

IBM MQ 9.2 and IBM MQ on Cloud continue to simplify the design, deployment, and management of secure, resilient, and robust messaging

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Overview

IBM[®] MQ for Multiplatforms (IBM MQ) is messaging middleware software that simplifies and accelerates the integration of diverse applications and business data across multiple platforms. It uses message queues to facilitate the exchanges of information and offers a single messaging solution for cloud, mobile, Internet of Things (IoT), and on-premises environments. By connecting virtually everything from a simple pair of applications to the most complex business environments, MQ helps organizations improve business responsiveness, control costs, reduce risk, and gain real-time insight from mobile, IoT and sensor data.

MQ 9.2 is the follow-on long-term support release (LTSR) to MQ V9.1. With the LTSR release, fix packs will only provide fixes that include no new functions.

MQ 9.2 also is the follow-on continuous delivery release (CD) to MQ V9.1.5, which is the final CD release for the MQ V9.1 LTSR. MQ 9.2 includes the features that were delivered in the CD releases of MQ versions 9.1.1 to 9.1.5, along with some minor enhancements. The capabilities being incorporated into MQ 9.2 from previous MQ 9.1.x CD releases and those that are new in MQ 9.2 are detailed in the Description section. For more information, see the [IBM MQ FAQ for Long Term Support and Continuous Delivery releases](#) website.

MQ 9.2 includes enhancements in the following areas:

- Simplified, smart management
- Augmented security
- Expanded client application options
- Easier adoption of containers
- More flexible design and deployment

IBM MQ Appliance 9.2 includes many of the capabilities of MQ 9.2 together with additional enhancements also detailed in the [Description section](#).

IBM MQ on Cloud has also been augmented with new capabilities in MQ 9.2.

Key requirements

- MQ 9.2 runs on a variety of operating systems and container runtime environments.

- For more details, see the [Software requirements](#) section.

Planned availability date

July 23, 2020: Electronic download

July 30, 2020: Media pack

See the [Availability of national languages](#) section for national language availability.

Description

MQ 9.2 includes enhancements that were introduced in CD releases as well as new function, first available in MQ 9.2. Below are some details of what MQ 9.2 contains. Capabilities that are only available in the IBM MQ Advanced offering are identified.

Simplified, smart management

- Capabilities in MQ 9.2 that first appeared in MQ 9.1.x CD releases:
 - Automatic balancing of a pool of connected applications across a set of available queue managers:
 - Uniform clusters are a new and powerful way for MQ users to ensure that an application workload connects and flows through clusters of MQ queue managers and to have that workload balanced across the queue managers without external actions being taken. Uniform clusters automatically rebalance your applications across all available queue managers when you add more applications or queue managers or need to take down a queue manager for maintenance.
 - A single set of configuration files can be defined once and used to deploy multiple queue managers into the uniform cluster, ensuring the configuration is consistent across them.
 - With support for applications written in Microsoft[™].NET, XMS .NET, JMS, and C, uniform clusters are a powerful option for use in a range of different environments.
 - Additional information is logged to help you understand how applications are being moved between queue managers to help monitor and identify any anomalies.
 - Increased level of control for administrators to determine how MQ uses available storage:
 - It is now possible to set limits on the amount of storage a queue can use. This makes it easier to make efficient use of storage without having to worry about contention over space between queues. In addition, queue files of more than 2 TB are supported.
 - Further extensions to the REST API for administration:
 - The next generation of REST API for administration has been added, providing a completely new JSON-based MQSC administration model
 - Updated web user interface for improved user experience

Augmented Security

- Capabilities in MQ 9.2 that first appeared in MQ 9.1.x CD releases:
 - Transport Layer Security (TLS) 1.3 support:
 - To ensure that MQ can offer a secure environment, MQ encryption and security standards continue to evolve. MQ 9.2 supports TLS 1.3 for a range of connections to ensure that additional options for creating secure environments are available. TLS 1.3 can be used for connections between queue managers and for C, C++, Java[™], and JMS MQ client applications.

