



IBM WebSphere MQ Low Latency Messaging V2.6 delivers enhanced management, monitoring, reliability, filtering, and performance optimizations

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At a glance

WebSphere® MQ Low Latency Messaging (LLM) is a messaging transport that is highly optimized for the high-volume, low-latency requirements of financial market firms and other industries with similar requirements. In these environments, applications require extremely low-latency (sub-millisecond) and high-message volumes (ranging from many thousands to millions of messages per second), with varying delivery styles and message qualities of service.

WebSphere MQ LLM V2.6 offers the following new capabilities:

- Pricing changed from "Per PVU" to "Per Virtual Server"
- Increased control of acknowledgements
- Enhanced performance and high availability via port-specific polling
- Improved transmitter failure recovery
- Increased control of monitoring statistics
- Expanded platform coverage: Support for Red Hat Enterprise Linux® 6 and for coordination manager on AIX® 5.3 and AIX 6.1
- Updated and expanded documentation

For ordering, contact your IBM® representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: LE001).

Overview

WebSphere MQ Low Latency Messaging (LLM) V2.6 delivers new features to enhance its high-volume, low-latency reliable messaging capabilities:

- Product pricing changed from "Per PVU" to "Per Virtual Server" for the MQ LLM Server and MQ LL Message Store.
- The MQ LLM Client functionality will be rolled into the base MQ LLM offering and will no longer be separately orderable.
- Asynchronous application level allows applications greater control of when to acknowledge that the application has successfully processed a packet.
- To improve the latency of a real-synchrony tier, RCMS allows an application to override the default behavior and send the ordering information over a dedicated fast-control channel.

- Port-specific polling on RMM receivers gives applications finer-grained control when making important trade-off decisions between lowest latency and CPU cycles.
- Improved transmitter failure recovery allows applications that crash to bring an RMM transmitter back up quickly, even in large-scale deployments.
- RMM reset statistics command added to coordination manager (LLM-CM), giving LLM administrators additional flexibility when monitoring RMM receiver and transmitter statistics.
- Support for Red Hat Enterprise Linux 6.
- Support for LLM-CM on AIX 5.3 and AIX 6.1.
- High-priority documentation improvements have been made to the RMM ("Developing applications") and LLM-CM sections.

These new features make WebSphere MQ LLM an even more attractive solution for trading firms, exchanges, and other organizations that need assured delivery of high volumes of data with low latency.

Key prerequisites

Selected levels of:

- AIX
- Linux
- Microsoft® Windows®
- Solaris
- HP-UX

Planned availability date

April 5, 2011

Description

WebSphere MQ Low Latency Messaging (LLM) offers a reliable, high-speed, high-throughput transport for a broad range of messages that enables extremely low-latency distribution of information. WebSphere MQ LLM is designed to address the needs of the front-, middle-, and back-offices of financial markets and other industries with similar needs.

WebSphere MQ LLM can be used for high-speed delivery of market data, order management data, reference data, and event data in or between front-, middle-, and back-office environments. Using the full IBM Messaging portfolio, WebSphere MQ LLM can be integrated with classic WebSphere MQ for back-office applications requiring the highest levels of assured delivery.

WebSphere MQ LLM can be used as a key element of low-latency solutions for financial firms or within other industries that require reliable, high-speed data delivery, such as telecommunications, manufacturing, aerospace, and defense. The software is also embedded in the WebSphere Front Office, a scalable, high-performance, low-latency market data delivery platform.

