IBM WebSphere MQ V7.0 delivers the universal messaging backbone for SOA and Web 2.0 with enhanced ease of use, performance, and resilience

At a glance

WebSphere MQ V7.0 delivers:

- Enhanced ease of use for publish and subscribe and Java™ Message Service (JMS) messaging
- Graphical configuration of publish and subscribe and JMS through the Eclipse-based MQ Explorer for improved usability
- Enhanced publish and subscribe performance, increasing throughput by up to 20%¹
- Enhanced JMS performance, increasing selector rates by up to 250% and message listener throughput by up to 45%¹
- Extended calls and behaviors for the MQI programming interface, improving developer productivity
- Enhanced WebSphere MQ clients, increasing nonpersistent throughput by up to 300%¹ and increasing failure detection and availability
- Web 2.0 support to help create a richer user experience by bridging HTTP applications with Asynchronous JavaScript and XML (AJAX) and Representational State Transfer (REST) to the MQ messaging backbone

¹ Preliminary results observed on prerelease-level code. For the latest performance information, select Performance Reports at http://www.ibm.com/webspheremq/support

For ordering, contact:

Your IBM representative or the Americas Call Centers at

800-IBM-CALL Reference: YE001

Overview

WebSphere® MQ V7.0 delivers the universal messaging backbone with robust connectivity that enables flexible and reliable messaging for applications, Web services, and Web 2.0. It also delivers market-leading JMS and publish and subscribe messaging.

WebSphere MQ is the market-leading message-oriented middleware product that delivers a reliable, proven messaging backbone for almost 10,000 organizations of different sizes, spanning many industries around the world.

Key prerequisites

For details, refer to the Hardware requirements and Software
Enhanced ease of use for publish and subscribe: Event-driven SOAs deliver a responsive, flexible infrastructure that can enable quicker and easier changes to how applications are connected. WebSphere MQ V7.0 is the ideal transport layer for an event-driven SOA with integrated support for publish and subscribe messaging. Publish and subscribe gives you a flexible, event-driven pattern for loosely coupling applications. It enables messages to be sent between applications without any prior knowledge of which applications need to receive those messages. The linkage between applications that publish and receive messages is not explicitly defined, so it need not be altered when changes are required to the applications that send and receive data. The pathway between these applications is determined dynamically by WebSphere MQ via the topics or keywords used to declare interest in certain messages when subscribing or to tag a message when publishing.

WebSphere MQ V7.0 makes it easier to use publish and subscribe to increase the flexibility of messaging solutions. Publish and subscribe messaging is now fully integrated into the graphical WebSphere MQ Explorer tooling, making it easier to use and configure. This release integrates the publish and subscribe function into the queue manager, eliminating the need to send publications to publication queues. With WebSphere MQ V7.0 you can now publish directly to topics in your applications. You do not need to start a separate publish and subscribe component: publish and subscribe services are now automatically enabled as part of all queue managers.

You can now administer topics directly as MQ Explorer objects just like queues, simplifying administration and security management. You can create topics using graphical wizards that can also generate corresponding JMS topics. Testing publish and subscribe is now even easier, with built-in tools to send and receive test publications. Specific documented samples for publish and subscribe and point-to-point messaging are included.

With WebSphere MQ V7.0, it is easier to see which applications are subscribed to topics in the same way that you can see which applications are using particular queues. You can switch existing applications from using a point-to-point message pattern to a publish and subscribe pattern without any code changes required. Administrators can create subscriptions on behalf of applications and redefine queues to have a topic assigned to them. Extensions in the MQI make it easier for applications to exploit publish and subscribe.

This release adds a new Topic object type that can be used to define publish and subscribe topics and create hierarchies of topics that enable a richer topic space. The queue manager automatically cleans up after nondurable subscriptions, simplifying administration and saving on resources. Topic objects also support inheritance, enabling attributes such as security settings to be inherited, helping to reduce manual administration. There is no need to define any topics to start using publish and subscribe; default settings in the queue manager make it easy to get started.

WebSphere MQ V7.0 makes it easier to manage publish and subscribe permissions by restricting the use of topics by authority settings on the topic object, following the existing MQ Authorization Service security model.