- Support for TLS 1.3 for Java and JMS client applications is provided when using Java 11.
- Provision for a list of acceptable TLS CipherSpecs:
 - Securing critical business infrastructure is of paramount importance. Because new risks arise continually, security provisions should remove previously used security options that are no longer safe and provide stronger security choices for an environment.
 - A security updating function enables organizations to immediately mitigate against new vulnerabilities. Weak CipherSpecs can be removed from the list of allowable CipherSpecs without waiting for a security fix in a fix pack that is shipped by IBM.
- Dynamic TLS CipherSpec negotiation:
 - When connecting multiple secure environments, the task of selecting and defining which TLS CipherSpec to set on each channel can be difficult and time consuming. With MQ 9.2, a strong CipherSpec can be negotiated dynamically from the set of CipherSpecs available for use on an MQ channel.
 - This TLS selection process helps avoid situations in which the CipherSpec selected might have been deprecated and require a manual update. It also helps reduce administrative overhead in support of stronger security. This TLS selection process enables automatic migration to stronger CipherSpecs as they become supported without any configuration changes.
- Inclusion of the MQ Internet Pass-Thru (MQIPT) function:
 - Provided originally in an MQ Category 3 SupportPac, MQIPT enables secure connections over the internet to reach MQ, even through a firewall.
 - The MQIPT function is now a part of the standard MQ offering. With the growth in the number of connections that stretch beyond the enterprise, this helps ensure that the function can continue to be used and be supported in the same way as all other functions. Organizations with MQ entitlement across any platform can download this component from the [IBM Support Fix Central](#) web page.
 - There are additional options for the way MQIPT passwords are stored.
- Capabilities that first appear in MQ 9.2:
 - TLS support on the IPT Command Port
 - Authentication of actions on the IPT Command Port
 - Additional security options for the MQ Bridge for Salesforce, including options for how passwords are stored
- Capabilities that first appear in MQ Advanced 9.2:
 - Additional security options for the MQ Bridge for blockchain, including options for how passwords are stored
 - MQ Advanced Message Security (AMS) for Java keystore password protection, including options for how passwords are stored
 - Public-Key Cryptography Standard (PKCS) #11 support in MQ AMS for Java and Java Message Service (JMS) clients, including using HSMs, with IBM and Oracle Java Runtime Environments (JRE) on Linux^(R) and Microsoft WindowsTM platforms
 - Support for Hardware Security Modules (HSM) for IPT Admin. Previously, IPT was able to access digital certificates stored in cryptographic hardware that supported the PKCS #11 interface for communication purposes. It is now also possible for administration of IPT to be carried out via connections secured with certificates stored in cryptographic hardware of this type.

Expanded client application options

- Capabilities in MQ 9.2 that first appeared in MQ 9.1.x CD releases:
 - Support for running applications on Microsoft.NET Core:
 - Many applications use Microsoft.NET as a framework for running applications on Microsoft Windows platforms. The Microsoft.NET Core is an increasingly popular choice for organizations that use the Microsoft.NET framework.

- MQ 9.2 supports the Microsoft.NET Core framework as part of MQ 9.2 for Microsoft Windows and Linux deployments.
- MQ 9.2 enables Microsoft.NET Core application development on Apple macOS. Once developed, these applications can be run on Microsoft Windows or Linux environments.
- Simplified creation of Microsoft.NET Core applications with updated Microsoft.NET Core samples and project template
- Enhanced integration with IBM WebSphere^(R) Liberty:
 - MQ V9.1 LTSR enabled message delivery to message-driven beans that run in IBM WebSphere Application Server to be paused in the event of a corrupted message being detected. MQ 9.2 LTSR provides the same feature for environments that use WebSphere Liberty instead of WebSphere Application Server.
 - MQ 9.2 supports XA transactions in JMS applications running in WebSphere Liberty profile to connect to one of a set of queue managers. Multiple transaction connections can be workload-balanced across multiple queue managers, removing the requirement for a single queue manager to be always available. This increases the application's ability to scale and be more highly available while maintaining the global transaction integrity and assured delivery of MQ.¹
- Augmented REST messaging:
 - Lightweight and simple applications can use a subset of MQ functions quickly and easily without requiring an MQ client library to be bound with the applications.
 - Along with the ability through REST to send, receive, and browse messages, you can now publish messages with REST.
 - REST messaging performance has been enhanced with connection pools: The MQ messaging REST API can cache and reuse connections to queue managers, which can increase messaging throughput and reduce the impact on messaging resources.
- Support for Java 11 clients:
 - AdoptOpenJDK with the Eclipse OpenJ9 runtime and Oracle Java 11 are supported Java 11 runtimes for MQ client applications.
- Enhancements to the MQ Bridge to Salesforce:
 - MQ V9.1 LTSR introduced the MQ Bridge to Salesforce that enables applications that use MQ to exchange data with Salesforce. MQ 9.2 includes diagnostics that make it easier to use MQ Bridge to Salesforce in production scenarios.

