

10.0

IBM MQ Overview



Note

Before using this information and the product it supports, read the information in [“Notices” on page 185](#).

This edition applies to version 9 release 4 of IBM® MQ and to all subsequent releases and modifications until otherwise indicated in new editions.

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About IBM MQ

Introductory information to help you get started with IBM MQ 10.0, including an introduction to the product and an overview of what is new and what is changed for this release.

You can use IBM MQ to enable applications to communicate at different times and in many diverse computing environments.

What is IBM MQ?

IBM MQ supports the exchange of information between applications, systems, services and files by sending and receiving message data via messaging queues. This simplifies the creation and maintenance of business applications. IBM MQ works with a broad range of computing platforms, and can be deployed across a range of different environments including on-premises, in cloud, and hybrid cloud deployments. IBM MQ supports a number of different APIs including Message Queue Interface (MQI), JMS, REST, .NET, AMQP and MQTT.

IBM MQ provides:

- Versatile messaging integration from mainframe to mobile that provides a single, robust messaging backbone for dynamic heterogeneous environments.
- Message delivery with security-rich features that produce auditable results.
- Qualities of service that provide once and once only delivery of messages to ensure messages will withstand application and system outages.
- High-performance message transport to deliver data with improved speed and reliability.
- Highly available and scalable architectures to support an application's needs.
- Administrative features that simplify messaging management and reduce time spent using complex tools.
- Open standards development tools that support extensibility and business growth.

An application has a choice of programming interfaces, and programming languages to connect to IBM MQ.

IBM MQ provides these *messaging* and *queuing* capabilities across multiple modes of operation: *point-to-point* ; *publish/subscribe*.

Messaging

Programs communicate by sending each other data in messages rather than by calling each other directly.

Queuing

Messages are placed on queues, so that programs can run independently of each other, at different speeds and times, in different locations, and without having a direct connection between them.

Point-to-point

Applications send messages to a queue and receive messages from a queue. Each message is consumed by a single instance of an application. The sender must know the name of the destination, but not where it is.

Publish/subscribe

Applications subscribe to topics. When an application publishes a message on a topic, IBM MQ sends copies of the message to those subscribing applications. The publisher does not know the names of subscribers, or where they are.

Related information

[System Requirements for IBM MQ](#)

IBM MQ

IBM MQ is robust, secure and reliable messaging middleware. It uses messages and queues to support exchange of information between applications, systems, services, and files. It simplifies and accelerates the integration of different applications and business data across multiple platforms. It supports a wide range of APIs and languages, and can be deployed on-premises, in cloud, and in hybrid cloud.



Documentation sets are available for each of the following IBM MQ products:

- [“IBM MQ for Multiplatforms and IBM MQ for z/OS” on page 6](#)
- [“IBM MQ in containers and IBM Cloud Pak for Integration” on page 6](#)
- [“IBM MQ on Cloud” on page 7](#)
- [“IBM MQ Appliance” on page 7](#)
- [“IBM MQ Explorer” on page 7](#)

IBM MQ for Multiplatforms and IBM MQ for z/OS

The documentation for these products is presented in a single documentation set, subdivided into the following categories. Each category contains topics that apply to the IBM MQ for Multiplatforms product, or to the IBM MQ for z/OS® product, or to both products. This documentation is for the IBM MQ 10.0 Long Term Support release and its maintenance, as well as for the IBM MQ 10.0 Continuous Delivery releases.

- [About IBM MQ](#)
- [Technical overview](#)
- [Scenarios](#)
- [Planning](#)
- [Maintaining and migrating](#)
- [Installing and uninstalling](#)
- [Securing](#)
- [Configuring](#)
- [Administering](#)
- [Developing applications](#)
- [Monitoring and performance](#)
- [Troubleshooting and support](#)
- [Reference](#)

IBM MQ in containers and IBM Cloud Pak for Integration

You can run IBM MQ in the pre-packaged container provided in IBM Cloud Pak® for Integration, IBM MQ, IBM MQ Advanced, and IBM MQ Advanced for Developers. This IBM MQ Advanced Container offers a supported image and Operator, and can be used to deploy a production-ready IBM MQ image into container environments such as Red Hat® OpenShift® and Amazon Elastic Kubernetes Service.

You can also run IBM MQ in a container you build yourself.

See [IBM MQ in containers and IBM Cloud Pak for Integration](#).

IBM MQ on Cloud

This managed service is available in both IBM Cloud® and Amazon Web Services (AWS). The IBM MQ on Cloud service lets you use IBM MQ as a managed offering, leaving IBM to handle upgrades, patches and also many of the operational management tasks, and allowing you to focus on the integration of IBM MQ with your applications.

See [IBM MQ on Cloud](#).

IBM MQ Appliance

The IBM MQ Appliance is a hardware product that provides IBM MQ ready installed and ready to use. There is no general-purpose operating system that is exposed to the administrator or messaging user, and everything that runs on the appliance is factory-installed in the appliance firmware.

See [IBM MQ Appliance](#).

IBM MQ Explorer

IBM MQ Explorer is an optional graphical user interface that runs on Windows and Linux® x86-64. It can remotely connect to queue managers that are running on any supported platform including z/OS, enabling your entire messaging backbone to be viewed, explored, and altered from the console.

See [Introduction to IBM MQ Explorer](#).

Introduction to IBM MQ

An overview of what IBM MQ can do, how you use it, how it works, and what tools and resources come with it.

What can IBM MQ do for me?

IBM MQ provides a universal messaging backbone with robust connectivity for flexible and reliable messaging for applications and the integration of existing IT assets using a service-oriented architecture (SOA).

- IBM MQ sends and receives data between your applications, and over networks.
- Message delivery is *assured* and *decoupled* from the application. Assured, because IBM MQ exchanges messages transactionally, and decoupled, because applications do not have to check that messages they sent are delivered safely.
- You can secure message delivery between queue managers with TLS.
- With Advanced Message Queuing Protocol (AMQP), you can encrypt and sign messages between being put by one application and retrieved by another.
- Application programmers do not need to have communications programming knowledge.

How do I use IBM MQ?

An IBM MQ messaging system is made up of one or more queue managers. Queue managers are where messaging resources, such as queues, are configured and what applications connect to, either running on the same system as the queue manager or over the network.

A network of connected queue managers supports asynchronous routing of messages between systems, where producing and consuming applications are connected to different queue managers.

IBM MQ can be managed using a variety of tools, from the IBM MQ Explorer GUI, through scripted or interactive command line tools or programmatically.

The applications connecting to IBM MQ can be written in any one of many different programming languages and to many different APIs. From C and Cobol, to Java and .Net to NodeJS and Ruby.

How does IBM MQ work?

Here is a brief overview of how IBM MQ works.

- First a messaging application must connect to a queue manager. This may require a channel to be created on the queue manager to accept application connections.
- When your application wants to transfer data to another application, it creates a message and puts the data into it. It puts the message onto a queue, or publishes the message to a topic to be delivered to subscribers to the topic.
- The queue or subscriptions may be on the same queue manager or on other, connected, queue managers. If the latter the connected queue managers work together to reliably transfer the message from the producer's queue manager to the target queue managers. The applications do not communicate with each other, the queue managers do.
- Messages can be handled based on a number of different qualities of service, where reliability and persistence is traded for speed. The highest quality of service given to messages are persistent messages that are sent and received under the control of transactions. This will ensure that messages are delivered once and once only even in the event of system, network or application failures.
- IBM MQ channels are used to connect one queue manager to another over a network. You can create IBM MQ channels yourself, or a queue manager can join a cluster of queue managers where IBM MQ channels are automatically created when they are needed.
-  On z/OS, you can configure multiple queue managers to share queues on the coupling facility. Applications connected to different queue managers can get and put messages to and from the same queues.
- You can have many queues and topics on one queue manager.
- You can have more than one queue manager on one computer.
- An application can run on the same computer as the queue manager, or on a different one. If it runs on the same computer, it is an IBM MQ server application. If it runs on a different computer, it is an IBM MQ client application. Whether it is IBM MQ client or server makes almost no difference to the application. You can build a client/server application with IBM MQ clients or servers.

 If you are new to using IBM MQ and want to find out more about getting started with IBM MQ, see [LearnMQ](#) on IBM Developer.

What tools and resources come with IBM MQ ?

IBM MQ provides the following tools and resources:

- Control commands, which are run from the command line. You create, start, and stop queue managers with the control commands. You also run IBM MQ administrative and problem determination programs with the control commands.
- IBM MQ script commands (MQSC), which are run by an interpreter. Create queues and topics, configure, and administer IBM MQ with the commands. Edit the commands in a file, and pass the file to the **runmqsc** program to interpret them. You can also run the interpreter on one queue manager, which sends the commands to a different computer to administer a different queue manager.
- The Programmable Command Format (PCF) commands, which you call in your own applications to administer IBM MQ. The PCF commands have the same capability as the script commands, but they are easier to program.
- The IBM MQ Console is a web-based user interface that you can use to administer IBM MQ. The IBM MQ Console runs in a browser and provides control over queue managers and IBM MQ objects.

- The REST API provides an alternative programmable interface to the existing IBM MQ Script Commands (MQSC) and Programmable Command Format (PCF) tools. This RESTful API can help you to embed IBM MQ administration into popular DevOps and automation tooling.
- Sample programs.
-   On Windows and Linux x86 and x86-64 platforms, you can use the IBM MQ Explorer to administer and configure the entire network of queue managers, irrespective of the platform that they are running on. IBM MQ Explorer does the same administrative tasks as the script commands, but is much easier to use interactively.

Related concepts

[“What's new and changed in IBM MQ 10.0.0” on page 25](#)

IBM MQ 10.0.0 is the follow-on Long Term Support (LTS) release to IBM MQ 9.4.0. It is also the follow-on Continuous Delivery (CD) release to IBM MQ 9.4.5, which is the final CD release for IBM MQ 9.4. IBM MQ 10.0.0 includes the features and enhancements that were previously delivered in the CD releases of IBM MQ 9.4.1 through IBM MQ 9.4.5 along with some features and enhancements that are new at IBM MQ 10.0.0. The features that you have access to depends on your product entitlement.

[“Icons used in the product documentation” on page 136](#)

The product documentation for all IBM MQ 10.0 release types (LTS, CD, CP4I-LTS), release versions, and platforms is provided in a single information set in IBM Documentation. If information is specific to a given release type, version, or platform, this is indicated by a rectangular icon. Information that applies to all release types, versions, and platforms is left unmarked. Icons are also used to distinguish between JMS and Jakarta messaging, and to highlight product features that are deprecated, stabilized or removed.

[Technical overview](#)

IBM MQ license information

What you can purchase with IBM MQ and what each purchase entitles you to install.

Notice: This License Guide provides supplementary information to assist you in deploying the Programs you licensed from IBM within your purchased entitlement. Your license agreement (such as the IBM International Program License Agreement (IPLA) or equivalent, and its transaction documents, including the License Information for the IBM MQ product offering) is the sole and complete agreement between you and IBM regarding use of the Program.

Licensed Program Specifications for IBM MQ for z/OS



The Licensed Program Specifications publication (LPS) for IBM MQ for z/OS 10.0 (LTS and CD) is available for download as a PDF file from the following location: <https://publibfp.dhe.ibm.com/epubs/pdf/C3475000.pdf>.

