page requests that result in I/O. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Hash Chain Changes Changes of the hash chain. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Low # Avail The lowest number of available buffers across all buffer pools that belong to this queue manager. The valid format is an integer.

Number Buffers The number of buffers in this buffer pool. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system or SMF ID.

Page Sets Assigned The number of page sets that are assigned to this buffer pool. The valid format is an integer.

Pool ID The number of the current buffer pool (a 2-digit integer of 00, 01, 02, or 03).

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queues Assigned The number of monitored queues assigned to page sets that are assigned to this buffer pool. Valid format is an integer.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Synch Writes The number of times that pages are written out synchronously. The valid format is an integer.

Synch Wrt % Percentage of synchronous writes. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Updated Pgs/Wrt The average number of updated buffer pages that are written each time buffer pages are stored on disk. The valid format is a decimal (formatted to 1 decimal place).

Zero Bufrs Count The number of times that no buffers are available to satisfy a request for a page. The valid format is an integer.

Buffer Pools attributes (z/OS systems only)

The Buffer Pools attributes are available on z/OS systems only.

Use the Buffer Pools attributes for detecting performance problems within buffer pools. This attribute group provides buffer manager performance statistics for buffer pools that belong to a queue manager on a z/OS system. For example, you can create a situation to detect low buffer availability within a pool. Buffer Pools is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

% of Bufrs Available The lowest percentage of available buffers across all buffer pools that belong to this queue manager. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

% GetPg Outside Pool The percentage of get-page requests that are not resolved from the buffer pool. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

% Updated Pgs Written The percentage of updated buffer pages that are written to page data sets on disk. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Asynch Writes The number of times that the asynchronous write processor needs to be started because fewer than 15% of the buffers are available. The valid format is an integer.

Available Buffers The number of available buffers in this buffer pool. The valid format is an integer.

DASD Page Reads/Sec The rate at which the buffer manager is reading buffer pages from page data sets on disk. The valid format is a decimal (formatted to 1 decimal place).

DASD Page Writes/Sec The rate at which the buffer manager is writing buffer pages to page data sets on disk. The valid format is a decimal (formatted to 1 decimal place).

GetPg IO % The percentage of get-page requests that result in I/O. Valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0.

Hash Chain Changes Changes of the hash chain. The valid format is an integer. Informational only.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Low # Avail The lowest number of available buffers across all buffer pools that belong to this queue manager. The valid format is an integer.

Number Buffers The number of buffers in this buffer pool. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

Page Sets Assigned The number of page sets that are assigned to this buffer pool. The valid format is an integer.

Pool ID The number of the current buffer pool (a 2-digit integer of 00, 01, 02, or 03).

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queues Assigned The number of monitored queues assigned to page sets that are assigned to this buffer pool. Valid format is an integer.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Synch Writes The number of times that pages are written out synchronously. The valid format is an integer.

Synch Wrt % Percentage of synchronous writes. The valid format is a decimal (formatted to 1 decimal place) with a range from 0.0 - 100.0. Informational only.

Updated Pgs/Wrt The average number of updated buffer pages that are written each time buffer pages are stored on disk. The valid format is a decimal (formatted to 1 decimal place).

Zero Bufrs Count The number of times that no buffers are available to satisfy a request for a page. The valid format is an integer.

Channel Data attributes

The Channel Data attributes provide detailed information about a channel.

Alter Date & Time The date and time that channel definition is last altered.

Batch Size The maximum number of messages that this channel processes before a checkpoint is taken; that is, the size of logical unit of work (LUW) of this channel. The valid format is an integer, in the range 0 - 9999.

Channel Description The description of this channel. This attribute is not available for CICS channels. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Type The type that is assigned to the channel (SDR for sender, SVR for server, RCVR for receiver, RQSTR for requester, CLNTCONN for client connection, SVRCONN for server connection, CLUSRCVR for cluster receiver, CLUSSDR for cluster sender, ClusQmgr for cluster queue manager) when it is created. Valid values are as follows:

- n/a = 0,
- SDR = 1,
- SVR = 2,
- RCVR = 3,
- RQSTR = 4,
- CLNTCONN = 6,
- SVRCONN = 7,
- CLUSRCVR = 8,
- CLUSSDR = 9,
- ClusQmgr = 254.

Cluster The name of the cluster that the channel belongs to. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster Channel Definition Type Indicates how this channel is defined. Valid format is an integer. Valid values are as follows:

- Explicit_Cluster-Sender = 1,
- Automatic_Cluster-Sender = 2,
- Explicit_Cluster-Receiver = 3,
- Explicit/Auto_Cluster-Sender = 4,
- n/a = 255.

Cluster Date & Time The date and time that this cluster channel definition is made available.

Cluster Namelist The name of the namelist that specifies a list of clusters that the channel belongs to. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster QMgr The name of the cluster queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster QMgr Suspend Indicates whether the cluster queue manager is suspended. Valid values are No = 0, Yes = 1, and n/a = 255.

Cluster QMgr Type The function of the associated queue manager in the cluster. The valid format is an integer. Valid values are Normal = 0, Repository = 1, and n/a = 255.

Connection Name The name of the physical or logical connection that this channel uses to transmit or receive data. This name is formed from the connection type (IP for TCP/IP, LU for LU6.2, or NETBIOS) and the connection address. Valid format is an alphanumeric string of up to 264 case-sensitive characters. If multiple

connections are configured for the channel, this attribute is displayed as a comma separated list of names of systems for the stated **Transport Type** attribute.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Maximum Msg Len The longest message length that this channel can accommodate. The length must be less than or equal to 4194304. Zero indicates that the channel uses the same maximum message length as the queue manager that it belongs to. The valid format is an integer, in the range 0 - 4194304.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (QSG environment on z/OS systems only) Disposition in the queue sharing group. Valid values are Qmgr = 0, Copy = 1, Group = 3, and Unknown = 255.

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Transport Type The transmission type (LU62, TCP for TCP/IP, NETBIOS, or CICS). Valid values are LOCAL = 0, LU62 = 1, TCP = 2, NETBIOS = 3, SPX = 4, DECNET = 5, UDP = 6, and CICS = 100.

Channel Definition Details attributes

Use the Channel Definition Details attributes to view values that are associated with channel parameters, including name, description, and value. These attributes are informational only; they cannot be used to create situations.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Type The type of this channel. The valid format is an integer. Valid values are as follows:

- SDR = 1,
- SVR = 2,
- RCVR = 3,
- RQSTR = 4,
- ALL = 5,
- CLNTCONN = 6,
- SVRCONN = 7,

- CLUSRCVR = 8,
- CLUSSDR = 9,
- ClusQmgr = 254.

Client Channel Weight This attribute specifies a weighting to influence which client-connection channel definition is used. The valid format is an integer, in the range 0 - 99.

Cluster The name of the cluster to which the channel belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster QMgr The name of the cluster queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Connection Affinity The client channel definition that the client applications use to connect to the queue manager if multiple connections are available. Valid values are as follows:

- NONE = 0,
- PREFERRED = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Max Instances The maximum number of simultaneous instances of a server-connection channel that can be started. Valid format is an integer, in the range 0 - 999999999.

Max Instances Per Client The maximum number of simultaneous instances of a server-connection channel that can be started from a single client. The valid format is an integer, in the range 0 - 999999999.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Parameter Description The description of the parameter. The valid format is a one or 2-digit integer. Valid values are as follows:

- Channel_name = 1,
- Channel_type = 2,
- Client_Channel_Weight = 74,
- Connection_name = 3,
- Connection_Affinity = 75,
- Transport_type = 4,
- Description = 5,
- Max_msgs_for_checkpoint = 6,
- Maximum_message_length = 7,

- Transmission_queue_name = 8,
- Sending_MCA_convert_data = 9,
- Max_xmitq_msg_wait_in_s. = 10,
- Max_long_retry_attempts = 11,
- Long_retry_wait_in_s. = 12,
- Maximum_Instances = 72,
- Maximum_Instances_Per_Client = 73,
- Message_channel_agent = 13,
- MCA_program_type = 14,
- MCA_user_identifier = 15,
- LU_6.2_mode_name = 16,
- Message_exit_user_data = 17,
- Message_exit_name = 18,
- MCA_SNA_session_password = 19,
- Put_authority_userid = 20,
- Property Control = 71,
- Receive_exit_user_data = 21,
- Receive_exit_name = 22,
- Security_exit_user_data = 23,
- Security_exit_name = 24,
- Send_exit_user_data = 25,
- Send_exit_name = 26,
- Sequence_number_wrap = 27,
- Max_short_retry_attempts = 28,
- Short_retry_wait_in_s. = 29,
- Sharing Conversations = 70,
- Transaction_program_name = 30,
- Task_user_identifier = 31,
- Client_connection_Qmgr = 32,
- Sequential_delivery = 33,
- Maximum_transmission_size = 34,
- Retry_count = 35,
- Retry_fast_interval_in_s. = 36,
- Retry_slow_interval_in_s. = 37,
- MCA_transaction_ID = 38,
- Target_system_identifier = 39,
- CICS_profile_name = 40,
- CICS_region = 41,
- Batch_interval_in_ms. = 42,
- Heartbeat_interval_in_s. = 43,
- Message_retry_exit_user_data = 44,
- Message_retry_exit_name = 45,
- Message_retry_count = 46,
- Message_retry_interval_in_ms. = 47,
- Non-persistent_message_speed = 48,

- Cluster_name = 49,
- Cluster_namelist = 50,
- Network_connection_priority = 51,
- Cluster_queue_manager = 52,
- Cluster_queue_manager_type = 53,
- Suspend_indicator = 54,
- Cluster_channel_definition_type = 55,
- Internal_queue_manager_name = 56,
- Batch_heartbeat = 57,
- Local_address = 58,
- Keep_alive_interval = 59,
- SSL_client_authentication = 60,
- SSL_cipher_specification = 61,
- SSL_peer_name = 62,
- Header_compression_techniques = 63,
- Message_compression_techniques = 64,
- Monitoring_channel_level = 65,
- Statistics_channel_level = 66,
- Cluster_workload_priority = 67,
- Cluster_workloadrank = 68,
- Cluster_workload_weight = 69

Parameter Name The name of the parameter. The valid format is a one or 2-digit integer. Valid values are as follows:

- CHANNEL = 1,
- CHLTYPE = 2,
- CONNAME = 3,
- TRPTYPE = 4,
- DESCR = 5,
- BATCHSZ = 6,
- MAXMSGL = 7,
- XMITQ = 8,
- CONVERT = 9,
- DISCINT = 10,
- LONGRTY = 11,
- LONGTMR = 12,
- MCANAME = 13,
- MCATYPE = 14,
- MCAUSER = 15,
- MODENAME = 16,
- MSGDATA = 17,
- MSGEXIT = 18,
- PASSWORD = 19,
- PUTAUT = 20,
- RCVDATA = 21,

- RCVEXIT = 22,
- SCYDATA = 23,
- SCYEXIT = 24,
- SENDDATA = 25,
- SENDEXIT = 26,
- SEQWRAP = 27,
- SHORTRTY = 28,
- SHORTTMR = 29,
- TPNAME = 30,
- USERID = 31,
- QMNAME = 32,
- DELIVER = 33,
- MAXXMIT = 34,
- RETRY = 35,
- FASTTMR = 36,
- SLOWTMR = 37,
- TRANSID = 38,
- TARGET = 39,
- PROFILE = 40,
- APPLID = 41,
- BATCHINT = 42,
- HBINT = 43,
- MRDATA = 44,
- MREXIT = 45,
- MRRTY = 46,
- MRTMR = 47,
- NPMSPEED = 48,
- CLUSTER = 49,
- CLUSNL = 50,
- NETPRTY = 51,
- CLUSQMGR = 52,
- QMTYPE = 53,
- SUSPEND = 54,
- DEFTYPE = 55,
- QMID = 56,
- BATCHHB = 57,
- LOCLADDR = 58,
- KAINTE = 59 (z/OS systems only),
- SSLCAUTH = 60,
- SSLCIPH = 61,
- SSLPEER = 62,
- COMPHDR = 63,
- COMPMSG = 64,
- MONCHL = 65,
- STATCHL = 66,

- CLWLPRTY = 67,
- CLWLRANK = 68,
- CLWLWGHT = 69

Parameter Type The type of the parameter. The valid format is an alphanumeric string of up to 22 characters.

Parameter Value (Deprecated) The value of the parameter. The valid format is an alphanumeric string of up to 264 characters.

Parameter Value The value of the parameter. The valid format is an alphanumeric string of up to 264 characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Channel Definitions attributes

Use the Channel Definitions attributes to create situations that query definition parameters of a channel. This attribute group provides definition parameters for the channels that belong to a queue manager. For example, you can create a situation that queries the channel type. Channel Definitions is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Alter Date & Time The date and time that the channel definition is last altered. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

Batch Size The maximum number of messages that this channel processes before a checkpoint is taken; that is, the size of the logical unit of work (LUW) of the channel. The valid format is an integer, in the range 0 - 9999.

Channel Description (Deprecated) The description of this channel. This attribute is not available for CICS channels. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

Channel Description The description of this channel. This attribute is not available for CICS channels. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Type The type that is assigned to the channel when it is created. Valid values are as follows:

- n/a = 0
- SDR = 1 (for sender)
- SVR = 2 (for server)
- RCVR = 3 (for receiver)
- RQSTR = 4 (for requester)
- CLNTCONN = 6 (for client connection)
- SVRCONN = 7 (for server connection)
- CLUSRCVR = 8 (for cluster receiver)
- CLUSSDR = 9 (for cluster sender)
- ClusQmgr = 254 (for cluster queue manager)

Cluster The name of the cluster to which the channel belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster Channel Definition Type Indicates how this channel is defined. The valid format is an integer. Valid values are as follows:

- Explicit_Cluster-Sender = 1
- Automatic_Cluster-Sender = 2
- Explicit_Cluster-Receiver = 3
- Explicit/Auto_Cluster-Sender = 4
- n/a = 255

Cluster Date & Time The date and time that this cluster channel definition is made available. Standard 16-character date/time format (CCYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Cluster Namelist The name of the namelist that specifies a list of clusters to which the channel belongs. Valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster QMgr The name of the cluster queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster Qmgr Suspend Indicates whether the cluster queue manager is suspended. Valid values are No = 0, Yes = 1, and n/a = 255.

Cluster QMgr Type The function of the associated queue manager in the cluster. The valid format is an integer. Valid values are Normal = 0, Repository = 1, and n/a = 255.

Connection Name The name of the physical or logical connection that this channel uses to transmit or receive data. This name is formed from the connection type (IP for TCP/IP, LU for LU6.2, or NETBIOS) and the connection address. The valid format is an alphanumeric string of up to 264 case-sensitive characters. If multiple connections are configured for the channel, this attribute is displayed as a comma separated list of names of systems for the stated Transport Type attribute.

Cur Defn Indicates whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Maximum Msg Len The longest message that this channel can accommodate; must be less than or equal to 4194304. Zero indicates that the channel uses the same maximum message length as the queue manager it belongs to. Valid format is an integer, in the range 0 - 4194304.

MCA Job Name (non z/OS systems only) The MCA job name string associated with a channel that uniquely identifies that channel. This name is provided to differentiate (along with Connection Name) between multiple active channel connections that can be defined to the same queue manager. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (QSG environment on z/OS systems only) Disposition in the queue sharing group. Valid values are Qmgr = 0, Copy = 1, Group = 3, and Unknown = 255.

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Transport Type The transmission type (LU62, TCP for TCP/IP, NETBIOS, or CICS). Valid values are LOCAL = 0, LU62 = 1, TCP = 2, NETBIOS = 3, SPX = 4, DECNET = 5, UDP = 6, and CICS = 100.

Channel Initiator Detail attributes (z/OS systems only)

The Channel Initiator Detail attributes are available on z/OS systems only.

Use the Channel Initiator Detail attributes to create situations for detecting channel connection states. This attribute group provides you with the status of the channel initiator, TCP/IP listener, TCP/IP group listener, LU 6.2 listener, and LU 6.2 group listener. It also provides you with elements that are necessary to determine the success of adapter subtask and dispatcher activity. Channel Initiator Detail is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

TCPIP Group Listeners The number of TCP/IP group listeners. The valid format is an integer.

TCPIP Group Retrying The number of TCP/IP group listeners that are attempting to become active after an error. The valid format is an integer.

TCPIP QMgr Listeners The number of TCP/IP queue manager listeners. The valid format is an integer.

TCPIP QMgr Retrying The number of TCP/IP queue manager listeners that are attempting to become active after an error. The valid format is an integer.

Adapters Requested The number of adapter subtasks that are requested in the channel initiator parameters. If the number of adapter subtasks that are currently active differs from the number of adapter subtasks that are requested, some adapter subtasks fail and are not restarted, which can reduce processing capacity. The valid format is an integer (up to 2 digits).

Adapters Started The number of adapter subtasks that are currently active. If the number of adapter subtasks that are currently active differs from the number of adapter subtasks that are requested, some adapter subtasks fail and are not restarted, which can reduce processing capacity. The valid format is an integer (up to 2 digits).

Chan Conn Active The number of active channel connections (message channel agents) that are current. The valid format is an integer (up to 2 digits).

Chan Conn Current The number of channel connections (message channel agents) that are current. The valid format is an integer (up to 2 digits).

Chan Conn Maximum The maximum number of channel connections (message channel agents). Valid format is an integer (up to 2 digits).

Chan Conn Retrying The number of channel connections (message channel agents) that attempt to reconnect after a temporary error. The valid format is an integer (up to 2 digits).

Chan Conn Starting The number of channel connections (message channel agents) that are waiting to become active, because the limit for active channels was reached. The valid format is an integer (up to 2 digits).

Chan Conn Stopping The number of channel connections (message channel agents) that are stopped and require manual intervention. The valid format is an integer (up to 2 digits).

Chan Init Active The status of the channel initiator. Valid values are No = 0 and Yes = 1.

Dispatchers Requested The number of dispatchers that are requested in the channel initiator parameters. If the number of dispatchers that are requested differs from the number of dispatchers that are currently active, some dispatchers failed and are not restarted. The number of current TCP/IP and LU 6.2 channels allowed are reduced proportionately, and other processing capacity might be reduced. The valid format is an integer (up to 2 digits).

Dispatchers Started The number of dispatchers that are currently active. If the number of dispatchers that are requested differs from the number of dispatchers that are currently active, some dispatchers failed and are not restarted. The number of current TCP/IP and LU 6.2 channels allowed are reduced proportionately, and other processing capacity might be reduced. The valid format is an integer (up to 2 digits).

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

LU62 Group Listener Active Indicates whether the status of the LU62 group listener is active. Valid values are No = 0, Yes = 1, and Retry = 2.

LU62 Group LU Name The LU Name for the LU62 group listener. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

LU62 Listener Active Indicates whether the status of the LU62 listener is active. Valid values are No = 0, Yes = 1, and Retry = 2.

LU62 LU Name The LU 62 LU Name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

Port Number The port number on which the TCP/IP listener is active. On z/OS systems, the TCP IP listener can be started many times with different combinations of port number and address. If this occurs, this attribute is set to the last set of TCP IP listener information that is provided by WebSphere MQ. The valid format is an integer (up to 4 digits).

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

SSL Server Subtasks Requested The number of Secure Socket Layer (SSL) subtasks that are requested. The valid format is an integer (up to 4 digits).

SSL Server Subtasks Started The number of Secure Socket Layer (SSL) subtasks that are started. The valid format is an integer (up to 4 digits).

TCP AS Name The TCP IP address space name. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

TCP IP Group Listener Active Indicates whether the status of the TCP/IP group listener is active. Valid values are No = 0, Yes = 1, and Retry = 2.

TCP IP Group Port The port number for the TCP/IP group listener. The valid format is an integer (up to 4 digits).

TCP IP Listener Active Indicates whether the status of the TCP/IP listener is active. Valid values are No = 0, Yes = 1, and Retry = 2. On z/OS systems, the TCP IP listener can be started many times with different combinations of port number and address. If this occurs, this attribute is set to the last set of TCP IP listener information that is provided by WebSphere MQ. The valid format is an integer (up to 2 digits).

Channel Long-Term History attributes

Use the Channel Long-Term History attributes to detect channel performance problems. This attribute group provides channel performance information for each monitored channel within a queue manager. These attributes are informational only; they cannot be used to create situations.

Batches Complete The number of logical units of work (LUWs) that this channel has processed after it is initialized. This attribute is not available for CICS channels. The valid format is an integer.

Buffers Received The total number of buffers that are received during the current interval or aggregation period. The valid format is an integer.

Buffers Sent The total number of buffers that are sent during the current interval or aggregation period. The valid format is an integer.

Bytes Received The total number of bytes that are received during the current interval or aggregation period. The valid format is an integer.

Bytes Sent The total number of bytes that are sent during the current interval or aggregation period. The valid format is an integer.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Status The current operational status of the channel. "n/a" means the channel is not currently active (thus no short-term history data is available) but was active in the recent past (thus long-term history data is available).

For CICS channels, status is either In-Doubt or the CICS status (Conn_Not_Def, Out_Service, Going_Out, Released, Obtaining, Acquired, Freeing, or Available).

Valid values are as follows:

- n/a = 0,
- Binding = 1,
- Starting = 2,
- Running = 3,
- Stopping = 4,
- Retrying = 5,
- Stopped = 6,

- Requesting = 7,
- Paused = 8,
- Initializing = 13,
- Inactive = 101,
- Conn_Not_Def = 200,
- Out_Service = 201,
- Going_Out = 202,
- Released = 203,
- Obtaining = 204,
- Acquired = 205,
- Freeing = 206,
- Available = 207,
- Unknown = 255.

Channel Type The type that is assigned to the channel (SDR for sender, SVR for server, RCVR for receiver, RQSTR for requester, CLNTCONN for client connection, SVRCONN for server connection, CLUSRCVR for cluster receiver, or CLUSSDR for cluster sender) when it is created. Valid values are as follows:

- n/a = 0,
- SDR = 1,
- SVR = 2,
- RCVR = 3,
- RQSTR = 4,
- CLNTCONN = 6,
- SVRCONN = 7,
- CLUSRCVR = 8,
- CLUSSDR = 9.

Connection Name The name of the physical or logical connection that this channel uses to transmit or receive data. This name is formed from the connection type (IP for TCP/IP, LU for LU6.2, or NETBIOS) and the connection address. The valid format is an alphanumeric string of up to 264 case-sensitive characters. If multiple connections are configured for the channel, this attribute is displayed as a comma separated list of system names.

CurBatch LUW ID The identifier that is assigned to the current logical unit of work (LUW). If a sender channel is in doubt, this is the problem batch. This attribute is not available for CICS channels. The valid format is an alphanumeric string of up to 16 case-sensitive characters.

CurBatch Messages The number of messages that are processed for the current logical unit of work (LUW). If a sender channel is in doubt, this is the number of messages that are currently in doubt. This attribute is not available for CICS channels. The valid format is an integer.

CurMsg SeqNo The number of the last message that is sent for the logical unit of work (LUW) that the in-doubt channel is currently processing. This attribute is not available for CICS channels. The valid format is an integer.

Cur Defn Indicates whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Current Action State The current action that is being performed by the channel. Valid values are as follows:

- n/a = -1,
- Other = 0,
- End_Of_Batch = 100,
- Sending = 200,
- Receiving = 300,
- Serializing = 400,
- Resynching = 500,
- Heartbeating = 600,
- Security_exit = 700,
- Receive_exit = 800,
- Sending_exit = 900,
- Message_exit = 1000,
- Retry_exit = 1100,
- Channel_definition_exit = 1200,
- Net_connection = 1250,
- SSL_hand_shaking = 1300,
- Name_server = 1400,
- MQPut = 1500,
- MQGet = 1600,
- MQI_Call = 1700,
- Compressing = 1800.

Default Header Compression The default techniques for header data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Default Message Compression The default techniques for message data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

In-Doubt Status Indicates whether this channel is in doubt. Valid values are No = 0, Yes = 1, and n/a = 255. A channel is considered in doubt when a logical unit of work (LUW) has been sent and the channel is waiting for an acknowledgment that the LUW has been successfully received.

Interval Length The interval time over which statistics were taken. The valid format is a character string in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters that are set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Last Header Compression The last techniques for header data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Last Message Compression The last techniques for message data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Last Send Date & Time The date and time that the last message is sent to the current channel/connection name combination. This attribute is not available for CICS channels. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Local Address The local communications address for the channel. The value returned depends on the TRPRYPE value of the channel (currently only TCP/IP is supported). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Long Term Batch Size The long-term number of messages in a batch. The valid format is an integer.

Long Term Compression Rate Long-term compression rate that is achieved to the nearest percentage. The valid format is a floating point number with a range from -1 - 100.

Long Term Compression Time Long-term amount of time per message, in microseconds, spent during compression or decompression. The valid format is an integer.

Long Term Exit Time Long term of the time that is taken executing user exits per message. The valid format is an integer.

Long Term Net Time Long term time of a network operation. The amount of time, in microseconds, to send a request to the remote end of the channel and receive a response. Valid format is an integer.

Long Term XmitQ Time The long-term transmission queue time. The time, in microseconds, that messages remain on the transmission queue before being retrieved. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel and, therefore, includes any interval that is caused by a delay in the putting applications. The valid format is an integer.

LUW Last Committed The identifier of the last-committed logical unit of work (LUW). The valid format is an alphanumeric string of up to 16 case-sensitive characters.

MCA Job Name (non z/OS systems only) The MCA job name string that is associated with a channel that uniquely identifies that channel. This name is provided to differentiate (along with Connection Name) between multiple active channel connections that can be defined to the same queue manager. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

MCA Status The status of the message channel agent. Valid values are Stopped = 0 and Running = 3.

Message Count The number of messages that are sent or received on this channel during the current interval or aggregation period. For the Interval Summary row in the Recent Channel report, this count is the sum of all the message counts in the subsequent rows. This attribute is not available for CICS channels. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Remote Partner Application Name The name of the client application at the remote end of the channel. This parameter applies only to server-connection channels. The valid format is an alphanumeric string of up to 48 characters.

Remote Qmgr Name The name that is assigned to the queue manager or queue sharing group of the remote system. This parameter does not apply to server-connection channels, where no values are returned. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

SeqNo Last Committed The number of the last-committed message within the last-committed logical unit of work (LUW). The valid format is an integer.

Short Retries The number of short retry intervals that are completed after the channel goes into retry state because of a connection failure. The maximum number of short retries is defined during channel definition using the SHORTRTY keyword. The time interval in seconds for short retries is defined during channel definition using the SHORTTMR keyword.

If the channel continually fails to connect after reaching the maximum number of short retry attempts, the WebSphere MQ Monitoring agent attempts long retries using the longer interval defined. If this value is non-zero while the channel is not currently retrying, it gives the most recent retry information that is being returned as the current channel status by WebSphere MQ.

This value is not available for CICS channels. The valid format is an integer.

Short Term Batch Size The short-term number of messages in a batch. The valid format is an integer.

Short Term Compression Rate Short-term compression rate that is achieved to the nearest percentage. The valid format is a floating point number with a range from -1 - 100.

Short Term Compression Time Short-term amount of time per message, in microseconds, spent during compression or decompression. The valid format is an integer.

Short Term Exit Time Short-term of the time that is taken executing user exits per message. The valid format is an integer.

Short Term Net Time Short-term time of a network operation. The amount of time (in microseconds) to send a request to the remote end of the channel and receive a response. The valid format is an integer.

Short Term XmitQ Time Short-term transmission queue time. The time, in microseconds, that messages remain on the transmission queue before being retrieved. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel and, therefore, includes any interval that is caused by a delay in the putting applications. The valid format is an integer.

SSL Key Count The number of successful SSL secret key resets that occurred for this channel instance since the channel starts. The valid format is an integer.

SSL Key Date & Time The date and time of the previous successful SSL secret key reset. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Start Date & Time The start date and time of the sample. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Transmit KB/Sec The transmission rate (in kilobytes per second) over the latest interval. This attribute is not available for CICS channels. The valid format is a decimal (formatted to 2 decimal places).

User Stop Request Indicates whether user stop request is outstanding. Valid values are as follows:

- n/a = -1,
- Stop_Not_Requested = 0,
- Stop_Requested = 1.

XmitQ Depth The number of messages on the transmission queue that are associated with this channel. Valid format is an integer.

XmitQ Messages Available The number of messages that are available. The valid format is an integer.

Channel Short-Term History attributes

Use the Channel Short-Term History attributes to detect channel performance problems. This attribute group provides channel performance information for each monitored channel within a queue manager. These attributes are informational only; they cannot be used to create situations.

Batches Complete The number of logical units of work (LUWs) this channel has processed since it is initialized. This attribute is not available for CICS channels. The valid format is an integer.

Buffers Received The total number of buffers received during the current interval or aggregation period. The valid format is an integer.

Buffers Sent The total number of buffers sent during the current interval or aggregation period. The valid format is an integer.

Bytes Received The total number of bytes received during the current interval or aggregation period. The valid format is an integer.

Bytes Sent The total number of bytes sent during the current interval or aggregation period. The valid format is an integer.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Status The current operational status of the channel (Starting, Binding, Running, Retrying, Requesting, Paused, Initializing, In-Doubt, Inactive, Stopping, Stopped, or Unknown). "n/a" means the channel is not currently active (thus no short-term history data is available) but has been active in the recent past (thus long-term history data is available).

For CICS channels, status is either In-Doubt or the CICS status (Conn_Not_Def, Out_Service, Going_Out, Released, Obtaining, Acquired, Freeing, or Available).

Valid values are as follows:

- n/a = 0,
- Binding = 1,
- Starting = 2,
- Running = 3,
- Stopping = 4,
- Retrying = 5,

- Stopped = 6,
- Requesting = 7,
- Paused = 8,
- Initializing = 13,
- Inactive = 101,
- Conn_Not_Def = 200,
- Out_Service = 201,
- Going_Out = 202,
- Released = 203,
- Obtaining = 204,
- Acquired = 205,
- Freeing = 206,
- Available = 207,
- Unknown = 255.

Channel Type The type assigned to the channel (SDR for sender, SVR for server, RCVR for receiver, RQSTR for requester, CLNTCONN for client connection, SVRCONN for server connection, CLUSRCVR for cluster receiver, or CLUSSDR for cluster sender) when it was created. Valid values are as follows:

- n/a = 0,
- SDR = 1,
- SVR = 2,
- RCVR = 3,
- RQSTR = 4,
- CLNTCONN = 6,
- SVRCONN = 7,
- CLUSRCVR = 8,
- CLUSSDR = 9.

Connection Name The name of the physical or logical connection that this channel uses to transmit or receive data. This name is formed from the connection type (IP for TCP/IP, LU for LU6.2, or NETBIOS) and the connection address. The valid format is an alphanumeric string of up to 264 case-sensitive characters. If multiple connections are configured for the channel, this attribute is displayed as a comma separated list of system names.

CurBatch LUW ID The identifier assigned to the current logical unit of work (LUW). If a sender channel is in doubt, this is the problem batch. This attribute is not available for CICS channels. The valid format is an alphanumeric string of up to 16 case-sensitive characters.

CurBatch Messages The number of messages processed so far for the current logical unit of work (LUW). If a sender channel is in doubt, this is the number of messages currently in doubt. This attribute is not available for CICS channels. The valid format is an integer.

CurMsg SeqNo The number of the last message sent for the logical unit of work (LUW) that the in-doubt channel is currently processing. This attribute is not available for CICS channels. The valid format is an integer.

Cur Defn Whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Current Action State The current action being performed by the channel. Valid values are as follows:

- n/a = -1,
- Other = 0,
- End_Of_Batch = 100,
- Sending = 200,
- Receiving = 300,
- Serializing = 400,
- Resynching = 500,
- Heartbeating = 600,
- Security_exit = 700,
- Receive_exit = 800,
- Sending_exit = 900,
- Message_exit = 1000,
- Retry_exit = 1100,
- Channel_definition_exit = 1200,
- Net_connection = 1250,
- SSL_hand_shaking = 1300,
- Name_server = 1400,
- MQPut = 1500,
- MQGet = 1600,
- MQI_Call = 1700,
- Compressing = 1800.

Default Header Compression The header data compression default techniques supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Default Message Compression The message data compression default techniques supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

In-Doubt Status Whether this channel is in doubt. Valid values are No = 0, Yes = 1, and n/a = 255. A channel is considered in doubt when a logical unit of work (LUW) has been sent and the channel is waiting for an acknowledgment that the LUW has been successfully received (in other words, when a syncpoint has been requested but not yet performed).

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Last Header Compression The header data compression last techniques supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Last Message Compression The message data compression last techniques supported by the channel. Valid values are as follows:

- n/a = -1,
- NONE = 0,
- Run_Length_Encoding_Compression = 1,
- ZLIB_Encoding_Speed_Compression = 2,
- ZLIB_Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455.

Last Send Date & Time The date and time the last message was sent to the current channel/connection name combination. This attribute is not available for CICS channels. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Local Address The local communication address for the channel. The value returned depends on the TRPRYPE value of the channel (currently only TCP/IP is supported). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Long Term Batch Size Indicates the long term number of messages in a batch. The valid format is an integer.

Long Term Compression Rate Long-term compression rate achieved to the nearest percentage. The valid format is a floating point number with a range from -1 - 100.

Long Term Compression Time Long-term amount of time per message, displayed in microseconds, spent during compression or decompression. The valid format is an integer.

Long Term Exit Time Long-term time taken executing user exits per message. The valid format is an integer.

Long Term Net Time Long-term time of a network operation. The amount of time, in microseconds, to send a request to the remote end of the channel and receive a response. The valid format is an integer.

Long Term XmitQ Time Indicates the long-term transmission queue time. The time, in microseconds, that messages remained on the transmission queue before being retrieved. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel and, therefore, includes any interval caused by a delay in the putting applications. Valid format is an integer.

LUW Last Committed The identifier of the last-committed logical unit of work (LUW). Valid format is an alphanumeric string of up to 16 case-sensitive characters.

MCA Job Name (non z/OS systems only) Specifies the MCA job name string that is associated with a channel that uniquely identifies that channel. This name is provided to differentiate (along with Connection Name) between multiple active channel connections that can be defined to the same queue manager. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

MCA Status The status of the message channel agent. Valid values are Stopped = 0 and Running = 3.

Message Count The number of messages sent or received on this channel during the current interval or aggregation period. For the Interval Summary row in the Recent Channel report, this count is the sum of all the message counts in the subsequent rows. This attribute is not available for CICS channels. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Remote Partner Application Name The name of the client application at the remote end of the channel. This attribute applies only to server-connection channels. The valid format is an alphanumeric string of up to 48 characters.

Remote Qmgr Name The name assigned to the queue manager or queue sharing group of the remote system. This parameter does not apply to server-connection channels, where no values are returned. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

SeqNo Last Committed The number of the last-committed message within the last-committed logical unit of work (LUW). The valid format is an integer.

Short Retries The number of short retry intervals that are completed since the channel went into retry state due to a connection failure. The maximum number of short retries is defined during channel definition using the SHORTRTY keyword. The time interval in seconds for short retries is defined during channel definition using the SHORTTMR keyword.

If the channel continually fails to connect after reaching the maximum number of short retry attempts, the WebSphere MQ Monitoring agent attempts long retries using the longer interval defined. If this value is non-zero while the channel is not currently retrying, it gives the most recent retry information still being returned as current channel status by WebSphere MQ.

This value is not available (0) for CICS channels. The valid format is an integer.

Short Term Batch Size Indicates the short-term number of messages in a batch. The valid format is an integer.

Short Term Compression Rate Short-term compression rate achieved to the nearest percentage. The valid format is a floating point number with a range from -1 - 100.

Short Term Compression Time Short-term amount of time per message, displayed in microseconds, spent during compression or decompression. Valid format is an integer.

Short Term Exit Time Short-term time taken executing user exits per message. The valid format is an integer.

Short Term Net Time Short-term time of a network operation. The amount of time (in microseconds) to send a request to the remote end of the channel and receive a response. The valid format is an integer.

Short Term XmitQ Time Short-term transmission queue time. The time, in microseconds, that messages remained on the transmission queue before being retrieved. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel and, therefore, includes any interval caused by a delay in the putting application. Valid format is an integer.

SSL Key Count The number of successful SSL secret key resets that occurred for this channel instance since the channel started. The valid format is an integer.

SSL Key Date & Time The date and time of the previous successful SSL secret key reset. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Start Date & Time Start date and time of the sample. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Transmit KB/Sec The transmission rate (in kilobytes per second) over the latest interval. This attribute is not available for CICS channels. The valid format is a decimal (formatted to 2 decimal places).

User Stop Request Indicates whether user stop request is outstanding. Valid values are n/a = -1, Stop_Not_Requested = 0, and Stop_Requested = 1.

XmitQ Depth The number (that is, depth) of messages on the transmission queue associated with this channel. The valid format is an integer.

XmitQ Messages Available The number of messages available. The valid format is an integer.

Channel Status attributes

Use the Channel Status attributes to create situations for detecting channel status problems. This attribute group provides channel status information for each monitored channel within a queue manager.

Batches Complete Number of complete batches. The valid format is an integer.

Batch Size Negotiated batch size. The valid format is an integer.

Buffers Received Number of buffers that are received. The valid format is an integer.

Buffers Sent Number of buffers that are sent. The valid format is an integer.

Bytes Received Number of bytes that are received. The valid format is an integer.

Bytes Sent Number of bytes that are sent. The valid format is an integer.

Channel Disp Disposition of channel on a z/OS system. Valid values are as follows:

- n/a = -2
- All = -1
- Shared = 2
- Private = 4
- Fixshared = 5

Channel Inst Type Type of channel instance. Valid values are as follows:

- Current = 1011
- Saved = 1012
- Short = 1015

Channel Name Name of the channel. Valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Status Status of the channel. The valid format is an integer. Valid values are as follows:

- n/a = 0
- Binding = 1
- Starting = 2
- Running = 3
- Stopping = 4
- Retrying = 5
- Stopped = 6

- Requesting = 7
- Paused = 8
- Initializing = 13
- Inactive=101
- Conn_Not_Def=200
- Out_Service=201
- Going_Out=202
- Released=203
- Obtaining=204
- Acquired=205
- Freeing=206
- Available=207
- Unknown=255

Channel Type Type of the channel. Valid format is an integer. Valid values are as follows:

- n/a = 0
- Sender = 1
- Server = 2
- Receiver = 3
- Requester = 4
- Client-connection = 6
- Server-connection = 7
- Cluster-receiver = 8
- Cluster-sender = 9

Connection Name Name of the connection. This is the connection name that is obtained using the MQSC DIS CHS command (see WebSphere MQ documentation for further information about this command). The valid format is an alphanumeric string of up to 264 case-sensitive characters.

CurBatch LUW ID Logical unit of work identifier for in doubt batch. The logical unit of work identifier is associated with the current batch for a sending or receiving channel. For an in-doubt sending channel, it is the LUW ID of the in doubt batch. It is updated with the LUW ID of the next batch when it is known. The valid format is an integer.

CurBatch Messages Number of messages that are in doubt. For a sending channel, this is the number of messages that are sent in the current batch. It is incremented as each message is sent, and when the channel becomes in doubt, it is the number of messages that are in doubt. For a receiving channel, it is the number of messages that are received in the current batch. It is incremented as each message is received. The valid format is an integer.

CurMsg SeqNo Sequence number of the last message in the in-doubt batch. For a sending channel, this is the message sequence number of the last sent message. It is updated as each message is sent, and when the channel becomes in-doubt, it is the message sequence number of the last message in the in-doubt batch. For a receiving channel, it is the message sequence number of the last message that is received. It is updated as each message is received.

Current Action State Current action that is being performed by the channel. Valid values are as follows:

- n/a = -1
- Other = 0
- End_Of_Batch = 100
- Sending = 200
- Receiving = 300
- Serializing = 400
- Resynching = 500
- Heartbeating = 600
- Security_exit = 700
- Receive_exit = 800
- Sending_exit = 900
- Message_exit = 1000
- Retry_exit = 1100
- Channel_definition_exit = 1200
- Net_connection = 1250
- SSL_hand_shaking = 1300
- Name_server = 1400
- MQPut = 1500
- MQGet = 1600
- MQI_Call = 1700
- Compressing = 1800

Current Sharing Conversations It is blank for all channel types other than server-connection channels. For each instance of a server-connection channel, it gives the number of conversations that are currently running over that channel instance.

Default Header Compression Indicates whether header data that is sent by the channel is compressed. Valid values are as follows:

- n/a = -1
- None = 0
- Run_Length_Encoding_Compression = 1
- ZLIB_Encoding_Speed_Compression = 2
- ZLIB_Encoding_High_Compression = 4
- System = 8
- Any = 268435455

Default Message Compression Whether message data that is sent by the channel is compressed. This is the default value assigned when the channel is created if no other value is assigned by the user. Valid values are as follows:

- n/a = -1
- None = 0
- Run_Length_Encoding_Compression = 1
- ZLIB_Encoding_Speed_Compression = 2
- ZLIB_Encoding_High_Compression = 4

- System = 8
- Any = 268435455

Heartbeat Interval Interval of heartbeat. The valid format is an integer.

Host Name Name of the host on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

In-Doubt Status Whether the channel is currently in doubt. A sending channel is in doubt only when the sending MCA is waiting for an acknowledgment that a batch of messages, which it sent, was successfully received. It is not in doubt at all other times, including the period during which messages are being sent, but before an acknowledgment is requested. The valid format is an alphanumeric string of up to 48 case-sensitive characters. Valid values are as follows:

- No = 0
- Yes = 1
- n/a = 255

Keep Alive Interval Keep alive interval. If the channel is idle for the length of time that is specified by this attribute (in seconds), the queue polls the other queue that is connected to the channel to ensure that the connection is still functioning. Valid values are as follows:

- Auto = -1
- n/a = -2

Last Header Compression Indicates whether header data that is sent by the channel is compressed. Valid values are as follows:

- n/a = -1
- None = 0
- Run_Length_Encoding_Compression = 1
- ZLIB_Encoding_Speed_Compression = 2
- ZLIB_Encoding_High_Compression = 4
- System = 8
- Any = 268435455

Last Message Compression This value determines whether message data sent by the channel is compressed. Valid values are as follows:

- n/a = -1
- None = 0
- Run_Length_Encoding_Compression = 1
- ZLIB_Encoding_Speed_Compression = 2
- ZLIB_Encoding_High_Compression = 4
- System = 8
- Any = 268435455

Last Message Date & Time Date and time at which the last message is sent or MQI call is handled. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year

MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Local Address The local communications address for the channel. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Long Retries Left Number of long retry attempts that remain. The valid format is an integer.

Long Term Batch Size Indicator of the number of messages in a batch based on activity over a long period of time. The valid format is an integer.

Long Term Compression Rate Compression rate to the nearest percentage point based on activity over a long period of time. The valid format is a floating point number.

Long Term Compression Time The amount of time per message, in microseconds, spent on compression or decompression based on activity over a long period of time. The valid format is an integer.

Long Term Exit Time The amount of time per message, in microseconds, spent processing user exits based on activity over a long period of time. If more than one exit is processed per message, the value is the sum of all the user exit times. The valid format is an integer.

Long Term Net Time The amount of time, in microseconds, from when a request is sent to the remote end of the channel until a response is received, based on activity over a long period of time. The valid format is an integer.

Long Term XmitQ Time The amount of time in microseconds that messages remain on the transmission queue before being retrieved, based on activity over a long period of time. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel, therefore, the value includes any interval caused by a delay in the putting application.

LUW Last Committed Logical unit of work identifier for last committed batch. The valid format is an integer.

Max Sharing Conversations It is blank for all channel types other than server-connection channels. For each instance of a server-connection channel, it gives the negotiated maximum of the number of conversations that can run over that channel instance. The valid format is an integer.

Maximum Msg Len Length of the maximum message. The valid format is an integer.

MCA Job Name Name of MCA job. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

MCA Status Status of the MCA. Valid values are as follows:

- n/a = -1
- Stopped = 0
- Running = 3

MCA User ID User identifier used by the MCA. It applies to server-connection, receiver, requester, and cluster-receiver connections. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Message Count Number of messages that are sent or received, or number of MQI calls that are handled. The valid format is an integer.

Monitoring Level Current amount of monitoring data that is collected for the channel. Valid values are as follows:

- Queue_Manager = -3
- n/a = -1
- Off = 0
- Low = 17
- Medium = 33
- High = 65

QMgr Name Name of the queue manager. Valid format is an alphanumeric string of up to 48 case-sensitive characters.

Non-Persist Msg Speed Speed at which nonpersistent messages are sent. Valid values are as follows:

- n/a = -1
- Normal = 1
- Fast = 2

Origin Node Node name of the managed system. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Remote Partner Application Name Name of the client application at the remote end of the channel for server-connection channels. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Remote Qmgr Name Name of the remote queue manager, or queue sharing group. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

SeqNo Last Committed Sequence number of the last message in the last committed batch. The valid format is an integer.

Short Retries Left Number of short retry attempts remaining. The valid format is an integer.

Short Term Batch Size Indicator of the number of messages in a batch based on recent activity over a short period of time. The valid format is an integer.

Short Term Compression Rate Compression rate to nearest percentage point based on recent activity over a short period of time. The valid format is a floating point number.

Short Term Compression Time The amount of time per message, in microseconds, spent on compression or decompression based on recent activity over a short period of time. The valid format is an integer.

Short Term Exit Time The amount of time per message, in microseconds, spent processing user exits based on recent activity over a short period of time. If more than one exit is processed per message, the value is the sum of all the user exit times. The valid format is an integer.

Short Term Net Time The amount of time, in microseconds, from when a request is sent to the remote end of the channel until a response is received, based on recent activity over a short period of time. The valid format is an integer.

Short Term XmitQ Time The amount of time in microseconds that messages remained on the transmission queue before being retrieved, based on recent activity over a short period of time. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel, therefore, the value includes any interval caused by a delay in the putting application.

SSL Cert Issuer Name The full Distinguished Name of the Certificate Authority that issues the remote certificate. Valid format is an alphanumeric string of up to 256 case-sensitive characters.

SSL Cert User ID The local user ID that is associated with the remote certificate (z/OS systems only). The valid format is an alphanumeric string of up to 12 case-sensitive characters.

SSL Key Count The number of SSL secret key resets that occurred for this channel instance since the channel was started. If the SSL secret key negotiation is enabled, the count is incremented whenever a secret key reset is performed. The valid format is an integer.

SSL Key Date & Time Date and time of the previous SSL secret key reset. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

SSL Short Peer Name Distinguished name of the peer queue manager or client at the other end of the channel. The valid format is an alphanumeric string of up to 256 case-sensitive characters. Exceptionally long distinguished names are truncated.

Start Date & Time The date and time at which the channel is started. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Transmit KB/Sec Channel transmission rate in kilobytes per second. The valid format is an integer.

User Stop Request Indicates whether user stop request is outstanding. Valid values are as follows:

- n/a = -1
- Stop_Not_Requested = 0
- Stop_Requested = 1

XmitQ Messages Available Number of messages on the transmission queue that are available to the channel for the MQGET call. The valid format is an integer.

XmitQ Name Name of the transmission queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Channel Statistics attributes

Use the Channel Statistics attributes to create situations for detecting channel performance problems. This attribute group provides channel performance information for each monitored channel within a queue manager. For example, you can create a situation to detect in-doubt channels or problems with channel status. Channel Statistics is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Batches Complete The number of logical units of work (LUWs) that this channel processed since it was initialized. This attribute is not available for CICS channels. The valid format is an integer.

Buffers Received The total number of buffers that are received during the current interval or aggregation period. The valid format is an integer.

Buffers Sent The total number of buffers that are sent during the current interval or aggregation period. The valid format is an integer.

Bytes Received The total number of bytes that are received during the current interval or aggregation period. The valid format is an integer.

Bytes Sent The total number of bytes that are sent during the current interval or aggregation period. The valid format is an integer.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Status The current operational status of the channel. n/a means the channel is not currently active (thus no short-term history data is available) but was active in the recent past (thus long-term history data is available).

For CICS channels, status is either In-Doubt or the CICS status (Conn_Not_Def, Out_Service, Going_Out, Released, Obtaining, Acquired, Freeing, or Available).

Valid values are as follows:

- n/a = 0,
- Binding = 1,
- Starting = 2,
- Running = 3,
- Stopping = 4,
- Retrying = 5,
- Stopped = 6,
- Requesting = 7,
- Paused = 8,
- Initializing = 13,
- Inactive = 101,
- Conn_Not_Def = 200,
- Out_Service = 201,
- Going_Out = 202,
- Released = 203,
- Obtaining = 204,
- Acquired = 205,
- Freeing = 206,
- Available = 207,
- Unknown = 255

Channel Type The type that is assigned to the channel when it is created. Valid values are as follows:

- n/a = 0
- SDR = 1 (for sender)
- SVR = 2 (for server)
- RCVR = 3 (for receiver)
- RQSTR = 4 (for requester)
- CLNTCONN = 6 (for client connection)
- SVRCONN = 7 (for server connection)
- CLUSRCVR = 8 (for cluster receiver)
- CLUSSDR = 9 (for cluster sender)

Completed Retry Time The time in seconds for all completed retry intervals after the channel goes into a retry state. This does not indicate elapsed time because it only includes the interval time up to the last completed retry interval. This value includes both short and long retry intervals. The valid format is an integer.

Connection Name The name of the physical or logical connection that this channel uses to transmit or receive data. This name is formed from the connection type (IP for TCP/IP, LU for LU6.2, or NETBIOS) and the connection address. This is the

name of a currently active connection. One channel might have more than one active connection simultaneously. The valid format is an alphanumeric string of up to 264 case-sensitive characters. If multiple connections are configured for the channel, this attribute is displayed as a comma separated list of names of systems for the stated **Transport Type** attribute.

CurBatch LUW ID The identifier that is assigned to the current logical unit of work (LUW). If a sender channel is in doubt, this is the problem batch. This attribute is not available for CICS channels. The valid format is an alphanumeric string of up to 16 case-sensitive characters.

CurBatch Messages The number of messages that are processed for the current logical unit of work (LUW). If a sender channel is in doubt, this is the number of messages currently in doubt. This attribute is not available for CICS channels. The valid format is an integer.

CurMsg SeqNo The number of the last message that is sent for the logical unit of work (LUW) that the in-doubt channel is currently processing. This attribute is not available for CICS channels. The valid format is an integer.

Cur Defn Indicates whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Current Action State The current action that is being performed by the channel. Valid values are as follows:

- n/a = -1,
- Other = 0,
- End_Of_Batch = 100,
- Sending = 200,
- Receiving = 300,
- Serializing = 400,
- Resynching = 500,
- Heartbeating = 600,
- Security_exit = 700,
- Receive_exit = 800,
- Sending_exit = 900,
- Message_exit = 1000,
- Retry_exit = 1100,
- Channel_definition_exit = 1200,
- Net_connection = 1250,
- SSL_hand_shaking = 1300,
- Name_server = 1400,
- MQPut = 1500,
- MQGet = 1600,
- MQI_Call = 1700,
- Compressing = 1800

Default Header Compression The default techniques for header data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,

- None = 0,
- Run_Length-Encoding_Compression = 1,
- ZLIB-Encoding_Speed_Compression = 2,
- ZLIB-Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455

Default Message Compression The default techniques for message data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length-Encoding_Compression = 1,
- ZLIB-Encoding_Speed_Compression = 2,
- ZLIB-Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

In-Doubt Status Indicates whether this channel is in doubt. Valid values are No = 0, Yes = 1, and n/a = 255. A channel is considered in doubt when a logical unit of work (LUW) was sent and the channel is waiting for an acknowledgment that the LUW was successfully received.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Last Header Compression The last techniques for header data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length-Encoding_Compression = 1,
- ZLIB-Encoding_Speed_Compression = 2,
- ZLIB-Encoding_High_Compression = 4,
- System = 8,
- Any = 268435455

Last Message Compression The last techniques for message data compression that are supported by the channel. Valid values are as follows:

- n/a = -1,
- None = 0,
- Run_Length-Encoding_Compression = 1,
- ZLIB-Encoding_Speed_Compression = 2,
- ZLIB-Encoding_High_Compression = 4,
- System = 8,

- Any = 268435455

Last Send Date & Time The date and time that the last message was sent to the current channel/connection name combination. This attribute is not available for CICS channels.

Local Address The local communications address for the channel. The value returned depends on the TRPRYPE of the channel (currently only TCP/IP is supported). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Long Retries The number of long retry intervals that were completed since the channel went into retry state due to a connection failure. The maximum number of long retries is defined during channel definition using the LONGRTY keyword. The time interval in seconds for long retries is defined during channel definition using the LONGTMR keyword. The WebSphere MQ Monitoring agent attempts long retries after the channel reaches the maximum number of short retry attempts for the channel. The valid format is an integer.

Long Term Batch Size The long-term number of messages in a batch. The valid format is an integer.

Long Term Compression Rate Long term compression rate that is achieved to the nearest percentage. The valid format is a floating point number with a range from -1 - 100.

Long Term Compression Time Long term amount of time per message, in microseconds, spent during compression or decompression. The valid format is an integer.

Long Term Exit Time Long term amount of time per message, in microseconds, spent during executing user exits. The valid format is an integer.

Long Term Net Time Long term time of a network operation. The amount of time, in microseconds, to send a request to the remote end of the channel and receive a response. The valid format is an integer.

Long Term XmitQ Time Long term transmission queue time. The valid format is an integer.

LUW Last Committed The identifier of the last-committed logical unit of work (LUW). The valid format is an alphanumeric string of up to 16 case-sensitive characters.

MCA Job Name (non z/OS systems only) The MCA job name string that is associated with a channel that uniquely identifies that channel. This is not a user-friendly name, but it is provided to differentiate (along with Connection Name) between multiple active channel connections that can be defined to the same queue manager. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

MCA Status The status of the message channel agent. Valid values are Stopped = 0 and Running = 3.

Message Count The number of messages that are sent or received on this channel during the current interval or aggregation period. For the Interval Summary row in

the Recent Channel report, this count is the sum of all the message counts in the subsequent rows. This attribute is not available for CICS channels. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (QSG environment on z/OS systems only) Indicates the disposition of the channel in a queue-sharing group environment. Valid values are Qmgr = 0, Copy = 1, Group = 3, and Unknown = 255.

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Remote Partner Application Name Name of the client application at the remote end of the channel. This parameter applies only to server-connection channels. The valid format is an alphanumeric string of up to 48 characters.

Remote Qmgr Name The queue manager name or queue sharing group name of the remote system, or the remote partner application name of a server-connection channel if the server-connection channel exists. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

SeqNo Last Committed The number of the last-committed message within the last-committed logical unit of work (LUW). The valid format is an integer.

Short Retries The number of short retry intervals that complete after the channel goes into a retry state because of a connection failure. The maximum number of short retries is defined during channel definition using the SHORTRTY keyword. The time interval in seconds for short retries is defined during channel definition using the SHORTTMR keyword.

If the channel continually fails to connect after reaching the maximum number of short retry attempts, the WebSphere MQ Monitoring agent attempts long retries using the longer interval defined. If this value is non-zero and the channel is not currently retrying, it gives the most recent retry information that is returned as the current channel status by WebSphere MQ.

This value is not available for CICS channels. The valid format is an integer.

Short Term Batch Size Indicates the short-term number of messages in a batch. The valid format is an integer.

Short Term Compression Rate Short-term compression rate that is achieved to the nearest percentage. The valid format is a floating point number with a range from -1 - 100.

Short Term Compression Time Short-term amount of time per message, in microseconds, spent during compression or decompression. The valid format is an integer.

Short Term Exit Time Short-term amount of time per message, displayed in microseconds, spent during executing user exits. The valid format is an integer.

Short Term Net Time Short-term time of a network operation. The amount of time (in microseconds) to send a request to the remote end of the channel and receive a response. The valid format is an integer.

Short Term XmitQ Time Short-term transmission queue time. The valid format is an integer.

SSL Key Count The number of successful SSL secret key resets that occurred for this channel instance since the channel started. The valid format is an integer.

SSL Key Date & Time The date and time of the previous successful SSL secret key reset. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Start Date & Time The start date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Transmission Queue Name The name of the transmit queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Transmit KB/Sec The transmission rate (in kilobytes per second) over the latest interval. This attribute is not available for CICS channels. The valid format is a decimal (formatted to 2 decimal places).

Transport Type The transmission type. Valid values are as follows:

- LOCAL = 0,
- LU62 = 1,
- TCP = 2,
- NETBIOS = 3,
- SPX = 4,
- DECNET = 5,
- UDP = 6,
- CICS = 100.

User Stop Request Indicates whether user stop request is outstanding. Valid values are n/a = -1, Stop_Not_Requested = 0, and Stop_Requested = 1.

XmitQ Depth The number of messages on the transmission queue that is associated with this channel. The valid format is an integer.

XmitQ Messages Available The number of messages that are queued on the transmission queue and available to the channel for the MQGET call. The valid format is an integer.

The Channel Statistics attributes defined above are *summarized* (or otherwise used in calculations) to create the Channel Performance by Type/Status table view. The columns displayed in the Channel Performance by Type/Status table view are informational only, and have the following meanings:

Last Send Date and Time Last Send Date and Time value of the channels that match this channel type/channel status combination.

Number of Channels Number of channels that match the channel type/channel status combination that are displayed in this row of the Channel Performance by Type/Status table view. It is calculated using the Channel Name attribute that is previously described.

Total Batches Complete Sum of Batches Complete values for channels that match this channel type/channel status combination.

Total Buffers Received Sum of Buffers Received values for channels that match this channel type/channel status combination.

Total Buffers Sent Sum of Buffers Sent values for channels that match this channel type/channel status combination.

Total Bytes Received Sum of Bytes Received values for channels that match this channel type/channel status combination.

Total Bytes Sent Sum of Bytes Sent values for channels that match this channel type/channel status combination.

Total CurBatch Messages Sum of Current Batch Messages values for channels that match this channel type/channel status combination.

Total Message Count Sum of Message Count values for channels that match this channel type/channel status combination.

Total Transmit KB/Sec Sum of Transmit Kilobytes per Second values for channels that match this channel type/channel status combination.

MAX Transmit KB/Sec Maximum value of Transmit Kilobytes per Second for channels that match this channel type/channel status combination.

Channel Summary attributes

Use the Channel Summary attributes to create situations for detecting problems of application client connections and channels. The Channel Summary attributes provide the summarized data on a channel level or on a connection level. By default, historical data collection is disabled for this attribute group. You can enable historical data collection for the summarized data only on a channel level.

% Max Instances The total number of instances of a server-connection channel as a percentage of the maximum number of instances of a server-connection channel that can be started. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions.

% Max Instances per Client The highest number of instances of a given channel that are grouped by clients as a percentage of the maximum number of instances of a channel that can be started from a single client. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions.

