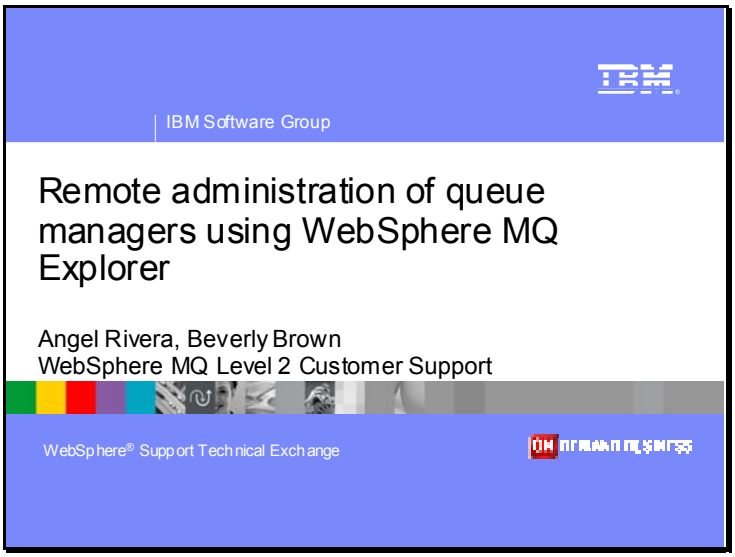
Slide 1



Title: Remote administration of queue managers using WebSphere MQ Explorer

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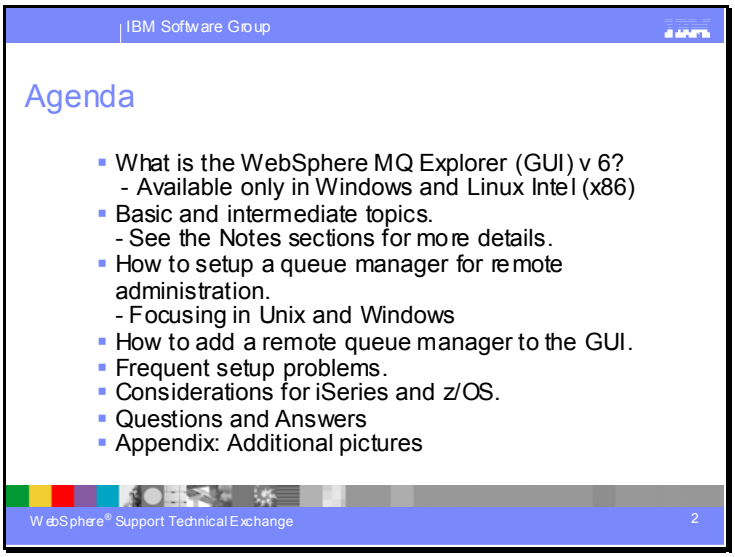
Acknowledgements:
We would like to acknowledge Karen Stanley for her assistance related to WebSphere MQ on iSeries.
Thanks also to Phil Blake for his presentation on the Explorer.

Slide 2



Agenda.

This presentation will cover basic and intermediate information on how to perform remote administration of queue managers using WebSphere MQ Explorer Version 6.

The focus is on Unix and Windows platforms; but iSeries and z/OS will be covered.

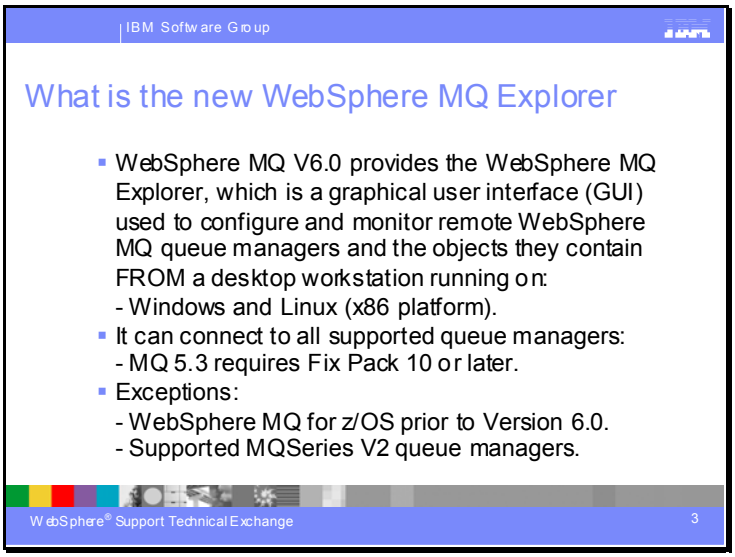
It also covers common problems and problem diagnosis.

Due to the limited space available in the actual slides, we are including many details in the Notes section for each slide.

Because pictures are painted very slowly during a web conference, few pictures are shown in the first part of this presentation.

However, for completeness, additional pictures are shown in the Appendix.

Slide 3



What is the new WebSphere MQ Explorer

WebSphere MQ V6.0 provides the WebSphere MQ Explorer, which is a graphical user interface (GUI) used to configure and monitor remote WebSphere MQ queue managers and the objects they contain from a desktop workstation running on Windows or on Linux (x86 platform).
This includes the administration of queue managers hosted on Windows, Linux, AIX, Solaris, HP-UX, iSeries and the z/OS platform.

Remote queue managers

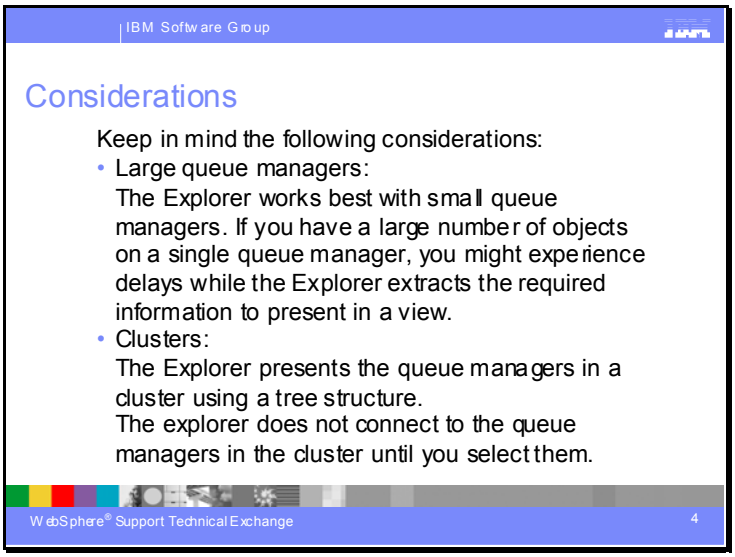
From a Windows or Linux (x86 platform) system, the WebSphere MQ Explorer can connect to all supported queue managers with the following exceptions:
- WebSphere MQ for z/OS queue managers prior to Version 6.0.
- Currently supported MQSeries(R) V2 queue managers.

The WebSphere MQ Explorer handles the differences in the capabilities between the different command levels and platforms. However, if it encounters an attribute that it does not recognize, the attribute will not be visible.

If you intend to remotely administer a V6.0 queue manager on Windows using the WebSphere MQ Explorer on a WebSphere MQ V5.3 computer, you must install Fix Pack 10 (CSD 10) or later on your WebSphere MQ for Windows V5.3 computer.

If you intend to remotely administer a V5.3 queue manager on iSeries using the WebSphere MQ Explorer on a WebSphere MQ V6.0 computer, you must install Fix Pack 11 (CSD11) or later on your WebSphere MQ for iSeries V5.3 computer.

Slide 4



Considerations

Deciding whether to use the WebSphere MQ Explorer

When deciding whether to use the WebSphere MQ Explorer at your installation, bear the following points in mind:

Object names

If you use lowercase names for queue managers and other objects with the WebSphere MQ Explorer, when you work with the objects using MQSC commands, you must enclose the object names in single quotes, or WebSphere MQ will not recognize them.

Large queue managers

The WebSphere MQ Explorer works best with small queue managers. If you have a large number of objects on a single queue manager, you might experience delays while the WebSphere MQ Explorer extracts the required information to present in a view.

Clusters

WebSphere MQ clusters can potentially contain hundreds or thousands of queue managers. The WebSphere MQ Explorer presents the queue managers in a cluster using a tree structure. The physical size of a cluster does not affect the speed of the WebSphere MQ Explorer dramatically because the explorer does not connect to the queue managers in the cluster until you select them.

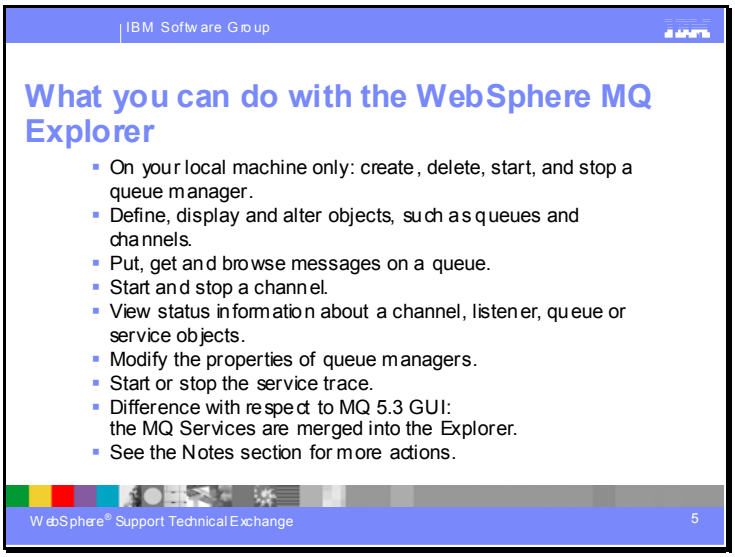
This is an advanced topic that will not be discussed in this presentation.