What you can purchase with IBM MQ



5724-H72 IBM MQ for Multiplatforms

For IBM MQ for Multiplatforms, the product offering contains the following chargeable components that can be independently purchased:

- IBM MQ
- IBM MQ High Availability Replica (formerly IBM MQ Idle Standby) [“1” on page 10](#)
- IBM MQ Advanced with AI Agents
- IBM MQ Advanced High Availability Replica (formerly IBM MQ Advanced Idle Standby) [“1” on page 10](#)
- IBM MQ Advanced for Developers (Non-warranted, free download)
- IBM MQ for Non-Production Environment
- IBM MQ Advanced for Non-Production Environment

-  IBM MQ Native HA and Cross-Region Replication Add-on
-  IBM MQ Native HA and Cross-Region Replication Add-on for Non-Production Environment



Attention:

1. IBM MQ will install as requiring full Production entitlement by default. Use the **setmqinst** command **-l** and **-e** options to correctly set entitlement for IBM License Metric Tool(ILMT) to automatically detect. This is required if the system is an HA replica, Non-Production, Native HA primary, or replica. Entitlement requirements for High Availability (HA) configurations are described in the IBM MQ product licenses.

For the following chargeable components, existing Subscription and Support can be renewed. No new entitlement can be purchased. See the [Withdrawal Announcement Letter](#) for more information.

- IBM MQ Telemetry
- IBM MQ Advanced Message Security
- IBM MQ Advanced Message Security High Availability Replica (formerly IBM MQ Advanced Message Security Idle Standby)
- IBM MQ Managed File Transfer Service
- IBM MQ Managed File Transfer Service High Availability Replica (formerly IBM MQ Managed File Transfer Service Idle Standby)
- IBM MQ Managed File Transfer Agent

z/OS

On z/OS, IBM MQ offers the following Programs that can be purchased independently:

- **5656-MQA** IBM MQ for z/OS
- **5656-AVA** IBM MQ Advanced for z/OS Value Unit Edition
- **5656-ADA** IBM MQ Advanced for z/OS
- **5656-VUA** IBM MQ for z/OS Value Unit Edition

Where you can purchase IBM MQ licenses

Passport Advantage

All IBM MQ licenses are available here.

1. Go to the [IBM MQ 10.0 download page](#).
2. Click the tab for the IBM MQ product that you want to download (either CD or LTS).
3. Choose the download that you require.

You are asked to log in. If your IBM ID is entitled, you are presented with a set of downloadable files. Otherwise, you are prompted to choose an appropriate license.

AWS Marketplace

When you deploy IBM MQ through the AWS Marketplace, you can get the IBM license at the same time. See the [IBM MQ page at the AWS Marketplace](#).

Azure Marketplace

When you deploy IBM MQ through the Azure Marketplace, you can get the IBM license at the same time. See the [IBM MQ page at the Azure Marketplace](#).

What is my enterprise entitled to install?

Important: For IBM MQ for Multiplatforms, the IBM MQ installation media contains all the components, but you must only install the subset that you have purchased entitlement for.

Any component marked as 'unlimited installs' is a client component and as many copies as required may be installed on client systems. These will not be counted against your purchased IBM MQ entitlement.

IBM MQ, IBM MQ Advanced, and IBM Cloud Pak for Integration

In the following table, IBM MQ product features are listed in the first column, and the IBM MQ product offerings are in the remaining columns of the table. For each product feature, a tick in the column for a product offering indicates which product offering entitlement you need to use a product feature.

Table 1. Product offering entitlement for IBM MQ, IBM MQ Advanced, and IBM Cloud Pak for Integration							
IBM MQ product feature	IBM MQ and IBM MQ for Non-Production Environment	IBM MQ Advanced and IBM MQ Advanced for Non-Production Environment	IBM MQ for z/OS	IBM MQ for z/OS Value Unit Edition	IBM MQ Advanced for z/OS Value Unit Edition	IBM MQ Appliance	IBM Cloud Pak for Integration
IBM MQ client (unlimited installs)	✓	✓	✓	✓	✓	✓	✓
Telemetry Service (unlimited installs)		✓					✓
Advanced Message Security		✓			✓	✓	✓
Managed File Transfer Service		✓			✓		✓
Managed File Transfer Agent (unlimited installs) “1” on page 13		✓			✓	✓	✓
Managed File Transfer Tools (unlimited installs)		✓			✓	✓	✓
Managed File Transfer Database Logger component (unlimited installs) “1” on page 13		✓			✓	✓ “2” on page 13	✓

Table 1. Product offering entitlement for IBM MQ, IBM MQ Advanced, and IBM Cloud Pak for Integration (continued)

IBM MQ product feature	IBM MQ and IBM MQ for Non-Production Environment	IBM MQ Advanced and IBM MQ Advanced for Non-Production Environment	IBM MQ for z/OS	IBM MQ for z/OS Value Unit Edition	IBM MQ Advanced for z/OS Value Unit Edition	IBM MQ Appliance	IBM Cloud Pak for Integration
Replicated Data Queue Manager (Red Hat Enterprise Linux for x86-64 only)		✓ “3” on page 13					✓
Kafka Connect connectors (unlimited installs) “1” on page 13		✓			✓	✓	✓
IBM MQ Advanced Container		✓ “5” on page 13					✓
IBM MQ Internet Pass-Thru (unlimited installs) “6” on page 13	✓	✓	✓	✓	✓	✓	✓
IBM Aspera® faspio Gateway		✓			✓	✓	✓
AMQP	✓	✓				✓	✓
Native HA, In-Region Replication, and Cross-Region Replication	✓ “9” on page 13	✓ “7” on page 13					✓ “7” on page 13
IBM MQ Web Server (unlimited installs)	✓ “8” on page 13	✓ “8” on page 13	✓ “8” on page 13	✓ “8” on page 13	✓ “8” on page 13	✓ “8” on page 13	✓ “8” on page 13

Table 1. Product offering entitlement for IBM MQ, IBM MQ Advanced, and IBM Cloud Pak for Integration (continued)

IBM MQ product feature	IBM MQ and IBM MQ for Non-Production Environment	IBM MQ Advanced and IBM MQ Advanced for Non-Production Environment	IBM MQ for z/OS	IBM MQ for z/OS Value Unit Edition	IBM MQ Advanced for z/OS Value Unit Edition	IBM MQ Appliance	IBM Cloud Pak for Integration
IBM Instana® Tracing Exit	✓	✓					✓
IBM MQ Agent		✓ “10” on page 13					✓ “10” on page 13
All other IBM MQ components from the install media not explicitly mentioned above	✓	✓	✓	✓	✓	✓	✓

Notes:

1. May only connect to an IBM MQ Advanced or IBM MQ Appliance entitled queue manager. Managed File Transfer components may also connect to queue managers with IBM MQ Managed File Transfer entitlement.
2. FILE mode only as a client connection.
3. Requires IBM MQ Advanced entitlement on one node and IBM MQ Advanced or IBM MQ Advanced High Availability Replica entitlement on the other two nodes.
4.  Linux x86-64 only.
5. Developer container images are on [IBM Container Registry](#). The production images are delivered as Continuous Delivery updates only with no Long Term Support.
6. Cryptographic hardware support is an advanced feature that may only be used if one of the queue managers connected to MQIPT has IBM MQ Advanced, IBM MQ Appliance or IBM MQ Advanced for z/OS Value Unit Edition entitlement. For more information, see [EnableAdvancedCapabilities](#).
7. Only the active/leader node consumes license entitlement. For further information on deployment see [“What are the options for deploying Native HA, Cross-Region Replication, and In-Region Replication?”](#) on [page 17](#)
8.  Linux for x86-64, Linux on Power® Systems - Little Endian, and Linux on IBM Z® only.
9.  Add-on entitlement to IBM MQ can be purchased for this capability. For more information, see [“What are the options for deploying Native HA, Cross-Region Replication, and In-Region Replication?”](#) on [page 17](#).
10. You manage your entitlement to use the IBM MQ Agent as an extension of the entitlement that you purchase for IBM MQ Advanced or IBM Cloud Pak for Integration (IBM MQ Advanced ratio). The IBM MQ Agent is not entitled with an IBM MQ Advanced for Non-Production Environment license. For more information, see [Preparing an AI runtime for the IBM MQ Agent](#).

Managed File Transfer, Advanced Message Security, and Telemetry

In the following table, IBM MQ product features are listed in the first column, and the IBM MQ product offerings are in the remaining columns of the table. For each product feature, a tick in the column for a product offering indicates which product offering entitlement you need to use a product feature.

V1000 V1000

Table 2. Product offering entitlement for Managed File Transfer, Advanced Message Security, and Telemetry					
IBM MQ product feature	IBM MQ Managed File Transfer Service ^{"1"} on page 15	IBM MQ Managed File Transfer Agent ^{"1"} on page 15	IBM MQ Advanced Message Security ^{"1"} on page 15	IBM MQ Telemetry ^{"1"} on page 15	IBM MQ Advanced for z/OS ^{"2"} on page 15
IBM MQ client (unlimited installs)					
Telemetry Service				✓	
Advanced Message Security			✓		✓
Managed File Transfer Service	✓				✓
Managed File Transfer Agent (unlimited installs)	✓	✓			✓ ^{"3"} on page 15
Managed File Transfer Tools (unlimited installs)	✓	✓			✓
Managed File Transfer Logger component (unlimited installs)	✓	✓			✓
Replicated Data Queue Manager (Red Hat Enterprise Linux for x86-64 only)					
Kafka Connect connectors (unlimited installs)					✓
IBM MQ Advanced Container					

Table 2. Product offering entitlement for Managed File Transfer, Advanced Message Security, and Telemetry (continued)

IBM MQ product feature	IBM MQ Managed File Transfer Service ^{“1”} on page 15	IBM MQ Managed File Transfer Agent ^{“1”} on page 15	IBM MQ Advanced Message Security ^{“1”} on page 15	IBM MQ Telemetry ^{“1”} on page 15	IBM MQ Advanced for z/OS ^{“2”} on page 15
IBM MQ Internet Pass-Thru					
IBM Aspera faspio Gateway					✓
AMQP					
Native High Availability					
IBM MQ Web Server (unlimited installs)					
IBM Instana Tracing Exit					
All other IBM MQ components from the install media not explicitly mentioned above					✓

Notes:

1. New entitlement can no longer be purchased for these Programs.
2. IBM MQ for z/OS entitlement must be separately purchased.
3. May only connect to an IBM MQ Advanced, IBM MQ Appliance, or IBM MQ Managed File Transfer entitled queue manager.

IBM MQ Advanced for Developers (non-warranted)

IBM MQ Advanced for Developers is available as a free download for development purposes, and provides the full set of capability available with IBM MQ Advanced. Components include:

- IBM MQ Advanced for Developers server install
- IBM MQ Advanced for Developers non-install package for building container images
- IBM MQ MacOS Toolkit

To get the download, complete the following steps:

1. Go to [Downloading IBM MQ 10](#).
2. Click the tab for the latest Continuous Delivery or Long Term Support release.
3. Near the end of the document, find **Other useful links > Development > IBM MQ Advanced for Developers**.
4. Click the link for your preferred platform (Windows / Linux / Ubuntu / Raspberry Pi).