% Max Sharing Conversations The highest number of current conversations of a server-connection channel as a percentage of the maximum number of conversations that can run over each instance. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Average Buffers Received The average of the Buffers Received attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Buffers Received value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Average Buffers Sent The average of the Buffers Sent attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Buffers Sent value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Average Bytes Received The average of the Bytes Received attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Bytes Received value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Average Bytes Sent The average of the Bytes Sent attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Bytes Sent value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Average Message Count The average of the Message Count attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Message Count attribute value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Average Transmit KB/Sec The average of the Transmit KB per Sec attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Transmit KB per Sec attribute value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Type The type that is assigned to the channel when it is created. Valid values are as follows:

- n/a
- SDR = 1 (for sender)
- SVR = 2 (for server)
- RCVR = 3 (for receiver)
- RQSTR = 4 (for requester)
- CLNTCONN = 6 (for client connection)
- SVRCONN = 7 (for server connection)
- CLUSRCVR = 8 (for cluster receiver)
- CLUSSDR = 9 (for cluster sender)

Client Count The number of clients that have different network addresses. The total number of individual clients with different network addresses, from which client applications are connecting a given channel respectively with a channel instance. This attribute is always 1 and will not be displayed in the Channel Summary by Connection Name workspace.

Connection Name The name of the connection. This attribute is available only in the Channel Summary by Connection Name workspace.

Earliest Start Date & Time The earliest time stamp among the Start Date & Time time stamps from all instances of a multi-instance channel. For single-instance channels, this attribute value is the same as the Start Date & Time time stamp.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Buffers Received The highest attribute value among the Buffers Received attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Buffers Received attribute value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Buffers Sent The highest attribute value among the Buffers Sent attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Buffers Sent attribute value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Bytes Received The highest attribute value among the Bytes Received attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Bytes Received attribute value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Bytes Sent The highest attribute value among the Bytes Sent attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Bytes Sent attribute value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Compression Time The highest attribute value among the Short Term Compression Time attribute values from all instances of a multi-instance channel. For a single-instance channel, the attribute value is the same as the Short Term Compression Time attribute value. Although WebSphere MQ provides both a short-term value and a long-term value, the short-term value is selected and displayed by default.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Conversations per Client The highest value among the numbers of conversations of a server-connection channel that are grouped by clients. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions.

Highest Current Conversations The highest value among the numbers of conversations that are running over each instance of a server-connection channel. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions. A value of 0 indicates that the channel is running in a mode earlier than that of WebSphere MQ version 7.0 with respect to the following behaviors:

- Administrator stop-quietse
- Heartbeating
- Read ahead
- Sharing conversations
- Client Asynchronous Consume

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Exit Time The highest attribute value among the Short Term Exit Time attribute values from all instances of a multi-instance channel. For single-instance channels, the attribute value is the same as the Short Term Exit Time value. Although WebSphere MQ provides both a short-term value and a long-term value, the short-term value is selected and displayed by default.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest In-Doubt Samples The highest value among the numbers of consecutive samples from all instances of a channel that are found in-doubt. This attribute is not applicable to server-connection channels. Besides sender-type channels, it is applicable to receiver-type channels that can have multiple instances. This attribute is set to 0 for the channels that are not applicable.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Instances per Client The highest value among the numbers of instances of a given channel that are grouped by clients.

Highest Message Count The highest attribute value among the Message Count attribute values from all instances of a server-connection channel. For single-instance channels, this attribute is the same as the Message Count value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Net Time The short-term duration of a network operation. The amount of time (in microseconds) to send a request to the remote end of the channel and to receive a response. The valid format is an integer. Although WebSphere MQ provides both a short-term value and a long-term value, the short-term value is selected and displayed by default. For historical data, this attribute shows the highest sampled value.

This attribute is only applicable to single-instance channels, and is not applicable to the channels that can have multiple instances, such as server-connection or receiver channels.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest Transmit KB/Sec The highest attribute value among the Transmit KB per Sec attribute values from all instances of a multi-instance channel. For single-instance channels, this attribute is the same as the Transmit KB per Sec attribute value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest XmitQ Depth The number (depth) of messages on the transmission queue that are associated with this channel. The valid format is an integer.

This attribute is only applicable to single-instance channels, and is not applicable to the channels that can have multiple instances, such as server-connection or receiver channels. It shows the highest sampled value for historical data.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Highest XmitQ Time The short-term transmission queue time. The time, in microseconds, that messages remained on the transmission queue before being retrieved. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel, therefore, the time includes any interval that is caused by a delay in the putting operation. The valid format is an integer. Although WebSphere MQ provides both a short-term value and a long-term value, the short-term value is selected and displayed by default. For historical data, this attribute shows the highest sampled value.

This attribute is only applicable to single-instance channels, and is not applicable to the channels that can have multiple instances, such as server-connection or receiver channels.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Latest Send Date & Time The latest time stamp among the Last Message Date & Time time stamps from all instances of a multi-instance channel. For single-instance channels, this attribute value is the same as the Last Message Date & Time value.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Max Instances The maximum number of simultaneous instances of a server-connection channel that can be started. This attribute can be set in the range 0 - 999,999,999. A value of zero indicates that no client connections are allowed on this channel. The default value is 999,999,999. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions.

Max Instances per Client The maximum number of simultaneous instances of a server-connection channel from a single client. This attribute can be set in the range 0 - 999,999,999. A value of 0 indicates that no client connections are allowed on this channel. The default value is 999,999,999. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions.

Max Sharing Conversations The maximum number of conversations that can run over each instance of a server-connection channel. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions. A value of 0 indicates that the channel is running in a mode earlier than that of WebSphere MQ version 7.0 with respect to the following behaviors:

- Administrator stop-quiet
- Heartbeating
- Read ahead

- Sharing conversations
- Client asynchronous consume

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Running Instances The number of instances of a given channel or a connection in the running status.

Retrying Instances The number of instances of a given channel or a connection in the retrying status.

Summary Type Indicates whether the data is summarized on a channel level or on a connection level. Valid values are as follows:

- Channel Summary = 0 (default)
- Connection Name Summary = 1

Total Conversations The total number of conversations across all instances of a server-connection channel. This attribute is valid only for server-connection channels of WebSphere MQ 7.0.1 and later versions.

In the Channel Summary by Connection Name workspace, this attribute is summarized for a given connection.

Total Instances The number of total instances of a given channel or a connection.

Connection Objects attributes

Use the Connection Objects attributes to display connection information about the applications that are connected to the queue manager. Use these attributes to identify applications with long-running units of work. If an attribute is specified that is not relevant for the connection, operating environment, or type of status information requested, that parameter is ignored. Use the Connection Object attributes to create situations for monitoring the status of handle.

Asynchronous State The state of the asynchronous consumer on this object handle. Valid values are as follows:

- n/a = 255
- NONE = 0
- SUSPENDED = 4
- SUSPENDEDTEMP = 5
- ACTIVE = 6
- INACTIVE = 7

Connection ID The identifier of the connection. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Conn ID Prefix (EXTCONN) Character hexadecimal representation of the prefix of connection ID. The valid format is an alphanumeric string of up to 32 characters.

Conn ID Suffix (CONN) Character hexadecimal representation of the suffix of connection ID. The valid format is an alphanumeric string of up to 16 characters.

Destination The destination queue for messages that are published to this subscription. This parameter is only relevant for handles of subscriptions to topics. Valid format is an alphanumeric string of up to 48 characters.

Destination Qmgr The destination queue manager for messages that are published to this subscription. The valid format is an alphanumeric string of up to 48 characters.

Handle Status This attribute is the status of the handle. Valid values are n/a = -1, Inactive = 0, and Active = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Object Name The name of an object that the connection has opened. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Object Type The type of the object that the connection has opened. Valid values are as follows:

- n/a = -1,
- Queue = 1,
- NameList = 2,
- Process = 3,
- StorageClass = 4,
- QMgr = 5,
- Channel = 6,
- AuthInfo = 7,
- TOPIC = 8

Open Options The open options that are currently in force for the connection for the object. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (z/OS systems only) Indicates the disposition of the object in QSG environment. Valid values are QMgr = 0, Copy = 1, Shared = 2, and Unknown = 255.

Read Ahead The read ahead connection status. Valid values are as follows:

- NO = 0
- YES = 1
- INHIBITED = 3
- BACKLOG = 4

Subscription ID The internal, all-time unique identifier of the subscription. This parameter is relevant only for handles of subscriptions to topics. The valid format is an alphanumeric string of up to 24 characters.

Sub Name The unique subscription name of the application that is associated with the handle. This parameter is relevant only for handles of subscriptions to topics. Not all subscriptions will have a subscription name. The valid format is an alphanumeric string of up to 256 characters.

Topic String The resolved topic string. This parameter is relevant for handles with OBJTYPE(TOPIC). It is blank for any other object type. The valid format is an alphanumeric string of up to 256 characters.

Current Events attributes

Use the Current Events attributes to create situations to monitor the status of the following WebSphere MQ events that occur within the interval specified in the situation:

- Channel_Stopped,
- Queue_Depth_High,
- Queue_Full,
- Queue_Service_Interval_High,
- Bridge_Stopped,
- Channel_Not_Activated

When you create Current_Events situations, the Situation Monitor continuously monitors your queue managers and issues an alert when an event, such as Queue_Full, occurs. When the Situation Monitor does not detect a WebSphere MQ event occurrence or detects another, contrary event occurrence, such as the Queue_Not_Full event, the status of the situation changes. Current Events situations alert you to WebSphere MQ events that occur within the interval that you specify in the Situation Editor dialog for the situation you are monitoring. The default interval is 5 minutes. Current Events is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Appl ID The application identifier that is associated with the event or message. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Appl Type The application type that is associated with the event or message. The valid format is an integer. Valid values are as follows:

- n/a = -2,
- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,
- WINDOWS_NT = 11,
- CICS_VSE = 10,
- VMS = 12,
- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- SYSTEMEXT = 35,
- USER = 65536.

Event The description of the outstanding WebSphere MQ event (for example, Channel_Stopped). The valid format is an integer. Valid values are as follows:

- Queue_Full = 2053,
- Bridge_Stopped = 2126,
- Queue_Depth_High = 2224,
- Queue_Service_Interval_High = 2226,
- Channel_Stopped = 2283,
- Channel_Not_Activated = 2296.

Event Date & Time The time and date that the event is posted to the WebSphere MQ event queue. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

- C** Century (0 for 20th, 1 for 21st)
- YY** Year
- MM** Month
- DD** Day
- HH** Hour
- MM** Minute
- SS** Second

mmm Millisecond

Event Host Name The name of the host system on which this event occurred (which is not necessarily the host system reporting the event). On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Event QMgr Name The name of the queue manager on which this event occurs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Event Qualifier The condition that generates the event. The valid format is an integer. Valid values are as follows:

- n/a = 0,
- Connection_Not_Authorized = 1,
- Open_Not_Authorized = 2,
- Close_Not_Authorized = 3,
- Command_Not_Authorized = 4,
- Queue_Manager_Stopping = 5,
- Queue_Manager_Quiescing = 6,
- Channel_Stopped_OK = 7,
- Channel_Stopped_Error = 8,
- Channel_Stopped_Retry = 9,
- Channel_Stopped_Disabled = 10,
- Bridge_Stopped_OK = 11,
- Bridge_Stopped_Error = 12.

Internal EventID The internal identifier that is assigned to the event. The valid format is an alphanumeric string of up to 8 characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Subsys (z/OS systems only) The subsystem ID that is associated with this queue manager. The valid format is an alphanumeric string of up to 4 characters.

Reporting Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Reporting Qmgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Resource Name The name of the WebSphere MQ resource (channel or queue) on which the event occurs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Current Queue Manager Status attributes

Use the Current Queue Manager Status attributes to display the most current status information that is associated with the related queue manager. You can specify one or more attributes that define the data to be displayed. The attributes can be specified in any order, but do not specify the same parameter more than once. Use the Current Queue Manager Object attributes to create situations for monitoring the status of queue manager or command server.

% Max Active Channels The number of active channel connections as percentage of the maximum number of active channels. The valid value is a decimal in the range 0.0 - 100.0.

% Max Channels The number of current channel connections as a percentage of the maximum number of current channels. The valid value is a decimal in the range 0.0 - 100.0.

Active Channel Connections The number of active channel connections. The valid format is an integer. This attribute is always set to be n/a for distributed systems.

Active Log Copy 1 Dataset Name The name of the first copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Active Log Copy 2 Dataset Name The name of the second copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Channel Health Indicator of the channel health. Possible values are as follows:

- 15 (Critical)
 - If there is one or more current channel connections that are not running
 - If current channel connections exceeds 90% of the maximum number of current channels.
 - If active channel connections exceeds 90% of the maximum number of active channels
- 10 (Warning)
 - If there is one or more indoubt channel connections
 - If current channel connections exceeds 80% of the maximum number of current channels.
 - If active channel connections exceeds 80% of the maximum number of active channels
- 5 (OK)
- 0 (Unknown) if the queue manager is stopped

Channel Health Thresholds This attribute is to be sent to the agent for internal use only. This attribute is informational only and cannot be used to create situations.

Channel Initiator Status The status of the channel initiator reading. Valid values are n/a = -1, Stopped = 0, Starting = 1, Running = 2, Stopping = 3, and Retrying = 4.

Command Server Status The status of the command server. Valid values are n/a = -1, Stopped = 0, Starting = 1, Running = 2, Stopping = 3, and Retrying = 4.

| **Connection Count** Indicates the current number of connection to the queue
| manager. The valid format is an integer.

Current Channel Connections The number of current channel connections. The
valid format is an integer. This attribute is always set to be n/a for distributed
systems.

| **Current Channel Connections Not Running** The number of current channel
| connections that are not running.

Current Log The name of the log extent that is written to at the time that the
DISPLAY QMSTATUS command is processed. It is blank for non-linear logging.
The valid format is an alphanumeric string of up to 24 case-sensitive characters.
This attribute is always blank for z/OS systems.

| **Current MQEvents** The number of rows that the current events table holds in
| memory.

| **DLQ Depth** The current depth of the dead letter queue.

| **Get Inhibited Queue Count** The number of queues that are get-inhibited.

| **High Depth Queue Count** The number of queues that exceed the high depth
| threshold.

Host Name The name of the system on which this queue manager is running. On
z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of
up to 48 case-sensitive characters.

Indoubt Channels The number of the indoubt channel connections.

Max Active Channels The maximum number of channels that can be active at any
time. Valid value is an integer. The default value is specified by the Max Channels
attribute. On z/OS systems, the value must be in the range 1 - 9999. On other
systems, the value must be in the range 1 - 65535.

Max Channels The maximum number of channels that can be current (including
server-connection channels with connected clients). The valid value is an integer.
On z/OS systems, the value must be in the range 1 - 9999, with a default value of
200. On other systems, the value must be in the range 1 - 65535, with the a default
value of 100.

Media Recovery Log The name of the oldest log extent that is required by the
queue manager to perform media recovery. It is blank for nonlinear logging. The
valid format is an alphanumeric string of up to 24 case-sensitive characters. This
attribute is always blank for z/OS systems.

| **Oldest Active UOW Log Dataset Name** The name of the oldest active UOW log
| data set. The valid format is an alphanumeric string of up to 44 case-sensitive
| characters. This attribute is always blank for distributed systems.

| **Open Queue Count** The number of queues that are open for input or output.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on
which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Page Set Recovery Log Dataset Name The name of the log data set that contains the oldest restart Relative Byte Address (RBA) of any page set for the queue manager. The valid format is an alphanumeric string of up to 44 case-sensitive characters. This attribute is always blank for distributed systems.

Permit Standby Indicates whether the queue manager permits standby queue manager instances. This attribute has the following valid values:

- n/a = -1 (z/OS systems only)
- No = 0
- Yes =1

Put Inhibited Queue Count The number of queues that are put-inhibited.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QMgr Status The current execution status of the queue manager. The valid values are n/a = -1, Stopped = 0, Starting = 1, Running = 2, Quiescing = 3, Stopping = 4, Standby=5.

Queue Health Indicator of the queue health. Possible values are as follows:

- 15 (Critical)
 - If there is one or more queues exceeding the high depth threshold.
 - If the number of messages on transmission queues exceeds the number of transmission queues.
- 10 (Warning)
 - if the current depth of the dead letter queue is greater than 0
 - If there is one or more put-inhibited queues
 - If there is one or more get-inhibited queues
 - If there is one or more messages on transmission queues
- 5 (OK)
- 0 (Unknown) if the queue manager is stopped.

Queue Health Thresholds This attribute is to be sent to the agent for internal use only. This attribute is informational only and cannot be used to create situations.

Queue Manager Health Indicator of the queue manager health. Possible values are as follows:

- 15 (Critical) if the queue manager status is quiescing, stopping, stopped, or n/a
- 10 (Warning)
 - If the queue manager status is starting
 - If the channel initiator status is not running
 - If the command server status is not running
 - If the Queue Health or Channel Health attribute value is Critical

- 5 (OK)
 - If the queue manager, the channel initiator, and the command server are all running
 - If the queue manager status is standby

Recovery Log Path Location of the recovery log extents. The valid format is an alphanumeric string of up to 1024 case-sensitive characters. This attribute is always blank for z/OS systems.

Restart Recovery Log The name of the oldest log extent that is required by the queue manager to perform restart recovery. It is blank if not linear logging. This attribute is always blank for z/OS systems.

Server Connections The number of server connections.

Total Messages The number of messages that are on all queues.

Total Messages on XMIT Queues The number of messages that are on transmission queues.

Error Log attributes (distributed systems only)

The Error Log attributes are available on distributed systems only. Use the Error Log attributes to create situations that are associated with messages in the error log of a monitored (non z/OS systems only) queue manager. Error Log is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Error Message Host Name The host name of the error message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Explanation (Deprecated) Text that further explains the message in the error log of the queue manager. The valid format is an alphanumeric string of up to 512 case-sensitive characters.

Explanation Text that further explains the message in the error log of the queue manager. The valid format is an alphanumeric string of up to 1024 case-sensitive characters.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Involved Object The name of the object that is associated with the reported message, if found in the message. The agent first scans the Message Text field and extracts text from between the first pair of single quotation marks that are found. If none are found, the agent next scans the Explanation field in the same way. If no text enclosed in single quotation marks is found, the Involved Object field is blank. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

Log Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Message ID The identifier of the message in the error log of the queue manager. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Message Text (Deprecated) The text of the message in the error log of the queue manager. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Message Text The text of the message in the error log of the queue manager. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On distributed systems, this name takes the form *qmgr::MQ*. If the *hostid* value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

User Action (Deprecated) Text that recommends a user response to the message in the error log of the queue manager. The valid format is an alphanumeric string of up to 512 case-sensitive characters.

User Action Text that recommends a user response to the message in the error log of the queue manager. The valid format is an alphanumeric string of up to 1024 case-sensitive characters.

Event Archive attributes

Use the Event Archive attributes to view the archived WebSphere MQ events that are reported to a queue manager. By default, historical data collection is disabled for this attribute group.

This attribute group is eligible for use with Tivoli Data Warehouse. If you enable historical data collection for this attribute group, use Tivoli Data Warehouse to store historical data if possible, because the amount of event data might be large.

Appl ID The application identifier that is associated with the event or message. On z/OS systems, this is the job name; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Appl Type The application type that is associated with the event or message. The valid format is an integer. Valid values are as follows:

- n/a=-2

- Unknown=-1
- NoContext=0
- CICS=1
- MVS=2
- IMS=3
- OS2=4
- DOS=5
- UNIX=6
- QMGR=7
- OS400=8
- WINDOWS=9
- CICS_VSE=10
- WINDOWS_NT=11
- VMS=12
- GUARDIAN=13
- VOS=14
- IMS_BRIDGE=19
- XCF=20
- CICS_BRIDGE=21
- NOTES_AGENT=22
- USER=25
- CHINIT=30
- BATCH=32
- RRS_BATCH=33
- SYSTEMEXT=35
- USER_FIRST=65536

Event The description of the WebSphere MQ event (for example, Channel_Stopped). The valid format is an integer. Valid values are as follows:

- Alias_Base_Queue_Type_Error=2001
- Get_Inhibited=2016
- Not_Authorized=2035
- Put_Inhibited=2051
- Queue_Full=2053
- Queue_Type_Error=2057
- Unknown_Alias_Base_Queue=2082
- Unknown_Object_Name=2085
- Unknown_Remote_Queue_Manager=2087
- Transmission_Queue_Type_Error=2091
- Transmission_Queue_Usage_Error=2092
- Bridge_Started=2125
- Bridge_Stopped=2126
- Remote_Queue_Name_Error=2184
- Unknown_Transmission_Queue=2196
- Unknown_Default_Xmit_Queue=2197

- Default_Xmit_Queue_Type_Error=2198
- Default_Xmit_Queue_Usage_Error=2199
- Queue_Manager_Active=2222
- Queue_Manager_Not_Active=2223
- Queue_Depth_High=2224
- Queue_Depth_Low=2225
- Queue_Service_Interval_High=2226
- Queue_Service_Interval_OK=2227
- Channel_Auto_Definition_OK=2233
- Channel_Auto_Definition_Error=2234
- Channel_Stopped_By_User=2279
- Channel_Started=2282
- Channel_Stopped=2283
- Channel_Conversion_Error=2284
- Channel_Activated=2295
- Channel_Not_Activated=2296
- Configuration_Create_Object=2367
- Configuration_Change_Object=2368
- Configuration_Delete_Object=2369
- Configuration_Refresh_Object=2370
- Channel_SSL_Error=2371
- Logger=2411
- Command_MQSC=2412
- Command_PCF=2413
- Queue_Not_Full=1002053

Event Date & Time The time and date when the event was posted to the WebSphere MQ event queue. The valid format is standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Event MQ Host Name The name of the host where this event occurred. This host is not necessarily the host that reported the event. If this is a z/OS system, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

| **Event MQ Manager Name** The name of the queue manager on which this event
| occurred. This queue manager is not necessarily the queue manager that reported
| the event. The valid format is an alphanumeric string of up to 48 case-sensitive
| characters.

| **Event Qualifier** The condition that generated the event. The valid format is an
| integer. Valid values are as follows:

- | • n/a=0
- | • Connection_Not_Authorized=1
- | • Open_Not_Authorized=2
- | • Close_Not_Authorized=3
- | • Command_Not_Authorized=4
- | • Queue_Manager_Stopping=5
- | • Queue_Manager_Quiescing=6
- | • Channel_Stopped_OK=7
- | • Channel_Stopped_Error=8
- | • Channel_Stopped_Retry=9
- | • Channel_Stopped_Disabled=10
- | • Bridge_Stopped_OK=11
- | • Bridge_Stopped_Error=12
- | • SSL_Handshake_Error=13
- | • SSL_Cipher_Spec_Error=14
- | • SSL_Client_Auth_Error=15
- | • SSL_Peer_Name_Error=16
- | • Sub_Not_Authorized=17
- | • Sub_Dest_Not_Authorized=18
- | • COMMAND_NONE=1000
- | • Change_Queue_Manager=1001
- | • Inquire_Queue_Manager=1002
- | • Change_Process=1003
- | • Copy_Process=1004
- | • Create_Process=1005
- | • Delete_Process=1006
- | • Inquire_Process=1007
- | • Change_Queue=1008
- | • Clear_Queue=1009
- | • Copy_Queue=1010
- | • Create_Queue=1011
- | • Delete_Queue=1012
- | • Inquire_Queue=1013
- | • Refresh_Queue_Manager=1016
- | • Reset_Queue_Stats=1017
- | • Inquire_Queue_Names=1018
- | • Inquire_Process_Names=1019
- | • Inquire_Channel_Names=1020
- | • Change_Channel=1021

- | • Copy_Channel=1022
- | • Create_Channel=1023
- | • Delete_Channel=1024
- | • Inquire_Channel=1025
- | • Ping_Channel=1026
- | • Reset_Channel=1027
- | • Start_Channel=1028
- | • Stop_Channel=1029
- | • Start_Channel_Initiator=1030
- | • Start_Channel_Listener=1031
- | • Change_Namelist=1032
- | • Copy_Namelist=1033
- | • Create_Namelist=1034
- | • Delete_Namelist=1035
- | • Inquire_Namelist=1036
- | • Inquire_Namelist_Names=1037
- | • Escape=1038
- | • Resolve_Channel=1039
- | • Ping_Queue_Manager=1040
- | • Inquire_Queue_Status=1041
- | • Inquire_Channel_Status=1042
- | • Config_Event=1043
- | • Queue_Manager_Event=1044
- | • Performance_Event=1045
- | • Channel_Event=1046
- | • Delete_Publication=1060
- | • Deregister_Publisher=1061
- | • Deregister_Subscriber=1062
- | • Publish=1063
- | • Register_Publisher=1064
- | • Register_Subscriber=1065
- | • Request_Update=1066
- | • Broker_Internal=1067
- | • Activity_Message=1069
- | • Inquire_Cluster_Queue_Manager=1070
- | • Resume_Queue_Manager_Cluster=1071
- | • Suspend_Queue_Manager_Cluster=1072
- | • Refresh_Cluster=1073
- | • Reset_Cluster=1074
- | • Trace_Route=1075
- | • Refresh_Security=1078
- | • Change_Authentication_Information=1079
- | • Copy_Authentication_Information=1080
- | • Create_Authentication_Information=1081
- | • Delete_Authentication_Information=1082

- | • Inquire_Authentication_Information=1083
- | • Inquire_Authentication_Information_Names=1084
- | • Inquire_Connection=1085
- | • Stop_Connection=1086
- | • Inquire_Authority_Records=1087
- | • Inquire_Entity_Auth=1088
- | • Delete_Authority_Records=1089
- | • Set_Authority_Records=1090
- | • Logger_Event=1091
- | • Reset_Queue_Manager=1092
- | • Change_Listener=1093
- | • Copy_Listener=1094
- | • Create_Listener=1095
- | • Delete_Listener=1096
- | • Inquire_Listener=1097
- | • Inquire_Listener_Status=1098
- | • Command_Event=1099
- | • Change_Security=1100
- | • Change_CF_Structure=1101
- | • Change_Storage_Class=1102
- | • Change_Trace=1103
- | • Archive_Log=1104
- | • Backup_CF_Structure=1105
- | • Create_Buffer_Pool=1106
- | • Create_Page_Set=1107
- | • Create_CF_Structure=1108
- | • Create_Storage_Class=1109
- | • Copy_CF_Structure=1110
- | • Copy_Storage_Class=1111
- | • Delete_CF_Structure=1112
- | • Delete_Storage_Class=1113
- | • Inquire_Archive=1114
- | • Inquire_CF_Structure=1115
- | • Inquire_CF_Structure_Status=1116
- | • Inquire_Command_Server=1117
- | • Inquire_Channel_Init=1118
- | • Inquire_QSG=1119
- | • Inquire_Log=1120
- | • Inquire_Security=1121
- | • Inquire_Storage_Class=1122
- | • Inquire_System=1123
- | • Inquire_Thread=1124
- | • Inquire_Trace=1125
- | • Inquire_Usage=1126
- | • Move_Queue=1127

- | • Recover_BSDS=1128
- | • Recover_CF_Structure=1129
- | • Reset_Tpipe=1130
- | • Resolve_Indoubt=1131
- | • Resume_Queue_Manager=1132
- | • Reverify_Security=1133
- | • Set_Archive=1134
- | • Set_Log=1136
- | • Set_System=1137
- | • Start_Command_Server=1138
- | • Start_Queue_Manager=1139
- | • Start_Trace=1140
- | • Stop_Channel_Init=1141
- | • Stop_Channel_Listener=1142
- | • Stop_Command_Server=1143
- | • Stop_Queue_Manager=1144
- | • Stop_Trace=1145
- | • Suspend_Queue_Manager=1146
- | • Inquire_CF_Structure_Names=1147
- | • Inquire_Storage_Class_Names=1148
- | • Change_Service=1149
- | • Copy_Service=1150
- | • Create_Service=1151
- | • Delete_Service=1152
- | • Inquire_Service=1153
- | • Inquire_Service_Status=1154
- | • Start_Service=1155
- | • Stop_Service=1156
- | • Delete_Buffer_Pool=1157
- | • Delete_Page_Set=1158
- | • Change_Buffer_Pool=1159
- | • Change_Page_Set=1160
- | • Inquire_Queue_Manager_Status=1161
- | • Create_Log=1162
- | • Statistics_MQI=1164
- | • Statistics_Queue=1165
- | • Statistics_Channel=1166
- | • Accounting_MQI=1167
- | • Accounting_Queue=1168
- | • Inquire_Authority_Service=1169
- | • Attributes_Before_Change=1000001
- | • Attributes_After_Change=1000002
- | • Change_Topic=1170
- | • Copy_Topic=1171
- | • Create_Topic=1172

- Delete_Topic=1173
- Inquire_Topic=1174
- Inquire_Topic_Names=1175
- Inquire_Subscription=1176
- Create_Subscription=1177
- Change_Subscription=1178
- Delete_Subscription=1179
- Clear_Subscription=1180
- Copy_Subscription=1181
- Inquire_SBStatus=1182
- Inquire_Topic_Status=1183
- Clear_Topic_String=1184
- Inquire_PubSub_Status=1185

Internal EventID The internal identifier that is assigned to the event. The valid format is an alphanumeric string of up to 8 characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node where the data for the queue manager originates.

On z/OS systems, this name takes the form of *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

On distributed systems, this name takes the form of *qmgr::MQ*. If you used the SET AGENT command to set the host ID value, this name takes the form of *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Reporting Host Name The name of the host that reported this event. This host is not necessarily the host where the event occurred. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Reporting Qmgr Name The name of the queue manager that reported this event. This queue manager is not necessarily the queue manager where the event occurred). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Resource Name The name of the WebSphere MQ resource (channel or queue) where the event occurred. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Sequence ID The sequence identifier of the event details when the details about an event are too many and have to be split into several rows.

XML Event Details Event parameter details that are shown in the form of XML attributes.

Event Parameters attributes

Use the Event Parameters attributes to view event parameters, including name, description, and value.

Event Date & Time The date and time that the event is posted to the WebSphere MQ event queue. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Internal EventID The internal identifier that is assigned to the event. The valid format is an alphanumeric string of up to 8 characters.

Default Persistence The default persistence that is assigned to this queue when it is defined. Valid values are as follows:

- -2 = not applicable
- -1 = as parent
- 0 = no
- 1 = yes
- 2 = AsQueue/AsTopic

Publication Enabled Indicates whether publications are allowed. Valid values are as follows:

- -1 = not applicable
- 0 = as parent
- 1 = no
- 2 = yes

Durable Indicates whether the subscription is durable. Possible values are as follows:

- 1 = yes
- 2 = no
- -1 = not applicable

Command Command events are notifications that an MQSC, or PCF command has been executed successfully. Possible values are as follows:

- 1 = Change_Queue_Manager
- 2 = Inquire_Queue_Manager
- 3 = Change_Process

- 4 = Copy_Process
- 5 = Create_Process
- 6 = Delete_Process
- 7 = Inquire_Process
- 8 = Change_Queue
- 9 = Clear_Queue
- 10 = Copy_Queue
- 11 = Create_Queue
- 12 = Delete_Queue
- 13 = Inquire_Queue
- 17 = Reset_Queue_Statistics
- 18 = Inquire_Queue_Names
- 19 = Inquire_Process_Names
- 20 = Inquire_Channel_Names
- 21 = Change_Channel
- 22 = Copy_Channel
- 23 = Create_Channel
- 24 = Delete_Channel
- 25 = Inquire_Channel
- 26 = Ping_Channel
- 27 = Reset_Channel
- 28 = Start_Channel
- 29 = Stop_Channel
- 30 = Start_Channel_Initiator
- 31 = Start_Channel_Listener
- 32 = Change_Namelist
- 33 = Copy_Namelist
- 34 = Create_Namelist
- 35 = Delete_Namelist
- 36 = Inquire_Namelist
- 38 = Escape
- 39 = Resolve_Channel
- 40 = Ping_Queue_Manager
- 42 = Inquire_Channel_Status
- 44 = Queue_Manager_Event
- 45 = Performance_Event
- 46 = Channel_Event
- 70 = Inquire_Cluster_Queue_Manager
- 71 = Resume_Cluster_Queue_Manager
- 72 = Suspend_Cluster_Queue_Manager
- 73 = Refresh_Cluster
- 74 = Reset_Cluster
- 170 = Change_Topic
- 171 = Copy_Topic
- 172 = Create_Topic

- 173 = Delete_Topic
- 174 = Inquire_Topic
- 175 = Inquire_Topic_Names
- 176 = Inquire_Subscription
- 177 = Create_Subscription
- 178 = Change_Subscription
- 179 = Delete_Subscription
- 180 = Clear_Subscription
- 181 = Copy_Subscription
- 182 = Inquire_SBStatus
- 183 = Inquire_Topic_Status
- 184 = Clear_Topic_String
- 185 = Inquire_PubSub_Status

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Parameter Description The parameter name of detail for the event. The valid format is an integer. Valid values are as follows:

- Event = 0,
- ApplType = 1,
- CodedCharSetId = 2,
- DefInputOpenOption = 4,
- DefPersistence = 5,
- DefPriority = 6,
- DefinitionType = 7,
- HardenGetBackout = 8,
- InhibitGet = 9,
- InhibitPut = 10,
- MaxHandles = 11,
- Usage = 12,
- MaxMsgLength = 13,
- MaxPriority = 14,
- QDepth = 15,
- MsgDeliverySequence = 16,
- Qtype = 20,
- RetentionInterval = 21,
- BackoutThreshold = 22,

- Shareability = 23,
- TriggerControl = 24,
- TriggerInterval = 25,
- TriggerMsgPriority = 26,
- CPILevel = 27,
- TriggerType = 28,
- TriggerDepth = 29,
- Syncpoint = 30,
- CommandLevel = 31,
- Platform = 32,
- MaxUncommittedMsgs = 33,
- TimeSinceReset = 35,
- HighQDepth = 36,
- MsgEnqCount = 37,
- MsgDeqCount = 38,
- ExpiryInterval = 39,
- QDepthHighLimit = 40,
- QDepthLowLimit = 41,
- QDepthMaxEvent = 42,
- QDepthHighEvent = 43,
- QDepthLowEvent = 44,
- AuthorityEvent = 47,
- InhibitEvent = 48,
- LocalEvent = 49,
- RemoteEvent = 50,
- ConfigurationEvent = 51,
- StartStopEvent = 52,
- PerformanceEvent = 53,
- QServiceInterval = 54,
- ChannelAutoDef = 55,
- ChannelAutoDefEvent = 56,
- IndexType = 57,
- ClusterWorkloadLength = 58,
- ClusterQType = 59,
- Archive = 60,
- DefBind = 61,
- PagesetId = 62,
- QSGDisp = 63,
- IntraGroupQueuing = 64,
- IGQPutAuthority = 65,
- AuthInfoType = 66,
- SSLTasks = 69,
- CFRecover = 71,
- LastUsed = 72,
- EventApplType = 1010,

- EventOrigin = 1011,
- ErrorIdentifier = 1013,
- ObjectType = 1016,
- ReasonQualifier = 1020,
- Command = 1021,
- Options = 1022,
- AuxErrorDataInt1 = 1070,
- AuxErrorDataInt2 = 1071,
- ConversionReasonCode = 1072,
- BridgeType = 1073,
- RefreshType = 1078,
- XmitProtocolType = 1501,
- BatchSize = 1502,
- DiscInterval = 1503,
- ShortTimer = 1504,
- ShortRetry = 1505,
- LongTimer = 1506,
- LongRetry = 1507,
- PutAuthority = 1508,
- SequenceNumberWrap = 1509,
- MaxMsgLength = 1510,
- ChannelType = 1511,
- DataConversion = 1515,
- MCAType = 1517,
- ChannelErrorData = 1525,
- SSLReturnCode = 1533,
- NPMSpeed = 1562,
- BatchInterval = 1564,
- NetworkPriority = 1565,
- BatchHB = 1567,
- SSLClientAuth = 1568,
- ApplId = 2001,
- BaseQName = 2002,
- CommandInputQName = 2003,
- CreationDate = 2004,
- CreationTime = 2005,
- DeadLetterQName = 2006,
- EnvData = 2007,
- InitiationQName = 2008,
- NamelistDesc = 2009,
- NamelistName = 2010,
- ProcessDesc = 2011,
- ProcessName = 2012,
- QDesc = 2013,
- QmgrDesc = 2014,

- QmgrName = 2015,
- QName = 2016,
- RemoteQmgrName = 2017,
- RemoteQName = 2018,
- BackoutReqQName = 2019,
- Names = 2020,
- UserData = 2021,
- Storage_Class = 2022,
- Trigger_Data = 2023,
- XmitQName = 2024,
- DefXmitQName = 2025,
- ChannelAutoDefExit = 2026,
- AlterationDate = 2027,
- AlterationTime = 2028,
- ClusterName = 2029,
- ClusterNamelist = 2030,
- ClusterQmgrName = 2031,
- QMgrIdentifier = 2032,
- ClusterWorkloadExit = 2033,
- ClusterWorkloadData = 2034,
- RepositoryName = 2035,
- RepositoryNamelist = 2036,
- ClusterDate = 2037,
- ClusterTime = 2038,
- CFStrucName = 2039,
- QSGName = 2040,
- IGQUserId = 2041,
- StorageClassDesc = 2042,
- XCFGGroupName = 2043,
- XCFMemberName = 2044,
- AuthInfoName = 2045,
- AuthInfoDesc = 2046,
- LDAPUserName = 2047,
- LDAPPASSWORD = 2048,
- SSLKeyRepository = 2049,
- SSLCRLNamelist = 2050,
- AuthInfoConnName = 2053,
- ObjectQMGRName = 3023,
- ApplName = 3024,
- UserIdentifier = 3025,
- AuxErrorDataStr1 = 3026,
- AuxErrorDataStr2 = 3027,
- AuxErrorDataStr3 = 3028,
- BridgeName = 3029,
- EventUserId = 3045,

- EventQMgr = 3047,
- EventApplIdentity = 3049,
- EventApplName = 3050,
- EventApplOrigin = 3051,
- ChannelName = 3501,
- Desc = 3502,
- ModeName = 3503,
- TPName = 3504,
- XmitQName = 3505,
- ConnectionName = 3506,
- SecExitName = 3508,
- MsgExitName = 3509,
- SendExitName = 3510,
- RcvExitName = 3511,
- ChannelNames = 3512,
- SecExitUserData = 3513,
- MsgExitUserData = 3514,
- SendExitUserData = 3515,
- RcvExitUserData = 3516,
- UserId = 3517,
- Password = 3518,
- LocalAddress = 3520,
- MCAUserId = 3527,
- Format = 3533,
- SSLCipherSpec = 3544,
- SSLPeerName = 3545,
- SSLHandshakeStage = 3546,
- EventAccountingToken = 7001, Instances = 1001001.

The following values are available on WebSphere MQ for systems version 7.0 and higher only:

- Expiry = 1244,
- TopicAttrs = 1269,
- PubSubProperties = 1271,
- DestinationClass = 1273,
- DurableSubscription = 1274,
- SubscriptionScope = 1275,
- VariableUserID = 1277,
- RequestOnly = 1280,
- PubPriority = 1283,
- SubAttrs = 1287,
- WildcardSchema = 1288,
- SubType = 1289,
- MessageCount = 1290,
- QMGRPubSub = 1291,

- QMGRVersion = 1292,
- SubStatusAttrs = 1294,
- TopicStatus = 1295,
- TopicSub = 1296,
- TopicPub = 1297,
- RetainedPublication = 1300,
- TopicStatusAttrs = 1301,
- TopicStatusType = 1302,
- SubOptions = 1303,
- PublishCount = 1304,
- ClearType = 1305,
- ClearScope = 1306,
- SubLevel = 1307,
- AsyncState = 1308,
- SubSummary = 1309,
- ObsoleteMsgs = 1310,
- PubSubStatus = 1311,
- PSStatusType = 1314,
- PubSubStatusAttrs = 1318,
- AdminTopicName = 2105,
- BaseObjectName = 2002,
- Child = 2101,
- Parent = 2102,
- ResumeDate = 2098,
- ResumeTime = 2099,
- TopicName = 2092,
- TopicDesc = 2093,
- TopicString = 2094,
- ModelDurableQ = 2096,
- ModelNonDurableQ = 2097,
- ApplIdentityData = 3135,
- ToTopicName = 3149,
- FromTopicName = 3150,
- TopicNames = 3151,
- SubName = 3152,
- DestinationQMGR = 3153,
- Destination = 3154,
- SubUserID = 3156,
- SubUserData = 3159,
- SubSelector = 3160,
- LastPubDate = 3161,
- LastPubTime = 3162,
- FromSubName = 3163,
- ToSubName = 3164,
- LastMsgTime = 3167,

- LastMsgDate = 3168,
- SubscriptionPoint = 3169,
- Filter = 3170,
- EventAccountingToken = 7001,
- EventSecurityID = 7002,
- ResponseSet = 7003,
- ResponseID = 7004,
- ExternalUOWID = 7005,
- ConnectionID = 7006,
- GenericConnectionID = 7007,
- OriginUOWID = 7008,
- QMGRUOWID = 7009,
- AccountingToken = 7010,
- CorrelID = 7011,
- GroupID = 7012,
- MsgID = 7013,
- CFLEID = 7014,
- DestinationCorrelID = 7015,
- SubID = 7016,
- BaseType = 193,
- DefReadAhead = 188,
- MsgMarkBrowseInterval = 68,
- MasterAdmin = 186,
- MaxPropertiesLength = 192,
- PropertyControl = 190,
- PubCount = 215,
- PubSubMaxmsgRetryCount = 206,
- PubSubMode = 187,
- PubSubNPMsg = 203,
- PubSubNPResp = 205,
- PubSubSyncPt = 207,
- ReadAhead = 189,
- ReceiveTimeoutMin = 113,
- SecurityCase = 141,
- SubCount = 204,
- TreeLifeTime = 183,
- TopicType = 208,
- TopicDefPersistence = 185,
- DurableSubs = 175,
- MonitoringTopic = 177,
- NPMDelivery = 196,
- PMDelivery = 195,
- SubScope = 218,
- PubScope = 219,
- ProxySub = 199,

- WildcardOperation = 216,
- InhibitPub = 181,
- InhibitSub = 182,
- DefPutResponseType = 184

Parameter Type The type of the parameter. The valid format is an alphanumeric string of up to 22 characters.

Parameter Value (Deprecated) The value of the parameter. The valid format is an alphanumeric string of up to 264 characters. This attribute has been deprecated.

Parameter Value The value of the parameter. The valid format is an alphanumeric string of up to 264 characters.

Topic Type The topic enumeration type. This attribute has the following possible values:

- 0 = local
- 1 = cluster
- 2 = all

Message Priority Default message priority. Possible values are 1 - 9, representing the priority of the message, or:

- -1 = not applicable
- -2 = as parent

Durable Subscription Indicates whether durable subscriptions are permitted. Possible values are as follows:

- 0 = as parent
- 1 = yes
- 2 = no
- -1 = not applicable

Subscription Enabled Whether subscription are allowed. Possible values are as follows:

- 0 = as parent
- 2 = yes
- 1 = no
- -1 = not applicable

Persistent Message Delivery Delivery mechanism for persistent messages that are published to this topic. Possible values are as follows:

- 0 = as parent
- 2 = all durable
- 1 = all
- -1 = not applicable
- 3 = all available

Nonpersistent Message Delivery Delivery mechanism for nonpersistent messages that are published to this topic. Possible values are as follows:

- 0 = as parent

- 2 = all durable
- 1 = all
- -1 = not applicable
- 3 = all available

Topic Statistics Option Statistics topic level. Possible values are as follows:

- -2 = as parent
- 0 = off
- 1 = on

Proxy Subscription Indicates whether to force the propagation of a proxy subscription for this topic string, even if no local or proxy subscriptions exist. Possible values are as follows:

- 0 = as parent
- 2 = first use
- 1 = force

Wildcard Indicates how wildcard subscriptions are handled for this topic. Possible values are as follows:

- 2 = pass through
- 1 = block

Message Put Response Type Put response type of messages that are published on the topic. Possible values are as follows:

- 1 = synchronous
- 2 = asynchronous
- 0 = as parent

Publish Subscriber Manner The delivery method of the publish-subscribe engine. Possible values are as follows:

- 2 = RFH2
- 1 = compat
- 0 = none
- 3 = message property

System Managed Destination The system managed destination. Possible values are as follows:

- 1 = managed
- 2 = provided

Subscription Scope The scope of the subscription. Possible values are as follows:

- -1 = not applicable
- 1 = queue manager
- 2 = all

Different User Indicates whether other users can connect to the subscription. Possible values are as follows:

- -1 = not applicable
- 1 = fixed

- 2 = any

Request Only Indicates whether the subscriber requests updates. Possible values are as follows:

- -1 = not applicable
- 1 = yes
- 2 = no

Publication Property The priority of the message that is sent to this subscription. Possible values are as follows:

- -1 = not applicable
- 1 = yes
- 2 = no

Subscription Type The type of the subscription. Possible values are as follows:

- -2 = User
- -1 = All
- 1 = API
- 2 = Admin
- 3 = Proxy

Wildcard Character The wildcard schema that is used by the topic string. Possible values are as follows:

- -1 = not applicable
- 1 = character
- 2 = topic

Expiry The length of time in seconds until the subscription expires. If the subscription does not expire, this value is -1.

Publication Scope Numeric value that identifies the scope of the publication. Possible values are as follows:

- -1 = not applicable
- 1 = queue manager
- 2 = all

ReasonQualifier Reason for the event that occurs. Possible values are as follows:

- Connection_(Type_1) = 1,
- Open_(Type_2) = 2,
- Close_(Type_3) = 3,
- Command_(Type_4) = 4,
- Stopping = 5,
- Quiescing = 6,
- OK = 7,
- Error = 8,
- Retry = 9,
- Disabled = 10,
- OK = 11,
- Error = 12,

- Handshake = 13,
- Cipher_Spec = 14,
- Client_Auth = 15,
- Peer_Name = 16,
- Subscribe_(Type_5) = 17,
- SubscribeDest_(Type_6) = 18

Appl Type The application type that is associated with the event or message. The valid format is an integer. Valid values are as follows:

- n/a = -2,
- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,
- CICS_VSE = 10,
- WINDOWS_NT = 11,
- VMS = 12,
- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- USER = 25,
- BROKER = 26,
- QMGR_PUBLISH = 27,
- JAVA = 28,
- DQM = 29,
- CHINIT = 30,
- WLM = 31,
- BATCH = 32,
- RRS_BATCH = 33,
- SIB = 34,
- SYSTEMEXT = 35,
- USER_FIRST = 65536

Event History attributes

Use the Event History attributes to look for trends in the occurrence of WebSphere MQ events. Because you can monitor events that occur in a queue manager from

the same or another queue manager, the Event QMgr Name and Event Host Name attributes indicate where the event actually occurs. Events are displayed whether they are local or if they occur on a remote queue manager that reports to the selected queue manager. These attributes are informational only; they cannot be used to create situations.

Appl ID The application identifier that is associated with the event or message. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Appl Type The application type that is associated with the event or message. The valid format is an integer. Valid values are as follows:

- n/a = -2,
- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,
- CICS_VSE = 10,
- VMS = 12,
- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- USER = 25,
- BROKER = 26,
- QMGR_PUBLISH = 27,
- JAVA = 28,
- DQM = 29,
- CHINIT = 30,
- WLM = 31,
- BATCH = 32,
- RRS_BATCH = 33,
- SIB = 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST = 65536

Event The description of the outstanding WebSphere MQ event (for example, Channel_Stopped). The valid format is an integer. Valid values are as follows:

- Alias_Base_Queue_Type_Error = 2001,
- Get_Inhibited = 2016,
- Not_Authorized = 2035,
- Put_Inhibited = 2051,
- Queue_Full = 2053,
- Queue_Type_Error = 2057,
- Unknown_Alias_Base_Queue = 2082,
- Unknown_Object_Name = 2085,
- Unknown_Remote_Queue_Manager = 2087,
- Transmission_Queue_Type_Error = 2091,
- Transmission_Queue_Usage_Error = 2092,
- Bridge_Started = 2125,
- Bridge_Stopped = 2126,
- Remote_Queue_Name_Error = 2184,
- Unknown_Transmission_Queue = 2196,
- Unknown_Default_Xmit_Queue = 2197,
- Default_Xmit_Queue_Type_Error = 2198,
- Default_Xmit_Queue_Usage_Error = 2199,
- Queue_Manager_Active = 2222,
- Queue_Manager_Not_Active = 2223,
- Queue_Depth_High = 2224,
- Queue_Depth_Low = 2225,
- Queue_Service_Interval_High = 2226,
- Queue_Service_Interval_OK = 2227,
- Channel_Auto_Definition_OK = 2233,
- Channel_Auto_Definition_Error = 2234,
- Channel_Stopped_By_User = 2279,
- Channel_Started = 2282,
- Channel_Stopped = 2283,
- Channel_Conversion_Error = 2284,
- Channel_Activated = 2295,
- Channel_Not_Activated = 2296,
- Configuration_Create_Object = 2367,
- Configuration_Change_Object = 2368,
- Configuration_Delete_Object = 2369,
- Configuration_Refresh_Object = 2370,
- Channel_SSL_Error = 2371,
- Logger = 2411,
- Command_MQSC = 2412,
- Command_PCF = 2413,
- PDS_Events_Lost = 1002052,
- Queue_Not_Full = 1002053.

Event Date & Time The time and date that the event is posted to the WebSphere MQ event queue. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Event Host Name The name of the host system on which this event occurs (which is not necessarily the host system reporting the event). If this is a z/OS system, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Event QMgr Name The name of the queue manager on which this event occurs (which is not necessarily the queue manager reporting the event). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Event Qualifier Describes the condition that generates the event. Valid format is an integer. Valid values are as follows:

- n/a = 0,
- Connection_Not_Authorized = 1,
- Open_Not_Authorized = 2,
- Close_Not_Authorized = 3,
- Command_Not_Authorized = 4,
- Queue_Manager_Stopping = 5,
- Queue_Manager_Quiescing = 6,
- Channel_Stopped_OK = 7,
- Channel_Stopped_Error = 8,
- Channel_Stopped_Retry = 9,
- Channel_Stopped_Disabled = 10,
- Bridge_Stopped_OK = 11,
- Bridge_Stopped_Error = 12,
- SSL_Handshake_Error = 13,
- SSL_Cipher_Spec_Error = 14,
- SSL_Client_Auth_Error = 15,
- SSL_Peer_Name_Error = 16,
- SUB_Not_Authorized = 17,
- SUB_Dest_Not_Authorized = 18,
- COMMAND_NONE = 1000,
- Change_Queue_Manager = 1001,
- Inquire_Queue_Manager = 1002,
- Change_Process = 1003,

- Copy_Process = 1004,
- Create_Process = 1005,
- Delete_Process = 1006,
- Inquire_Process = 1007,
- Change_Queue = 1008,
- Clear_Queue = 1009,
- Copy_Queue = 1010,
- Create_Queue = 1011,
- Delete_Queue = 1012,
- Inquire_Queue = 1013,
- Refresh_Queue_Manager = 1016,
- Reset_Queue_Stats = 1017,
- Inquire_Queue_Names = 1018,
- Inquire_Process_Names = 1019,
- Inquire_Channel_Names = 1020,
- Change_Channel = 1021,
- Copy_Channel = 1022,
- Create_Channel = 1023,
- Delete_Channel = 1024,
- Inquire_Channel = 1025,
- Ping_Channel = 1026,
- Reset_Channel = 1027,
- Start_Channel = 1028,
- Stop_Channel = 1029,
- Start_Channel_Initiator = 1030,
- Start_Channel_Listener = 1031,
- Change_Namelist = 1032,
- Copy_Namelist = 1033,
- Create_Namelist = 1034,
- Delete_Namelist = 1035,
- Inquire_Namelist = 1036,
- Inquire_Namelist_Names = 1037,
- Escape = 1038, Resolve_Channel = 1039,
- Ping_Queue_Manager = 1040,
- Inquire_Queue_Status = 1041,
- Inquire_Channel_Status = 1042,
- Config_Event = 1043,
- Queue_Manager_Event = 1044,
- Performance_Event = 1045,
- Channel_Event = 1046,
- Delete_Publication = 1060,
- Deregister_Publisher = 1061,
- Deregister_Subscriber = 1062,
- Publish = 1063,
- Register_Publisher = 1064,

- Register_Subscriber = 1065,
- Request_Update = 1066,
- Broker_Internal = 1067,
- Activity_Message = 1069,
- Inquire_Cluster_Queue_Manager = 1070,
- Resume_Queue_Manager_Cluster = 1071,
- Suspend_Queue_Manager_Cluster = 1072,
- Refresh_Cluster = 1073,
- Reset_Cluster = 1074,
- Trace_Route = 1075,
- Refresh_Security = 1078,
- Change_Authentication_Information = 1079,
- Copy_Authentication_Information = 1080,
- Create_Authentication_Information = 1081,
- Delete_Authentication_Information = 1082,
- Inquire_Authentication_Information = 1083,
- Inquire_Authentication_Information_Names = 1084,
- Inquire_Connection = 1085,
- Stop_Connection = 1086,
- Inquire_Authority_Records = 1087,
- Inquire_Entity_Auth = 1088,
- Delete_Authority_Records = 1089,
- Set_Authority_Records = 1090,
- Logger_Event = 1091,
- Reset_Queue_Manager = 1092,
- Change_Listener = 1093,
- Copy_Listener = 1094,
- Create_Listener = 1095,
- Delete_Listener = 1096,
- Inquire_Listener = 1097,
- Inquire_Listener_Status = 1098,
- Command_Event = 1099,
- Change_Security = 1100,
- Change_CF_Structure = 1101,
- Change_Storage_Class = 1102,
- Change_Trace = 1103,
- Archive_Log = 1104,
- Backup_CF_Structure = 1105,
- Create_Buffer_Pool = 1106,
- Create_Page_Set = 1107,
- Create_CF_Structure = 1108,
- Create_Storage_Class = 1109,
- Copy_CF_Structure = 1110,
- Copy_Storage_Class = 1111,
- Delete_CF_Structure = 1112,

- Delete_Storage_Class = 1113,
- Inquire_Archive = 1114,
- Inquire_CF_Structure = 1115,
- Inquire_CF_Structure_Status = 1116,
- Inquire_Command_Server = 1117,
- Inquire_Channel_Init = 1118,
- Inquire_QSG = 1119,
- Inquire_Log = 1120,
- Inquire_Security = 1121,
- Inquire_Storage_Class = 1122,
- Inquire_System = 1123,
- Inquire_Thread = 1124,
- Inquire_Trace = 1125,
- Inquire_Usage = 1126,
- Move_Queue = 1127,
- Recover_BSDS = 1128,
- Recover_CF_Structure = 1129,
- Reset_Tpipe = 1130,
- Resolve_Indoubt = 1131,
- Resume_Queue_Manager = 1132,
- Reverify_Security = 1133,
- Set_Archive = 1134,
- Set_Log = 1136,
- Set_System = 1137,
- Start_Command_Server = 1138,
- Start_Queue_Manager = 1139,
- Start_Trace = 1140,
- Stop_Channel_Init = 1141,
- Stop_Channel_Listener = 1142,
- Stop_Command_Server = 1143,
- Stop_Queue_Manager = 1144 ,
- Stop_Trace = 1145,
- Suspend_Queue_Manager = 1146,
- Inquire_CF_Structure_Names = 1147,
- Inquire_Storage_Class_Names = 1148,
- Change_Service = 1149,
- Copy_Service = 1150,
- Create_Service = 1151,
- Delete_Service = 1152,
- Inquire_Service = 1153,
- Inquire_Service_Status = 1154,
- Start_Service = 1155,
- Stop_Service = 1156,
- Delete_Buffer_Pool = 1157,
- Delete_Page_Set = 1158,

- Change_Buffer_Pool = 1159,
- Change_Page_Set = 1160,
- Inquire_Queue_Manager_Status = 1161,
- Create_Log = 1162,
- Statistics_MQI = 1164,
- Statistics_Queue = 1165,
- Statistics_Channel = 1166,
- Accounting_MQI = 1167,
- Accounting_Queue = 1168,
- Inquire_Authority_Service = 1169,
- Change_Topic = 1170,
- Copy_Topic = 1171,
- Create_Topic = 1172,
- Delete_Topic = 1173,
- Inquire_Topic = 1174,
- Inquire_Topic_Names = 1175,
- Inquire_Subscription = 1176,
- Create_Subscription = 1177,
- Change_Subscription = 1178,
- Delete_Subscription = 1179,
- Clear_Subscription = 1180,
- Copy_Subscription = 1181,
- Inquire_SBStatus = 1182,
- Inquire_Topic_Status = 1183,
- Clear_Topic_String = 1184,
- Inquire_PUBSUB_Status = 1185.
- Attributes_Before_Change = 1000001,
- Attributes_After_Change = 1000002

Instances The count of instances of the event. The valid format is an integer.

Internal EventID The internal identifier that is assigned to the event. The valid format is an alphanumeric string of up to 8 characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Reporting Host Name The name of the system reporting this event (which is not necessarily the host system on which the event occurred). On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

PCF Length The length of the PCF parameters for the event. The valid format is an integer.

PCF Parameters The PCF parameters structures for the event. Valid format is an alphanumeric string of up to 2048 case-sensitive characters.

Reporting QMgr Name The name assigned to the queue manager reporting this event (which is not necessarily the queue manager on which the event occurred). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Resource Name (Deprecated) The name of the WebSphere MQ resource (channel or queue) on which the event occurs. The valid format is an alphanumeric string of up to 48 case-sensitive characters. This attribute is deprecated.

Resource Name The name of the WebSphere MQ resource (channel or queue) on which the event occurs. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Listener Status attributes (distributed systems only)

The Listener Status attributes are available on distributed systems only.

Use the Listener Status attributes to display status information for one or more listeners. You must specify a listener for which you want to display status information. You can specify a listener by using either a specific listener name or a generic listener name. By using a generic listener name, you can display either of the following:

- Status information for all listener definitions, by using a single asterisk (*)
- Status information for one or more listeners that match the specified name

Concurrent Conn Request Count The number of concurrent connection requests that the listener supports. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Listener Description The descriptive plain text comment that is defined with listener. Valid format is an alphanumeric string of up to 256 case-sensitive characters.

Listener Name The name of the listener. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

LU62 Tran Pgm Name The LU6.2 transaction program name. This is applicable only to Windows system when the transport type is LU62. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

NetBIOS Adapter The adapter number on which NetBIOS listens. This attribute is applies only to Windows system when the transport type is NETBIOS. The valid format is an integer.

NetBIOS Command Count The number of commands that the listener can use. This attribute is valid only on Windows systems when the transport type is NETBIOS. The valid format is an integer.