For more information see:

WebSphere MQ V6 Fundamentals (Redbook)

http://www.redbooks.ibm.com/abstracts/SG247128.html?Open

Slide 5



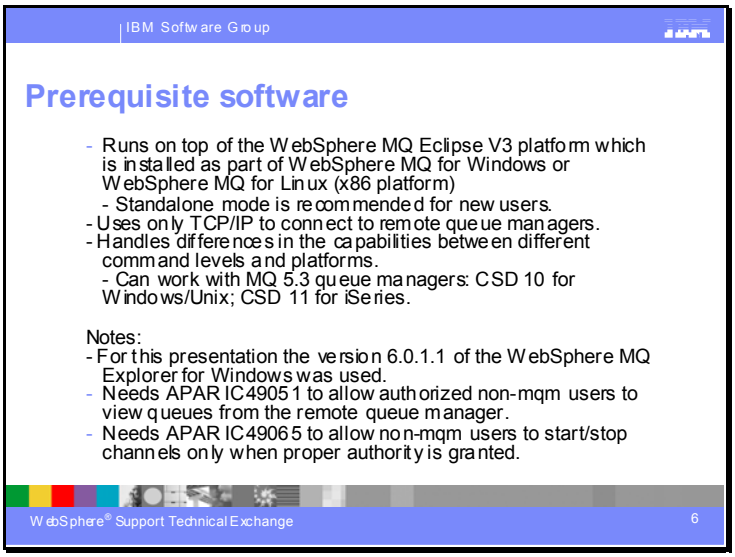
What you can do with the WebSphere MQ Explorer

With the WebSphere MQ Explorer, you can:

Create and delete a queue manager (on your local machine only).
Start and stop a queue manager (on your local machine only).
Define, display, and alter the definitions of WebSphere MQ objects such as queues and channels.
Put, get and browse the messages on a queue.
Start and stop a channel.
View status information about a channel, listener, queue, or service objects.
View queue managers in a cluster.
Check to see which applications, users, or channels have a particular queue open.
Create a new queue manager cluster using the *Create New Cluster* wizard.
Add a queue manager to a cluster using the *Add Queue Manager to Cluster* wizard.
Manage the authentication information object, used with Secure Sockets Layer (SSL) channel security.
Create and delete channel initiators, trigger monitors, and listeners.
Start or stop the command servers, channel initiators, trigger monitors, and listeners.
Set specific services to start up automatically when a queue manager is started.
Modify the properties of queue managers.
Change the local default queue manager.
Invoke the ikeyman GUI to manage secure sockets layer (SSL) certificates, associate certificates with queue managers, and configure and setup certificate stores (on your local machine only).
Modify the parameters for any service, such as the TCP port number for a listener, or a channel initiator queue name.
Start or stop the service trace.

Difference with respect to MQ 5.3 GUI:
the MQ Services are merged into the Explorer.

Slide 6



Prerequisite software

Before you can use the WebSphere MQ Explorer, you must have the following installed on your computer:
The WebSphere MQ Eclipse platform (installed as part of WebSphere MQ for Windows or WebSphere MQ for Linux (x86 platform))
The WebSphere MQ Explorer can connect to remote queue managers using the TCP/IP communication protocol only.

WebSphere MQ Explorer is integrated with Eclipse V3.0 and runs in two modes:

- Standalone application
The Standalone mode is recommended for new users.
Explorer runs as an application like the old MMC Explorer.

- In an Eclipse Workbench
The Eclipse Workbench mode is recommended for advanced users.
It allows Explorer to be used with other products and perspectives in the same Eclipse Workbench

The WebSphere MQ Explorer handles the differences in the capabilities between the different command levels and platforms. However, if it encounters a value that it does not recognize as an attribute for an object, you cannot change the value of that attribute.

If you intend to remotely administer a V6.0 queue manager on Windows using the WebSphere MQ Explorer on a WebSphere MQ V5.3 computer, you must install Fix Pack 10 (CSD 10) or later on your WebSphere MQ for Windows V5.3 computer.

If you intend to remotely administer a V5.3 queue manager on iSeries using the WebSphere MQ Explorer on a WebSphere MQ V6.0 computer, you must install Fix Pack 11 (CSD11) or later on your WebSphere MQ for iSeries V5.3 computer.

WebSphere MQ for z/OS V5 does not support PCFs and therefore can not be remotely administered with the MQ Explorer.
SupportPac "MO71: WebSphere MQ for Windows - GUI Administrator" (provided AS-IS with no Level 2 support) supplies an alternative GUI administration interface:
http://www-1.ibm.com/support/docview.wss?rs=171&uid=swg24000142

Using WebSphere MQ 6.0.1.1 for this presentation
For this presentation the version 6.0.1.1 of the WebSphere MQ Explorer for Windows is being used, which is the latest version at the time of writing this presentation.

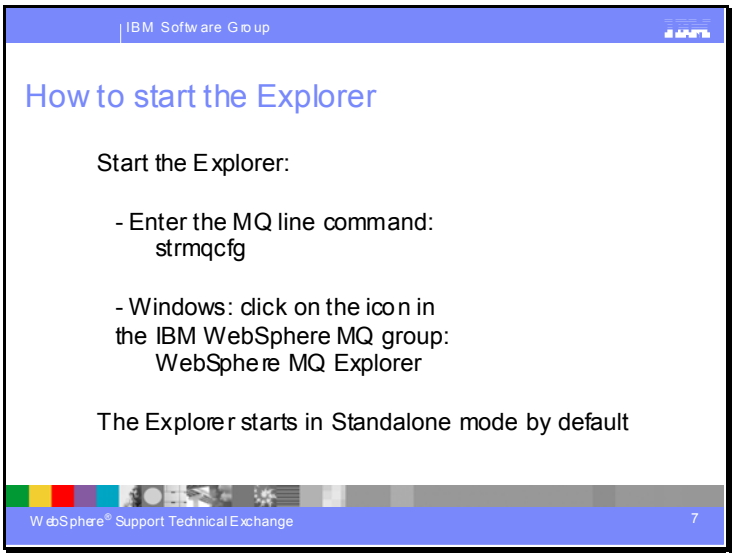
Needs APAR IC49051 to allow authorized non-mqm users to view queues from the remote queue manager.
If APAR IC49051 is not installed on top of 6.0, 6.0.1 or 6.0.1.1, then the non-mqm users will not be able to view queues from the remote manager, even if they have the proper authorizations to view them.

http://www-1.ibm.com/support/docview.wss?uid=swg1IC49051
IC49051: WebSphere MQ Explorer fails to display queues when run as a non-mqm user
Targeted for 6.0.2.
Contact MQ support for interim fix for 6.0.1 and 6.0.1.1.

The following IBM-internal web page has information on the interim-fix:
http://l3.hursley.ibm.com/cgi-bin/ViewPRB.pl?standard/2905.PRB&explorer
WebSphere MQ Explorer fails to display queues when run as a non-mqm user
Article: 2905.PRB

Needs APAR IC49065 to allow non-mqm user to start/stop channels only when proper authority is granted.
http://www-1.ibm.com/support/docview.wss?uid=swg1IC49065
IC49065: USING PCF, A NON-MQM USER CAN START/STOP CHANNELS WITHOUT HAVING +ctrl AUTHORITY
Fix included in Refresh pack 6.0.1.1.

Slide 7



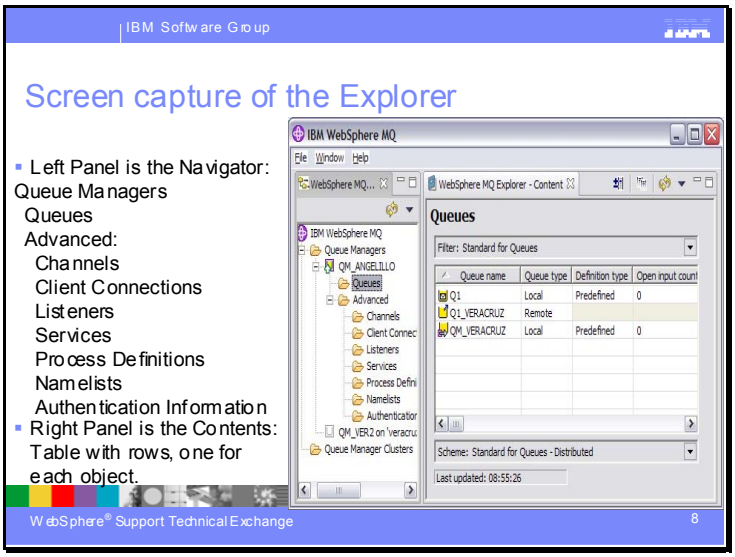
How to start the Explorer.

You can start the WebSphere MQ Explorer by using one of the following methods:

Using the strmqcfg WebSphere MQ control command.

Clicking the WebSphere MQ Explorer icon. This method is only available on WebSphere MQ for Windows.
The icon is located in:
Start -> All Programs ->IBM WebSphere MQ -> WebSphere MQ Explorer
- From the MQ tray icon: right click to show context menu, select WebSphere MQ Explorer.

Slide 8



Screen capture of the Explorer.

The picture in this slide is a screen capture of the WebSphere MQ Explorer that shows one queue manager with one local queue, one remote queue definition and one transmission queue.

The Explorer has two Eclipse Views:

- The Navigator View with a tree representing the parts of MQ
- The Content View showing information about the selected item in the Navigator View tree

Both Views have a Refresh toolbar button (and menu item) which will refresh the data displayed and show the latest status.

The Content View also has a toolbar button (and menu item) for selecting whether System Objects are to be shown

The left Panel shows the Navigator and the tree items are:

Queue Managers
Queues
Advanced:
Channels
Client Connections
Listeners
Services
Process Definitions
Namelists
Authentication Information

You can do a right click on the objects of the Navigator to display the Context menu.
For example, double click on “Queues” and you will see the context menu to define a new local queue: “New …” then “Local Queue”.

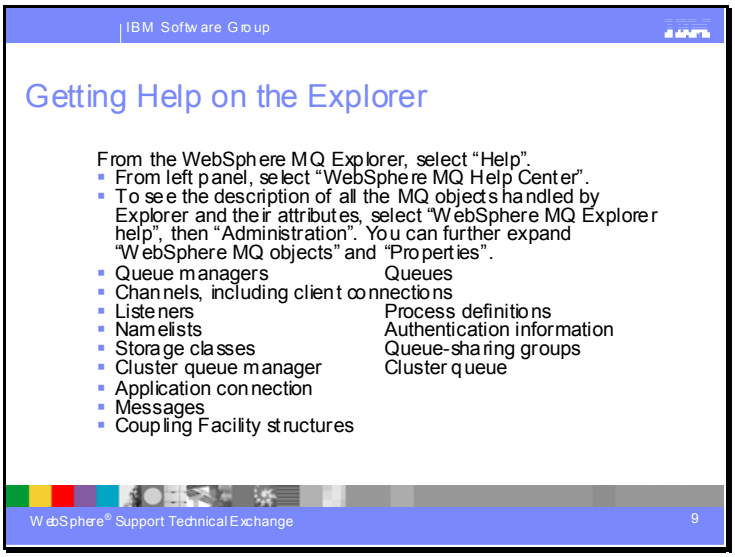
The right Panel shows the Contents:
It is a table with rows, one for each object.