Enhanced ease of use for JMS: JMS is a Java industry-standard programming interface for messaging. WebSphere MQ V7.0 delivers significant enhancements for JMS to improve ease of use and optimize performance. The previous release of WebSphere MQ supported the latest iteration of the JMS standard, V1.1. So, while the JMS interface remains the same in WebSphere MQ V7.0, significant optimizations and enhancements are introduced.

WebSphere MQ V7.0 integrates JMS configuration into its graphical, Eclipse-based tooling, MQ Explorer, making it easier to design and deploy JMS solutions. JMS objects like connection factories and destinations now appear in MQ Explorer alongside queues and channels. Because MQ Explorer can remotely configure the entire WebSphere MQ network, JMS messaging is easier to explore and configure across the network.

MQ Explorer now makes it easier to do the following:
• View all the properties of JMS resources at a glance and update JMS object properties.
• Create JMS resources such as Connection Factories using step-by-step wizards.
• Create a queue or topic that can automatically define a corresponding JMS destination at the same time.
• Customize views of JMS objects just as for other MQ resources, such as filtering JMS objects that match selection criteria.

Enhanced JMS trace facilities can help improved problem determination and serviceability. When problems are encountered that require the assistance of IBM support, improved diagnostic capabilities are provided to help rapid resolution of the problems. This includes First Failure Data Capture (FFDC) as well as enhanced trace control and formatting.

**Enhanced publish and subscribe performance:** WebSphere MQ V7.0 optimizes the throughput of publish and subscribe messaging. This release integrates publish and subscribe function into the queue manager, removing the need to queue persistent publications twice between the queue manager and the previously independent publish and subscribe component. By optimizing message logging for persistent publish and subscribe messaging, throughput can increase by up to 20%. This performance enhancement applies to all interfaces: JMS, MQI, and XMS.

WebSphere MQ V7.0 enhances the scalability and availability of publish and subscribe messaging with publish and subscribe clusters that enable you to route publications through a set of queue managers, eliminating single points of failure.

1 Preliminary results observed on prerelease-level code. For the latest performance information, select Performance Reports at http://www.ibm.com/webspheremq/support

**Enhanced JMS performance:** WebSphere MQ V7 delivers enhancements to optimize throughput and performance for JMS messaging.

• JMS client applications can benefit from performance enhancements in WebSphere MQ V7.0. Message readahead can improve nonpersistent JMS throughput by up to 300%. JMS selector performance is also enhanced through selector matching on the server-side, eliminating network latencies that result from client-side selector matching. The performance of selectors is heavily dependent on the selector criteria, header contents, and the proportion of matching messages. With WebSphere MQ V7.0, JMS selector scenarios can give up to 250% throughput increase.

• WebSphere MQ V7.0 optimizes JMS message listeners by eliminating polling and using asynchronous message delivery to monitor destinations. In this release, JMS message listener throughput can be increased by up to 45%, with additional improvements in latency. The introduction of shared client conversations can also reduce the time needed to establish connections increasing overall throughput, especially for SSL connections. Refer to the Client enhancements section for more details.

• WebSphere MQ V7.0 integrates publish and subscribe function into the queue manager, removing the need to queue persistent publications twice between the queue manager and the previously independent publish and subscribe component. By optimizing message logging for persistent publish and subscribe, JMS messaging throughput can increase. For more details on enhancements to this aspect of the JMS standard, refer to the Enhanced publish and subscribe performance section.

JEE application servers can take advantage of these performance enhancements to improve message throughput for message-driven beans (MDBs) that are invoked whenever messages arrive via WebSphere MQ. Eliminating polling of the messaging provider can also reduce CPU utilization of application servers.

**Enhanced MQ Explorer:** MQ Explorer enables remote configuration of WebSphere MQ from Linux™ on x86 and Microsoft® Windows® machines. It does not require a local server or client, and can be installed on machines at no charge.

• To make it easier to manage many queue managers, you can now group them into separate views in the MQ Explorer navigator. You can group and view test and production queue managers separately, for example.

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• It is also easier to configure security settings. You can configure channels exits, user IDs, and passwords for each queue manager or globally for all queue managers in a group or workspace.

• MQ Explorer plug-ins previously available in FixPack 6.0.2 include graphical problem discovery tools that provide one-click detection and diagnosis of the messaging backbone configuration and support for graphical configuration of user permissions via the Object Authority Manager (OAM).