WebSphere MQ Low Latency Messaging is ideal for organizations that require:

- High messaging throughput and ultra-low latency
- High availability without compromising on latency even with commodity hardware
- Assured delivery and message replay

- Ability to choose most efficient delivery -- true point-to-point unicast and one-to-many multicast
- Freedom to choose -- and combine -- native support for InfiniBand and 10 GbE (Gigabit Ethernet) networks
- Message traffic rate and congestion control
- Support for simultaneous use of User Datagram Protocol (UDP) and Transmission Control Protocol (TCP)
- Shared memory for fast inter-process communication
- Simplified topic provisioning and subscription management
- Flexible, fine-grained message filtering
- Robust application and network statistics monitoring for internal and external latency

WebSphere MQ LLM V2.6 updates IBM's ultra-low-latency transport with enhanced performance and high availability, increased control of acknowledgements and monitoring statistics, and expanded platform coverage.

This update adjusts the pricing model changing from Per Processor Value Unit to the Per Virtual Server-based licensing metric for the WebSphere MQ LLM Server and Message Store. In addition, the WebSphere MQ LLM client is rolled into the base product offering and is no longer a separately chargeable component.

Additional new capabilities and improvements now available in WebSphere MQ LLM V2.6 include:

- Asynchronous application level acknowledgement (ACK)

Version 2.6 introduces asynchronous application level ACK, allowing applications greater control of when to acknowledge that the application has successfully processed a packet. This feature is useful for applications that want to delay the ACK for a packet until certain tasks have been completed. As an example, consider an application that receives packets and (among other things) should send the messages to be stored in a remote cache server. The application would like to acknowledge a packet only after the cache server provides an indication that the data is safely stored. Late acknowledgement in this case would ensure proper back-pressure to slow down the sender in case the cache server cannot keep up with the current rate.

In addition, in case the application fails and then restarts, it will get all packets that were not acknowledged by the previous instance of the application. Another example is transaction-based processing, where a group of messages (transmitted over a sequence of RMM packets) should only be acknowledged after the whole transaction is committed.
- Performance improvements in RCMS real synchrony

By default, RCMS sends control information, including total ordering information and other intra-tier messages, between tier members by using the group communication services of DCS. This is done for both virtual-synchrony and real-synchrony tiers. For a virtual-synchrony tier, the end-to-end latency is not affected by DCS performance, but with a real-synchrony, the latency is strongly affected by the round-trip latency over the DCS service. The reason is that with real-synchrony, the primary has to wait for an acknowledgement to the ordering information it sends from the backup tier members before the data can be delivered to the application.

To improve the latency of a real-synchrony tier, RCMS allows an application to override the default behavior and send the ordering information over a dedicated fast-control channel. The fast-control channel is implemented using a regular RMM topic, which provides the lowest possible latency.
- Port-specific polling on RMM receivers

This feature allows an application to control the degree of opportunistic polling of the network per RMM Receiver port. Polling is a trade off between CPU time and latency. Often applications will opt to spend additional CPU cycles polling

in order to achieve the lowest possible latency. Before LLM 2.6, an application requiring polling on an RMM receiver would specify an instance wide receiver advanced configuration parameter: RecvPacketNPoll. This would result in the same degree of polling on all ports with normal or high priority. This feature gives applications finer-grained control when making important trade-off decisions between lowest latency and CPU cycles. For example, if an application is receiving latency sensitive data from a shared memory port and control data on an Ethernet port, it may decide to enable polling only on the shared memory port and disable polling on the Ethernet port in order to reduce the amount of CPU cycles consumed by RMM.

- Enhanced transmitter failure recovery

This feature is an enhanced recovery feature that allows applications that crash to bring an RMM transmitter back up quickly, even in large-scale deployments. The process of generating an RMM stream ID has been enhanced to handle application crashes.

- RMM reset statistics command added to LLM coordination manager (LLM-CM)

This feature gives LLM administrators greater control when monitoring LLM applications. The ability to reset statistics can give LLM administrators additional flexibility when monitoring RMM receiver and transmitter statistics.

- Updated and expanded documentation

Documentation improvements have been made to the following sections:

- Developing applications
- Coordination manager

- Extended platform support

This update extends platform coverage to include:

- Red Hat Enterprise Linux 6
- LLM-CM server on AIX 5.3 and AIX 6.1

For details, see the [Specified operating environment](#) section.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Section 508 of the US Rehabilitation Act

WebSphere MQ Low Latency Messaging is capable as of April 5, 2011, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it.