This is a free download. Support for development, test and staging environments may be obtained through purchasing IBM MQ for Non-Production Environment or IBM MQ Advanced for Non-Production Environment entitlement.



Attention: The IBM MQ license defines what is considered as development purposes.

Additionally, your enterprise can mix and match IBM MQ versions as required. For example, your 100 PVUs of IBM MQ (Server) entitlement could be split into 50 PVUs of the IBM MQ 9.4 version and 50 PVUs of the IBM MQ 10.0 version of this component.

What are Subscription License parts?

- Subscription License parts are available for IBM MQ on Multiplatforms (PID 5724-H72) and include:
 - VPC-based parts for IBM MQ and IBM MQ Advanced
 - Subscription License Upgrade parts
 - Extended Support parts
 - Advanced Support parts
- They are for customers to purchase IBM MQ via Private offer on AWS Marketplace and these parts reside along with the existing Monthly VPC and Perpetual PVC parts. For more information, read the [Subscription License guidance](#).

What are High Availability Replica chargeable components?

High Availability Replica parts are required when deploying IBM MQ in Multi-Instance or Replicated Data Queue Manager (RDQM) high availability configurations, or when using an external provider to manage automated failover of IBM MQ.

For most scenarios of failover systems where IBM MQ is installed:

- If failover is automatic, and there is no other active use of IBM MQ, then license the failover system as IBM MQ High Availability Replica or IBM MQ Advanced High Availability Replica.
- If failover is manual (for example, for Disaster Recovery), and there is no other active use of IBM MQ, then no IBM MQ or IBM MQ High Availability Replica licenses (or their IBM MQ Advanced equivalents) are required. See [Backup Licensing documents](#).

Multi-Instance Queue Manager, IBM MQ Replicated Data Queue Manager High Availability and Disaster Recovery Features require entitlement as described in the license terms. A copy of the terms are below.

You must use the **setmqinst** command to specify that an installation is a High Availability Replica. This action applies tags to the installation such that it can be identified by the IBM License Metric Tool (ILMT). For more information, see [setmqinst](#).

Notes:

1. Use of the IBM MQ multi-instance queue manager and Replicated Data Queue Manager features require High Availability Replica entitlement.
2. There is no High Availability Replica part for the IBM MQ Telemetry component. The same IBM MQ Telemetry part needs to be purchased for the active and passive system, unless you have IBM MQ Advanced High Availability Replica, in which case it is included.

License terms for IBM MQ High Availability Replica components are defined in the Program license terms.



Attention: Always check the Program license agreement for the latest licensing terms. IBM MQ Native HA add-on parts can only be used with the corresponding base IBM MQ or IBM MQ for Non-Production Environment.

A. Licensee's use of the Program is limited to use of the following features as stated below or as stated in the Other High Availability Solutions section.

1. Multi-Instance Queue Manager Feature

Licensee is permitted to use the multi-instance queue manager feature of the Program for Stand-by Purposes only. Stand-by Purposes are defined as having the Program started, but ensuring that the Program remains idle unless the active and separately entitled IBM MQ copy of the program fails over to the high availability replica Program. If this occurs, the high availability replica Program may be used to carry out productive work during the period of failover. The Program is considered "idle" if, until a failover takes place, it is not used to carry out productive work of any kind and is used exclusively for administrative actions.

2. Replicated Data Queue Manager High Availability Feature

Licensee's use of this replicated data queue manager feature of the Program requires configuration on three servers and requires that all queue managers on the three servers be Replicated Data Queue Managers. Two of the servers may be configured and entitled as IBM MQ Advanced High Availability Replica, but the copy of IBM MQ on the third configured server must be licensed separately by obtaining entitlements to IBM MQ Advanced.

2a. Replicated Data Queue Manager Disaster Recovery: When using this high availability feature in conjunction with replication to a disaster recovery site, the three high availability servers at the disaster recovery site must also be entitled as described above.

3. Replicated Data Queue Manager Disaster Recovery Feature

Licensee's use of this replicated data queue manager feature of the Program requires configuration on two servers and requires that all queue managers on the two servers be Replicated Data Queue Managers. One of the servers may be configured and entitled as an IBM MQ Advanced High Availability Replica, but the copy of IBM MQ on the second configured server must be licensed separately by obtaining entitlements to IBM MQ Advanced. This disaster recovery configuration of two servers is a separate configuration to using three servers as a high availability configuration, even when that is used with replication to a disaster recovery site.

B. Other High Availability Solutions

If Licensee chooses to use other high availability solutions along with the Program, Licensee is permitted to use the Program as a high availability replica so long as it resides for backup purposes on a standby server and the Program is not started. The Program may be started automatically by the high availability components in the event of the active server failing, in which event the Program may be used to carry out productive work during the period of failover.

What are the options for deploying Native HA, Cross-Region Replication, and In-Region Replication?

IBM MQ Native HA, Cross-Region Replication (CRR), and In-Region Replication (IRR) capability is available with IBM MQ Advanced entitlement or as an additional Add-On to IBM MQ.

Entitlement as an Add-On to IBM MQ

The Add-On to IBM MQ provides entitlement to use IBM MQ Native HA, Cross-Region Replication, and In-Region Replication capability with all the base IBM MQ capabilities to build high availability solutions. The Add-On entitlement does not permit you to use any other IBM MQ Advanced capabilities.

Add-On entitlement parts are available for production and non-production environments:

- IBM MQ Native HA and Cross-Region Replication Add-on
- IBM MQ Native HA and Cross-Region Replication Add-on for Non-Production Environment Add-on

Use setmqinst to configure license usage

On Linux, you must use the **setmqinst** command to correctly designate the systems in a Native HA group for entitlement tracking. This action applies tags to the installation such that it can be identified by the IBM License Metric Tool.

The license terms below define the entitlement requirements for the different Native HA configurations. One system in the group must be designated as IBM MQ Advanced or IBM MQ plus the Native Add-on, and the other system(s) can be Native HA Replicas.

License terms for IBM MQ High Availability Replica components are defined in the Program license terms.

For more information, see **setmqinst**.



Attention: Always check the Program license agreement for the latest licensing terms

1. Native High Availability Feature

Licensee's use of the native high availability (automatic failover) feature of the Program ("Native High Availability") requires configuration on three servers and requires that all queue managers on the three servers are Native High Availability Queue Managers. The Program must be licensed on one server by obtaining entitlements to IBM MQ Advanced, or IBM MQ and IBM MQ Native HA and Cross-Region Replication Add-On, but the two Native High Availability Queue Manager replica servers are not used to determine the number of entitlements required for the Program.

2. Native High Availability Cross Region Replication Feature

Licensee's use of the native high availability cross-region replication feature of the Program requires two Native High Availability groups (a live group and a recovery group) to be configured on a total of six servers, with each group licensed as described in 1.

3. Native High Availability In Region Replication Feature

Licensee's use of the native high availability in-region replication feature of the Program requires configuration on two servers and requires that all queue managers on the two servers are Native High Availability Queue Managers. The Program must be licensed on one server by obtaining entitlements to IBM MQ Advanced, or IBM MQ and IBM MQ Native HA and Cross-Region Replication Add-On, but the Native High Availability Queue Manager replica servers are not used to determine the number of entitlements required for the Program.

For 1, 2 and 3, within a Native High Availability group a Native High Availability Queue Manager replica server must not be used to carry out productive work other than synchronization of data and other resources with the active and separately entitled Native High Availability Queue Manager.

How do I configure IBM MQ for non-production environments?

IBM MQ Advanced for Non-Production Environment is an entitlement option for internal development and test systems for non-production activities.

You must use the **setmqinst** command to specify that an installation is a Non-Production Environment. This action applies tags to the installation such that it can be identified by the IBM License Metric Tool (ILMT). For more information, see **setmqinst**.

IBM MQ for Non-Production Environment cannot currently be configured to be automatically identified by the IBM License Metric Tool (ILMT).

Which components of IBM MQ can I install separately from the queue manager?

Some components of IBM MQ are designed to be for client or administrator usage and are intended to be installed on systems that are remote from an IBM MQ queue manager, but connected over a network to an IBM MQ queue manager. The following list shows the IBM MQ components that are in this category and can be installed on remote systems in accordance with the license terms:

IBM MQ/IBM MQ Appliance

- IBM MQ C, C++ and .NET clients
- IBM MQ Java/JMS client
- IBM MQ Resource Adapter
- IBM MQ Internet Pass-Thru (MQIPT)

- IBM MQ Explorer
- IBM MQ Web Server

IBM MQ Advanced/IBM MQ Appliance

- IBM MQ Managed File Transfer Agent
- IBM MQ Managed File Transfer Database Logger
- IBM MQ Managed File Transfer Tools
- Kafka Connect source and sink connectors for IBM MQ
- IBM Aspera faspio Gateway

None of the components in this list are charged, so do not incur additional costs when installed on systems remote from the IBM MQ queue manager.

Further to this, a subset of these components are licensed to be redistributable with 3rd party applications. For more information, see [“IBM MQ Redistributable Components” on page 20](#).

Other questions

In an IBM MQ network using IBM MQ Advanced features, such as Managed File Transfer and Advanced Message Security, which IBM MQ queue managers require IBM MQ Advanced entitlement?

- For Advanced Message Security, only the end-point queue managers where AMS Policies are defined require IBM MQ Advanced entitlement.
- For Managed File Transfer, only the queue managers where MFT components (Agent and Logger) connect require IBM MQ Advanced entitlement.
- Intermediary queue managers that are just routing messages, but perform no IBM MQ Advanced processing, only require IBM MQ entitlement.

Questions about High Availability and the Replicated Data Queue Manager capability:

- Q: When configuring the RDQM High Availability feature can I place all the queue managers under RDQM control on the same system?

A: Yes. Queue managers can run on any node in the HA group, including all three queue managers on one node. This is not an optimal configuration for making best use of system resources across the three nodes, but our licensing does not prohibit this.

- Q: Do all nodes in a RDQM HA or DR configuration need to have the same memory, disk and CPU capacity?

A: No, but our recommendation is that all nodes have the same resource allocation. RDQM maximum disk storage capacity is limited to the maximum capacity of the smallest system in the configuration and queue manager creation will fail if RDQM cannot allocate the required disk capacity up front. For CPU and memory, if a well resourced, high performing, system fails over to system with less memory and CPU then there could be undesirable performance consequences because maximum message throughput rates will be reduced.

- Q: Can I place both an RDQM HA queue manager and RDQM DR queue manager on the same system?

A: This would not be in compliance with the IBM MQ Advanced High Availability Replica license terms because a system must be either a dedicated RDQM HA or DR node. It cannot be both. It is technically possible, but this configuration would require IBM MQ Advanced entitlement.

Supporting Programs

The following Supporting Program is licensed with IBM MQ Advanced 10.0, IBM MQ Advanced for Non-Production Environment 10.0, IBM MQ Advanced for z/OS Value Unit Edition 10.0, and IBM MQ Advanced for z/OS 10.0:

- IBM Aspera faspio Gateway 1.3

Related concepts

[“What's new and changed in IBM MQ 10.0.0” on page 25](#)

IBM MQ 10.0.0 is the follow-on Long Term Support (LTS) release to IBM MQ 9.4.0. It is also the follow-on Continuous Delivery (CD) release to IBM MQ 9.4.5, which is the final CD release for IBM MQ 9.4. IBM MQ 10.0.0 includes the features and enhancements that were previously delivered in the CD releases of IBM MQ 9.4.1 through IBM MQ 9.4.5 along with some features and enhancements that are new at IBM MQ 10.0.0. The features that you have access to depends on your product entitlement.