Backup of configuration:
The Import/Export context menu on the "IBM WebSphere MQ" tree node in the navigation view will launch a dialog allowing the user to export/save all of their local settings into a new location and re-import these files back into another MQ Explorer. You can export and import the following types of settings: - Column schemes that you have created
- Filters that you have created
- Connection details for remote queue managers
- Preferences that you have set in WebSphere MQ Explorer

Queue manager object definitions can be backed up with SupportPac MQ03 (available at http://www-1.ibm.com/support/docview.wss?uid=swg27007197).

Back up the Windows Registry to save queue manager attributes (i.e. the equivalent of the qm.ini and qms.ini files on Unix platforms). Nothing for the MQ Explorer is stored in the registry.

Slide 9



From the WebSphere MQ Explorer, select “Help”.

From left panel, select “WebSphere MQ Help Center”.

To see the description of all the MQ objects handled by Explorer and their attributes, select “WebSphere MQ Explorer help”, then “Administration”.

You can further expand “WebSphere MQ objects” and “Properties”.

Queue managers

Queues

Channels, including client connections

Listeners

Process definitions

Namelists

Authentication information

Storage classes

Queue-sharing groups

Cluster queue manager

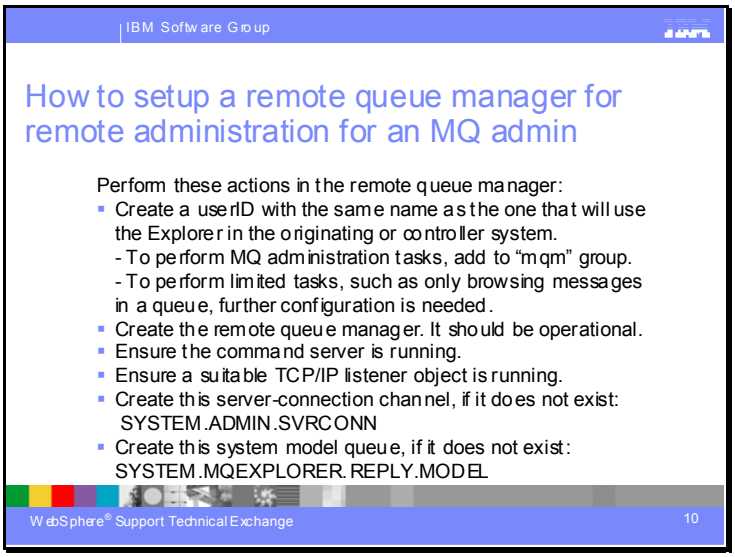
Cluster queue

Application connection

Messages

Coupling Facility structures

Slide 10



How to setup a remote queue manager for remote administration for an MQ administrator

Required matching of userIDs between the remote machine and the machine with the Explorer.

Create a userID with the same name as the one that, in the other system, will use the Explorer.

Use the OS facilities to create the user, that is, on AIX smit, HPUX sam or useradd, Solaris useradd.

The user name must be in lower case, that is, for user "MYUSER" on Windows create a user "myuser" on UNIX.

If the userID is not created in the remote system, then the following error is going to be shown in the Explorer when trying to add a remote queue manager to the list:

AMQ4036: Access not permitted. You are not authorized to perform this operation.

For example, if you want to use "user1" in a Windows machine that has the WebSphere MQ Explorer, in order to show a remote queue manager that resides in a Linux system, then it is necessary that in that Linux system, the user "user1" must be created.

If "user1" is going to act as an MQ administrator, then it needs to belong to the "mqm" group in the Linux system.

If the user is not going to be an MQ administrator but perform limited tasks, such as only browsing messages from a queue, then further configuration is needed. This will be explainer in another slide.

Required definitions in a queue manager for remote administration.

Ensure that you have satisfied the following requirements before trying to use the WebSphere MQ Explorer.

Perform these actions in the remote queue manager (not on the local machine that has the Explorer).

- A remote queue manager (a queue manager that resides in a server other than the server where the WebSphere MQ Explorer is running) has been created and it is operational.
- A command server is running on every remotely administered queue manager.

- A suitable TCP/IP listener object must be running on every remote queue manager. This can be the WebSphere MQ listener or, on UNIX systems, the inetd daemon.
- A server-connection channel, by default named SYSTEM.ADMIN.SVRCONN, exists on all remote queue managers.
- The system queue, SYSTEM.MQEXPLORER.REPLY.MODEL, must exist.

Note:
In these examples, the name of a test queue manager MYQMGR is used for illustration purposes.

*** Ensure that the remote queue manager is running:**
The following command shows you the status of the queue managers in a machine:
$ dspmq
The output should look like this:
QMNAME(QM_TEST) STATUS(Running)
QMNAME(MYQMGR) STATUS(Ended normally)

If the desired queue manager is not running, then start it by using this command:
$ strmqm MYQMGR

*** Ensure the command server is running:**
The command server is started automatically when starting the Queue Manager.
However, it is necessary to ensure that it is running, just in case.
The command server's process name is amqpcsea.

This command shows the process id of amqpcsea. In this example, the output is null, which indicates that there process amqpcsea was not running.
$ ps -fe | grep amqpcsea

This command starts the command server:
$ strmqcsv MYQMGR
WebSphere MQ command server started.

This command shows the process id of amqpcsea.
$ ps -ef | grep amqpcsea
mqm 28657 28637 0 13:11 ? 00:00:00 /opt/mqm/bin/amqpcsea MYQMGR

*** A suitable TCP/IP listener object must be running:**
Ensure that the listener is setup and running. You can use the following command to find out if a listener is running:
$ ps -ef | grep runmqlsr
If there are multiple entries, then look for the one that has the desired queue manager, such as:
mqm 7333 7314 0 Aug22 ? 00:00:00 /opt/mqm/bin/runmqlsr -r -m MYQMGR -t TCP -p 1414

If the listener for the desired queue manager is not running, then proceed with the rest of this subsection:

a) If using runmqlsr (which is the recommended way), start the listener type of TCP/IP in port 1414 (which is the default):
runmqlsr -m MYQMGR -t TCP -p 1414

b) If using inetd. Put this entry in /etc/services

MQ_MYQMGR 1414/tcp
... and this entry in /etc/inetd.conf
MQ_MYQMGR stream tcp nowait root /usr/lpp/mqm/bin/amqcrsta amqcrsta -m MYQMGR

Request inetd to refresh its cache from the files by finding the PID of inetd and sending a SIGHUP signal to the process.
$ su - root
root's Password:

ps -ef | grep inetd
root 4450 8010 0 27 Oct - 0:01 /usr/sbin/inetd
root 14706 1 0 27 Oct - 0:00 /etc/inetd.afs /etc/inetd.conf.afs

kill -1 4450

*** Ensure that the server-connection channel SYSTEM.ADMIN.SVRCONN exists.**
Issue the following command under runmqsc to find out:
$ runmqsc MYQMGR
display channel(SYSTEM.ADMIN.SVRCONN)

If this channel does not exist, then you can define the channel using the following MQSC command:
DEFINE CHANNEL(SYSTEM.ADMIN.SVRCONN) CHLTYPE(SVRCONN)
This command creates a basic channel definition. If you want a more sophisticated definition (to set up security, for example), you need additional parameters.

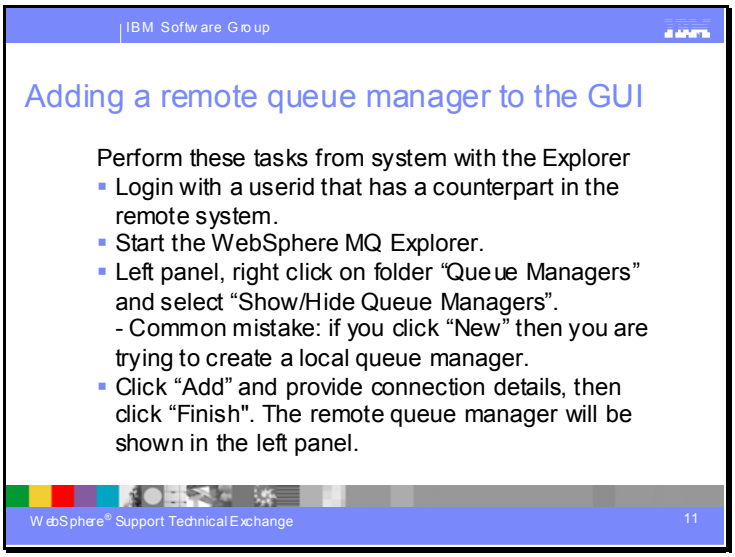
*** Ensure that the system model queue SYSTEM.MQEXPLORER.REPLY.MODEL exists.**
This model queue is created by default in version 6.

Issue the following command under runmqsc to find out:
$ runmqsc MYQMGR
display queue(SYSTEM.MQEXPLORER.REPLY.MODEL)

If this queue does not exist, then you can define the required model queue in MQSC:
DEFINE QMODEL('SYSTEM.MQEXPLORER.REPLY.MODEL') DEFTYPE(TEMPDYN)

Note: You might see temporary dynamic queues with names starting AMQ.MQEXPLORER.
These are created by the WebSphere MQ Explorer based on the SYSTEM.MQEXPLORER.REPLY.MODEL model queue.
The WebSphere MQ Explorer uses the request reply interface provided by the command servers of queue managers.

Slide 11



Adding a remote queue manager to the GUI.

Assuming that remote queue manager is ready (see previous slide).

From the system that has the MQ Explorer:

Login with a userid that has a counterpart in the remote system.

If the local userid does not have a counterpart, then the following error is going to be shown in the Explorer when trying to add a remote queue manager:

AMQ4036: Access not permitted. You are not authorized to perform this operation.

Start the Explorer

See corresponding slide on how to start the Explorer.

Adding a remote queue manager

From the Explorer, in the Navigator panel (left side), select the folder "Queue Managers" and click on the right mouse button to bring the context menu. Select "Show/Hide Queue Managers…", which will bring a window.