Product positioning

WebSphere MQ Low Latency Messaging is positioned as a member of the MQ family of messaging transports, which provides a messaging backbone with a range of capabilities for the enterprise, both inter- and intra-company. The objective of the MQ family is to offer a comprehensive suite of seamless, interconnected transport protocols and quality-of-service levels.

WebSphere MQ Low Latency Messaging is highly optimized for the high-volume, low-latency requirements of financial market firms. Applications include the high-speed delivery of market, transactional, reference, and event data in or between front-, middle-, and back-office. With RCMS with single acknowledgement and

multiple multicast reliability, WebSphere MQ Low Latency Messaging offers a store and forward form of assured delivery, in contrast to the queuing style of assured delivery offered by WebSphere MQ.

In addition to financial markets, WebSphere MQ Low Latency Messaging is potentially suitable for military, transportation, chemical and petroleum processing, multimedia, or other industries that require high-volume, low-latency reliable message delivery.

WebSphere MQ Low Latency Messaging is particularly suitable for financial markets use cases, including:

- **Efficient market data distribution:** Enables low-latency communication to downstream applications that perform functions like trading, analytics, and compliance.
- **Congestion management:** Detects and actively manages congestion, offering memory buffer usage limits with notification; limits on data retransmission with notification; transmission rate limitation; and slow consumer policies.
- **Reliable trade execution:** Delivers highly reliable communication with persistence to the downstream execution infrastructure without performance degradation, with high availability for complex execution routing.
- **Real-time market analytics:** Offers robust message filtering to deliver relevant information to downstream applications that perform analytics and compliance.

WebSphere MQ LLM can be used as a key element of low-latency solutions for financial firms or within other industries that require reliable, high-speed data delivery, such as telecommunications, manufacturing, aerospace, and defense. The software is also embedded in the WebSphere Front Office, a scalable, high-performance, low-latency market data delivery platform.

Program number

Program name	Program number
IBM WebSphere MQ Low Latency Messaging	5724-T21

Offering Information

Product information is available via the Offering Information website

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

Also, visit the Passport Advantage® website

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

Publications

No publications are shipped with this product.

Technical information

Specified operating environment

Hardware requirements

Minimum requirements are listed. The actual requirements for your system may be greater, depending on the complexity of your specific environment, latency, throughput, and data requirements.

Additional hardware that may be required based on capacity requirements:

- CPUs (processors or multicore processors)
- Memory
- Servers (for added capacity or redundancy)
- Disks

Gigabit network adapters and routers are required for high-speed transport. Native InfiniBand (on Linux only) and IP over InfiniBand are also supported.

Processor requirements

- Processor
 - AMD or Intel® x86 architecture 32- or 64-bit
 - Solaris UltraSPARC
 - PowerPC® with Linux
 - PowerPC with AIX
 - Intel Itanium® IA64 processor with HP-UX
 - IBM System z9® or z10™ with Linux
- One processor, with a minimum speed of 2.0 GHz (dual processor or dual core recommended)
- Minimum 300 MB free disk space required for installation
- One or more of the following network adapters:
 - For Ethernet, one or ten GbE adapters
 - For InfiniBand, host channel adapters supported by OFED-1.3, or later
- For the Low Latency Message Store feature, enough disk space to hold the messages that are to be stored, and a disk system fast enough to support the rate of messages to be stored

Software requirements

Operating system

For RMM and RUM over Ethernet, RCMS, and IPv6, one of the following operating system platforms:

- Red Hat Enterprise Linux 4 (x86 or x86-64)
- Red Hat Enterprise Linux 5 (x86, x86-64, ppc64, z9™, or z10)¹
- Red Hat Enterprise Linux 6 (x86 or x86-64)
- Red Hat Enterprise MRG 1.1 (x86 or x86-64)
- SUSE Enterprise Linux 10 (x86, x86-64, z9, or z10)¹
- SUSE Enterprise Linux 11 (x86, x86-64, or ppc64)
- SUSE Linux Enterprise Real Time Extension 10 (x86 or x86-64)
- Microsoft Windows 7 (x86 or x64)
- Microsoft Windows XP SP2, or later (x86 or x64)
- Microsoft Windows Server 2003 SP1, or later (x86 or x64)
- Microsoft Windows Server 2003 R2 (x86 or x64)
- Microsoft Windows Vista (x86 or x64)
- Microsoft Windows Server 2008 (x86 or x64)
- Microsoft Windows Server 2008 R2 (x86 or x64)
- Solaris 10 UltraSPARC (32- or 64-bit)
- Solaris 10 (x86 or x86-64)
- AIX 5.3 (64-bit)
- AIX 6.1 (64-bit)

- HP-UX 11i V2²

¹ RCMS is not supported on Linux on System z®.

² RCMS and IPV6 are not supported on HP-UX.

For the Low Latency Coordination Manager and Low Latency Message Store, one of the following operating system platforms:

- Red Hat Enterprise Linux 4 (x86 or x86-64)
- Red Hat Enterprise Linux 5 (x86, x86-64, or ppc64)
- Red Hat Enterprise Linux 6 (x86 or x86-64)
- Red Hat Enterprise MRG 1.1 (x86 or x86-64)
- SUSE Enterprise Linux 10 (x86 or x86-64)
- SUSE Enterprise Linux 11 (x86, x86-64, or ppc64)
- SUSE Linux Enterprise Real Time Extension 10 (x86 or x86-64)
- Microsoft Windows XP SP2, or later (x86 or x64)
- Microsoft Windows 7 (x86 or x64)
- Microsoft Windows Server 2003 SP1, or later (x86 or x64)
- Microsoft Windows Vista (x86 or x64)
- Microsoft Windows Server 2008 (x86 or x64)
- Microsoft Windows Server 2008 R2 (x86 or x64)
- Solaris 10 UltraSPARC (32- or 64-bit)
- Solaris 10 (x86 or x86-64)
- AIX 5.3 (64-bit)
- AIX 6.1 (64-bit)

For RMM and RUM shared memory transport, one of the following operating system platforms:

- Red Hat Enterprise Linux 4 (x86 or x86-64)
- Red Hat Enterprise Linux 5 (x86, x86-64, or ppc64)
- Red Hat Enterprise MRG 1.1 (x86 or x86-64)
- SUSE Linux Enterprise 10 (x86 or x86-64)
- SUSE Linux Enterprise 11 (x86, x86-64, or ppc64)
- SUSE Linux Enterprise Real Time Extension 10 (x86 or x86-64)
- AIX 5.3 (64 bit)
- AIX 6.1 (64 bit)
- Microsoft Windows XP SP2, or later (x86 or x64)
- Microsoft Windows 7 (x86 or x64)
- Microsoft Windows Server 2003 SP1, or later (x86 or x64)
- Microsoft Windows Vista (x86 or x64)
- Microsoft Windows Server 2008 (x86 or x64)
- Microsoft Windows Server 2008 R2 (x86 or x64)
- Solaris 10 UltraSPARC (32- or 64-bit)

Runtime requirements

- C and C++ applications -- Windows platform: Microsoft Visual C++ 2005 SP1 Redistributable Package (shipped)
- Java™ applications
 - Linux on x86 platform: IBM JRE 5.0 (shipped) or Sun Java SE 5 or 6
 - Linux on IBM system p or System z, or HP-UX: IBM JRE 5.0 (shipped)