¹ The minimum version of WebSphere Liberty required to enable this capability is version 18.0.0.2.

- Capabilities in MQ Advanced 9.2 that first appeared in MQ 9.1.x CD releases:
 - Additional MQ MFT features and enhancements:
 - Among the additional capabilities provided by MQ Advanced is the ability to move file data over the MQ network, benefiting from the reliability and security of MQ, while enabling data held in files to start or end in an MQ-enabled application.
 - High availability for MQ MFT agents. With this enhancement, there can be one or more instances of an MFT agent, and if there is a failure in the active agent during transfer, another instance of the agent starts up and continues the transfer. This enhances the ability to complete workloads even in instances of hardware, network, or programmatic issues.
 - The MFT Protocol Bridge now supports connectivity to an FTP server running on IBM i. This enables MQ MFT to exchange files with the integrated file system on IBM i.
 - An **fteClearMonitorHistory** command simplifies the task of reprocessing and reinitiating a transfer by using a monitor. Resource monitors provide performance improvements when monitoring deep queues or directories with large numbers of files.

- The MQ MFT logger enables users to log data about use of MQ MFT to an offline store for additional review or auditing. This can make transfer logs readable by other users. It is easier than it was in MQ 9.1 for additional sources to read these logs and consume the data for analysis.
- Support for REST API calls for MQ MFT administration:
 - A REST API enables file data to be transferred over MQ with a new **Create file transfer** command. In addition, a set of REST API commands are provided to manage the resource monitoring activities. These commands enable you to create a new monitor that can watch the trigger conditions and start a transfer, clear monitor history, delete monitors, and list monitors.
 - MQ MFT REST functions support the MQ web user role to make administration easier.
 - When invoked through a REST API, customized tooling can be created to enable a more dynamic and responsive environment to move file data through MQ reliably and securely.
- Enhancements to the MQ Bridge to blockchain:
 - MQ Bridge to blockchain enables applications that use MQ to read and update data on blockchain networks. MQ Bridge to blockchain includes diagnostics that help make it easier to use in production scenarios and includes a new API for communication between MQ and blockchain.
- Capabilities that first appear in MQ 9.2:
 - Advanced Message Queuing Protocol (AMQP) shared subscription enhancement:
 - Support has been added to AMQP channels for consuming data from subscriptions and shared-subscriptions; for example, when using the popular QPid JMS client library

Easier adoption of containers

- Capabilities in MQ Advanced 9.2 that first appeared in MQ 9.1.x CD releases:
 - Improved deployment options for high availability in the IBM Cloud Pak^(R) container image for MQ Advanced
 - Improved resiliency in Kubernetes environments, which can be achieved in the following ways:
 - Configuring a multi-instance queue manager using active and standby pods
 - Configuring a single resilient queue manger, with Kubernetes monitoring the queue manager nodes for availability
 - Red Hat^(R) OpenShift^(R) support for the MQ Advanced certified container image:
 - Direct support for Red Hat OpenShift without requiring IBM Cloud^(R) Private as a prerequisite
 - Reduced need for additional user permissions when deploying the MQ Advanced certified container within Red Hat OpenShift environments, making it easier to include MQ within more tightly controlled environments
- Capabilities that first appear in MQ Advanced 9.2:
 - MQ zip images for development and production containers:
 - MQ server is now packaged as a zip file to support clients building their own container images for Linux x86-64 environments. The zip file enables MQ container images to be built that can run under the OpenShift **anyuid** security context constraints (SCC) without requiring privilege escalation. The zip images are available as CD release updates only, with no long-term support option, and can only be used for building container images.