NetBIOS Local Name The NETBIOS local name that the listener uses. This is applicable to Windows systems only when the transport type is NETBIOS. The valid format is an alphanumeric string of up to 264 case-sensitive characters.

NetBIOS Name Count The number of names that the listener can use. This attribute is valid only on Windows systems when the transport type is NETBIOS. The valid format is an integer.

NetBIOS Session Count The number of sessions that the listener can use. This attribute is valid only on Windows systems when the transport type is NETBIOS. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Process Identifier The operating system process identifier that is associated with the listener. Valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

SPX Socket The SPX socket on which to listen. This is valid only if the transport type is SPX. The valid format is an integer.

Start Date & Time The date and time at which the listener is started. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Start Stop Control Specifies how the listener is started and stopped. Valid values are as follows:

- n/a = -1
- Queue_Manager = 0
- QMgr_Start_Only = 1
- Manual = 2

Status The current status of the listener. Valid values are as follows:

- n/a = -1
- Stopped = 0

- Starting = 1
- Running = 2
- Stopping = 3

TCP IP Address The listener IP address for the TCP protocol. If it is not defined, the listener listens on all configured IPv4 and IPv6 stacks. It is blank when not available. The valid format is an alphanumeric string of up to 264 case-sensitive characters.

TCP Port The port number for TCP/IP. This is valid only when the transport type is TCP. The valid format is an integer.

Transport Type The transmission protocol type. Valid values are as follows:

- n/a = -2
- LU62 = 1
- TCP = 2
- NETBIOS = 3
- SPX = 4

Log Data Set Status attributes (z/OS systems only)

The Log Data Set Status attributes are available on z/OS systems only.

Use the Log Data Set Status attributes to view information about the log data sets. The log is made up of log records, each of which is a set of log data that is treated as a single unit. A log record is identified either by the relative byte address (RBA) of the first byte of its header, or by its log record sequence number (LRSN).

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Restart RBA Restart relative byte address (RBA) of the log data. The valid format is a string of 12 hexadecimal characters.

Oldest Page Set Recovery Log Name of the log data set that contains the Restart RBA value of the log data. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

UOW Start RBA Current RBA value of the log data. The valid format is a string of 12 hexadecimal characters.

Oldest Active UOW Log Name of log data set that contains the Current RBA. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

CF Backup LRSN Log record sequence number (LRSN) of oldest current CF Backup. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Oldest CF Recovery Log Name Name of the oldest CF structure recovery log. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Log Manager Long-Term History attributes (z/OS systems only)

The Log Manager Long-Term History attributes are available on z/OS systems only.

The Log Manager Long-Term History attributes are associated with the log manager performance history for the selected queue manager. These attributes are informational only; they cannot be used to create situations.

% Current Active Log Copy 2 Full The percent full of the second copy of the current active log. The valid format is an integer.

% Current Active Log Full The percent full of the first copy of the current active log. The valid format is an integer.

% Failed Look ahead Mounts The percentage of attempted look ahead tape mounts that fail. The valid format is an integer.

% of Busy Tape Units The percentage of maximum allowable allocated tape units (MAXRTU) that are currently busy. The valid format is an integer.

% Rd Log Delayed The percentage of log-read requests that were delayed because the MAXRTU data sets were already allocated. The valid format is a decimal (formatted to 1 decimal place).

Active Log Copy 2 Dataset Name The name of the second copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Active Log Dataset Name The name of the first copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Active Logs Available The number of active log data sets that are available for use; that is, the number of active log data sets that are not full. The valid format is an integer.

Actv Log Read % The percentage of log-read requests with Active status. The valid format is a decimal (formatted to 1 decimal place).

Arch Log Read % The percentage of log-read requests that must be resolved from an archive log data set. Valid format is a decimal (formatted to 1 decimal place).

Archive Delay Due to Max Tape The number of read log requests that are delayed because the maximum number of tape units that can be allocated for archive data sets is reached. This limiting value is determined by the MAXRTU value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer.

Archive Delay Unavail Resource The number of read log requests delayed because of an unavailable resource not related to the MAXRTU limit, such as tape unit availability or WTOR delay. The valid format is an integer.

Archive Log Quiesced Indicates that all user update activity is currently suspended to perform archive of the active log. This occurs if the ARCHIVE LOG MODE(QUIESCE) command is issued. Possible values are Yes = 1 and No = 0. The valid format is an integer.

Busy Archive Tape Units The number of tape units that are currently busy actively processing an archive log data set. The valid format is an integer.

Checkpoints (z/OS systems only) The number of checkpoints that are issued during the sampling interval. The valid format is an integer.

Compressed KB After Compression Total number of compressed bytes that are written to the log.

Compressed KB Before Decompression Total bytes before decompression.

Compression Failures Per Min Compression failures per minute.

Compression Requests Per Min Compression requests per minute.

Decompression Failures Per Min Decompression failures per minute.

Decompression Requests Per Min Decompression requests per minute.

Full Logs to offload The number of full active logs waiting to be offloaded. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

In-Storage Rd Log % The percentage of log-read requests with In Storage status. The valid format is a decimal (formatted to 1 decimal place).

Interval Length The interval time over which statistics are taken. The valid format is in the form MMM:SS, where M is minute and S is second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Log Write Buffer Pagein The number of times that a log write buffer needs to be paged in before it can be used. The valid format is an integer.

Log Write CI Per Min The rate of CIs written for log per minute. The valid format is an integer of up to 4 digits.

Log Write Request Per Min The rate of log-write I/O requests per minute. The valid format is an integer of up to four digits.

Log Write Threshold Reached The number of times that a log write request was scheduled because the log write threshold was reached. This threshold is determined by the WRTHRSR value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer.

Log Wr Req for CI Rewrite/Min The rate of serial log write requests for CI rewrites per minute when dual logging. The valid format is an integer of up to 4 digits.

Logging Suspended Indicates whether logging is suspended. Logging is suspended if the SUSPEND QMGR LOG command is issued. All logging and update activity for the queue manager is suspended until the RESUME QMGR LOG command is issued. The valid format is an integer. Valid values are as follows:

- No = 0
- Yes = 1
- Unknown = 255

Lookahead Tape Mounts The number of look ahead tape mounts for archive data sets that are attempted. Valid format is an integer.

Offload Task Status The current status of the offload task. The valid format is an integer. Valid values are as follows:

- Available = 1
- BusyAllocating = 2
- BusyCopyingLog = 3
- BusyCopyingBSDS = 4
- Unknown = 255

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Read Log Per Min The number of log-read requests per minute. The valid format is an integer.

Sample Date & Time The time and date of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Uncompressed KB After Decompression Total number of uncompressed bytes after decompression.

Uncompressed KB Before Compression Total number of uncompressed bytes before compression.

Write Log Force % The percentage of log-write requests with Force status. The valid format is a decimal (formatted to 1 decimal place).

Write Log NoWait % The percentage of log-write requests with NoWait status. The valid format is a decimal (formatted to 1 decimal place).

Write Log Per Min The number of log-write requests per minute. The valid format is an integer.

Write Log Wait % The percentage of log-write requests with Wait status. The valid format is a decimal (formatted to 1 decimal place).

Write Request Suspended The number of times a request to write data to buffers was suspended. The valid format is an integer.

Zero Bufr Waits The number of buffer waits. The valid format is an integer of up to 4 digits.

Log Manager Short-Term History attributes (z/OS systems only)

The Log Manager Short-Term History attributes are available on z/OS systems only.

The Log Manager Short-Term History attributes are associated with the recent log manager performance history for the selected queue manager. These attributes are informational only; they cannot be used to create situations.

% Current Active Log Copy 2 Full The percent full of the second copy of the current active log. The valid format is an integer.

% Current Active Log Full The percent full of the first copy of the current active log. The valid format is an integer.

% Failed Look ahead Mounts The percentage of attempted look ahead tape mounts that fail. The valid format is an integer.

% of Busy Tape Units The percentage of maximum allowable allocated tape units (MAXRTU) that are currently busy. Valid format is an integer.

% Rd Log Delayed The percentage of log-read requests that were delayed because the MAXRTU data sets were already allocated. The valid format is a decimal (formatted to 1 decimal place).

Active Log Copy 2 Dataset Name The name of the second copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Active Log Dataset Name The name of the first copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Active Logs Available The number of active log data sets available for use; that is, the number of active log data sets that are not full. The valid format is an integer.

Arch Log Read % The percentage of log-read requests that must be resolved from an archive log data set. Valid format is a decimal (formatted to 1 decimal place).

Actv Log Read % The percentage of log-read requests with Active status. The valid format is a decimal (formatted to 1 decimal place).

Archive Delay Due to Max Tape The number of read log requests that are delayed because the maximum number of tape units that can be allocated for archive data sets is reached. This limiting value is determined by the MAXRTU value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer.

Archive Delay Unavail Resource The number of read log requests that are delayed because of an unavailable resource that is not related to the MAXRTU limit, such as tape unit availability or WTOR delay. The valid format is an integer.

Archive Log Quiesced Indicates that all user update activity is currently suspended to perform archive of the active log. This occurs if the ARCHIVE LOG MODE(QUIESCE) command is issued. Possible values are 1 = Yes, 0 = No. The valid format is an integer.

Busy Archive Tape Units The number of tape units that are currently busy actively processing an archive log data set. The valid format is an integer.

Checkpoints (z/OS systems only) The number of checkpoints that are issued during the sampling interval. The valid format is an integer.

Compressed KB After Compression Total number of compressed bytes that are written to the log.

Compressed KB Before Decompression Total bytes before decompression.

Compression Failures Per Min Compression failures per minute.

Compression Requests Per Min Compression requests per minute.

Decompression Failures Per Min Decompression failures per minute

Decompression Requests Per Min Decompression requests per minute.

Full Logs to offload The number of full active logs that are waiting to be offloaded. Valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

In-Storage Rd Log % The percentage of log-read requests with In Storage status. The valid format is a decimal (formatted to 1 decimal place).

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control

parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Log Write Buffer Pagein The number of times that a log write buffer needs to be paged in before it can be used. The valid format is an integer.

Log Write CI Per Min The rate of CIs that are written for log per minute. The valid format is an integer of up to 4 digits.

Log Write Threshold Reached The number of times that a log write request is scheduled because the log write threshold is reached. This threshold is determined by the WRTHRS value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer.

Log Write Request Per Min The rate of log-write I/O requests per minute. The valid format is an integer of up to four digits.

Log Wr Req for CI Rewrite/Min The rate of serial log-write requests for CI rewrites per minute when using dual logging. The valid format is an integer of up to 4 digits.

Logging Suspended Indicates whether logging is suspended. Logging is suspended if the SUSPEND QMGR LOG command is issued. All logging and update activity for the queue manager is suspended until the RESUME QMGR LOG command is issued. The valid format is an integer. Valid values are as follows:

- No = 0
- Yes = 1

Lookahead Tape Mounts The number of look ahead tape mounts for archive data sets that are attempted. Valid format is an integer.

Offload Task Status The current status of the offload task. The valid format is an integer. Valid values are as follows:

- Available = 1
- BusyAllocating = 2
- BusyCopyingLog = 3
- BusyCopyingBSDS = 4

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Read Log Per Min The number of log-read requests per minute. Valid format is an integer.

Sample Date & Time The time and date of the sample. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Uncompressed KB After Decompression Total number of uncompressed bytes after decompression.

Uncompressed KB Before Compression Total number of uncompressed bytes before compression.

Write Log Force % The percentage of log-write requests with Force status. The valid format is a decimal (formatted to 1 decimal place).

Write Log NoWait % The percentage of log-write requests with NoWait status. Valid format is a decimal (formatted to 1 decimal place).

Write Log Per Min The number of log-write requests per minute. Valid format is an integer.

Write Log Wait % The percentage of log-write requests with Wait status. The valid format is a decimal (formatted to 1 decimal place).

Write Request Suspended The number of times a request to write data to buffers was suspended. The valid format is an integer.

Zero Bufr Waits The number of buffer waits. The valid format is an integer of up to 4 digits.

Manager Definition Details attributes

The Manager Definition Details attributes are associated with WebSphere MQ manager parameters, including name, description, and value. These attributes are informational only and they cannot be used to create situations.

Group Type Type of the queue manager parameter. Possible values are as follows:

- Queue_Manager_Definition = 1
- System_Parameter = 2
- System_Log_Parameter = 3

Host Name Name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Log Compression Indicates whether messages are compressed before logging. Valid values are as follows:

- n/a = -1
- None = 0
- RLE = 1
- Any = 268435455

Max Properties Length The maximum length of property data in bytes that can be associated with a message. Valid format is an integer. Valid values are as follows:

- n/a = -2
- NOLIMIT = -1

Max Msg Retry Count The number of times that the command is retried before the broker attempts to process the command message. When the Queued Pub/Sub Daemon fails to process the command message under syncpoint, the broker processes the command message according to its report options. One example is when a published message that cannot be delivered to a subscriber because the subscriber queue is full and it is not possible to put the publication on the dead letter queue. The valid format is an integer.

Msg Mark Browse Interval The time interval, in milliseconds, for which messages that are marked as browsed by a call to MQGET, with the get message option MQGMO_MARK_BROWSE_CO_OP, are expected to remain mark-browsed. The valid format is an integer.

MULC Capture Algorithm MULC capture algorithm. This attribute has the following valid values:

- n/a = -1
- Standard = 0
- Refined = 1

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Parameter Description The description of the parameter. The valid format is an integer.

Valid values are as follows:

- MQ_manager_name = 1
- Authority_events = 2
- Coded_character_set_ID = 3
- Command_input_queue_name = 4
- Command_level = 5
- Dead_letter_queue_name = 6
- Description = 7

- Inhibit_events = 8
- Local_error_events = 9
- Maximum_open_handles = 10
- Maximum_message_length = 11
- Maximum_message_priority = 12
- Maximum_uncommitted_msgs = 13
- Performance_events = 14
- Architecture_of_platform = 15
- Remote_error_events = 16
- Start_and_stop_events = 17
- Syncpoint_support = 18
- Trigger_interval_in_ms = 19
- Default_transmission_Q = 20
- Channel_auto_definition = 21
- Channel_auto_definition_events = 22
- Channel_auto_definition_exit = 23
- Distribution_lists = 24
- Connection = 25
- Channel_Group = 26
- Cluster_workload_exit = 27
- Cluster_workload_exit_data = 28
- Cluster_workload_exit_maximum = 29
- Internal_queue_manager_name = 30
- Repository_cluster = 31
- Repository_clusters_namelist = 32
- Configuration_event = 33
- Expiry_interval = 34
- SSL_tasks = 35
- SSL_CRL_namelist = 36
- SSL_key_repository = 37
- SSL_crypto_hardware = 38
- Maximum_user_messages = 39
- Intra_group_queuing = 40
- Intra_group_queuing_authority_checking = 41
- Intra_group_queuing_user = 42
- Queue_sharing_group_name = 43
- Connection_threads = 44
- Background_connections = 45
- Foreground_connections = 46
- Log_record_load = 47
- Command_userid = 48
- Queue_manager_coded_character_set_ID = 49
- Route_code = 50
- SMF_accounting = 51
- SMF_statistics = 52

- SMF_collection_interval = 53
- OTMA_connection_group = 54
- OTMA_connection_member = 55
- OTMA_connection_dest_user_exit = 56
- OTMA_connection_age = 57
- OTMA_connection_tpipe_prefix = 58
- Global_tracing = 59
- Global_trace_table_size = 60
- Exit_tasks_count = 61
- Exit_time_limit = 62
- Workload_manager_time = 63
- QSG_data_queue_sharing_group = 64
- QSG_data_DB2_data_sharing_group = 65
- QSG_data_DB2_subsystem = 66
- QSG_data_DB2_server_tasks = 67
- RACF_auditing = 68
- Queue_index_build_wait = 69
- Input_buffer_size = 70
- Output_buffer_size = 71
- Maximum_tape_units = 72
- Maximum_archive_log_volumes = 73
- Dual_active_logging = 74
- Dual_archive_logging = 75
- Dual_bootstrap_data sets = 76
- Archiving = 77
- Write_threshold = 78
- Deallocation_time = 79
- Unitname_for_first_archive_log = 80
- Unitname_for_second_archive_log = 81
- Space_allocation_units = 82
- Space_primary_quantity = 83
- Space_secondary_quantity = 84
- Block_size = 85
- Archive_log_first_dataset_prefix = 86
- Archive_log_second_dataset_prefix = 87
- Timestamp_archive_log = 88
- Archive_log_retention_period = 89
- Archive_log_WTOR = 90
- Archive_log_routing_codes = 91
- Archive_log_cataloged = 92
- Archive_log_compacted = 93
- Archive_log_protected = 94
- Quiesce_time = 95
- Accounting_connection_override = 96
- Accounting_interval = 97

- Accounting_MQI_level = 98
- Accounting_queue_level = 99
- Max_active_channels = 100
- Activity_report_recording = 101
- Adopt_new_MCA_check = 102
- Adopt_new_MCA_type = 103
- Bridge_events = 104
- Channel_initiator_adapter_subtasks = 105
- Channel_initiator_dispatchers = 106
- Channel_events = 107
- Cluster_workload_max_recently_used_channels = 108
- Cluster_workload_use_queue = 109
- Command_events = 110
- DNS_group_name = 111
- DNS_WLM_registration = 112
- IP_address_version = 113
- Logger_events = 114
- Listener_restart_interval = 115
- Listener_generic_LU_name = 116
- Outbound_LU_name = 117
- APPCPM_suffix = 118
- Max_LU62_channels = 119
- Max_current_channels = 120
- Monitoring_cluster_sender_channel_level = 121
- Monitoring_channel_level = 122
- Monitoring_queue_level = 123
- Outbound_port_number_max = 124
- Outbound_port_number_min = 125
- Receive_timeout = 126
- Receive_timeout_min = 127
- Receive_timeout_type = 128
- Trace_route_recording = 129
- Start_channel_initiator_control = 130
- Start_command_server_control = 131
- Shared_queue_qmgr_name = 132
- SSL_events = 133
- SSL_FIPS_required = 134
- SSL_reset_key_count = 135
- Statistics_cluster_sender_channel_level = 136
- Statistics_channel_level = 137
- Statistics_interval = 138
- Statistics_MQI_level = 139
- Statistics_queue_level = 140
- Max_TCP/IP_channels = 141
- TCP_keepalive = 142

- TCP/IP_system_name = 143
- TCP/IP_stack_type = 144
- Channel_initiator_trace_auto_start = 145
- Channel_initiator_trace_table_size = 146
- Tree_life_time = 147
- Parent = 148
- Max_properties_length = 149
- Pub_Sub_mode = 150
- Pub_Sub_max_msg_retry_count = 151
- Pub_Sub_non-persistent_message = 152
- Pub_Sub_response_message = 153
- Pub_Sub_sync_point = 154
- Message_mark_browse_interval = 155
- Log_compression = 156
- MULC_capture_algorithm = 157

Parameter Name The name of the defined parameter. The valid format is an integer.

Valid values are as follows:

- QMNAME = 1
- AUTHOREV = 2
- CCSID = 3
- COMMANDQ = 4
- CMDLEVEL = 5
- DEADQ = 6
- DESCR = 7
- INHIBTEV = 8
- LOCALEV = 9
- MAXHANDS = 10
- MAXMSGL = 11
- MAXPRTY = 12
- MAXSMSGS = 13
- PERFMEV = 14
- PLATFORM = 15
- REMOTEEV = 16
- STRSTPEV = 17
- SYNCPT = 18
- TRIGINT = 19
- DEFXMITQ = 20
- CHAD = 21
- CHADEV = 22
- CHADEXIT = 23
- DISTL = 24
- CONNECTN = 25
- CHANGRP = 26

- CLWLEXIT = 27
- CLWLDDATA = 28
- CLWLLEN = 29
- QMID = 30
- REPOS = 31
- REPOSNL = 32
- CONFIGEV = 33
- EXPRYINT = 34
- SSLTASKS = 35
- SSLCRLNL = 36
- SSLKEYR = 37
- SSLCRYP = 38
- MAXUMSGS = 39
- IGQ = 40
- IGQAUT = 41
- IGQUSER = 42
- QSGNAME = 43
- CTHREAD = 44
- IDBACK = 45
- IDFORE = 46
- LOGLOAD = 47
- CMDUSER = 48
- QMCCSID = 49
- ROUTCDE = 50
- SMFACCT = 51
- SMFSTAT = 52
- STATIME = 53
- OTMACON_GROUP = 54
- OTMACON_MEMBER = 55
- OTMACON_DRUEXIT = 56
- OTMACON_AGE = 57
- OTMACON_TPIPEPFX = 58
- TRACSTR = 59
- TRACTBL = 60
- EXITTCB = 61
- EXITLIM = 62
- WLMTIME = 63
- QSGDATA_QSGNAME = 64
- QSGDATA_DSGNAME = 65
- QSGDATA_DB2NAME = 66
- QSGDATA_DB2SERV = 67
- RESAUDIT = 68
- QINDEXBLD = 69
- INBUFF = 70
- OUTBUFF = 71

- MAXRTU = 72
- MAXARCH = 73
- TWOACTV = 74
- TWOARCH = 75
- TWOBSDS = 76
- OFFLOAD = 77
- WRTHRSH = 78
- DEALLCT = 79
- UNIT = 80
- UNIT2 = 81
- ALCUNIT = 82
- PRIQTY = 83
- SECQTY = 84
- BLKSIZE = 85
- ARCPFX1 = 86
- ARCPFX2 = 87
- TSTAMP = 88
- ARCRETN = 89
- ARCWTOR = 90
- ARCWRTC = 91
- CATALOG = 92
- COMPACT = 93
- PROTECT = 94
- QUIESCE = 95
- CMDEV = 110
- COMPLOG = 156
- MULCCAPT = 157

Parameter Type The type of the parameter. The valid format is an alphanumeric string of up to 22 characters.

Parameter Value (Deprecated) The value of the parameter. The valid format is an alphanumeric string of up to 64 characters.

Parameter Value The value of the parameter. The valid format is an alphanumeric string of up to 256 characters.

Parent The name of the parent queue manager to which the local queue manager is to connect as its child in a hierarchy. The valid format is an alphanumeric string of up to 48 characters.

Pubsub Mode Controls whether the publish/subscribe engine and the queued publish/subscribe interface are running, and therefore controls whether applications can publish or subscribe by using the application programming interface and the queues that are monitored by the queued publish/subscribe interface. Valid values are as follows

- n/a = -1
- Disabled = 0
- Compatibility = 1

- Enabled = 2

Pubsub Nonpersistent Msg Controls how the Queued Pub/Sub Daemon handles a nonpersistent input message when it cannot process it. Depending on the report options of the input message, it might attempt to write the input message to the dead-letter queue. If the attempt to write it to the dead-letter queue fails, and the **MQRO_DISCARD_MSG** report option was specified on the input message or the value of **Pubsub Nonpersistent Msg** is DISCARD, the daemon discards the input message. If the value of **Pubsub Nonpersistent Msg** is KEEP, the daemon only discards the input message if the **MQRO_DISCARD_MSG** report option was set in the input message. Valid values are as follows:

- n/a = -1
- Discard = 2
- Keep = 3

Pubsub Nonpersistent Response If the Queued Pub/Sub Daemon attempts to generate a response message in response to a nonpersistent input message, and the response message cannot be delivered to the reply-to queue, this attribute indicates whether the daemon should try to write the undeliverable message to the dead-letter queue or whether to discard the message. Valid values are as follows:

- n/a = -1
- Normal = 0
- Safe = 1
- Discard = 2
- Keep = 3

Pubsub Sync Point Controls whether the Queued Pub/Sub Daemon processes command messages (publishes or deletes publication messages) under syncpoint. Valid values are as follows:

- n/a = -1
- Ifper = 1
- Yes = 0

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Repository Namelist The name of the namelist that is associated with the repository. Valid format is an alphanumeric string of up to 48 characters.

Tree Life The lifetime of non-administrative topics in seconds. The valid format is an integer.

Managers attributes

Use the Managers attributes to query dead-letter queue usage and in-doubt channels. This attribute group provides performance statistics and summary information for all of your WebSphere MQ managers. You can also use this group to detect performance problems with the log manager, buffer manager, or message manager components of a queue manager on a z/OS system. For example, you could create situations for detecting unavailable log manager buffers or a shortage of buffer pools. Managers is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

of ApplIDS (z/OS systems only) The number of entries in the trace data set for this object. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

of Page Sets (z/OS systems only) The number of page sets that are defined. The valid format is an integer in the range 0 - 100.

of Pools In Use (z/OS systems only) Number of buffer pools that are in use by this queue manager. The valid format is an integer in the range 0 - 4.

of Queues (z/OS systems only) The number of queues that are accessed by an application, transaction, or program running on this queue manager. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

of Qs Get-Inhib The number of monitored queues that belong to this queue manager that are get-inhibited. Users cannot issue the WebSphere MQ API routine MQGET for these queues. The valid format is an integer.

of Qs Put-Inhib The number of monitored queues that belong to this queue manager that are put-inhibited. Users cannot issue the WebSphere MQ API routines MQPUT and MQPUT1 for these queues. The valid format is an integer.

Qs with High Depth The number of monitored queues that belong to this queue manager that are marked as having too many messages (that is, their number of messages exceeds the high-depth threshold defined for each queue). The valid format is an integer.

of Task IDs The number of task IDs that are associated with this queue manager, application, program, or CICS transaction that are active at the time of the last data sample. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

of Tran/Pgms (z/OS systems only) The number of unique CICS transactions or program names. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

% Current Active Log Full The percent full of the first copy of the current active log. The valid format is an integer.

% Failed Look ahead Tape Mounts The percentage of attempted look ahead tape mounts that fail. The valid format is an integer.

% GetPg Outside Pool (z/OS systems only) The percentage of get-page requests that are not resolved from the buffer pool. The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

% of Busy Tape Units The percentage of maximum allowable allocated tape units (MAXRTU) that are currently busy. The valid format is an integer.

% Qs with High Depth The percentage of monitored queues that belong to this queue manager that are marked as having too many messages (that is, their message depths exceed the high-depth threshold defined for each queue). The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

% Rd Log Delayed (z/OS systems only) The percentage of log-read requests that were delayed because the MAXRTU data sets were already allocated. A non-zero value indicates that the queue manager has long running tasks that are backing out and having to read archive logs. The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

Active Log Data set Name The name of the current active log data set, first copy. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Active Logs Available The number of active log data sets that are available for use; that is, the number of active log data sets that are not full. The valid format is an integer.

Alias Queues The number of alias queues that are monitored for this queue manager. The valid format is an integer.

Alter Date & Time The date and time that the queue manager definition is last altered. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Arch Log Read % (z/OS systems only) The percentage of log-read requests that must be resolved from an archive log data set. The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

Archive Delay Due to Max Tape The number of read log requests that are delayed because the maximum number of tape units that can be allocated for archive data sets is reached. This limiting value is determined by the MAXRTU value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer.

Archive Delay Unavail Resource The number of read log requests that are delayed because of an unavailable resource that is not related to the MAXRTU limit, such as tape unit availability or WTOR delay. The valid format is an integer.

Archiving Quiesced Indicates that all user update activity is currently suspended to perform archive of the active log. This occurs if the ARCHIVE LOG MODE(QUIESCE) command is issued. Possible values are as follows:

- No = 0
- Yes = 1
- Unknown = 255

Auto-Defined Cluster Channels The number of automatically defined cluster-sender channels that are currently being monitored for this queue manager. The valid format is an integer.

Avg % In Use (z/OS systems only) The average percentage of allocated pages that are in use across all page sets. The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

Avg Extents (z/OS systems only) The average number of DASD extents per page set for this queue manager. Valid format is an integer (formatted to one decimal place).

Avg Pages Allocated (z/OS systems only) The average number of pages that are allocated per page set. The valid format is an integer (formatted to one decimal place).

Busy Archive Tapes The number of tape units that are currently busy actively processing an archive log data set. The valid format is an integer.

Checkpoints (z/OS systems only) The number of checkpoints that are issued during the sampling interval. The valid format is an integer.

Close Hndl Per Sec (z/OS systems only) The number of times per second WebSphere MQ closed an object (such as a queue) independently of a call to the MQCLOSE API routine. The valid format is an integer (formatted to one decimal place).

Cluster QMgr Auto Clussdr The current number of cluster queue manager entries for automatically defined cluster sender channels. The valid format is an integer.

Cluster QMgr Clusrcvr The current number of cluster queue manager entries for cluster receiver channels. Valid format is an integer.

Cluster QMgr Explicit Clussdr The current number of cluster queue manager entries for explicitly defined cluster sender channels. The valid format is an integer.

Cluster Queues The number of cluster queue definitions. The valid format is an integer.

Command Server Queue Name The name of the command server queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Current Channels The number of currently active channels that are monitored for this queue manager. The valid format is an integer.

Current Receivers The number of currently active receiver channels that are monitored for this queue manager. The valid format is an integer.

Current Requesters The number of currently active requester channels that are monitored for this queue manager. The valid format is an integer.

Current Senders The number of currently active sender channels that are monitored for this queue manager. The valid format is an integer.

Current Servers The number of currently active server channels that are monitored for this queue manager. The valid format is an integer.

DLQ Depth The number of messages that are currently stored in the dead-letter queue (DLQ) of this queue manager. The valid format is an integer.

DLQ Maximum The maximum number of messages that can be stored in the dead-letter queue (DLQ) of this queue manager. The valid format is an integer.

DLQ Name The name that is assigned to the dead-letter queue of this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Dynamic Perm Qs The number of monitored, permanent dynamic queues that are created for this queue manager. The valid format is an integer.

Dynamic Temp Qs The number of monitored temporary dynamic queues that are created for this queue manager. The valid format is an integer.

Event Count The total number of occurrences of all WebSphere MQ events that are reported to the event queue of this queue manager. Informational only.

Full Logs To Offload The number of full active logs that are waiting to be offloaded. Valid format is an integer.

Full Page Sets (z/OS systems only) The number of page sets that are full. When a page set is full, all calls to MQPUT or MQPUT1 for queues associated with that page set fail. The valid format is an integer (formatted to one decimal place).

GetPg I/O % (z/OS systems only) The percentage of get-page requests that resulted in I/O. The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

High % In Use (z/OS systems only) The highest percentage of allocated pages that are in use across all page sets. The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

High Extents (z/OS systems only) The highest number of DASD extents across all page sets for this queue manager. The valid format is an integer.

Host Jobname (z/OS systems only) The name of the started task or batch job that is running this queue manager. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Inactive Channels The number of currently inactive channels that are monitored for this queue manager. The valid format is an integer.

Inactive Receivers The number of currently inactive receiver channels that are monitored for this queue manager. The valid format is an integer.

Inactive Requesters The number of currently inactive requester channels that are monitored for this queue manager. The valid format is an integer.

Inactive Senders The number of currently inactive sender channels monitored for this queue manager. The valid format is an integer.

Inactive Servers The number of currently inactive server channels that are monitored for this queue manager. The valid format is an integer.

In-Doubt Channels The number of monitored channel connections that are currently in doubt for this queue manager. A sender channel is in doubt when a logical unit of work (LUW) has been sent and the channel is waiting for an acknowledgment that the LUW has been successfully received (in other words, when a syncpoint has been requested but not yet performed). The valid format is an integer.

Interval Time The length of interval. Informational only.

Local Queues The number of local queues that are monitored for this queue manager. The valid format is an integer.

Log Write Buffer Pagein The number of times that a log write buffer needs to be paged in before it can be used. The valid format is an integer.

Log Write Threshold The number of times that a log write request is scheduled because the log write threshold is reached. This threshold is determined by the WRTHRS value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer.

Logging Suspended Indicates whether logging is suspended. Logging is suspended if the SUSPEND QMGR LOG command is issued. All logging and update activity for the queue manager is suspended until the RESUME QMGR LOG command is issued. The valid format is an integer. Possible values are as follows:

- No = 0
- Yes = 1
- Unknown = 255

Look ahead Tape Mounts The number of look ahead tape mounts for archive data sets that are attempted. Valid format is an integer.

Low # Avail (z/OS systems only) The lowest number of available (unused) buffers across all buffer pools that belong to this queue manager. The valid format is an integer.

Low % Avail (z/OS systems only) The lowest percentage of available (unused) buffers across all buffer pools that belong to this queue manager. The valid format is an integer (formatted to one decimal place) in the range 0.0 - 100.0.

Message Security Indicates whether message security is active and thus whether message functions are allowed for this manager. A value of **Y** for Yes means

message functions are not allowed. A value of N for No means message functions are allowed for this manager. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Monitored Queues The number of active queues that are monitored for this queue manager. You specify which queues to monitor when customizing the WebSphere MQ Monitoring agent. The dead-letter queue is always monitored. Valid format is an integer.

MQCLOSE Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQCLOSE for this queue manager. The valid format is an integer (formatted to one decimal place).

MQGET Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQGET for this queue manager. The valid format is an integer (formatted to one decimal place).

MQINQ Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQINQ for this queue manager. The valid format is an integer (formatted to one decimal place).

MQOPEN Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQOPEN for this queue manager. The valid format is an integer (formatted to one decimal place).

MQPUT Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQPUT for this queue manager. The valid format is an integer (formatted to one decimal place).

MQPUT1 Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQPUT1 for this queue manager. The valid format is an integer (formatted to one decimal place).

MQSeries Release The release level of WebSphere MQ under which this queue manager is executing. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

MQSET Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQSET for this queue manager. The valid format is an integer (formatted to one decimal place).

Object Creates The object create rate of the data manager per second. Informational only.

Object Deletes The data manager object delete rate of the data manager per second. Informational only.

Object Gets The data manager object get rate of the data manager per second. Informational only.

Object Locates Data manager object locate rate per second. Informational only.

Object Puts The object put rate of the data manager per second. Informational only.

Offload Task Status The current status of the offload task. Possible values are Available, Busy Allocating Archive Data set, Busy Copying Active Log, and Busy Copying BSDS. The valid format is an integer.

Open Queues The number of monitored queues that are currently open for this queue manager. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Predefined Queues The number of predefined queues that are monitored for this queue manager. Valid format is an integer.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QMgr Status The status of this queue manager. The following values are valid:

Table 19. Queue manager status. This table lists the statuses of queue managers and their definitions

Status	Definition
Inactive = 0	The WebSphere MQ Monitoring agent is online, but the queue manager is not currently active.
Active = 1	The WebSphere MQ Monitoring agent is online and the queue manager is active.
Unknown = 3	The WebSphere MQ Monitoring agent is online, but the status of the queue manager is unknown.
QueueManager_Not_Available = 4	The WebSphere MQ Monitoring agent is online, but the queue manager is not available for connection.
CommandServer_Not_Responding = 5	The WebSphere MQ Monitoring agent is online, but is not receiving responses from the command server.
Dynamic_Queue_Allocation_Error = 6	The WebSphere MQ Monitoring agent is online, but is not able to dynamically allocate its reply-to queue.
Cluster_Repository_Unavailable = 7	The WebSphere MQ Monitoring agent is online, but the cluster repository is unavailable.
Standby = 8	The WebSphere MQ Monitoring agent is online, but the queue manager is now running as a standby instance and ready to become active if the existing active instance fails.

Table 19. Queue manager status (continued). This table lists the statuses of queue managers and their definitions

Status	Definition
Running_Elsewhere = 9	The WebSphere MQ Monitoring agent is online, but the queue manager is running elsewhere.

QMgr Subsys (z/OS systems only) The subsystem ID that is associated with this queue manager. The valid format is an alphanumeric string of up to 4 characters.

QMgr Type The operating system where this queue manager is running. Valid values are as follows:

- MVS = M
- AIX = A
- OS2 = O
- NT = N
- HPUNIX = H
- OS400 = 4
- Solaris = S
- Guardian = G
- Windows = W
- Linux = L
- UNIX = U
- VMS = V
- NSK = K
- VSE = E
- n/a = R

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Queue Messages The total number of messages on all monitored queues. The valid format is an integer.

Read Log Per Min (z/OS systems only) The number of read-log requests per minute. The valid format is an integer (formatted to one decimal place).

Remote Queues The number of remote queues that are monitored for this queue manager. The valid format is an integer.

Server Connections The total number of active server connections. Valid format is an integer.

Start Date & Time The time and date that this queue manager or channel is last started. This information is available for UNIX and Linux systems. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

StorClass Changes The storage class change rate of the data manager per second. Informational only.

Synch Writes (z/OS systems only) The number of times that the synchronous page processor needs to be started because the synchronous write threshold is reached. The valid format is an integer.

Timeout Count The number of system command reply timeouts that occur during the most recent sampling cycle for the current queue manager. If the queue manager does not respond to an information request from the WebSphere MQ Monitoring agent within 30 seconds, the agent considers it a timeout and stops waiting for a response. In this case, data is missing from the last sample.

For a non z/OS queue manager, it is the number of consecutive timeouts, which indicates the number of samples missed. If this parameter is nonzero, there might be a serious performance or availability problem with this queue manager. The valid format is an integer.

Total Channels The total number of active channels and inactive channels. The valid format is an integer.

Transmit Queues The number of transmission queues that are monitored for this queue manager. The valid format is an integer.

Unavailable Page Sets (z/OS systems only) The number of defined page sets that are not available for use. The valid format is an integer in the range 0 - 100.

Write Log Per Min (z/OS systems only) The number of write-log requests per minute. The valid format is an integer (formatted to one decimal place).

Write Requests Suspended The number of times that a request to write data to buffers is suspended. The valid format is an integer.

Zero Bufr Waits (z/OS systems only) The number of times that an application has to wait because no buffers are available in buffer pool of this queue manager. The valid format is an integer.

Zero Bufs Count (z/OS systems only) The number of times that a WebSphere MQ application cannot get an available buffer from the buffer pool of this queue manager. The valid format is an integer.

Message Data attributes

Use the Message Data attributes to view message parameters, including displacement, character data, converted data, and hexadecimal data. These attributes are informational only; they cannot be used to create situations.

Character Data The contents of the message in character form. This is the message data after it has been converted to UTF-8 format character data using the message CCSID. The message data is retrieved from the queue for conversion without using the MQGMO_CONVERT option.

Character Data (deprecated) The data at displacement in characters. Valid format is an alphanumeric string.

Character Data CCSID The CCSID of the character set that is used to encode the message contents.

For a complete list of CCSID values and their corresponding character sets see the IBM Web site.

Converted Data The data at displacement in converted characters. Valid format is an alphanumeric string.

Converted Data (deprecated) The contents of the message in character form. This is the message data after it has been converted to UTF-8 format character data using the message CCSID. The message data is retrieved from the queue for conversion using the MQGMO_CONVERT option.

Converted Data CCSID The CCSID of the character set that is used by the queue manager on which the message is stored.

This attribute is used to convert the message data for the Converted Data attribute when the message data is retrieved from the queue using the MQGMO_CONVERT option. For a complete list of CCSID values and their corresponding character sets see the IBM Web site.

Converted Status The status of the open or get command. The valid format is an integer of up to 4 digits. There are the following valid values:

- Unknown = -1
- Success = 0
- MQMD_Format_None = 12
- 2001-Alias_Base_Q_Type_Error = 2001
- 2002-Already_Connected = 2002
- 2003-Backed_Out = 2003
- 2004-Buffer_Error = 2004
- 2005-Buffer_Length_Error = 2005
- 2006-Char_Attr_Length_Error = 2006
- 2007-Char_Attrs_Error = 2007
- 2008-Char_Attrs_Too_Short = 2008
- 2009-Connection_Broken = 2009
- 2010-Data_Length_Error = 2010
- 2011-Dynamic_Q_Name_Error = 2011
- 2012-Environment_Error = 2012
- 2013-Expiry_Error = 2013
- 2014-Feedback_Error = 2014
- 2016-Get_Inhibited = 2016
- 2017-Handle_Not_Available = 2017

- 2018-Hconn_Error = 2018
- 2019-Hobj_Error = 2019
- 2020-Inhibit_Value_Error = 2020
- 2021-Int_Attr_Count_Error = 2021
- 2022-Int_Attr_Count_Too_Small = 2022
- 2023-Int_Attrs_Array_Error = 2023
- 2024-Syncpoint_Limit_Reached = 2024
- 2025-Max_Conns_Limit_Reached = 2025
- 2026-Md_Error = 2026
- 2027-Missing_Reply_To_Q = 2027
- 2029-Msg_Type_Error = 2029
- 2030-Msg_Too_Big_For_Q = 2030
- 2031-Msg_Too_Big_For_Q_Mgr = 2031
- 2033-No_Msg_Available = 2033
- 2034-No_Msg_Under_Cursor = 2034
- 2035-Not_Authorized = 2035
- 2036-Not_Open_For_Browse = 2036
- 2037-Not_Open_For_Input = 2037
- 2038-Not_Open_For_Inquire = 2038
- 2039-Not_Open_For_Output = 2039
- 2040-Not_Open_For_Set = 2040
- 2041-Object_Changed = 2041
- 2042-Object_In_Use = 2042
- 2043-Object_Type_Error = 2043
- 2044-Od_Error = 2044
- 2045-Option_Not_Valid_For_Type = 2045
- 2046-Options_Error = 2046
- 2047-Persistence_Error = 2047
- 2048-Persistent_Not_Allowed = 2048
- 2049-Priority_Exceeds_Maximum = 2049
- 2050-Priority_Error = 2050
- 2051-Put_Inhibited = 2051
- 2052-Q_Deleted = 2052
- 2053-Q_Full = 2053
- 2055-Q_Not_Empty = 2055
- 2056-Q_Space_Not_Available = 2056
- 2057-Q_Type_Error = 2057
- 2058-Q_Mgr_Name_Error = 2058
- 2059-Q_Mgr_Not_Available = 2059
- 2061-Report_Options_Error = 2061
- 2062-Second_Mark_Not_Allowed = 2062
- 2063-Security_Error = 2063
- 2065-Selector_Count_Error = 2065
- 2066-Selector_Limit_Exceeded = 2066
- 2067-Selector_Error = 2067

- 2068-Selector_Not_For_Type = 2068
- 2069-Signal_Outstanding = 2069
- 2070-Signal_Request_Accepted = 2070
- 2071-Storage_Not_Available = 2071
- 2072-Syncpoint_Not_Available = 2072
- 2075-Trigger_Control_Error = 2075
- 2076-Trigger_Depth_Error = 2076
- 2077-Trigger_Msg_Priority_Err = 2077
- 2078-Trigger_Type_Error = 2078
- 2079-Truncated_Msg_Accepted = 2079
- 2080-Truncated_Msg_Failed = 2080
- 2082-Unknown_Alias_Base_Q = 2082
- 2085-Unknown_Object_Name = 2085
- 2086-Unknown_Object_Q_Mgr = 2086
- 2087-Unknown_Remote_Q_Mgr = 2087
- 2090-Wait_Interval_Error = 2090
- 2091-Xmit_Q_Type_Error = 2091
- 2092-Xmit_Q_Usage_Error = 2092
- 2093-Not_Open_For_Pass_All = 2093
- 2094-Not_Open_For_Pass_Ident = 2094
- 2095-Not_Open_For_Set_All = 2095
- 2096-Not_Open_For_Set_Ident = 2096
- 2097-Context_Handle_Error = 2097
- 2098-Context_Not_Available = 2098
- 2099-Signal1_Error = 2099
- 2100-Object_Already_Exists = 2100
- 2101-Object_Damaged = 2101
- 2102-Resource_Problem = 2102
- 2103-Another_Q_Mgr_Connected = 2103
- 2104-Unknown_Report_Option = 2104
- 2105-Storage_Class_Error = 2105
- 2106-Cod_Not_Valid_For_Xcf_Q = 2106
- 2107-Xwait_Canceled = 2107
- 2108-Xwait_Error = 2108
- 2109-Suppressed_By_Exit = 2109
- 2110-Format_Error = 2110
- 2111-Source_Ccsid_Error = 2111
- 2112-Source_Integer_Enc_Error = 2112
- 2113-Source_Decimal_Enc_Error = 2113
- 2114-Source_Float_Enc_Error = 2114
- 2115-Target_Ccsid_Error = 2115
- 2116-Target_Integer_Enc_Error = 2116
- 2117-Target_Decimal_Enc_Error = 2117
- 2118-Target_Float_Enc_Error = 2118
- 2119-Not_Converted = 2119

- 2120-Converted_Msg_Too_Big = 2120
- 2120-Truncated = 2120
- 2121-No_External_Participants = 2121
- 2122-Participant_Not_Available = 2122
- 2123-Outcome_Mixed = 2123
- 2124-Outcome_Pending = 2124
- 2125-Bridge_Started = 2125
- 2126-Bridge_Stopped = 2126
- 2127-Adapter_Storage_Shortage = 2127
- 2128-Uow_In_Progress = 2128
- 2129-Adapter_Conn_Load_Error = 2129
- 2130-Adapter_Serv_Load_Error = 2130
- 2131-Adapter_Defs_Error = 2131
- 2132-Adapter_Defs_Load_Error = 2132
- 2133-Adapter_Conv_Load_Error = 2133
- 2134-Bo_Error = 2134
- 2135-Dh_Error = 2135
- 2136-Multiple_Reasons = 2136
- 2137-Open_Failed = 2137
- 2138-Adapter_Disc_Load_Error = 2138
- 2139-Cno_Error = 2139
- 2140-Cics_Wait_Failed = 2140
- 2141-Dlh_Error = 2141
- 2142-Header_Error = 2142
- 2143-Source_Length_Error = 2143
- 2144-Target_Length_Error = 2144
- 2145-Source_Buffer_Error = 2145
- 2146-Target_Buffer_Error = 2146
- 2148-Iih_Error = 2148
- 2149-Pcf_Error = 2149
- 2150-Dbcs_Error = 2150
- 2152-Object_Name_Error = 2152
- 2153-Object_Q_Mgr_Name_Error = 2153
- 2154-Recs_Present_Error = 2154
- 2155-Object_Records_Error = 2155
- 2156-Response_Records_Error = 2156
- 2157-Asid_Mismatch = 2157
- 2158-Pmo_Record_Flags_Error = 2158
- 2159-Put_Msg_Records_Error = 2159
- 2160-Conn_Id_In_Use = 2160
- 2161-Q_Mgr_Quiescing = 2161
- 2162-Q_Mgr_Stopping = 2162
- 2163-Duplicate_Recov_Coord = 2163
- 2173-Pmo_Error = 2173
- 2182-API_Exit_Not_Found = 2182

- 2183-API_Exit_Load_Error = 2183
- 2184-Remote_Q_Name_Error = 2184
- 2185-Inconsistent_Persistence = 2185
- 2186-Gmo_Error = 2186
- 2191-Tmc_Error = 2191
- 2192-Pageset_Full = 2192
- 2193-Pageset_Error = 2193
- 2194-Name_Not_Valid_For_Type = 2194
- 2195-Unexpected_Error = 2195
- 2196-Unknown_Xmit_Q = 2196
- 2197-Unknown_Def_Xmit_Q = 2197
- 2198-Def_Xmit_Q_Type_Error = 2198
- 2199-Def_Xmit_Q_Usage_Error = 2199
- 2201-Name_In_Use = 2201
- 2202-Connection_Quiescing = 2202
- 2203-Connection_Stopping = 2203
- 2204-Adapter_Not_Available = 2204
- 2206-Msg_Id_Error = 2206
- 2207-Correl_Id_Error = 2207
- 2208-File_System_Error = 2208
- 2209-No_Msg_Locked = 2209
- 2216-File_Not_Audited = 2216
- 2217-Connection_Not_Authorized = 2217
- 2218-Msg_Too_Big_For_Channel = 2218
- 2219-Call_In_Progress = 2219
- 2220-Rmh_Error = 2220
- 2222-Q_Mgr_Active = 2222
- 2223-Q_Mgr_Not_Active = 2223
- 2224-Q_Depth_High = 2224
- 2225-Q_Depth_Low = 2225
- 2226-Q_Service_Interval_High = 2226
- 2227-Q_Service_Interval_Ok = 2227
- 2233-Channel_Auto_Def_Ok = 2233
- 2234-Channel_Auto_Def_Error = 2234
- 2235-Cfh_Error = 2235
- 2236-Cfil_Error = 2236
- 2237-Cfin_Error = 2237
- 2238-Cfsl_Error = 2238
- 2239-Cfst_Error = 2239
- 2241-Incomplete_Group = 2241
- 2242-Incomplete_Msg = 2242
- 2243-Inconsistent_Ccsids = 2243
- 2244-Inconsistent_Encodings = 2244
- 2245-Inconsistent_Uow = 2245
- 2246-Invalid_Msg_Under_Cursor = 2246

- 2247-Match_Options_Error = 2247
- 2248-Mde_Error = 2248
- 2249-Msg_Flags_Error = 2249
- 2250-Msg_Seq_Number_Error = 2250
- 2251-Offset_Error = 2251
- 2252-Original_Length_Error = 2252
- 2253-Segment_Length_Zero = 2253
- 2255-Uow_Not_Available = 2255
- 2256-Wrong_Gmo_Version = 2256
- 2257-Wrong_Md_Version = 2257
- 2258-Group_Id_Error = 2258
- 2259-Inconsistent_Browse = 2259
- 2260-Xqh_Error = 2260
- 2261-Src_Env_Error = 2261
- 2262-Src_Name_Error = 2262
- 2263-Dest_Env_Error = 2263
- 2264-Dest_Name_Error = 2264
- 2265-Tm_Error = 2265
- 2280-Hconfig_Error = 2280
- 2281-Function_Error = 2281
- 2282-Channel_Started = 2282
- 2283-Channel_Stopped = 2283
- 2284-Channel_Conv_Error = 2284
- 2285-Service_Not_Available = 2285
- 2286-Initialization_Failed = 2286
- 2287-Termination_Failed = 2287
- 2288-Unknown_Q_Name = 2288
- 2289-Service_Error = 2289
- 2290-Q_Already_Exists = 2290
- 2291-User_Id_Not_Available = 2291
- 2292-Unknown_Entity = 2292
- 2293-Unknown_Auth_Entity = 2293
- 2294-Unknown_Ref_Object = 2294
- 2295-Channel_Activated = 2295
- 2296-Channel_Not_Activated = 2296
- 3001-MQCFH_Type_Error = 3001
- 3002-MQCFH_Struct_Length_Error = 3002
- 3003-MQCHF_Version_Error = 3003
- 3004-MQCFH_Msg_Seq_Error = 3004
- 3005-MQCFH_Control_error = 3005
- 3006-MQCFH_Parm_Count_Error = 3006
- 3007-MQCFH_Command_Error = 3007
- 3008-Command_Failed = 3008
- 3009-MQCFIN_Struct_Length_Error = 3009
- 3010-MQCFST_Struct_Length_Error = 3010

- 3011-MQCFST_String_Length_Error = 3011
- 3012-Force_value_Error = 3012
- 3013-Structure_Type_Error = 3012
- 3014-MQCFIN_Parm_ID_Error = 3014
- 3015-MQCFST_Parm_ID_Error = 3015
- 3016-Msg_Length_Error = 3016
- 3017-MQCFIN_Duplicate_Parm = 3017
- 3018-MQCFST_Duplicate_Parm = 3018
- 3019-Parm_Count_Too_Small = 3019
- 3020-Parm_Count_Too_Big = 3020
- 3021-Q_Already_In_Cell = 3021
- 3022-Q_Type_Error = 3022
- 3023-MD_Format_Error = 3023
- 3025-Replace_Value_Error = 3025
- 3026-MQCFIL_Duplicate_Value = 3026
- 3027-MQCFIL_Count_Error = 3027
- 3028-MQCFIL_Length_Error = 3028
- 3029-Quiesce_Value_Error = 3029
- 3030-Msg_Seq_Number_Error = 3030
- 3031-Ping_Data_Count_Error = 3031
- 3032-Ping_Data_Compare_Error = 3032
- 3034-Channel_Type_Error = 3034
- 3035-Parm_Sequence_Error = 3035
- 3036-Xmit_Protocol_Type_Error = 3036
- 3037-Batch_Size_Error = 3037
- 3038-Disc_Int_Error = 3038
- 3039-Short_Retry_Error = 3039
- 3040-Short_Timer_Error = 3040
- 3041-Long_Retry_Error = 3041
- 3042-Long_Timer_Error = 3042
- 3043-Seq_Number_Wrap_Error = 3043
- 3044-Max_Msg_Length_Error = 3044
- 3045-Put_Auth_Error = 3045
- 3046-Purge_Value_Error = 3046
- 3047-MQCFIL_Parm_ID_Error = 3047
- 3048-Msg_Truncated = 3048
- 3049-CCSID_Error = 3049
- 3050-Encoding_Error = 3050
- 3052-Data_Conv_Value_Error = 3052
- 3053-InDoubt_Value_Error = 3053
- 3054-Escape_Type_Error = 3054
- 3062-Channel_Table_Error = 3062
- 3063-MCA_Type_Error = 3063
- 3064-Chl_Inst_Type_Error = 3064
- 3065-Chl_Status_Not_Found = 3065

- 3066-MQCFSL_Duplicate_Parm = 3066
- 3067-MQCFSL_Total_Length_Error = 3067
- 4001-Object_Already_Exist = 4001
- 4002-Object_Wrong_Type = 4002
- 4003-Like_Object_Wrong_Type = 4003
- 4004-Object_Open = 4004
- 4005-Attr_Value_Error = 4005
- 4006-Unknown_Q_Mgr = 4006
- 4007-Q_Wrong_Type = 4007
- 4008-Object_Name_Error = 4008
- 4009-Allocate_Failed = 4009
- 4010-Host_Not_Available = 4010
- 4011-Configuration_Error = 4011
- 4012-Connection_Refused = 4012
- 4013-Entry_Error = 4013
- 4014-Send_Failed = 4014
- 4015-Receive_Data_Error = 4015
- 4016-Receive_Failed = 4016
- 4017-Connection_Closed = 4017
- 4018-No_Storage = 4018
- 4019-No_Comms_Manager = 4019
- 4020-Listener_Not_Started = 4020
- 4024-Bind_Failed = 4024
- 4025-Channel_InDoubt = 4025
- 4026-MQCONN_Failed = 4026
- 4027-MQOPEN_Failed = 4027
- 4028-MQGET_Failed = 4028
- 4029-MQPUT_Failed = 4029
- 4030-PING_Error = 4030
- 4031-Channel_In_Use = 4031
- 4032-Channel_Not_Found = 4032
- 4033-Unknown_Remote_Channel = 4033
- 4034-Remote_QM_Unavailable = 4034
- 4035-Remote_QM_Terminating = 4035
- 4036-MQINQ_Failed = 4036
- 4037-Not_Xmit_Q = 4037
- 4038-Channel_Disabled = 4038
- 4039-User_Exit_Not_Available = 4039
- 4040-Commit_Failed = 4040
- 4042-Channel_Already_Exists = 4042
- 4043-Data_Too_Large = 4043
- 4044-Channel_Name_Error = 4044
- 4045-Xmit_Q_Name_Error = 4045
- 4047-MCA_Name_Error = 4047
- 4048-Send_Exit_Name_Error = 4048

- 4049-Sec_Exit_Name_Error = 4049
- 4050-Msg_Exit_Name_Error = 4050
- 4051-Rcv_Exit_Name_Error = 4051
- 4052-Xmit_Q_Name_Wrong_Type = 4052
- 4053-MCA_Name_Wrong_Type = 4053
- 4054-Disc_Int_Wrong_Type = 4054
- 4055-Short_Retry_Wrong_Type = 4055
- 4056-Short_Timer_Wrong_Type = 4056
- 4057-Long_Retry_Wrong_Type = 4057
- 4058-Long_Timer_Wrong_Type = 4058
- 4059-Put_Auth_Wrong_Type = 4059
- 4061-Missing_Conn_Name = 4061
- 4062-Conn_Name_Error = 4062
- 4063-MQSET_Failed = 4063
- 4064-Channel_Not_Active = 4064
- 4065-Terminated_By_Sec_Exit = 4065
- 4067-Dynamic_Q_Scope_Error = 4067
- 4068-Cell_Dir_Not_Available = 4068
- 4069-MR_Count_Error = 4069
- 4070-MR_Count_Wrong_Type = 4070
- 4071-MR_Exit_Name_Error = 4071
- 4072-MR_Exit_Name_Wrong_Type = 4072
- 4073-MR_Interval_Error = 4073
- 4074-MR_Interval_Wrong_Type = 4074
- 4075-NPM_Speed_Error = 4075
- 4076-NPM_Speed_Wrong_Type = 4076
- 4077-HB_Interval_Error = 4077
- 4078-HB_Interval_Wrong_Type = 4078
- 4079-CHAD_Error = 4079
- 4080-CHAD_Wrong_Type = 4080
- 4081-CHAD_Event_Error = 4081
- 4082-CHAD_Event_Wrong_Type = 4082
- 4083-CHAD_Exit_Error = 4083
- 4084-CHAD_Exit_Wrong_Type = 4084
- 4085-Suppressed_By_Exit = 4085
- 4086-Batch_Int_Error = 4086
- 4087-Batch_Int_Wrong_Type = 4087
- Insufficient_Storage = 9005
- Agent_Timeout_Occurred = 9009
- Not_Allowed_By_COMMAND_Option = 9010
- Failed_Due_to_QMGR_Quiescing = 9011
- Unknown_Reason_Code = 9012
- Command_Accepted_by_MVS = 9013
- QMGR_Not_Active = 9014
- Remote_QMGR_Not_Supported = 9015

- Syntax_Error = 9016
- Command_Failed = 9017
- Not_Allowed_by_Security = 9018
- Not_Supported_by_Platform = 9019

Correlation ID The correlation identifier. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Disp The displacement within the message. The valid format is an alphanumeric string of up to 4 characters.

Hexadecimal Data The data at displacement in hexadecimal characters. The valid format is an alphanumeric string of up to 36 characters.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message ID The identifier that is associated with the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message Tag Cyclic redundancy check (CRC) for message descriptor (MQMD) in hexadecimal characters. The valid format is an alphanumeric string of up to 8 characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call (MQOD_ObjectName) of the application. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Status The status of the open or get command. The valid format is an integer of up to four digits.