- Solaris platform Sun Java SE 5 or 6
- AIX platform: IBM JRE 5.0 (shipped)
- HP-UX IBM JRE 5.0 (shipped)
- Windows platform
 - IBM JRE 5.0 (shipped) or Sun Java SE 5 or 6
 - Microsoft Visual C++ 2005 SP1 Redistributable Package (shipped)
- .NET applications -- Windows platform: Microsoft Visual C++ 2005 SP1 Redistributable Package (shipped), with a prerequisite of Microsoft .NET Framework 2.0

InfiniBand runtime requirements

- OpenFabrics Enterprise Distribution (OFED) V1.3, or later

Development system software requirements

- C and C++ applications
 - Windows platform -- Microsoft Visual Studio 8.0 or 9.0 (32- or 64-bit), on one of the following:
 - Microsoft Windows XP (SP2+)
 - Microsoft Windows 7
 - Windows Server 2003 (SP1+)
 - Microsoft Windows Vista
 - Microsoft Windows 2008
 - Linux platform (one of the following):
 - GCC 3.4.3 or GCC 4.1.0 (32- or 64-bit) on Red Hat Enterprise Linux Advanced Server 4
 - GCC 4.1.2 (32- or 64-bit) on Red Hat Enterprise Linux Server 5
 - GCC 4.1.0 (32- or 64-bit) on SUSE Linux Enterprise Server 10
 - GCC 4.3.2 (32- or 64-bit) on SUSE Linux Enterprise Server 11
 - GCC 4.1.2 (64-bit) on SUSE Linux Enterprise Server 10 on IBM System p® or System z
 - GCC 4.1.2 (64-bit) on Red Hat Enterprise Linux Server 5 on IBM System p or System z
 - Solaris platform: Sun Studio 11 (32- or 64-bit) on Solaris 10 (SPARC)
 - Solaris platform: Sun Studio 11 (32- or 64-bit) on Solaris 10 (x86 or x86-64)
 - HP/UX platform: HP C/aC++ for HP Integrity servers (32- or 64-bit) on HP-UX 11i v2
- Java applications
 - Linux platform: IBM SDK for Java 5.0 (shipped) or Sun JDK 5 or 6
 - Windows platform: IBM SDK for Java 5.0 (shipped) or Sun JDK 5 or 6
 - Solaris platform: Sun JDK 5 or 6
 - HP/UX platform: IBM SDK for Java 5.0 (shipped)
 - AIX platform: IBM SDK for Java 5.0 (shipped)
- .NET applications -- Windows platform: Microsoft Visual Studio 8.0 or 9.0 and Microsoft .NET Framework 2.0
- AIX XLC C/C++ V10.1 on AIX 5.3 or AIX 6.1

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme 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.

Limitations

For additional information, refer to [Usage restrictions](#) in the Terms and conditions section, or to the License Information document that is available on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

Performance considerations

WebSphere MQ Low Latency Messaging is a scalable product. Performance depends on the complexity of the specific environment, volume of data traffic, and the data object size. The stated performance numbers are based on measurements using standard IBM benchmarks in a controlled environment. The actual throughput that any application will experience may vary, depending upon considerations such as message size, transmission rate, hardware platform, and network configuration. Therefore, no assurance can be given that an individual application will achieve the throughput or latency stated here.

Customers should conduct their own testing. For more detailed performance information, consult your IBM representative.

Planning information

Customer responsibilities

IBM Services are available to assist in the installation, design, implementation, and maintenance of WebSphere MQ Low Latency Messaging. The following skills are required for implementation of WebSphere MQ Low Latency Messaging:

- Networking
- C, Java, or .NET programming
- Thorough understanding of WebSphere MQ LLM

Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage and Passport Advantage Express. Product upgrades and technical support are provided by the Software Subscription and Support 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 Subscription and Support with each program license acquired. The initial period of Software Subscription and Support can be extended by the purchase of a renewal option, if available.