More flexible design and deployment

- Capabilities in MQ 9.2 that first appeared in MQ 9.1.x CD:
 - Improved queue manager restart and client reconnect times:

- Improvements in core queue manager functions enable faster restarts for queue managers with large numbers of messages in existing queues, and at the same time enable reconnects for an organization's applications up to five times faster than was previously possible. With faster queue manager restart times, overall MQ availability is increased.
- Capabilities in MQ Advanced 9.2 that first appeared in MQ 9.1.x CD:
 - Asynchronous disaster recovery between high availability three-way Replication Data Queue Manager (RDQM) configurations:
 - RDQM enables the creation of a three-way highly available queue manager without the need for external storage.
 - Asynchronous disaster recovery between two high-availability RDQM configurations enables a backup site to take over and remain redundant in the event of a failure.
 - Replication of user application data in RDQM configurations
 - Enhancements to help identify installs of MQ Advanced High Availability Replica:
 - Deployments of RDQM can be licensed for high availability in which one node is licensed for MQ Advanced while the other two nodes are licensed for MQ Advanced High Availability Replica. The MQ installation remains the same.
 - It can be difficult when using RDQM to ensure that the correct license entitlement is allocated and tracked by the IBM License Management Tool (ILMT). This problem is mitigated in MQ 9.2 by the ability, when installing and configuring MQ Advanced for RDQM, to nominate individual installs as either MQ Advanced or MQ Advanced High Availability Replica. This is reported with ILMT to ensure correct license identification.
 - Use of IBM Aspera[®] fasp.io streaming for MQ messages:
 - Users have the option to deploy an Aspera fasp.io Gateway to enable MQ messages (system, application, and MFT messages) to pass through an Aspera fasp.io Gateway to reach a destination by using the Aspera Fast Adaptive and Secure Protocol (FASP[®]) protocol instead of TCP/IP. For poor-quality networks or high latencies, this can enable messages to move between destinations more rapidly than otherwise would be the case.
- Capabilities that first appear in MQ 9.2:
 - Support for Linux upgrade in place, which streamlines the process of upgrading from MQ 9.2, eliminating steps that were required previously
 - Support for RDQM on RedHat Enterprise Linux (RHEL) 8

MQ Appliance 9.2

MQ Appliance combines the scalability and security of MQ with the simplicity, convenience, and low total cost of ownership of a dedicated feature-rich appliance. MQ Appliance 9.2 firmware includes many of the capabilities of MQ 9.2. For more information, see the [MQ License information](#) website. In addition, the MQ Appliance 9.2 firmware includes the following enhancements:

Capabilities in MQ 9.2 that first appeared in MQ 9.1.x CD:

- Integration of MQ Appliance error logs with MQ log targets:
 - MQ Appliance 9.1 LTSR enables system logs to be streamed to external tools for centralized monitoring and timely insight.
 - MQ Appliance 9.2 firmware integrates the MQ queue manager error logs with system log targets to provide a consolidated logging mechanism for MQ and system events on the platform. This integration enables MQ queue manager error log information to be streamed to external monitoring tools.
 - The MQ Appliance 9.2 firmware also includes support for MQ queue manager error logs to be output in JSON format, consistent with other deployment platforms.
 - There is now the option to generate error reports to persistent RAID storage.

- It is now possible to format MQ trace using the **dspmqrtrc** command.
- High availability (HA) and disaster recovery status notifications:
 - A feature that clients like best about the MQ Appliance is the seamless support it provides for HA and disaster recovery (DR). In the MQ Appliance V9.2 firmware, HA and DR status notifications are written to the MQ system log. The notifications can be streamed to third-party monitoring tools using a system log target for timely detection and response.
 - If replication between appliances in an HA or DR configuration is interrupted, then the date and time when data synchronization was lost is reported.
- Enhancements to the MQ Appliance audit log:
 - MQ administrative control commands are recorded in the appliance audit log when used in the command-line interface and the IBM MQ Console.
 - The appliance audit log includes entries for system changes and MQ control commands in a consistent location, which can be streamed to external tools for monitoring and security compliance.
- Enhancement to the **test tcp-connection** command:
 - The **test tcp-connection** command on the MQ Appliance enables an administrator to verify network connectivity to a remote server by specifying a remote port and the remote server's hostname or IP address. The command now supports setting a local source IP address, which enables verification of network connectivity for secondary IP addresses, including HA floating IP addresses.
- Enhancement to reset the appliance Secure Shell Host (SSH) key

Capabilities that first appear in MQ 9.2 include:

- An updated web user interface for an improved user experience.
- Transportation Layer Security (TLS) 1.3 support for remote management interfaces, including the web management interface and REST.
- The appliance certificate monitor can be configured to output warnings to the log when TLS certificates have either expired or will expire soon. In the MQ Appliance 9.2 firmware, the certificate monitor is enhanced to also check the certificates in queue manager key repositories.
- The **ping** and **traceroute** commands on the MQ Appliance enable an administrator to verify and trace network connectivity to a remote server. These two commands now support setting a local source IP address, which enables verification of network connectivity for secondary IP addresses, including HA floating IP addresses.
- MQ error log messages output by system log targets now append additional insert information associated with each message, although you can disable this behavior, if required.