In this release, you can use the MQ Explorer to manage the z/OS® parts of your WebSphere MQ network without having to buy the WebSphere MQ for z/OS V7.0 Client Attachment Feature. This usage is restricted to five client connections and the channel name used must be SYSTEM.ADMIN.SVRCONN (which is the default that is configured for use with the MQ Explorer).

**Enhanced Message Queue Interface (MQI):** WebSphere MQ includes a rich programming interface, the MQI. This interface, common across all supported platforms, has a simple set of calls that access the advanced features of WebSphere MQ. WebSphere MQ V7.0 further enhances the MQI with new calls and behaviors designed to increase ease of use for MQI developers.

WebSphere MQ V7.0 introduces message properties and message handles to the MQI.

• MQI users can customize message headers with user-defined data.

• New MQI calls enable properties to be set (MQSETMP) and queried (MQINQMP), eliminating the need for applications to parse message headers to find message metadata.

• Developers can use the message handle to specify explicit relationships between messages, such as when messages are sent in reply to specific messages.

WebSphere MQ V7.0 introduces a callback function to the MQI with a new call, MQCB. This enables JMS and MQI clients to register with the queue manager to be automatically notified whenever messages or publications arrive for their consumption. This enables asynchronous consumption of messages:

• Eliminates the need for client applications to continuously poll queue managers

• Frees network bandwidth

• Reduces lag time from message arrival to delivery

• Reduces server and client CPU utilization

Previously, WebSphere MQ clients polled for messages using MQGET: now MQI, JMS, and XMS clients can benefit from callback.

WebSphere MQ V7.0 introduces support for selectors to the MQI:

• Applications can select messages from queues based on the values of message properties or message headers.

• Queries constructed in Standard Query Language (SQL92) can retrieve a filtered set of messages by matching the criteria in the message properties.

• MQOPEN and MQSUB calls can be used in conjunction with selectors to retrieve a series of messages matching the required criteria.

• Queries can be run on the server to optimize performance for clients.

Selectors eliminate the need for client applications to browse through delivered messages, comparing these with their selection criteria, and ignoring those that do not match. Now only messages matching the selection criteria are delivered to the client in the first place. This can improve performance and lower network bandwidth use by eliminating the need to send messages to clients that are not wanted and would merely be discarded. Filtering messages based on the content body — rather than just the header and properties — is enabled by WebSphere Message Broker.

WebSphere MQ V7.0 enhances support for developers using the MQI for publish and subscribe messaging.
MQSUB enables applications to register subscriptions.

MQSUBRQ enables new subscribers to receive the most recent retained publication that was already sent on a topic.

Existing MQI calls have new options for publish and subscribe messaging. MQOPEN can be used to access a topic, MQCLOSE to end durable subscriptions, and MQPUT and MQGET to publish and to receive subscriptions.

Client enhancements: WebSphere MQ V7.0 introduces a new quality of service enhancement to help optimize performance for client applications that require nonpersistent delivery of a stream of messages.

Servers can stream nonpersistent messages to clients so that these can arrive buffered on the client machine even before the client requests them. This message readahead function enables WebSphere MQ V7.0 to preemptively dispatch messages it expects clients to request. In addition, WebSphere MQ V7.0 servers can also regulate the flow of messages to its clients. Message readahead can increase throughput of nonpersistent messaging by up to 300%.

Because messages on the client side are held in client memory and no longer queued, this feature applies to nonpersistent messaging scenarios only. If the WebSphere MQ server needs to send persistent messages to the client, WebSphere MQ automatically reverts to its regular quality of service to handle those messages. Enabling WebSphere MQ V7.0 clients for message readahead requires no changes to existing applications, only reconfiguration of WebSphere MQ.

WebSphere MQ V7.0 clients use full-duplex protocols for TCP/IP, enabling more effective heart-beating to increase availability through faster detection of connection failures and orphaned server-connection channels.

WebSphere MQ V7.0 enables sharing of TCP/IP sockets to help simplify administration of large numbers of client connections. Connection sharing can make it easier to see the connection status of multiple clients at a glance. By sharing sockets, clients can also enhance scalability and reduce the time needed to establish connections, increasing overall throughput, especially for SSL connections.

A new feature enables client applications to continue doing useful work after putting messages to queues or topics. Rather than wait for response codes to be sent back to the client, asynchronously putting messages eliminates the need for clients to wait for responses back from the queue manager each time a message is put to a queue or topic. Return codes can be requested later, if required, using a new call, MQSTAT, which supplies the last asynchronous return code. Client applications can choose not to wait and can prepare to send the next message or do some other useful work rather than pausing to synchronize with an MQ server. This new feature can significantly increase performance for applications that do not require response codes.