Valid values are as follows:

- OK = 0,
- (KMQW000W)2001-Alias_Base_Q_Type_Error = 2001,
- (KMQW000W)2004-Buffer_Error = 2004,
- (KMQW000W)2005-Buffer_Length_Error = 2005,
- (KMQW000W)2009-Connection_Broken = 2009,
- (KMQW000W)2010-Data_Length_Error = 2010,
- (KMQW000W)2011-Dynamic_Q_Name_Error = 2011,

- (KMQW000W)2016-Get_Inhibited = 2016,
- (KMQW000W)2017-Handle_Not_Available = 2017,
- (KMQW000W)2018-Hconn_Error = 2018,
- (KMQW000W)2019-Hobj_Error = 2019,
- (KMQW000W)2024-Syncpoint_Limit_Reached = 2024,
- (KMQW000W)2026-MD_Error = 2026,
- (KMQW000W)2033-No_Msg_Available = 2033,
- (KMQW000W)2034-No_Msg_Under_Cursor = 2034,
- (KMQW000W)2035-Not_Authorized = 2035,
- (KMQW000W)2036-Not_Open_For_Browse = 2036,
- (KMQW000W)2037-Not_Open_For_Input = 2037,
- (KMQW000W)2041-Object_Changed = 2041,
- (KMQW000W)2042-Object_In_Use = 2042,
- (KMQW000W)2043-Object_Type_Error = 2043,
- (KMQW000W)2044-OD_Error = 2044,
- (KMQW000W)2045-Option_Not_Valid_For_Type = 2045,
- (KMQW000W)2046-Options_Error = 2046,
- (KMQW000W)2052-Q_Deleted = 2052,
- (KMQW000W)2057-Q_Type_Error = 2057,
- (KMQW000W)2058-Q_Mgr_Name_Error = 2058,
- (KMQW000W)2059-Q_Mgr_Not_Available = 2059,
- (KMQW000W)2062-Second_Mark_Not_Allowed = 2062,
- (KMQW000W)2063-Security_Error = 2063,
- (KMQW000W)2069-Signal_Outstanding = 2069,
- (KMQW000W)2070-Signal_Request_Accepted = 2070,
- (KMQW000W)2071-Storage_Not_Available = 2071,
- (KMQW000W)2079-Truncated_Msg_Accepted = 2079,
- (KMQW000W)2080-Truncated_Msg_Failed = 2080,
- (KMQW000W)2082-Unknown_Alias_Base_Q = 2082,
- (KMQW000W)2085-Unknown_Object_Name = 2085,
- (KMQW000W)2086-Unknown_Object_Q_Mgr = 2086,
- (KMQW000W)2087-Unknown_Remote_Q_Mgr = 2087,
- (KMQW000W)2091-Xmit_Q_Type_Error = 2091,
- (KMQW000W)2092-Xmit_Q_Usage_Error = 2092,
- (KMQW000W)2099-Signal1_Error = 2099,
- (KMQW000W)2100-Object_Already_Exists = 2100,
- (KMQW000W)2101-Object_Damaged = 2101,
- (KMQW000W)2102-Resource_Problem = 2102,
- (KMQW000W)2109-Suppressed_By_Exit = 2109,
- (KMQW000W)2110-Format_Error = 2110,
- (KMQW000W)2111-Source_CCSID_Error = 2111,
- (KMQW000W)2112-Source_Integer_Enc_Error = 2112,
- (KMQW000W)2113-Source_Decimal_Enc_Error = 2113,
- (KMQW000W)2114-Source_Float_Enc_Error = 2114,
- (KMQW000W)2115-Target_CCSID_Error = 2115,

- (KMQW000W)2116-Target_Integer_Enc_Error = 2116,
- (KMQW000W)2117-Target_Decimal_Enc_Error = 2117,
- (KMQW000W)2118-Target_Float_Enc_Error = 2118,
- (KMQW000W)2119-Not_Converted = 2119,
- (KMQW000W)2120-Converted_Msg_Too_Big = 2120,
- (KMQW000W)2130-Adapter_Serv_Load_Error = 2130,
- (KMQW000W)2133-Adapter_Conv_Load_Error = 2133,
- (KMQW000W)2136-Multiple_Reasons = 2136,
- (KMQW000W)2140-CICS_Wait_Failed = 2140,
- (KMQW000W)2152-Object_Name_Error = 2152,
- (KMQW000W)2153-Object_Q_Mgr_Name_Error = 2153,
- (KMQW000W)2154-Recs_Present_Error = 2154,
- (KMQW000W)2155-Object_Records_Error = 2155,
- (KMQW000W)2156-Response_Records_Error = 2156,
- (KMQW000W)2157-ASID_Mismatch = 2157,
- (KMQW000W)2161-Q_Mgr_Quiescing = 2161,
- (KMQW000W)2162-Q_Mgr_Stopping = 2162,
- (KMQW000W)2183-API_Exit_Load_Error = 2183,
- (KMQW000W)2184-Remote_Q_Name_Error = 2184,
- (KMQW000W)2186-GMO_Error = 2186,
- (KMQW000W)2192-Pageset_Full = 2192,
- (KMQW000W)2193-Pageset_Error = 2193,
- (KMQW000W)2194-Name_Not_Valid_For_Type = 2194,
- (KMQW000W)2195-Unexpected_Error = 2195,
- (KMQW000W)2196-Unknown_Xmit_Q = 2196,
- (KMQW000W)2197-Unknown_Def_Xmit_Q = 2197,
- (KMQW000W)2198-Def_Xmit_Q_Type_Error = 2198,
- (KMQW000W)2199-Def_Xmit_Q_Usage_Error = 2199,
- (KMQW000W)2201-Name_In_Use = 2201,
- (KMQW000W)2202-Connection_Quiescing = 2202,
- (KMQW000W)2203-Connection_Stopping = 2203,
- (KMQW000W)2204-Adapter_Not_Available = 2204,
- (KMQW000W)2209-No_Msg_Locked = 2209,
- (KMQW000W)2217-Connection_Not_Authorized = 2217,
- (KMQW000W)2219-Call_In_Progress = 2219,
- (KMQW000W)2241-Incomplete_Group = 2241,
- (KMQW000W)2242-Incomplete_Msg = 2242,
- (KMQW000W)2243-Inconsistent_CCSIDs = 2243,
- (KMQW000W)2244-Inconsistent_Encodings = 2244,
- (KMQW000W)2245-Inconsistent_UOW = 2245,
- (KMQW000W)2246-Invalid_Msg_Under_Cursor = 2246,
- (KMQW000W)2247-Match_Options_Error = 2247,
- (KMQW000W)2255-UOW_Not_Available = 2255,
- (KMQW000W)2256-Wrong_GMO_Version = 2256,
- (KMQW000W)2257-Wrong_MD_Version = 2257,

- (KMQW000W)2259-Inconsistent_Browse = 2259,
- (KMQW002E)Unsupported_CCSID_Found = 9002,
- (KMQW008E)Not_Allowed_By_MSGACCESS = 9008,
- (KMQW009E)Agent_Timeout_Occurred = 9009

Remember: If you do not specify the Format field of the MQMD, you get a warning: MQMD_format_None, which indicates the WebSphere MQ Monitoring agent skips the message conversion process if the target CCSID is not identical to the source CCSID.

Message Details attributes

Use the Message Details attributes to view message parameters, including name, description, and value. These attributes are informational only; they cannot be used to create situations.

Correlation ID The correlation identifier. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message ID The identifier that is associated with the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message Tag Cyclic redundancy check (CRC) for message descriptor (MQMD) in hexadecimal characters. The valid format is an alphanumeric string of up to 8 characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Parameter Description The parameter name of detail for the event. The valid format is an integer.

The following values are from the Message Descriptor (MQMD) which is always present:

- Report = 1,
- MsgType = 2,
- Expiry = 3,
- Feedback = 4,
- Encoding = 5,
- CodedCharSetId = 6,
- Format = 7,
- Priority = 8,

- Persistence = 9,
- MsgId = 10,
- CorrelId = 11,
- BackoutCount = 12,
- ReplyToQ = 13,
- ReplyToQMgr = 14,
- UserIdentifier = 15,
- AccountingToken = 16,
- ApplIdentityData = 17,
- PutApplType = 18,
- PutApplName = 19,
- PutDate = 20,
- PutTime = 21,
- ApplOriginData = 22

The following values are from the Dead Letter Header (MQDLH):

- DLH_Reason = 23,
- DLH_DestQName = 24,
- DLH_DestQMgrName = 25,
- DLH_Encoding = 26,
- DLH_CodedCharSetId = 27,
- DLH_Format = 28,
- DLH_PutApplType = 29,
- DLH_PutApplName = 30,
- DLH_PutDate = 31,
- DLH_PutTime = 32.

The following extensions to the MQMD which are found in either a Version 2 MQMD or an MQMDE:

- MDE_Encoding = 33,
- MDE_CodedCharSetId = 34,
- MDE_Format = 35,
- MDE_Flags = 36,
- MDE_GroupId = 37,
- MDE_MsgSeqNumber = 38,
- MDE_Offset = 39,
- MDE_MsgFlags = 40,
- MDE_OriginalLength = 41

The following values are from the Transmission Queue Header (MQXQH):

- XQH_RemoteQName = 42,
- XQH_RemoteQMgrName = 43.

The following values are from the embedded MsgDesc that is contained within the Transmission Queue Header (MQXQH):

- XQH_Encoding = 44,
- XQH_CodedCharSetid = 45,

- XQH_Format = 46,
- XQH_Msgid = 47,
- XQH_CorrelId = 48,
- XQH_BackoutCount = 49,
- XQH_PutApplType = 50,
- XQH_PutApplName = 51,
- XQH_PutDate = 52,
- XQH_PutTime = 53,
- XQH_ApplOriginData = 54

The following values are from the Distribution Header (MQDH) and the subsequent, if they are present, Object Records (MQOR) and Put-Message Records (MQPMR):

- DH_Encoding = 55,
- DH_CodedCharSetId = 56,
- DH_Format = 57,
- DH_Flags = 58,
- DH_PutMsgRecFields = 59,
- DH_RecsPresent = 60,
- DH_ObjectRecOffset = 61,
- DH_PutMsgRecOffset = 62,
- OR_ObjectName = 63,
- OR_ObjectQMgrName = 64,
- PMR_MsgId = 65,
- PMR_CorrelID = 66,
- PMR_GroupID = 67,
- PMR_Feedback = 68,
- PMR_AccountingToken = 69

The following values are from the Message Reference Header (MQRMH):

- RMH_Encoding = 70,
- RMH_CodedCharSetId = 71,
- RMH_Format = 72,
- RMH_Flags = 73,
- RMH_ObjectType = 74,
- RMH_ObjectInstanceId = 75,
- RMH_SrcEnvLength = 76,
- RMH_SrcEnvOffset = 77,
- RMH_SrcNameLength = 78,
- RMH_SrcNameOffset = 79,
- RMH_DestEnvLength = 80,
- RMH_DestEnvOffset = 81,
- RMH_DestNameLength = 82,
- RMH_DestNameOffset = 83,
- RMH_DataLogicalLength = 84,
- RMH_DataLogicalOffset = 85,

- RMH_DataLogicalOffset2 = 86.

Parameter Type The type of the parameter. The valid format is an alphanumeric string of up to 22 characters.

Parameter Value The value of the parameter. The valid format is an alphanumeric string of up to 48 characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call (MQOD_ObjectName) of the application. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Status The status of the open or get. The valid format is an integer. Valid values are as follows:

- OK = 0,
- (KMQW000W)2001-Alias_Base_Q_Type_Error = 2001,
- (KMQW000W)2004-Buffer_Error = 2004,
- (KMQW000W)2005-Buffer_Length_Error = 2005,
- (KMQW000W)2009-Connection_Broken = 2009,
- (KMQW000W)2010-Data_Length_Error = 2010,
- (KMQW000W)2011-Dynamic_Q_Name_Error = 2011,
- (KMQW000W)2016-Get_Inhibited = 2016,
- (KMQW000W)2017-Handle_Not_Available = 2017,
- (KMQW000W)2018-Hconn_Error = 2018,
- (KMQW000W)2019-Hobj_Error = 2019,
- (KMQW000W)2024-Syncpoint_Limit_Reached = 2024,
- (KMQW000W)2026-MD_Error = 2026,
- (KMQW000W)2033-No_Msg_Available = 2033,
- (KMQW000W)2034-No_Msg_Under_Cursor = 2034,
- (KMQW000W)2035-Not_Authorized = 2035,
- (KMQW000W)2036-Not_Open_For_Browse = 2036,
- (KMQW000W)2037-Not_Open_For_Input = 2037,
- (KMQW000W)2041-Object_Changed = 2041,
- (KMQW000W)2042-Object_In_Use = 2042,
- (KMQW000W)2043-Object_Type_Error = 2043,
- (KMQW000W)2044-OD_Error = 2044,
- (KMQW000W)2045-Option_Not_Valid_For_Type = 2045,
- (KMQW000W)2046-Options_Error = 2046,
- (KMQW000W)2052-Q_Deleted = 2052,
- (KMQW000W)2057-Q_Type_Error = 2057,
- (KMQW000W)2058-Q_Mgr_Name_Error = 2058,
- (KMQW000W)2059-Q_Mgr_Not_Available = 2059,
- (KMQW000W)2062-Second_Mark_Not_Allowed = 2062,
- (KMQW000W)2063-Security_Error = 2063,
- (KMQW000W)2069-Signal_Outstanding = 2069,

- (KMQW000W)2070-Signal_Request_Accepted = 2070,
- (KMQW000W)2071-Storage_Not_Available = 2071,
- (KMQW000W)2079-Truncated_Msg_Accepted = 2079,
- (KMQW000W)2080-Truncated_Msg_Failed = 2080,
- (KMQW000W)2082-Unknown_Alias_Base_Q = 2082,
- (KMQW000W)2085-Unknown_Object_Name = 2085,
- (KMQW000W)2086-Unknown_Object_Q_Mgr = 2086,
- (KMQW000W)2087-Unknown_Remote_Q_Mgr = 2087,
- (KMQW000W)2091-Xmit_Q_Type_Error = 2091,
- (KMQW000W)2092-Xmit_Q_Usage_Error = 2092,
- (KMQW000W)2099-Signal1_Error = 2099,
- (KMQW000W)2100-Object_Already_Exists = 2100,
- (KMQW000W)2101-Object_Damaged = 2101,
- (KMQW000W)2102-Resource_Problem = 2102,
- (KMQW000W)2109-Suppressed_By_Exit = 2109,
- (KMQW000W)2110-Format_Error = 2110,
- (KMQW000W)2111-Source_CCSID_Error = 2111,
- (KMQW000W)2112-Source_Integer_Enc_Error = 2112,
- (KMQW000W)2113-Source_Decimal_Enc_Error = 2113,
- (KMQW000W)2114-Source_Float_Enc_Error = 2114,
- (KMQW000W)2115-Target_CCSID_Error = 2115,
- (KMQW000W)2116-Target_Integer_Enc_Error = 2116,
- (KMQW000W)2117-Target_Decimal_Enc_Error = 2117,
- (KMQW000W)2118-Target_Float_Enc_Error = 2118,
- (KMQW000W)2119-Not_Converted = 2119,
- (KMQW000W)2120-Converted_Msg_Too_Big = 2120,
- (KMQW000W)2130-Adapter_Serv_Load_Error = 2130,
- (KMQW000W)2133-Adapter_Conv_Load_Error = 2133,
- (KMQW000W)2136-Multiple_Reasons = 2136,
- (KMQW000W)2140-CICS_Wait_Failed = 2140,
- (KMQW000W)2152-Object_Name_Error = 2152,
- (KMQW000W)2153-Object_Q_Mgr_Name_Error = 2153,
- (KMQW000W)2154-Recs_Present_Error = 2154,
- (KMQW000W)2155-Object_Records_Error = 2155,
- (KMQW000W)2156-Response_Records_Error = 2156,
- (KMQW000W)2157-ASID_Mismatch = 2157,
- (KMQW000W)2161-Q_Mgr_Quiescing = 2161,
- (KMQW000W)2162-Q_Mgr_Stopping = 2162,
- (KMQW000W)2183-API_Exit_Load_Error = 2183,
- (KMQW000W)2184-Remote_Q_Name_Error = 2184,
- (KMQW000W)2186-GMO_Error = 2186,
- (KMQW000W)2192-Pageset_Full = 2192,
- (KMQW000W)2193-Pageset_Error = 2193,
- (KMQW000W)2194-Name_Not_Valid_For_Type = 2194,
- (KMQW000W)2195-Unexpected_Error = 2195,

- (KMQW000W)2196-Unknown_Xmit_Q = 2196,
- (KMQW000W)2197-Unknown_Def_Xmit_Q = 2197,
- (KMQW000W)2198-Def_Xmit_Q_Type_Error = 2198,
- (KMQW000W)2199-Def_Xmit_Q_Usage_Error = 2199,
- (KMQW000W)2201-Name_In_Use = 2 201,
- (KMQW000W)2202-Connection_Quiescing = 2202,
- (KMQW000W)2203-Connection_Stopping = 2203,
- (KMQW000W)2204-Adapter_Not_Available = 2204,
- (KMQW000W)2209-No_Msg_Locked = 2209,
- (KMQW000W)2217-Connection_Not_Authorized = 2217,
- (KMQW000W)2219-Call_In_Progress = 2219,
- (KMQW000W)2241-Incomplete_Group = 2241,
- (KMQW000W)2242-Incomplete_Msg = 2242,
- (KMQW000W)2243-Inconsistent_CCSIDs = 2243,
- (KMQW000W)2244-Inconsistent_Encodings = 2244,
- (KMQW000W)2245-Inconsistent_UOW = 2245,
- (KMQW000W)2246-Invalid_Msg_Under_Cursor = 2246,
- (KMQW000W)2247-Match_Options_Error = 2247,
- (KMQW000W)2255-UOW_Not_Available = 2255,
- (KMQW000W)2256-Wrong_GMO_Version = 2256,
- (KMQW000W)2257-Wrong_MD_Version = 2257,
- (KMQW000W)2259-Inconsistent_Browse = 2259,
- (KMQW002E)Unsupported_CCSID_Found = 9002,
- (KMQW008E)Not_Allowed_By_MSGACCESS = 9008,
- (KMQW009E)Agent_Timeout_Occurred = 9009

Message Manager Long-Term History attributes (z/OS systems)

The Message Manager Long-Term History attributes are available on z/OS systems only.

The Message Manager Long-Term History attributes are associated with the history of the rates at which messages are passed to and pulled from a particular z/OS queue manager. These attributes are informational only; they cannot be used to create situations.

Close Handles Per Sec The number of times per second that WebSphere MQ closes an object (such as a queue) independently of a call to the MQCLOSE API routine. The valid format is an integer (formatted to one decimal place).

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Length The interval time over which statistics are taken. The valid format is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control

parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

MQCB Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQCB for this queue manager. The valid format is an integer of up to 4 digits.

MQCLOSE Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQCLOSE for this queue manager. The valid format is an integer (formatted to one decimal place).

MQCTL Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQCTL for this queue manager. The valid format is an integer of up to 4 digits.

MQGET Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQGET for this queue manager. The valid format is an integer (formatted to one decimal place).

MQINQ Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQINQ for this queue manager. The valid format is an integer (formatted to one decimal place).

MQOPEN Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQOPEN for this queue manager. The valid format is an integer (formatted to one decimal place).

MQPUT Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQPUT for this queue manager. The valid format is an integer (formatted to one decimal place).

MQPUT1 Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQPUT1 for this queue manager. The valid format is an integer (formatted to one decimal place).

MQSET Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSET for this queue manager. The valid format is an integer (formatted to one decimal place).

MQSTAT Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSTAT for this queue manager. The valid format is an integer of up to 4 digits.

MQSUB Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSUB for this queue manager. The valid format is an integer of up to 4 digits.

MQSUBRQ Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSUBRQ for this queue manager. The valid format is an integer of up to 4 digits.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

Pub Put Per Sec The number of publications per second. The valid format is an integer of up to 4 digits.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The time and date of the sample. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Message Manager Short-Term History attributes (z/OS systems only)

The Message Manager Short-Term History attributes are available on z/OS systems only.

The Message Manager Short-Term History attributes are associated with the recent history of the rates at which messages are passed to and pulled from a particular z/OS queue manager. These attributes are informational only; they cannot be used to create situations.

Close Handles Per Sec The number of times per second WebSphere MQ closed an object (such as a queue) independently of a call to the MQCLOSE API routine. The valid format is an integer (formatted to one decimal place).

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

MQCB Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQCB for this queue manager. The valid format is an integer of up to 4 digits.

MQCLOSE Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQCLOSE for this queue manager. The valid format is an integer (formatted to one decimal place).

MQCTL Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQCTL for this queue manager. The valid format is an integer of up to 4 digits.

MQGET Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQGET for this queue manager. The valid format is an integer (formatted to one decimal place).

MQINQ Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQINQ for this queue manager. The valid format is an integer (formatted to one decimal place).

MQOPEN Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQOPEN for this queue manager. The valid format is an integer (formatted to one decimal place).

MQPUT Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQPUT for this queue manager. The valid format is an integer (formatted to one decimal place).

MQPUT1 Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQPUT1 for this queue manager. The valid format is an integer (formatted to one decimal place).

MQSET Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSET for this queue manager. The valid format is an integer (formatted to one decimal place).

MQSTAT Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSTAT for this queue manager. The valid format is an integer of up to 4 digits.

MQSUB Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSUB for this queue manager. The valid format is an integer of up to 4 digits.

MQSUBRQ Per Sec The number of calls or starts per second of the WebSphere MQ API routine MQSUBRQ for this queue manager. The valid format is an integer of up to 4 digits.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Pub Put Per Sec The number of publications per second. The valid format is an integer of up to 4 digits.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The time and date of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

Message Statistics attributes

Use the Message Statistics attributes to create situations that are associated with message statistics for a particular queue of interest. Note that the Queue Name attribute must be provided in queries to this attribute group and it must specify an individual queue name. No wildcards are allowed. See also the description of the Grouping Mechanism attribute that follows. Because of the overhead of collecting message statistics data, it must only be collected for those queues that you want closely monitored. Message Statistics is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Many of the message statistics are calculated using the put-date-and-time of the message in the queue. If the queue has messages with put-date-and-times that do not reflect accurately when the message is put into the input queue, the statistics are correspondingly inaccurate. Put-date-and-times are not accurate indicators when origin context is preserved or set for a message during the put by an application to the queue. This commonly occurs when an application is a message mover that moves messages from one queue to another, or when any application passes or sets origin context for a message.

% Delayed The percentage of Total Messages that are Delayed Messages.

Authorization userid The user ID of the user that issues the WebSphere MQ request. The valid format is an alphanumeric string of up to 16 case-sensitive characters. Informational.

Average Msg(Secs) The average number of seconds (with two decimal places) that messages matching the Message Group Identifier are on the queue.

Delayed Messages The count of messages matching the Message Group Identifier for which the current date and time minus the message put date and time exceeds the Latency Threshold value. The valid format is an integer.

Grouping Mechanism An enumerated value that indicates how to ascertain the Message Group Identifier. This can be given in queries to the attribute group to tell the agent how to group the messages in the queue. The grouping mechanism can be Correlation ID, Application Name, Group ID, or Queue. Queue is the default, which results in one row being returned giving the message statistics for the whole queue. The valid format is an integer. Valid values are as follows:

- Queue = 0,
- Correlation_ID = 1,
- Application_Name = 2,
- Group_ID = 3

High Priority Msg(Secs) The number of seconds (with two decimal places) that the highest priority message that matches the Message Group Identifier is on the queue (note that if there is more than one of the highest priority, the oldest such message is used for this time value).

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Largest Message Size The size of the largest message on the queue. The message size is a return attribute when messages are browsed for other data. The valid format is an integer.

Latency Threshold The number of seconds (with two decimal places) that a message can exist on the queue before it is determined to be delayed on the queue. This can be given in queries to the attribute group to tell the agent how to calculate Delayed Messages. The default is either the threshold given for a greater-than comparison to the Oldest Message Time attribute when available in the query, or if not available, a value of 120 seconds.

Message Group Identifier A character string that identifies how messages are grouped within a workspace; this can be the correlation ID, put application name, or group ID from the MQMD. This identifier is blank when the default grouping mechanism of Queue is used. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message Group Identifier(Hex) A hexadecimal character representation of the Message Group Identifier. It is possible to chose to group by a hexadecimal correlation ID or group ID; however this form of the identifier is not selected for display by default in the product-provided workspaces. The valid format is an alphanumeric string of up to 96 case-sensitive characters.

Newest Msg(Secs) The number of seconds (with two decimal places) that the newest, most recent message matching the Message Group Identifier has been on the queue.

Oldest Msg(Secs) The number of seconds (with two decimal places) that the oldest (or most delayed) message matching the Message Group Identifier has been on the queue.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Priority 0 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 0.

Priority 1 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 1.

Priority 2 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 2.

Priority 3 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 3.

Priority 4 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 4.

Priority 5 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 5.

Priority 6 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 6.

Priority 7 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 7.

Priority 8 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 8.

Priority 9 Messages The count of messages that match the Message Group Identifier for which the message priority given in the MQMD is 9.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of a queue that is managed by the selected queue manager. This attribute is required to be given in queries to this attribute group. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Request Type One of the following request types: Current or Recent History. The valid format is an integer. Valid Values are Current = 0 and Recent_History = 1.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Total Messages The count of messages that are browsed that match the Message Group Identifier on the queue during the collection sample. The valid format is an integer.

Message Summary attributes

Use the Message Summary attributes to detect problems with messages. This group provides the backout count (which if high can indicate a problem), the correlation and message IDs, the message expiration time, the message length, message type (which can be request, reply, report, or datagram), persistence (which indicates whether the message is recoverable), priority (which can be used for selective retrieval), date and time the message was created, and the reply-to queue and queue manager names. These attributes are informational only; they cannot be used to create situations.

If multiple headers are generated, subsequent headers are prefixed with the IBM WebSphere MQ ID of the associated header. For example, subsequent dead letter queue headers are prefixed with DLH and subsequent transmit queue headers are prefixed with XQH. For more information, see the *WebSphere MQ Application Programming Reference* manual.

Accounting Token The accounting token of the message. The valid format is an alphanumeric string of up to 32 case-sensitive characters.

Appl ID The application name (on z/OS, the application identifier) of the application that put the message on the queue. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Appl Origin The application origin data of the message. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Appl Type The application type of the application that put the message on the queue. The valid format is an integer. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,
- CICS_VSE = 10,
- WINDOWS_NT = 11,
- VMS = 12,
- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- USER = 25,
- BROKER = 26,

- QMGR_PUBLISH = 27,
- JAVA = 28,
- DQM = 29,
- CHINIT = 30,
- WLM = 31,
- BATCH= 32,
- RRS_BATCH = 33,
- SIB = 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER = 65536

Application Identity Data The application identity data of the message. The valid format is an alphanumeric string of up to 32 case-sensitive characters.

Backout Count The backout count of the message. A high value might indicate a problem. The valid format is an integer.

Coded CharSetID The coded character set identifier, CCSID, of the message. The valid format is an integer.

Correlation ID The correlation identifier of the message, in hexadecimal character format. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Correlation ID (Char) The correlation identifier of the message. The valid format is an alphanumeric string of up to 24 characters.

Dest QMgr The destination queue manager of the message. The valid format is an alphanumeric string of up to 48 characters.

Dest Queue The destination queue of the message. The valid format is an alphanumeric string of up to 48 characters.

DLQ Appl ID The application name (or on z/OS, the application identifier) of the application that put the message on the dead-letter queue. The valid format is an alphanumeric string of up to 28 characters.

DLQ Appl Type The application type of the application that put the message on the dead-letter queue. The valid format is an integer. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,

- CICS_VSE = 10,
- WINDOWS_NT = 11,
- VMS = 12,
- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- SYSTEMEXT = 35,
- USER = 65536

DLQ Put Date & Time The date and time the message is put on the dead-letter queue. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Encoding The encoding value of the message comparing with Origin Encoding. The valid format is an integer.

Expire (Secs) The expiration of the message, in seconds. The valid format is an integer.

Feedback Code The feedback code of the message. The valid format is an integer.

Format Name The format name of the message. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Group ID The group identifier for segmented or group messages. The valid format is an alphanumeric string of up to 48 characters.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message ID The message identifier of the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message Tag Cyclic redundancy check (CRC) for message descriptor (MQMD) in hexadecimal characters. The valid format is an alphanumeric string of up to 8 characters.

Msg Length The length of the message. The valid format is an integer.

Msg Type The message type (can be request, reply, report, or datagram). The valid format is an integer. Valid values are as follows:

- Request = 1,
- Reply = 2,
- Report = 4,
- Datagram = 8,
- Appl = 65536

Origin CharSetID The coded character set identifier, CCSID, of the original message. The valid format is an integer.

Origin Encoding The encoding value of the original message. The valid format is an integer.

Origin Format The format name of the original message. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Persistence Indicates whether the message is persistent. Valid values are No = 0 and Yes = 1. This indicates whether the message is recoverable.

Priority The priority of the message. The valid format is an integer.

Put Date & Time The date and time that the message is put on the queue. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call (MQOD_ObjectName) of the application. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Reason Code The reason code for the message. This indicates why the message is undeliverable. The valid format is an integer. Valid values are as follows:

- None = 0,
- 1-System_First = 1,
- (KMQW000W)256-Quit = 256,
- (KMQW000W)258-Expiration = 258,
- (KMQW000W)259-Coa = 259,
- (KMQW000W)260-Cod = 260,
- (KMQW000W)262-Channel_Completed = 262,
- (KMQW000W)263-Channel_Fail_Retry = 263,
- (KMQW000W)264-Channel_Fail = 264,
- (KMQW000W)265-Appl_Cannot_Be_Started = 265,
- (KMQW000W)266-Trigger_Msg_Error = 266,
- (KMQW000W)267-Appl_Type_Error = 267,
- (KMQW000W)268-Stopped_By_Msg_Exit = 268,
- (KMQW000W)269-Activity = 269,
- (KMQW000W)271-Xmit_Q_Msg_Error = 271,
- (KMQW000W)275-Pan = 275,
- (KMQW000W)276-Nan = 276,
- (KMQW000W)277-Stopped_By_Chad_Exit = 277,
- (KMQW000W)279-Stopped_By_Pubsub_Exit = 279,
- (KMQW000W)280-Not_A_Repository_Msg = 280,
- (KMQW000W)281-Bind_Open_Clusrcvr_Del = 281,
- (KMQW000W)282-Max_Activities = 282,
- (KMQW000W)283-Not_Forwarded = 283,
- (KMQW000W)284-Not_Delivered = 284,
- (KMQW000W)285-Unsupported_Forwarding = 285
- (KMQW000W)286-Unsupported_Delivery = 286,
- (KMQW000W)291-Data_Length_Zero = 291,
- (KMQW000W)292-Data_Length_Negative = 292,
- (KMQW000W)293-Data_Length_Too_Big = 293,
- (KMQW000W)294-Buffer_Overflow = 294,
- (KMQW000W)295-Length_Off_By_One = 295,
- (KMQW000W)296-Iih_Error = 296,
- (KMQW000W)298-Not_Authorized_For_Ims = 298,
- (KMQW000W)300-Ims_Error = 300,
- (KMQW000W)301-Ims_First = 301,
- (KMQW000W)399-Ims_Last = 399,
- (KMQW000W)401-Cics_Internal_Error = 401,
- (KMQW000W)402-Cics_Not_Authorized = 402,
- (KMQW000W)403-Cics_Bridge_Failure = 403,
- (KMQW000W)404-Cics_Correl_Id_Error = 404,

- (KMQW000W)405-Cics_Ccsid_Error = 405,
- (KMQW000W)406-Cics_Encoding_Error = 406,
- (KMQW000W)407-Cics_Cih_Error = 407,
- (KMQW000W)408-Cics_Uow_Error = 408,
- (KMQW000W)409-Cics_Commarea_Error = 409,
- (KMQW000W)410-Cics_Appl_Not_Started = 410,
- (KMQW000W)411-Cics_Appl_Abended = 411,
- (KMQW000W)412-Cics_Dlq_Error = 412,
- (KMQW000W)413-Cics_Uow_Backded_Out = 413,
- (KMQW000W)900-Mqrc_Appl_First = 900,
- (KMQW000W)999-Mqrc_Appl_Last = 999,
- (KMQW000W)2001-Alias_Base_Q_Type_Error=2001,
- (KMQW000W)2002-Already_Connected=2002,
- (KMQW000W)2003-Backded_Out = 2003,
- (KMQW000W)2004-Buffer_Error = 2004,
- (KMQW000W)2005-Buffer_Length_Error = 2005
- (KMQW000W)2006-Char_Attr_Length_Error = 2006,
- (KMQW000W)2007-Char_Attrs_Error = 2007,
- (KMQW000W)2008-Char_Attrs_Too_Short = 2008,
- (KMQW000W)2009-Connection_Broken = 2009,
- (KMQW000W)2010-Data_Length_Error = 2010,
- (KMQW000W)2011-Dynamic_Q_Name_Error = 2011,
- (KMQW000W)2012-Environment_Error = 2012,
- (KMQW000W)2013-Expiry_Error = 2013,
- (KMQW000W)2014-Feedback_Error = 2014,
- (KMQW000W)2016-Get_Inhibited = 2016,
- (KMQW000W)2017-Handle_Not_Available = 2017,
- (KMQW000W)2018-Hconn_Error = 2018,
- (KMQW000W)2019-Hobj_Error = 2019,
- (KMQW000W)2020-Inhibit_Value_Error = 2020,
- (KMQW000W)2021-Int_Attr_Count_Error = 2021,
- (KMQW000W)2022-Int_Attr_Count_Too_Small = 2022,
- (KMQW000W)2023-Int_Attrs_Array_Error =2023,
- (KMQW000W)2024-Syncpoint_Limit_Reached = 2024,
- (KMQW000W)2025-Max_Conns_Limit_Reached = 2025,
- (KMQW000W)2026-Md_Error = 2026,
- (KMQW000W)2027-Missing_Reply_To_Q = 2027,
- (KMQW000W)2029-Msg_Type_Error = 2029,
- (KMQW000W)2030-Msg_Too_Big_For_Q = 2030,
- (KMQW000W)2031-Msg_Too_Big_For_Q_Mgr = 2031,
- (KMQW000W)2033-No_Msg_Available = 2033,
- (KMQW000W)2034-No_Msg_Under_Cursor = 2034,
- (KMQW000W)2035-Not_Authorized = 2035,
- (KMQW000W)2036-Not_Open_For_Browse = 2036,
- (KMQW000W)2037-Not_Open_For_Input = 2037,

- (KMQW000W)2038-Not_Open_For_Inquire = 2038,
- (KMQW000W)2039-Not_Open_For_Output = 2039,
- (KMQW000W)2040-Not_Open_For_Set = 2040,
- (KMQW000W)2041-Object_Changed = 2041,
- (KMQW000W)2042-Object_In_Use = 2042,
- (KMQW000W)2043-Object_Type_Error = 2043,
- (KMQW000W)2044-Od_Error = 2044,
- (KMQW000W)2045-Option_Not_Valid_For_Type = 2045,
- (KMQW000W)2046-Options_Error = 2046,
- (KMQW000W)2047-Persistence_Error = 2047,
- (KMQW000W)2048-Persistent_Not_Allowed = 2048,
- (KMQW000W)2049-Priority_Exceeds_Maximum = 2049,
- (KMQW000W)2050-Priority_Error = 2050,
- (KMQW000W)2051-Put_Inhibited = 2051,
- (KMQW000W)2052-Q_Deleted = 2052,
- (KMQW000W)2053-Q_Full = 2053,
- (KMQW000W)2056-Q_Space_Not_Available = 2056,
- (KMQW000W)2057-Q_Type_Error = 2057,
- (KMQW000W)2058-Q_Mgr_Name_Error = 2058,
- (KMQW000W)2059-Q_Mgr_Not_Available = 2059,
- (KMQW000W)2061-Report_Options_Error = 2061,
- (KMQW000W)2062-Second_Mark_Not_Allowed = 2062,
- (KMQW000W)2063-Security_Error = 2063,
- (KMQW000W)2065-Selector_Count_Error = 2065,
- (KMQW000W)2066-Selector_Limit_Exceeded = 2066,
- (KMQW000W)2067-Selector_Error = 2067,
- (KMQW000W)2068-Selector_Not_For_Type = 2068,
- (KMQW000W)2069-Signal_Outstanding = 2069,
- (KMQW000W)2070-Signal_Request_Accepted = 2070,
- (KMQW000W)2071-Storage_Not_Available = 2071,
- (KMQW000W)2072-Syncpoint_Not_Available = 2072,
- (KMQW000W)2075-Trigger_Control_Error = 2075,
- (KMQW000W)2076-Trigger_Depth_Error = 2076,
- (KMQW000W)2077-Trigger_Msg_Priority_Err = 2077,
- (KMQW000W)2078-Trigger_Type_Error = 2078,
- (KMQW000W)2079-Truncated_Msg_Accepted = 2079,
- (KMQW000W)2080-Truncated_Msg_Failed = 2080,
- (KMQW000W)2082-Unknown_Alias_Base_Q = 2082,
- (KMQW000W)2085-Unknown_Object_Name = 2085,
- (KMQW000W)2086-Unknown_Object_Q_Mgr = 2086,
- (KMQW000W)2087-Unknown_Remote_Q_Mgr = 2087,
- (KMQW000W)2090-Wait_Interval_Error = 2090,
- (KMQW000W)2091-Xmit_Q_Type_Error = 2091,
- (KMQW000W)2092-Xmit_Q_Usage_Error = 2092,
- (KMQW000W)2093-Not_Open_For_Pass_All = 2093,

- (KMQW000W)2094-Not_Open_For_Pass_Ident = 2094,
- (KMQW000W)2095-Not_Open_For_Set_All = 2095,
- (KMQW000W)2096-Not_Open_For_Set_Ident = 2096,
- (KMQW000W)2097-Context_Handle_Error = 2097,
- (KMQW000W)2098-Context_Not_Available = 2098,
- (KMQW000W)2099-Signal1_Error = 2099,
- (KMQW000W)2100-Object_Already_Exists = 2100,
- (KMQW000W)2101-Object_Damaged = 2101,
- (KMQW000W)2102-Resource_Problem = 2102,
- (KMQW000W)2103-Another_Q_Mgr_Connected = 2103,
- (KMQW000W)2104-Unknown_Report_Option = 2104,
- (KMQW000W)2105-Storage_Class_Error = 2105,
- (KMQW000W)2106-Cod_Not_Valid_For_Xcf_Q = 2106,
- (KMQW000W)2107-Xwait_Canceled = 2107,
- (KMQW000W)2108-Xwait_Error = 2108,
- (KMQW000W)2109-Suppressed_By_Exit = 2109,
- (KMQW000W)2110-Format_Error = 2110,
- (KMQW000W)2111-Source_Ccsid_Error = 2111,
- (KMQW000W)2112-Source_Integer_Enc_Error = 2112,
- (KMQW000W)2113-Source_Decimal_Enc_Error = 2113,
- (KMQW000W)2114-Source_Float_Enc_Error = 2114,
- (KMQW000W)2115-Target_Ccsid_Error = 2115,
- (KMQW000W)2116-Target_Integer_Enc_Error = 2116,
- (KMQW000W)2117-Target_Decimal_Enc_Error = 2117,
- (KMQW000W)2118-Target_Float_Enc_Error = 2118,
- (KMQW000W)2119-Not_Converted = 2119,
- (KMQW000W)2120-Converted_Msg_Too_Big = 2120,
- (KMQW000W)2120-Truncated = 2120,
- (KMQW000W)2121-No_External_Participants = 2121,
- (KMQW000W)2122-Participant_Not_Available = 2122 ,
- (KMQW000W)2123-Outcome_Mixed = 2123,
- (KMQW000W)2124-Outcome_Pending = 2124,
- (KMQW000W)2125-Bridge_Started = 2125,
- (KMQW000W)2126-Bridge_Stopped = 2126,
- (KMQW000W)2127-Adapter_Storage_Shortage = 2127,
- (KMQW000W)2128-Uow_In_Progress = 2128,
- (KMQW000W)2129-Adapter_Conn_Load_Error = 2129,
- (KMQW000W)2130-Adapter_Serv_Load_Error = 2130,
- (KMQW000W)2131-Adapter_Defs_Error = 2131,
- (KMQW000W)2132-Adapter_Defs_Load_Error = 2132,
- (KMQW000W)2133-Adapter_Conv_Load_Error = 2133,
- (KMQW000W)2134-Bo_Error = 2134,
- (KMQW000W)2135-Dh_Error = 2135,
- (KMQW000W)2136-Multiple_Reasons = 2136,
- (KMQW000W)2137-Open_Failed = 2137,

- (KMQW000W)2138-Adapter_Disc_Load_Error = 2138,
- (KMQW000W)2139-Cno_Error = 2139,
- (KMQW000W)2140-Cics_Wait_Failed = 2140,
- (KMQW000W)2141-Dlh_Error = 2141,
- (KMQW000W)2142-Header_Error = 2142,
- (KMQW000W)2143-Source_Length_Error = 2143,
- (KMQW000W)2144-Target_Length_Error = 2144,
- (KMQW000W)2145-Source_Buffer_Error = 2145,
- (KMQW000W)2146-Target_Buffer_Error = 2146,
- (KMQW000W)2148-Iih_Error = 2148,
- (KMQW000W)2149-Pcf_Error = 2149,
- (KMQW000W)2150-DBCS_Error = 2150,
- (KMQW000W)2152-Object_Name_Error = 2152,
- (KMQW000W)2153-Object_Q_Mgr_Name_Error = 2153,
- (KMQW000W)2154-Recs_Present_Error = 2154,
- (KMQW000W)2155-Object_Records_Error = 2155,
- (KMQW000W)2156-Response_Records_Error = 2156,
- (KMQW000W)2157-Asid_Mismatch = 2157,
- (KMQW000W)2158-Pmo_Record_Flags_Error = 2158,
- (KMQW000W)2159-Put_Msg_Records_Error = 2159,
- (KMQW000W)2160-Conn_Id_In_Use = 2160,
- (KMQW000W)2161-Q_Mgr_Quiescing = 2161,
- (KMQW000W)2162-Q_Mgr_Stopping = 2162,
- (KMQW000W)2163-Duplicate_Recov_Coord = 2163,
- (KMQW000W)2173-Pmo_Error = 2173,
- (KMQW000W)2182-API_Exit_Not_Found = 2182,
- (KMQW000W)2183-API_Exit_Load_Error = 2183,
- (KMQW000W)2184-Remote_Q_Name_Error = 2184,
- (KMQW000W)2185-Inconsistent_Persistence = 2185,
- (KMQW000W)2186-Gmo_Error = 2186,
- (KMQW000W)2187-Cics_Bridge_Restriction = 2187,
- (KMQW000W)2188-Stopped_By_Cluster_Exit = 2188,
- (KMQW000W)2189-Cluster_Resolution_Error = 2189,
- (KMQW000W)2190-Converted_String_Too_Big = 2190,
- (KMQW000W)2191-Tmc_Error = 2191,
- (KMQW000W)2192-Pageset_Full = 2192,
- (KMQW000W)2192-Storage_Medium_Full = 2192,
- (KMQW000W)2193-Pageset_Error = 2193,
- (KMQW000W)2194-Name_Not_Valid_For_Type = 2194,
- (KMQW000W)2195-Unexpected_Error = 2195,
- (KMQW000W)2196-Unknown_Xmit_Q = 2196,
- (KMQW000W)2197-Unknown_Def_Xmit_Q = 2197,
- (KMQW000W)2198-Def_Xmit_Q_Type_Error = 2198,
- (KMQW000W)2199-Def_Xmit_Q_Usage_Error = 2199,
- (KMQW000W)2201-Name_In_Use = 2201,

- (KMQW000W)2202-Connection_Quiescing = 2202,
- (KMQW000W)2203-Connection_Stopping = 2203,
- (KMQW000W)2204-Adapter_Not_Available = 2204,
- (KMQW000W)2206-Msg_Id_Error = 2206,
- (KMQW000W)2207-Correl_Id_Error = 2207,
- (KMQW000W)2208-File_System_Error = 2208,
- (KMQW000W)2209-No_Msg_Locked = 2209,
- (KMQW000W)2210-Soap_Dotnet_Error = 2210,
- (KMQW000W)2211-Soap_Axis_Error = 2211,
- (KMQW000W)2212-Soap_Url_Error = 2212,
- (KMQW000W)2216-File_Not_Audited = 2216,
- (KMQW000W)2217-Connection_Not_Authorized = 2217,
- (KMQW000W)2218-Msg_Too_Big_For_Channel = 2218,
- (KMQW000W)2219-Call_In_Progress = 2219,
- (KMQW000W)2220-Rmh_Error = 2220,
- (KMQW000W)2222-Q_Mgr_Active = 2222,
- (KMQW000W)2223-Q_Mgr_Not_Active = 2223,
- (KMQW000W)2224-Q_Depth_High = 2224,
- (KMQW000W)2225-Q_Depth_Low = 2225,
- (KMQW000W)2226-Q_Service_Interval_High = 2226,
- (KMQW000W)2227-Q_Service_Interval_Ok = 2227,
- (KMQW000W)2228-Rfh_Header_Field_Error = 2228,
- (KMQW000W)2229-Ras_Property_Error = 2229,
- (KMQW000W)2232-Unit_Of_Work_Not_Started = 2232,
- (KMQW000W)2233-Channel_Auto_Def_Ok = 2233,
- (KMQW000W)2234-Channel_Auto_Def_Error = 2234,
- (KMQW000W)2235-Cfh_Error = 2235,
- (KMQW000W)2236-Cfil_Error = 2236,
- (KMQW000W)2237-Cfin_Error = 2237,
- (KMQW000W)2238-Cfsl_Error = 2238,
- (KMQW000W)2239-Cfst_Error = 2239,
- (KMQW000W)2241-Incomplete_Group = 2241,
- (KMQW000W)2242-Incomplete_Msg = 2242,
- (KMQW000W)2243-Inconsistent_Ccsids = 2243,
- (KMQW000W)2244-Inconsistent_Encodings = 2244,
- (KMQW000W)2245-Inconsistent_Uow = 2245,
- (KMQW000W)2246-Invalid_Msg_Under_Cursor = 2246,
- (KMQW000W)2247-Match_Options_Error = 2247,
- (KMQW000W)2248-Mde_Error = 2248,
- (KMQW000W)2249-Msg_Flags_Error = 2249,
- (KMQW000W)2250-Msg_Seq_Number_Error = 2250,
- (KMQW000W)2251-Offset_Error = 2251,
- (KMQW000W)2252-Original_Length_Error = 2252,
- (KMQW000W)2253-Segment_Length_Zero = 2253,
- (KMQW000W)2255-Uow_Not_Available = 2255,

- (KMQW000W)2256-Wrong_Gmo_Version = 2256,
- (KMQW000W)2257-Wrong_Md_Version = 2257,
- (KMQW000W)2258-Group_Id_Error = 2258,
- (KMQW000W)2259-Inconsistent_Browse = 2259,
- (KMQW000W)2260-Xqh_Error = 2260,
- (KMQW000W)2261-Src_Env_Error = 2261,
- (KMQW000W)2262-Src_Name_Error = 2262,
- (KMQW000W)2263-Dest_Env_Error = 2263,
- (KMQW000W)2264-Dest_Name_Error = 2264,
- (KMQW000W)2265-Tm_Error = 2265,
- (KMQW000W)2266-Cluster_Exit_Error = 2266,
- (KMQW000W)2267-Cluster_Exit_Load_Error = 2267,
- (KMQW000W)2268-Cluster_Put_Inhibited = 2268,
- (KMQW000W)2269-Cluster_Resource_Error = 2269,
- (KMQW000W)2270-No_Destinations_Available = 2270,
- (KMQW000W)2271-Conn_Tag_In_Use = 2271,
- (KMQW000W)2272-Partially_Converted = 2272,
- (KMQW000W)2273-Connection_Error = 2273,
- (KMQW000W)2274-Option_Environment_Error = 2274,
- (KMQW000W)2277-Cd_Error = 2277,
- (KMQW000W)2278-Client_Conn_Error = 2278,
- (KMQW000W)2279-Channel_Stopped_By_User = 2279,
- (KMQW000W)2280-Hconfig_Error = 2280,
- (KMQW000W)2281-Function_Error = 2281,
- (KMQW000W)2282-Channel_Started = 2282,
- (KMQW000W)2283-Channel_Stopped = 2283,
- (KMQW000W)2284-Channel_Conv_Error = 2284,
- (KMQW000W)2285-Service_Not_Available = 2285,
- (KMQW000W)2286-Initialization_Failed = 2286,
- (KMQW000W)2287-Termination_Failed = 2287,
- (KMQW000W)2288-Unknown_Q_Name = 2288,
- (KMQW000W)2289-Service_Error = 2289,
- (KMQW000W)2290-Q_Already_Exists = 2290,
- (KMQW000W)2291-User_Id_Not_Available = 2291,
- (KMQW000W)2292-Unknown_Entity = 2292,
- (KMQW000W)2293-Unknown_Auth_Entity = 2293,
- (KMQW000W)2294-Unknown_Ref_Object = 2294,
- (KMQW000W)2295-Channel_Activated = 2295,
- (KMQW000W)2296-Channel_Not_Activated = 2296,
- (KMQW000W)2297-Uow_Canceled = 2297,
- (KMQW000W)2298-Function_Not_Supported = 2298,
- (KMQW000W)2299-Selector_Type_Error = 2299,
- (KMQW000W)2300-Command_Type_Error = 2300,
- (KMQW000W)2301-Multiple_Instance_Error = 2301,
- (KMQW000W)2302-System_Item_Not_Alterable = 2302,

- (KMQW000W)2303-Bag_Conversion_Error = 2303,
- (KMQW000W)2304-Selector_Out_Of_Range = 2304,
- (KMQW000W)2305-Selector_Not_Unique = 2305,
- (KMQW000W)2306-Index_Not_Present = 2306,
- (KMQW000W)2307-String_Error = 2307,
- (KMQW000W)2308-Encoding_Not_Supported = 2308,
- (KMQW000W)2309-Selector_Not_Present = 2309,
- (KMQW000W)2310-Out_Selector_Error = 2310,
- (KMQW000W)2311-String_Truncated = 2311,
- (KMQW000W)2312-Selector_Wrong_Type = 2312,
- (KMQW000W)2313-Inconsistent_Item_Type = 2313,
- (KMQW000W)2314-Index_Error = 2314,
- (KMQW000W)2315-System_Bag_Not_Alterable = 2315,
- (KMQW000W)2316-Item_Count_Error = 2316,
- (KMQW000W)2317-Format_Not_Supported = 2317,
- (KMQW000W)2318-Selector_Not_Supported = 2318,
- (KMQW000W)2319-Item_Value_Error = 2319,
- (KMQW000W)2320-Hbag_Error = 2320,
- (KMQW000W)2321-Parameter_Missing = 2321,
- (KMQW000W)2322-Cmd_Server_Not_Available = 2322,
- (KMQW000W)2323-String_Length_Error = 2323,
- (KMQW000W)2324-Inquiry_Command_Error = 2324,
- (KMQW000W)2325-Nested_Bag_Not_Supported = 2325,
- (KMQW000W)2326-Bag_Wrong_Type = 2326,
- (KMQW000W)2327-Item_Type_Error = 2327,
- (KMQW000W)2328-System_Bag_Not_Deletable = 2328,
- (KMQW000W)2329-System_Item_Not_Deletable = 2329,
- (KMQW000W)2330-Coded_Char_Set_Id_Error = 2330,
- (KMQW000W)2331-Msg_Token_Error = 2331,
- (KMQW000W)2332-Missing_Wih = 2332,
- (KMQW000W)2333-Wih_Error = 2333,
- (KMQW000W)2334-Rfh_Error = 2334,
- (KMQW000W)2335-Rfh_String_Error = 2335,
- (KMQW000W)2336-Rfh_Command_Error = 2336,
- (KMQW000W)2337-Rfh_Parm_Error = 2337,
- (KMQW000W)2338-Rfh_Duplicate_Parm = 2338,
- (KMQW000W)2339-Rfh_Parm_Missing = 2339,
- (KMQW000W)2340-Char_Conversion_Error = 2340,
- (KMQW000W)2341-Ucs2_Conversion_Error = 2341,
- (KMQW000W)2342-Db2_Not_Available = 2342,
- (KMQW000W)2343-Object_Not_Unique = 2343,
- (KMQW000W)2344-Conn_Tag_Not_Released = 2344,
- (KMQW000W)2345-Cf_Not_Available = 2345,
- (KMQW000W)2346-Cf_Struc_In_Use = 2346,
- (KMQW000W)2347-Cf_Struc_List_Hdr_In_Use = 2347,

- (KMQW000W)2348-Cf_Struc_Auth_Failed = 2348,
- (KMQW000W)2349-Cf_Struc_Error = 2349,
- (KMQW000W)2350-Conn_Tag_Not_Usable = 2350,
- (KMQW000W)2351-Global_Uow_Conflict = 2351,
- (KMQW000W)2352-Local_Uow_Conflict = 2352,
- (KMQW000W)2353-Handle_In_Use_For_Uow = 2353,
- (KMQW000W)2354-Uow_Enlistment_Error = 2354,
- (KMQW000W)2355-Uow_Mix_Not_Supported = 2355,
- (KMQW000W)2356-Wxp_Error = 2356,
- (KMQW000W)2357-Current_Record_Error = 2357,
- (KMQW000W)2358-Next_Offset_Error = 2358,
- (KMQW000W)2359-No_Record_Available = 2359,
- (KMQW000W)2360-Object_Level_Incompatible = 2360,
- (KMQW000W)2361-Next_Record_Error = 2361,
- (KMQW000W)2362-Backout_Threshold_Reached = 2362,
- (KMQW000W)2363-Msg_Not_Matched = 2363,
- (KMQW000W)2364-Jms_Format_Error = 2364,
- (KMQW000W)2365-Segments_Not_Supported = 2365,
- (KMQW000W)2366-Wrong_Cf_Level = 2366,
- (KMQW000W)2367-Config_Create_Object = 2367,
- (KMQW000W)2368-Config_Change_Object = 2368,
- (KMQW000W)2369-Config_Delete_Object = 2369,
- (KMQW000W)2370-Config_Refresh_Object = 2370,
- (KMQW000W)2371-Channel_Ssl_Error = 2371,
- (KMQW000W)2373-Cf_Struc_Failed = 2373,
- (KMQW000W)2374-API_Exit_Error = 2374,
- (KMQW000W)2375-API_Exit_Init_Error = 2375,
- (KMQW000W)2376-API_Exit_Term_Error = 2376,
- (KMQW000W)2377-Exit_Reason_Error = 2377,
- (KMQW000W)2378-Reserved_Value_Error = 2378,
- (KMQW000W)2379-No_Data_Available = 2379,
- (KMQW000W)2380-Sco_Error = 2380,
- (KMQW000W)2381-Key_Repository_Error = 2381,
- (KMQW000W)2382-Crypto_Hardware_Error = 2382,
- (KMQW000W)2383-Auth_Info_Rec_Count_Error = 2383,
- (KMQW000W)2384-Auth_Info_Rec_Error = 2384,
- (KMQW000W)2385-Air_Error = 2385,
- (KMQW000W)2386-Auth_Info_Type_Error = 2386,
- (KMQW000W)2387-Auth_Info_Conn_Name_Error = 2387,
- (KMQW000W)2388-Ldap_User_Name_Error = 2388,
- (KMQW000W)2389-Ldap_User_Name_Length_Err = 2389,
- (KMQW000W)2390-Ldap_Password_Error = 2390,
- (KMQW000W)2391-Ssl_Already_Initialized = 2391,
- (KMQW000W)2392-Ssl_Config_Error = 2392,
- (KMQW000W)2393-Ssl_Initialization_Error = 2393,

- (KMQW000W)2394-Q_Index_Type_Error = 2394,
- (KMQW000W)2395-Cfbs_Error = 2395,
- (KMQW000W)2396-Ssl_Not_Allowed = 2396,
- (KMQW000W)2397-Jsse_Error = 2397,
- (KMQW000W)2398-Ssl_Peer_Name_Mismatch = 2398,
- (KMQW000W)2399-Ssl_Peer_Name_Error = 2399,
- (KMQW000W)2400-Unsupported_Cipher_Suite = 2400,
- (KMQW000W)2401-Ssl_Certificate_Revoked = 2401,
- (KMQW000W)2402-Ssl_Cert_Store_Error = 2402,
- (KMQW000W)2406-Client_Exit_Load_Error = 2406,
- (KMQW000W)2407-Client_Exit_Error = 2407,
- (KMQW000W)2409-Ssl_Key_Reset_Error = 2409,
- (KMQW000W)2410-Unknown_Component_Name = 2410,
- (KMQW000W)2411-Logger_Status = 2411,
- (KMQW000W)2412-Command_Mqsc = 2412,
- (KMQW000W)2413-Command_Pcf = 2413,
- (KMQW000W)2414-Cfif_Error = 2414,
- (KMQW000W)2415-Cfsf_Error = 2415,
- (KMQW000W)2416-Cfgr_Error = 2416,
- (KMQW000W)2417-Msg_Not_Allowed_In_Group = 2417,
- (KMQW000W)2418-Filter_Operator_Error = 2418,
- (KMQW000W)2419-Nested_Selector_Error = 2419,
- (KMQW000W)2420-Eph_Error = 2420,
- (KMQW000W)2421-Rfh_Format_Error = 2421,
- (KMQW000W)2422-Cfbf_Error = 2422,
- (KMQW000W)2423-Client_Channel_Conflict = 2423,
- (KMQW000W)6100-Reopen_Excl_Input_Error = 6100,
- (KMQW000W)6101-Reopen_Inquire_Error = 6101,
- (KMQW000W)6102-Reopen_Saved_Context_Err = 6102,
- (KMQW000W)6103-Reopen_Temporary_Q_Error = 6103,
- (KMQW000W)6104-Attribute_Locked = 6104,
- (KMQW000W)6105-Cursor_Not_Valid = 6105,
- (KMQW000W)6106-Encoding_Error = 6106,
- (KMQW000W)6107-Struc_Id_Error = 6107,
- (KMQW000W)6108-Null_Pointer = 6108,
- (KMQW000W)6109-No_Connection_Reference = 6109,
- (KMQW000W)6110-No_Buffer = 6110,
- (KMQW000W)6111-Binary_Data_Length_Error = 6111,
- (KMQW000W)6112-Buffer_Not_Automatic = 6112,
- (KMQW000W)6113-Insufficient_Buffer = 6113,
- (KMQW000W)6114-Insufficient_Data = 6114,
- (KMQW000W)6115-Data_Truncated = 6115,
- (KMQW000W)6116-Zero_Length = 6116,
- (KMQW000W)6117-Negative_Length = 6117,
- (KMQW000W)6118-Negative_Offset = 6118,

- (KMQW000W)6119-Inconsistent_Format = 6119,
- (KMQW000W)6120-Inconsistent_Object_State = 6120,
- (KMQW000W)6121-Context_Object_Not_Valid = 6121,
- (KMQW000W)6122-Context_Open_Error = 6122,
- (KMQW000W)6123-Struc_Length_Error = 6123,
- (KMQW000W)6124-Not_Connected = 6124,
- (KMQW000W)6125-Not_Open = 6125,
- (KMQW000W)6126-Distribution_List_Empty = 6126,
- (KMQW000W)6127-Inconsistent_Open_Options = 6127,
- (KMQW000W)6128-Wrong_Version = 6128,
- (KMQW000W)6129-Reference_Error = 6129,
- (KMQW000W)65535-System_Last = 65535,
- (KMQW000W)65536-Mqfb_Appl_First = 65536,
- (KMQW000W)99999999-Mqfb_Appl_Last = 99999999

Reply to QMgr The name of the reply-to queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Reply to Queue The name of the reply-to queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Report Options The report options. The valid format is an integer.