MQ Appliance 9.2 firmware is available for the following appliances:

- MQ Appliance M2001
- MQ Appliance M2002

MQ on Cloud:

- MQ is available as a managed service on IBM Cloud or Amazon Web Services (AWS) and includes many of the capabilities of MQ 9.2. For feature details, see the [IBM MQ supported features](#) web page.

With the LTSR release, the fix packs only provide fixes that include no new function.

Functional deprecations and removals

MQ deprecations and removals include the following:

- Support for the Oracle Solaris operating system for all MQ components, including server and clients, is removed.

- Support for Microsoft Active X is removed. IBM MQ classes for .NET are the recommended replacement technology. For Microsoft.NET development information, see the [developing .NET applications](#) web page.
- Support for connecting to MQ using the MQ Multicast protocol is deprecated. No further enhancements are planned.
- Support for all MQ MFT environment variables that begin with "FTE" has been deprecated.
 - IBM recommends that organizations substitute for "FTE" environment variables, using those that begin with "BFG."
 - Examples of deprecated environment variable substitutions:
 - For FTE_ANT_HOME, substitute BFG_ANT_HOME
 - For FTE_CLASSPATH, substitute BFG_CLASSPATH
 - For FTE_JVM_PROPERTIES, substitute BFG_JVM_PROPERTIES
 - For FTE_JAVA_HOME, substitute BFG_JAVA_HOM
 - Support for **-credentialsFile** parameter of **fteObfuscate** command has been deprecated. Clients are recommended to use **-f** parameter instead.
- MQIPT SupportPac MS81 is superseded by the MQIPT capability delivered with MQ 9.2. SupportPac MS81 remains available for use with older releases of MQ.
- On the MQ Appliance, the log target option to suppress identical events for a defined duration is deprecated.
- On the MQ Appliance, the log target type syslog-ng is removed.

Accessibility by people with disabilities

Accessibility Compliance Reports (previously known as a VPAT) containing details on accessibility compliance to standards, including the Worldwide Consortium Web Content Accessibility Guidelines, European Standard EN 301 349, and US Section 508, can be found on the [IBM Accessibility Conformance Report Request](#) website.

Statement of general direction

IBM intends to deliver the following new capability and deprecation within a future release:

- Expanded MQ platform support for message-level encryption and decryption on message channels when exchanging messages between AMS and non-AMS-enabled queue managers, which currently is available in MQ for z/OS^(R) offerings.
- Cessation of support for Secure Sockets Layer v3 (SSLv3) and TLS 1.0 in MQ. This means the MQ 9.2 LTSR will be the last to provide SSLv3 and TLS 1.0 support. The plan is to remove support in a future CD release after that.

Statements by IBM regarding its plans, directions, and intent are subject to change or withdrawal without notice at the sole discretion of IBM. Information regarding potential future products is intended to outline general product direction and should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for IBM products remain at the sole discretion of IBM.

Reference information

For general product information about MQ for z/OS, see the [IBM MQ for z/OS](#) website.

For information about IBM MQ for z/OS Value Unit Edition 9.2, IBM MQ for z/OS Advanced 9.2, and IBM MQ for z/OS Advanced Value Unit Edition 9.2, see Software Announcement [220-239](#), dated July 21, 2020.

For information about IBM MQ for z/OS, 9.2, see Software Announcement [220-240](#), dated July 21, 2020.

Availability of national languages

Description	Availability date	Language
IBM MQ 9.2	July 23, 2020	English, Japanese, Spanish, Korean, French, Traditional Chinese, Simplified Chinese, Polish, German, Hungarian, Russian, Brazilian Portuguese, Italian, Czech
IBM MQ Appliance firmware 9.2	July 23, 2020	English

Translation information, if available, can be found at the [Translation Reports](#) website.