Packaging

WebSphere MQ Low Latency Messaging is distributed as a single package containing:

- Quick Start CD, which includes a readme file, quick start guide, and installation and configuration guide
- IBM program package on CD media
- Program Directory
- Proof of Entitlement
- IBM International Program License Agreement (IPLA)
- License Information

Security, auditability, and control

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 extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

Ordering information

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

Product group: WebSphere

Product Identifier	Description	(PID)
WebSphere MQ Low Latency Messaging		5724-T21

Product category: Application Integration Middleware Other

Charge metric

WebSphere MQ Low Latency Messaging:

Program name	PID number	Charge unit description
NEW:		
IBM WebSphere MQ Low Latency Messaging	5724-T21	Per Virtual Server
IBM WebSphere MQ Low Latency Message Store	5724-T21	Per Virtual Server
IBM WebSphere MQ Low Latency Messaging Non-Production Environment	5724-T21	Per Virtual Server
IBM WebSphere MQ Low Latency Message Store Non-Production Environment	5724-T21	Per Virtual Server
IBM WebSphere MQ Low Latency Messaging for zEnterprise BladeCenter® Extension and Linux on System z	5724-T21	Per Virtual Server
IBM WebSphere MQ Low Latency Messaging for zEnterprise BladeCenter Extension and Linux on System z Non-Production Environment	5724-T21	Per Virtual Server

Charge metrics definitions

Per Virtual Server

Virtual Server is a unit of measure by which the program can be licensed. A server is a physical computer that is comprised of processing units, memory, and input/output capabilities and that executes requested procedures, commands, or applications for one or more users or client devices. Where racks, blade enclosures, or other similar equipment is being employed, each separable physical device (for example, a blade or a rack-mounted device) that has the required components is considered itself a separate server. A virtual server is either a virtual computer created by partitioning the resources available to a physical server or an unpartitioned physical server. Licensee must obtain Virtual Server entitlements for each virtual server which is made available to the program, regardless of the number of processor cores in the virtual server or the number of copies of the program on the virtual server.

Passport Advantage

Program name/Description	Part number
IBM WebSphere MQ Low Latency Messaging (LLM)	
IBM WebSphere MQ LLM per Virtual Server Lic + SW S&S 12 Mo	D0IKLLL
IBM WebSphere MQ LLM per Virtual Server Annual SW S&S Rnw1	E0BQJLL
IBM WebSphere MQ LLM per Virtual Server SW S&S Reinstate 12Mo	D0IKMLL
IBM WebSphere MQ Low Latency Message Store	
IBM WebSphere MQ LL Message Store per Virtual Server Lic + SW S&S 12 Mo	D0IKELL
IBM WebSphere MQ LL Message Store per Virtual Server Annual SW S&S Rnw1	E0BQGLL
IBM WebSphere MQ LL Message Store per Virtual Server SW S&S Reinstate 12 Mo	D0IKFLL
IBM WebSphere MQ Low Latency Messaging (LLM) Non-Production Environment	
IBM WebSphere MQ LLM Non Prod Env per Virtual Server Lic + SW S&S 12 Mo	D0IK7LL
IBM WebSphere MQ LLM Non Prod Env Virtual Server Lic Annual SW S&S Rnw1	E0BQELL
IBM WebSphere MQ LLM Non Prod Env per Virtual Server SW S&S Reinstate 12Mo	D0IK8LL
IBM WebSphere MQ Low Latency Message Store Non-Production Environment	
IBM WebSphere MQ LL Message Store Non Prod Env per Virtual Server Lic + SW S&S 12 Mo	D0IL0LL
IBM WebSphere MQ LL Message Store Non-Prod Env per Virtual Server	E0BQQLL

Annual SW S&S Rnw1

IBM WebSphere MQ LL Message Store Non-Prod Env
per Virtual Server
SW S&S Reinstate 12 Mo D0IL1LL

IBM WebSphere MQ LLM for zEnterprise BladeCenter Extension
and Linux on System z

IBM WebSphere MQ LLM
for zEnterprise BladeCenter Extension
and Linux on System z
per Virtual Server
Lic + SW S&S 12 Mo D0IKPLL