[Technical overview](#)

[IBM MQ non-install images](#)

Related information

[Downloading IBM MQ 10.0](#)

IBM MQ Redistributable Components

IBM MQ delivers several components that are licensed to be redistributable with third-party applications. The redistributable license terms may be found in the relevant IBM MQ Program license agreement.

The license agreement can be found at the [IBM Terms website](#). In the license agreement, IBM MQ Client components are also listed as being "Components Not Used for Establishing Required Entitlements". It is the IBM MQ queue manager to which the application is connected that requires correct entitlement.

All IBM MQ redistributable components are supported for use in production environments, and share the same system requirements and support lifecycle as the corresponding installable client images. See the [IBM Software Lifecycle](#) page for more information.

IBM MQ Client components

IBM MQ Client components may be redistributed under the license terms of the following Programs:

- IBM MQ
- IBM MQ Advanced
- IBM MQ Appliance M2002 and M2003
- IBM MQ for z/OS
- IBM MQ for z/OS Value Unit Edition
- IBM MQ Advanced for z/OS Value Unit Edition

Requirements:

The queue manager to which the application connects must be entitled with one of the above Programs.

Redistributables:

- IBM MQ Clients from IBM Fix Central
 - <http://ibm.biz/mq100fixpacks>
- IBM MQ Message Service Client (XMS) for C/C++ (IA94 SupportPac)
 - <https://ibm.biz/mqxms3supportpac>
- IBM MQ .NET Client components from nuget.org
 - <https://www.nuget.org/packages/IBMMQDotnetClient/>
 - <https://www.nuget.org/packages/IBMXMSDotnetClient/>
- IBM MQ Java Client components from Maven
 - <https://search.maven.org/search?q=a:com.ibm.mq.allclient>, or
 - <https://mvnrepository.com/artifact/com.ibm.mq/com.ibm.mq.allclient>

IBM MQ Managed File Transfer Agent

IBM MQ Managed File Transfer Agent (including, from IBM MQ 9.3.0, the Managed File Transfer Logger component) may be redistributed under the license terms of the following Programs:

- IBM MQ Advanced with AI Agents
- IBM MQ Appliance M2000, M2001 and M2002
- IBM MQ Advanced for z/OS Value Unit Edition
- IBM MQ Managed File Transfer Agent

Requirements:

The queue manager to which the application connects must be entitled with one of the above Programs.

Redistributables:

- IBM MQ Managed File Transfer Agent from IBM Fix Central.
 - <https://ibm.biz/mq100redistmftagent>

IBM MQ for z/OS stub routines



IBM MQ for z/OS stub routines may be redistributed under the license terms of the following Programs:

- IBM MQ for z/OS
- IBM MQ for z/OS Value Unit Edition
- IBM MQ Advanced for z/OS Value Unit Edition

Requirements:

The queue manager to which the application connects must be entitled with one of the above Programs.

Redistributables:

The following MQ stub routines that are intended to be bound, link-edited, or otherwise included with code and run on z/OS systems and are contained in the following data set - CSQ.SCSQLOAD:

- CSQBSTUB, CSQBRSI, CSQBRSTB, CSQCSTUB, CSQQSTUB, CSQXSTUB, CSQASTUB

Members of the following data sets are required for application development and compilation and may also be redistributed:

- CSQ.SCSQPLIC - PL/I include files
- CSQ.SCSQMACS – assembler macros
- CSQ.SCSQHPPS – C++ header files
- CSQ.SCSQC370 – C header files
- CSQ.SCSQCOBC – COBOL copy books
- CSQ.SCSQDEFS – C++ side decks subset:

CSQA, CSQBAS1X, CSQBAS2X, CSQBMB1X, CSQBMB2X, CSQBMQ1, CSQBMQ1X, CSQBMQ2X, CSQBRI1, CSQBRI1X, CSQBRI2X, CSQBRR1, CSQBRR1X, CSQBRR2X, CSQBXB1X, CSQBXB2X, CSQBXI1, CSQBXI1X, CSQBXI2X, CSQBXQ1, CSQBXQ1X, CSQBXQ2X, CSQBXR1, CSQBXR1X, CSQBXR2X, CSQBXS1X, CSQBXS2X, CSQC, CSQCMQ2X, CSQCXQ2X, CSQMDA, CSQMDL, CSQMDV, CSQMD1A, CSQMD1L, CSQMD1V, CSQMD2A, CSQMD2L, CSQMD2V, CSQP, CSQQMQ1X, CSQQMQ2X, CSQQXQ1X, CSQQXQ2X, CSQV

IBM MQ Client for .NET license information

The IBM MQ Client for .NET is a component of IBM MQ that can be downloaded free-of-charge. It can be used to integrate third party .NET applications into an IBM MQ messaging infrastructure. The IBM MQ

Clients, including the IBM MQ Client for .NET, are licensed under the IBM MQ Client license terms in the IBM MQ product license.

The IBM MQ Client for .NET is part of the IBM MQ Client package, which contains client libraries supporting many different programming languages. IBM MQ Clients (including IBM MQ .NET client libraries) are made available free-of-charge with certain redistribution rights (see IBM MQ product license for redistributables terms) to enable third parties to easily develop and distribute IBM MQ applications. The IBM MQ Clients are provided as-is. For technical support and defect fixes a support agreement with IBM is required.

IBM MQ product identifiers and export information

An overview of IBM MQ product offerings, their associated product identifiers (PIDs), and export classifications.

Table 3. Table of IBM MQ products, their associated PID values, and export classifications		
IBM MQ product offering	Product identifier (PID)	Export classification (ECCN)
IBM MQ “1” on page 22	5724-H72	5D992
IBM MQ for z/OS	5656-MQA	5D002.c.1
IBM MQ for z/OS Value Unit Edition	5656-VUA	5D002.c.1
IBM MQ Advanced for z/OS Value Unit Edition “2” on page 22	5656-AVA	5D002.c.1
IBM MQ Advanced for z/OS	5656-ADA	5D002.c.1

Notes:

- 5724-H72 IBM MQ contains the following components:
 - IBM MQ
 - IBM MQ High Availability Replica
 - IBM MQ Advanced with AI Agents
 - IBM MQ Advanced High Availability Replica
 - IBM MQ Managed File Transfer Service
 - IBM MQ Managed File Transfer Service High Availability Replica
 - IBM MQ Managed File Transfer Agent
 - IBM MQ Advanced Message Security
 - IBM MQ Advanced Message Security High Availability Replica
 - IBM MQ Telemetry
 -  IBM MQ Native HA and Cross-Region Replication Add-on
 -  IBM MQ Native HA and Cross-Region Replication Add-on for Non-Production Environment
 -  IBM MQ Native HA replica
- IBM MQ Advanced for z/OS Value Unit Edition is a zCAP (Collocated Application Pricing) Defining Program.

IBM MQ Appliances



Table 4. IBM MQ Appliance products, their associated PID values, and export classifications

IBM MQ product offering	Product identifier (PID)	Machine-Type Model (MTM)	Firmware Export classification (ECCN)	Hardware Export classification (ECCN)
IBM MQ Appliance M2002	5737-H47	8441-54X	5D992	5A002.a.2
IBM MQ Appliance M2003	5900-ALJ	8496-54X	5D002.c.1	4A994.b

Related concepts

➤ **z/OS** [Product usage recording with IBM MQ for z/OS products](#)

IBM MQ release types and versioning

There are two main types of release for IBM MQ; Long Term Support (LTS) and Continuous Delivery (CD). There is also a separate Container Long Term Support (Container-LTS) with its own support duration.

LTS and CD release types

The aim of the two main release types is to meet the requirement for delivery of new and enhanced IBM MQ functions as rapidly as possible in the next CD release, while at the same time maintaining a stable LTS release for systems that need a long term deployment of IBM MQ, and for customers who prefer this traditional option.

The two release types are distinguishable by the modification number, that is the M digit of the VRMF:

- Long Term Support and Container Long Term Support releases always have a modification number of zero. For example 9.4.0 and 10.0.0.
- Continuous Delivery releases usually have a modification number that is non-zero. For example 10.0.1, 10.0.2, and so on.

For each new version of IBM MQ there is an initial CD release available at the same time as the initial LTS release. Both releases have the same Modification level of zero, and both are functionally identical. For example, IBM MQ 10.0.0 is the follow-on LTS release to IBM MQ 9.4.0. It is also the follow-on CD release to IBM MQ 9.4.5.

Each LTS release is supported for 5 years (or 2.5 years as a prebuilt container image). Each CD release is supported for 1 year or while it is one of the most recent two CD releases, whichever is longer. The IBM MQ Operator channel associated with the initial release of an LTS version is also supported for 2.5 years.

Note: IBM MQ Explorer releases are CD only.

For more information, see [IBM MQ FAQ for Long Term Support and Continuous Delivery releases](#).

To check the IBM MQ version:

- Type the command **dspmqver**, or **DSPMQMVER** on IBM i. The returned messages include the three-digit VRM or, if maintenance has been applied, the four-digit VRMF.
- Use the REST API [GET](#) method.
- ➤ **Linux** ➤ **Windows** [View the queue manager property panel in IBM MQ Explorer.](#)
- ➤ **z/OS** Look at the CSQY000I message in the queue manager job log. This message is issued when the queue manager starts, and shows the release level and release type.

The command level of a queue manager is the four-digit VVRM level. An IBM MQ program can call MQINQ, passing the MQIA_COMMAND_LEVEL selector, to get the command level of the queue manager it is connected to. You can also view the queue manager command level in the [queue manager property panel in IBM MQ Explorer](#).

Maintenance delivery model

There are two types of maintenance release, **fix packs** for LTS releases and **Cumulative Security Updates** (CSUs) for LTS and CD releases:

- Fix packs provide the latest security and functional fixes.
- CSUs provide the latest security fixes.

Both types of maintenance are mutually cumulative (that is, they contain all fixes included in older CSUs and fix packs) and both are installed using the same mechanisms for applying maintenance. So you can apply any higher numbered fix pack or CSU of the same version/release to upgrade directly to that version level. You do not have to apply the intervening fixes.

Both types of maintenance update the F digit of the VRMF to a higher number than any previous maintenance:

-  For LTS releases, the F digit of the VRMF is either a fix pack number, which is a value divisible by 5, or a CSU number, which is a value not divisible by 5. For example, 9.3.0.5 is a fix pack and 10.0.0.1 is an LTS CSU.
-  For CD releases, the F digit of the VRMF is either a zero or a CSU number, which is a value not divisible by 5. For example, 9.3.2.1 is a CD CSU.

Maintenance levels do not affect the command level of the queue manager. No migration is required, and maintenance levels do not affect the service end date of a release.

For more information, see [Changes to IBM MQ's maintenance delivery model](#).

For each supported platform, the release type you choose affects ordering, installation, maintenance and migration. For more information, see [IBM MQ release types: planning considerations](#).