Program number

Program number	VRM	Program name
5724-H72	9.2.0	IBM MQ for Multiplatforms
5725-Z09	9.2.0	IBM MQ Appliance M2001
5737-H47	9.2.0	IBM MQ Appliance M2002
5737-H57	Cloud service	IBM MQ on Cloud

Program name	Program number	Machine type-model
IBM MQ Appliance M2001	5725-Z09	8436-55X
IBM MQ Appliance M2002	5737-H47	8441-54X

Publications

For MQ 9.2 documentation, see the [IBM MQ Version 9.2 product documentation](#) web page.

For MQ Appliance 9.2 documentation, see the [IBM MQ Appliance Version 9.2 product documentation](#) web page.

Services

Software Services

IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of the lab-based software services team and the business consulting, project management, and infrastructure expertise of the IBM Global Services team. Also, IBM extends the reach of IBM Software Services through IBM Business Partners to provide an extensive portfolio of capabilities. IBM provides 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, contact your Lab Services Sales or Delivery Leader.

Technical information

Specified operating environment

Software requirements

MQ 9.2 supports the following operating environments and programming languages:

Operating systems:

- Microsoft Windows
- Linux
- IBM AIX^(R)
- IBM i
- IBM z/OS

Programming languages:

- Java
- C/C++
- Microsoft.NET
- COBOL
- For further language binding options, see the [IBM Messaging GitHub community website](#).

For MQ product software requirements, see the [IBM MQ System Requirements website](#).

For MQ Appliance software requirements, see the [IBM MQ System requirements for IBM MQ Appliance website](#).

For container runtime environments that are supported by the prebuilt MQ Advanced certified container, see the [IBM MQ System Requirements website](#), select the product component or operating system for the MQ release being used, and view the "Containers" tab.

If you are building your own MQ containers, see the [IBM MQ System Requirements website](#), select the product component or operating system for the MQ release being used, and view the "Supported Software" tab in the "Cloud Platform" section to see supported runtime environments (Docker, CRI-O, and Containerd).

The IBM MQ resource adapter is compatible with application servers that support the Java Enterprise Edition 7.0 specification.

MQ Appliance supports the following equipment approvals and safety standards:

Compatibility

Queue managers and clients in MQ 9.2 interoperate with queue managers and clients from current and previous levels of MQ, IBM WebSphere MQ, or IBM MQSeries^(R).

- IBM MQ Explorer runs on the Linux x86-64 and Microsoft Windows platforms.
- MQ Explorer, which is supplied with MQ 9.2, can use a client connection to connect to any supported level of MQ or WebSphere MQ on any platform.
- MQ Managed File Transfer supports file transfers to and from server and client installations at any level of WebSphere MQ File Transfer Edition.

IBM Support

[IBM Support](#) is your gateway to technical support tools and resources that are designed to help you save time and simplify support. IBM Support can help you find answers to questions, download fixes, troubleshoot, submit and track problem cases, and build skills. Learn and stay informed about the transformation of IBM

Support, including new tools, new processes, and new capabilities, by going to the [IBM Support Insider](#).

Planning information

Packaging

MQ 9.2 is delivered through the internet as an electronic download. It is also available as a DVD media pack.

Ordering information

For ordering information, consult your IBM representative or IBM Business Partner, or go to the [Passport Advantage[®]](#) website.

This program is only available through Passport Advantage. It is not available as shrinkwrap.

These products may only be sold directly by IBM or by IBM Business Partners.

To locate IBM Business Partners in your geography, see the [Find a Business Partner](#) page.

Passport Advantage

IBM MQ

Program name/Description	Part number
IBM MQ Per Processor Value Unit (PVU) License + SW S&S 12 Months	D55V1LL
IBM MQ Per Processor Value Unit (PVU) Annual SW S&S Renewal	E0256LL
IBM MQ Per Processor Value Unit (PVU) SW S&S Reinstatement 12 Months	D55V2LL
IBM MQ High Availability Replica Processor Value Unit (PVU) License + SW Subscription & Support 12 Months	D0GGQLL
IBM MQ High Availability Replica Processor Value Unit (PVU) Annual SW Subscription & Support Renewal	E0ALULL
IBM MQ High Availability Replica Processor Value Unit (PVU) SW Subscription & Support Reinstatement 12 Months	D0GGSLL
IBM MQ High Availability Replica Virtual Processor Core Monthly License	D1VAILL
IBM MQ Virtual Processor Core Monthly License	D1RYSLL
IBM MQ Processor Value Unit (PVU) Monthly License	D1D2FLL
IBM MQ High Availability Replica Processor Value Unit (PVU) Monthly License	D193BLL