Delivering value to Web 2.0: Web 2.0 promises a compelling new way of creating user interfaces using new Web technologies like AJAX and simple techniques like REST. Compelling and valuable user interfaces require more than just interfaces and tools. Access to meaningful, up-to-date business data is essential to delivering real value to Web 2.0 users.

WebSphere MQ V7.0 makes the connection between real business data in core applications and Web 2.0, unlocking the value of that data and making it easier to present it to Web 2.0 users. WebSphere MQ V7.0 delivers a bridge for HTTP (previously available as SupportPac™ MA0Y) that links AJAX applications to the WebSphere MQ backbone using a RESTful programming model. Web 2.0 developers do not require WebSphere MQ knowledge or skills to connect their new applications to core business systems. Both point-to-point and publish and subscribe messaging are supported and accessed via uniform resource indicators (URIs) that map to WebSphere MQ queues and topics. REST verbs GET, DELETE, and POST are mapped to MQGET and MQPUT calls to queues or topics.

WebSphere MQ V7.0 connects Web 2.0 with core enterprise systems, enabling a richer user experience and unlocking the value of business data.

Sample applications help accelerate the development of Web 2.0 solutions and help demonstrate the value of linking core business applications with Web 2.0. Because client applications do not require installation or configuration of WebSphere MQ client code, the bridge for HTTP can also be used where zero client footprint is needed and can simplify administration for large communities of applications that require simple access to WebSphere MQ.

Section 508 of the U.S. Rehabilitation Act

WebSphere MQ is capable as of June 27, 2008, when used in accordance with IBM's associated...
You can request a U.S. Section 508 Voluntary Product Accessibility Template (VPAT), containing details on the product's accessibility compliance, at the following website:


**IPLA and Subscription and Support considerations:** IPLA licenses can be transferred from one machine to another within, but not limited to an enterprise. You may aggregate the capacity for all the processors the product is operated on to achieve a more economic price. This will result in a single Proof of Entitlement (PoE). It is your responsibility to manage the distribution of Value Units within the limits of the entitlement of the product license.

Subscription and Support must cover the same capacity as the product license entitlement. Subscription and Support will be available in the country in which the agreement is made.

**Product positioning**

The WebSphere MQ family delivers the universal messaging backbone for SOA connectivity. It connects new and existing applications, as well as Web services, with reliable messaging. WebSphere MQ is a first step to SOA as a transport layer to underpin an ESB. It delivers guaranteed, reliable messaging — as well other qualities of service — offering choice in the class of delivery.

WebSphere MQ supports industry-standard JMS messaging. It enables simple, RESTful access from Web 2.0 to core back-end applications. WebSphere MQ integrates virtually any commercial IT system with support for more than 80 platform configurations. It integrates JEE applications, .NET applications, CICS®, IMS™, DB2®, and packaged applications.

WebSphere MQ can help organizations get more from their IT investments through a reliable and flexible integration backbone for exchanging messages between applications and Web services.

- WebSphere MQ, the core of application integration, is the reliable, proven messaging backbone for SOA connectivity, as the universal, multipurpose data transport. It connects virtually any commercial IT system, with support for more than 80 platform configurations. WebSphere MQ supports industry-standard JMS messaging and includes a choice of APIs. WebSphere MQ interoperates with the JMS messaging services embedded in WebSphere Application Server, extending its reach to non-JEE environments. WebSphere MQ is a flexible connectivity solution that can grow incrementally with changing business needs.

- WebSphere MQ for z/OS exploits the platform-specific capabilities of the IBM System z™ platform to deliver a messaging powerhouse.

- WebSphere MQ for HP OpenVMS, WebSphere MQ for HP NonStop Server, and MQSeries® for VSE/ESA™ all extend the reach of WebSphere MQ to these specific computing platforms.

- WebSphere MQ Extended Security Edition expands the industry-standard security offered by WebSphere MQ with end-to-end data protection for your applications. It enables enterprise-wide, remote management of security polices on your MQ network and can be deployed to existing production environments without changes to existing WebSphere MQ applications.