Segmented or Group Message Indicates whether the message is a Segmented or Group message, or both. Valid values include No = 0, Segment = 1, Group = 2, Group_Segment = 3.

Status The status of the open or get. The valid format is an integer of up to 4 digits. Valid values are as follows:

- OK = 0,
- (KMQW000W)2001-Alias_Base_Q_Type_Error = 2001,
- (KMQW000W)2004-Buffer_Error = 2004,
- (KMQW000W)2005-Buffer_Length_Error = 2005,
- (KMQW000W)2009-Connection_Broken = 2009,
- (KMQW000W)2010-Data_Length_Error = 2010,
- (KMQW000W)2011-Dynamic_Q_Name_Error = 2011,
- (KMQW000W)2016-Get_Inhibited = 2016,
- (KMQW000W)2017-Handle_Not_Available = 2017,
- (KMQW000W)2018-Hconn_Error = 2018,
- (KMQW000W)2019-Hobj_Error = 2019,
- (KMQW000W)2024-Syncpoint_Limit_Reached = 2024,
- (KMQW000W)2026-MD_Error = 2026,
- (KMQW000W)2033-No_Msg_Available = 2033,
- (KMQW000W)2034-No_Msg_Under_Cursor = 2034,
- (KMQW000W)2035-Not_Authorized = 2035,
- (KMQW000W)2036-Not_Open_For_Browse = 2036,
- (KMQW000W)2037-Not_Open_For_Input = 2037,
- (KMQW000W)2041-Object_Changed = 2041,

- (KMQW000W)2042-Object_In_Use = 2042,
- (KMQW000W)2043-Object_Type_Error = 2043,
- (KMQW000W)2044-OD_Error = 2044,
- (KMQW000W)2045-Option_Not_Valid_For_Type = 2045,
- (KMQW000W)2046-Options_Error = 2046,
- (KMQW000W)2052-Q_Deleted = 2052,
- (KMQW000W)2057-Q_Type_Error = 2057,
- (KMQW000W)2058-Q_Mgr_Name_Error = 2058,
- (KMQW000W)2059-Q_Mgr_Not_Available = 2059,
- (KMQW000W)2062-Second_Mark_Not_Allowed = 2062,
- (KMQW000W)2063-Security_Error = 2063,
- (KMQW000W)2069-Signal_Outstanding = 2069,
- (KMQW000W)2070-Signal_Request_Accepted = 2070,
- (KMQW000W)2071-Storage_Not_Available = 2071,
- (KMQW000W)2079-Truncated_Msg_Accepted = 2079,
- (KMQW000W)2080-Truncated_Msg_Failed = 2080,
- (KMQW000W)2082-Unknown_Alias_Base_Q = 2082,
- (KMQW000W)2085-Unknown_Object_Name = 2085,
- (KMQW000W)2086-Unknown_Object_Q_Mgr = 2086,
- (KMQW000W)2087-Unknown_Remote_Q_Mgr = 2087,
- (KMQW000W)2091-Xmit_Q_Type_Error = 2091,
- (KMQW000W)2092-Xmit_Q_Usage_Error = 2092,
- (KMQW000W)2099-Signal1_Error = 2099,
- (KMQW000W)2100-Object_Already_Exists = 2100,
- (KMQW000W)2101-Object_Damaged = 2101,
- (KMQW000W)2102-Resource_Problem = 2102,
- (KMQW000W)2109-Suppressed_By_Exit = 2109,
- (KMQW000W)2110-Format_Error = 2110,
- (KMQW000W)2111-Source_CCSID_Error = 2111,
- (KMQW000W)2112-Source_Integer_Enc_Error = 2112,
- (KMQW000W)2113-Source_Decimal_Enc_Error = 2113,
- (KMQW000W)2114-Source_Float_Enc_Error = 2114,
- (KMQW000W)2115-Target_CCSID_Error = 2115,
- (KMQW000W)2116-Target_Integer_Enc_Error = 2116,
- (KMQW000W)2117-Target_Decimal_Enc_Error = 2117,
- (KMQW000W)2118-Target_Float_Enc_Error = 2118,
- (KMQW000W)2119-Not_Converted = 2119,
- (KMQW000W)2120-Converted_Msg_Too_Big = 2120,
- (KMQW000W)2130-Adapter_Serv_Load_Error = 2130,
- (KMQW000W)2133-Adapter_Conv_Load_Error = 2133,
- (KMQW000W)2136-Multiple_Reasons = 2136,
- (KMQW000W)2140-CICS_Wait_Failed = 2140,
- (KMQW000W)2152-Object_Name_Error = 2152,
- (KMQW000W)2153-Object_Q_Mgr_Name_Error = 2153,
- (KMQW000W)2154-Recs_Present_Error = 2154,

- (KMQW000W)2155-Object_Records_Error = 2155,
- (KMQW000W)2156-Response_Records_Error = 2156,
- (KMQW000W)2157-ASID_Mismatch = 2157,
- (KMQW000W)2161-Q_Mgr_Quiescing = 2161,
- (KMQW000W)2162-Q_Mgr_Stopping = 2162,
- (KMQW000W)2183-API_Exit_Load_Error = 2183,
- (KMQW000W)2184-Remote_Q_Name_Error = 2184,
- (KMQW000W)2186-GMO_Error = 2186,
- (KMQW000W)2192-Pageset_Full = 2192,
- (KMQW000W)2193-Pageset_Error = 2193,
- (KMQW000W)2194-Name_Not_Valid_For_Type = 2194,
- (KMQW000W)2195-Unexpected_Error = 2195,
- (KMQW000W)2196-Unknown_Xmit_Q = 2196,
- (KMQW000W)2197-Unknown_Def_Xmit_Q = 2197,
- (KMQW000W)2198-Def_Xmit_Q_Type_Error = 2198,
- (KMQW000W)2199-Def_Xmit_Q_Usage_Error = 2199,
- (KMQW000W)2201-Name_In_Use = 2201,
- (KMQW000W)2202-Connection_Quiescing = 2202,
- (KMQW000W)2203-Connection_Stopping = 2203,
- (KMQW000W)2204-Adapter_Not_Available = 2204,
- (KMQW000W)2209-No_Msg_Locked = 2209,
- (KMQW000W)2217-Connection_Not_Authorized = 2217,
- (KMQW000W)2219-Call_In_Progress = 2219,
- (KMQW000W)2241-Incomplete_Group = 2241,
- (KMQW000W)2242-Incomplete_Msg = 2242,
- (KMQW000W)2243-Inconsistent_CCSIDs = 2243,
- (KMQW000W)2244-Inconsistent_Encodings = 2244,
- (KMQW000W)2245-Inconsistent_UOW = 2245,
- (KMQW000W)2246-Invalid_Msg_Under_Cursor = 2246,
- (KMQW000W)2247-Match_Options_Error = 2247,
- (KMQW000W)2255-UOW_Not_Available = 2255,
- (KMQW000W)2256-Wrong_GMO_Version = 2256,
- (KMQW000W)2257-Wrong_MD_Version = 2257,
- (KMQW000W)2259-Inconsistent_Browse = 2259,
- (KMQW002E)Unsupported_CCSID_Found = 9002,
- (KMQW005E)Insufficient_Storage = 9005,
- (KMQW008E)Not_Allowed_By_MSGACCESS = 9008,
- (KMQW009E)Agent_Timeout_Occurred = 9009

User Identifier The user identifier that is used for MQ requests that must be authenticated to the terminal user. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

MQ Action Log attributes

Use the MQ Action Log attributes to view an audit trail of actions performed by end users. The actions include actions performed by issuing Take Action commands and message manipulation actions.

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Log Date & Time Date and time that the action is written to log. Standard 16-character date and time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

User ID ID of the user that has issued the Take Action command or performed the message manipulation action. The valid format is an alphanumeric string of up to 10 case-sensitive characters.

Action Type Type of action. The valid format is an integer. Valid values are as follows:

- Unknown = -1
- MQ_Command = 1
- Retry_Message = 2
- Forward_Message = 3
- Delete_Message = 4

Command Content of the Take Action command or message manipulation request. The valid format is an alphanumeric string of up to 1024 case-sensitive characters.

Message ID Message ID of the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Correlation ID Correlation ID of the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Message Tag Cyclic redundancy check (CRC) for MQMD (Message Descriptor) in hexadecimal characters. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Source Queue Name Source queue name of the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Target QMgr Name Target queue manager name of the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Target Queue Name Target queue name of the message. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

MQ Reason Code Reason code of the Take Action command or message manipulation. The valid format is an integer. Valid values are as follows:

- n/a = -1
- MQ_Command_Successful = 0
- 2001-Alias_Base_Q_Type_Error = 2001
- 2002-Already_Connected = 2002
- 2003-Backed_Out = 2003
- 2004-Buffer_Error = 2004
- 2005-Buffer_Length_Error = 2005
- 2006-Char_Attr_Length_Error = 2006
- 2007-Char_Attrs_Error = 2007
- 2008-Char_Attrs_Too_Short = 2008
- 2009-Connection_Broken = 2009
- 2010-Data_Length_Error = 2010
- 2011-Dynamic_Q_Name_Error = 2011
- 2012-Environment_Error = 2012
- 2013-Expiry_Error = 2013
- 2014-Feedback_Error = 2014
- 2016-Get_Inhibited = 2016
- 2017-Handle_Not_Available = 2017
- 2018-Hconn_Error = 2018
- 2019-Hobj_Error = 2019
- 2020-Inhibit_Value_Error = 2020
- 2021-Int_Attr_Count_Error = 2021
- 2022-Int_Attr_Count_Too_Small = 2022
- 2023-Int_Attrs_Array_Error = 2023
- 2024-Syncpoint_Limit_Reached = 2024
- 2025-Max_Conns_Limit_Reached = 2025
- 2026-Md_Error = 2026
- 2027-Missing_Reply_To_Q = 2027
- 2029-Msg_Type_Error = 2029
- 2030-Msg_Too_Big_For_Q = 2030

- 2031-Msg_Too_Big_For_Q_Mgr = 2031
- 2033-No_Msg_Available = 2033
- 2034-No_Msg_Under_Cursor = 2034
- 2035-Not_Authorized = 2035
- 2036-Not_Open_For_Browse = 2036
- 2037-Not_Open_For_Input = 2037
- 2038-Not_Open_For_Inquire = 2038
- 2039-Not_Open_For_Output = 2039
- 2040-Not_Open_For_Set = 2040
- 2041-Object_Changed = 2041
- 2042-Object_In_Use = 2042
- 2043-Object_Type_Error = 2043
- 2044-Od_Error = 2044
- 2045-Option_Not_Valid_For_Type = 2045
- 2046-Options_Error = 2046
- 2047-Persistence_Error = 2047
- 2048-Persistent_Not_Allowed = 2048
- 2049-Priority_Exceeds_Maximum = 2049
- 2050-Priority_Error = 2050
- 2051-Put_Inhibited = 2051
- 2052-Q_Deleted = 2052
- 2053-Q_Full = 2053
- 2055-Q_Not_Empty = 2055
- 2056-Q_Space_Not_Available = 2056
- 2057-Q_Type_Error = 2057
- 2058-Q_Mgr_Name_Error = 2058
- 2059-Q_Mgr_Not_Available = 2059
- 2061-Report_Options_Error = 2061
- 2062-Second_Mark_Not_Allowed = 2062
- 2063-Security_Error = 2063
- 2065-Selector_Count_Error = 2065
- 2066-Selector_Limit_Exceeded = 2066
- 2067-Selector_Error = 2067
- 2068-Selector_Not_For_Type = 2068
- 2069-Signal_Outstanding = 2069
- 2070-Signal_Request_Accepted = 2070
- 2071-Storage_Not_Available = 2071
- 2072-Syncpoint_Not_Available = 2072
- 2075-Trigger_Control_Error = 2075
- 2076-Trigger_Depth_Error = 2076
- 2077-Trigger_Msg_Priority_Err = 2077
- 2078-Trigger_Type_Error = 2078
- 2079-Truncated_Msg_Accepted = 2079
- 2080-Truncated_Msg_Failed = 2080
- 2082-Unknown_Alias_Base_Q = 2082

- 2085-Unknown_Object_Name = 2085
- 2086-Unknown_Object_Q_Mgr = 2086
- 2087-Unknown_Remote_Q_Mgr = 2087
- 2090-Wait_Interval_Error = 2090
- 2091-Xmit_Q_Type_Error = 2091
- 2092-Xmit_Q_Usage_Error = 2092
- 2093-Not_Open_For_Pass_All = 2093
- 2094-Not_Open_For_Pass_Ident = 2094
- 2095-Not_Open_For_Set_All = 2095
- 2096-Not_Open_For_Set_Ident = 2096
- 2097-Context_Handle_Error = 2097
- 2098-Context_Not_Available = 2098
- 2099-Signal1_Error = 2099
- 2100-Object_Already_Exists = 2100
- 2101-Object_Damaged = 2101
- 2102-Resource_Problem = 2102
- 2103-Another_Q_Mgr_Connected = 2103
- 2104-Unknown_Report_Option = 2104
- 2105-Storage_Class_Error = 2105
- 2106-Cod_Not_Valid_For_Xcf_Q = 2106
- 2107-Xwait_Canceled = 2107
- 2108-Xwait_Error = 2108
- 2109-Suppressed_By_Exit = 2109
- 2110-Format_Error = 2110
- 2111-Source_Ccsid_Error = 2111
- 2112-Source_Integer_Enc_Error = 2112
- 2113-Source_Decimal_Enc_Error = 2113
- 2114-Source_Float_Enc_Error = 2114
- 2115-Target_Ccsid_Error = 2115
- 2116-Target_Integer_Enc_Error = 2116
- 2117-Target_Decimal_Enc_Error = 2117
- 2118-Target_Float_Enc_Error = 2118
- 2119-Not_Converted = 2119
- 2120-Converted_Msg_Too_Big = 2120
- 2120-Truncated = 2120
- 2121-No_External_Participants = 2121
- 2122-Participant_Not_Available = 2122
- 2123-Outcome_Mixed = 2123
- 2124-Outcome_Pending = 2124
- 2125-Bridge_Started = 2125
- 2126-Bridge_Stopped = 2126
- 2127-Adapter_Storage_Shortage = 2127
- 2128-Uow_In_Progress = 2128
- 2129-Adapter_Conn_Load_Error = 2129
- 2130-Adapter_Serv_Load_Error = 2130

- 2131-Adapter_Defs_Error = 2131
- 2132-Adapter_Defs_Load_Error = 2132
- 2133-Adapter_Conv_Load_Error = 2133
- 2134-Bo_Error = 2134
- 2135-Dh_Error = 2135
- 2136-Multiple_Reasons = 2136
- 2137-Open_Failed = 2137
- 2138-Adapter_Disc_Load_Error = 2138
- 2139-Cno_Error = 2139
- 2140-Cics_Wait_Failed = 2140
- 2141-Dlh_Error = 2141
- 2142-Header_Error = 2142
- 2143-Source_Length_Error = 2143
- 2144-Target_Length_Error = 2144
- 2145-Source_Buffer_Error = 2145
- 2146-Target_Buffer_Error = 2146
- 2148-lih_Error = 2148
- 2149-Pcf_Error = 2149
- 2150-Dbcs_Error = 2150
- 2152-Object_Name_Error = 2152
- 2153-Object_Q_Mgr_Name_Error = 2153
- 2154-Recs_Present_Error = 2154
- 2155-Object_Records_Error = 2155
- 2156-Response_Records_Error = 2156
- 2157-Asid_Mismatch = 2157
- 2158-Pmo_Record_Flags_Error = 2158
- 2159-Put_Msg_Records_Error = 2159
- 2160-Conn_Id_In_Use = 2160
- 2161-Q_Mgr_Quiescing = 2161
- 2162-Q_Mgr_Stopping = 2162
- 2163-Duplicate_Recov_Coord = 2163
- 2173-Pmo_Error = 2173
- 2182-API_Exit_Not_Found = 2182
- 2183-API_Exit_Load_Error = 2183
- 2184-Remote_Q_Name_Error = 2184
- 2185-Inconsistent_Persistence = 2185
- 2186-Gmo_Error = 2186
- 2191-Tmc_Error = 2191
- 2192-Pageset_Full = 2192
- 2193-Pageset_Error = 2193
- 2194-Name_Not_Valid_For_Type = 2194
- 2195-Unexpected_Error = 2195
- 2196-Unknown_Xmit_Q = 2196
- 2197-Unknown_Def_Xmit_Q = 2197
- 2198-Def_Xmit_Q_Type_Error = 2198

- 2199-Def_Xmit_Q_Usage_Error = 2199
- 2201-Name_In_Use = 2201
- 2202-Connection_Quiescing = 2202
- 2203-Connection_Stopping = 2203
- 2204-Adapter_Not_Available = 2204
- 2206-Msg_Id_Error = 2206
- 2207-Correl_Id_Error = 2207
- 2208-File_System_Error = 2208
- 2209-No_Msg_Locked = 2209
- 2216-File_Not_Audited = 2216
- 2217-Connection_Not_Authorized = 2217
- 2218-Msg_Too_Big_For_Channel = 2218
- 2219-Call_In_Progress = 2219
- 2220-Rmh_Error = 2220
- 2222-Q_Mgr_Active = 2222
- 2223-Q_Mgr_Not_Active = 2223
- 2224-Q_Depth_High = 2224
- 2225-Q_Depth_Low = 2225
- 2226-Q_Service_Interval_High = 2226
- 2227-Q_Service_Interval_Ok = 2227
- 2233-Channel_Auto_Def_Ok = 2233
- 2234-Channel_Auto_Def_Error = 2234
- 2235-Cfh_Error = 2235
- 2236-Cfil_Error = 2236
- 2237-Cfin_Error = 2237
- 2238-Cfsl_Error = 2238
- 2239-Cfst_Error = 2239
- 2241-Incomplete_Group = 2241
- 2242-Incomplete_Msg = 2242
- 2243-Inconsistent_Ccsids = 2243
- 2244-Inconsistent_Encodings = 2244
- 2245-Inconsistent_Uow = 2245
- 2246-Invalid_Msg_Under_Cursor = 2246
- 2247-Match_Options_Error = 2247
- 2248-Mde_Error = 2248
- 2249-Msg_Flags_Error = 2249
- 2250-Msg_Seq_Number_Error = 2250
- 2251-Offset_Error = 2251
- 2252-Original_Length_Error = 2252
- 2253-Segment_Length_Zero = 2253
- 2255-Uow_Not_Available = 2255
- 2256-Wrong_Gmo_Version = 2256
- 2257-Wrong_Md_Version = 2257
- 2258-Group_Id_Error = 2258
- 2259-Inconsistent_Browse = 2259

- 2260-Xqh_Error = 2260
- 2261-Src_Env_Error = 2261
- 2262-Src_Name_Error = 2262
- 2263-Dest_Env_Error = 2263
- 2264-Dest_Name_Error = 2264
- 2265-Tm_Error = 2265
- 2280-Hconfig_Error = 2280
- 2281-Function_Error = 2281
- 2282-Channel_Started = 2282
- 2283-Channel_Stopped = 2283
- 2284-Channel_Conv_Error = 2284
- 2285-Service_Not_Available = 2285
- 2286-Initialization_Failed = 2286
- 2287-Termination_Failed = 2287
- 2288-Unknown_Q_Name = 2288
- 2289-Service_Error = 2289
- 2290-Q_Already_Exists = 2290
- 2291-User_Id_Not_Available = 2291
- 2292-Unknown_Entity = 2292
- 2293-Unknown_Auth_Entity = 2293
- 2294-Unknown_Ref_Object = 2294
- 2295-Channel_Activated = 2295
- 2296-Channel_Not_Activated = 2296
- 3001-MQCFH_Type_Error = 3001
- 3002-MQCFH_Struct_Length_Error = 3002
- 3003-MQCHF_Version_Error = 3003
- 3004-MQCFH_Msg_Seq_Error = 3004
- 3005-MQCFH_Control_error = 3005
- 3006-MQCFH_Parm_Count_Error = 3006
- 3007-MQCFH_Command_Error = 3007
- 3008-Command_Failed = 3008
- 3009-MQCFIN_Struct_Length_Error = 3009
- 3010-MQCFST_Struct_Length_Error = 3010
- 3011-MQCFST_String_Length_Error = 3011
- 3012-Force_value_Error = 3012
- 3013-Structure_Type_Error = 3013
- 3014-MQCFIN_Parm_ID_Error = 3014
- 3015-MQCFST_Parm_ID_Error = 3015
- 3016-Msg_Length_Error = 3016
- 3017-MQCFIN_Duplicate_Parm = 3017
- 3018-MQCFST_Duplicate_Parm = 3018
- 3019-Parm_Count_Too_Small = 3019
- 3020-Parm_Count_Too_Big = 3020
- 3021-Q_Already_In_Cell = 3021
- 3022-Q_Type_Error = 3022

- 3023-MD_Format_Error = 3023
- 3025-Replace_Value_Error = 3025
- 3026-MQCFIL_Duplicate_Value = 3026
- 3027-MQCFIL_Count_Error = 3027
- 3028-MQCFIL_Length_Error = 3028
- 3029-Quiesce_Value_Error = 3029
- 3030-Msg_Seq_Number_Error = 3030
- 3031-Ping_Data_Count_Error = 3031
- 3032-Ping_Data_Compare_Error = 3032
- 3034-Channel_Type_Error = 3034
- 3035-Parm_Sequence_Error = 3035
- 3036-Xmit_Protocol_Type_Error = 3036
- 3037-Batch_Size_Error = 3037
- 3038-Disc_Int_Error = 3038
- 3039-Short_Retry_Error = 3039
- 3040-Short_Timer_Error = 3040
- 3041-Long_Retry_Error = 3041
- 3042-Long_Timer_Error = 3042
- 3043-Seq_Number_Wrap_Error = 3043
- 3044-Max_Msg_Length_Error = 3044
- 3045-Put_Auth_Error = 3045
- 3046-Purge_Value_Error = 3046
- 3047-MQCFIL_Parm_ID_Error = 3047
- 3048-Msg_Truncated = 3048
- 3049-CCSID_Error = 3049
- 3050-Encoding_Error = 3050
- 3052-Data_Conv_Value_Error = 3052
- 3053-InDoubt_Value_Error = 3053
- 3054-Escape_Type_Error = 3054
- 3062-Channel_Table_Error = 3062
- 3063-MCA_Type_Error = 3063
- 3064-Chl_Inst_Type_Error = 3064
- 3065-Chl_Status_Not_Found = 3065
- 3066-MQCFSL_Duplicate_Parm = 3066
- 3067-MQCFSL_Total_Length_Error = 3067
- 4001-Object_Already_Exist = 4001
- 4002-Object_Wrong_Type = 4002
- 4003-Like_Object_Wrong_Type = 4003
- 4004-Object_Open = 4004
- 4005-Attr_Value_Error = 4005
- 4006-Unknown_Q_Mgr = 4006
- 4007-Q_Wrong_Type = 4007
- 4008-Object_Name_Error = 4008
- 4009-Allocate_Failed = 4009
- 4010-Host_Not_Available = 4010

- 4011-Configuration_Error = 4011
- 4012-Connection_Refused = 4012
- 4013-Entry_Error = 4013
- 4014-Send_Failed = 4014
- 4015-Receive_Data_Error = 4015
- 4016-Receive_Failed = 4016
- 4017-Connection_Closed = 4017
- 4018-No_Storage = 4018
- 4019-No_Comms_Manager = 4019
- 4020-Listener_Not_Started = 4020
- 4024-Bind_Failed = 4024
- 4025-Channel_InDoubt = 4025
- 4026-MQCONN_Failed = 4026
- 4027-MQOPEN_Failed = 4027
- 4028-MQGET_Failed = 4028
- 4029-MQPUT_Failed = 4029
- 4030-PING_Error = 4030
- 4031-Channel_In_Use = 4031
- 4032-Channel_Not_Found = 4032
- 4033-Unknown_Remote_Channel = 4033
- 4034-Remote_QM_Unavailable = 4034
- 4035-Remote_QM_Terminating = 4035
- 4036-MQINQ_Failed = 4036
- 4037-Not_Xmit_Q = 4037
- 4038-Channel_Disabled = 4038
- 4039-User_Exit_Not_Available = 4039
- 4040-Commit_Failed = 4040
- 4042-Channel_Already_Exists = 4042
- 4043-Data_Too_Large = 4043
- 4044-Channel_Name_Error = 4044
- 4045-Xmit_Q_Name_Error = 4045
- 4047-MCA_Name_Error = 4047
- 4048-Send_Exit_Name_Error = 4048
- 4049-Sec_Exit_Name_Error = 4049
- 4050-Msg_Exit_Name_Error = 4050
- 4051-Rcv_Exit_Name_Error = 4051
- 4052-Xmit_Q_Name_Wrong_Type = 4052
- 4053-MCA_Name_Wrong_Type = 4053
- 4054-Disc_Int_Wrong_Type = 4054
- 4055-Short_Retry_Wrong_Type = 4055
- 4056-Short_Timer_Wrong_Type = 4056
- 4057-Long_Retry_Wrong_Type = 4057
- 4058-Long_Timer_Wrong_Type = 4058
- 4059-Put_Auth_Wrong_Type = 4059
- 4061-Missing_Conn_Name = 4061

- 4062-Conn_Name_Error = 4062
- 4063-MQSET_Failed = 4063
- 4064-Channel_Not_Active = 4064
- 4065-Terminated_By_Sec_Exit = 4065
- 4067-Dynamic_Q_Scope_Error = 4067
- 4068-Cell_Dir_Not_Available = 4068
- 4069-MR_Count_Error = 4069
- 4070-MR_Count_Wrong_Type = 4070
- 4071-MR_Exit_Name_Error = 4071
- 4072-MR_Exit_Name_Wrong_Type = 4072
- 4073-MR_Interval_Error = 4073
- 4074-MR_Interval_Wrong_Type = 4074
- 4075-NPM_Speed_Error = 4075
- 4076-NPM_Speed_Wrong_Type = 4076
- 4077-HB_Interval_Error = 4077
- 4078-HB_Interval_Wrong_Type = 4078
- 4079-CHAD_Error = 4079
- 4080-CHAD_Wrong_Type = 4080
- 4081-CHAD_Event_Error = 4081
- 4082-CHAD_Event_Wrong_Type = 4082
- 4083-CHAD_Exit_Error = 4083
- 4084-CHAD_Exit_Wrong_Type = 4084
- 4085-Suppressed_By_Exit = 4085
- 4086-Batch_Int_Error = 4086
- 4087-Batch_Int_Wrong_Type = 4087
- Insufficient_Storage = 9005
- Agent_Timeout_Occurred = 9009
- Not_Allowed_By_COMMAND_Option = 9010
- Failed_Due_to_QMGR_Quiescing = 9011
- Unknown_Reason_Code = 9012
- Command_Accepted_by_MVS = 9013
- QMGR_Not_Active = 9014
- Remote_QMGR_Not_Supported = 9015
- Syntax_Error = 9016
- Command_Failed = 9017
- Not_Allowed_by_Security = 9018
- Not_Supported_by_Platform = 9019

MQ Channel Statistics attributes (distributed systems only)

The MQ Channel Statistics attributes are available on distributed systems only. Use the MQ Channel Statistics attributes to view information that is related to the activity of a channel during a configured interval. Use the MQ Channel Statistics attributes to create situations for monitoring concerned attributes of channels.

Avg Batch Size Average size of batches that are processed by the channel. The valid format is an integer.

Channel Name The name of this channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Type Type of the channel. Valid values are as follows:

- Unknown = -1,
- Sender = 1,
- Server = 2,
- Receiver = 3,
- Requester = 4,
- All = 5,
- ClusRcvr = 8,
- ClusSdr = 9.

Command Level Queue manager command level. The valid format is an integer.

Connection Name Connection name of remote queue manager. The valid format is an alphanumeric string of up to 264 case-sensitive characters.

Exit Time Avg Average recorded time that is spent running a user exit in recording interval. The valid format is an integer.

Exit Time Max Longest recorded time that is spent running a user exit in recording interval. Valid format is an integer.

Exit Time Min Shortest recorded time that is spent running a user exit in recording interval. The valid format is an integer.

Full Batch Count Number of complete batches that are processed by the channel. The valid format is an integer.

Full Batch Rate Rate per second of complete batches that are processed by the channel. Valid format is a floating point number.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Incomplete Batch Count Number of incomplete batches that are processed by the channel. The valid format is an integer.

Incomplete Batch Rate Rate per second of incomplete batches that are processed by the channel. The valid format is a floating point number.

Interval End Date & Time Date and time of the end of the monitoring period. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

- C** Century (0 for 20th, 1 for 21st)
- YY** Year
- MM** Month
- DD** Day
- HH** Hour

MM Minute
SS Second
mmm Millisecond

Interval Start Date & Time Date and time of the start of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Time Seconds of interval time. The valid format is an integer.

Msg Count Number of nonpersistent messages that are sent or received. The valid format is an integer.

Msg Rate Rate per second of nonpersistent messages that are sent or received. The valid format is a floating point number.

Net Time Avg Average latency of messages that are retrieved from the queue. The valid format is an integer.

Net Time Max Longest recorded channel round trip that is measured in recording interval. The valid format is an integer.

Net Time Min Shortest recorded channel round trip that is measured in the recording interval. Valid format is an integer.

Object Count Number of queues that are accessed in the interval. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Put Retry Count Number of times for a message that enters a retry loop because of failure. Valid format is an integer.

Put Retry Rate Rate per second of times for a message that enters a retry loop because of failure. The valid format is a floating point number.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Query Type Type of a SQL query. Valid values are as follows: Current = 0, Recent = 1, Historical = 2.

Remote QMgr Name of the remote queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Handle Handle for a sample data record. The valid format is an integer.

Total Byte Rate Rate per second of bytes that are sent or received for nonpersistent message. The valid format is a floating point number.

Total Bytes Number of bytes that are sent or received for nonpersistent message. The valid format is an integer.

Total Bytes (Deprecated) Number of bytes that are sent or received for nonpersistent message. Valid format is an alphanumeric string of up to 20 case-sensitive characters.

MQ Queue Statistics attributes (distributed systems only)

The MQ Queue Statistics attributes are available on distributed systems only.

Use the MQ Queue Statistics attributes to view the information that is related to the activity of a queue during a configured interval. Use the MQ Queue Statistics attributes to create situations for monitoring concerned attributes of queues.

Browse Byte Rate Rate per second of bytes that are got nondestructively. The valid format is a floating point number.

Browse Bytes Total number of bytes that are got nondestructively. The valid format is an integer.

Browse Bytes (Deprecated) Total number of bytes that are got nondestructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Browse Count Count of non-destructive gets for messages. The valid format is an integer.

Browse Fail Count Number of unsuccessful non-destructive gets. Valid format is an integer.

Browse Fail Rate Rate per second of unsuccessful non-destructive gets. The valid format is a floating point number.

Browse Rate Rate per second of non-destructive gets for messages. The valid format is a floating point number.

Command Level Queue manager command level. The valid format is an integer.

Create Date & Time Date and time that the queue is created. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Expired Msg Count Number of messages that are discarded because of expiration. The valid format is an integer.

Expired Msg Rate Rate per second of messages that are discarded because of expiration. The valid format is a floating point number.

Get Byte Rate Rate per second of bytes that are got destructively. The valid format is a floating point number.

Get Bytes Total number of bytes that are got destructively. The valid format is an integer.

Get Bytes (Deprecated) Total number of bytes that are got destructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Get Count Count of gets. The valid format is an integer.

Get Fail Count Number of unsuccessful destructive gets. The valid format is an integer.

Get Fail Rate Rate per second of unsuccessful destructive gets. The valid format is a floating point number.

Get Rate Rate per second of destructive gets. The valid format is a floating point number.

Host Name The name of the system where this queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval End Date & Time Date and time of the end of the monitoring period. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Start Date & Time Date and time of the start of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Interval Time Seconds of interval time. The valid format is an integer.

Non-Queued Msg Count Number of messages that bypass the queue and are transferred to a waiting application. The valid format is an integer.

Non-Queued Msg Rate Rate per second of messages that bypass the queue and are transferred to a waiting application. The valid format is a floating point number.

Object Count Number of queues that are accessed in the interval. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

Purge Count Number of messages that are purged. The valid format is an integer.

Purge Rate Rate per second of messages that are purged. The valid format is a floating point number.

Put Byte Rate Rate per second of bytes that are put for messages. The valid format is a floating point number.

Put Bytes Total number of bytes that are put for messages. The valid format is an integer.

Put Bytes (Deprecated) Total number of bytes that are put for messages. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Put Count Count of puts. The valid format is an integer.

Put Fail Count Number of unsuccessful attempts to put a message. Valid format is an integer.

Put Fail Rate Rate per second of unsuccessful attempts to put a message. The valid format is a floating point number.

Put Rate Rate per second of messages that are successfully put to a queue. Valid format is a floating point number.

Put1 Count Count of messages that are put by the MQPUT1 call. The valid format is an integer.

Put1 Fail Count Number of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is an integer.

Put1 Fail Rate Rate per second of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is a floating point number.

Put1 Rate Rate per second of messages that are put to queue by the MQPUT1 call. The valid format is a floating point number.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Query Type Type of a SQL query. Valid values are as follows: Current = 0, Recent = 1, Historical = 2.

Queue Def Type Queue definition type. Valid values are as follows:

- Unknown = -1,
- Predefined = 1,
- PermanentDynamic = 2,
- TemporaryDynamic = 3,
- SharedDynamic = 4

Queue Max Depth Maximum queue depth during the monitoring period. The valid format is an integer.

Queue Min Depth Minimum queue depth during the monitoring period. Valid format is an integer.

Queue Name Name of the queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Time Avg(ms) Average latency of messages that are retrieved from the queue. The valid format is an integer.

Queue Time Avg(ms) (Deprecated) Average latency of messages that are retrieved from the queue. The valid format is an integer.

Queue Type Type of the queue. Valid values are as follows:

- Unknown = -1,
- Local = 1,
- Model = 2,
- Alias = 3,
- Remote = 6,
- Cluster = 7

Sample Handle Handle for a sample data record. The valid format is an integer.

MQI Call Statistics Details attributes (distributed systems only)

The MQI Call Statistics Details attributes are available on distributed systems only.

Use MQI Call Statistics Details attributes to view the detailed information of MQI Call statistics. These attributes are informational only; they cannot be used to create situations.

Auth Info Object Count Number of authentication information objects that are operated. The valid format is an integer.

Auth Info Object Rate Rate per second of authentication information objects that are operated. The valid format is a floating point number.

Channel Object Count Number of channel objects that are operated. Valid format is an integer.

Channel Object Rate Rate per second of channel objects that are operated. The valid format is a floating point number.

Interval End Date & Time Date and time of the end of the monitoring period. Standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Interval Start Date & Time Date and time of the start of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Interval Time Seconds of interval time. The valid format is an integer.

Listener Object Count Number of listener objects that are operated. The valid format is an integer.

Listener Object Rate Rate per second of listener objects that are operated. The valid format is a floating point number.

MQI Call Metric Metric for MQI call. Valid values are as follows:

- Sample_No_Longer_Available = -1,
- Opens = 0,
- Open_Failures = 1,
- Closes = 2,
- Close_Failures = 3,
- Inquires = 4,
- Inquire_Failures = 5,
- Sets = 6,
- Set_Failures = 7

Namelist Object Count Number of namelist objects that are operated. The valid format is an integer.

Namelist Object Rate Rate per second of namelist objects that are operated. The valid format is a floating point number.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 32 case-sensitive characters.

Process Object Count Number of process objects that are operated. The valid format is an integer.

Process Object Rate Rate per second of process objects that are operated. The valid format is a floating point number.

QMgr Name The name that are assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QManager Object Count Number of queue manager objects that are operated. The valid format is an integer.

QManager Object Rate Rate per second of queue manager objects that are operated. The valid format is a floating point number.

Queue Object Count Number of queue objects that are operated. The valid format is an integer.

Queue Object Rate Rate per second of queue objects that are operated. Valid format is a floating point number.

Sample Handle Handle for a sample data record. The valid format is an integer.

Sample Type Type of a sample data record. Valid values are as follows: n/a = -1, Application_Accounting = 0, MQI_Statistics = 1.

Service Object Count Number of service objects that are operated. The valid format is an integer.

Service Object Rate Rate per second of service objects that are operated. The valid format is a floating point number.

MQI Message Statistics Details attributes (distributed systems only)

The MQI Message Statistics Details attributes are available on distributed systems only.

Use MQI Message Statistics Details attributes to view the detailed information of MQI Message statistics. These attributes are informational only; they cannot be used to create situations.

Interval End Date & Time Date and time of the end of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Start Date & Time Date and time of the start of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Time Seconds of interval time. The valid format is an integer.

MQI Msg Metric Metric for MQI message. Valid values are as follows:

- Sample_No_Longer_Available = -1,
- Puts = 0,

- Put1s = 1,
- Gets = 2,
- Browses = 3,
- Put_Bytes = 4,
- Get_Bytes = 5,
- Browse_Bytes = 6,
- Put_Minimum_Bytes = 7,
- Put_Maximum_Bytes = 8,
- Get_Minimum_Bytes = 9,
- Get_Maximum_Bytes = 10,
- Browse_Minimum_Bytes = 11,
- Browse_Maximum_Bytes = 12,
- Queue_Time_Average = 13,
- Queue_Time_Minimum = 14,
- Queue_Time_Maximum = 15

Nonpersistent Msg Count Number of nonpersistent messages for operation. The valid format is an integer.

Nonpersistent Msg Count (Deprecated) Number of nonpersistent messages for operation. The valid format is an integer.

Nonpersistent Msg Rate Rate per second of nonpersistent messages for operation. The valid format is a floating point number.

Origin Node Name of the managed system node for the queue manager.

Persistent Msg Count Number of persistent messages for operation. The valid format is an integer.

Persistent Msg Count (Deprecated) Number of persistent messages for operation. The valid format is an integer.

Persistent Msg Rate Rate per second of persistent messages for operation. The valid format is a floating point number.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Handle Handle for a sample data record. The valid format is an integer.

Sample Type Type of sample for query type. Valid values are as follows:

- n/a = -1
- Application_Accounting = 0,
- MQI_Statistics = 1,
- Queue_Accounting = 2,
- Queue_Statistics = 3

MQI Statistics attributes (distributed systems only)

The MQI Statistics attributes are available on distributed systems only.

Use MQI Statistics attributes to view information related to the number of MQI requests issued during a configured interval. Use the MQI Statistics attributes to create situations for monitoring concerned attributes of MQI requests.

Backout Count Number of backouts that are processed, including implicit backouts. The valid format is an integer.

Backout Rate Rate per second of backouts that are processed, including implicit backouts. The valid format is a floating point number.

Browse Byte Rate Rate per second of bytes that are got nondestructively. The valid format is a floating point number.

Browse Bytes Total number of bytes that are got nondestructively. The valid format is an integer.

Browse Bytes (Deprecated) Total number of bytes that are got nondestructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Browse Count Count of non-destructive gets for messages. The valid format is an integer.

Browse Fail Count Number of unsuccessful non-destructive gets. The valid format is an integer.

Browse Fail Rate Rate per second of unsuccessful non-destructive gets. The valid format is a floating point number.

Browse Rate Rate per second of non-destructive gets for messages. The valid format is a floating point number.

Close Count Count of objects that are closed. Valid format is an integer.

Close Fail Count Count of objects that are closed with failure. The valid format is an integer.

Close Fail Rate Rate per second of unsuccessful attempts to close queue objects. The valid format is a floating point number.

Close Rate Rate per second of objects that are closed. The valid format is a floating point number.

Command Level Queue manager command level. Valid format is an integer.

Commit Count Number of successful transactions. The valid format is an integer.

Commit Fail Count Number of unsuccessful attempts to complete a transaction. The valid format is an integer.

Commit Fail Rate Rate per second of unsuccessful attempts to complete a transaction. The valid format is a floating point number.

Commit Rate Rate per second of successful transactions. The valid format is a floating point number.

Connection Fail Count Number of unsuccessful connection attempts. The valid format is an integer.

Connection Fail Rate Rate per second of unsuccessful connection attempts. The valid format is a floating point number.

Connection Rate Rate per second of successful connections to the queue manager. The valid format is a floating point number.

Connection Count Number of successful connections to the queue manager. Valid format is an integer.

Expired Msg Count Number of messages that are discarded because of expiration. The valid format is an integer.

Expired Msg Rate Rate per second of messages that are discarded because of expiration. Valid format is a floating point number.

Get Byte Rate Rate per second of bytes that are got destructively. Valid format is a floating point number.

Get Bytes Total number of bytes that are got destructively. The valid format is an integer.

Get Bytes (Deprecated) Total number of bytes that are got destructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Get Count Count of gets. The valid format is an integer.

Get Fail Count Number of unsuccessful destructive gets. The valid format is an integer.

Get Fail Rate Date per second of unsuccessful destructive gets. The valid format is a floating point number.

Get Rate Rate per second of destructive gets. The valid format is a floating point number.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Implicit Disconnect Count Number of implicit disconnections from the queue manager. The valid format is an integer.

Implicit Disconnect Rate Rate per second of implicit disconnections from the queue manager. The valid format is a floating point number.

Inquire Count Count of successful inquiries for objects. The valid format is an integer.

Inquire Fail Count Number of unsuccessful attempts to inquire objects. The valid format is an integer.

Inquire Fail Rate Rate per second of unsuccessful attempts to inquire objects. The valid format is a floating point number.

Inquire Rate Rate per second of successful inquires for objects. The valid format is a floating point number.

Interval End Date & Time Date and time of the end of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Interval Start Date & Time Date and time of the start of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Interval Time Seconds of interval time. The valid format is an integer.

Max Concurrent Connections Maximum number of concurrent connections in the recording interval. The valid format is an integer.

Normal Disconnect Count Number of normal disconnections from the queue manager. The valid format is an integer.

Normal Disconnect Rate Rate per second of normal disconnections from the queue manager. The valid format is a floating point number.

Open Count Count of objects that are opened. Valid format is an integer.

Open Fail Count Count of objects that are opened with failure. The valid format is an integer.

Open Fail Rate Rate per second of unsuccessful attempts to open objects. The valid format is a floating point number.

Open Rate Rate per second of objects that are opened. The valid format is a floating point number.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Purge Count Number of messages that are purged. The valid format is an integer.

Purge Rate Rate per second of messages that are purged. The valid format is a floating point number.

Put Byte Rate Rate per second of bytes that are put for messages. The valid format is a floating point number.

Put Bytes Total number of bytes that are put for messages. The valid format is an integer.

Put Bytes (Deprecated) Total number of bytes that are put for messages. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Put Count Count of puts. The valid format is an integer.

Put Fail Count Number of unsuccessful attempts to put a message. Valid format is an integer.

Put Fail Rate Rate per second of unsuccessful attempts to put a message. The valid format is a floating point number.

Put Rate Rate per second of messages that are successfully put to a queue. Valid format is a floating point number.

Put1 Count Count of messages that are put by the MQPUT1 call. The valid format is an integer.

Put1 Fail Count Number of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is an integer.

Put1 Fail Rate Rate per second of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is a floating point number.

Put1 Rate Rate per second of messages that are put to queue by the MQPUT1 call. The valid format is a floating point number.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Query Type Type of a SQL query. Valid values are as follows: Current = 0, Recent = 1, Historical = 2.

Queue Manager Disconnect Count Number of QMgr disconnections from the queue manager. The valid format is an integer.

Queue Manager Disconnect Rate Rate per second of QMgr disconnections from the queue manager. The valid format is a floating point number.

Sample Handle Handle for a sample data record. The valid format is an integer.

Set Count Count of successful MQSET calls. The valid format is an integer.

Set Fail Count Count of unsuccessful MQSET calls. The valid format is an integer.

Set Fail Rate Rate per second of unsuccessful MQSET calls. The valid format is a floating point number.

Set Rate Rate per second of successful MQSET calls. The valid format is a floating point number.

MQSeries Events attributes

Use the MQSeries Events attributes to create situations that alert you when a WebSphere MQ event occurs; these are pure events.

WebSphere MQ events are messages written by WebSphere MQ to one of four SYSTEM event queues in response to errors, warnings, or other significant occurrences within a queue manager. For example, if an application tries to add a message to a queue with an MQPUT request and that request fails because the queue is full, the application receives an error, and WebSphere MQ writes a Queue_Full error to the appropriate event queue.

MQSeries Events is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Appl ID The application identifier that is associated with the event or message. On z/OS systems, this is the JOBNAME; in CICS it is the VTAM Application ID; in IMS it is the IMS subsystem ID. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Appl Type The application type associated with the event or message. The valid format is an integer. Valid values are as follows:

- n/a = -2,
- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,
- OS2 = 4,
- DOS = 5,
- UNIX = 6,
- QMGR = 7,
- OS400 = 8,
- WINDOWS = 9,
- CICS_VSE = 10,
- WINDOWS_NT = 11,
- VMS = 12,

- GUARDIAN = 13,
- VOS = 14,
- IMS_BRIDGE = 19,
- XCF = 20,
- CICS_BRIDGE = 21,
- NOTES_AGENT = 22,
- USER = 25,
- CHINIT = 30,
- BATCH = 32,
- RRS_BATCH = 33,
- SYSTEMEXT=35,
- USER = 65536

Event The description of the outstanding WebSphere MQ event (for example, Channel_Stopped). The valid format is an integer. Valid values are as follows:

- Alias_Base_Queue_Type_Error = 2001,
- Get_Inhibited = 2016,
- Not_Authorized = 2035,
- Put_Inhibited = 2051,
- Queue_Full = 2053,
- Queue_Type_Error = 2057,
- Unknown_Alias_Base_Queue = 2082,
- Unknown_Object_Name = 2085,
- Unknown_Remote_Queue_Manager = 2087,
- Transmission_Queue_Type_Error = 2091,
- Transmission_Queue_Usage_Error = 2092,
- Bridge_Started = 2125,
- Bridge_Stopped = 2126,
- Remote_Queue_Name_Error = 2184,
- Unknown_Transmission_Queue = 2196,
- Unknown_Default_Xmit_Queue = 2197,
- Default_Xmit_Queue_Type_Error = 2198,
- Default_Xmit_Queue_Usage_Error = 2199,
- Queue_Manager_Active = 2222,
- Queue_Manager_Not_Active = 2223,
- Queue_Depth_High = 2224,
- Queue_Depth_Low = 2225,
- Queue_Service_Interval_High = 2226,
- Queue_Service_Interval_OK = 2227,
- Channel_Auto_Definition_OK = 2233,
- Channel_Auto_Definition_Error = 2234,
- Channel_Stopped_By_User = 2279,
- Channel_Started = 2282,
- Channel_Stopped = 2283,
- Channel_Conversion_Error = 2284,

- Channel_Activated = 2295,
- Channel_Not_Activated = 2296,
- Configuration_Create_Object = 2367,
- Configuration_Change_Object = 2368,
- Configuration_Delete_Object = 2369,
- Configuration_Refresh_Object = 2370,
- Channel_SSL_Error = 2371,
- Logger = 2411,
- Command_MQSC = 2412,
- Command_PCF = 2413,
- Queue_Not_Full = 1002053

Event Date & Time The time and date the event was posted to the WebSphere MQ event queue. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

- C** Century (0 for 20th, 1 for 21st)
- YY** Year
- MM** Month
- DD** Day
- HH** Hour
- MM** Minute
- SS** Second
- mmm** Millisecond

Event Host Name The name of the host system on which this event occurred, which is not necessarily the host system reporting the event. If this is a z/OS system, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Event QMgr Name The name of the queue manager on which this event occurred, which is not necessarily the queue manager reporting the event. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Event Qualifier This describes the condition that generated the event. The valid format is an integer. Valid values are as follows:

- n/a = 0,
- Connection_Not_Authorized = 1,
- Open_Not_Authorized = 2,
- Close_Not_Authorized = 3,
- Command_Not_Authorized = 4,
- Queue_Manager_Stopping = 5,
- Queue_Manager_Quiescing = 6,
- Channel_Stopped_OK = 7,
- Channel_Stopped_Error = 8,
- Channel_Stopped_Retry = 9,
- Channel_Stopped_Disabled = 10,

- Bridge_Stopped_OK = 11,
- Bridge_Stopped_Error = 12,
- SSL_Handshake_Error = 13,
- SSL_Cipher_Spec_Error = 14,
- SSL_Client_Auth_Error = 15,
- SSL_Peer_Name_Error = 16,
- Sub_Not_Authorized=17,
- Sub_Dest_Not_Authorized=18,
- COMMAND_NONE = 1000,
- Change_Queue_Manager = 1001,
- Inquire_Queue_Manager = 1002,
- Change_Process = 1003,
- Copy_Process = 1004,
- Create_Process = 1005,
- Delete_Process = 1006,
- Inquire_Process = 1007,
- Change_Queue = 1008,
- Clear_Queue = 1009,
- Copy_Queue = 1010,
- Create_Queue = 1011,
- Delete_Queue = 1012,
- Inquire_Queue = 1013,
- Refresh_Queue_Manager = 1016,
- Reset_Queue_Stats = 1017,
- Inquire_Queue_Names = 1018,
- Inquire_Process_Names = 1019 ,
- Inquire_Channel_Names = 1020,
- Change_Channel = 1021,
- Copy_Channel = 1022,
- Create_Channel = 1023 ,
- Delete_Channel = 1024,
- Inquire_Channel = 1025 ,
- Ping_Channel = 1026 ,
- Reset_Channel = 1027,
- Start_Channel = 1028,
- Stop_Channel = 1029,
- Start_Channel_Initiator = 1030,
- Start_Channel_Listener = 1031,
- Change_Namelist = 1032,
- Copy_Namelist = 1033,
- Create_Namelist = 1034,
- Delete_Namelist = 1035 ,
- Inquire_Namelist = 1036 ,
- Inquire_Namelist_Names = 1037,
- Escape = 1038,

- Resolve_Channel = 1039,
- Ping_Queue_Manager = 1040,
- Inquire_Queue_Status = 1041,
- Inquire_Channel_Status = 1042,
- Config_Event = 1043,
- Queue_Manager_Event = 1044,
- Performance_Event = 1045,
- Channel_Event = 1046 ,
- Delete_Publication = 1060,
- Deregister_Publisher = 1061,
- Deregister_Subscriber = 1062,
- Publish = 1063,
- Register_Publisher = 1064,
- Register_Subscriber = 1065,
- Request_Update = 1066,
- Broker_Internal = 1067,
- Activity_Message = 1069,
- Inquire_Cluster_Queue_Manager = 1070,
- Resume_Queue_Manager_Cluster = 1071,
- Suspend_Queue_Manager_Cluster = 1072,
- Refresh_Cluster = 1073,
- Reset_Cluster = 1074,
- Trace_Route = 1075,
- Refresh_Security = 1078,
- Change_Authentication_Information = 1079,
- Copy_Authentication_Information = 1080,
- Create_Authentication_Information = 1081,
- Delete_Authentication_Information = 1082,
- Inquire_Authentication_Information = 1083,
- Inquire_Authentication_Information_Names = 1084,
- Inquire_Connection = 1085,
- Stop_Connection = 1086,
- Inquire_Authority_Records = 1087,
- Inquire_Entity_Auth = 1088,
- Delete_Authority_Records = 1089,
- Set_Authority_Records = 1090,
- Logger_Event = 1091,
- Reset_Queue_Manager = 1092,
- Change_Listener = 1093,
- Copy_Listener = 1094,
- Create_Listener = 1095,
- Delete_Listener = 1096,
- Inquire_Listener = 1097,
- Inquire_Listener_Status = 1098,
- Command_Event = 1099,

- Change_Security = 1100,
- Change_CF_Structure = 1101,
- Change_Storage_Class = 1102,
- Change_Trace = 1103,
- Archive_Log = 1104,
- Backup_CF_Structure = 1105,
- Create_Buffer_Pool = 1106,
- Create_Page_Set = 1107,
- Create_CF_Structure = 1108,
- Create_Storage_Class = 1109,
- Copy_CF_Structure = 1110,
- Copy_Storage_Class = 1111,
- Delete_CF_Structure = 1112,
- Delete_Storage_Class = 1113,
- Inquire_Archive = 1114,
- Inquire_CF_Structure = 1115,
- Inquire_CF_Structure_Status = 1116,
- Inquire_Command_Server = 1117,
- Inquire_Channel_Init = 1118,
- Inquire_QSG = 1119,
- Inquire_Log = 1120,
- Inquire_Security = 1121,
- Inquire_Storage_Class = 1122,
- Inquire_System = 1123,
- Inquire_Thread = 1124,
- Inquire_Trace = 1125,
- Inquire_Usage = 1126,
- Move_Queue = 1127,
- Recover_BSDS = 1128,
- Recover_CF_Structure = 1129,
- Reset_Tpipe = 1130,
- Resolve_Indoubt = 1131,
- Resume_Queue_Manager = 1132,
- Reverify_Security = 1133,
- Set_Archive = 1134,
- Set_Log = 1136,
- Set_System = 1137,
- Start_Command_Server = 1138,
- Start_Queue_Manager = 1139,
- Start_Trace = 1140,
- Stop_Channel_Init = 1141,
- Stop_Channel_Listener = 1142,
- Stop_Command_Server = 1143,
- Stop_Queue_Manager = 1144 ,
- Stop_Trace = 1145,

- Suspend_Queue_Manager = 1146,
- Inquire_CF_Structure_Names = 1147,
- Inquire_Storage_Class_Names = 1148,
- Change_Service = 1149,
- Copy_Service = 1150,
- Create_Service = 1151,
- Delete_Service = 1152,
- Inquire_Service = 1153,
- Inquire_Service_Status = 1154,
- Start_Service = 1155,
- Stop_Service = 1156,
- Delete_Buffer_Pool = 1157,
- Delete_Page_Set = 1158,
- Change_Buffer_Pool = 1159,
- Change_Page_Set = 1160,
- Inquire_Queue_Manager_Status = 1161,
- Create_Log = 1162,
- Statistics_MQI = 1164,
- Statistics_Queue = 1165,
- Statistics_Channel = 1166,
- Accounting_MQI = 1167,
- Accounting_Queue = 1168,
- Inquire_Authority_Service = 1169,
- Change_Topic = 1170,
- Copy_Topic = 1171,
- Create_Topic = 1172,
- Delete_Topic = 1173,
- Inquire_Topic = 1174,
- Inquire_Topic_Names = 1175,
- Inquire_Subscription = 1176,
- Create_Subscription = 1177,
- Change_Subscription = 1178,
- Delete_Subscription = 1179,
- Clear_Subscription = 1180,
- Copy_Subscription = 1181,
- Inquire_SBStatus = 1182,
- Inquire_Topic_Status = 1183,
- Clear_Topic_String = 1184,
- Inquire_PUBSUB_Status = 1185.
- Attributes_Before_Change = 1000001,
- Attributes_After_Change = 1000002.

Internal EventID The internal ID assigned to the event. The valid format is an alphanumeric string of up to 8 characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Reporting Host Name The name of the system reporting this event (which is not necessarily the host system on which the event occurred). On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Reporting QMgr Name The name assigned to the queue manager reporting this event (which is not necessarily the queue manager on which the event occurred). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Resource Name (Deprecated) The name of the WebSphere MQ resource (channel or queue) on which the event occurred. The valid format is an alphanumeric string of up to 48 case-sensitive characters. This attribute has been deprecated.

Resource Name The name of the WebSphere MQ resource (channel or queue) on which the event occurred. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Namelist attributes

Use the Namelist attributes to view data associated with namelists. This group includes namelist name, count, and description.

Alter Date & Time The date and time the namelist definition was last altered. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Description (Deprecated) The namelist description. The valid format is an alphanumeric string of up to 64 characters.

Description The namelist description. The valid format is an alphanumeric string of up to 256 characters.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Name Count The number of names in the namelist. The valid format is an integer.

Namelist Name The name of the namelist. The valid format is an alphanumeric string of up to 48 characters.

Names The names in the namelist, separated by blanks. The valid format is an alphanumeric string of up to 1024 characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form of *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form of *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form of *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Object Attribute Details attributes

Use the Object Attribute Details attribute group to view attribute details for a topic or subscription. These attributes are informational only; they cannot be used to create situations.

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Attribute Unique ID The name of the application subscription.

Attribute Name The attribute name. Possible values are as follows:

- 1 = topic string
- 2 = subscription name
- 3 = user data
- 4 = selector

Attribute Value The attribute value. The valid format is a string of up to 10240 UTF-8 characters.

Attribute Type Identifies the source of the object. Possible values are as follows:

- 1 = topic
- 2 = subscription

Topic Name A symbol that is used to link to Topic String Details from Topic Definitions only.

Topic String The topic string, which comprises the tree node names that make up the topic. For example, /news/ibm/hursley/.

Remember: if the topic string exceeds 512 characters in length, it is truncated.

Page Set Long-Term History attributes (z/OS systems only)

The Page Set Long-Term History attributes are available on z/OS systems only.

Use the Page Set Long-Term History attributes to detect problems with page sets. This attribute group provides page set allocation and usage information for a queue manager on a z/OS system. These attributes are informational only; they cannot be used to create situations.

% Buffer Pool In Use The percentage of the total buffer pool using pages from this page set. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

% Pages In Use The percentage of allocated pages currently in use. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

Allocated Data Pages The number of data pages allocated for the current page set. The valid format is an integer.

Buffers In Use The number of pages from this page set that currently reside in the buffer pool. The valid format is an integer.

Extents Since Restart The number of DASD extents acquired since this queue manager was last restarted. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Length The interval time over which statistics were taken. The valid format is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Non-Persistent Pages The number of data pages currently in use that contain nonpersistent data. (A data page may contain only persistent or nonpersistent messages.) The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Page Set ID The page set identifier (a 2-digit integer of 00 - 99). Valid values include 00, 01, 02...98, 99.

Persistent Pages The number of data pages currently in use that contain persistent data. (A data page may contain only persistent or nonpersistent messages.) The valid format is an integer.

QMgr Name The name assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Messages The number of queued messages written to this page set (includes only messages on monitored queues). The valid format is an integer.

Queues Assigned The number of monitored queues assigned to this page set. The valid format is an integer.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Status The status of the current page set. Valid values are Available = 1, Full = 2, and NotAvail = 3.

Total Extents The total number of DASD extents in this page set. The valid format is an integer.

Page Set Short-Term History attributes (z/OS systems only)

The Page Set Short-Term History attributes are available on z/OS systems only.