IBM MQ Advanced

Program name/Description	Part number
IBM MQ Advanced Per Processor Value Unit (PVU) License + SW S&S 12 Months	D1GZULL
IBM MQ Advanced Per Processor Value Unit (PVU) Annual SW S&S Renewal	E0LNALL
IBM MQ Advanced Per Processor Value Unit (PVU) SW S&S Reinstatement 12 Months	D1GZVLL
IBM MQ Advanced High Availability Replica Processor Value Unit (PVU) License + SW S&S 12 Months	D1H5GLL

Program name/Description	Part number
IBM MQ Advanced High Availability Replica Processor Value Unit (PVU) Annual SW S&S Renewal	E0LNDLL
IBM MQ Advanced High Availability Replica Processor Value Unit (PVU) SW S&S Reinstatement 12 Months	D1H5HLL
IBM MQ Advanced High Availability Replica Virtual Processor Core Monthly License	D1VAKLL
IBM MQ Advanced Virtual Processor Core Monthly License	D1RYWLL
IBM MQ Advanced High Availability Replica Processor Value Unit (PVU) Monthly License	D1H8VLL
IBM MQ Advanced Processor Value Unit (PVU) Monthly License	D1H8TLL

IBM MQ Telemetry

Program name/Description	Part number
IBM MQ Telemetry per Install Annual SW S&S Renewal	E0DRHLL

IBM MQ Advanced Message Security Component

Program name/Description	Part number
IBM MQ Advanced Message Security Component Per PVU Annual SW S&S Renewal	E0DS8LL
IBM MQ Advanced Message Security Component High Availability Replica 10 PVUs Annual SW S&S Renewal	E0DS0LL

IBM MQ Managed File Transfer Component

Program name/Description	Part number
IBM MQ Managed File Transfer Service Processor Value Unit (PVU) Annual SW S&S Renewal	E0LNELL
IBM MQ Managed File Transfer Service High Availability Replica 10 PVUs Annual SW S&S Renewal	E0LNKLL
IBM MQ File Transfer Agent Install Annual SW S&S Renewal	E0LNLLL

IBM MQ Advanced for Developers

Program name/Description	Part number
IBM MQ Advanced for Developers Install Annual SW Subscription & Support Renewal 12 Months	E0MZPLL
IBM MQ Advanced for Developers Install License + SW Subscription & Support 12 Months	D1PI3LL
IBM MQ Advanced for Developers Install SW Subscription & Support Reinstatement 12 Months	D1PI4LL
IBM MQ Advanced for Developers Install Monthly License	D1PI5LL

IBM MQ Appliance

For ordering information for MQ Appliance, see Software Announcement [218-249](#), dated July 3, 2018.

Passport Advantage trade up

Clients must have previously acquired licenses for the following precursor products to be eligible to acquire equivalent licenses for the trade-up products:

Precursor product	Trade-up product	Trade-up part number
IBM MQ Trade Up License + SW Subscription & Support 12 Months	IBM MQ Advanced Processor Value Unit (PVU)	D1GZWLL
IBM MQ High Availability Replica Processor Value Unit Trade Up License + SW Subscription & Support 12 Months	IBM MQ Advanced High Availability Replica Processor Value Unit (PVU)	D1H5ILL
IBM MQ for Linux on z Systems ^(R) Processor Value Unit (PVU) Trade Up License + SW Subscription & Support 12 Months	IBM MQ Advanced for Linux on z Systems Processor Value Unit (PVU)	D1H00LL
IBM MQ High Availability Replica for Linux on z Systems PVU Trade Up License + SW Subscription & Support 12 Months	IBM MQ Advanced High Availability Replica for Linux on z Systems Processor Value Unit (PVU)	D1H6ELL

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.