A common mistake is to select "New -> Queue Manager" which will try to create a LOCAL queue manager. This "New" option is NOT related to remote queue manager.

In the top portion of the "Show/Hide Queue Managers" click on the button "Add".
Enter the Queue manager name. Accept the default of “Connect directly”. Then click Next.
Enter the connection details, such as the host name or IP address.
Enter the port number (the default is 1414).
By the way, the host name and port number are displayed together later on, such as:

hostname.ibm.com(1414)

Accept the default of the server-connection channel, which is SYSTEM.ADMIN.SVRCONN.
Click Finish.

Common mistake:
If you click “New” in the context menu for “Queue Managers”, then you are trying to create a new local queue manager!

If you get the error:
AMQ4083: Queue manager name not known.
The explanation and solution are:
If the queue manager is remote, this might indicate that another queue manager is incorrectly using the same connection name. Queue managers using TCP/IP on the same computer must listen on different port numbers. This means that they will also have different connection names.
The solution is to ensure that the output of the following command shows unique port numbers for all the listeners:
$ ps -ef | grep runmqlsr

mqm 7333 7314 0 Aug22 ? 00:00:00 /opt/mqm/bin/runmqlsr -r -m MYQMGR -t TCP -p 1414

If there are multiple entries, then look for the one that has the desired queue manager.

For example in the above example, the port number is 1414.

Also check that the definition for the remote queue manager in “Show/Hide Queue Managers” has the appropriate port used by the desired queue manager.

Cannot edit an entry for a remote queue manager: you need to delete entry and create a new one.

From the Show/Hide Queue Managers window, you cannot edit the properties in the Explorer for the entry (proxy) for the remote queue manager, such as different host or port.

You will need to delete the wrong entry and create a new one with the proper properties.

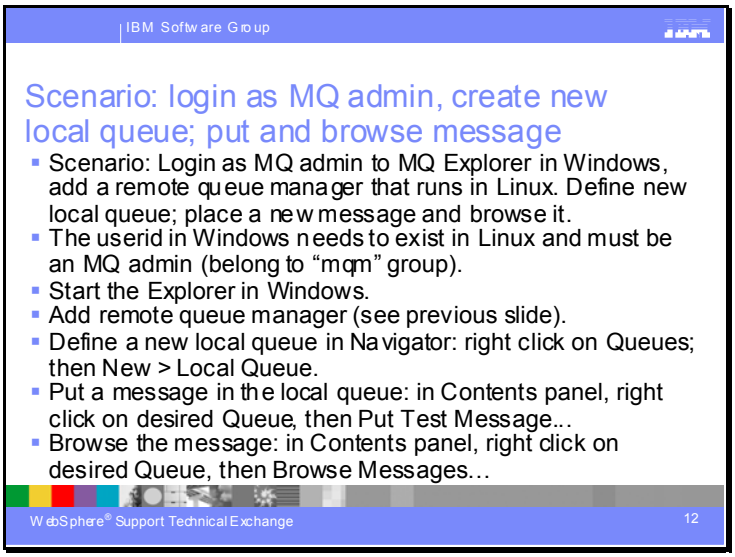
To do this, you will need to:

From the top portion of the Show/Hide Queue Managers window, select the wrong entry and click “Hide”.

Notice that the entry is moved from the top to the bottom portion of the window.

From the bottom portion, select the desired entry to be deleted and click “Remove…”.

Slide 12



Scenario:

Using the MQ Explorer in Windows, add a remote queue manager that runs in Linux.

Define a new local queue in the remote queue manager.

Put a new message in that queue and browse the message.

Steps:

Login and start the Explorer.

Login to the Windows machine with a userid that has a counterpart in Linux and which is an MQ administrator.

For example, if the Windows userid "mquser" is going to use the MQ Explorer to perform remote administration tasks on a queue manager in Linux (such as creating a new queue), then the userid "mquser" must exist in Linux and must belong to the "mqm" group in Linux.

Start the Explorer.

See corresponding slide on how to start the Explorer.

Add remote queue manager.

Add the remote queue manager by following instructions from the slide:
“Adding a remote queue manager to the GUI”.
You must be an MQ administrator.

Define a new local queue.

In the Navigator panel (left panel), inside the folder “Queue Managers”, select the desired remote queue manager.
Right click and select “Connect”.
You will not be notified of a successful connection; instead, you will see that the icon for the remote queue manager has changed by having a plus sign to the left.

You can click on the plus sign to expand the different sub-folders.
Select the sub-folder “Queues”.
If there are any queues already defined, they will be shown in the Content panel (right panel).

Right click on the sub-folder “Queues” and select “New” then “Local Queue…”.
You will see the wizard “New Local Queue”. Enter the desired name for the queue, then press Next, accept the defaults and press Finish.
In the Content panel you will see a new entry which corresponds to the new local queue.

Put a new message.

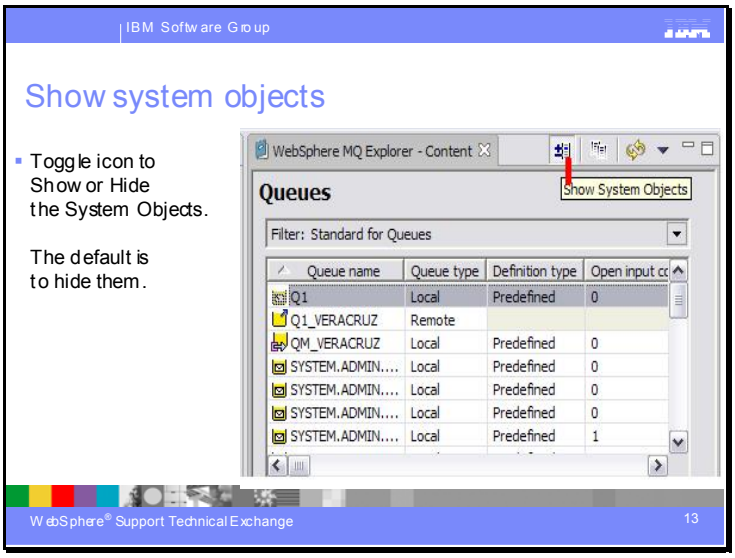
In the Content panel, select the new queue, right click and select “Put New Message…”.
In the wizard “Put new message”, enter a message text in the field “Message data”, click the button “Put message”.
A new message will be send to the queue.

You can enter another message if you want. When ready to leave the wizard, click the button “Close”.
In the Content panel, for the selected row of the new local queue, see the value in the column “Current queue depth” which indicates how many messages are in the queue.
It might be possible that the value is 0, which is likely due that the Explorer has not refreshed yet the displayed values.
To refresh the contents of this panel, click on the 4th icon from the right on the top right corner (hover help says “Refresh”), to forcibly refresh the contents.
You should see a value of 1. If after the refresh the value is still 0, then proceed to the slide on common problems.

Browsing the message.

To browse the message in the queue, select the queue, right click and select “Browse Messages …”.
You will see a brief progress window which indicates that the Explorer is getting the message data from the queue.
A window called “Message browser” is displayed which shows you all the data associated with the message.
Select the message and you can slide the horizontal slider to the right to see the rest of the columns.
You can also double click on the message to see a notebook with the properties of the message, which are shown in different tabs.

Slide 13

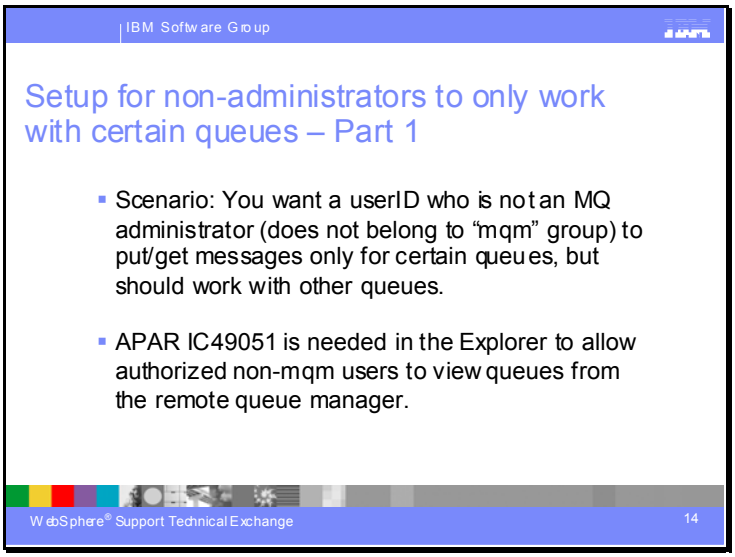


By default, the Content panel does NOT show the SYSTEM objects.

To show these SYSTEM objects, select the 6th icon from the right on the top right corner of the screen (an icon that has an Plus and Minus sign and when you hover the mouse on top of the icon, the help will say “Show System Objects”), which is a toggle.

Click once this toggle to see the SYSTEM objects; click it again to hide them.

Slide 14



Setup for non-administrators to only work with certain queues

This slide explains how to provide limited access via the Explorer to users who are not members of the MQ administration team (that is, they do not belong to the "mqm" group).

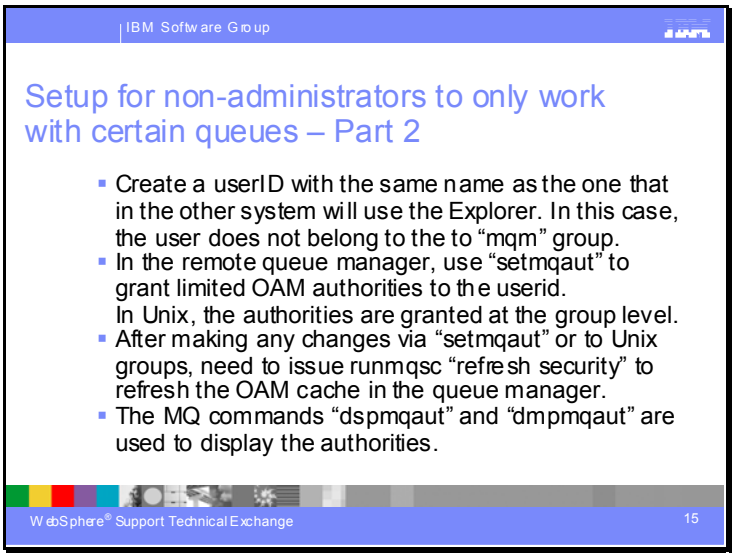
For example, a developer wants to be able to put and get messages using a specific queue, but this developer should not be able to perform actions on other MQ objects in the remote queue manager.