Maintenance delivery model: differences by platform

 For Multiplatforms, LTS fix packs and CSUs, and CD CSUs,

- are downloaded as interim fixes
- are downloaded by fix pack or CSU number
- are cumulative

From IBM MQ 9.4, on Windows and Linux platforms both types of maintenance are full install images that can be used for a new installation or upgrading an existing installation. On AIX® and IBM i the CSU and fix pack maintenance process is unchanged and requires a base install image to apply to.

 For z/OS, LTS fix packs and CSUs

- are downloaded as interim fixes
- are downloaded by Program Temporary Fix (PTF) number
- are cumulative

z/OS CD CSUs are not usually made available as separate downloads. They are bundled into the next CD release. If you cannot wait for the next CD release, you can request a CD CSU as a USERMOD.

IBM MQ in containers and IBM Cloud Pak for Integration

You can use various options to deploy IBM MQ in a container environment or as part of IBM Cloud Pak for Integration. The release types, fix availability, and support duration can vary between options. For more information, see [Choosing how you want to use IBM MQ in containers](#) and [Support for IBM MQ in containers](#).

Related concepts

[Applying maintenance to IBM MQ](#)

Related information

[Downloading IBM MQ 10.0](#)

What's new and changed in IBM MQ 10.0.0

IBM MQ 10.0.0 is the follow-on Long Term Support (LTS) release to IBM MQ 9.4.0. It is also the follow-on Continuous Delivery (CD) release to IBM MQ 9.4.5, which is the final CD release for IBM MQ 9.4. IBM MQ 10.0.0 includes the features and enhancements that were previously delivered in the CD releases of IBM MQ 9.4.1 through IBM MQ 9.4.5 along with some features and enhancements that are new at IBM MQ 10.0.0. The features that you have access to depends on your product entitlement.

For more information on what you can purchase with IBM MQ, and what each purchase entitles you to install, see [“IBM MQ license information” on page 9](#).

Delivery and support model

IBM MQ 10.0.0 follows the delivery and support model for IBM MQ that was introduced in IBM MQ 9.0. From IBM MQ 9.0, two release types are made available; a Long Term Support (LTS) release and a Continuous Delivery (CD) release.

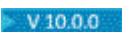
 **LTS** The Long Term Support release is a recommended product level for which support, including defect and security updates, is provided over a specified period of time. This release is intended for systems which demand a long term deployment and maximum stability.

 **CD** Continuous Delivery releases deliver new functional enhancements, in addition to fixes and security updates, on a much shorter cadence, so providing much more rapid access to those new functions. These releases are intended for systems where applications want to exploit the very latest capabilities of IBM MQ.

For further information see [IBM MQ release types and versioning](#) and [IBM MQ FAQ for Long Term Support and Continuous Delivery releases](#).

How to use the *What's new and changed* information for IBM MQ 10.0.0

IBM MQ 10.0.0 includes the features, enhancements and changes of behavior that were previously delivered in the CD releases of IBM MQ 9.4.1 through IBM MQ 9.4.5, along with some features, enhancements, and changes of behavior that are new at IBM MQ 10.0.0:

- Features, enhancements, and changes of behavior that are new to Long Term Support (LTS) users at IBM MQ 10.0.0 are indicated by a dark blue icon 
- Features, enhancements, and changes of behavior that are new to Continuous Delivery (CD) users at IBM MQ 10.0.0 are indicated by a light blue icon 

What's new in IBM MQ for Multiplatforms - base and Advanced entitlement



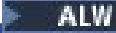
On [Multiplatforms](#), the following features and enhancements are available with both base product entitlement, and with Advanced entitlement.

Security

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  [“Support for FIPS 203 Quantum Safe ML-KEM key shares for TLS” on page 31](#)
-  [“Support for multiple certificate labels” on page 31](#)
-  [“\[AIX, Linux, Windows\]Cryptographic library GSKit upgraded to version 9” on page 32](#)

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Extended authority events for positive authentication” on page 32](#)
-  [“New dspmqcert program for checking SSL/TLS certificate dates” on page 32](#)
-  [“HTTPS now supported for accessing a CCDT through a URL” on page 32](#)
-  [“Support for customized SSLSocketFactory for CCDT and JWT retrieval over HTTPS” on page 33](#)
-  [“JWKS support for automatic queue manager side certificate management” on page 33](#)
-  [“Support for the IBM Semeru Runtime FIPS 140-3 security provider” on page 33](#)
-  [“Support for FIPS in AMS, JWT, JWKS, HTTPS CCDT retrieval and the Password Protection system” on page 34](#)
-  [“Federal Information Processing Standards \(FIPS\) compliance with IBM MQ Explorer” on page 33](#)
-   [“\[AIX, Linux, Windows\]Improvements to how IBM MQ selects the keystores to use for TLS” on page 34](#)
-  [“Support for three additional TLS 1.2 CipherSpecs” on page 34](#)
-  [“Custom path for TLS certificates in IBM MQ .NET and XMS .NET client applications” on page 34](#)

Administration

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-   [View detailed status for a Native HA configuration](#)

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Enhancements to the IBM MQ Console” on page 34](#)
-  [“Force option might be required when you change a queue manager CCSID” on page 35](#)
-  [“Accessing error logs programmatically” on page 35](#)

Application development

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-   [“Providing trace for short-lived Java/JMS application containers” on page 35](#)
-   [“Using MsgToken in a JMS selector” on page 35](#)
-   [“IBM MQ and XMS .NET.NET client libraries built with .NET 10” on page 36](#)

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Enhancements to AMQP and MQTT” on page 35](#)
-  [“Multiple JMS connections can be treated as a single application instance” on page 35](#)
-  [“JWT endpoint support in IBM MQ classes for JMS/Jakarta Messaging” on page 36](#)
-  [“Support for .NET 10 at runtime” on page 36](#)

Containers

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Native HA and Cross-Region Replication features available on IBM MQ licensed queue managers” on page 36](#)

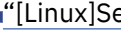
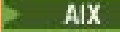
What's new in IBM MQ for Multiplatforms - Advanced entitlement only



On Multiplatform, the following features and enhancements are available only with Advanced entitlement.

Security

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “[Linux]You can now specify that replication links in your HA RDQM, DR RDQM, and DR/HA RDQM configuration are secured with TLS.” on page 38
-  “[Linux]Secure heartbeat for HA RDQM” on page 38
-   “[Linux][AIX]Managed File Transfer support for OpenSSH type Private key for SFTP servers” on page 38

Administration

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  “[Linux]Native HA In-Region Replication (IRR) support ” on page 38
-

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-   “[IBM Cloud Pak for Integration][Kubernetes]Native HA cross-region replication in containers” on page 38
-  “[Linux]Native High Availability and Cross Region Replication on Linux” on page 39
-  “Simplifying data conversion with the Kafka Connect XML Converter” on page 39
-  “Update to the Kafka Source and Sink connectors” on page 39
-  “Support for Kafka Connect” on page 39

Monitoring

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “Enhancements for monitoring Native HA instances” on page 39

Containers

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “[Linux]Support for deployments outside OpenShift with the IBM MQ Advanced container image” on page 39
-  “[Linux]License tagging for non-production container workloads” on page 39

What's new in IBM MQ for z/OS - base and Advanced VUE entitlement



On z/OS, the following features and enhancements are available both with base product entitlement, and with IBM MQ Advanced for z/OS Value Unit Edition (Advanced VUE) entitlement.

Security

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “Federal Information Processing Standards (FIPS) compliance with IBM MQ Explorer” on page 41

Administration

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  [“Increased upper limit for OUTBUFF within CSQ6LOGP to define output buffer sizes” on page 41](#)

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Simpler connectivity to cloud” on page 41](#)
-  [“Enhancements to the IBM MQ Console” on page 41](#)
-  [“Improved alternative site recovery” on page 41](#)
-  [“Support for Channels Stanza - Ignore Sequence Number Mismatch attribute within QMINI” on page 41](#)
-  [“Data conversion support for the latest GB18030 standard” on page 42](#)

Monitoring

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  [“Integrated OpenTelemetry tracing” on page 42](#)
-  [“New fields in channel accounting data records” on page 42](#)
-  [“New message indicating failed authentication” on page 42](#)

What's new in IBM MQ for z/OS - Advanced and Advanced VUE entitlement only

On z/OS, the following features and enhancements are available with Advanced or Advanced VUE entitlement only.

Administration

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Support for Kafka Connect” on page 43](#)
-  [“Latest Kafka Source and Sink connectors” on page 43](#)
-  [“Simplifying data conversion with the Kafka Connect XML Converter” on page 43](#)

What's changed in IBM MQ 10.0.0

IBM MQ 10.0.0 includes changes of behavior that were previously delivered in the CD releases of IBM MQ 9.4.0 through IBM MQ 9.4.5, along with some changes that are new at IBM MQ 10.0.0:

License entitlement, installation and migration

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-     [“\[IBM MQ Advanced\]\[IBM MQ Advanced VUE\]\[IBM MQ Advanced for z/OS\]IBM Aspera faspio Gateway version upgraded” on page 46](#)

Security

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

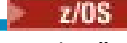
-   [“Configuring TLS client authentication in MQIPT” on page 46](#)
-   [“\[Removed\]Removal of support for the Java security manager in MQIPT” on page 46](#)
-    [“\[UNIX, Linux, Windows, IBM i\]Certificate labels with existing space or commas must be escaped” on page 46](#)

The following changes first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

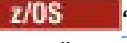
-  “[AIX, Linux, Windows]Increased support for the IBM Semeru Runtime 21 FIPS 140-3 security provider” on page 47
-  “[AIX, Linux, Windows]Changes to CipherSuites supported by MQIPT” on page 47
-  “Changes to CipherSuites supported by the IBM MQ AMQP service, Managed File Transfer, IBM MQ Console, REST API, and IBM MQ Telemetry server” on page 47
-  “Changes to Distinguished Name attributes that are supported by the runmqktool and mqiptKeytool commands” on page 47
-   “[Linux][AIX]JWT token typ parameter is now optional” on page 47
-  “Migrating FIPS clients from Java 8 to IBM Semeru Runtime Java with FIPS 140-3 ” on page 48
-  “[Deprecated]Deprecation of RSA key exchange CipherSpecs” on page 48
-  “[Deprecated]Deprecation of SSL 3.0 and TLS 1.0 protocols” on page 49
-  “Removal of support for SSLv3, TLS 1.0, RC4, 3DES CipherSpecs” on page 49
-  “TLS_RSA_* CipherSpecs disabled in IBM Semeru Runtime 25” on page 49
-  “Restriction on minimum RSA keysize allowed” on page 49
-  “[AIX, Linux, Windows]Update to create keystores with secure algorithm by default” on page 49
-  “Support for longer User IDs for connected and authenticated applications” on page 49
-  “Stricter validation of User IDs” on page 49
-  “[AIX, Linux, Windows]Extended Key Usage (EKU) enhancements” on page 50

Administration

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-   “[AIX, Linux, Windows]Changes to the Java runtime environment shipped with IBM MQ” on page 50
-   “[z/OS]AMS and MFT standalone PID removal” on page 51
-   “[z/OS]SYSTEM.FTE.EVENT.agent_name and SYSTEM.FTE.STATE.agent_name queues on z/OS” on page 51
-  “Change to default TCP buffer size for IBM MQ clients” on page 51
-   “[z/OS]Changes to SM115REL and SMF116REL” on page 52
-   “[z/OS]A new column is added to two Db2 tables used by queue sharing groups” on page 52

The following changes first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “[IBM MQ Advanced][IBM MQ Advanced VUE][IBM MQ Advanced for z/OS]IBM Kafka Source and Sink Connector version upgraded” on page 50
-  “Message AMQ7366W added to ExcludeMessage and SuppressMessage lists” on page 50
-  Removal of Russian translation messaging component
-   “[z/OS]Changes to the Java runtime environment runtime for IBM MQ for z/OS components” on page 51

Application development

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  [“Customizing XMS .NET client connection keep alive behavior in XMS .NET applications” on page 52](#)

The following changes first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-    [“\[Windows\]\[Jakarta Messaging 3.0\]Support for IBM MQ resource adapter for Jakarta Messaging in GlassFish Server” on page 52](#)
-  [“Customizing JMS connection keep alive behavior in JMS applications” on page 53](#)
-  [“IBM Semeru Runtime 25 file encoding change” on page 53](#)

Related concepts

[“IBM MQ license information” on page 9](#)

What you can purchase with IBM MQ and what each purchase entitles you to install.