Use the Page Set Short-Term History attributes to detect problems with page sets. This attribute group provides page set allocation and usage information for a queue manager on a z/OS system. These attributes are informational only; they cannot be used to create situations.

% Buffer Pool In Use The percentage of the total buffer pool using pages from this page set. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

% Pages In Use The percentage of allocated pages currently in use. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

Allocated Data Pages The number of data pages allocated for the current page set. The valid format is an integer.

Buffers In Use The number of pages from this page set that currently reside in the buffer pool. The valid format is an integer.

Extents Since Restart The number of DASD extents acquired since this queue manager was last restarted. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Non-Persistent Pages (z/OS systems only) The number of data pages currently in use that contain nonpersistent data. (A data page may contain only persistent or nonpersistent messages.) The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form of *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

Page Set ID The page set identifier (a 2-digit integer of 00 - 99). Valid values include 00, 01, 02...98, 99.

Persistent Pages The number of data pages currently in use that contain persistent data. (A data page may contain only persistent or nonpersistent messages.) The valid format is an integer.

QMgr Name The name assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Messages The number of queued messages written to this page set (includes only messages on monitored queues). The valid format is an integer.

Queues Assigned The number of monitored queues assigned to this page set. The valid format is an integer.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour

MM Minute
SS Second
mmm Millisecond

Status The status of the current page set. Valid values are Available = 1, Full = 2, and NotAvail = 3.

Total Extents The total number of DASD extents in this page set. The valid format is an integer.

Page Sets attributes (z/OS systems only)

The Page Sets attributes are available on z/OS systems only.

Use the Page Sets attributes to create situations for detecting problems with page sets. This attribute group provides page set allocation and usage information for a queue manager on a z/OS system. For example, you could create a situation to notify you when a page set fill ups and thereby identify queues that should be moved from one page set to another. Page Sets is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

% Buffer Pool In Use The percentage of the total buffer pool using pages from this page set. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

% Pages In Use The percentage of allocated pages currently in use. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

Allocated Data Pages The number of data pages allocated for the current page set. The valid format is an integer.

Buffer Pool ID The buffer pool this page set is assigned to. Valid values are 00, 01, 02, and 03.

Buffers In Use The number of pages from this page set that currently reside in the buffer pool. The valid format is an integer.

Data set Name The name of the data set that contains this page set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Extents Since Restart The number of DASD extents acquired since this queue manager was last restarted. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Non-Persistent Pages (z/OS systems only) The number of data pages currently in use that contain nonpersistent data. (A data page may contain only persistent or nonpersistent messages.) The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form of *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

Page Set ID The page set identifier (a 2-digit integer of 00 - 99). Valid values include 00, 01, 02...98, 99.

Persistent Pages The number of data pages currently in use that contain persistent data. (A data page may contain only persistent or nonpersistent messages.) Valid format is an integer.

QMgr Name The name assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Messages The number of queued messages written to this page set (includes only messages on monitored queues). The valid format is an integer.

Queues Assigned The number of monitored queues assigned to this page set. The valid format is an integer.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Status The status of the current page set. Valid values are Available, Full, or NotAvail.

Total Extents The total number of DASD extents in this page set. The valid format is an integer.

Unused Pages The number of data pages currently unused. The valid format is an integer.

Volume The volume containing the page set data set's primary space allocation. If this data set is a multivolume data set, the secondary extents may reside on different volumes. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Publish Subscribe Status attributes

The Publish Subscribe Status attributes provide status information about the publish-subscribe engine.

Host Name Name of the system where the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

Pub Sub Type The type of the publish-subscribe engine. Possible values are as follows:

- 1 = Local
- 2 = Parent
- 3 = Child

Pub Sub Status The status of the publish-subscribe engine. Possible values are as follows:

- 0 = Inactive
- 1 = Starting
- 2 = Stopping
- 3 = Active
- 4 = Compat*
- 5 = Error
- 6 = Refused

When the publish-subscribe engine has a status of Compat, the engine is running and publish/subscribe facilities available using MQI. However, the queued publish-subscribe interface is not running.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Channels attributes

The QSG Channels attributes are available for QSG environment on z/OS systems only.

Use the QSG Channels attributes to create situations for detecting problems in the shared channels that belong to the queue sharing group. QSG Channels is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Channel Disp The disposition of the channel describes its sharing characteristics; if the channel disposition is Shared or FixShared then any queue manager in the queue sharing group can support this channel in the same way. Valid values are as follows:

- Private = 0
- Shared = 1
- FixShared = 2

- Unknown = 255

Channel Name The name of the shared channel. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Channel Status The current operational status of the channel. Valid values are as follows:

- None = 0,
- Starting = 1,
- Binding = 2,
- Initializing = 3,
- Running = 4,
- Stopping = 5,
- Retrying = 6,
- Paused = 7,
- Stopped = 8,
- Requesting = 9,
- Unknown = 255

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue sharing group originates. This name takes the form *qsgname::MQQSG*, where *qsgname* is the name of the queue sharing group. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name assigned to the queue manager. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

QSG Name The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Xmit Q The name of the transmit queue; for sender queues only. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Coupling Facility Structure Backups attributes (z/OS systems only)

The QSG Coupling Facility Structure Backups attributes are available for QSG environment on z/OS systems only.

Use the QSG Coupling Facility Structure Backups attributes to create situations for detecting problems in the backups of coupling facility application structures that belong to the queue sharing group. QSG Coupling Facility Structure Backups is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Backup Date & Time The date and time the backup of the coupling facility application structure was last performed. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

- C Century (0 for 20th, 1 for 21st)
- YY Year
- MM Month

DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Backup End RBA Identifies the end location of the backup of the coupling facility application structure in the backup data set; expressed as a Relative Byte Address (RBA), in hexadecimal characters. The valid format is a string of 16 hexadecimal characters.

Backup Size The storage size, in megabytes (MB), of the backup of the coupling facility application structure. Valid format is an integer.

Backup Start RBA Identifies the start location of the backup of the coupling facility application structure in the backup data set; expressed as a Relative Byte Address (RBA), in hexadecimal characters. The valid format is a string of 16 hexadecimal characters.

CF Struct Name The name of the coupling facility application structure. The valid format is an alphanumeric string of up to 12 uppercase characters.

Failure Date & Time The date and time the backup of the coupling facility application structure last failed. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue sharing group originates. This name takes the form qsgname::MQQSG, where qsgname is the name of the queue sharing group. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name of the queue manager that took the backup. Valid format is an alphanumeric string of up to 4 case-sensitive characters.

QSG Name The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Struct Status The status of the coupling facility application structure. Valid values are as follows:

- None = 0

- Active = 1
- Failed = 2
- InBackup = 3
- InRecover = 4
- Unknown = 255

QSG Coupling Facility Structure Connections attributes (z/OS systems only)

The QSG Coupling Facility Structure Connections attributes are available for QSG environment on z/OS systems only.

Use the QSG Coupling Facility Structure Connections attributes to create situations for detecting problems in the connections to coupling facility application structures that belong to the queue sharing group. QSG Coupling Facility Structure Connections is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

CF Struct Name The name of the coupling facility application structure. The valid format is an alphanumeric string of up to 12 uppercase characters.

Conn Status The status of the connection to the coupling facility application structure. Valid values are as follows:

- None = 0
- Active = 1
- Failed = 2
- Unknown = 255

Failure Date & Time The date and time the connection of the coupling facility application structure last failed. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Host Name The name of the z/OS host system (the SYSNAME). The valid format is an alphanumeric string of up to 8 uppercase characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue sharing group originates. This name takes the form *qsgname::MQQSG*, where *qsgname* is the name of the queue sharing group. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name assigned to the queue manager. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

QSG Name The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

QSG Coupling Facility Structures attributes (z/OS systems only)

The QSG Coupling Facility Structures attributes are available for QSG environment on z/OS systems only.

Use the QSG Coupling Facility Structures attributes to create situations for detecting problems in coupling facility application structures and the administration structure associated with the queue sharing group. Some information is not provided for administration structures, as noted in the descriptions. QSG Coupling Facility Structures is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

% Entries Used The list entries used in the coupling facility structure, expressed as a percentage.

% Stor Used The storage used by the coupling facility structure, expressed as a percentage.

Alter Date & Time The date and time the coupling facility structure was last altered; the value is blank for an administration structure. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

CF Struct Name The name of the coupling facility structure. The valid format is an alphanumeric string of up to 12 uppercase characters.

CF Struct Type The type of this coupling facility structure; Admin indicates an Administration structure and Appl indicates an Application structure. Valid values are as follows:

- None = 0
- Admin = 1
- Appl = 2
- Unknown = 255

Description (Deprecated) Descriptive comment defined for the coupling facility structure; the value is blank for an administration structure. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

Description Descriptive comment defined for the coupling facility structure; the value is blank for an administration structure. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Failure Date & Time The date and time the coupling facility structure last failed. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Max Stor The maximum storage size of the coupling facility structure, in kilobytes (KB). The valid format is an integer.

Max Entries The maximum number of list entries in the coupling facility structure. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue sharing group originates. This name takes the form *qsgname::MQQSG*, where *qsgname* is the name of the queue sharing group. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QSG Name The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Recovery Supported Whether Recovery is supported for this coupling facility structure. The value is No for an administration structure. Valid values are No = 0 and Yes = 1.

Struct Level Indicates the functional level of the coupling facility structure; the value is zero for an administration structure. The valid format is an integer.

Struct Status The status of the coupling facility structure. Valid values are as follows:

- None = 0,
- NotFound = 1,
- Active = 2,
- Failed = 3,
- InBackup = 4,
- InRecover = 5,
- Unknown = 255

Used Entries The number of list entries used in the coupling facility structure.

QSG QMgrs attributes (z/OS systems only)

The QSG QMgrs attributes are available for QSG environment on z/OS systems only.

Use the QSG QMgrs attributes to create situations for detecting problems in the queue managers that belong to the queue sharing group. QSG QMgrs is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

of DB2 Servers The number of DB2 servers.

DB2 Conn Status The status of the queue manager connection to the DB2 subsystem. Valid values are as follows:

- None = 0
- Inactive = 1
- Active = 2
- Failed = 3
- Pending = 4
- Unknown = 255

DB2 Subsystem The name of the DB2 subsystem. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

DSG Name The name of the data sharing group. Valid format is an alphanumeric string of up to 8 uppercase characters.

Host Name The name of the z/OS host system (the SYSNAME). The valid format is an alphanumeric string of up to 8 uppercase characters.

MQSeries Release The version of WebSphere MQ. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue sharing group originates. This name takes the form *qsgname::MQQSG*, where *qsgname* is the name of the queue sharing group. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name The name assigned to the queue manager. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

QMgr Status The status of the queue manager. Valid values are as follows:

- None = 0
- Inactive = 1
- Active = 2
- Failed = 3
- Created = 4
- Unknown = 255

QSG Name The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

QSG Queues attributes (z/OS systems only)

The QSG Queues attributes are available for QSG environment on z/OS systems only.

Use the QSG Queues attributes to create situations for detecting problems in the queues that belong to the queue sharing group. QSG Queues is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

% Full The current number of messages on the queue (the current depth of queue) divided by the maximum number of messages for the queue and expressed as a percentage.

CF Struct Name The name of the Coupling Facility application structure for the queue. The valid format is an alphanumeric string of up to 12 uppercase characters.

Current Depth The number of messages that are currently on the queue. For Copy queues this number indicates the copy with the greatest depth. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue sharing group originates. This name takes the form *qsgname::MQQSG*, where *qsgname* is the name of the queue sharing group. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

QMgr Name For Copy queues, the name assigned to the queue manager that returned the largest Current depth of queue value, is displayed; for Shared queues, the name of the queue sharing group is displayed. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

QSG Disp The disposition of the queue in the queue sharing group. Valid values are as follows:

- Qmgr = 0
- Copy = 1
- Shared = 2
- Group = 3
- Unknown = 255

QSG Name The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Queue Name The name of the queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Accounting attributes (distributed systems only)

The Queue Accounting attributes are available on distributed systems only.

Use the Queue Accounting attributes to view information related to the number of MQI requests that are executed using connections to a queue manager, with respect to specific queues. Use the Queue Accounting attributes to create situations for monitoring concerned attributes of MQI requests for a certain queue.

Application Name Name of the application. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

Browse Byte Rate Rate per second of bytes that are got nondestructively. The valid format is a floating point number.

Browse Bytes Total number of bytes that are got nondestructively. Valid format is an integer.

Browse Bytes (Deprecated) Total number of bytes that are got nondestructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Browse Count Count of non-destructive gets for messages. The valid format is an integer.

Browse Fail Count Number of unsuccessful non-destructive gets. Valid format is an integer.

Browse Fail Rate Rate per second of unsuccessful non-destructive gets. The valid format is a floating point number.

Browse Max Bytes Number of bytes of the largest message that is browsed from queue. Valid format is an integer.

Browse Min Bytes Number of bytes of the smallest message that is browsed from queue. Valid format is an integer.

Browse Rate Rate per second of unsuccessful non-destructive gets. The valid format is a floating point number.

Close Count Count of objects that are closed. The valid format is an integer.

Close Date & Time Date and time of the final close of the queue in this recording interval. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Close Rate Rate per second of times that this queue is closed by application in this interval. The valid format is a floating point number.

Command Level Queue manager command level. The valid format is an integer.

Connection ID Connection identifier for the WebSphere MQ connection. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Create Date & Time Date and time that the queue is created. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Generated Msg Count Number of messages that are generated. The valid format is an integer.

Generated Msg Rate Rate per second of messages that are generated. Valid format is a floating point number.

Get Bytes Total number of bytes that are got destructively. The valid format is an integer.

Get Bytes (Deprecated) Total number of bytes that are got destructively. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Get Byte Rate Rate per second of bytes that are got destructively. Valid format is a floating point number.

Get Count Count of gets. The valid format is an integer.

Get Fail Count Number of unsuccessful destructive gets. The valid format is an integer.

Get Fail Rate Rate per second of unsuccessful destructive gets. The valid format is a floating point number.

Get Max Bytes Number of the largest message that is retrieved from the queue. The valid format is an integer.

Get Min Bytes Number of the smallest message that is retrieved from the queue. The valid format is an integer.

Get Rate Rate per second of destructive gets. Valid format is a floating point number.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval End Date & Time Date and time of the end of the monitoring period. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Start Date & Time Date and time of the start of the monitoring period. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Interval Time Seconds of interval time. The valid format is an integer.

Object Count Number of queues that are accessed in the interval. The valid format is an integer.

Open Count Count of objects that are opened. Valid format is an integer.

Open Date & Time Date and time of the queue that is first opened in this recording interval. Standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Open Rate Rate per second of objects that are opened. The valid format is a floating point number.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Process ID OS process identifier of the application. The valid format is an integer.

Put Bytes Total number of bytes that are put for messages. The valid format is an integer.

Put Bytes (Deprecated) Total number of bytes that are put for messages. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

Put Byte Rate Rate per second of bytes that are put for messages. The valid format is a floating point number.

Put Count Count of puts. The valid format is an integer.

Put Fail Count Number of unsuccessful attempts to put a message. Valid format is an integer.

Put Fail Rate Rate per second of unsuccessful attempts to put a message. The valid format is a floating point number.

Put Max Bytes Size of the largest message that is placed on the queue. The valid format is an integer.

Put Min Bytes Size of the smallest message that is placed on the queue. The valid format is an integer.

Put Rate Rate per second of messages that are successfully put to a queue. The valid format is a floating point number.

Put1 Count Count of messages that are put by the MQPUT1 call. The valid format is an integer.

Put1 Fail Count Number of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is an integer.

Put1 Fail Rate Rate per second of unsuccessful attempts to put a message using MQPUT1 calls. The valid format is a floating point number.

Put1 Rate Rate per second of messages that are put to queue by the MQPUT1 call. The valid format is a floating point number.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Query Type Type of a SQL query. Valid values are as follows:

- Current = 0

- Recent = 1
- Historical = 2

Queue Def Type Queue definition type. Valid values are as follows:

- Unknown = -1
- Predefined = 1
- PermanentDynamic = 2
- TemporaryDynamic = 3
- SharedDynamic = 4

Queue Name Name of the queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Time Avg Average time that a message remains on queue. The valid format is an integer.

Queue Time Avg (Deprecated) Average time that a message remains on queue. The valid format is an integer.

Queue Time Max The longest time that a message remains on queue. The valid format is an integer.

Queue Time Max (Deprecated) The longest time that a message remains on queue. The valid format is an integer.

Queue Time Min The shortest time that a message remains on queue. The valid format is an integer.

Queue Time Min (Deprecated) The shortest time that a message remains on queue. The valid format is an integer.

Queue Type The type of the queue. Valid values are as follows:

- Unknown = -1
- Local = 1
- Model = 2
- Alias = 3
- Remote = 6
- Cluster = 7

Sample Handle The handle for a sample data record. The valid format is an integer.

Sequence Number The sequence number. The valid format is an integer.

Thread ID WebSphere MQ thread identifier of the connection in the application. The valid format is an integer.

User ID The user identifier context of the application. The valid format is an alphanumeric string of up to 12 case-sensitive characters.

Queue Data attributes

The Queue Data attributes provide detailed information about a cluster queue.

Alter Date & Time The date and time that the queue definition is last altered.

CF Struct Name (QSG environment on z/OS systems only) The name of the Coupling Facility application structure for this queue. The valid format is an alphanumeric string of up to 12 uppercase characters.

Cluster The name of the cluster to which the queue belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster Date & Time The date and time that the cluster queue definition is made available.

Cluster Namelist The name of the namelist that specifies a list of clusters to which the queue belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster Queue Type Type of the cluster queue. Valid values are as follows:

- Local = 1
- Alias = 2
- Remote = 3
- Qmgr = 4
- n/a = 255

Creation Date & Time The date and time that this WebSphere MQ object (for example, a channel or queue) is created.

Current Depth Current depth of the queue. On z/OS systems it is zero for queues defined with a disposition of group and for queues with a disposition of shared if the CF structure that they use is unavailable or has failed.

Default Persist The default persistence that is assigned to this queue when it is defined. Messages of a persistent queue are logged and are therefore recoverable after queue manager or system failure; messages of a nonpersistent queue are not recoverable. Valid values are No = 0 and Yes = 1.

Default Priority The default priority that is assigned to this queue when it is defined. When messages are retrieved from a queue, they can be selected by priority, so that higher-priority messages are retrieved before messages that have reached the queue earlier. The valid format is an integer with a range from 0 - 9.

Definition Type The definition type for the queue. Valid values are as follows:

- Predefined = 1
- PermDyn = 2
- TempDyn = 3
- n/a = -1

Get Status Indicates whether gets are enabled for the queue. Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

High Depth Threshold % The queue depth threshold at which a high depth event is triggered, represented as a percentage to one decimal place.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host QMgr The queue manager that hosts the cluster queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Opens Number of handles that are open for input. On z/OS systems it is zero for queues defined with a disposition of group and for queues with a disposition of shared. Only the handles for the queue managers sending back the information are returned, not for the whole group. The valid value is an integer.

Max Depth Maximum depth of the queue. The valid value is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Opens Number of handles that are open for output. On z/OS systems it is zero for queues defined with a disposition of group and for queues with a disposition of shared. Only the handles for the queue managers sending back the information are returned, not for the whole group. Valid value is an integer.

% Full Current depth full percentage with one decimal place.

Put Status Indicates whether the current queue is enabled for puts (that is, whether applications may call WebSphere MQ API routines MQPUT or MQPUT1 for this queue). Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (QSG environment on z/OS systems only) The disposition of this queue sharing group. Valid values are as follows:

- Qmgr = 0
- Copy = 1
- Shared = 2
- Group = 3
- Unknown = 255

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Queue Description Text description of the particular queue and its applications. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Queue Name The name of a queue that is managed by the selected queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Type Type of the queue. Valid values are as follows:

- Local = 1
- Model = 2
- Alias = 3
- Remote = 6
- Cluster = 7

Queue Usage Usage of the queue. Valid values are Normal, XmitQ, and n/a.

Remote Queue Manager Name Name of the queue manager that manages the remote queue if the queue type is Remote, blank if the queue type is Alias. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Target Object Remote Queue Name of the queue/topic that the alias queue is associated with if the queue type is Alias, name of the remote queue that the queue is associated with if the queue type is Remote. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Total Opens Total number of open operations that are performed for a queue. Valid value is an integer.

Trigger Control Indicates whether triggers are active. Valid values are Off = 0, On = 1, and n/a = -1.

Trigger Depth Depth of the trigger. The valid format is an integer.

Trigger Priority Threshold message priority for triggers. The valid format is an integer.

Trigger Type Type of trigger. Valid values are None = 0, First = 1, Every = 2, Depth = 3, and n/a = -1.

Queue Definitions attributes

Use the Queue Definitions attributes to create situations that query queue definitions for an individual queue. This attribute group provides queue definition information for each monitored queue within a queue manager. For example, you can create a situation to detect deleted queues or queues with a particular queue type. Queue Definitions is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Alias Resolves Object Type The type of object to which the alias resolves. The valid format is an integer. Valid values are as follows:

- n/a = -1
- Queue = 1
- Topic = 8

Alter Date & Time The date and time that the channel definition is last altered. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

CF Struct Name (QSG environment on z/OS systems only) The name of the Coupling Facility application structure for this queue. The valid format is an alphanumeric string of up to 12 uppercase characters.

Cluster The name of the cluster to which the queue belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster Date & Time The date and time that the cluster queue definition is made available. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Cluster Namelist The name of the namelist that specifies a list of clusters to which the queue belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster Queue Type Type of the cluster queue. Valid values are as follows:

- Local = 1
- Alias = 2
- Remote = 3
- Qmgr = 4
- n/a = 255

Creation Date & Time The date and time that this WebSphere MQ object (for example, a channel or queue) is created. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month

DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Cur Defn Indicates whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Current Depth Current depth of the queue. On z/OS systems it is zero for queues defined with a disposition of group and for queues with a disposition of shared if the CF structure that they use is unavailable or has failed.

Default Persist The default persistence that is assigned to this queue when it is defined. Messages of a persistent queue are logged and are therefore recoverable after queue manager or system failure; messages of a nonpersistent queue are not recoverable. Valid values are No = 0 and Yes = 1.

Default Priority The default priority that is assigned to this queue when it is defined. When messages are retrieved from a queue, they can be selected by priority, so that higher-priority messages are retrieved before messages that may have reached the queue earlier. The valid format is an integer with a range from 0 - 9.

Default Put Response Type Default response type for message puts. Valid values are as follows:

- n/a = -1
- Sync = 1
- Async = 2

Default Read Ahead Value Default read ahead behavior for nonpersistent messages that are delivered to the client. Enabling read ahead can improve the performance of client applications that are consuming nonpersistent messages. Valid values are as follows:

- n/a = -1
- No = 0
- Yes = 1
- Disabled = 2

Definition Type The definition type for the queue. Valid values are as follows:

- Predefined = 1
- PermDyn = 2
- TempDyn = 3
- n/a = -1

Get Status Indicates whether gets are enabled for the queue. Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

High Depth Threshold % The queue depth threshold at which a high depth event is triggered, represented as a percentage to one decimal place.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host QMgr The queue manager that hosts the cluster queue. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Opens Number of handles that are open for input. On z/OS systems it is zero for queues defined with a disposition of group and for queues with a disposition of shared. Only the handles for the queue managers that send back the information are returned, not for the whole group. Valid value is an integer.

Maximum Depth Maximum depth of the queue. Valid value is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Opens Number of handles that are open for output. On z/OS systems it is zero for queues defined with a disposition of group and for queues with a disposition of shared. Only the handles for the queue managers sending back the information are returned, not for the whole group. Valid value is an integer.

Percent Full Current depth full percentage with one decimal place.

Property Control Property control attribute. Valid values are as follows:

- n/a = -1
- Compatibility = 0
- None = 1
- All = 2
- Force = 3

Put Status Indicates whether the current queue is enabled for puts (that is, whether applications may call WebSphere MQ API routines MQPUT or MQPUT1 for this queue). Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (QSG environment on z/OS systems only) The disposition of this queue sharing group. Valid values are as follows:

- Qmgr = 0
- Copy = 1
- Shared = 2
- Group = 3
- Unknown = 255

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Queue Description (Deprecated) Text description of the particular queue and its applications. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

Queue Description Text description of the particular queue and its applications. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Queue Name The name of a queue that is managed by the selected queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Type Type of the queue. Valid values are as follows:

- Local = 1
- Model = 2
- Alias = 3
- Remote = 6
- Cluster = 7

Queue Usage The queue usage, either Normal, XmitQ (for a transmission queue), or n/a. Valid values are Normal = 0, XmitQ = 1, and n/a = -1.

Remote Queue Manager Name Name of the queue manager that manages the remote queue if the queue type is Remote, blank if the queue type is Alias. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Target Object Remote Queue Name of the queue/topic that the alias queue is associated with if the queue type is Alias, name of the remote queue that the queue is associated with if the queue type is Remote. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Total Opens Total number of open operations that are performed for a queue. Valid value is an integer.

Tpipe Names The TPIPE names that are used for communication with OTMA through the WebSphere MQ IMS bridge if the bridge is active (Only exist on z/OS systems). The valid format is an alphanumeric string of up to 48 characters.

Trigger Control Indicates whether triggers are active. Valid values are Off = 0, On = 1, and n/a = -1.

Trigger Depth Depth of the trigger. The valid format is an integer.

Trigger Priority Threshold message priority for triggers. The valid format is an integer.

Trigger Type Type of trigger. Valid values are None = 0, First = 1, Every = 2, Depth = 3, and n/a = -1.

Queue Definition Details attributes

Use the Queue Definition Details attributes to view monitored queue parameters, including name, description, and value.

Cluster The name of the cluster to which the queue belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster QMgr The name of the cluster queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Parameter Description The description of the parameter. The valid format is an integer.

Valid values are as follows:

- Queue_name = 1,
- Description = 2,
- Type_of_queue = 3,
- Usage_normal_or_xmit = 4,
- Type_of_definition = 5,
- Default_msg_persistence = 6,
- Default_msg_priority = 7,
- Msgs_can_be_added = 8,
- Msgs_can_be_retrieved = 9,
- Maximum_message_length = 10,
- Maximum_number_of_msgs = 11,
- High_event_threshold = 12,
- Low_event_threshold = 13,
- Queue_full_events = 14,
- Service_interval_events = 15,
- Service_interval_in_ms. = 16,
- Trigger_msgs_used_or_not = 17,
- Conditions_for_trigger = 18,
- Queue_depth_trigger = 19,
- Message_priority_trigger = 20,
- Trigger_message_data = 21,
- Initiation_Q_for_trigger = 22,

- Process_name_for_trigger = 23,
- Default_input_share_opt = 24,
- Msg_delivery_sequence = 25,
- Multiple_appl_get_msgs = 26,
- Hours_to_retain_queue = 27,
- Storage_class_name = 28,
- Backout_count_hardening = 29,
- Backout_threshold = 30,
- Backout_requeue_name = 31,
- Remote_queue_manager = 32,
- Remote_queue_name = 33,
- Transmission_queue_name = 34,
- Base_queue_being_aliased = 35,
- Queue_depth_high_events = 36,
- Queue_depth_low_events = 37,
- Scope_of_Q_definition = 38,
- Distribution_lists = 39,
- Index_type = 40,
- Cluster_name = 41,
- Cluster_namelist = 42,
- Cluster_host_queue_manager = 43,
- Cluster_queue_type = 44,
- Default_message_binding = 45,
- Internal_queue_manager_name = 46,
- Queue_Sharing_Group_Disposition = 47,
- Coupling_Facility_Structure = 48,
- Non-persistent_msg_reliability_level = 49,
- Accounting_queue_level = 50,
- Monitoring_queue_level = 51,
- Statistics_queue_level = 52,
- Cluster_workload_priority = 53,
- Cluster_workload_rank = 54,
- Cluster_workload_use_queue = 55,
- Tpipe_names = 56,
- Alias_resolves_object_type = 57,
- Default_read_ahead_value = 58,
- Default_put_response_type = 59,
- Property_control = 60.

Parameter Name The name of the defined parameter. The valid format is an integer.

Valid values are as follows:

- QNAME = 1,
- DESCR = 2,
- QTYPE = 3,

- USAGE = 4,
- DEFTYPE = 5,
- DEFPSIST = 6,
- DEFPRTY = 7,
- PUT = 8,
- GET = 9,
- MAXMSGL = 10,
- MAXDEPTH = 11,
- QDEPTHHI = 12,
- QDEPTHLO = 13,
- QDPMAXEV = 14,
- QSVCIEV = 15,
- QSVCINT = 16,
- TRIGGER = 17,
- TRIGTYPE = 18,
- TRIGDPTH = 19,
- TRIGMPRI = 20,
- TRIGDATA = 21,
- INITQ = 22,
- PROCESS = 23,
- DEFSOPT = 24,
- MSGDLVSQ = 25,
- SHARE = 26,
- RETINTVL = 27,
- STGCLASS = 28,
- HARDENBO = 29,
- BOTHRESH = 30,
- BOQNAME = 31,
- RQMNAME = 32,
- RNAME = 33,
- XMITQ = 34,
- TARGQ = 35,
- QDPHIEV = 36,
- QDPLOEV = 37,
- SCOPE = 38,
- DISTL = 39,
- INDXTYPE = 40,
- CLUSTER = 41,
- CLUSNL = 42,
- CLUSQMGR = 43,
- CLUSQT = 44,
- DEFBIND = 45,
- QMID = 46,
- QSGDISP = 47,
- CFSTRUCT = 48,

- NPMCLASS = 49,
- ACCTQ = 50,
- MONQ = 51,
- STATQ = 52,
- CLWLPRTY = 53,
- CLWLRANK = 54,
- CLWLUSEQ = 55,
- TPIPE = 56,
- TARGTYPE = 57,
- DEFREADA = 58,
- DEFPRESP = 59,
- PROPCTL = 60.

Parameter Type The type of the parameter. The valid format is an alphanumeric string of up to 22 characters.

Parameter Value (Deprecated) The value of the parameter. The valid format is an alphanumeric string of up to 64 characters.

Parameter Value The value of the parameter. The valid format is an alphanumeric string of up to 256 characters.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call (MQOD_ObjectName) of the application. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Handle Status attributes

Use the Queue Handle Status attributes to view the most current data about which applications have a queue open. This attribute group can return multiple rows for a query, one for each queue open handle. Note that if a specific Queue Name is provided in the query to this attribute group, and that queue has no open handles, no rows are returned. No data is returned if the WebSphere MQ version requirement is not met.

If there are certain queues to be monitored by situations for Queue Handle Status, you must make a specific situation for each queue to be monitored and match the specific queue name with the Queue Name attribute as a condition in the situation. However, if you choose not to provide the queue name in the situation, only queues that are open are considered for possible match with the situation conditions specified.

Appl Type The type of application that owns the handle. Valid values are as follows:

- Unknown = -1,
- NoContext = 0,
- CICS = 1,
- MVS = 2,
- IMS = 3,

- OS2= 4,
- DOS= 5,
- UNIX= 6,
- QMgr = 7,
- OS400= 8,
- WINDOWS= 9,
- CICS_VSE= 10,
- WINDOWS_NT= 11,
- VMS= 12,
- GUARDIAN= 13,
- VOS= 14,
- IMS_BRIDGE= 19,
- XCF= 20,
- CICS_BRIDGE= 21,
- NOTES_AGENT= 22,
- USER= 25,
- BROKER= 26,
- QMGR_PUBLISH= 27,
- JAVA= 28,
- DQM= 29,
- CHINIT= 30,
- WLM= 31,
- BATCH= 32,
- RRS_BATCH= 33,
- SIB= 34,
- SYSTEMEXT = 35,
- SYSTEM = 101 (z/OS systems only),
- USER_FIRST= 65536

Application Tag The tag name identifies the application that owns the handle. For example, one of the following applications that are connected to the queue manager: z/OS batch job name, TSO USERID, CICS APPLID, IMS region name, Channel initiator job name, i5/OS job name, UNIX process, Windows process. The valid format is an alphanumeric string of up to 28 case-sensitive characters.

ASID The address space identifier of the application that opens the queue; the value is blank on non z/OS systems or on z/OS systems when the application type is Queue Manager. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Asynch State The state of the asynchronous consumption on this object handle. This attribute has the following valid values:

- None = 0
- Suspended = 4
- SuspendedTemp = 5
- Active = 6
- Inactive = 7
- n/a = 255

Channel Name The name of the channel that owns the handle if the handle belongs to the channel initiator; blank when no channel is associated with the handle. The valid format is an alphanumeric string of up to 20 case-sensitive characters.

CICS Region Name (CICS applications on z/OS systems only) The CICS region name if Appl Type is CICS; otherwise blank. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

CICS Task No (CICS applications on z/OS systems only) The CICS 7-digit task number if Appl Type is CICS; otherwise blank. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

CICS Trans ID (CICS applications on z/OS systems only) The CICS transaction identifier if Appl Type is CICS; otherwise blank. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Connection Name The name of the connection that is associated with the channel that owns the handle if the channel belongs to the channel initiator; blank when no channel is associated with the handle. The valid format is an alphanumeric string of up to 264 case-sensitive characters.

External Unit of Recovery ID The external unit of recovery identifier that is associated with the connection. The valid format is an alphanumeric string of up to 264 case-sensitive characters.

External Unit of Recovery Type The type of external unit of recovery identifier as perceived. The external unit of recovery type identifies the external unit of recovery identifier type and not the type of the transaction coordinator. When the value of the external unit of recovery type is QMGR, the associated identifier is in the queue manager unit of recovery identifier, and not the external unit of recovery identifier. Valid values are as follows:

- n/a = -1,
- QMGR = 0,
- CICS = 1 (z/OS systems only),
- RRS = 2 (z/OS systems only),
- IMS = 3 (z/OS systems only),
- XA = 4

Handle Status The state of the handle. Valid values are n/a = -1, Inactive = 0, and Active = 1.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

IMS PSB Name (IMS applications on z/OS systems only) The name of the IMS Program Specification Block that is associated with the running IMS transaction if Appl Type is IMS; otherwise blank. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

IMS PST ID (IMS applications on z/OS systems only) The IMS Program Specification Table region identifier for the connected IMS region if Appl Type is IMS; otherwise blank. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Open for Browse Indicates whether the queue is open for browsing. Valid values are No = 0 and Yes = 1.

Open for Input Indicates whether the queue is open for input. If so, further describes the type of open for input. Valid values are No = 0, Shared = 1, and Exclusive = 2.

Open for Inquire Indicates whether the queue is open for inquiring. Valid values are No = 0 and Yes = 1.

Open for Output Indicates whether the queue is open for output. Valid values are No = 0 and Yes = 1.

Open for Set Indicates whether the queue is open for setting. Valid values are No = 0 and Yes = 1.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Process ID The process identifier of the application that owns the handle; this is the application that opened the queue. Valid values are an integer process identifier or n/a = -1 on a z/OS system.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QMgr Unit of Recovery ID The queue manager unit of recovery identifier. On z/OS systems, this is a 6-byte log RBA, displayed as 12 hexadecimal characters. On systems other than z/OS systems, this is an 8-byte transaction identifier, displayed as m.n where m and n are the decimal representation of the first and last 4 bytes of the transaction identifier.

You can use the queue manager unit of recovery identifier as a filter keyword. On z/OS systems, you must specify the filter value as a hexadecimal string. On systems other than z/OS systems, you must specify the filter value as a pair of decimal numbers separated by a period (.). You can only use the EQ, NE, GT, LT, GE, or LE filter operators.

QSG Disp (QSG environment on z/OS systems only) Disposition of the queue in a queue-sharing group environment. Valid values are Qmgr = 0, Copy = 1, Shared = 2, and Unknown = 255.

Queue Name The name of a queue that is managed by the selected queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

RRS UR ID (RRS Batch applications on z/OS systems only) The hexadecimal character form of the 16-byte RRS Unit-of-Recovery identifier that is associated with the handle if Appl Type is RRS Batch; otherwise blank. Valid format is an alphanumeric string of up to 32 case-sensitive characters.

Thread ID The thread identifier of the thread in the application that owns the handle; this is the application that opened the queue. Valid values are an integer thread identifier or n/a = -1 on z/OS systems.

User ID The user identifier that is associated with the handle. The valid format is an alphanumeric string of up to 64 case-sensitive characters.

Queue Long Term History attributes

Use the Queue Long Term History attributes to detect problems with individual queues. This attribute group provides queue statistics for each monitored queue within a queue manager. These attributes are informational only; they cannot be used to create situations.

of Tran/Pgms (z/OS systems only) The number of unique CICS transactions or program names. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

% Full The current number of messages on the queue divided by the maximum number of messages for the queue and expressed as a percentage. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

Avg Appl Time Between Calls (z/OS systems only) The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time (z/OS systems only) The average time that it takes for WebSphere MQ to respond to all MQI calls. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Creation Date & Time The date and time that this WebSphere MQ object (for example, a channel or queue) is created. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Cur Defn Indicates whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Cur Opened Exclusive (z/OS systems only) Indicates whether this queue is currently opened for exclusive use during the last data sample. Valid values are n/a = 0, Yes = 1, and No = 2. This information is only available if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0.

Current Depth The number of messages that are currently on the queue. The valid format is an integer.

Get Status Indicates whether the current queue is enabled for gets (that is, whether applications can call WebSphere MQ API routine MQGET for this queue). Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

High Depth Threshold The percentage of the maximum message depth of the current queue that triggers a Queue Depth High event for this queue. This attribute is expressed as an integer in the range 0 - 100.

High Depth Threshold Percent The percentage of the maximum message depth of the current queue that triggers a Queue Depth High event for this queue. This attribute is expressed as a percentage value to one decimal place.

Highest Depth If Queue Statistics are collected (SET QUEUE STATISTICS(YES)), this is the highest number of messages in the queue during the sampling interval; otherwise this is the highest recorded Current Depth value from the collection of sampling intervals that comprise the entire historical period. Valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg (z/OS systems only) The average size of all input messages belonging to this queue, transaction, program, or application. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

Input Opens The number of applications that opened this queue for input. This does not include open requests for either inquiry or browse. The valid format is an integer.

Interval Length The interval time over which statistics are taken. The valid format is in the form MMM:SS where M is minute and S is second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Last Put The date and time of the last sample interval in which a put is recorded. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Last Read The date and time of the last sample interval in which a read is recorded. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Msgs Browsed (z/OS systems only) The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

Msgs Put The number of messages that are put to the queue during the sampling interval. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer.

Msgs Put per Sec The rate per second of messages that are put to the queue. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to one decimal place).

Msgs Read The number of messages that are read (and removed) from the queue during the sampling interval. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer.

Msgs Read per Sec The rate per second of messages that are read from the queue. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to one decimal place).

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Msg Size Avg (z/OS systems only) The average size of all output messages that belong to this queue, CICS transaction, program, or application. This information is only available if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0. The valid format is an integer.

Output Opens The number of applications that opened this queue for output. The valid format is an integer.

Put Status Indicates whether the current queue is enabled for puts (that is, whether applications can call WebSphere MQ API routines MQPUT or MQPUT1 for this queue). Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of the queue that is specified in the MQOPEN call (MQOD_ObjectName) of the application. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Retent Intvl Exceeded Whether the retention interval (that is, the number of hours this queue must be retained after its creation) is exceeded. If yes, this queue is eligible for deletion. Valid values are No = 0, Yes = 1, and n/a = -1.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

- C** Century (0 for 20th, 1 for 21st)
- YY** Year
- MM** Month
- DD** Day
- HH** Hour
- MM** Minute
- SS** Second
- mmm** Millisecond

Time to Full Queue (Secs) The amount of time, in seconds, that it takes for the queue to reach maximum allowed depth given the current depth, maximum depth, messages read per second, and messages put per second. If this value cannot be calculated with the current rates, the following values might be set:

Table 20. Values and descriptions. This table lists the values and descriptions for the Time to Full Queue (Secs) attribute.

Value	Description
Equal_Put_Get_Rates = -1	The rate of both puts and gets is equal.
Zero_Put_Get_Rates = -2	The rate of puts and gets is zero.
Sufficient_Get_Rate = -3	The rate of gets is greater than puts.
n/a = -4	Only occurs if the sample interval length is 0.

If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to 2 decimal places).

Time to Zero Msgs (Secs) The amount of time, in seconds, that it takes for the queue to have no messages given the current depth, messages read per second, and messages put per second. If this value cannot be calculated with the current rates, the following values might be set:

Table 21. Values and descriptions. This table lists the values and descriptions for the Time to Zero Msgs (Secs) attribute.

Value	Description
Equal_Put_Get_Rates = -1	The rate of both puts and gets is equal.

Table 21. Values and descriptions (continued). This table lists the values and descriptions for the Time to Zero Msgs (Secs) attribute.

Value	Description
Zero_Put_Get_Rates = -2	The rate of puts and gets is zero.
Deficient_Get_Rate = -3	The rate of gets is less than puts.
n/a = -4	Only occurs if the sample interval length is 0.

If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to 2 decimal places).

Trigger Control Whether trigger messages are enabled for this queue. Valid values are No = 0, Yes = 1, and n/a = -1.

Trigger Depth For trigger type Depth, the number of messages that trigger a message to the initiation queue. The valid format is an integer.

Trigger Priority For trigger types First and Every, the message priority that triggers a message to the initiation queue. The valid format is an integer in the range 0 - 9.

Trigger Type The condition (First, Every, Depth, or None) that causes a trigger message to be sent to the initiation queue. Valid values are as follows:

- None = 0
- First = 1
- Every = 2
- Depth = 3
- n/a = -1

Queue Short Term History attributes

Use the Queue Short Term History attributes to detect problems with individual queues. This attribute group provides queue statistics for each monitored queue within a queue manager. These attributes are informational only; they cannot be used to create situations.

of Tran/Pgms (z/OS systems only) The number of unique CICS transactions or program names. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0. The valid format is an integer.

% Full The current number of messages on the queue divided by the maximum number of messages for the queue and expressed as a percentage. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

Avg Appl Time Between Calls (z/OS systems only) The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)).

If Application Queue Statistics monitoring is not active, the value is 0. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time (z/OS systems only) The average time that it takes for WebSphere MQ to respond to all MQI calls. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Creation Date & Time The date and time that this WebSphere MQ object (for example, a channel or queue) is created. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

Buffer Pool ID (z/OS systems only) Indicates the buffer pool that this page set is assigned to. Valid values include 00, 01, 02, and 03.

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

CF Struct Name (QSG environment on z/OS systems only) The name of the Coupling Facility application structure for this queue. The valid format is an alphanumeric string of up to 12 uppercase characters.

Cur Defn Whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Cur Opened Exclusive (z/OS systems only) Whether this queue is currently opened for exclusive use during the last data sample. Valid values are n/a = 0, Yes = 1, and No = 2. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0.

Current Depth The number of messages that are currently on the queue. The valid format is an integer.

Definition Type The definition type for the queue. Valid values are as follows:

- Predefined = 1
- PermDyn = 2
- TempDyn = 3
- Base_Q_Not_Monitored = 9999
- n/a = -1

Get Status Indicates whether the current queue is enabled for gets (that is, whether applications can call WebSphere MQ API routine MQGET for this queue). Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

High Depth Threshold The percentage of the maximum message depth of the current queue that triggers a Queue Depth High event for this queue. This attribute is expressed as an integer in the range 0 - 100.

High Depth Threshold Percent The percentage of the maximum message depth of the current queue that triggers a Queue Depth High event for this queue. This attribute is expressed as a percentage value to one decimal place.

Highest Depth If Queue Statistics are collected (SET QUEUE STATISTICS(YES)), this is the highest number of messages in the queue during the sampling interval; otherwise, this value is 0. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Initiation Queue Name The name of a local queue to which trigger messages are written. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg (z/OS systems only) The average size of all input messages that belong to this queue, transaction, program, or application. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0. The valid format is an integer.

Input Opens The number of applications that opened this queue for input. This does not include open requests for either inquiry or browse. The valid format is an integer.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Last Put The date and time of the last sample interval in which a put is recorded. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute

SS Second
mmm Millisecond

Last Read The date and time of the last sample interval in which a read is recorded. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistic data is used. If neither type of monitoring is active, the value is 0. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Msgs Browsed (z/OS systems only) The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0. The valid format is an integer.

Msgs Put The number of messages that are put to the queue during the sampling interval. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer.

Msgs Put per Sec The rate per second of messages that are put to the queue. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to one decimal place).

Msgs Read The number of messages that are read and removed from the queue during the sampling interval. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer.

Msgs Read per Sec The rate per second of messages that are read from the queue. If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the

Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to one decimal place).

Max Depth The maximum number of messages that are allowed on the queue. The valid format is an integer.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Msg Size Avg (z/OS systems only) The average size of all output messages that belong to this queue, CICS transaction, program, or application. This information is only available if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the value is 0. The valid format is an integer.

Output Opens The number of applications that have opened this queue for output. Valid format is an integer.

Page Set ID (z/OS systems only) The page set identifier (a 2-digit integer of 00 - 99). Valid values include 00, 01, 02...98, 99.

Process Name The name of a process instance that identifies the application. Note that when writing a situation, a particular process name can sometimes be used to identify a group of critically important queues more easily than writing a separate situation for each queue name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Put Status Indicates whether the current queue is enabled for puts (that is, whether applications may call WebSphere MQ API routines MQPUT or MQPUT1 for this queue). Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (QSG environment on z/OS systems only) The disposition of this queue sharing group. Valid values are as follows:

- Qmgr = 0
- Copy = 1
- Shared = 2
- Group = 3
- Unknown = 255

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Queue Name The name of the queue that is specified in the application's MQOPEN call (MQOD_ObjectName). The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Type Type of the queue. Valid values are Local = 1 and Alias = 3.

Queue Usage The queue usage, either Normal, XmitQ (for a transmission queue), or n/a. Valid values are Normal = 0, XmitQ = 1, and n/a = -1.

Retent Intvl Exceeded Whether the retention interval (that is, the number of hours this queue must be retained after its creation) is exceeded. If yes, this queue is eligible for deletion. Valid values are No = 0, Yes = 1, and n/a = -1.

Sample Date & Time The date and time of the sample. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Storage Class (z/OS system local queues only) The name of the WebSphere MQ storage class this queue is assigned to. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Time to Full Queue (Secs) The amount of time, in seconds, that it takes for the queue to reach maximum allowed depth given the current depth, maximum depth, messages read per second, and messages put per second. If this value cannot be calculated with the current rates, the following values might be set:

Table 22. Values and descriptions for the Time to Full Queue (Secs) attribute. The table lists values and descriptions for the Time to Full Queue (Secs) attribute.

Value	Description
Equal_Put_Get_Rates = -1	The rate of both puts and gets is equal.
Zero_Put_Get_Rates = -2	The rate of puts and gets is zero.
Sufficient_Get_Rate = -3	The rate of gets is greater than puts.
n/a = -4	Only occurs if the sample interval length is 0.

If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to 2 decimal places).

Time to Zero Msgs (Secs) The amount of time, in seconds, that it takes for the queue to have no messages given the current depth, messages read per second, and messages put per second. If this value cannot be calculated with the current rates, the following values might be set:

Table 23. Values and descriptions for the Time to Zero Msgs (Secs) attribute. The table lists values and descriptions for the Time to Zero Msgs (Secs) attribute

Value	Description
Equal_Put_Get_Rates = -1	The rate of both puts and gets is equal.
Zero_Put_Get_Rates = -2	The rate of puts and gets is zero.
Deficient_Get_Rate = -3	The rate of gets is less than puts.
n/a = -4	Only occurs if the sample interval length is 0.

If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is an integer (formatted to 2 decimal places).

Total Opens The total number of applications that opened this queue for either input or output. This does not include open requests for either inquiry or browse. The valid format is an integer.

Trigger Control Whether trigger messages are enabled for this queue. Valid values are No = 0, Yes = 1, and n/a = -1.

Trigger Depth For trigger type Depth, the number of messages that trigger a message to the initiation queue. The valid format is an integer.

Trigger Priority For trigger types First and Every, the message priority that triggers a message to the initiation queue. The valid format is an integer in the range 0 - 9.

Trigger Type The condition (First, Every, Depth, or None) that causes a trigger message to be sent to the initiation queue. Valid values are as follows:

- None = 0
- First = 1
- Every = 2
- Depth = 3
- n/a = -1

Queue Statistics attributes

Use the Queue Statistics attributes to create situations for detecting problems with individual queues. This attribute group provides queue statistics for each monitored queue within a queue manager. For example, you could create a situation to detect a put-inhibited queue or a queue that exceeds its high-depth threshold. Queue Statistics is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

of Tran/Pgms (z/OS systems only) The number of unique CICS transactions or program names. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION

STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

% Full The current number of messages on the queue (the current depth) divided by the maximum number of messages for the queue and expressed as a percentage. The valid format is a decimal (formatted to 1 decimal place) in the range 0.0 - 100.0.

Avg Appl Time Between Calls (z/OS systems only) The average elapsed time between MQI calls for any instances of the selected application ID, transaction, or program. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Avg MQ Resp Time (z/OS systems only) The average time that it takes for WebSphere MQ to respond to all MQI calls. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The value is expressed in seconds, accurate to the third decimal place. The valid format is a decimal (formatted to 3 decimal places).

Buffer Pool ID (z/OS systems only) Indicates the buffer pool that this page set is assigned to. Valid values include 00, 01, 02, and 03.

CF Struct Name (QSG environment on z/OS systems only) The name of the Coupling Facility application structure for this queue. The valid format is an alphanumeric string of up to 12 uppercase characters.

Creation Date & Time The date and time that this WebSphere MQ object (for example, a channel or queue) is created. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Cur Defn Whether the queue or channel is currently defined on the monitored queue manager. Valid values are No = 0 and Yes = 1.

Cur Opened Exclusive (z/OS systems only) Whether this queue currently is opened for exclusive use during the last data sample. Valid values are n/a = 0, Yes = 1, No = 2. This information is only available if Application Queue Statistics are

being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0.

Current Depth The number of messages currently on the queue. The valid format is an integer.

Definition Type The definition type for the queue. Valid values are as follows:

- Predefined = 1
- PermDyn = 2
- TempDyn = 3
- Base_Q_Not_Monitored = 9999
- n/a = -1

Get Status Indicates whether the current queue is enabled for gets (whether applications can call WebSphere MQ API routine MQGET for this queue). Valid values are Enabled = 0, Disabled = 1, n/a = -1.

High Depth Threshold The percentage of the maximum message depth of the current queue that triggers a Queue Depth High event for this queue. This attribute is expressed as an integer in the range 0 -100.

High Depth Threshold Percent The percentage of the maximum message depth of the current queue that triggers a Queue Depth High event for this queue. This attribute is expressed as a percentage value to one decimal place.

Highest Depth If Queue Statistics are collected (SET QUEUE STATISTICS(YES)), this is the highest number of messages in the queue during the sampling interval; otherwise, this value is 0. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Msg Size Avg (z/OS systems only) The average size of all input messages that belong to this queue, transaction, program, or application. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

Initiation Queue Name The name of a local queue to which trigger messages are written. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Opens The number of applications that opened this queue for input. This does not include open requests for either inquiry or browse. The valid format is an integer.

Interval Time The size of the current sampling interval, expressed in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Last Put The date and time of the last sample interval in which a put is recorded. If Queue Statistics are collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used; otherwise, if Application Queue Statistics are collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used. If neither type of monitoring is active, the value is 0. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Last Read The date and time of the last sample interval in which a read is recorded. If Queue Statistics are being collected (SET QUEUE STATISTICS(YES)) then that data is used; otherwise, if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)) that data is used. If neither type of monitoring is active, the values are 0. The valid format is the standard 16-character date/time format (CYYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour

MM Minute

SS Second

mmm Millisecond

Max Depth The maximum number of messages that are allowed on the queue. The valid format is an integer.

Msgs Browsed (z/OS systems only) The number of messages belonging to this queue, transaction, program, or application that are successfully browsed. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

Msgs Put The number of messages that are put to the queue during the sampling interval. If Queue Statistics are being collected (SET QUEUE STATISTICS(YES)) then that data is used; otherwise, if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)) that data is used. If neither type of monitoring is active, the values are 0. The valid format is an integer.

Msgs Put per Sec The rate per second of messages that are put to the queue. If Queue Statistics are being collected (SET QUEUE STATISTICS(YES)) then that data is used; otherwise, if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)) that data is used. If neither type of monitoring is active, the values are 0. The valid format is an integer (formatted to one decimal place).

Msgs Read The number of messages that are read and removed from the queue during the sampling interval. If Queue Statistics are being collected (SET QUEUE STATISTICS(YES)) then that data is used; otherwise, if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)) that data is used. If neither type of monitoring is active, the values are 0. The valid format is an integer.

Msgs Read per Sec The rate per second of messages that are read from the queue. If Queue Statistics are being collected (SET QUEUE STATISTICS(YES)) then that data is used; otherwise, if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)) that data is used. If neither type of monitoring is active, the values are 0. The valid format is an integer (formatted to one decimal place).

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If you used the SET AGENT command to set the host ID value, then this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Output Msg Size Avg (z/OS systems only) The average size of all output messages that belong to this queue, transaction, program, or application. This information is only available if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)). If Application Queue Statistics monitoring is not active, the values are 0. The valid format is an integer.

Output Opens The number of applications that opened this queue for output. The valid format is an integer.

Page Set ID (z/OS systems only) The page set identifier (a 2-digit integer of 00 - 99). Valid values include 00, 01, 02...98, 99.

Process Name The name of a process instance that identifies the application. Note that when writing a situation, a particular process name can sometimes be used to identify a group of critically important queues more easily than writing a separate situation for each queue name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Put Status Indicates whether the current queue is enabled for puts (that is, whether applications can call WebSphere MQ API routines MQPUT or MQPUT1 for this queue). Valid values are Enabled = 0, Disabled = 1, and n/a = -1.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (QSG environment on z/OS systems only) The disposition of this queue sharing group. Valid values are as follows:

- Qmgr = 0
- Copy = 1
- Shared = 2
- Group = 3
- Unknown = 255

QSG Name (QSG environment on z/OS systems only) The name of the queue sharing group. The valid format is an alphanumeric string of up to 4 case-sensitive characters.

Queue Description A description of the queue. This can be useful when using situations, because you can use the description field to implement a scheme for classifying queues into groups. In this way you can create a situation that is only triggered by queues belonging to a particular group, avoiding the necessity of creating a separate situation for each individual queue, as you would need to if the queue name attribute were used instead.

For example, if you have queues with descriptions of Type 1 and Type 2, you can create situations with the following formulas to trigger events based on the same attribute (Current_Depth) under different circumstances depending on the description field, as follows:

```
IF Queue_Description = "Type1" AND Current_Depth >99 THEN [situation event occurs]
IF Queue_Description = "Type2" AND Current_Depth >1000 THEN [situation event occurs]
```

Queue Name The name of a queue that is managed by the selected queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Type Type of the queue. Valid values are Local = 1 and Alias = 3.

Queue Usage The queue usage, either Normal, XmitQ (for a transmission queue), or n/a. Valid values are Normal = 0, XmitQ = 1, n/a = -1.

Ret Intvl Exceeded Whether the retention interval (that is, the number of hours this queue must be retained after its creation) is exceeded. If yes, this queue is eligible for deletion. Valid values are No = 0, Yes = 1, and n/a = -1.

Storage Class (z/OS system local queues only) The name of the WebSphere MQ storage class this queue is assigned to. The valid format is an alphanumeric string of up to 8 case-sensitive characters.

Time to Full Queue (Secs) The amount of time, in seconds, that it takes for the queue to reach maximum allowed depth given the current depth, maximum depth, messages read per second, and messages put per second. If this value cannot be calculated with the current rates, the following values can be set:

Table 24. Values and descriptions for the Time to Full Queue (Secs) attribute. The table lists the values and descriptions for the Time to Full Queue (Secs) attribute.

Value	Description
Equal_Put_Get_Rates = -1	The rate of both puts and gets is equal.
Zero_Put_Get_Rates = -2	The rate of puts and gets is zero.
Sufficient_Get_Rate = -3	The rate of gets is greater than puts.
n/a = -4	Only occurs if the sample interval length is 0.

If Queue Statistics are being collected (SET QUEUE STATISTICS(YES)) then that data is used; otherwise, if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)) that data is used. If neither type of monitoring is active, the values are 0. The valid format is an integer (formatted to 2 decimal places).

Time to Zero Msgs (Secs) The amount of time, in seconds, that it takes for the queue to have no messages given the current depth, messages read per second, and messages put per second. If this value cannot be calculated with the current rates, the following values might be set:

Table 25.

Value	Description
Equal_Put_Get_Rates = -1	The rate of both puts and gets is equal.
Zero_Put_Get_Rates = -2	The rate of puts and gets is zero.
Deficient_Get_Rate = -3	The rate of gets is less than puts.
n/a = -4	Only occurs if the sample interval length is 0.

If Queue Statistics are being collected (SET QUEUE STATISTICS(YES)) then that data is used; otherwise, if Application Queue Statistics are being collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)) that data is used. If neither type of monitoring is active, the values are 0. The valid format is an integer (formatted to 2 decimal places).

Total Opens The total number of applications that have opened this queue for either input or output. This does not include open requests for either inquiry or browse. The valid format is an integer.

Trigger Control Whether trigger messages are enabled for this queue. Valid values are No = 0, Yes = 1, n/a = -1.

Trigger Depth For trigger type Depth, the number of messages that trigger a message to the initiation queue. The valid format is an integer.

Trigger Priority For trigger types First and Every, the message priority that triggers a message to the initiation queue. The valid format is an integer in the range 0 - 9.

Trigger Type The condition (First, Every, Depth, or None) that causes a trigger message to be sent to the initiation queue. Valid values are as follows:

- None = 0
- First = 1

- Every = 2
- Depth = 3
- n/a = -1

Queue Status attributes

Use the Queue Status attributes to view the most current status data about a specifically chosen queue; note the Queue Name attribute must be provided in queries to this attribute group. No data is returned if the WebSphere MQ version requirement is not met.

If there are certain queues to be monitored by situations for Queue Status, you should make a specific situation for each queue to be monitored and match the specific queue name with the Queue Name attribute as a condition in the situation. However, if you choose not to provide the queue name in the situation, only queues with a non-zero Current Depth value are considered for possible match with the situation conditions specified.

Current Depth The number of messages that are currently on the queue; this includes both committed and uncommitted messages. The valid format is an integer.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Input Opens The number of handles that are currently open for input (either shared or exclusive), this does not include opens for browsing. The valid format is an integer.

Last Get Date & Time The date and time that the last message is destructively read from the queue. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Last Put Date & Time The date and time that the last message is successfully put to the queue. Standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)
YY Year
MM Month
DD Day

HH Hour
MM Minute
SS Second
mmm Millisecond

Long Term Queue Time The time that messages remain on queue in microseconds over a long period of time. The maximum displayable value is 999,999,999.