Needs APAR IC49051 to allow authorized non-mqm users to view queues from the remote queue manager.

If APAR IC49051 is not installed on top of 6.0, 6.0.1 or 6.0.1.1, then the non-mqm users will not be able to view queues from the remote manager, even if they have the proper authorizations to view them.

See the slide for the Prerequisites.

Slide 15



Create the required user on the remote machine.

Create a userID with the same name as the one that in the other system will use the Explorer.

Use the OS facilities to create the user, that is, on AIX smit, HPUX sam or useradd, Solaris useradd.

The user name must be in lower case, that is, for user "MYUSER" on Windows create a user "myuser" on UNIX.

If this is not done, then the following error is going to be shown in the Explorer when trying to add a remote queue manager:

AMQ4036: Access not permitted. You are not authorized to perform this operation.

For example, if you want to use “user1” in a Windows machine that has the WebSphere MQ Explorer in order to show a remote queue manager that resides in a Linux system, then it is necessary that in that Linux system, the user “user1” must be created.

For MQ Administrators:

If “user1” is going to act as an MQ administrator, then it needs to belong to the “mqm” group in the Linux system.

For users with limited access to MQ objects:

If “user1” is not going to be an MQ administrator but perform limited tasks, such as only browsing messages from a queue, then it is necessary to perform additional configuration tasks, which are explained in this slide.

Using setmqaut to grant OAM authorities for remote administration

A set of WebSphere MQ control commands are provided to control the authorities granted to entities against individual objects or groups of objects. Authority can only be granted to user identifiers and group identifiers known to the local operating system. These authorities are managed by the OAM (Object Authority Manager).

Note: On WebSphere MQ for UNIX platforms, authority is always granted or revoked at an operating system user group level.
If an authority is granted or revoked on an individual user identifier, that authority is granted or revoked on the primary group of that user identifier, not the user identifier itself.
For example, “user1” does not belong to the primary group “mqm” but to the group “mqviewer”; then when granting or revoking MQ authorities to “user1”, all the members of the group “mqviewer” will be affected in the same way, because the actual changes are done to the primary group “mqviewer”.

The setmqaut command is used to grant or revoke OAM authorities for WebSphere MQ objects of a particular queue manager with a particular type and a particular name.
The name parameter can contain a wildcard asterisk (*) character to allow a group of names to be specified.
The queue manager object itself does not require the name parameter.

Note: After making any changes using the setmqaut command for a running queue manager, it is important to issue the REFRESH SECURITY command in runmqsc for that queue manager. This is because queue managers hold a cache of authority information for efficiency, so might not react to changes made to authorities until this cache is cleared using a REFRESH SECURITY command. This is also important after making changes to group memberships for user identifiers in the operating system.

The **dspmqaut** command is used to display the authorities that are resolved against a particular user identifier or group identifier for a particular object.

The **dmpmqaut** command has a similar purpose as the dspmqaut command, but provides significantly more details. This command is especially useful if attempting to identify why a particular user identifier is being granted the authorities shown by the dspmqaut command, for example, because of group memberships.

For information on the differences in the output of these commands, see the following technote:

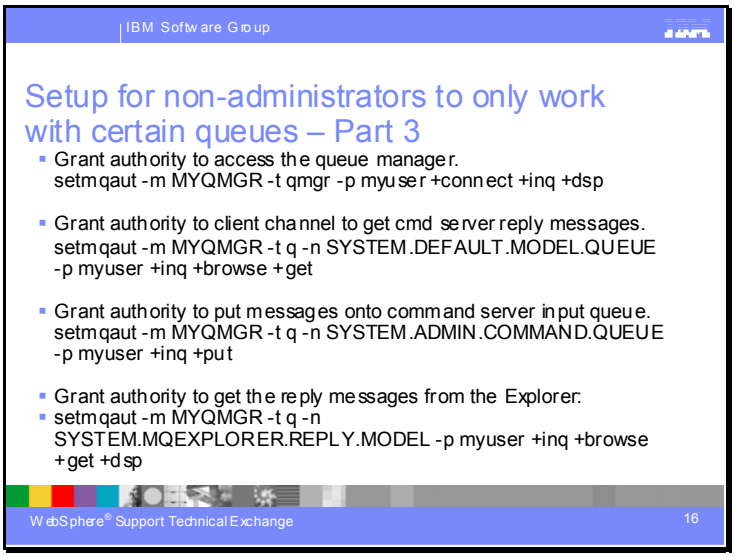
http://www-1.ibm.com/support/docview.wss?rs=171&uid=swg21196131

Why are the outputs from WebSphere MQ commands dmpmqaut and dspmqaut different

For more information about these commands, refer to the “WebSphere MQ control commands” section in WebSphere MQ System Administration Guide, SC34-6584.

Authority checks on WebSphere MQ for z/OS objects are performed externally to WebSphere MQ by RACF.

Slide 16



The userids that are not members of the MQ administrator's group "mqm" by default do not have access to the queue manager, nor other objects that are necessary for the communication between the Explorer and the remote queue manager.
Therefore, it is necessary for an MQ administrator to grant certain authorities to these users to be allowed to access the queue manager.

This slide explains the necessary authorities for non MQ administrators to access the remote queue manager:

The purpose of the following setmqaut commands is:
1. Grant authority to access the queue manager.
2. Grant authority to the client channel to get the command server reply messages.
3. Grant authority to put messages onto the command server input queue.
4. Grant authority to get the reply messages.

Issue these setmqaut commands to grant minimal authority to the userID "myuser" (using the PrincipalName, or person, flag: -p)
The queue manager name is MYQMGR.
The flag-value pair "t qmgr" refers to the object type of QueueManager.
The flag-value pair "t q" refers to the object type of Queue.

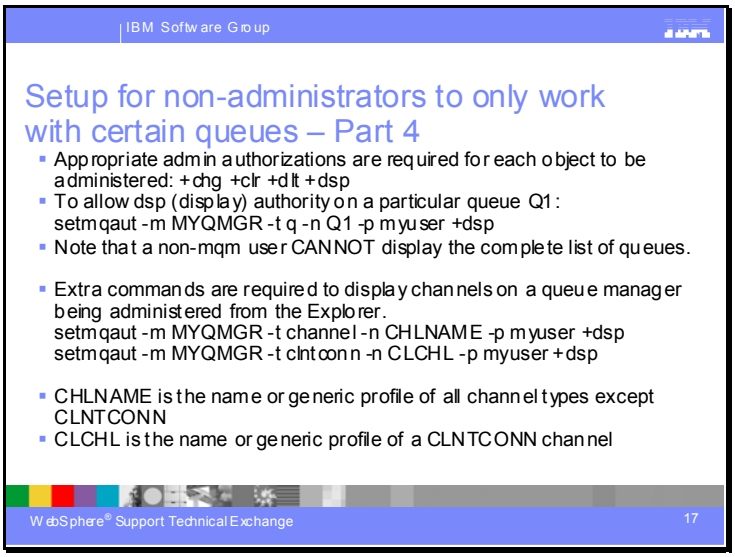
$ setmqaut -m MYQMGR -t qmgr -p myuser +connect +inq +dsp
$ setmqaut -m MYQMGR -t q -n SYSTEM.DEFAULT.MODEL.QUEUE -p myuser +inq +browse +get
$ setmqaut -m MYQMGR -t q -n SYSTEM.ADMIN.COMMAND.QUEUE -p myuser +inq +put
$ setmqaut -m MYQMGR -t q -n SYSTEM.MQEXPLORER.REPLY.MODEL -p myuser +inq +browse +get +dsp

OR for a Unix group:

Issue these setmqaut commands to grant minimal authority to the Unix group (using the GroupName flag: -g)

```
$ setmqaut -m MYQMGR -t qmgr -g mygroup +connect +inq +dsp
$ setmqaut -m MYQMGR -t q -n SYSTEM.DEFAULT.MODEL.QUEUE -g mygroup +inq +browse +get
$ setmqaut -m MYQMGR -t q -n SYSTEM.ADMIN.COMMAND.QUEUE -g mygroup +inq +put
$ setmqaut -m MYQMGR -t q -n SYSTEM.MQEXPLORER.REPLY.MODEL -g mygroup +inq +browse +get + dsp
```

Slide 17



The previous slide granted just enough authority for non MQ administrators to access the queue manager, but at this point, these users cannot see any objects because additional authorities are needed.

Administration setmqaut authorizations will be required on each object in the queue manager to be administered remotely:

+chg	Change
+clr	Clear
+dlt	Delete
+dsp	Display

For example, to allow dsp (display) authority on a particular queue Q1, issue the following commands.
The flag-value pair "-t q" refers to an object type "queue".
The flag-value pair "-n Q1" refers to a queue named "Q1".

For a userid:
$ setmqaut -m MYQMGR -t q -n Q1 -p myuser +dsp

For a group:
$ setmqaut -m MYQMGR -t q -n Q1 -g mygroup +dsp

Note that a non-mqm user CANNOT display the complete list of queues.
This is because authorities cannot be granted on queue SYSTEM.AUTH.DATA.QUEUE; only users in the mqm group have authorities on that queue.

Extra commands are required to display channels on a queue manager being administered from the Explorer.