[“What was new and changed in earlier versions” on page 76](#)

Links to information about new features and changes to functions and resources, including stabilizations, deprecations and removals, that occurred in versions of the product before IBM MQ 10.0.

What's new and what's changed in IBM MQ Explorer

[“Icons used in the product documentation” on page 136](#)

The product documentation for all IBM MQ 10.0 release types (LTS, CD, CP4I-LTS), release versions, and platforms is provided in a single information set in IBM Documentation. If information is specific to a given release type, version, or platform, this is indicated by a rectangular icon. Information that applies to all release types, versions, and platforms is left unmarked. Icons are also used to distinguish between JMS and Jakarta messaging, and to highlight product features that are deprecated, stabilized or removed.

Related information

[System Requirements for IBM MQ](#)

[IBM MQ, WebSphere MQ, and MQSeries product readmes web page](#)

What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement

For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.

Security

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  [“Support for FIPS 203 Quantum Safe ML-KEM key shares for TLS” on page 31](#)
-  [“Support for multiple certificate labels” on page 31](#)
-  [“\[AIX, Linux, Windows\]Cryptographic library GSKit upgraded to version 9” on page 32](#)

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Extended authority events for positive authentication” on page 32](#)
-  [“New dspmqcert program for checking SSL/TLS certificate dates” on page 32](#)
-  [“HTTPS now supported for accessing a CCDT through a URL” on page 32](#)
-  [“Support for customized SSLSocketFactory for CCDT and JWT retrieval over HTTPS” on page 33](#)
-  [“JWKS support for automatic queue manager side certificate management” on page 33](#)
-  [“Support for the IBM Semeru Runtime FIPS 140-3 security provider” on page 33](#)
-  [“Support for FIPS in AMS, JWT, JWKS, HTTPS CCDT retrieval and the Password Protection system” on page 34](#)
-  [“Federal Information Processing Standards \(FIPS\) compliance with IBM MQ Explorer” on page 33](#)

-  “[AIX, Linux, Windows]Improvements to how IBM MQ selects the keystores to use for TLS” on page 34
-  “Support for three additional TLS 1.2 CipherSpecs” on page 34
-  “Custom path for TLS certificates in IBM MQ .NET and XMS .NET client applications” on page 34

Administration

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-   View detailed status for a Native HA configuration

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “Enhancements to the IBM MQ Console” on page 34
-  “Force option might be required when you change a queue manager CCSID” on page 35
-  “Accessing error logs programmatically” on page 35

Application development

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-   “Providing trace for short-lived Java/JMS application containers” on page 35
-   “Using MsgToken in a JMS selector” on page 35
-   .NET client library built with .NET 10

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “Enhancements to AMQP and MQTT” on page 35
-  “Multiple JMS connections can be treated as a single application instance” on page 35
-  “JWT endpoint support in IBM MQ classes for JMS/Jakarta Messaging” on page 36
-  “Support for .NET 10 at runtime” on page 36

Containers

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “Support for Amazon Elastic Kubernetes Service” on page 36
-  “Native HA and Cross-Region Replication features available on IBM MQ licensed queue managers” on page 36
-  “Disabling Scratch and Tmp volumes ” on page 36

Security

Support for FIPS 203 Quantum Safe ML-KEM key shares for TLS

IBM MQ 10.0.0 adds support for FIPS 203 quantum safe key shares. Support for both Hybrid ML-KEM and ML-KEM is available on TLS 1.3 secured channels. The FIPS 203 key shares enable a TLS 1.3 handshake to be secured against future quantum computers. This enables protection against the current "Harvest Now, Decrypt Later" attacks.

For more information see [Quantum Safe IBM MQ](#).

Support for multiple certificate labels

From IBM MQ 10.0.0, certificate label fields can have a list of certificate labels provided. The lists are separated by commas on AIX, Linux, IBM i, and Windows platforms and additionally separated by spaces on AIX, Linux, and Windows platforms. TLS 1.2 CipherSpecs require a matching certificate type (RSA/ECDSA), when only one certificate is provided the queue manager can only support TLS 1.2 CipherSpecs of that matching type. By providing a list of TLS certificates a queue manager can ensure a required TLS certificate for ECDSA or RSA TLS 1.2 Ciphers is available for use.

For more information, see [ALTER QMGR \(alter queue manager settings\)](#), or [ALTER CHANNEL \(alter channel settings\)](#), or [DEFINE CHANNEL \(define a new channel\)](#).

ALW

Cryptographic library GSKit upgraded to version 9

From IBM MQ 10.0.0, on AIX, Linux for x86-64, and Linux on Power Systems - Little Endian, Linux s390x and Windows, GSKit has been updated to version 9.

GSKit 9 increases the standard for FIPS compliance from FIPS 140-2 to FIPS 140-3. IBM MQ provides FIPS 140-3 compliance through the IBM Crypto for C (ICC) cryptographic module (64bit only). For more information, see [Federal Information Processing Standards \(FIPS\)](#).

Note: FIPS support at FIPS 140-2 and FIPS 140-3 levels is currently not available for Linux s390x. Customers on this platform who require FIPS support should remain at a previous version of IBM MQ. Support for FIPS 140-3 will be enabled in a future FixPack once the IBM Crypto for C (ICC) cryptographic module has received its certification on this platform.

Extended authority events for positive authentication

From IBM MQ 10.0.0, extended positive authority events can be generated when authority events are enabled. The events are put to the `SYSTEM.ADMIN.QMGR.EVENT` queue. The scope of the event messages is determined by the new queue manager attribute **AUTHEVSC**.

For more information, see [ALTER QMGR \(alter queue manager settings\)](#) and [Queue Manager Events](#).

New dspmqcert program for checking SSL/TLS certificate dates

From IBM MQ 10.0.0, the **dspmqcert** program provides an easy way to query SSL/TLS certificates for queue managers. A typical use for **dspmqcert** is to check the validity of SSL/TLS certificate dates. Checking SSL/TLS certificate dates is crucial because they expire and must be renewed to meet current security standards. Failure to renew before expiry disrupts TLS communication between applications.

For more information, see [dspmqcert \(display IBM MQ certificates\)](#).

HTTPS now supported for accessing a CCDT through a URL

A client channel definition table (CCDT) defines client connection channels and their attributes. You can save a CCDT file in a central location that can be accessed through a URL, so you don't have to individually update the CCDT file for each deployed client. From IBM MQ 10.0.0, this URL can use the `https` protocol in addition to `http`, `ftp`, and `file`. Using HTTPS URLs protects the integrity of the CCDT file in transit.

To use an HTTPS URL, you must first configure an HTTPS keystore. This keystore is a PKCS #12 key repository that the IBM MQ client library can use as a truststore when it creates the outgoing HTTPS connection to fetch the CCDT file.

You can specify information about the HTTPS keystore by using the following attributes in the client configuration file, as described in [SSL stanza of the client configuration file](#):

- `HTTPSKeyStore`
- `HTTPSCertValidation`
- `HTTPSCertRevocation`

IBM MQ MQI client applications can use the following fields of the `MQSCO` structure to specify information about the HTTPS keystore, as described in [MQSCO - SSL/TLS configuration options](#):

- `HTTPSKeyStorePtr`
- `HTTPSKeyStoreOffset`
- `HTTPSKeyStoreLength`
- `HTTPSCertValidation`
- `HTTPSCertRevocation`

For more information about accessing CCDTs through URLs, see [URL access to the CCDT and Locations for the CCDT](#).

If an HTTPS connection fails, diagnostic information is provided by new error codes for message AMQ9795E, as described in HTTP error codes.

Support for customized SSLSocketFactory for CCDT and JWT retrieval over HTTPS

IBM MQ 9.4.5 supports customizing SSL behavior when retrieving CCDT files and JWT authentication tokens over HTTPS. You can now provide your own customized instance of the SSLSocketFactory class for retrieval of CCDT and JWT from HTTPS endpoints. This enables you to control truststores, keystores, and certificate validation logic without affecting other HTTPS connections in the JVM.

Applications can use the following connection factory properties to supply an SSLSocketFactory instance for retrieving CCDT and JWT files over HTTPS:

- **WMQ_CCDT_SSL_SOCKET_FACTORY** for CCDT retrieval from an HTTPS endpoint.
- **TOKEN_SSL_SOCKET_FACTORY** for JWT retrieval from an HTTPS endpoint.

You can assign these connection factories independently or reuse the same configuration for both endpoints. You can use the properties to customize all aspects of SSL encryption, giving you control over SSL for CCDT and JWT retrieval and making it easier to work with internal HTTPS endpoints, custom trustchains, and application-level SSL configurations. For more information, see [Supplying a customized SSLSocketFactory in IBM MQ classes for JMS/Jakarta Messaging](#).

These connection factory properties can be found as constants that can be accessed through WMQConstants. For more information, see [WMQConstants](#).

Applications can also specify the level of validation applied during an HTTPS connection. You can use the following configuration properties for the CCDT and JWT certificate validation policy to manage the certificate checks that the IBM MQ classes for JMS client library runs when it makes an HTTPS connection:

- **WMQ_CCDT_HTTPS_CERT_VALIDATION_POLICY**
- **TOKEN_HTTPS_CERT_VALIDATION_POLICY**

There are several different ways of setting the certificate validation policy properties. If you use more than one method, the settings are processed in order of precedence. For more information, see [Configuring certificate validation policies in IBM MQ](#).

JWKS support for automatic queue manager side certificate management

From IBM MQ 10.0.0, two new attributes are added to the SSL stanza of the qm.ini file.

- [HTTPSCertRevocation=REQUIRED\(default\)|OPTIONAL|DISABLED](#) sets the level of CRL/OCSP extension checks for HTTPS certificates.
- [HTTPSCertValidation=HOSTNAMECN\(default\)|ANY|NONE](#) sets the level of certificate peer name validation performed when establishing HTTPS connections.