Media Recovery Log Extent The log extent or journal receiver needed for media recovery of the queue. On queue managers on which circular logging is in place, The media recovery log extent is returned as a null string. The valid format is an alphanumeric string of up to 24 case-sensitive characters. This attribute is valid on AIX, HP-UX, Linux, i5/OS, Solaris, and Windows systems.

Oldest Msg Age Age, in seconds, of the oldest message on the queue. The maximum displayable value is 999,999,999; if the age exceeds this value, 999,999,999 is displayed.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID value is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

Queue Monitoring The current level of monitoring data collection for the queue. Valid values are as follows:

- n/a = -1,
- Off = 0 ,
- On = 1,
- Low = 17,
- Medium = 33,
- High = 65

Output Opens The number of handles that are currently open for output. The valid format is an integer.

QSG Disp (QSG environment on z/OS systems only) Indicates the disposition of the queue in a queue-sharing group environment. Valid values are as follows:

- Qmgr = 0
- Copy = 1
- Shared = 2
- Unknown = 255

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Queue Name The name of a queue that is managed by the selected queue manager. This attribute is required to be given in queries to this attribute group. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Short Term Queue Time The time that messages remain on queue in microseconds over a short period of time. The maximum displayable value is 999,999,999.

Uncommitted Msgs Whether there are any uncommitted messages on the queue. Valid values are No = 0 and Yes = 1.

SMF Data attributes

The SMF Data attributes provide performance information about log managers and message managers. This attribute group is available only on z/OS systems.

% Current Active Log Copy 2 Full The percent full of the second copy of the current active log. The valid format is an integer.

% Current Active Log Full The percent full of the first copy of the current active log. The valid format is an integer.

% Failed Lookahead Tape Mounts The percentage of attempted look ahead tape mounts that fail. The valid format is an integer of up to 4 digits.

% of Busy Tape Units The percentage of maximum allowable allocated tape units (MAXRTU) that are currently busy. The valid format is an integer.

% Rd Log Delayed (z/OS systems only) The percentage of log-read requests that were delayed because the MAXRTU data sets were already allocated. The valid format is an integer of up to 4 digits.

Active Logs Available The number of active log data sets that are available for use; that is, the number of active log data sets that are not full. The valid format is an integer of up to 4 digits.

Active Log Copy 2 Dataset Name The name of the second copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Active Log Dataset Name The name of the first copy of the current active log data set. The valid format is an alphanumeric string of up to 44 case-sensitive characters.

Actv Log Read % The percentage of log-read requests with Active status. The valid format is a decimal (formatted to 1 decimal place).

ADMIN Pub Per Sec (z/OS systems only) The rate of ADMIN publications per second. The valid format is an integer of up to 4 digits.

ADMIN Sub High Water Mark (z/OS systems only) The high watermark of ADMIN subscriptions. The valid format is an integer of up to 4 digits.

ADMIN Sub Low Water Mark (z/OS systems only) The low watermark of ADMIN subscriptions. The valid format is an integer of up to 4 digits.

API Pub Per Sec (z/OS systems only) The rate of API publications per second. The valid format is an integer of up to 4 digits.

API Sub High Water Mark (z/OS systems only) The high watermark of API subscriptions. The valid format is an integer of up to 4 digits.

API Sub Low Water Mark (z/OS systems only) The low watermark of API subscriptions. The valid format is an integer of up to 4 digits.

Archive Delay Due to Max Tape The number of log-read requests that are delayed because the maximum number of tape units that can be allocated for archive data sets is reached. This limiting value is determined by the MAXRTU value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer of up to 4 digits.

Archive Delay Unavail Resource The number of log-read requests that are delayed because of an unavailable resource that is not related to the MAXRTU limit, such as tape unit availability or WTOR delay. The valid format is an integer of up to four integer.

Arch Log Read % (z/OS systems only) The percentage of log-read requests that must be resolved from an archive log data set. The valid format is an integer of up to four digits.

Archiving Quiesced Indicates whether archive log mode is active. This occurs if the ARCHIVE LOG MODE(QUIESCE) command is issued. The valid format is an integer. Valid values are as follows:

- No = 0
- Yes = 1
- Unknown = 255

Busy Archive Tape The number of tape units that are currently busy actively processing an archive log data set. The valid format is an integer.

Checkpoints (z/OS systems only) The number of checkpoints that are issued during the sampling interval. The valid format is an integer of up to 4 digits.

Close Hndl Per Sec (z/OS systems only) The number of times per second WebSphere MQ closed an object (such as a queue) independently of a call to the MQCLOSE API routine. Valid format is an integer of up to 4 digits.

Compressed KB After Compression Total number of compressed bytes that are written to the log.

Compressed KB Before Decompression Total bytes before decompression.

Compression Failures Per Min Compression failures per minute.

Compression Requests Per Min Compression requests per minute.

Decompression Failures Per Min Decompression failures per minute.

Decompression Requests Per Min Decompression requests per minute.

Durable Sub Per Sec (z/OS systems only) The rate of durable subscription requests per second. The valid format is an integer of up to 4 digits.

Expired Sub (z/OS systems only) The total number of expired subscriptions. The valid format is an integer of up to 4 digits.

Full Logs To Offload The number of full active logs that are waiting to be offloaded. Valid format is an integer of up to 4 digits.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

In-Storage Rd Log % The percentage of log-read requests with In Storage status. The valid format is a decimal (formatted to 1 decimal place).

Interval Length The interval time over which statistics are taken. The valid format is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Logging Suspended Indicates whether logging is suspended. Logging is suspended if the SUSPEND QMGR LOG command is issued. All logging and update activity for the queue manager is suspended until the RESUME QMGR LOG command is issued. The valid format is an integer. Valid values are as follows:

- No = 0
- Yes = 1
- Unknown = 255

Log Write Buffer Pagein The number of times that a log write buffer needs to be paged in before it can be used. The valid format is an integer of up to 4 digits.

Log Write CI Per Min (z/OS systems only) The rate of CIs written for log per minute. The valid format is an integer.

Log Wr Req for CI Rewrite/Min (z/OS systems only) The rate of serial log- write requests for CI rewrite per minute when dual logging. The valid format is an integer.

Log Write Requests Per Minute (z/OS systems only) The rate of log-write requests per minute. The valid format is an integer.

Log Write Threshold The number of times that a log-write request is scheduled because the log-write threshold is reached. This threshold is determined by the WRTHRSH value in the CSQ6LOGP system parameter macro. It can be modified by issuing the SET LOG command. The valid format is an integer of up to four integer.

Lookahead Tape Mounts The number of look ahead tape mounts for archive data sets that are attempted. The valid format is an integer of up to 4 digits.

MQCB Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQCB for message manager. The valid format is an integer of up to 4 digits.

MQCLOSE Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQCLOSE for this queue manager. The valid format is an integer of up to 4 digits.

MQCTL Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQCTL for message manager. The valid format is an integer of up to 4 digits.

MQGET Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQGET for this queue manager. The valid format is an integer of up to 4 digits.

MQINQ Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQINQ for this queue manager. The valid format is an integer of up to 4 digits.

MQOPEN Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQOPEN for this queue manager. The valid format is an integer of up to 4 digits.

MQPUT Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQPUT for this queue manager. The valid format is an integer of up to 4 digits.

MQPUT1 Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQPUT1 for this queue manager. The valid format is an integer of up to 4 digits.

MQSET Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQSET for this queue manager. The valid format is an integer of up to 4 digits.

MQSTAT Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQSTAT for message manager. The valid format is an integer of up to 4 digits.

MQSUB Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQSUB for message manager. The valid format is an integer of up to 4 digits.

MQSUBRQ Per Sec (z/OS systems only) The number of calls or starts per second of the WebSphere MQ API routine MQSUBRQ for message manager. The valid format is an integer of up to 4 digits.

Msg on Subscriber Queue Per Sec (z/OS systems only) The rate of messages per second that are put onto subscriber queue. The valid format is an integer of up to 4 digits.

No Subscriber Publish Count (z/OS systems only) The number of publications that have no subscribers. The valid format is an integer of up to 4 digits.

Offload Task Status The current status of the offload task. The valid format is an integer. Valid values are as follows:

- Available = 1
- BusyAllocating = 2
- BusyCopyingLog = 3
- BusyCopyingBSDS = 4
- Unknown = 255

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager, and *smfid* is the z/OS system ID or SMF ID.

On distributed systems, this name takes the form *qmgr::MQ*. If the host ID valued is specified by the SET AGENT command, this name takes the form *qmgr:hostid:MQ*. The valid format is an alphanumeric string of up to 128 case-sensitive characters.

PROXY Pub Per Sec (z/OS systems only) The rate of PROXY publications per second. The valid format is an integer of up to 4 digits.

PROXY Sub High Water Mark (z/OS systems only) The high watermark of PROXY subscriptions. The valid format is an integer of up to 4 digits.

PROXY Sub Low Water Mark (z/OS systems only) The low watermark of PROXY subscriptions. The valid format is an integer of up to 4 digits.

Publish High Water Mark (z/OS systems only) The high watermark of publications. The valid format is an integer of up to 4 digits.

Publish Low Water Mark (z/OS systems only) The low watermark of publications. The valid format is an integer of up to 4 digits.

Pub Put Per Sec (z/OS systems only) The number of publications per second for message management. Valid format is an integer of up to 4 digits.

Publish Elapsed Time High Water Mark (z/OS systems only) The high watermark of elapse time for performing publish request. The valid format is an integer of up to 4 digits.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Read Log Per Min (z/OS systems only) The rate of log-read requests per minute. The valid format is an integer of up to 4 digits.

Sample Date & Time The time and date of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

- C Century (0 for 20th, 1 for 21st)
- YY Year
- MM Month

DD Day
HH Hour
MM Minute
SS Second
mmm Millisecond

Single Pub Subscriber High Water Mark (z/OS systems only) The high watermark of subscribers receiving a single publication. The valid format is an integer of up to 4 digits.

Sub Per Sec (z/OS systems only) The rate of subscription requests per second. The valid format is an integer of up to 4 digits.

Total Publish Time (z/OS systems only) The total time for performing publication requests. The valid format is an integer of up to 4 digits.

Uncompressed KB After Decompression Total number of uncompressed bytes after decompression.

Uncompressed KB Before Compression Total number of uncompressed bytes before compression.

Write Log Force % The percentage of log-write requests with Force status. The valid format is a decimal (formatted to 1 decimal place).

Write Log NoWait % The percentage of log-write requests with NoWait status. The valid format is a decimal (formatted to 1 decimal place).

Write Log Per Min (z/OS systems only) The rate of log-write requests per minute. The valid format is an integer of up to 4 digits.

Write Log Wait % The percentage of log-write requests with Wait status. The valid format is a decimal (formatted to 1 decimal place).

Write Requests Suspended The number of times that a request to write data to buffers is suspended. The valid format is an integer of up to 4 digits.

Zero Bufr Waits (z/OS systems only) The number of times that an application needs to wait because no buffers are available in the buffer pool of this queue manager. The valid format is an integer of up to 4 digits.

Subscription Definitions attributes

The Subscription Definitions attributes provide information of all system defined subscriptions.

Accounting Token The accounting token that is provided by the subscriber and inserted into messages sent to this subscription in the Accounting Token field of the MQMD.

Alter Date & Time Date and time that the subscriber is last modified.

Appl ID Identity data that is provided by the subscriber and inserted into messages sent to this subscription in the ApplIdentityData field of the MQMD.

Create Date & Time Date and time that the subscriber is created.

Destination The name of the destination that is used by the subscription.

Destination Correlation ID The correlation ID of the destination queue that is used by the subscription.

Destination Event The destination event type. Valid values are as follows:

- 2053 queue full
- 2224 queue depth high
- -1 = not applicable

The destination event type is -1 in the following situations:

- The destination event is not found in current events.
- Performance event monitoring on the queue manager is disabled.
- Queue monitoring events (by definition) for the subscription queue is disabled.
- No set events are collected.
- The destination queue manager is not the queue manager currently selected in the navigator tree.
- The destination queue is of one of the following types:
 - QCLUSTER
 - QREMOTE
 - QALIAS

Destination QMgr The name of the destination queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Durable Whether the subscription is durable. Valid values are as follows:

- 1 = yes
- 2 = no
- -1 = not applicable

Expire (Secs) The length of time in seconds until the subscription expires. If the subscription does not expire, this value is -1.

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Max Rows The maximum number of rows that are returned by the agent as the result of a query. The default value is 2000 rows.

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

Property Type The method of message delivery. Valid values are as follows:

- None = 0
- Compat = 1
- RFH2 = 2

- MsgProp = 3

Pub Priority The message priority. Valid values are 1 - 9, representing the priority of the message, or:

- -1 = as queue definition
- -3 = as published

QMgr Name Name of the queue manager. Valid format is an alphanumeric string of up to 48 case-sensitive characters.

Request Only Whether the subscriber requests updates. Valid values are as follows:

- 1 = yes
- 2 = no
- -1 = not applicable

Status The status for search. Valid values are as follows:

- 0 = ok
- -1 = no results found

Sub ID Unique Subscription Identifier. Valid format is an alphanumeric string of up to 48 case-sensitive characters. The hover help only displays the first character of the Sub ID when you move the cursor over this column.

Sub Level The level within the subscription interception hierarchy at which this subscription is made. Possible values are integers 1 - 9.

Sub Name The name of the application subscription. The valid format is a string of up to 256 UTF-8 characters.

Sub Scope The scope of the subscription. Valid values are as follows:

- 1 = queue manager
- 2 = all
- -1 = not applicable

Sub Type The type of the subscription. Valid values are as follows:

- User = -2
- All = -1
- API = 1
- Admin = 2
- Proxy = 3

Sub User The user ID of the user that currently owns this subscription.

System Managed Destination The system managed destination. Valid values are as follows:

- 1 = managed
- 2 = provided

Topic Name The name of the topic to which the subscription pertains.

Topic String The topic string, which comprises the tree node names that make up the topic. For example, /news/ibm/hursley/. The valid format is an alphanumeric string of up to 256 case-sensitive characters. If the topic string exceeds 256 characters in length, it is truncated.

Variable User Whether other users can connect to the subscription. Valid values are as follows:

- 1 = fixed
- 2 = any
- -1 = not applicable

Wildcard Char The wildcard schema used in the topic string. Possible values are as follows:

- 1 = character
- 2 = topic
- -1 = not applicable

Subscription Status attributes

The Subscription Status attributes provide information about the status of subscriptions.

Connection ID The currently active ConnectionId (CONNID) that has opened this subscription. Used to detect local publications. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Durable Whether durable subscriptions are permitted. Valid values are as follows:

- 1 = yes
- 2 = no
- -1 = not applicable

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Last Date & Time The date and time that a message is last sent to this subscription by an MQPUT API call.

Msg Count Number of messages that are put to the destination that is specified by this subscription.

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Recent Date & Time Date and time that the most recent MQSUB connection to this subscription is made.

Sub ID Unique Subscription Identifier. The valid format is an alphanumeric string of up to 48 case-sensitive characters. The hover help only displays the first character of the Sub ID when you move the cursor over this column.

Sub Name The name of the application subscription. The valid format is a string of up to 256 UTF-8 characters.

Sub Type The type of the subscription. Valid values are as follows:

- -2 = User
- -1 = All
- 1 = API
- 2 = Admin
- 3 = Proxy

Sub User The user ID of the user that currently owns this subscription.

TCPIP Started Listeners attributes (z/OS systems only)

The TCPIP Started Listeners attributes are available on z/OS systems.

Use the TCPIP Started Listeners attributes to create situations for gathering information about started TCP/IP listeners, including the IP address, port number, and the disposition of messages received by the listener. TCPIP Started Listeners is a multiple-instance attribute group. You cannot mix these attributes with attributes of any other multiple-instance group.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Inbound Disposition The disposition of messages that is received by this listener. Valid values are None = 0, Qmgr = 1, Group = 2, and Unknown = 255.

IP Address The Internet Protocol address of the TCP/IP listener; displayed as an asterisk (*) by default if IPADDR is not specified on the start listener command, optionally specified in dotted decimal notation or symbolic notation. On z/OS systems, the TCP/IP listener can be started many times with different combinations of port number and address. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

Port Number The port number on which the TCP/IP listener is active. On z/OS systems, the TCP/IP listener can be started many times with different combinations of port number and address. The valid format is an integer (up to 4 digits).

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Retrying Listener Indicates whether the TCP/IP listener port is retrying. The valid format is an integer. Valid values are No = 0 and Yes = 1.

Topic Definitions attributes

The Topic Definitions attributes provide detailed information about all system defined topics.

Alter Date & Time The data and time that this topic is last modified. The valid format is a 16 character timestamp.

Cluster Date & Time The date and time that the cluster topic definition becomes available.

Cluster Name The name of the cluster to which this topic belongs. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Cluster QMgr The name of the queue manager that is hosting the cluster topic. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Durable Sub Whether durable subscriptions are permitted. Possible values are as follows:

- 0 = as parent
- 1 = yes
- 2 = no
- -1 = not applicable

Remember: If this attribute is set to as parent, whether durable subscriptions are permitted depends on the setting of the first parent administrative node found in the topic tree that relates to this topic.

Durable Sub Model The name of the model queue that is used to create dynamic queues for durable subscriptions. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Max Rows The maximum number of rows that are returned by the agent as the result of a query.

Msg Persistence Whether messages are persistent. Possible values are as follows:

- n/a = -2
- AsParent = -1
- No = 0
- Yes = 1
- AsQOrTopicDef = 2

Msg Priority The message priority. Possible values are 2 - 9, representing the priority of the message, or one of the following values:

- n/a = -4
- AsPublished = -3
- AsParent = -2

- AsQOrTopicDef = -1

Msg Put Resp Type Put response type of messages that are published on the topic. Possible values are as follows:

- 0 = as parent
- 1 = synchronous
- 2 = asynchronous
- -1 = not applicable

Nonpersistent Msg Delivery The delivery method that is used to publish nonpersistent messages on this topic. Possible values are as follows:

- 0 = as parent
- 1 = all
- 2 = all durable
- 3 = all available
- -1 = not applicable

Non-Durable Sub Model The name of the model queue that is used to create dynamic queues for non-durable subscriptions. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

Persistent Msg Delivery The delivery method that is used to publish persistent messages on this topic. Possible values are as follows:

- 0 = as parent
- 1 = all
- 2 = all durable
- 3 = all available
- -1 = not applicable

Proxy Sub Forces the propagation of a proxy subscription for this topic string, even if no local or proxy subscriptions exist. Possible values are as follows:

- n/a = -1
- AsParent = 0
- Force = 1
- FirstUse = 2

Pub Enabled Whether publication is enabled. Possible values are as follows:

- n/a = -1
- AsParent = 0
- No = 1
- Yes = 2

Pub Scope String identifying the scope of the publication. Possible values are as follows:

- n/a = -1
- All = 0
- AsParent = 1
- Cluster = 2
- Hierarchy = 3
- QMgr = 4
- Force_All = 5
- Force_QMgr = 6

QMgr ID The unique name of the queue manager that hosts the topic. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

QSG Disp (z/OS systems only) Specifies how commands are executed when the queue manager is a member of a queue-sharing group. Possible values are as follows:

- n/a = -2
- All = -1
- QMgr = 0
- Copy = 1
- Shared = 2
- Group = 3
- Private = 4
- Live = 6

Status Status for search. Possible values are as follows:

- OK = 0 (The search result is displayed.)
- No_Results_Found = -1

Sub Enabled Whether subscriptions are enabled. Possible values are as follows:

- n/a = -1
- AsParent = 0
- No = 1
- Yes = 2

Sub Scope String that identifies the scope of the subscription. Possible values are as follows:

- n/a = -1
- All = 0
- AsParent = 1
- Cluster = 2
- Hierarchy = 3
- QMgr = 4
- Force_All = 5
- Force_QMgr = 6

Topic Description A text description of the topic. The valid format is a string of up to 256 UTF-8 characters.

Topic Name Name of the topic. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Topic String The topic string, which comprises the tree node names that make up the topic. For example, /news/ibm/hursley/. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Remember: If the topic string exceeds 256 characters in length, it is truncated.

Topic Type The topic enumeration type. This attribute has the following possible values:

- n/a = -1
- Local = 0
- Cluster = 1
- All = 2

Wildcard How wildcard subscriptions are handled for this topic. Possible values are as follows:

- n/a = -1
- Block = 1
- PassThru = 2

Topic Manager Long-Term History attributes (z/OS systems only)

The Topic Manager Long-Term History attributes are available on z/OS systems only.

The Topic Manager Long-Term History attributes are associated with the topic manager performance history for the selected queue manager. These attributes are informational only; they cannot be used to create situations.

ADMIN Pub Per Sec The rate of ADMIN publications per second. The valid format is an integer of up to 4 digits.

ADMIN Sub High Water Mark The high watermark of ADMIN subscriptions. The valid format is an integer of up to 4 digits.

ADMIN Sub Low Water Mark The low watermark of ADMIN subscriptions. The valid format is an integer of up to 4 digits.

API Pub Per Sec (z/OS systems only) The rate of API publications per second. The valid format is an integer of up to 4 digits.

API Sub High Water Mark The high watermark of API subscriptions. The valid format is an integer of up to 4 digits.

API Sub Low Water Mark The low watermark of API subscriptions. The valid format is an integer of up to 4 digits.

Durable Sub Per Sec The rate of durable subscription requests per second. The valid format is an integer of up to 4 digits.

Expired Sub The total number of expired subscriptions. The valid format is an integer of up to 4 digits.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Length The interval time over which statistics were taken. The valid format is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). Valid format is a decimal (formatted to 2 decimal places).

Msg on Subscriber Queue Per Sec The rate of messages per second that are put onto subscriber queue. The valid format is an integer of up to 4 digits.

No Subscriber Publish Count The number of publications that have no subscribers. The valid format is an integer of up to four digits.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

PROXY Pub Per Sec The rate of PROXY publications per second. The valid format is an integer of up to 4 digits.

PROXY Sub High Water Mark The high watermark of PROXY subscriptions. The valid format is an integer of up to 4 digits.

PROXY Sub Low Water Mark The low watermark of PROXY subscriptions. The valid format is an integer of up to 4 digits.

Publish Elapsed Time High Water Mark) The high watermark of elapse time for performing publish request. The valid format is an integer of up to 4 digits.

Publish High Water Mark The high watermark of publications. The valid format is an integer of up to 4 digits.

Publish Low Water Mark The low watermark of publications. The valid format is an integer of up to 4 digits.

QMgr Name The name that is assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The time and date of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C	Century (0 for 20th, 1 for 21st)
YY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
mmm	Millisecond

Single Pub Subscriber High Water Mark The high watermark of subscribers that receive a single publication. The valid format is an integer of up to 4 digits.

Sub Per Sec The rate of subscription requests per second. The valid format is an integer of up to 4 digits.

Total Publish Time The total time for performing publication requests. The valid format is an integer of up to 4 digits.

Topic Manager Short-Term History attributes (z/OS systems only)

The Topic Manager Short-Term History attributes are available on z/OS systems only.

The Topic Manager Short-Term History attributes are associated with the recent topic manager performance history for the selected queue manager. These attributes are informational only; they cannot be used to create situations.

ADMIN Pub Per Sec The rate of ADMIN publications per second. The valid format is an integer of up to 4 digits.

ADMIN Sub High Water Mark The high watermark of ADMIN subscriptions. The valid format is an integer of up to 4 digits.

ADMIN Sub Low Water Mark The low watermark of ADMIN subscriptions. Valid format is an integer of up to 4 digits.

API Pub Per Sec The rate of API publications per second. The valid format is an integer of up to 4 digits.

API Sub High Water Mark The high watermark of API subscriptions. The valid format is an integer of up to 4 digits.

API Sub Low Water Mark The low watermark of API subscriptions. The valid format is an integer of up to 4 digits.

Durable Sub Per Sec The rate of durable subscription requests per second. The valid format is an integer of up to 4 digits.

Expired Sub The total number of expired subscriptions. The valid format is an integer of up to 4 digits.

Host Name The name of the system on which this queue manager is running. On z/OS systems, this is the SMF ID. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Interval Length The interval time over which statistics were taken. The valid format is in the form MMM:SS where M = Minute, S = Second.

Interval Time The size of the current sampling interval, in hundredths of seconds. For example, .50 is half a second. This value is determined by the control parameters your site set when configuring the WebSphere MQ Monitoring agent; it is usually specified as 60.00 (60 seconds). The valid format is a decimal (formatted to 2 decimal places).

Msg on Subscriber Queue Per Sec The rate of messages per second that are put onto subscriber queue. The valid format is an integer of up to 4 digits.

No Subscriber Publish Count The number of publications that have no subscribers. The valid format is an integer of up to four digits.

Origin Node The WebSphere MQ Monitoring agent-assigned name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system ID or SMF ID.

PROXY Pub Per Sec The rate of PROXY publications per second. The valid format is an integer of up to 4 digits.

PROXY Sub High Water Mark The high watermark of PROXY subscriptions. The valid format is an integer of up to 4 digits.

PROXY Sub Low Water Mark The low watermark of PROXY subscriptions. The valid format is an integer of up to 4 digits.

Publish Elapsed Time High Water Mark The high watermark of elapse time for performing publish request. The valid format is an integer of up to 4 digits.

Publish High Water Mark The high watermark of publications. The valid format is an integer of up to 4 digits.

Publish Low Water Mark The low watermark of publications. The valid format is an integer of up to 4 digits.

QMgr Name The name assigned to this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Sample Date & Time The time and date of the sample. The valid format is the standard 16-character date/time format (CYMMDDHHMMSSmmm), where the strings have the following meanings:

C Century (0 for 20th, 1 for 21st)

YY Year

MM Month

DD Day

HH Hour
MM Minute
SS Second
mmm Millisecond

Single Pub Subscriber High Water Mark The high watermark of subscribers that receive a single publication. Valid format is an integer of up to 4 digits.

Sub Per Sec The rate of subscription requests per second. The valid format is an integer of up to 4 digits.

Total Publish Time The total time for performing publication requests. Valid format is an integer of up to 4 digits.

Topic Publishers attributes

The Topic Publishers attributes provide detailed information about the publishers (message producing applications) that use a particular topic.

Connection ID The currently active ConnectionId (CONNID). This is the connection that has opened the subscription. The valid format is an alphanumeric string of up to 48 characters. Possible values are as follows:

- active Connection ID
- Not_Connected_to_QMgr

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Msg Date & Time Date and time that the message is last sent by this publisher.

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form of *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

Publish Count Number of items that are published by this publisher.

Remember: This is the total number of publications before fan-out, not the total number of messages that result from publication.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Topic ID Topic identifier string. The valid format is an alphanumeric string of up to 40 case-sensitive characters.

Topic String The topic string, which comprises the tree node names that make up the topic. For example, */news/ibm/hursley/*. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Remember: If the topic string exceeds 256 characters in length, it is truncated.

Topic Status attributes

The Topic Status attributes provide information about the root level of topic nodes.

Admin Node If this node is an admin node, this attribute is the name of the associated topic object that contains the node configuration. If the field is not an admin node, this attribute is empty.

Durable Sub Whether durable subscriptions are permitted. Possible values are as follows:

- 1 = yes
- 2 = no
- -1 = not applicable

Durable Sub Model The name of the model queue that is used to create dynamic queues for durable subscriptions. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Max Rows The maximum number of rows that are returned by the agent as the result of a query. The default value is 2000 rows.

Msg Persistence Whether messages are persistent. Possible values are as follows:

- 0 = no
- 1 = yes
- -1 = not applicable

Msg Priority The message priority. Possible values are 1 - 9, representing the priority of the message, or -1 = not applicable.

Msg Put Resp Type Put response type of messages that are published on the topic. Possible values are as follows:

- 1 = synchronous
- 2 = asynchronous
- -1 = not applicable

Non-Durable Sub Model The name of the model queue that is used to create dynamic queues for non-durable subscriptions. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Non-Persistent Msg Delivery The delivery method that is used to publish nonpersistent messages on this topic. Possible values are as follows:

- 1 = all
- 2 = all durable
- 3 = all available
- -1 = not applicable

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form of *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

Persistent Msg Delivery The delivery method used to publish persistent messages on this topic. Possible values are as follows:

- 1 = all
- 2 = all durable
- 3 = all available
- -1 = not applicable

Pub Enabled Whether publication is enabled. Possible values are as follows:

- n/a = -1
- No = 1
- Yes = 2

Pub Scope Numeric value that identifies the scope of the publication. Possible values are as follows:

- n/a = -1
- All = 0
- Asparent = 1
- Cluster = 2
- Hierarchy = 3
- QMgr = 4
- Force_All = 5
- Force_QMgr = 6

Publisher Count The number of handles that are currently open for publishing on the topic.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Query String Query string. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Retained Pub Whether there is a retained publication associated with this topic. Possible values are as follows:

- 0 = no
- 1 = yes
- -1 = not applicable

Status Status for Search. Possible values are as follows:

- OK = 0 (The search result is displayed.)
- No_Result_Found = -1

Sub Enabled Whether subscriptions are enabled. Possible values are as follows:

- n/a = -1
- No = 1
- Yes = 2

Sub Scope Numeric value identifies the scope of the subscription. Possible values are as follows:

- n/a = -1
- All = 0
- Asparent = 1
- Cluster = 2
- Hierarchy = 3
- QMgr = 4
- Force_All = 5
- Force_QMgr = 6

Subscriber Count The number of subscribers to this topic, including durable subscribers that are not currently connected.

Topic ID Topic identifier string. The valid format is an alphanumeric string of up to 40 case-sensitive characters.

Topic String The topic string, which comprises the tree node names that make up the topic. For example, /news/ibm/hursley/. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Remember: If the topic string exceeds 256 characters in length, it is truncated.

Topic Subscribers attributes

The Topic Subscribers attributes provide detailed information about the subscribers to a particular topic.

% Full Current depth full percentage, with one decimal place.

Connection ID The currently active ConnectionId (CONNID) that has opened this subscription. Used to detect local publications. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Connection Type The type of the topology connection. Possible values are as follows:

- DurableSubConn=DurableSubscriptionConnection
- NondurableSubConn=NonDurableSubscriptionConnection
- ApplicationConn=ApplicationConnection
- DestinationConn=DestinationConnection

Durable Whether durable subscriptions are permitted. Possible values are as follows:

- 1 = yes
- 2 = no
- -1 = not applicable

High Depth Threshold % Threshold percent for high depth event.

Host Name Name of the system on which the queue manager is running. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Last Date & Time The date and time that a message is last sent to this subscription by an MQPUT API call.

Max Nodes The maximum number of nodes that are displayed in the topology view in Tivoli Enterprise Portal. The default value is 200.

Msg Count Number of messages that are put to the destination that is specified by this subscription.

Node ID Node identifier. This attribute is hidden.

Node Name Topology Node Name. This attribute has one of the following values:

- The leftmost 48 characters of the last topic string segment
- The subscription name or ID
- The application ID
- The name of the destination Queue

Node Type The type of the topology node. Possible values are as follows:

- Topic=TopicNode
- Application=ApplicationNode
- LocalDestination=LocalDestinationNode
- NonLocalDestination=RemoteDestinationNode
- DurableSubscription=DurableSubNode
- NonDurableSubscription=NonDurableSubNode

Origin Node Name of the node on which the data for the queue manager originates.

On z/OS systems, this name takes the form *qmgr:smfid:MQESA*, where *qmgr* is the name of the queue manager and *smfid* is the z/OS system or SMF ID.

QMgr Name Name of the queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

Recent Date & Time Date and time that the most recent MQSUB connection to this subscription is made.

Status The status for search. Possible values are as follows:

- 0 = ok
- -1 =No_Results_Found

Sub ID Unique Subscription Identifier. Valid format is an alphanumeric string of up to 48 case-sensitive characters. The hover help only displays the first character of the Sub ID when you move the cursor over this column.

Sub User The user ID of the owner of this subscription. This is either the user ID of the creator of the subscription, or, if subscription takeover is enabled, the user ID of the user that last takes over the subscription.

Sub Type The type of the subscription. Possible values are as follows:

- 1 = API
- -2 = User

- -1 = All
- 0 = not applicable
- 2 = admin
- 3 = proxy

Topic ID Topic identifier string. Valid format is an alphanumeric string of up to 40 case-sensitive characters.

Topic String The topic string, which comprises the tree node names that make up the topic. For example, /news/ibm/hursley/. The valid format is an alphanumeric string of up to 256 case-sensitive characters.

Remember: If the topic string exceeds 256 characters in length, it is truncated.

Parameters for remote configuration through Tivoli Enterprise Portal

All the parameters for remote agent configuration are attributes of one of these tags: General Agent Settings, Queue Manager Groups, Queue Access, Queues, Channels, Event Log, Event Queue In, Event Queue Out, Include File, Start Monitoring, Agent name, and Agent.

General Agent Settings

- **Queue Manager Name:** The name of the queue manager.
- **Group Name:** The group name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Is Active:** Indicates whether to actively monitor this queue manager. Valid values are Yes and No. The default value is YES.
- **Is Remote:** Indicates whether the queue manager is running on a separate system from the agent. Valid values are Yes and No. The default value is NO.
- **Number of Samples in History:** Number of samples to maintain in recent history for this queue manager.
- **Command:** Controls the MQ Command feature. Valid values are Yes and No. The default value is YES.
- **Sampling Interval:** The interval of the error log collection cycle in seconds. The default value is 10.
- **Maximum Number of Message:** Specifies the maximum number of error messages that are held in memory and displayed in the Error Log workspace. The default value is 100.
- **Access to event queues:** Specifies how to access system event queues. Valid values are Remove, Browse, and No. The default value is NO.
- **High Level Qualifier:** Specifies the high-level qualifier for product-created queue names. The default value is KMQ.
- **Interval Cycle:** Specifies the number of sample interval cycles to wait before the queue manager performance data is gathered. The default value is 1.
- **Like Manager Name:** The name or the nickname of a previously defined manager.
- **Accounting Queue Access:** Specifies how to access the accounting messages from the system accounting queues. Read and remove messages, or browse without removing messages. Valid values are Remove and Browse. The default value is REMOVE.
- **Retain Recent Accounting Samples:** The number of recent records to keep for application or queue accounting data.

- **Statistics Queue Access:** Specifies how to access the statistics messages from the system statistics queues. Read and remove messages, or browse without removing messages. Valid values are Remove and Browse. The default value is REMOVE.
- **Retain Recent Statistics Samples:** The number of recent records to keep for MQI, queue, or channel statistics data.
- **Take Action Authorized Users:** The authorized Tivoli Enterprise Portal users to launch take action commands. There can be multiple entries that are associated with this parameter, each entry is separated by a comma, and each entry can be a mask, which can include the asterisk (*) and the question mark (?).
- **Take Action Specified User:** The specified user that is used to launch take action commands: UIUSER (The user that is used to login Tivoli Enterprise Portal), MQAGENT (The user that is used to launch MQ Agent), or USER=user-id.
- **Message Access Level:** Controls the level of user access to messages in queues for the specified queue managers. Valid values are None, Desc, Retry, Data, Delete, and Use Queue Access. The default value is DESC.
- **Nickname:** The nickname (alternate name) for this queue manager. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **History Data Display Time:** The number of minutes that historical data is displayed for queue manager objects. The default value is 1440.
- **Model Queue of Reply-to Queue:** The name of a model queue to use as a model for the reply-to queue of this product.
- **Status:** Specifies what to do if this **SET MANAGER** command was previously specified with the same name. Valid values are Add, Delete, and Reset.
- **SMF System ID:** The SMF system ID where this queue manager runs.

Queue Manager Group

- **Group Name:** The group name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Is Default Group:** Specifies whether this is the default group. Valid values are Yes and No.
- **Number of Sample in History:** The number of samples to maintain in recent history for all queue managers in this group. The default value is 15.
- **Command:** Controls the MQ Command feature. Valid values are Yes and No. The default value is YES.
- **Sampling Interval:** The interval of the error log collection cycle in seconds. The default value is 10.
- **Maximum Number of Message:** Specifies the maximum number of error messages that are held in memory and displayed in the Error Log workspace. The default value is 100.
- **Access to event queues:** Specifies how to access system event queues. Valid values are Remove, Browse, and No. The default value is NO.
- **High Level Qualifier:** Specifies the high-level qualifier for product-created queue names. The default value is KMQ.
- **Interval Cycle:** Specifies the number of sample interval cycles to wait before queue manager performance data is gathered. The default value is 1.
- **Like Group Name:** The name of a previously defined manager group.
- **Accounting Queues Access:** Specifies how to access the accounting messages from the system accounting queues. Read and remove messages, or browse without removing messages. Valid values are Remove and Browse. The default value is REMOVE.

- **Retain Recent Accounting Samples:** The number of recent records to keep for application or queue accounting data.
- **Statistics Queue Access:** Specifies how to access the statistics messages from the system statistics queues. Read and remove messages, or browse without removing messages. Valid values are Remove and Browse. The default value is REMOVE.
- **Retain Recent Statistics Samples:** The number of recent records to keep for MQI, queue, or channel statistics data.
- **Take Action Authorized Users:** The authorized Tivoli Enterprise Portal users to launch take action commands. There can be multiple entries that are associated with this parameter, each entry is separated by a comma, and each entry can be a mask, which can include the asterisk (*) and the question mark (?).
- **Take Action Specified User:** The specified user that is used to launch take action commands: UIUSER (The user that is used to login Tivoli Enterprise Portal), MQAGENT (The user that is used to launch MQ Agent) or USER=user-id.
- **Message Access Level:** The level of user access to messages in queues. Valid values are None, Desc, Retry, Data, Delete, and Use Queue Access. The default value is DESC.
- **History Data Display Time:** The number of minutes that historical data is displayed for queue manager objects. The default value is 1440.
- **Model Queue of Reply-to Queue:** The name of a model queue to use as a model for the reply-to queue of this product.

Queue Access

- **Name:** Name for this Queue Access option group. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Queue Name:** Defines the specific or generic queue name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Message Manipulation Authorized Users:** The authorized Tivoli Enterprise Portal users to manipulate messages. There can be multiple entries that are associated with this parameter, each entry is separated by a comma, and each entry can be a mask which can include the asterisk (*) and the question mark (?).
- **Message Manipulation Specified User:** The specified user that is used to manipulate messages: UIUSER (The user that is used to login Tivoli Enterprise Portal), MQAGENT (The user that is used to launch MQ Agent) or USER=user-id.
- **Message Access Level:** The level of user access to messages in queues. Valid values are None, Desc, Retry, Data, and Delete. The default value is DESC.
- **Queue Manager Name:** The queue manager name.
- **Group Name:** The group name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Status:** Specifies what to do if this **SET QUEUE** command was previously specified with the same name. Valid values are Add and Delete.

Queues

- **Queue Name:** Defines the specific or generic queue name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Queue Manager Name:** The queue manager name.
- **Group Name:** The group name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.

- **Types Of Queues:** Indicates which kinds of queues to monitor. Valid values are Predefined, Permanent Dynamic, Temporary Dynamic, and All. The default value is All.
- **Collect QueueStatistics:** Specifies whether to collect queue statistics using WebSphere MQ Reset Queue Statistics command processing. Valid values are Yes and No. The default value is NO.
- **Status:** Specifies what to do if this **SET QUEUE** command was previously specified with the same name. Valid values are Add and Delete.

Channels

- **Channel Name:** Defines the specific or generic channel name to monitor. The valid format is an alphanumeric string of up to 20 case-sensitive characters.
- **Queue Manager Name:** The queue manager name.
- **Group Name:** The group name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Status:** Specifies what to do if this **SET CHANNEL** command was previously specified with the same name. Valid values are Add and Delete.

Event Log

- **File Size:** The maximum event log file size. The default value is 10.
- **Directory:** The directory to write the event log file to. The default value is @logpath@.
- **Archive File Name:** The archive directory and file name. The default value is @logpath@\Qmeventh.arc.
- **Kra Rolloff Options:** The krarloff (kra rolloff) command.

Event Queues In

- **Queue Manager Name:** The queue manager name.
- **Group Name:** The group name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Queue Manager Event Queue:** Specifies the name of the queue manager event queue to monitor. The default value is SYSTEM.ADMIN.QMGR.EVENTS.
- **Channel Event Queue:** Specifies the name of the channel event queue to monitor. The default value is SYSTEM.ADMIN.CHANNEL.EVENTS.
- **Performance Event Queue:** Specifies the name of the performance event queue to monitor. The default value is SYSTEM.ADMIN.PERFM.EVENTS.
- **Logger Event Queue:** Specifies the name of the logger event queue to monitor. The default value is SYSTEM.ADMIN.LOGGER.EVENT.

Event Queues Out

- **Queue Manager Name:** The queue manager name.
- **Group Name:** The group name. The valid format is an alphanumeric string of up to 48 case-sensitive characters.
- **Queue Manager Event Queue:** Specifies the name of the local queue where queue manager events are copied after being processed.
- **Channel Event Queue:** Specifies the name of the local queue where channel events are copied after being processed.
- **Performance Event Queue:** Specifies the name of the local queue where performance events are copied after being processed.

- **Logger Event Queue:** Specifies the name of the local queue where logger events are copied after being processed.

Include File

- **File Name:** The name of the file containing the list of customization commands of the WebSphere MQ Monitoring agent.

Start Monitoring

- **Sample Interval:** Specifies how often, in seconds, WebSphere MQ Monitoring agent samples your queue manager(s) for performance data. The default value is 60.
- **Collect Historical Data:** Defines whether historical data is collected. Valid values are Yes and No. The default value is NO.
- **Only Active Queue Managers:** This optional parameter indicates whether to monitor only active queue managers. Valid values are Yes and No. The default value is NO.
- **Row Limit:** This optional parameter specifies the maximum number of messages that are processed and returned by the agent when reading messages from a queue for report requests. The default value is 0.
- **Server Connection:** This optional parameter indicates whether to collect server connection channel statistics that are displayed in the Channel Performance workspaces. Valid values are Yes and No. The default value is YES.
- **Queue Sharing Group Check Interval:** This optional parameter specifies how often, in seconds, the WebSphere MQ Monitoring agent performs queue-sharing group monitoring activities. The default value is 300.
- **XCF Group Name:** You can use this optional parameter to specify an alternative SysPlex XCF group name. The default value is KMQQSG.

Agent Name

- **Agent Name:** The name to be used for the middle qualifier of the managed system name. It can only be provided when you create a new agent instance, you must modify the remote agent configuration file manually if you want to change it.

Agent

- **Run as:** The user account that is used to run the WebSphere MQ Monitoring agent. You can use the system account or set a new account for the agent.
- **Version:** The version number of the WebSphere MQ Monitoring agent that the managed system is using.

Predefined situations

The predefined situations that are provided by the WebSphere MQ Monitoring agent have names that begin with MQSeries. The following predefined managed system list names are associated with WebSphere MQ Monitoring agent:

- ***MVS_MQM:** All the monitoring agents.
- ***MQ_QSG:** The monitoring agents on z/OS systems that monitor the queue-sharing group.

MQSeries_Alias_Queue_Problem

The MQSeries_Alias_Queue_Problem situation monitors alias queue related events and issues an alert when the alias queue definition specified in the MQOPEN or MQPUT1 call is not recognized as a queue name, or not a local queue, or local definition of a remote queue.

The formula is:

```
MQSeries_Events.Event EQ Alias_Base_Queue_Type_Error  
OR  
MQSeries_Events.Event EQ Unknown_Alias_Base_Queue
```

MQSeries_Appl_MQ_RespTime_High

The MQSeries_Appl_MQ_RespTime_High situation monitors application response time, and issues an alert when the average response time for MQI requests is greater than two seconds.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Application_Transaction/Program_Statistics.Avg MQ Resp Time GT 2
```

MQSeries_Appl_MQI_Failures_High

The MQSeries_Appl_MQI_Failures_High situation monitors applications, and issues an alert when the percentage of MQI request failures is greater than 5%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Application_Transaction/Program_Statistics.% MQI Failures GT 5
```

MQSeries_Appl_Msgs_Put_High

The MQSeries_Appl_Msgs_Put_High situation monitors applications, and issues an alert when the number of messages put to a queue is greater than 100.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Application_Transaction/Program_Statistics.Msgs Put GT 100
```

MQSeries_Authority_Problem

The MQSeries_Authority_Problem situation monitors authority related events, and issues an alert when the user is not authorized to issue **MQCONN**, **MQOPEN**, **MQPUT1**, **MQCLOSE**, or other commands.

Authority events are valid on HP OpenVMS, Windows, and UNIX systems only.

The formula is:

```
MQSeries_Events.Event EQ Not_Authorized
```

MQSeries_Automation_ChIStart

The MQSeries_Automation_ChIStart situation starts a stopped channel.

The formula is:

```
Queue_Statistics.Channel Status EQ Stopped
```

MQSeries_Automation_Fix_XmitQ

The MQSeries_Automation_Fix_XmitQ situation forces triggering for all transmission queues.

The formula is:

```
Queue_Statistics.Queue Usage EQ XmitQ  
AND  
Queue_Statistics.Trigger Control EQ No  
THEN  
set the TRIGGER attribute, and set GET to ENABLED
```

MQSeries_Bufpool_Buffer_Shrt_C

The MQSeries_Bufpool_Buffer_Shrt_C situation monitors buffer pool usage, and issues a critical alert when the percentage of available buffers is less than 6%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Buffer_Pools.% of Bufrs Available LT 6
```

MQSeries_Bufpool_Buffer_Shrt_W

The MQSeries_Bufpool_Buffer_Shrt_W situation monitors buffer pool usage and issues a warning alert when the percentage of available buffers is greater than 5% and less than 16%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Buffer_Pools.% of Bufrs Available LT 16  
AND  
Buffer_Pools.% of Bufrs Available GT 5
```

MQSeries_Bufpool_High_GetPage_IO

The MQSeries_Bufpool_High_GetPage_IO situation monitors the percentage of get-page requests that result in page set I/O and issues a warning alert when the percentage is greater than 25%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Buffer_Pools.GetPg IO % GT 25
```

MQSeries_Channel_Active_High

The MQSeries_Channel_Active_High situation monitors the percentage of active channel connections within the maximum number of channels that can be active. The situation issues an alert when the percentage is higher than 80%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Current_Queue_Manager_Status.% Max Active Channels GT 80.0
```

MQSeries_Channel_Autodef_Error

The MQSeries_Channel_Autodef_Error situation monitors channel initiator status and issues an alert when the channel initiator is stopped, stopping, or retrying.

This situation applies to WebSphere MQ version 6.0 or later.

The formula is:

```
MQSeries_Events.Event EQ Channel_Auto_Definition_Error
```

MQSeries_Channel_Current_High

The MQSeries_Channel_Current_High situation monitors the percentage of current channel connections within the maximum number of channels that can be current. The situation issues an alert when the percentage is higher than 80%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Current_Queue_Manager_Status.% Max Channels GT 80.0
```

MQSeries_Channel_Initiator_Prob

The MQSeries_Channel_Initiator_Prob situation issues an alert when the automatic definition of a channel fails.

The failure might be caused by an error occurred during the definition process, or the channel automatic-definition exit inhibited the definition. Additional information indicating the reason for the failure is returned in the event message.

The formula is:

```
Channel_Initiator_Status.CHINIT EQ Stopped  
OR  
Channel_Initiator_Status.CHINIT EQ Stopping  
OR  
Channel_Initiator_Status.CHINIT EQ Retrying
```

MQSeries_Channel_Instance_High

The MQSeries_Channel_Instance_High situation monitors the **% Max Instance** value in the Channel Summary table. The **% Max Instance** attribute reflects the total number of channel instances as a percentage of the maximum number of instances that can be started for a server-connection channel. The situation issues an alert when the percentage is higher than 80%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Channel_Summary.% Max Instances GT 80.0
```

MQSeries_Channel_Out_Of_Sync

The MQSeries_Channel_Out_Of_Sync monitors the queue manager error log (distributed systems only), and issues an alert when a WebSphere MQ error message indicates the message sequence numbers for the channel are inconsistent. This alert is a pure event.

For more information about error log monitoring, see “Error Log monitoring (distributed systems only)” on page 117.

The formula is:

```
SCAN Error_Log.Message ID EQ AMQ9526
```

MQSeries_Channel_Remain_Indoubt

The MQSeries_Channel_Remain_Indoubt situation monitors the **Highest In-Doubt Samples** value in the Channel Summary table. The **Highest In-Doubt Samples** attribute is the highest value among the numbers of consecutive samples from all instances of a channel that are found in doubt. This situation issues an alert when the value is higher than 1.

The WebSphere MQ Monitoring agent samples the monitored queue manager for performance data. The default sample interval is 300 seconds, which is configured by the **SAMPINT** parameter. This situation alerts for the continuous in-doubt samples that are greater than one, which indicates that a channel remains in-doubt for too long. And the connection between the in-doubt channel and the remote channel about which messages are sent and received is lost. This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Channel_Summary.Highest In-Doubt Samples GT 1
```

MQSeries_Channel_SSL_Error

The MQSeries_Channel_SSL_Error monitors the channel using Secure Sockets Layer (SSL), and issues an alert when it fails to establish an SSL connection.

The formula is:

```
MQSeries_Events.Event EQ Channel_SSL_Error
```

MQSeries_Channels_Indoubt

The MQSeries_Channels_Indoubt situation monitors channel performance, and issues an alert when an active queue manager has one or more channels in an in-doubt state.

This alert automatically resets itself when the situation is no longer true. This situation is activated by default.

The formula is:

```
Managers.In-Doubt Channels GT 0  
AND  
Managers.QMgr Status EQ Active
```

MQSeries_ChInst_per_Client_High

The MQSeries_ChInst_per_Client_High situation monitors the % **Max Instances per Client** value in the Channel Summary table. The % **Max Instances per Client**

attribute reflects the highest number of instances of a given channel that are grouped by clients as percentage of the maximum number of instances that can be started for a channel from a single client. The situation issues an alert when the percentage is higher than 80%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Channel_Summary.% Max Instances per Client GT 80.0
```

MQSeries_CICS_Channel_Stopped

The MQSeries_CICS_Channel_Stopped situation monitors CICS channel performance.

This situation issues an alert if a CICS channel is either not currently defined on the monitored queue manager or in one of the following status. This situation is activated by default.

- Out_Service
- Going_Out
- Released
- Freeing

The formula is:

```
Channel_Statistics.Transport Type EQ CICS AND (Channel_Statistics.Cur Defn EQ No  
OR  
Channel_Statistics.Channel Status EQ Out_Service  
OR  
Channel_Statistics.Channel Status EQ Going_Out  
OR  
Channel_Statistics.Channel Status EQ Released  
OR  
Channel_Statistics.Channel Status EQ Freeing)
```

MQSeries_Cluster_QMgr_Suspended

The MQSeries_Cluster_QMgr_Suspended situation monitors queue managers in a cluster, and issues an alert when a cluster queue manager is suspended. A cluster queue manager is suspended when the **SUSPEND QMGR** is issued.

The formula is:

```
Channel_Definitions.Cluster Qmgr Suspend EQ Yes
```

MQSeries_Conversion_Error

The MQSeries_Conversion_Error situation issues an alert when a channel is unable to carry out data conversion and the MQGET call to get a message from the transmission queue resulted in a data conversion error.

The formula is:

```
MQSeries_Events.Event EQ Channel_Conversion_Error
```

MQSeries_Dead_Letter

The MQSeries_Dead_Letter situation monitors the dead letter queue for an active queue manager, and issues an alert if one or more messages appear on the queue.

This alert automatically resets itself when the situation is no longer true. This situation is activated by default.

The formula is:

```
Managers.DLQ Depth GT 0 AND Managers.QMgr Status EQ Active
```

MQSeries_Delayed_Message_Group

The MQSeries_Delayed_Message_Group situation determines whether the value of the message statistics oldest message time attribute exceeds a given threshold for a specific queue. This query can only include an individual queue name.

In the following example, a queue named TEST.QUEUE is monitored for messages older than 300.00 seconds. Note that the Latency_Threshold_Seconds attribute is not specified since the query tests for Oldest_Message_Seconds greater than a certain value. As a result, the Latency_Threshold_Seconds attribute uses 300.00 as the default value.

```
IF VALUE Message_Statistics.Queue Name EQ TEST.QUEUE  
AND VALUE Message_Statistics.Grouping Mechanism EQ Correlation_ID  
AND VALUE Message_Statistics.Oldest Msg(SeCS) GT 300.00
```

Many of the message statistics are calculated using the put-date-and-time of the messages in the queue. If the queue has messages with put-date-and-times that cannot reflect accurately when the messages are put into the input queue, then the statistics are correspondingly inaccurate. Put-date-and-time is not accurate when the origin context is preserved or set for a message when put by an application to the queue. This commonly occurs when an application is a message mover that moves messages from one queue to another, or when any application passes or sets origin context for a message.

MQSeries_High_Delayed_Messages

The MQSeries_High_Delayed_Messages situation determines whether the number of delayed messages exceeds a given threshold for a specific queue. This query can include only an individual queue name.

In the following example, a queue named TEST.QUEUE2 is monitored for 10 messages which have a delay for longer than 300.00 seconds. Note that the Grouping_Mechanism attribute is not specified, which means that statistics are collected at the queue level.

```
IF VALUE Message_Statistics.Queue Name EQ TEST.QUEUE2  
AND VALUE Message_Statistics.Latency Threshold EQ 300.00  
AND VALUE Message_Statistics.Delayed Messages GT 10
```

MQSeries_Inhibit_Problem

The MQSeries_Inhibit_Problem situation issue an alert when MQGET calls are currently inhibited for the queue or MQPUT and MQPUT1 calls are currently inhibited for the queue.

The formula is:

```
MQSeries_Events.Event EQ Put_Inhibited  
OR  
MQSeries_Events.Event EQ Get_Inhibited
```


MQSeries_Listener_Not_Started (distributed systems only)

The MQSeries_Listener_Not_Started situation monitors listener status, and issues an alert when the listener is either stopped or stopping, or the status is unavailable for some reason.

This situation applies to WebSphere MQ version 6.0 or later.

The formula is:

```
Listener Status.Status NE Running AND Listener Status.Status NE Starting
```

MQSeries_Local_DestQ_Depth_High

The MQSeries_Local_DestQ_Depth_High situation monitors subscriptions for current WebSphere MQ events, and issues an alert when a Queue_Depth_High event occurs for a subscriptions destination queue.

This alert indicates that the queue has reached its user-defined high depth threshold. This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Subscription_Definitions.Destination_Event EQ Queue_Depth_High
```

MQSeries_Local_DestQ_Full

The MQSeries_Local_DestQ_Full situation monitors subscriptions for current WebSphere MQ events, and issues an alert when a Queue_Full event occurs for a subscriptions destination queue.

This alert indicates that the queue is full. This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Subscription_Definitions.Destination_Event EQ Queue_Full
```

MQSeries_Local_Object_Unknown

The MQSeries_Local_Object_Unknown situation issues an alert when the object name in the object descriptor is not recognized for the specified object type.

The formula is:

```
MQSeries_Events.Event EQ Unknown_Object_Name
```

MQSeries_Logging_High_RBA_Crit

The MQSeries_Logging_High_RBA_Crit situation monitors the **UOW Start RBA** value in the Log Data Set Status table. The **UOW Start RBA** attribute is the current RBA value of the log data. This situation issues an alert when the value is greater than or equal to X'730000000000'.

The formula is:

```
Log_Data_Set_Status.UOW Start RBA >= 730000000000
```

MQSeries_Logging_High_RBA_Warn

The MQSeries_Logging_High_RBA_Warn situation monitors the **UOW Start RBA** value in the Log Data Set Status table. The **UOW Start RBA** attribute is the current RBA value of the log data. This situation issues an alert when the value is greater than or equal to X'700000000000'.

The formula is:

```
Log_Data_Set_Status.UOW Start RBA >= 700000000000
```

MQSeries_Logging_Suspended (z/OS systems only)

The MQSeries_Logging_Suspended situation issues an alert when logging is suspended.

The formula is:

```
Managers.Logging Suspended EQ Yes
```

MQSeries_LogMgr_Buffer_Waits

The MQSeries_LogMgr_Buffer_Waits situation monitors buffer pool usage for an active queue manager on a z/OS system, and issues an alert when the number of unavailable buffers is greater than 0.

When no buffers are available in the buffer pool of the monitored queue manager, application response time increases and system performance is degraded. This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Managers.Zero Bufr Waits GT 0  
AND  
Managers.QMgr Status EQ Active  
AND  
Managers.QMgr Type EQ MVS
```

MQSeries_LogMgr_High_Archiv_Read

The MQSeries_LogMgr_High_Archiv_Read situation monitors log-read requests to an archive log data set on a z/OS system, and issues an alert when the percentage of requests is greater than 33%.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Managers.Arch Log Read % GT 33  
AND  
Managers.QMgr Status EQ Active  
AND  
Managers.QMgr Type EQ MVS
```

MQSeries_LogMgr_Reads_Delayed

The MQSeries_LogMgr_Reads_Delayed situation monitors log-read requests to a log data sets on a z/OS system, and issues an alert when the percentage of delayed requests is greater than 1. Delayed log-read requests occur when the maximum number of archive data sets is reached.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Managers.% Rd Log Delayed GT 1
AND
Managers.QMgr Status EQ Active
AND
Managers.QMgr Type EQ MVS
```

MQSeries_Manager_Inactive

The MQSeries_Manager_Inactive situation monitors queue managers, and issues an alert when a queue manager is not active.

To enable this alert, the queue manager must be specified as being monitored. This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Managers.QMgr Status EQ Inactive
```

MQSeries_Manager_Inactive_Event

The MQSeries_Manager_Inactive_Event situation monitors queue managers for WebSphere MQ events, and issues an alert when the Queue_Manager_Not_Active event occurs.

The WebSphere MQ Monitoring agent retrieves event information from the local event queues on a monitored queue manager. Event information can originate either on a local system or on a remote system whose events are routed to a monitored event queue. This situation can be used to detect an inactive queue manager that are monitored by a remote system. This situation does not automatically reset itself when a Queue_Manager_Active event occurs. You must close the event manually (see the Tivoli Enterprise Portal online Help).

The issued alert is a pure event, and is not closed automatically like sampled events. You must close the event manually (see the Tivoli Enterprise Portal online Help). Alternatively, you can add an Until Modifier to the situation. The Until modifier causes a situation to reset itself with an event (for example, Queue_Manager_Active) occurring or with an elapsed time interval. To add an Until modifier to a situation, use the Situation Editor and follow the instructions in the Tivoli Enterprise Portal online Help. To see an example of the Until modifier, see "MQSeries_Queue_Full_Until" on page 625.

The formula is:

```
MQSeries_Events.Event EQ Queue_Manager_Not_Active
```

MQSeries_MQ_Channel_Stopped

The MQSeries_MQ_Channel_Stopped situation monitors queue managers for current WebSphere MQ events, and issues an alert when a Channel_Stopped event occurs. A Channel_Stopped event occurs when there is an error, retry, or disabled condition.

This alert automatically resets itself when the situation is no longer true. This situation is activated by default.

The formula is:

```
Current_Events.Event EQ Channel_Stopped
AND
Current_Events.Event Qualifier NE Channel_Stopped_OK
```

MQSeries_MQSecure_Problem

The MQSeries_MQSecure_Problem situation monitors the SYSTEM.MQSECURE.PROBLEMS queue, and issues an alert if MQSecure detects any security problem.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Queue_Statistics.Queue Name EQ SYSTEM.MQSECURE.PROBLEMS  
AND  
Queue_Statistics.Current Depth GT 0
```

MQSeries_No_Queue_Messages_Read

The MQSeries_No_Queue_Messages_Read situation monitors message read activity, and issues an alert when there are messages on the queue and there is no read activity during the sampling interval.