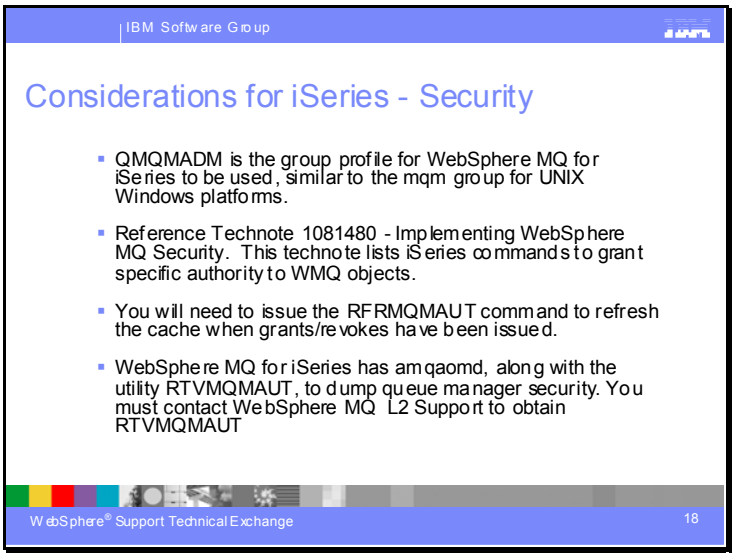
$ setmqaut -m MYQMGR -t channel -n CHLNAME -p myuser +dsp
$ setmqaut -m MYQMGR -t clntconn -n CLCHL -p myuser +dsp

CHLNAME is the name or generic profile of all channel types except CLNTCONN
CLCHL is the name or generic profile of a CLNTCONN channel

For more information on generic profiles, see the following section from the WebSphere MQ Infocenter:

http://publib.boulder.ibm.com/infocenter/wmqv6/v6r0/index.jsp?topic=/com.ibm.mq.amqzag.doc/oamprof.htm
Using OAM generic profiles

Slide 18



Considerations for iSeries.

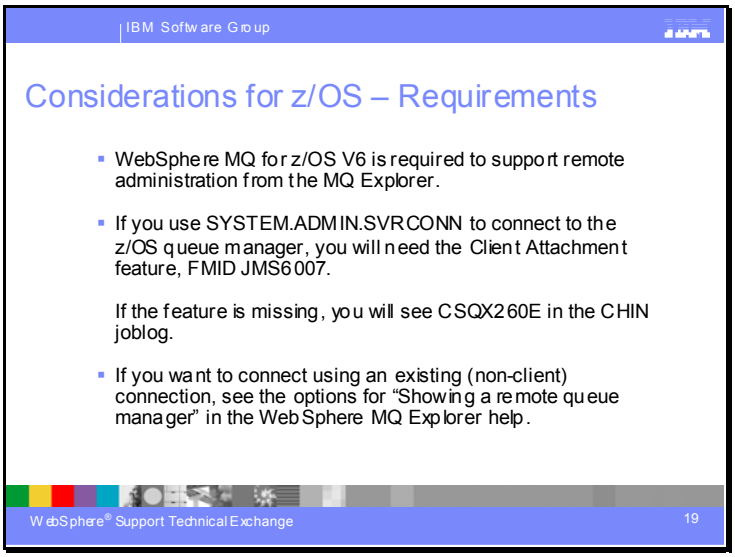
Userids on the iSeries are limited to a length of 10 characters

Technote 1081480:

http://www-1.ibm.com/support/docview.wss?rs=171&uid=swg21081480

Implementing WebSphere MQ Security

Slide 19



Considerations for z/OS.

The MQ Explorer uses PCF (Programmable Command Format) commands. WebSphere MQ for z/OS V5 does not support PCF, but V6 does. SupportPac MO71 provides a GUI that can be used with V5 for remote administration.

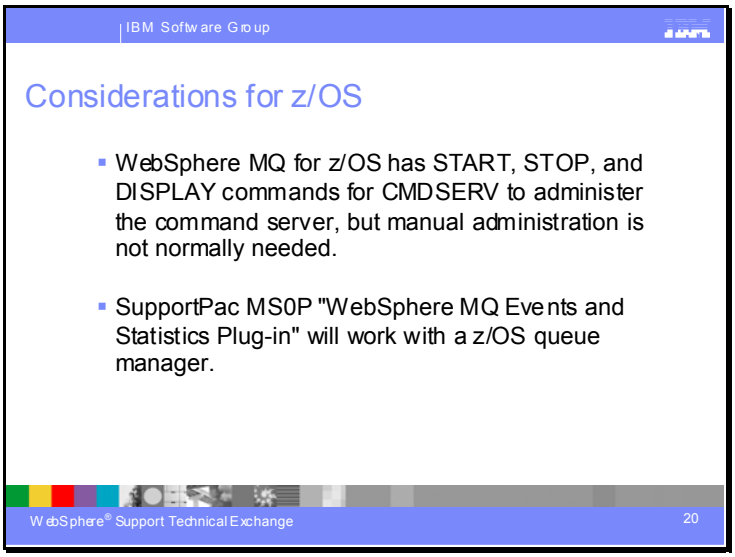
For more information on the separately orderable and installable Client Attachment Feature, FMID JMS6007, see the WebSphere MQ for z/OS V6.0 Program Directory at http://www-306.ibm.com/software/integration/wmq/library/library6x.html

If the Client Attachment Feature is not installed, you will see these messages:

CSQX500I CSQXRESP Channel SYSTEM.DEF.SVRCONN started
CSQX260E CSQXRESP Client attachment feature unavailable,
channel SYSTEM.DEF.SVRCONN,
connection <conname> (<ipaddr>)
CSQX501I CSQXRESP Channel SYSTEM.DEF.SVRCONN is no longer active

If you do not wish to use a client connection, you can use an existing connection from an intermediate queue manager to the remote queue manager as described in “Showing a remote queue manager” in the WebSphere MQ Explorer help. See instructions to access this help information in a prior slide. The intermediate queue manager will have to be active, and channels will have to be active in both directions between it and the remote queue manager. Using the client channel configuration is more seamless.

Slide 20

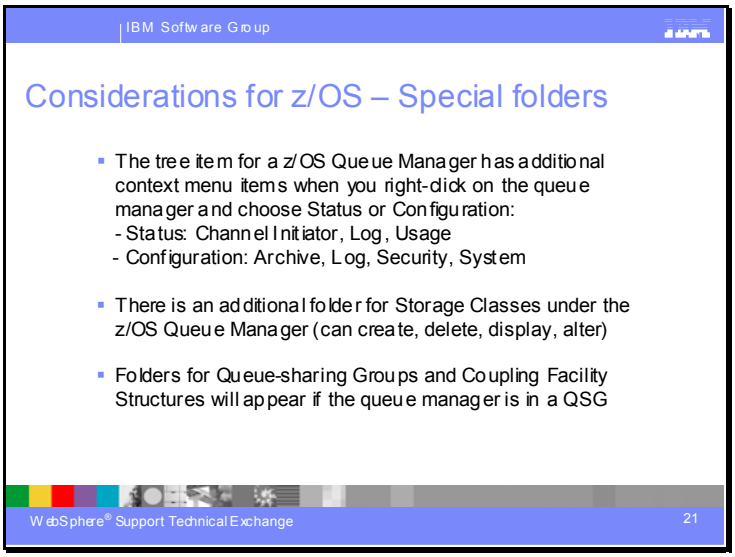


Considerations for z/OS.

http://www-1.ibm.com/support/docview.wss?rs=171&uid=swg24011617&loc=en_US&cs=utf-8&lang=en
SupportPac: MS0P: WebSphere MQ Events and Statistics Plug-in

You can access SupportPacs at from the WebSphere MQ support site at http://www-306.ibm.com/software/integration/wmq/support/
You can follow the link from that page to SupportPacs and then Product WebSphere MQ, or search for document number 7007197.

Slide 21

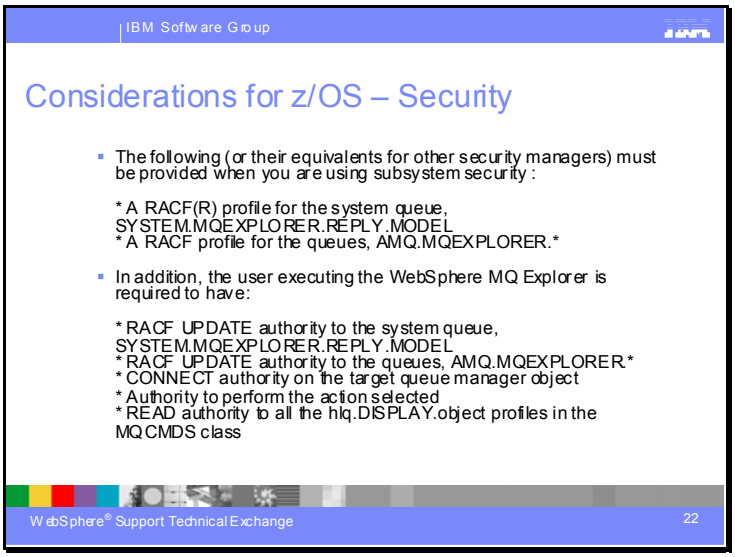


Considerations for z/OS.

- The Configuration options show equivalents of such commands as display dqm (or chinit), log, usage, system, archive, security

- Shared Queues, Coupling Facility Structures and objects with group disposition are shown in folders under the Queue Sharing Group. You can create a new cfstruct, show status of cfstruct objects, compare properties with another cfstruct, display/change properties

Slide 22



Considerations for z/OS – Security.

SYSTEM.MQEXPLORER.REPLY.MODEL is the model for the dynamic reply queue. AMQ.MQEXPLORER is the reply queue prefix.

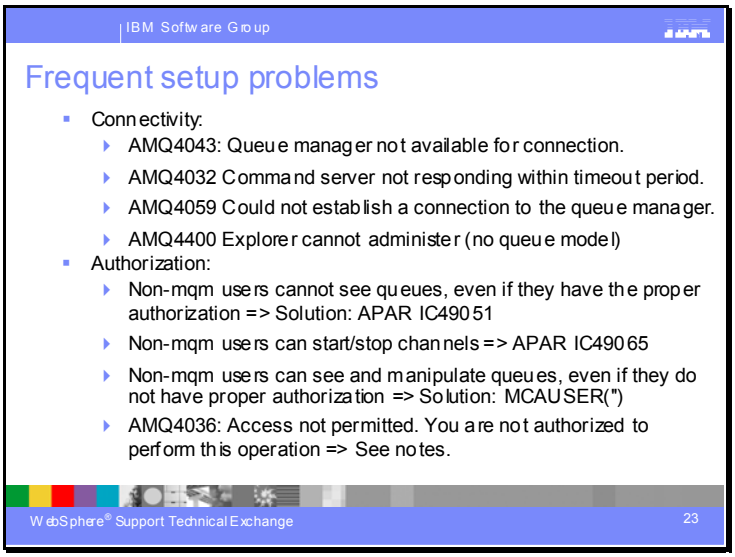
IC50201: MQEXPLORER SECURITY FAILURE CONNECTING TO Z/OS (will be in Fix pack 6.0.2.1)

When using the MQ Explorer V6 to connect to a queue manager in which security is enabled you fail with the following RACF message:

ICH408I USER(DODARO) GROUP(SYS1)
NAME(####################)
MQGT.AMQ.BF0F023EF3019DB9 CL(MQQUEUE)
PROFILE NOT FOUND - REQUIRED FOR AUTHORITY CHECKING
ACCESS INTENT(READ) ACCESS ALLOWED(NONE)

The problem is resolved by ensuring that the correct prefix is specified when MQ creates the reply queue.