- WebSphere MQ Low Latency Messaging (on Linux, Microsoft Windows, and Solaris platforms) extends the WebSphere MQ product family with low-latency, high-throughput delivery. It is optimized for the very high-volume, low-latency requirements typical of financial markets firms and other industries where speed of data delivery is paramount.

WebSphere MQ is the messaging backbone that underpins and extends the IBM ESB portfolio. It provides the transport layer that ESBs can build upon, augmenting the backbone with mediation, transformation, and routing services.

- WebSphere Message Broker adds transformation, intelligent routing, and information flow modelling to the WebSphere MQ messaging backbone. This ESB distributes information and data generated by business events in real time to people, applications, and devices throughout your extended enterprise and beyond.

- WebSphere ESB leverages Web services standards and builds on the embedded messaging in WebSphere Application Server. WebSphere MQ extends the reach of this ESB to non-JEE
environments and a broader range of platforms.

- WebSphere DataPower Integration Appliance XI50 includes an ESB in an appliance form factor. It is a 1U (1.75-inch thin) rack-mountable network device capable of transforming between disparate message formats, including binary, legacy, and XML, and providing message routing and security. XI50 delivers client connectivity into the WebSphere MQ backbone.

The WebSphere MQ family is complemented by skills, services, and offerings from more than 800 IBM Business Partners worldwide.

In addition, the IBM Tivoli® portfolio offers systems management for large-scale WebSphere MQ solutions. Tivoli OMEGAMON® XE for Messaging can help improve the availability and performance of WebSphere MQ solutions. It can identify common problems and automate corrective actions, using predefined industry best-practice situations, while monitoring key WebSphere MQ metrics. Tivoli OMEGAMON XE for Messaging can help improve management of Service Level Agreements (SLAs) by monitoring availability and capacity using real-time and historical data analysis. Out-of-the-box capabilities, such as auto-discovery and monitoring of complex WebSphere MQ environments, can improve IT staff productivity and reduce administration costs.

In addition, SupportPac product extensions offer additional function available as a download from the Internet. Visit

http://www.ibm.com/webspheremq

A messaging backbone based on WebSphere MQ can help organizations:

- Quickly and economically connect IT systems
- Improve the reliability and accuracy of business data being exchanged
- Become more agile so that IT can be flexible to meet changing business demands
- Stay flexible so that IT and organizational changes can be absorbed
- Be better prepared for regulatory compliance and industry initiatives
- Connect the new with the now, leveraging Web 2.0 and Web services while connecting these with the core back-end systems

Universal messaging backbone

In an SOA, an ESB provides an integration layer that mediates, transforms, and enriches data when it transports the data between service components. The transport layer that underpins an ESB layer is a messaging backbone that enables it to move data between those service assets. As a key member of the WebSphere software portfolio, WebSphere MQ delivers a universal messaging backbone that can help you take the first step to SOA.

WebSphere MQ enables Simple Object Access Protocol (SOAP) interactions to flow over its messaging backbone between Web service requesters and providers. Legacy and batch applications that are Web services-enabled can also benefit from using WebSphere MQ in its asynchronous mode as a buffering mechanism to regulate the flow of requests made to these systems. WebSphere MQ is the ideal transport for adding reliability and traceability to service interactions, providing a scalable, reliable, and resilient backbone that enables a business-critical SOA.

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Education support

The following educational offerings are available.

IBM training provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers are on the IBM training Web site


Call IBM training at 800-IBM-TEACH (426-8322) for catalogs, schedules, and enrollments.

Education support will be provided for the product in this announcement. Visit

http://www.ibm.com/software/integration/wmq/

Offering Information

Product information is available via the Offering Information Web site

http://www.ibm.com/common/ssi

Also, visit the Passport Advantage® Web site

http://www.ibm.com/software/passportadvantage

Publications

No publications are shipped with this product.

A printed Quick Start Guide is shipped with the product. Online product documentation is integrated within the product and is also supplied on the Quick Start CD-ROM.

The IBM Publications Center

http://www.ibm.com/shop/publications/order

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card (in the U.S.) or customer number for 20 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries.

Technical information

Hardware requirements: Any hardware that is explicitly compatible and fully capable of running the specified operating system, all the corresponding supporting software, and any associated applications unmodified. Responsibility to provide a statement of full compatibility between machines lies with the original equipment provider (if not IBM).