IBM WebSphere MQ LLM
for zEnterprise BladeCenter Extension
and Linux on System z
per Virtual Server
Annual SW S&S Rnw1 E0BQKLL

IBM WebSphere MQ LLM
for zEnterprise BladeCenter Extension
and Linux on System z
per Virtual Server
SW S&S Reinstate 12Mo D0IKQLL

IBM WebSphere MQ LLM for zEnterprise BladeCenter Extension
and Linux on System z Non-Production Environment

IBM WebSphere MQ LLM
Non-Prod Env
for zEnterprise BladeCenter Extension
and Linux on System z
per Virtual Server
Lic + SW S&S 12 Mo D0IKALL

IBM WebSphere MQ LLM
Non-Prod Env
for zEnterprise BladeCenter Extension
and Linux on System z
per Virtual Server
Annual SW S&S Rnw1 E0BQFLL

IBM WebSphere MQ LLM Linux on Syst z
Non-Prod Env
for zEnterprise BladeCenter Extension
and Linux on System z
per Virtual Server
SW S&S Reinstate 12Mo D0IKBLL

Note: WebSphere MQ LLM Client functionality will be rolled into the base MQ LLM offering and will no longer be separately orderable.

Cross-platform products

Cross-platform product for use on System z

Order the part numbers that follow when the product is used for either the development of code that will be deployed on System z servers or when the product will be communicating or transferring data between a distributed server and a System z server. Otherwise, order from the other set of part numbers in this announcement. This set of part numbers provides the identical supply and authorization as the other set in this announcement

Cross-platform product for use on System z IFL engines

Order the part numbers that follow when the product is intended to run on the Linux operating system on System z IFL engines. If the product is not intended to run on

the Linux operating system on System z IFL engines, order from the other set of part numbers in this announcement. This set of part numbers provides the identical supply and authorization as the other set in this announcement.

Passport Advantage trade-up

Below is a list of precursor products for which you must have already acquired a license, in order to be eligible to acquire equivalent licenses using the trade-up part numbers.

Precursor product	Trade-up product	Trade-up part number
Qualified competitor license	MQ Low Latency Msg per Virtual Server Lic + SW Subscr and Spt 12 mos	D0IKNLL
Qualified competitor license	MQ Low Latency Msg Non-Prod Virtual Server Lic + SW Subscr and Spt 12 mos	D0IK9LL
Qualified competitor license	MQ Low Latency Msg for zEnterprise BladeCenter Extension and Linux on System z per Virtual Server Lic + SW Subscr and Spt 12 mos	D0IKRLL
Qualified competitor license	MQ Low Latency Msg for zEnterprise BladeCenter Extension and Linux on System z Non-Prod Virtual Server Lic + SW Subscr and Spt 12 mos	D0IKCLL
Qualified competitor license	MQ Low Latency Msg Store per Virtual Server Lic + SW Subscr and Spt 12 mos	D0IKGLL
Qualified competitor license	MQ Low Latency Msg Store Non-Prod Virtual Server Lic + SW Subscr and Spt 12 mos	D0IL2LL

Consult your IBM representative if you have any questions.

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.

The following media pack applies for all editions of IBM WebSphere MQ Low Latency Messaging V2.6:

Media pack description	Part number
IBM WebSphere MQ Low Latency Messaging V2.6 Multiplatform for English Media Pack	BA10TNA

Terms and conditions

The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM

International Program License Agreement, IBM International Passport Advantage Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

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

Licensing

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use. Part number products only, offered outside of Passport Advantage, where applicable, are license only and do not include Software Maintenance.

This software license includes Software Subscription and Support (also referred to as Software Maintenance).

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

License Information form number

- WebSphere MQ Low Latency Messaging: L-AVIL-8DPS4X

The program's License Information will be available for review on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

Limited warranty applies

Yes

Limited warranty

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

Program technical support

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