Support for the IBM Semeru Runtime FIPS 140-3 security provider

The IBM Semeru Runtime FIPS 140-3 implementation has now been certified by NIST. From IBM MQ 10.0.0, the handling of IBM MQ classes for JMS and IBM MQ classes for Java client connections using TLS for IBM Semeru Runtime versions 8.0.8.30, 11.0.24, 17.0.12, and Java 21.0.4 or higher has been updated to support the FIPS 140-3 implementation on the following platforms:

-  AIX
-  Linux Linux for x86-64
-  Linux Linux on Power Systems - Little Endian
-  Windows

For more information, see [TLS CipherSpecs and CipherSuites in IBM MQ classes for JMS](#) and [TLS CipherSpecs and CipherSuites in IBM MQ classes for Java](#).

Federal Information Processing Standards (FIPS) compliance with IBM MQ Explorer

From IBM MQ 10.0.0, FIPS compliance is available in IBM MQ Explorer again.

For more information, see [FIPS compliance](#).

Improvements to how IBM MQ selects the keystores to use for TLS

From IBM MQ 10.0.0, when selecting a TLS keystore to use for secure communications, IBM MQ searches for a TLS keystore with an extension of .p12 prior to searching for a TLS keystore with an extension of .kdb.

For more information see [Changing the key repository location for a queue manager on AIX, Linux, and Windows](#) or [Specifying the key repository location for an IBM MQ MQI client on AIX, Linux, and Windows](#).

Support for three additional TLS 1.2 CipherSpecs

IBM MQ 10.0.0 adds support for three new TLS 1.2 CipherSpecs:

- ECDHE_RSA_CHACHA20_POLY1305
- ECDHE_ECDSA_CHACHA20_POLY1305
- ECDHE_ECDSA_AES128_CCM8

For more information, see [Enabling CipherSpecs](#).

Support for FIPS in AMS, JWT, JWKS, HTTPS CCDT retrieval and the Password Protection system

From IBM MQ 10.0.0, support for FIPS has been extended to several components that perform cryptographic operations. Enabling FIPS mode in these components will indicate that a FIPS compliant cryptographic library should be used and only FIPS approved algorithms should be used.

For more information about IBM MQ FIPS support, see [Federal Information Processing Standards \(FIPS\) for AIX, Linux, and Windows](#).

Custom path for TLS certificates in IBM MQ .NET and XMS .NET client applications

From IBM MQ 10.0.0, IBM MQ .NET and XMS .NET clients can use encrypted passwords or plain text passwords and custom certificate paths for TLS connections to load the client and queue manager certificates. In addition, users can securely encrypt the password for the TLS keystore before passing it to the respective IBM MQ .NET 6 client application with a new utility called Dotnet Password Encryptor (**rundotnetcred**). This tool encrypts TLS keystore passwords, providing secure handling of sensitive password data.

For more information, see [Custom path for certificates in .NET for TLS connectivity using plain text or encrypted passwords](#) and [Custom path for certificates in XMS .NET for TLS connectivity using plain text or encrypted passwords](#).

Administration

Enhancements to the IBM MQ Console

- The IBM MQ Console now provides a customized column view, which allows you to customize which columns are displayed in certain views. You can define different views and switch between them, hiding, revealing, and rearranging columns. For more information, see [Quick tour of the IBM MQ Console](#).
- With the new queue manager status view, you can now view status information equivalent to that returned by the **qmstatus** command for a running queue manager. For more information, see [IBM MQ Console: Viewing queue manager status](#).
- You can now create, use and save custom table filters. This enables you to filter the data so that only the objects that you are interested in are displayed. For all applicable tables, you can use the Filter panel to modify the fields that you would like to filter on and how. You can create and save new filters and switch between them, and edit and delete existing filters. For more information, see [IBM MQ Console: filtering objects displayed in tables](#).
- You can now move or copy messages from one queue to another when using the IBM MQ Console. You can move or copy all files from a queue, or select individual messages to move or copy. For more information, see [IBM MQ console: Working with queues](#).

- You can now view detailed status for a Native HA configuration. For more information, see [IBM MQ Console: Viewing queue manager status](#).

Force option might be required when you change a queue manager CCSID

If you want to modify a queue manager's coded character set identifier (CCSID) in a manner which might be unsafe, you must now specify the **FORCE** parameter. Unsafe modifications include switching to a smaller character set, for example CCSID 1208 to CCSID 819.

For more information, see the description of the **CCSID** parameter in the topics for the various queue manager modification commands: [ALTER QMGR](#) and [MQCMD_CHANGE_Q_MGR](#).

Accessing error logs programmatically

You can now access IBM MQ queue manager error logs by using a new PCF command, **MQCMD_INQUIRE_ERROR_LOG**. Previously, error logs were accessible only from the file system or by using platform-specific tooling. The new command enables programmatic access to error logs; authorized clients can retrieve the contents of the logs as a series of PCF reply messages. Log data is returned as raw text, chunked into 1MB sized messages. For more information, see [MQCMD_INQUIRE_ERROR_LOG](#).

Application development

Providing trace for short-lived Java/JMS application containers

Short-lived containers in cloud-native environments often do not have persistent storage locations. This presents challenges for capturing diagnostic and troubleshooting information when using trace mechanisms that write trace output to files because the file systems do not persist after the containers terminate. From IBM MQ 10.0.0, you can specify that trace output is sent directly to stdout (standard output stream) or stderr (standard error stream) by setting the **com.ibm.msg.client.commonservices.trace.outputName** property to the appropriate value. This allows you to capture trace information through container logging mechanisms, which persist beyond the container's lifetime. For more information, see [Tracing IBM MQ classes for JMS applications](#) and [Tracing IBM MQ classes for Java applications](#).

Using MsgToken in a JMS selector

When it is important to retrieve a precise message even when duplicates exist, you can use the message token (MsgToken) as a selector. The properties JMSMessageID and JMSCorrelationID are normally sufficient to specify a particular message selection, but it can happen that more than one message with the same ID might be returned. This is because applications can override the MessageID, and a CorrelationID can be reused.

For more information, see [Message selectors in JMS](#).

Enhancements to AMQP and MQTT

- Java heap dump generation to troubleshoot low memory exceptions for AMQP and MQTT

From IBM MQ 10.0.0, you can set the system property **com.ibm.mq.MQXR.GenerateHeapDump** to enable automatic generation of a Java heap dump when the AMQP or MQTT service reports a low memory exception. This will assist IBM Support in diagnosing low memory problems. For more information, see [Enabling Java heap dump generation to troubleshoot low memory exceptions for AMQP](#) and [Enabling Java heap dump generation to troubleshoot low memory exceptions for MQTT](#).

- Simplified configuration of AMQP and MQTT application properties

IBM MQ 10.0.0 provides a simpler way for you to configure properties in the AMQP and MQTT configuration files. Instead of having to edit these files manually, you can use the new **setamqp**, **dspamqp**, **setmqxr**, **dspmqxr** commands to create, modify, or view them.

Multiple JMS connections can be treated as a single application instance

From IBM MQ 10.0.0, for applications that use IBM MQ classes for JMS or IBM MQ classes for Jakarta Messaging, you can specify a mode of operation in which all JMS connections that are created by the same Java virtual machine are treated as a single application instance and connect or reconnect to the same queue manager. This new behavior can be useful for some applications, such as microservices.

You enable this mode by specifying a new environment variable, **AMQ_APP_INSTANCE_MODE**, or a new Java system property, `com.ibm.mq.cfg.jmqi.AppInstanceMode=JVM`. Restrictions apply. For more information, see [Application Instances in IBM MQ classes for JMS/Jakarta Messaging](#).

JWT endpoint support in IBM MQ classes for JMS/Jakarta Messaging

From IBM MQ 10.0, the IBM MQ classes for JMS/Jakarta Messaging have been enhanced so that a Java client application no longer needs to handle the complexity of connecting to the token issuer or fetching the token. Instead, the process of obtaining a token is fully managed by the IBM MQ classes for JMS/Jakarta Messaging, which interacts with the token issuer on behalf of the client, retrieving a token from a token provider. The token is then sent to the queue manager for authentication. For more information, see [Using authentication tokens in an application](#).

Note: The client must be registered with the token provider to use the client credentials flow to generate the `client_id` and `client_secret`.

The following three connection factory properties are provided for retrieving a token from the provider:

- **TOKEN_ENDPOINT:** the URI of the endpoint of a token provider.
- **TOKEN_CLIENT_ID:** the Client ID as defined in a token provider.
- **TOKEN_CLIENT_SECRET:** Client Secret, that is, a secret known only to the client application and token provider.

The JMSAdmin and JMS30Admin tools have also been enhanced to support the new properties of the connection factory. For more information, see [Creating JMS objects](#) and [Starting the JMSAdmin and JMS30Admin tools](#).

Support for .NET 10 at runtime

From IBM MQ 10.0, IBM MQ supports .NET 10 at runtime for applications using IBM MQ classes for .NET and IBM MQ classes for XMS .NET. When run against the new runtime or component, existing binaries might encounter a breaking change in behavior, such as failure to load or execute, and if so, might require recompilation. For more information, see [Installing IBM MQ classes for .NET](#), [Installing IBM MQ classes for XMS .NET](#), and [Breaking changes in .NET 10](#).

IBM MQ and XMS .NET.NET client libraries built with .NET 10

From IBM MQ 10.0, IBM MQ provides .NET 10 as the target framework to build applications using IBM MQ classes for .NET and IBM MQ classes for XMS .NET. For more information, see [Installing IBM MQ classes for .NET](#) and [Installing IBM MQ classes for XMS .NET](#).

Containers

Support for Amazon Elastic Kubernetes Service

The IBM MQ Operator is now supported on Amazon Elastic Kubernetes Service (EKS). A new Helm chart is available for deploying the IBM MQ Operator in this environment. To learn more about installing the IBM MQ Operator on Amazon EKS, see [Installing the IBM MQ Operator on Amazon EKS](#).

Native HA and Cross-Region Replication features available on IBM MQ licensed queue managers

Add-on parts for IBM MQ for Kubernetes and OpenShift are available, providing a cost-effective method of licensing Native High Availability (HA) and Cross Region Replication (CRR) when running IBM MQ in container environments.

Native HA provides a straightforward way of building a highly resilient containerized IBM MQ instance, with 3 synchronous IBM MQ active/passive nodes in a quorum. Cross Region Replication enables asynchronous replication to a second site, enabling a rapid disaster recovery mechanism.

Disabling Scratch and Tmp volumes

You can now configure the Scratch and Tmp volumes so that their data is placed on the queue manager data volume. By using this configuration, you can set the queue manager file system to read-only without the need for `emptyDir` ephemeral volumes. For more information about this configuration, see [Running the IBM MQ container with a read-only root file system](#).

Related concepts

  [What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only](#)

IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.

 [What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement](#)
For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.

   [What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement](#)

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

 [What's changed in IBM MQ 10.0.0](#)

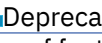
Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

 [New, changed, and removed messages in IBM MQ 10.0.0](#)

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

 [New, changed, and removed messages since IBM MQ 9.4.5](#)

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

  [Deprecated, stabilized, and removed features in IBM MQ 10.0.0](#)

A number of features are deprecated or removed from the product from IBM MQ 10.0.0.

What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only

IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.