Visit


Software requirements: Visit

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a read-me file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

**Compatibility:** WebSphere® MQ V7.0 queue managers and clients interoperate with queue managers and clients from any previous level of WebSphere MQ or MQSeries® products.

The WebSphere MQ Explorer runs on the Linux™ on x86 and Windows® platforms. The MQ Explorer can be used on a client connection from an earlier supported level of WebSphere MQ or MQSeries on a different platform (for example, WebSphere MQ V5.3 on AIX® or MQSeries V5.1 on Solaris, Intel® Platform Edition).

### Planning information

**Customer responsibilities:** Software Maintenance is included with licenses purchased through Passport Advantage and Passport Advantage Express. Product upgrades and technical support are provided by the Software Maintenance offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software, and technical support provides voice and electronic access to IBM support organizations, worldwide.

IBM includes one year of Software Maintenance with each program license acquired. The initial period of Software Maintenance can be extended by the purchase of a renewal option, if available.

**Packaging:** The WebSphere MQ V7.0 Media Pack comprises the following CD-ROMs:

- WebSphere MQ for AIX
- WebSphere MQ for HP-UX on Itanium platform
- WebSphere MQ for HP-UX PA-RISC platform
- WebSphere MQ for i5/OS™
- WebSphere MQ for Linux on x86-64 platform
- WebSphere MQ for Linux on x86 platform
- WebSphere MQ for Linux on System z™ platform
- WebSphere MQ for Linux on POWER™ platform
- WebSphere MQ for Solaris on x86-64 platform
- WebSphere MQ for Solaris SPARC platform
- WebSphere MQ for Windows
- WebSphere MQ Clients
- WebSphere MQ Quick Start

The Media Pack also contains an International Program License Agreement booklet and a Media Pack Pointer Sheet.

**Security, audibility, and control**

WebSphere MQ uses the security and auditability features of the host software.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

### Software Services

IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an unmatched portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support any critical business need.
Ordering information

This product is only available via Passport Advantage. It is not available as shrinkwrap.

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Charge metrics definitions:

**Value Unit:** A Value Unit is a pricing charge metric for program license entitlements which is based upon the quantity of a specific designated measurement used for a given program. Each program has a designated measurement. The most commonly used designated measurement is a processor core. However, for select programs, there are other designated measurements such as users or resources which may include servers, client devices, and messages. The number of Value Unit entitlements required for a program depends on how the program is deployed in your environment and must be obtained from a Value Unit table. You must obtain a PoE for the calculated number of Value Unit entitlements for your implementation. The Value Unit entitlements are specific to a program and may not be exchanged, interchanged, or aggregated with Value Unit entitlements of another program.

**Processor (Value Unit):** A processor core is a functional unit within a computing device that interprets and executes instructions. A processor core consists of at least an instruction control unit and one or more arithmetic or logic unit. With multicore technology, each core is considered a processor. Not all processor cores require the same number of Processor Value Unit entitlements. To calculate the number of Processor Value Unit entitlements required, refer to the Processor Value Unit table on the following Web site:


With full capacity licensing, a PoE must be acquired for the appropriate number of Processor Value Units based on all activated processor cores available for use on the server.

**Sub-capacity processor (Value Unit):** For programs eligible for sub-capacity licensing, a PoE must be acquired for the appropriate number of Processor Value Units based on all activated processor cores available for use in each partition (utilizing eligible partitioning technologies) where the program runs. Refer to the International Passport Advantage Agreement Attachment for sub-capacity terms or the program's license information to determine applicable sub-capacity terms.
Passport Advantage program licenses: WebSphere MQ

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Passport Advantage customer: Media pack entitlement details

Customers with active maintenance or subscription for the products listed are entitled to receive the corresponding media pack.

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<td>WebSphere MQ for Multiplatforms V7.0 Multilingual Media Pack</td>
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Cross-platform product for use on System z

Order the part numbers that follow when there is an intention to acquire this cross-platform product for deployment on the System z or S/390® platform. This set of part numbers provides the identical supply and authorization as the other set in this announcement. The distinction is to identify the planned deployment platform.

<table>
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<th>Program name/description</th>
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<td>WebSphere MQ Linux zSeries Value Unit Annual SW Maint Rnwl</td>
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Sub-capacity

**WebSphere MQ**

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On/Off CoD: WebSphere MQ

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<td>WebSphere MQ Subcap Value Unit</td>
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<th>Product name</th>
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