Media packs description	Part number
IBM MQ Version 9.2 for Multiplatform Multilingual Media Pack	BA1B2ML

Cross-platform product for use on IBM Z^(R) Integrated Facility for Linux (IFL) engines

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Program name/Description	Part number
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IBM MQ for Linux on IBM Z Processor Value Unit (PVU) Annual SW Subscription & Support Renewal	E0257LL
IBM MQ for Linux on IBM Z Processor Value Unit (PVU) SW Subscription & Support Reinstatement 12 Months	D55V5LL
IBM MQ High Availability Replica for Linux on IBM Z Processor Value Unit (PVU) License + SW Subscription & Support 12 Months	D0GGNLL
IBM MQ High Availability Replica for Linux on IBM Z Processor Value Unit (PVU) Annual SW Subscription & Support Renewal	E0ALTLL
IBM MQ High Availability Replica for Linux on IBM Z Processor Value Unit (PVU) SW Subscription & Support Reinstatement 12 Months	D0GGPLL
MQ High Availability Replica for Linux on IBM Z Processor Value Unit (PVU) Monthly License	D193ALL
IBM MQ for Linux on IBM Z Processor Value Unit (PVU) Monthly License	D1938LL

Program name/Description	Part number
IBM MQ High Availability Replica Linux on IBM Z Virtual Processor Core Monthly License	D1VAJLL
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IBM MQ Managed File Transfer

Program name/Description	Part number
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IBM MQ Managed File Transfer Service for Linux on IBM Z Processor Value Unit (PVU) Annual SW Subscription & Support Renewal 12 Months	E0LNCLL
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IBM MQ Advanced

Program name/Description	Part number
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IBM MQ Advanced for Linux on IBM Z Processor Value Unit (PVU) Annual SW Subscription & Support Renewal 12 Months	E0LNBL
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IBM MQ Advanced High Availability Replica Linux on IBM Z Virtual Processor Core Monthly License	D1VALL
IBM MQ Advanced Linux on IBM Z Virtual Processor Core Monthly License	D1RYZL
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IBM MQ Advanced High Availability Replica for Linux on IBM Z Processor Value Unit (PVU) Monthly License	D1H8UL

IBM MQ Advanced Message Security

Program name/Description	Part number
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Program name/Description	Part number
IBM MQ Advanced Message Security Component High Availability Replica for Linux on IBM Z 10 Processor Value Units (PVUs) Annual SW Subscription & Support Renewal	E0DRZLL

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Program name/Description	Part number
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5724-H72	IBM MQ Advanced V9.2	L-APIG-BMJJBM
5724-H72	IBM MQ Advanced for Developers V9.2	L-APIG-BMJJUF
5724-H72	IBM MQ Managed File Transfer Service V9.2	L-APIG-BMJJVK
5724-H72	IBM MQ Managed File Transfer Agent V9.2	L-APIG-BMJJVK
5724-H72	IBM MQ Advanced Message Security V9.2	L-APIG-BMJJWH
5724-H72	IBM MQ Telemetry V9.2	L-APIG-BMJJXH
5724-H72	BM MQ Advanced High Availability Replica V9.2	L-APIG-BMJJSA
5724-H72	IBM MQ Managed File Transfer Service High Availability Replica V9.2	L-APIG-BMJJYD
5724-H72	IBM MQ Advanced Message Security High Availability Replica V9.2	L-APIG-BMJJYD
5724-H72	IBM MQ High Availability Replica V9.2	L-APIG-BMJJZ6
5737-H47	IBM MQ Appliance M2002 V9.2	L-APIG-BMKGA4

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5724-H72	IBM MQ Managed File Transfer Service V9.2	L-APIG-BMJJVK
5724-H72	IBM MQ Managed File Transfer Agent V9.2	L-APIG-BMJJVK
5724-H72	IBM MQ Advanced Message Security V9.2	L-APIG-BMJJWH
5724-H72	IBM MQ Telemetry V9.2	L-APIG-BMJJXH
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5724-H72	IBM MQ Managed File Transfer Service High Availability Replica V9.2	L-APIG-BMJJYD
5724-H72	IBM MQ Advanced Message Security High Availability Replica V9.2	L-APIG-BMJJYD
5724-H72	IBM MQ High Availability Replica V9.2	L-APIG-BMJJZ6
5737-H47	IBM MQ Appliance M2002 V9.2 ¹	L-APIG-BMKG44

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