Slide 23



Frequent setup problems

In this slide we present the most common problems encountered during the setup for accessing a remote queue manager via the Explorer.
For each step that is mentioned in this presentation, we provide the error messages, and the corresponding solution, when that step is not performed correctly or not performed at all.

For additional help on MQ error messages, consult
http://publib.boulder.ibm.com/infocenter/wmqv6/v6r0/index.jsp
WebSphere MQ Infocenter

<u>Connectivity Problems</u>

Problem:
You try to connect to the remote queue manager and you get the error:
AMQ4043: Queue manager not available for connection.
Solution:

Ensure that the remote queue manager is active by using the command "dspmq" to display the status.
If it is not active, start it by issuing:
stmqm MYQMGR
Ensure that the listener is setup and running. You can use the following command to find out if a listener is running:
$ ps -ef | grep runmqlsr
a) If using runmqlsr (which is the recommended way), start the listener type of TCP/IP in port 1414 (which is the default):
runmqlsr -m MYQMGR -t TCP -p 1414

Problem:
You try to connect to the remote queue manager and you get the error:
AMQ4032 Command server not responding within timeout period
Solution:
This command shows the process id of amqpcsea. In this example, the output is null, which indicates that there process amqpcsea was not running.
$ ps -fe | grep amqpcsea
This command starts the command server:
$ stmqcsv MYQMGR

Problem:
AMQ4059 Could not establish a connection to the queue manager.
Solution:
One possibility is that the channel SYSTEM.ADMIN.SVRCONN is missing or was incorrectly defined.
Use "runmqsc" and define the channel:
DEFINE CHANNEL(SYSTEM.ADMIN.SVRCONN) CHLTYPE(SVRCONN)

Problem:
AMQ4400 Explorer cannot administer the queue manager because the queue

'SYSTEM.MQEXPLORER.REPLY.MODEL' is not defined.

Solution:

Use "runmqsc" and define the queue model:

DEFINE QMODEL('SYSTEM.MQEXPLORER.REPLY.MODEL')

DEFTYPE(TEMPDYN)

Authorization Problems:

Problem:

If APAR IC49051 is not installed on top of 6.0, 6.0.1 or 6.0.1.1, then the non-mqm users will not be able to view queues from the remote manager, even if they have the proper authorizations to view them.

Solution:

For more information see:

http://www-1.ibm.com/support/docview.wss?uid=swg1IC49051

IC49051: WebSphere MQ Explorer fails to display queues when run as a non-mqm user

Targeted for 6.0.2.

Contact MQ support for interim fix for 6.0.1 and 6.0.1.1.

The following IBM-internal web page has information on the interim-fix:

http://l3.hursley.ibm.com/cgi-bin/ViewPRB.pl?standard/2905.PRB&explorer

WebSphere MQ Explorer fails to display queues when run as a non-mqm user

Article: 2905.PRB

Problem:

Users who are not MQ administrators (do not belong to the 'mqm' group) are able have full access to the objects in the remote queue manager, they can even create or delete queues.

Even users who do not have a userid in the server have full access.

Cause:

If the MCAUSER attribute in the SVRCONN channel has a value of "mqm", then all the actions done
via this channel are performed in behalf of the "mqm" userid.

Solution:

One possibility is that the attribute MCAUSER for the channel SYSTEM.ADMIN.SVRCONN has a value of 'mqm'.
Use "runmqsc" and ensure that the attribute for MCAUSER is null (use 2 single quotes):
alter CHANNEL(SYSTEM.ADMIN.SVRCONN) CHLTYPE(SVRCONN) MCAUSER('')

Problem:

You try to add a remote queue manager:
AMQ4036: Access not permitted. You are not authorized to perform this operation.

Solution:

The userID that is using the Explorer:
- Does not have a valid counterpart in the remote server, or
- Does not belong to the "mqm" group, or
- Does not have the proper authorities set by setmqaut.

Problem:

A non-mqm user who does not have the +ctrl authority is able to start/stop channels.

Solution:

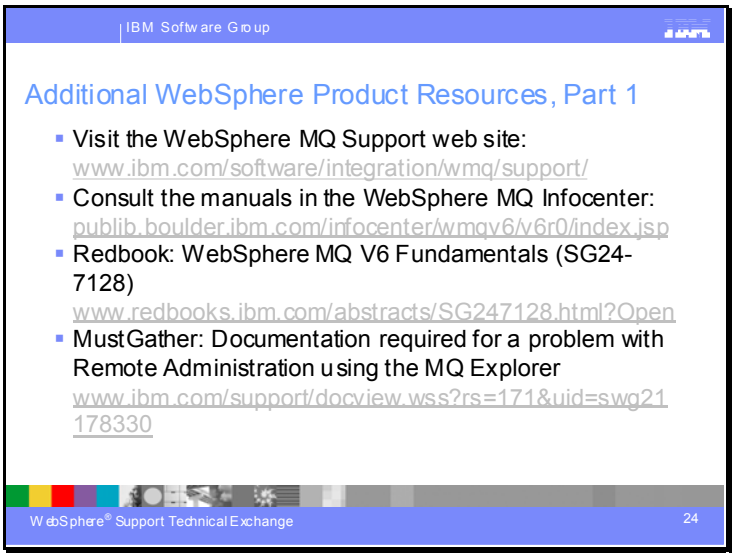
Need to apply APAR IC49065 to allow non-mqm user to start/stop channels only when proper authority is granted.

http://www-1.ibm.com/support/docview.wss?uid=swg1IC49065

IC49065: USING PCF, A NON-MQM USER CAN START/STOP CHANNELS WITHOUT HAVING +ctrl AUTHORITY

Fix included in Refresh pack 6.0.1.1.

Slide 24



Additional WebSphere Product Resources, Part 1

The WebSphere MQ support web site is the first stop for support information, such as:

Solve a problem: Forums and newsgroups, Featured documents, IBM Support Assistant (tool to help resolve problems), MustGather: Read first, Technotes, APARs
Download: Recommended Updates, SupportPacs, Product Readmes,
Learn: Information center, Information roadmap, WebSphere MQ Library, Redbooks, Education, Whitepapers
Stay up to date: Request e-mail updates, News feeds of new content
Assistance: Report problems, Information to include, Contact support, IBM Software Support Toolbar
Search Support (this product): Enter terms, error code or APAR #

The WebSphere MQ Infocenter has the online version of all the product manuals. It has a search function that looks across all the manuals.

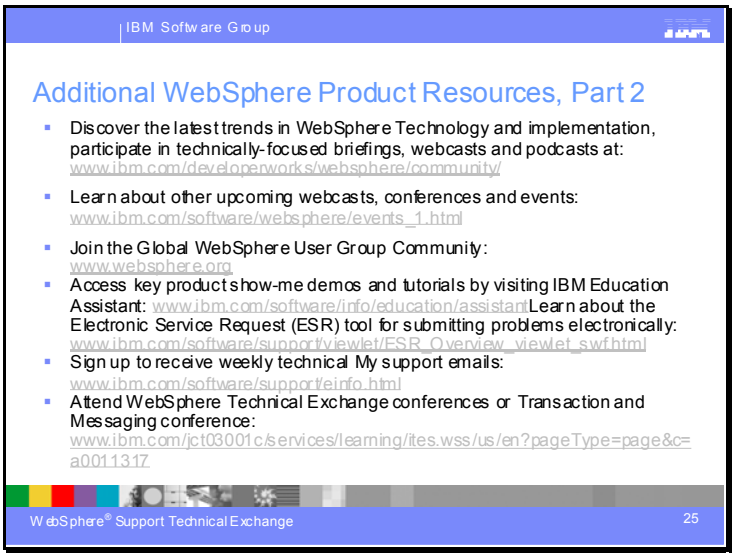
The Redbook WebSphere MQ V6 Fundamentals provides instructions on how to perform many administrative tasks by using both the WebSphere MQ Explorer and the command “mqsc”.

The MustGather technote 1178330 describes the documentation required by the WebSphere® MQ support team for a Remote Administration problem.
Gather this information before calling IBM® support to expedite the troubleshooting process, and save time. View the hints and tips in this item to assist in self-diagnosis of problems.

What is a “Technote”?
Documents a reported customer problem and the currently available solution to that problem. May include brief how-to information on installation, configuration, troubleshooting and usage, as well as answering frequently asked questions.