The predefined sampling interval is 5 minutes. The information monitored with this situation is available only when Queue Statistics data is collected (SET QUEUE STATISTICS(YES)) or Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)).

If Queue Statistics data is collected (SET QUEUE STATISTICS(YES)), the Queue Statistics data is used. If Application Queue Statistics data is collected on z/OS systems (SET APPLICATION STATISTICS(ALL|NODYNAMQ)), the Application Queue Statistics data is used.

For detailed information about queue statistics data, see Chapter 7, “Collecting queue statistics data,” on page 87. For instruction about how to change monitoring options, see Chapter 2, “Customizing monitoring options,” on page 11.

The formula is:

```
Queue_Statistics.Msgs Read EQ 0  
AND  
Queue_Statistics.Current Depth GT 0
```

MQSeries_Old_Message_On_Queue

The MQSeries_Old_Message_On_Queue situation monitors queue status, and issues an alert when the age of the oldest message on a queue is older than the given number of seconds.

This situation indicates that messages are not being processed in a timely way. In the following example, 60 is used for 1 minute. The time threshold can be changed as your site requires. This situation applies to WebSphere MQ version 6.0 or later only.

The formula is:

```
Queue Status.Oldest_Message_Age GT 60
```

MQSeries_PageSet_Unavailable

The MQSeries_PageSet_Unavailable situation monitors page set usage, and issues an alert when a defined page set is not available.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Page_Sets.Status EQ NotAvail
```

MQSeries_PageSet_Usage_High

The MQSeries_PageSet_Usage_High situation monitors page set usage, and issues an alert when the percentage of pages in use is greater than 90% and the number of total extents equals *nnn*, where *nnn* is your site-specific number of maximum extents.

This alert automatically resets itself when the situation is no longer true. The number of the total extents must be specified before using this situation.

The formula is:

```
Page_Sets.% Pages In Use GT 90  
AND  
Page_sets.Total Extents EQ nnn
```

MQSeries_PubSub_Problem

The MQSeries_PubSub_Problem situation monitors the status of the publish-subscribe engine, and issues an alert if the engine is not running or an error is detected.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Publish_Subscribe_Status.Pub Sub Status EQ Inactive  
OR  
Publish_Subscribe_Status.Pub Sub Status EQ Error
```

MQSeries_QMgr_Instance_Standby

The MQSeries_QMgr_Instance_Standby situation monitors your queue managers for WebSphere MQ events and issues an informational alert when the status of a queue manager is elsewhere or standby.

This situation is activated by default.

The formula is:

```
Managers.QMgr Status EQ Standby  
OR  
Managers.QMgr Status EQ Running_Elsewhere
```

MQSeries_QSG_CFBBackup_Delay (QSG environment on z/OS systems only)

The MQSeries_QSG_CFBBackup_Delay situation compares the current date and time to the last date and time when a coupling facility application structure is backed up, and issues a warning alert if no backup is completed in the last 24 hours.

The formula is:

```
QSG_Coupling_Facility_Structure_Backups.Backup Date & Time < current time - 24H
```

MQSeries_QSG_CFStruct_Failed(QSG environment on z/OS systems only)

The MQSeries_QSG_CFStruct_Failed situation issues an alert if a coupling facility structure associated with the queue sharing group fails.

This situation is activated by default.

The formula is:

```
QSG_Coupling_Facility_Structures.Struct Status EQ Failed
```

MQSeries_QSG_CFStruct_HighEnts (QSG environment on z/OS systems only)

The MQSeries_QSG_CFStruct_HighEnts situation issues an alert if the percentage of list entries used by a coupling facility structure associated with the queue sharing group exceeds 85% of its maximum available list entries.

The formula is:

```
QSG_Coupling_Facility_Structures.% Entries Used GT 85.0
```

MQSeries_QSG_CFStruct_HighMem (QSG environment on z/OS systems only)

The MQSeries_QSG_CFStruct_HighMem situation issues an alert if the percentage of storage used by a coupling facility structure associated with the queue sharing group exceeds 85% of its maximum available storage.

The formula is:

```
QSG_Coupling_Facility_Structures.% Stor Used GT 85.0
```

MQSeries_QSG_CFStruct_Inhibit (QSG environment on z/OS systems only)

The MQSeries_QSG_CFStruct_Inhibit situation issues an informational alert if a coupling facility structure associated with the queue sharing group is either being backed up or being recovered.

The formula is:

```
QSG_Coupling_Facility_Structures.Struct Status EQ InBackup  
OR  
QSG_Coupling_Facility_Structures.Struct Status EQ InRecovery
```

MQSeries_QSG_DB2_Failed (QSG environment on z/OS systems only)

The MQSeries_QSG_DB2_Failed situation monitors the queue manager connection to the DB2 subsystem, and issues an alert if the connection fails.

This situation is activated by default.

The formula is:

```
QSG_QMgrs.DB2 Conn Status EQ Failed
```

MQSeries_QSG_QMgr_Failed (QSG environment on z/OS systems only)

The MQSeries_QSG_QMgr_Failed situation issues an alert if a queue manager that belongs to the queue sharing group fails.

This situation is activated by default.

The formula is:

```
QSG_QMgrs.QMgr Status EQ Failed
```

MQSeries_QSG_QMgr_NotStarted (QSG environment on z/OS systems only)

The MQSeries_QSG_QMgr_NotStarted situation monitors queue managers that are defined to the queue sharing group, and issues an alert if a queue manager is not started.

The formula is:

```
QSG_QMgrs.QMgr Status EQ Created  
OR  
QSG_QMgrs.QMgr Status EQ Inactive
```

MQSeries_QSG_Queue_HighUse (QSG environment on z/OS systems only)

The MQSeries_QSG_Queue_HighUse situation issues an alert if the number of messages on a queue sharing group queue exceeds 85% of the maximum queue depth.

The formula is:

```
QSG_Queuees.% Full GT 85.0
```

MQSeries_QSG_StrConn_Failed (QSG environment on z/OS systems only)

The MQSeries_QSG_StrConn_Failed situation monitors the connection to the coupling facility application structure associated with the queue sharing group and issues an alert if the connection fails.

The formula is:

```
QSG_CF_Structure_Connections.Conn Status EQ Failed
```

MQSeries_Queue_Depth_High

The MQSeries_Queue_Depth_High situation monitors queue managers for current WebSphere MQ events, and issues an alert when a Queue_Depth_High event occurs.

This alert indicates that a queue has reached its user-defined high depth threshold. This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Current_Events.Event EQ Queue_Depth_High
```

MQSeries_Queue_Full

The MQSeries_Queue_Full situation monitors queue managers for current WebSphere MQ events, and issues an alert when a Queue_Full event occurs.

This alert automatically resets itself when the situation is no longer true. This situation is activated by default.

The formula is:

```
Current_Events.Event EQ Queue_Full
```

MQSeries_Queue_Full_Until

The MQSeries_Queue_Full_Until situation monitors queue managers for WebSphere MQ events, and issues an alert when a Queue_Full event occurs.

This alert automatically resets itself after 15 minutes. If you remove the Until modifier from this situation, this situation does not reset itself after 15 minutes.

The formula is:

```
MQSeries_Events.Event EQ Queue_Full  
THEN situation MQSeries_Queue_Full_Until is true  
until an elapsed time interval of 15 minutes has expired.
```

MQSeries_Queue_Manager_Problem

The MQSeries_Queue_Manager_Problem situation monitors queue managers for events, and issues an alert when a Queue_Manager_Problem event occurs.

This situation is activated by default.

The formula is:

```
Managers.QMgr Status EQ QueueManager_Not_Available  
OR  
Managers.QMgr Status EQ CommandServer_Not_Responding  
OR  
Managers.QMgr Status EQ Dynamic_Queue_Allocation_Error  
OR  
Managers.QMgr Status EQ Cluster_Repository_Unavailable
```

MQSeries_Queue_Manager_Quiesce

The MQSeries_Queue_Manager_Quiesce situation monitors queue manager status, and issues an alert when the current execution status of the queue manager is quiescing.

This situation applies to WebSphere MQ version 6.0 or later only.

The formula is:

```
MQ Manager Status.QMSTATUS EQ Quiescing
```

MQSeries_Queue_Not_Being_Read

The MQSeries_Queue_Not_Being_Read situation monitors queue status, and issues an alert when there are messages on a queue but there is no application with it open for input.

The formula is:


```
Queue Status.Current_Depth GT 0
AND
Queue Status.Input_Opens LT 1
```

MQSeries_Queue_Service_Int_High

The MQSeries_Queue_Service_Int_High situation monitors queue managers for current WebSphere MQ events, and issues an alert when a Queue_Service_Interval_High event occurs.

This alert automatically resets itself when the situation is no longer true.

The formula is:

```
Current_Events.Event EQ Queue_Service_Interval_High
```

MQSeries_Remote_Queue_Error

The MQSeries_Remote_Queue_Error situation covers serious remote queue related events, and issues an alert when an application (or a queue manager) cannot access a (remote) queue on another queue manager.

The formula is:

```
MQSeries_Events.Event EQ Queue_Type_Error
OR
MQSeries_Events.Event EQ Default_Xmit_Queue_Type_Error
OR
MQSeries_Events.Event EQ Default_Xmit_Queue_Usage_Error
OR
MQSeries_Events.Event EQ Remote_Queue_Name_Error
OR
MQSeries_Events.Event EQ Transmission_Queue_Type_Error
OR
MQSeries_Events.Event EQ Transmission_Queue_Usage_Error
```

MQSeries_Remote_Queue_Problem

The MQSeries_Remote_Queue_Problem situation covers common remote queue related events, and issues an alert when an application (or a queue manager) cannot access a (remote) queue on another queue manager.

The formula is:

```
MQSeries_Events.Event EQ Unknown_Default_Xmit_Queue
OR
MQSeries_Events.Event EQ Unknown_Remote_Queue_Manager
OR
MQSeries_Events.Event EQ Unknown_Transmission_Queue
```

Predefined Take Action commands

The WebSphere MQ Monitoring agent provides predefined Take Action commands. For more detailed information about any of the WebSphere MQ commands, see *WebSphere MQ Script (MQSC) Command Reference*.

Take Action commands for the WebSphere MQ Monitoring agent have names beginning with the MQ characters.

MQ Reset Channel

The **MQ Reset Channel** command resets the message sequence number of a WebSphere MQ channel. If you execute this command from a workspace in which

the attribute does not resolve, the Edit Argument Values window is displayed. Enter the name of the channel that you want to reset in the **Value** field.

The syntax of the command sent to the agent is:
MQ:RESET CHANNEL(&Channel_Statistics.Channel_Name)

MQ Resume Cluster Queue Manager

The **MQ Resume Cluster Queue Manager** command informs other queue managers that the availability of the specified cluster is resumed. If you execute this command from a workspace in which the attribute does not resolve, the Edit Argument Values is displayed. Enter the name of the cluster in the **Value** field.

The syntax of the command sent to the agent is as follows:
MQ:RESUME QMGR CLUSTER(&Channel_Definitions.Cluster)

MQ Set Log (z/OS systems only)

The **MQ Set Log** command modifies log system parameter values. This command is always issued manually as the parameters for this command are user-modifiable values. Enter a value for each parameter in the Edit Argument Values window.

Exception: This command can not be issued from a situation.

The syntax of the command sent to the agent is as follows:
MQ:SET LOG MAXRTU(&MAXRTU) DEALLCT(&DEALLCT) CMDSCOPE(&CMDSCOPE)

MQ Set System (z/OS systems only)

The **MQ Set System** command resets system parameter values. Note that this command cannot be invoked from a situation. The parameters for this command are user-modifiable values (not attributes that can be resolved) so this command is always invoked manually. The Edit Argument Values dialog prompts you to enter a value for each parameter.

The syntax of the command that is sent to the agent is:
MQ:SET SYSTEM CMDSCOPE(&CMDSCOPE) CTHREAD(&CTHREAD) IDFORE(&IDFORE)SERVICE(&SERVICE) TRACTBL(&TRACTBL)

MQ Set System Default (z/OS systems only)

The **MQ Set System Default** command resets system parameter values to the archive system parameters set by CSQ6SYSP.

The syntax of the command sent to the agent is:
MQ:SET SYSTEM DEFAULT

MQ Start Channel

The **MQ Start Channel** starts the specified WebSphere MQ channel. If you execute this command from a workspace in which the attribute does not resolve, the Edit Argument Values window is displayed. Enter the name of the channel that you want to start in the **Value** field.

The syntax of the command sent to the agent is:
MQ:START CHANNEL(&Channel_Statistics.Channel_Name)

MQ Stop Channel

The **MQ Stop Channel** stops the specified WebSphere MQ channel. If you execute this command from a workspace in which the attribute does not resolve, the Edit Argument Values window is displayed. Enter the name of the channel that you want to stop in the **Value** field.

The syntax of the command sent to the agent is:

```
MQ:STOP CHANNEL(&Channel_Statistics.Channel_Name)
```

Appendix A. Accessibility

Accessibility features help users with physical disabilities, such as restricted mobility or limited vision, to use software products successfully. With the major accessibility features in this product, users can do the following things:

- Use assistive technologies, such as screen-reader software and digital speech synthesizer, to hear what is displayed on the screen. Consult the product documentation of the assistive technology for details on using those technologies with this product.
- Operate specific or equivalent features using only the keyboard.
- Magnify what is displayed on the screen.

In addition, the product documentation was modified to include the following features to aid accessibility:

- All documentation is available in both HTML and convertible PDF formats to give the maximum opportunity for users to apply screen-reader software.
- All images in the documentation are provided with alternative text so that users with vision impairments can understand the contents of the images.

Magnifying what is displayed on the screen

You can enlarge information on the product windows using facilities provided by the operating systems on which the product is run. For example, in a Microsoft Windows system environment, you can lower the resolution of the screen to enlarge the font sizes of the text on the screen. Refer to the documentation provided by your operating system for more information.

Navigating the interface using the keyboard

Standard shortcut and accelerator keys are used by the product and are documented by the operating system. Refer to the documentation provided by your operating system for more information.

Appendix B. Monitoring events on non-supported systems

Always install the WebSphere MQ Monitoring agent on supported systems. However, you can use the following procedure to monitor events *only* on non-supported systems. This procedure causes event data to be stored in a monitored queue manager.

Do the following steps to monitor events on non-supported systems:

1. In the queue manager on the non-supported system, define the system event queues as QREMOTE and as located in your monitored queue manager.
2. In the queue manager on the non-supported system, enable events. Events must be recorded in Coordinated Universal Time (UTC).
3. Enable monitoring of the queue manager on the supported system to which the events on the non-supported system are sent.

Appendix C. Monitoring remote queue managers

You can set up a WebSphere MQ Monitoring agent to monitor a remote queue manager running on a system that is not currently supported by the agent. Using remote monitoring, you can monitor queue managers that are running on systems on which you cannot install WebSphere MQ Monitoring agent. The following figure shows the architecture that is used when monitoring a remote queue manager.

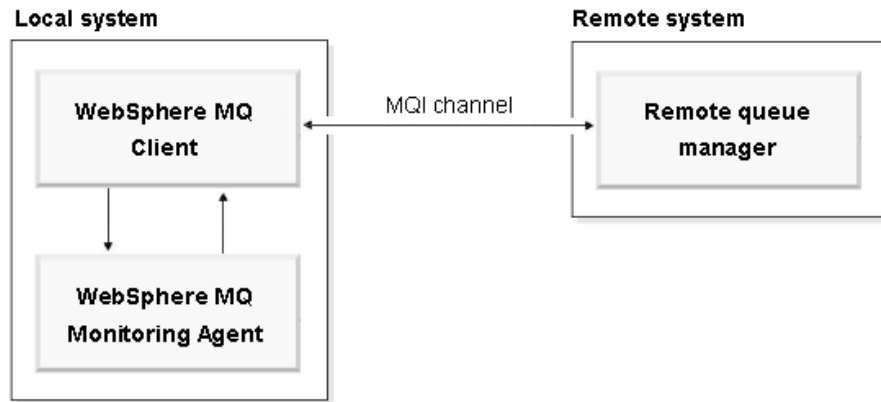


Figure 33. Remote monitoring communications architecture

Remote monitoring

Remote monitoring is a method of monitoring a queue manager that is deployed on a system with no monitoring agent. When using remote monitoring, a WebSphere MQ Monitoring agent that is on one system monitors queue managers on another system.

If you want to monitor queue managers within your WebSphere MQ environment that are running on operating systems not currently supported by the WebSphere MQ Monitoring agent, such as on Tandem computers, you can use remote monitoring. Table 26 compares monitoring a queue manager locally to monitoring a queue manager remotely.

Table 26. Comparison between monitoring a queue manager locally and remotely

Functionality	Local Monitoring	Remote Monitoring
Monitor queue manager status	✓	✓
Monitor queues	✓	✓
Monitor MQSeries events	✓	✓
Monitor error log	✓	
Monitor dead-letter queues	✓	✓
Monitor channels	✓	✓
Monitor cluster queue managers	✓	✓

Table 26. Comparison between monitoring a queue manager locally and remotely (continued)

Functionality	Local Monitoring	Remote Monitoring
Collect application accounting data	✓	✓
Issue MQSeries Take Action commands	✓	✓
Issue system Take action command	✓	
Monitor multiple queue managers running on different Tandem computers		✓

Setting up the environment for remote queue manager monitoring

Before setting up your environment for remote monitoring, you must have a WebSphere MQ Monitoring agent and WebSphere MQ Client running together on a Windows 2000, Windows 2003, Windows 2008, Linux or AIX system. See Appendix E, “Check the existence of WebSphere MQ Client,” on page 651 for information about how to check whether WebSphere MQ Client is installed on your computer.

Do the following steps to set up your environment to monitor a remote queue manager running on a system that is not currently supported by the agent:

1. Create an instance of the WebSphere MQ Monitoring agent. For information about how to create an instance of the WebSphere MQ Monitoring agent, see “Creating multiple instances of the WebSphere MQ Monitoring agent” on page 11.
2. Configure the agent instance to connect to the Tivoli Enterprise Monitoring Server.
3. Ensure that the agent instance is stopped.
4. Modify the configuration file of the agent instance to enable remote monitoring by replacing SET MANAGER NAME(*Qmgr_remote*) with the following statements:

```
SET MANAGER NAME(Qmgr_remote) REMOTE(YES)
SET AGENT NAME(agentID)
```

where:

- *Qmgr_remote* is the name of the remote queue manager.
- *agentID* is the host name or IP address of the remote host.

Tip: The configuration file name of the agent instance is *hostname_mq_Qmgr_remote.cfg*, where *hostname* is the name of the host system; *Qmgr_remote* is the name of the remote queue manager.

5. Run the following commands on the remote host to define a client channel, a server connection channel, and a listener on the remote queue manager for communication with the monitoring agent:

```
runmqsc Qmgr_remote
> DEFINE LISTENER(Listener) TRPTYPE(TCP) PORT(port_NO)
> DEFINE CHANNEL(Chl_name) CHLTYPE(SVRCONN) TRPTYPE(TCP)
> DEFINE CHANNEL(Chl_name) CHLTYPE(CLNTCONN) TRPTYPE(TCP)-
CONNAME('Host_IP(port_NO)') QMNAME(Qmgr_remote)
> END
```

where:

- *Qmgr_remote* is the name of the remote queue manager.
- *Listener* is the name of the listener on the remote queue manager.
- *port_NO* is the port number used by the listener.
- *Chl_name* is the name that you assign to the client and server channel.
- *Host_IP* is the IP address of the remote host.

Requirement: The client and server channel must have the same name.

6. Transfer the client channel definition table file (AMQCLCHL.TAB) to the computer where the WebSphere MQ Monitoring agent is installed. Depending on the system on which the WebSphere MQ Monitoring agent is running, the destination directory on the host of the agent is as follows:

- Windows systems: *install_dir*\TMAITM6
- UNIX systems: *install_dir/arch/mq/bin*

where:

- *install_dir* is the IBM Tivoli Monitoring installation directory.
- *arch* is the architecture code of the operating system. For a complete list of architecture codes, see *Installation and Setup Guide*.

Tip: The AMQCLCHL.TAB file is created in the *qmgrs/Qmgr_remote/@ipcc* directory.

7. Configure the listener to start automatically and then start the listener on the remote queue manager by running the following commands on the remote host:

```
runmqsc Qmgr_remote
> ALTER LISTENER(Listener) TRPTYPE(tcp) CONTROL(QMGR)
> START LISTENER(Listener)
> END
```

where:

- *Qmgr_remote* is the name of the remote queue manager.
 - *Listener* is the name of the listener on the remote queue manager.
8. Start the listener on the remote queue manager by running the following commands on the remote host:

```
runmqslr -m Qmgr_remote -t tcp -p port_NO
```

9. Start the WebSphere MQ Monitoring agent instance.

Monitoring multiple queue managers

If you want to remotely monitor multiple queue managers using the same WebSphere MQ Monitoring agent, you cannot copy the AMQCLCHL.TAB files of all remotely monitored queue managers to the system that hosts the WebSphere MQ Monitoring agent, as you can when remotely monitoring a single queue manager (see step 6 of “Setting up the environment for remote queue manager monitoring” on page 634). Instead, you must select one remotely monitored queue manager to be the primary queue manager, and configure it so that its AMQCLCHL.TAB contains the correct information for all queue managers. To configure the remotely monitored queue manager, do the following steps:

1. Create an instance of the WebSphere MQ Monitoring agent for each queue manager that you want to monitor remotely.
2. Modify the configuration file of each agent instance to enable remote monitoring by setting the following parameters:

```
SET MANAGER NAME(queue_manager_name) REMOTE(YES) SET AGENT NAME(agentId)
```

where *queue_manager_name* is the name of the remote queue manager and *agentId* is the host name or IP address of the remote host.

3. Create a pair of client and server channels between each queue manager that you want to monitor and the system that hosts the WebSphere MQ Monitoring agents by running the following commands:

```
runmqsc qmgr_remote
DEFINE CHANNEL(chl_name) CHLTYPE(SVRCONN) TRPTYPE(TCP)
DEFINE CHANNEL(chl_name) CHLTYPE(CLNTCONN) TRPTYPE(TCP)+
CONNNAME('host_IP(port_no)') QMNAME(qmgr_remote)
END
```

where:

- *qmgr_remote* is the name of the additional queue manager.
 - *port_no* is the port number that is used by the listener.
 - *chl_name* is the name that you want to assign to the client and server channels.
 - *host_IP* is the IP address of the remote host.
4. Create a pair of client and server channels between the primary queue manager and the WebSphere MQ Monitoring agent and between each additional queue manager and the WebSphere MQ Monitoring agent.

- a. Run the following commands for the primary queue manager, where *qmgr_primary* is the name of the primary queue manager.

```
runmqsc qmgr_primary
DEFINE CHANNEL(chl_name) CHLTYPE(SVRCONN) TRPTYPE(TCP)
DEFINE CHANNEL(chl_name) CHLTYPE(CLNTCONN) TRPTYPE(TCP)+
CONNNAME('host_IP(port_no)') QMNAME(qmgr)
```

- b. Run the following commands for each additional queue manager, where *qmgr* is the name of the queue manager on the remote host.

```
DEFINE CHANNEL(chl_name) CHLTYPE(SVRCONN) TRPTYPE(TCP)
DEFINE CHANNEL(chl_name) CHLTYPE(CLNTCONN) TRPTYPE(TCP)+
CONNNAME('host_IP(port_no)') QMNAME(qmgr)
```

- c. Finally, run the following command:

```
END
```

Important: Run all these commands before you proceed to the next step.

5. Copy the AMQCLCHL.TAB binary file from the system where the primary queue manager is running to the system that hosts the WebSphere MQ Monitoring agent.
6. Start all listeners for each remotely monitored queue manager and start all the WebSphere MQ Monitoring agent instances.

Limitations of remote queue manager monitoring

Because the WebSphere MQ Monitoring agent cannot access the local file system or issue local commands on the remote host, the following features are unavailable with remote queue manager monitoring:

- Error Log workspace for the remote queue manager.
- Executing Take Action for system commands on the system with the remote queue manager
- The Start Date & Time column in the Queue Manager Status workspace
- Detecting the default queue manager on the remote host

Appendix D. Disk space requirements for historical data tables

IBM Tivoli Composite Application Manager Agents for WebSphere Messaging: Installation and Setup Guide, SC14-7520 provides the basic disk space requirements for components such as WebSphere MQ Monitoring agent and WebSphere Message Broker Monitoring agent. These requirements do not include disk space that is required for maintaining historical data files. Because of the variations in client distributed systems, system size, number of managed systems, and other items, it is difficult to provide actual disk space requirements for historical data collection. The basic size for each of the tables for which historical data is collected are provided.

Historical data tables

It is a good practice to always collect WebSphere MQ Monitoring agent historical tables at the remote managed system for WebSphere MQ. Product performance is improved by keeping the data at the remote managed system, especially data that applies only to z/OS systems, which can deal with large volumes of data more efficiently.

Important: To reduce the performance impact on your system, you can set a longer collection interval for tables that collect a large amount of data. For WebSphere MQ Monitoring agent, the Queue Statistics table collects a large amount of data. For additional information, see the topic “Performance Impact of Historical Data Requests” in the *IBM Tivoli Monitoring Administrator’s Guide*.

The attribute history tables, default file names, default tables collected, and the estimated disk space that is required for each 24-hour period for the historical data that is collected for WebSphere MQ Monitoring agent are listed in Table 27. Total default space is the estimated space that is required for each managed system for each 24-hour period for the default file collection option for all WebSphere MQ systems except z/OS systems; the total default space is based on monitoring 100 queues, 10 channels, and 500 events.

For information that is specific to the historical data collection options of WebSphere MQ Monitoring agent, see “Monitoring options” on page 23.

Table 27. Historical data tables

Attribute history table	File name for historical data
“Application Accounting attributes (distributed systems only)” on page 289	QMMQIACCT
“Application Long-Term History attributes (z/OS systems only)” on page 315	QMCONNAPP
“Application Connections attributes” on page 293*	QM_APAL
“Application Queue Long-Term History attributes (z/OS systems only)” on page 320*	QM_APQL
“Application Transaction/Program Long-Term History attributes (z/OS systems only)” on page 336*	QM_APTL

Table 27. Historical data tables (continued)

Attribute history table	File name for historical data
"Buffer Manager Long-Term History attributes (z/OS systems only)" on page 343*	QMLHBM
"Channel Data attributes" on page 349	QMCH_DATA
"Channel Definitions attributes" on page 356	QMCHANNEL
"Channel Initiator Detail attributes (z/OS systems only)" on page 359*	QMCHANIN
"Channel Long-Term History attributes" on page 361	QMCH_LH
"Channel Status attributes" on page 375	QMCHAN_ST
"Channel Summary attributes" on page 390	QMCHAN_SUM
"Connection Objects attributes" on page 395	QMCONNOBJ
"Current Queue Manager Status attributes" on page 400	QMCURSTAT
"Error Log attributes (distributed systems only)" on page 403**	QMERRLOG
"Event Archive attributes" on page 404	QMEVENTL
"Listener Status attributes (distributed systems only)" on page 432	QMLSSTATUS
"Log Data Set Status attributes (z/OS systems only)" on page 434*	QMDSPUSAGE
"Log Manager Long-Term History attributes (z/OS systems only)" on page 435*	QMLHLM
"Message Manager Long-Term History attributes (z/OS systems)" on page 476*	QMLHMM
"Message Statistics attributes" on page 480	QMMSG_STAT
"MQ Action Log attributes" on page 500	QMACTLOG
"MQ Channel Statistics attributes (distributed systems only)" on page 509	QMCH_STAT
"MQ Queue Statistics attributes (distributed systems only)" on page 512	QMQ_STAT
"MQI Call Statistics Details attributes (distributed systems only)" on page 516	QMMQICDET
"MQI Message Statistics Details attributes (distributed systems only)" on page 518	QMMQIMDET
"MQI Statistics attributes (distributed systems only)" on page 519	QMMQISTAT
"Page Set Long-Term History attributes (z/OS systems only)" on page 533*	QMPS_LH
"QSG Channels attributes" on page 538*	QSG_CHANS
"QSG Coupling Facility Structure Backups attributes (z/OS systems only)" on page 539*	QSG_CFBKUP
"QSG Coupling Facility Structure Connections attributes (z/OS systems only)" on page 541*	QSG_CFCONN
"QSG Coupling Facility Structures attributes (z/OS systems only)" on page 542*	QSG_CFSTR
"QSG QMgrs attributes (z/OS systems only)" on page 544*	QSG_QMGR
"QSG Queues attributes (z/OS systems only)" on page 545*	QSG_QUEUES
"Queue Long Term History attributes" on page 565	QMQ_LH
"Queue Accounting attributes (distributed systems only)" on page 545	QMQ_ACCT
"Queue Data attributes" on page 551	QMQ_DATA
"Queue Definition Details attributes" on page 558	QMQEUE

Table 27. Historical data tables (continued)

Attribute history table	File name for historical data
"Queue Handle Status attributes" on page 561	QMQ_HDL_ST
"Queue Status attributes" on page 583	QMQ_QU_ST
"Topic Manager Long-Term History attributes (z/OS systems only)" on page 598*	QMLHTM
* These tables are not available on systems other than z/OS systems. They are not included in the default space estimates.	
** The Event Log is created for all systems but cannot be configured by using option 3, Customize Historical Collection, on the HDC Main menu. It is included in the table because the data is available for use in the same way as history data. By default, the QMEVENTH file is automatically archived into the CTIRA_HIST_DIR directory when the size of the QMEVENTH file is 10MB. The name of the archive is QMEVENTH.arc.	

Historical table record sizes

Table 28. Historical table record sizes

History table	Record size	Frequency
Application Accounting	968 bytes	One record is recorded for each application accounting record.
Application Connections	1164 bytes	During each interval, one record is recorded for each connection.
Application Long-Term History	320 bytes	During each interval, one record is recorded for each monitored application.
Application Queue Long-Term History	412 bytes	During each interval, one record is recorded for each queue used by each transaction or program per monitored application.
Application Transaction/Program Long-Term History	332 bytes	During each interval, one record is recorded for each transaction or program per monitored application.
Buffer Manager Long-Term History	324 bytes	During each interval, one record is recorded for each buffer pool.
Channel Data	1004 bytes	During each interval, one record is recorded for each channel.
Channel Definitions	1072 bytes	During each interval, one record is recorded for each queue.
Channel Initiator Detail	312 bytes	One record is recorded for each z/OS system queue manager.
Channel Long-Term History	960 bytes	During each interval, one record is recorded for each monitored channel that is active.
Channel Status	1604 bytes	During each interval, one record is recorded for each channel.
Connection Objects	1080 bytes	During each interval, one record is recorded for each connection.
Current Queue Manager Status	1712 bytes	During each interval, one record is recorded for the current queue manager.
Error Log	3800 bytes	One record is recorded for each message written to the error log.
Listener Status	1208 bytes	During each interval, one record is recorded for each listener.
Log Data Set Status	344 bytes	During each interval, one record is recorded for each log data set.

Table 28. Historical table record sizes (continued)

History table	Record size	Frequency
Log Manager Long-Term History	584 bytes	During each interval, one record is recorded for each queue manager.
Message Manager Long-Term History	304 bytes	During each interval, one record is recorded for each queue manager.
Message Statistics	560 bytes	One record is recorded for each row returned by active situations that are associated with Message Statistics attribute group.
MQ Action Log	1560 bytes	During each interval, one record is recorded for each action.
MQ Channel Statistics	732 bytes	One record is recorded for each Channel statistics record.
MQ Queue Statistics	580 bytes	One record is recorded for each Queue statistics record.
MQI Call Statistics Details	268 bytes	One record is recorded for each MQI Call Statistics Details record.
MQI Message Statistics Details	236 bytes	One record is recorded for each MQI Message Statistics Details record.
MQI Statistics	608 bytes	One record is recorded for each MQI statistics record.
Page Set Long-Term History	300 bytes	During each interval, one record is recorded for each active page set.
QSG Channels	240 bytes	During each interval, one record is recorded for each shared channel in each QSG.
QSG Coupling Facility Structure Backups	212 bytes	During each interval, one record is recorded for each backup of CF Structure of each QSG.
QSG Coupling Facility Structure Connections	304 bytes	During each interval, one record is recorded for each connection to CF Structure in each QSG.
QSG Coupling Facility Structures	532 bytes	During each interval, one record is recorded for each CF Structure of each QSG.
QSG QMgrs	304 bytes	During each interval, one record is recorded for each queue manager.
QSG Queues	208 bytes	During each interval, one record is recorded for each shared queue in each QSG.
Queue Long-Term History	640 bytes	During each interval, one record is recorded for each monitored queue.
Queue Accounting	752 bytes	One record is recorded for each queue accounting record.
Queue Data	940 bytes	During each interval, one record is recorded for each queue.
Queue Definitions	960 bytes	During each interval, one record is recorded for each queue.
Queue Handle Status	1060 bytes	During each interval, one record is recorded for each queue handle.
Queue Status	392 bytes	During each interval, one record is recorded for each queue.
Topic Manager Long-Term History	324 bytes	During each interval, one record is recorded for each queue manager.

Historical space requirement worksheets

Use the following worksheets to estimate expected file sizes and additional disk space requirements for your site. A sample calculation is provided for each historical data collection table.

Table 29. Application Accounting (QMMQIACCT) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	968 bytes	$(60/15 \times 24 \times 968 \times 2) / 1024$ for 2 applications	181.5 KBs

Table 30. Application Connections (QMCONNAPP) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1164 bytes	$(60/15 \times 24 \times 1164 \times 5) / 1024$ for 5 monitored applications	546 KBs

Table 31. Application Long-Term History (QM_APAL) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	320 bytes	$(60/15 \times 24 \times 320 \times 5) / 1024$ for 5 monitored applications	150 KBs

Table 32. Application Queue Long-Term History (QM_APQL) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	412 bytes	$(60/15 \times 24 \times 412 \times 20) / 1024$ for 20 queues used by monitored applications	773 KBs

Table 33. Application Transaction/Program Long-Term History (QM_APTL) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	332 bytes	$(60/15 \times 24 \times 332 \times 10) / 1024$ for 10 transaction or programs for monitored applications	311 KBs

Table 34. Buffer Manager Long-Term History (QMLHBM) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	324 bytes	$(60/15 \times 24 \times 324 \times 4) / 1024$ for 4 buffer pools in use	122 KBs

Table 34. Buffer Manager Long-Term History (QMLHBM) worksheet (continued)

Interval	Record size	Formula	Expected file size per 24 hours

Table 35. Channel Data (QMCH_DATA) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1004 bytes	$(60/15 \times 24 \times 1004 \times 10) / 1024$ for 10 active monitored channels	942 KBs

Table 36. Channel Definitions (QMCHANNEL) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1072 bytes	$(60/15 \times 24 \times 1072 \times 10) / 1024$ for 10 active monitored channels	1005 KBs

Table 37. Channel Initiator Detail (QMCHANIN) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	312 bytes	$(60/15 \times 24 \times 312 \times 1) / 1024$ for each z/OS system queue manager	29 KBs

Table 38. Channel Long-Term History (QMCH_LH) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	960 bytes	$(60/15 \times 24 \times 960 \times 10) / 1024$ for 10 active monitored channels	900 KBs

Table 39. Channel Status (QMCHAN_ST) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1604 bytes	$(60/15 \times 24 \times 1604 \times 10) / 1024$ for 10 active monitored channels	1504 KBs

Table 40. Channel Summary (QMCHAN_SUM) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	732 bytes	$(60/15 \times 24 \times 408 \times 5) / 1024$ for 5 channel summary	191.25 KBs

Table 41. Connection Objects (QMCONNOBJ) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1080 bytes	$(60/15 \times 24 \times 1080 \times 5) / 1024$ for 5 monitored connections	507 KBs

Table 42. Current Queue Manager Status (QMCURSTAT) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1712 bytes	$(60/15 \times 24 \times 1712 \times 1) / 1024$ for 1 monitored queue manager	160.5 KBs

Table 43. Event Archive (QMEVENTL) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	732 bytes	$(60/15 \times 24 \times 1668 \times 5) / 1024$ for 5 event archives	781.875 KBs

Table 44. Event Log (QMEVENTH) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
Real-time	2776 bytes	$(2776 \times 500) / 1024$ for 500 events	1355 KBs

Table 45. Listener Status (QMLSSTATUS) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1208 bytes	$(60/15 \times 24 \times 1208 \times 1) / 1024$ for 1 monitored listener	114 KBs

Table 46. Log Data Set Status (QMDSPUSAGE) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	344 bytes	$(60/15 \times 24 \times 344 \times 1) / 1024$ for 1 monitored log data set	32 KBs

Table 47. Log Manager Long-Term History (QMLHLM) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	584 bytes	$(60/15 \times 24 \times 584 \times 1) / 1024$ for 1 monitored queue manager	54.75 KBs

Table 48. Message Manager Long-Term History (QMLHMM) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	304 bytes	$(60/15 \times 24 \times 304 \times 1) / 1024$ for 1 monitored queue manager	29 KBs

Table 49. Message Statistics (QMMSG_STAT) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	560 bytes	$(60/15 \times 24 \times 560 \times 30 \text{ rows}^*) / 1024$ * Calculated as follows for 10 active situations for a 5-minute situation interval written for 10 queues that all use Queue as the grouping mechanism. A 15-minute historical collection interval divided by the 5-minute situation interval (15/5) equals 3 collection intervals. 10 rows (10 situations per queue) x 3 collection intervals = 30 rows per 15 minute historical interval.	1.58 MBs

Table 50. MQ Action Log (QMACTLOG) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1560 bytes	$(60/15 \times 24 \times 1560 \times 1) / 1024$ for 1 monitored queue manager	147 KBs

Table 51. MQ Channel Statistics (QMCH_STAT) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	732 bytes	$(60/15 \times 24 \times 732 \times 5) / 1024$ for 5 channels statistics	343.125 KBs

Table 52. MQ Queue Statistics (QMQ_STAT) worksheet

Interval	Record Size	Formula	Expected File Size per 24 Hours
15 min.	580 bytes	$(60/15 \times 24 \times 580 \times 5) / 1024$ for 5 queues statistics	271.875 KBs

Table 53. MQI Call Statistics Details (QMMQICDET) worksheet

Interval	Record Size	Formula	Expected File Size per 24 Hours
15 min.	268 bytes	$(60/15 \times 24 \times 268 \times 12) / 1024$ for 12 MQI Call statistics	302 KBs

Table 54. MQI Message Statistics Details (QMMQIMDET) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	236 bytes	$(60/15 \times 24 \times 236 \times 12) / 1024$ for 12 MQI Message statistics	265.5 KBs

Table 55. MQI Statistics (QMMQISTAT) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	608 bytes	$(60/15 \times 24 \times 608 \times 1) / 1024$ for 1 MQI statistics	57 KBs

Table 56. Page Set Long-Term History (QMPS_LH) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	300 bytes	$(60/15 \times 24 \times 300 \times 10) / 1024$ for 10 active page sets	281 KBs

Table 57. QSG Channels (QSG_CHANS) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	240 bytes	$(60/15 \times 24 \times 240 \times 10) / 1024$ for 10 monitored channels	225 KBs

Table 58. QSG Coupling Facility Structure Backups (QSG_CFBKUP) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	212 bytes	$(60/15 \times 24 \times 212 \times 5) / 1024$ for 5 connected queue managers	99 KBs

Table 59. QSG Coupling Facility Structure Connections (QSG_CFCONN) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	304 bytes	$(60/15 \times 24 \times 304 \times 5) / 1024$ for 5 monitored queue manager connections to DB2	143 KBs

Table 60. QSG Coupling Facility Structures (QSG_CFSTR) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	532 bytes	$(60/15 \times 24 \times 532 \times 3) / 1024$ for 3 monitored structures	150 KBs

Table 61. QSG QMgrs (QSG_QMGR) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	304 bytes	$(60/15 \times 24 \times 304 \times 2) / 1024$ for 2 monitored queue managers	57 KBs

Table 62. QSG Queues (QSG_QUEUES) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	208 bytes	$(60/15 \times 24 \times 208 \times 20) / 1024$ for 20 monitored queues	390 KBs

Table 63. Queue Accounting (QMQ_ACCT) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	752 bytes	$(60/15 \times 24 \times 752 \times 5) / 1024$ for 5 queues	352.5 KBs

Table 64. Queue Data (QMQ_DATA) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	940 bytes	$(60/15 \times 24 \times 940 \times 5) / 1024$ for 5 queues	441 KBs

Table 64. Queue Data (QMQ_DATA) worksheet (continued)

Interval	Record size	Formula	Expected file size per 24 hours

Table 65. Queue Definitions (QMQUEUE) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	960 bytes	$(60/15 \times 24 \times 960 \times 5) / 1024$ for 5 queues	450 KBs

Table 66. Queue Handle Status (QMQ_HDL_ST) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	1060 bytes	$(60/15 \times 24 \times 1060 \times 1) / 1024$ for 1 queue handle	100 KBs

Table 67. Queue Long-Term History (QMQ_LH) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	640 bytes	$(60/15 \times 24 \times 640 \times 10) / 1024$ for 10 monitored queues	600 KBs

Table 68. Queue Status (QMQ_QU_ST) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	392 bytes	$(60/15 \times 24 \times 392 \times 5) / 1024$ for 5 queues	184 KBs

Table 69. Topic Manager Long-Term History (QMLHTM) worksheet

Interval	Record size	Formula	Expected file size per 24 hours
15 min.	324 bytes	$(60/15 \times 24 \times 324 \times 1) / 1024$ for 1 monitored queue manager	30 KBs

Historical disk space summary worksheet

Table 70. Historical disk space summary worksheet

History table	Historical data table size (kilobytes) (24 hours)	Number of archives	Subtotal of the total space required (kilobytes)
Application Accounting			

Table 70. Historical disk space summary worksheet (continued)

History table	Historical data table size (kilobytes) (24 hours)	Number of archives	Subtotal of the total space required (kilobytes)
Application Connections			
Application Long-Term History			
Application Queue Long-Term History			
Application Transaction/Program Long-Term History			
Buffer Manager Long-Term History			
Channel Data			
Channel Definitions			
Channel Initiator Detail			
Channel Long-Term History			
Channel Status			
Channel Summary			
Connection Objects			
Current Queue Manager Status			
Error Log			
Event Archive			
Listener Status			
Log Data Set Status			
Log Manager Long-Term History			
Message Manager Long-Term History			
Message Statistics			
MQ Action Log			
MQ Channel Statistics			
MQ Queue Statistics			
MQI Call Statistics Details			
MQI Message Statistics Details			
MQI Statistics			
Page Set Long-Term History			
QSG Channels			
QSG Coupling Facility Structure Backups			
QSG Coupling Facility Structure Connections			
QSG Coupling Facility Structures			

Table 70. Historical disk space summary worksheet (continued)

History table	Historical data table size (kilobytes) (24 hours)	Number of archives	Subtotal of the total space required (kilobytes)
QSG QMgrs			
QSG Queues			
Queue Long-Term History			
Queue Accounting			
Queue Data			
Queue Definitions			
Queue Handle Status			
Queue Status			
Topic Manager Long-Term History			
Total Disk Space Required			

Appendix E. Check the existence of WebSphere MQ Client

Check if WebSphere MQ Client is already installed on your computer.

Checking the existence of WebSphere MQ Client on Windows systems

Do the following steps to check if WebSphere MQ Client is already installed on a Windows system:

1. Open the Registry Editor by clicking **Start > Run** and typing `regedit`. Click **OK**.
2. Expand the `HKEY_LOCAL_MACHINE` registry key.
3. Expand the `SOFTWARE` registry key.
4. Expand the `IBM` registry key.
5. Expand the `MQSERIES` registry key.
6. Expand the `CurrentVersion` registry key.
7. Expand the `Components` registry key and check if there is an entry named `Local Clients\Windows NT Client` in its subkey list. If there is, then WebSphere MQ Client is installed on the Windows system.

Checking the existence of WebSphere MQ Client on AIX systems

Do the following steps to check if WebSphere MQ Client is already installed on an AIX system:

1. Log on using the root user ID.
2. Run the following command:

```
lslpp -l | grep mqm.client
```

If the following output is displayed, then WebSphere MQ Client is already installed on the AIX system:

```
mqm.client.rte          version COMMITTED WebSphere MQ Client for AIX
```

where *version* is the version number of WebSphere MQ Client.

Checking the existence of WebSphere MQ Client on Linux systems

Do the following steps to check if WebSphere MQ Client is already installed on a Linux system:

1. Log on using the root user ID.
2. Run the following command:

```
rpm -qa | grep MQSeriesClient
```

If the following output is displayed, then WebSphere MQ Client is already installed on the Linux system:

```
MQSeriesClient-version
```

where *version* is the version number of WebSphere MQ Client.

Appendix F. Granting WebSphere MQ OAM authorities to a user ID

If the WebSphere MQ queue manager that you want to monitor is of version 7.0.1 or later, you can use a non-mqm user ID to start, stop, and run the agent that monitors the queue manager. Do the following steps to grant the user ID appropriate Object Authority Manager (OAM) authorities so that the user ID can start, stop and run the agent successfully:

1. Run the following command to grant the user ID the appropriate authorities to access the queue manager that you want to monitor:

```
setmqaut -m QMGR -t qmgr -p UserID +inq +connect +dsp +setid
```

where *QMGR* is the name of the queue manager and *UserID* is the user ID. You must specify the fully qualified user ID for the *-p* option, such as *-p user@domain* or *-p user@host*.

Tip: You can replace the *-p* option with the *-g* option in these commands to specify a user group name.

2. Run the following commands to grant the user ID the appropriate authorities to access the system queues of the queue manager:

```
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.COMMAND.QUEUE -p UserID +inq +get
+dsp +put +setid
(The following line is required only by HLQ statements.)
setmqaut -m QMGR -t q -n hlq.IRA.* -p UserID +inq +get +dsp +put
setmqaut -m QMGR -t q -n SYSTEM.DEFAULT.MODEL.QUEUE -p UserID +dsp +get
setmqaut -m QMGR -t q -n SYSTEM.AUTH.DATA.QUEUE -p UserID +dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.QMGR.EVENT -p UserID +get +inq +dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.PERFM.EVENT -p UserID +get +inq +dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.CHANNEL.EVENT -p UserID +get +inq +dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.LOGGER.EVENT -p UserID +get +inq +dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.CONFIG.EVENT -p UserID +get +inq +dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.COMMAND.EVENT -p UserID +get +inq +dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.ACCOUNTING.QUEUE -p UserID +get +inq
+dsp
setmqaut -m QMGR -t q -n SYSTEM.ADMIN.STATISTICS.QUEUE -p UserID +get +inq
+dsp
```

3. For the workspaces to display data, the user ID of the agent needs display access to various objects. Run the following commands to grant the user ID the appropriate authorities:

```
setmqaut -m QMGR -t q -n "*" -p UserID +dsp
setmqaut -m QMGR -t channel -n "*" -p UserID +dsp
setmqaut -m QMGR -t clntconn -n "*" -p UserID +dsp
setmqaut -m QMGR -t listener -n "*" -p UserID +dsp
setmqaut -m QMGR -t namelist -n "*" -p UserID +dsp
setmqaut -m QMGR -t topic -n "*" -p UserID +dsp
```

4. If you want to use the Take Action facility, and the agent parameters indicate that the user ID of the agent is used to run Take Action commands, you must grant additional OAM authorities to the user ID. For example, to update a queue with a Take Action command, you must grant the OAM change authority for the queue to the user ID.
5. If you want to use the agent to delete a message from a queue, forward a message to another queue, or purge a queue, you must grant additional OAM authorities to the user ID.

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Glossary

This glossary includes terms and definitions for ITCAM Agents for WebSphere Messaging.

The following cross-references are used in this glossary:

- See refers you from a term to a preferred synonym, or from an acronym or abbreviation to the defined full form.
- See also refers you to a related or contrasting term.

To view glossaries for other IBM products, go to www.ibm.com/software/globalization/terminology (opens in new window).

A

access The ability to read, update, or otherwise use a resource. Access to protected resources is usually controlled by system software.

access management

The process of controlling access to IT services, data, or other assets.

address space

The range of addresses available to a computer program or process. Address space can refer to physical storage, virtual storage, or both. See also buffer pool.

agent Software that is installed to monitor systems. An agent collects data about an operating system, a subsystem, or an application.

aggregation

The process of collecting, interpreting, and sorting data from various locations into a single file.

alert A message or other indication that signals an event or an impending event. See also event.

attribute

1. The application properties that are measured and reported on, such as the amount of memory that is used or a message ID. See also attribute group.
2. Data that is associated with a component. For example, a host name,

IP address, or the number of hard drives can be attributes associated with a server component.

attribute group

A set of related attributes that can be combined in a view or a situation. See also attribute, situation, view.

audit A process that logs modifications to the database and plan.

B

batch

1. Pertaining to a group of jobs to be run on a computer sequentially with the same program with little or no operator action.
2. A group of records or data processing jobs brought together for processing or transmission.

batch job

A predefined group of processing actions submitted to the system to be performed with little or no interaction between the user and the system.

batch mode

The condition established so that batch processing can be performed.

BPM See business performance management.

broker

A set of execution processes that host one or more message flows. See also execution group, message flow.

buffer pool

An area of memory into which data pages are read and in which they are modified and held during processing. See also address space.

bundle

A packaged collection of software products that is purchased as one item and that has its own product identifier (PID).

business performance management (BPM)

The monitoring, management, and tuning

of business performance in real time through the analysis of business relevant information.

C

channel

A WebSphere MQ object that defines a communication link between two queue managers (message channel) or between a client and a queue manager (MQI channel). See also queue manager.

client A software program or computer that requests services from a server. See also host, server.

cluster

1. In WebSphere MQ, a group of two or more queue managers on one or more computers, providing automatic interconnection, and allowing queues to be advertised among them for load balancing and redundancy.
2. In Microsoft Cluster Server, a group of computers, connected together and configured in such a way that, if one fails, MSCS performs a failover, transferring the state data of applications from the failing computer to another computer in the cluster and reinitiating their operation there.

cluster queue manager

A queue manager that is a member of a cluster. A queue manager can be a member of more than one cluster.

component

A software item that is part of a software product, and might be separately identified, but is not individually licensed.

condition

1. An expression that consists of an agent attribute, an operator such as greater than or equal to, and a value. It can be read as, "If - system condition - compared to - value - is true. See also situation.
2. A test of a situation or state that must be in place for a specific action to occur.

configuration

The manner in which the hardware and

software of a system, subsystem, or network are organized and interconnected.

D

data set

The major unit of data storage and retrieval, consisting of a collection of data in one of several prescribed arrangements and described by control information to which the system has access.

dead-letter queue (DLQ)

A queue to which a queue manager or application sends messages that cannot be delivered to their correct destination.

deployment

The process of installing and configuring a software application and all its components.

DLQ See dead-letter queue.

dynamic queue

A local queue created when a program opens a model queue object.

E

enterprise

The composite of all operational entities, functions, and resources that form the total business concern and that require an information system.

event An occurrence of significance to a task or system. Events can include completion or failure of an operation, a user action, or the change in state of a process. See also alert, situation.

execution group

A named process or set of processes within a broker in which message flows are executed. The broker is guaranteed to enforce some degree of isolation between message flows in distinct execution groups by ensuring that they execute in separate address spaces, or as unique processes. See also broker, message flow.

F

full repository

A complete set of information about every queue manager in a cluster. This set of information is called the repository or sometimes the full repository and is usually held by two of the queue managers in the cluster. See also partial repository.

function

Any instruction or set of related instructions that performs a specific operation.

H

host A computer that is connected to a network and that provides an access point to that network. The host can be a client, a server, or both a client and server simultaneously. See also client, server.

hot standby

A redundant server that, if the primary server or hub server fails, assumes the responsibilities of the failed server.

I

integration

The software development activity in which separate software components are combined into an executable whole.

L

launch-in-context

An operation in which a user starts a secondary application from a primary application to perform a specific task. Using the parameters, navigation instructions, and user credentials that are supplied by the primary application, the secondary application opens to the specific place in which to complete the task.

M

managed object

A resource that is subject to management as viewed from a systems management perspective. Examples of such resources are a connection, a scalable system, or a line.

managed system

A system that is being controlled by a given system management application.

manager

An entity that monitors or controls one or more managed objects by (a) receiving notifications regarding the objects and (b) requesting management operations to modify or query the objects.

message flow

A sequence of processing steps that execute in the broker when an input message is received. Message flows are defined in the workbench by including a number of message flow nodes, each of which represents a set of actions that define a processing step. The connections in the flow determine which processing steps are carried out, in which order, and under which conditions. See also broker, execution group, subflow.

middleware

Software that acts as an intermediate layer between applications or between client and server. It is used most often to support complex, distributed applications in heterogeneous environments.

module

A program unit that is discrete and identifiable with respect to compiling, combining with other units, and loading.

monitoring agent

See agent.

multi-instance queue manager

A queue manager that is configured to share the use of queue manager data with other queue manager instances. One instance of a running multi-instance queue manager is active, other instances are on standby ready to take over from the active instance. See also queue manager.

O

offering

1. A logical unit of software packaging and sharing that has a managed development and maintenance life cycle and customer visible attributes (offering features, product IDs, licenses, maintenance contracts, and so forth). An offering is a serviceable software asset that is orderable by an IBM customer. It can be a collection of common components, assemblies, and other offerings.
2. The element or integrated set of elements (hardware, software, services) designed to satisfy the wants and needs of current and/or prospective customers. A solution is the application of the offering in a specific customer environment. See also solution.

P

partial repository

A partial set of information about queue managers in a cluster. A partial repository is maintained by all cluster queue managers that do not host a full repository. See also full repository.

performance management

1. The discipline that encompasses capacity planning, collecting performance data, and tuning resources.
2. The management processes and systems needed to effectively deliver business services.

PID See product identifier.

platform

The combination of an operating system and hardware that makes up the operating environment in which a program runs.

policy A set of considerations that influence the behavior of a managed resource or a user.

product ID

See product identifier.

product identifier (PID, product ID)

A unique value that identifies an IBM

software product. Every mainframe and distributed IBM software product has a PID.

Q

query In a Tivoli environment, a combination of statements that are used to search the configuration repository for systems that meet certain criteria. The query object is created within a query library.

queue An object that holds messages for message-queueing applications. A queue is owned and maintained by a queue manager.

queue manager

A component of a message queuing system that provides queuing services to applications. See also channel, multi-instance queue manager.

queue-sharing group

In WebSphere MQ for z/OS, a group of queue managers in the same sysplex that can access a single set of object definitions stored in the shared repository, and a single set of shared queues stored in the coupling facility.

R

registry

A repository that contains access and configuration information for users, systems, and software.

S

sampled event

An event that happens when a situation becomes true. Situations sample data at regular intervals. When the situation is true, it opens an event, which is closed automatically when the situation returns to false.

segment

A set of customers/buyers within a market who have common wants, needs, characteristics and buying behavior. These wants and needs are sufficiently homogeneous that a consistent set of strategies, marketing campaigns and sales tactics can be directed toward them.

server A software program or a computer that

- provides services to other software programs or other computers. See also client, host.
- service request**
A request from a user for help, information, advice, or access to an IT service.
- severity level**
A classification for an event that indicates its degree of severity. The predefined severity levels, in order of descending severity, are: fatal, critical, warning, minor, harmless, and unknown.
- situation**
A set of conditions that, when met, creates an event. See also attribute group, condition, event.
- snapshot**
A capture of data at a point time for performance analysis.
- solution**
A combination of products that addresses a particular customer problem or project.
- started task**
In MVS, a process that begins at system start and runs unattended. Started tasks are generally used for critical applications. The UNIX equivalent of a started task is a daemon.
- state**
An indication associated with an icon, color, and severity level assigned to a situation at a point in time. A situation can reflect one of the following states: critical, warning, or informational.
- status**
The true or false condition of a situation.
- subflow**
A sequence of processing steps, implemented using message flow nodes, that is designed to be embedded in a message flow or in another subflow. A subflow must include at least one Input or Output node. A subflow can be executed by a broker only as part of the message flow in which it is embedded, and therefore it cannot be deployed. See also message flow.
- subnet**
See subnetwork.
- subnetwork (subnet)**
A network that is divided into smaller independent subgroups, which still are interconnected.
- subscription**
In a Tivoli environment, the process of identifying the subscribers that the profiles are distributed to.
- summarization**
The process of aggregating events and then submitting the set of events with a much smaller number of summary events.
- system**
A computer and its associated devices and programs.
-
- T**
- TCP/IP**
See Transmission Control Protocol/Internet Protocol.
- threshold**
A customizable value for defining the acceptable tolerance limits (maximum, minimum, or reference limit) for an application resource or system resource. When the measured value of the resource is greater than the maximum value, less than the minimum value, or equal to the reference value, an exception or event is raised.
- transaction**
A unit of processing consisting of one or more application programs, affecting one or more objects, that is initiated by a single request.
- Transmission Control Protocol/Internet Protocol (TCP/IP)**
An industry-standard, nonproprietary set of communication protocols that provides reliable end-to-end connections between applications over interconnected networks of different types.
- transmission queue**
A local queue on which prepared messages destined for a remote queue manager are temporarily stored.

U

upgrade

To install a new version or release of a product to replace an earlier version or release of the same product.

user profile

A description of a user that includes such information as user ID, user name, password, access authority, and other attributes that are obtained when the user logs on.

V

view A window pane, or frame, in a workspace. It may contain data from an agent in a chart or table, or it may contain a terminal session or notepad, for example. A view can be split into two separate, autonomous views. See also attribute group.

W

workspace

1. A window comprised of one or more views.
2. In Tivoli management applications, the working area of the user interface, excluding the Navigator pane, that displays one or more views pertaining to a particular activity. Predefined workspaces are provided with each Tivoli application, and systems administrators can create customized workspaces.

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