Search for WebSphere MQ technotes at http://www-306.ibm.com/software/integration/wmq/support/

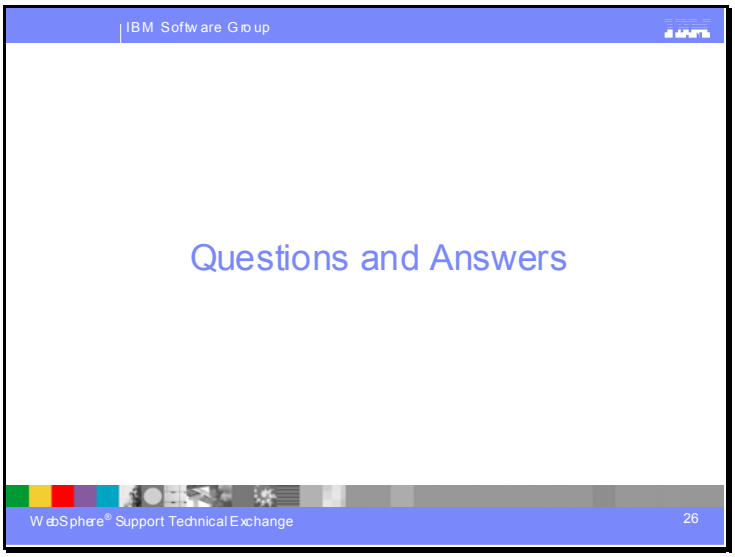
Slide 25



Additional WebSphere Product Resources, Part 2

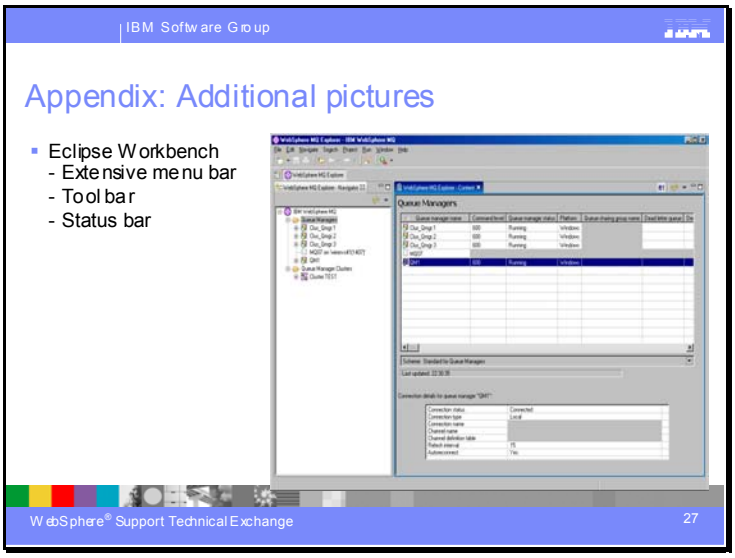
This chart includes links to a number of sites that provide valuable online resources for WebSphere products. developerWorks offers in-depth technical information. The Events link on Support pages points you to webcast and conference information. Visit websphere.org for user group information and more product information. The IBM Education Assistant consists of self-help modules to get new users up the learning curve quickly. The ESR tool is available to Passport Advantage clients to open, update and view PMRs online. And the My Support link on all product support pages lets you sign up for weekly e-mail updates for products of interest to you.

Slide 26



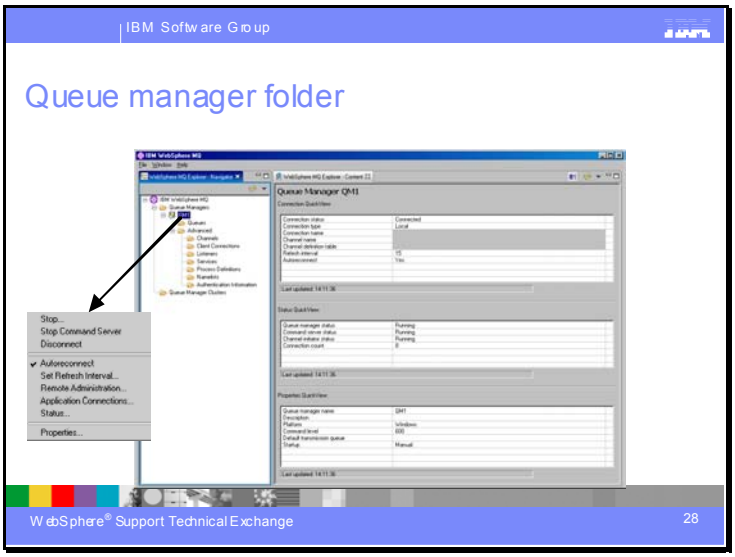
Questions and Answers.

Slide 27



The Eclipse Workbench has additional features such as extensive menu bar, tool bar, status bar at the bottom.

Slide 28

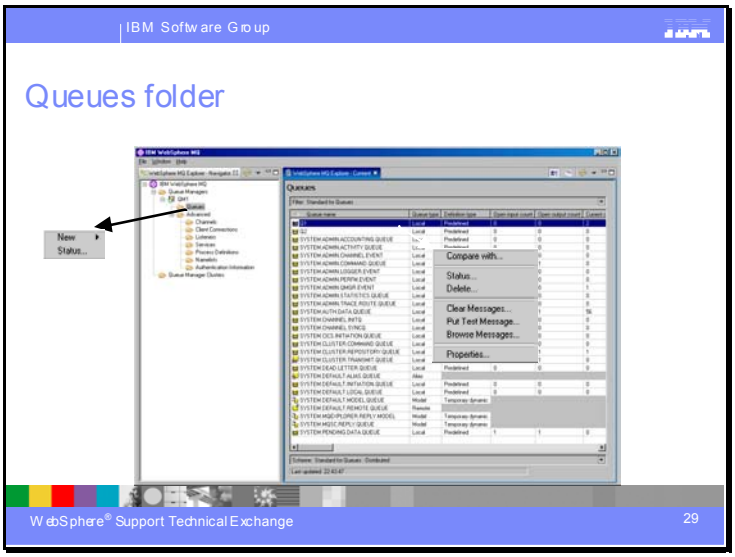


Show/Hide remote queue managers

controls which are shown in the navigator panel

Create a new local queue manager (wizard)

Slide 29



Common layout for all WMQ objects

Refresh button on all content views

Attributes not appropriate are “greyed” out (new feature)

color can be changed

Menus are context sensitive

based on object type

Compare with (new feature)

Display/change the properties

Create new queue - wizard

“Show system objects” on most content pages

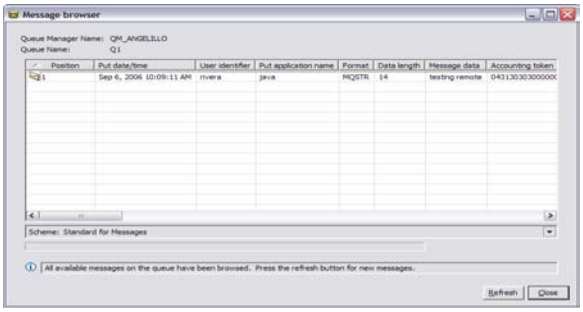
“Show temp queues” only on Queues content

Status of all queues (new feature)

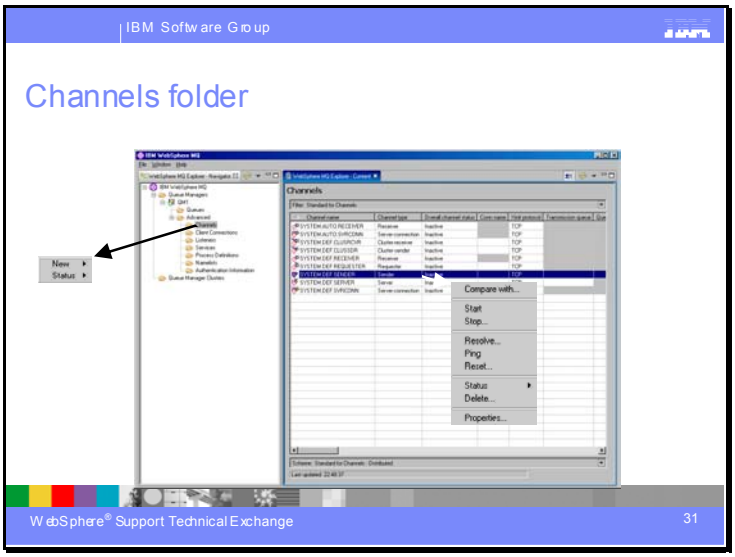
Status of a queue – shows new dialog with type queue and type handle

Slide 30

Browsing messages from a queue



Slide 31



Create new channels - wizard

Status of all channels (new feature)

Menus are context sensitive

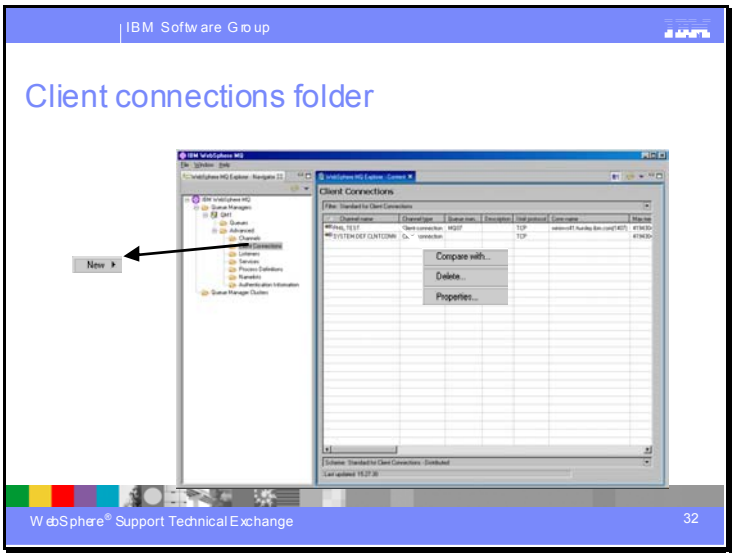
start/stop/delete/ping/reset/etc

status of a channel (current or saved)

Display/change the properties of a channel

Compare properties with another channel

Slide 32



Create new client connection channels - wizard

Display/change the properties of a client connection channel

Compare properties with another client connection channel

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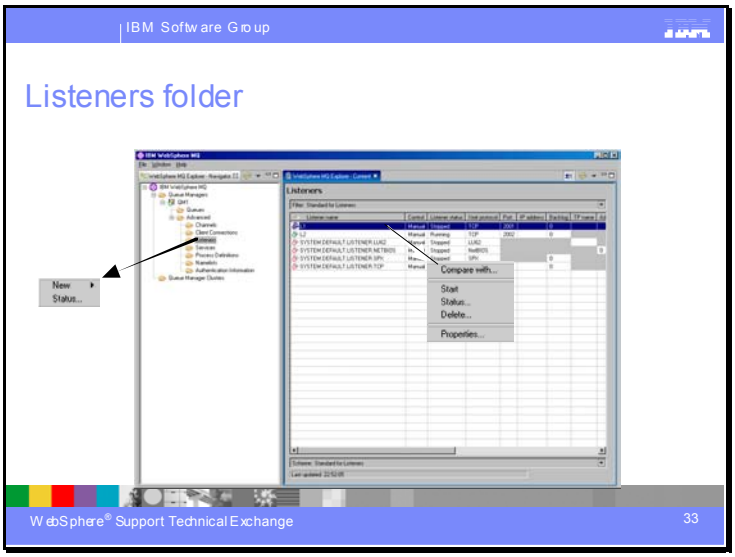

Create a new listener – wizard

Status of all listeners (new feature)

includes those started from command line

Menus are context sensitive

start/stop/delete

Display/change the properties of a listener

Compare properties with another listener

+++ end +++