Security

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“\[Linux\]You can now specify that replication links in your HA RDQM, DR RDQM, and DR/HA RDQM configuration are secured with TLS.” on page 38](#)
-  [“\[Linux\]Secure heartbeat for HA RDQM” on page 38](#)
-   [“\[Linux\]\[AIX\]Managed File Transfer support for OpenSSH type Private key for SFTP servers” on page 38](#)

Administration

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  [“\[Linux\]Native HA In-Region Replication \(IRR\) support ” on page 38](#)

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-   [“\[IBM Cloud Pak for Integration\]\[Kubernetes\]Native HA cross-region replication in containers” on page 38](#)
-  [“\[Linux\]Native High Availability and Cross Region Replication on Linux” on page 39](#)

-  [“Simplifying data conversion with the Kafka Connect XML Converter” on page 39](#)
-  [“Update to the Kafka Source and Sink connectors” on page 39](#)
-  [“Support for Kafka Connect” on page 39](#)

Monitoring

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Enhancements for monitoring Native HA instances” on page 39](#)

Containers

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-   [“\[Linux\]Support for deployments outside OpenShift with the IBM MQ Advanced container image” on page 39](#)
-   [“\[Linux\]License tagging for non-production container workloads” on page 39](#)

Security

You can now specify that replication links in your HA RDQM, DR RDQM, and DR/HA RDQM configuration are secured with TLS.

When you create a queue manager in an RDQM configuration, you can specify that the links used to replicate data between the queue manager instances are secured with TLS.

For more information, see [Secure replication for HA RDQM](#), [Secure replication for DR RDQM](#), and [Secure replication for DR/HA RDQM](#).

Secure heartbeat for HA RDQM

You can now specify that the heartbeat links in your HA RDQM configuration are encrypted.

See [Secure heartbeat for HA RDQM](#).

Managed File Transfer support for OpenSSH type Private key for SFTP servers

From IBM MQ 10.0.0, in addition to supporting private keys generated in RSA format, Managed File Transfer (MFT) supports private keys generated in the newer OpenSSH format. Both of these formats are compatible with the protocol bridge agent.

For more information, see [Example: How to configure a protocol bridge agent to use private key credentials with a UNIX SFTP server](#).

Administration

Native HA In-Region Replication (IRR) support

Native HA IRR is available on Linux.

A Native HA In-Region Replication (IRR) configuration enables you to switch the running of a queue manager to a different Native HA configuration in a different location within the same region (up to 160 km or 100 miles apart). You can configure Native HA IRR on virtual machines or natively on Linux platforms. Native HA IRR is not currently supported on containers.

For more information, see [Native HA IRR](#).

Native HA cross-region replication in containers

Native HA cross-region replication (CRR) is now available in the container environment. This feature involves having replication between two Native HA groups in different regions. You can manually switch from running a queue manager in one region to running in another. You can use Native HA CRR to provide a disaster recovery solution. If some disaster befalls a live site whereby the queue manager can no longer run or communicate, you can start that queue manager on the recovery site with little or

no loss of data. You can also perform a managed switchover to enable you to complete maintenance on what is normally the live site (in this case there is no loss of data).

For more information, see [Native HA Cross-Region Replication](#).

Native High Availability and Cross Region Replication on Linux

Native HA and Native HA CRR configurations are now available on Linux. You can securely replicate queue managers, including across regions, with a Recovery Point Objective/Recovery Time Objective near zero. You can configure Native HA and Native HA CRR on virtual machines or natively on Linux platforms.

For more information, see [Native HA](#) and [Native HA CRR](#).

Simplifying data conversion with the Kafka Connect XML Converter

The Kafka Connect XML Converter and transformation plug-ins, previously only available on GitHub, are now included on Fix Central alongside the existing Kafka sink and source connectors. The Kafka Connect XML Converter and transformation plug-ins make it easier to work with XML data in Kafka Connect pipelines.

For more information, see [Kafka Connect scenarios](#).

Update to the Kafka Source and Sink connectors

The Kafka Source and Sink connectors included on Fix Central have been updated to their latest versions. The Source connector the version has been upgraded from version 2.1.0 to 2.3.0 and the Sink connector has been upgraded from version 2.2.0 to 2.2.1. For more information see, [Kafka Connect scenarios](#).

For more information, see [Kafka Connect scenarios](#).

Support for Kafka Connect

From IBM MQ 10.0.0, you get access to an IBM provided, and supported Kafka Connect runtime, which can be used for running the IBM MQ source and sink Kafka connectors which are already provided and supported by IBM. This means you no longer need to obtain separate support for Kafka Connect, simplifying the deployment of the connectors.

For more information, see [Kafka Connect scenarios](#).

Monitoring

Enhancements for monitoring Native HA instances

Published resource statistics and the performance tool, **mqperfck**, have been enhanced to help with monitoring and troubleshooting Native HA instances. See [Metrics published on the system topics and mqperfck \(MQ performance check\)](#).

Containers

Support for deployments outside OpenShift with the IBM MQ Advanced container image

From IBM MQ 10.0.0, you can deploy IBM MQ into container runtime environments provided by containerd, cri-o, Podman or Docker with the pre-built IBM MQ Advanced container image. This image is available from the IBM Container Registry.

For more information, see [Support for the IBM MQ Advanced container images](#).

License tagging for non-production container workloads

From IBM MQ 10.0.0, in the IBM MQ Operator, you can select the appropriate licenses for non-production workloads in the IBM MQ Advanced Container.

For more information, see [Correcting license annotations for deployed queue managers](#).

Related concepts

What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement

For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.

What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.

What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

What's changed in IBM MQ 10.0.0

Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

New, changed, and removed messages in IBM MQ 10.0.0

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

New, changed, and removed messages since IBM MQ 9.4.5

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

Deprecated, stabilized, and removed features in IBM MQ 10.0.0

A number of features are deprecated or removed from the product from IBM MQ 10.0.0.

"IBM MQ license information" on page 9

What you can purchase with IBM MQ and what each purchase entitles you to install.

What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.

Security

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

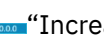
-  "Federal Information Processing Standards (FIPS) compliance with IBM MQ Explorer" on page 41

Administration

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  "Simpler connectivity to cloud" on page 41
-  "Enhancements to the IBM MQ Console" on page 41
-  "Improved alternative site recovery" on page 41
-   "Support for Channels Stanza - Ignore Sequence Number Mismatch attribute within QMINI" on page 41
-  "Data conversion support for the latest GB18030 standard" on page 42

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-   "Increased upper limit for OUTBUFF within CSQ6LOGP to define output buffer sizes" on page 41

Monitoring

The following capabilities are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

- [“Integrated OpenTelemetry tracing” on page 42](#)
- [“New fields in channel accounting data records” on page 42](#)
- [“New message indicating failed authentication” on page 42](#)

Security

Federal Information Processing Standards (FIPS) compliance with IBM MQ Explorer

From IBM MQ 10.0.0, FIPS compliance is available in IBM MQ Explorer again.

For more information, see [FIPS compliance](#).

Administration

Simpler connectivity to cloud

From IBM MQ 10.0, TCP channels support **CONNAMES** up to 264 characters, making it easy to connect IBM MQ for z/OS to queue managers running in cloud, OpenShift or Kubernetes environments. Similarly, CHLAUTH records now support an **ADDRESS** of up to 264 characters.

For more information, see [DEFINE CHANNEL \(define a new channel\)](#) and [SET CHLAUTH \(create or modify a channel authentication record\)](#).

Enhancements to the IBM MQ Console

- The IBM MQ Console now provides a customized column view, which allows you to customize which columns are displayed in certain views. You can define different views and switch between them, hiding, revealing, and rearranging columns. For more information, see [Quick tour of the IBM MQ Console](#).
- You can now create, use and save custom table filters. This enables you to filter the data so that only the objects that you are interested in are displayed. For all applicable tables, you can use the Filter panel to modify the fields that you would like to filter on and how. You can create and save new filters and switch between them, and edit and delete existing filters. For more information, see [IBM MQ Console: filtering objects displayed in tables](#).
- You can now move or copy messages from one queue to another when using the IBM MQ Console. You can move or copy all files from a queue, or select individual messages to move or copy. For more information, see [IBM MQ Console: Working with queues](#).
- You can use the IBM MQ Console to add, view, delete and update coupling facility structures on z/OS queue managers. For more information, see [IBM MQ Console: Working with coupling facility structures](#).
- You can use the IBM MQ Console to view shared message data sets on z/OS queue managers. For more information, see [IBM MQ Console: Working with shared message data sets](#).

Increased upper limit for OUTBUFF within CSQ6LOGP to define output buffer sizes

From IBM MQ 10.0.0, you can set the **OUTBUFF** parameter of CSQ6LOGP to a larger maximum of 40000KB instead of 4000KB, previously available on Db2®. This sets the size of the log output buffers, which are now permanently pagefixed in above-the-bar storage for improved performance.

For more information, see [Using CSQ6LOGP](#).

Improved alternative site recovery

From IBM MQ 10.0, queue managers will automatically rebuild XCF group entries at start up, removing the need for manually running the **ADD QMGR** command of the CSQ5PQSG utility.

For more information, see Step 4 of [Recovering a queue sharing group at the alternative site](#).

Support for Channels Stanza - Ignore Sequence Number Mismatch attribute within QMINI

From IBM MQ 10.0, you can add a second stanza to the QMINI dataset, Channels, and use the attribute **IgnoreSeqNumberMismatch**, previously only available on IBM MQ for Multiplatforms. The **IgnoreSeqNumberMismatch** controls how the queue manager handles a sequence number mismatch during channel startup. The attribute is set on the receiver queue manager and effectively performs a reset channel command on the receiver channel.

For more information, see [The QMINI data set](#).

Data conversion support for the latest GB18030 standard

IBM MQ 10.0.0 adds support for the latest version of the GB18030 standard. Messages can be converted between GB18030-2022 level 1 and level 2 characters (CCSID 1388) and Unicode (UTF-8, CCSID 1208 and UTF-16, CCSID 1200) and vice-versa. Earlier versions supported conversion to the GB18030-2005 standard.

For more information, see [Simplified Chinese](#).

Monitoring

Integrated OpenTelemetry tracing

From IBM MQ 10.0.0, IBM MQ for z/OS queue managers are capable of taking part in OpenTelemetry traces initiated either on distributed or z/OS and automatically propagating those traces to other z/OS middleware. This makes it much easier to understand the flow of any application that runs on z/OS, and how it interacts with other platforms. Support includes:

- Span emission when messages are put to, or got from, queues.
- Span emission when messages are put to, or got from, topics.
- Span emission when messages are sent to IMS via the IMS bridge.
- Automatic propagation of trace between queue managers, whether they are on z/OS or distributed.
- Automation propagation of trace between IBM MQ and CICS® either via the CICS bridge, or the CICS adapter.
- Automation propagation of trace between IBM MQ and IMS either via the IMS bridge, or the IMS adapter.

For more information, see [Open Telemetry tracing](#) and [OpenTelemetry tracing with IBM MQ on z/OS](#).

New fields in channel accounting data records

Two new fields have been added to the SMF Type 116, Subtype 10 channel accounting data records:

- The field *qcstrpid* (Remote partner product id) gives the product identifier of the IBM MQ code running at the remote end of the channel.
- The field *qcstrver* (Remote partner version) gives the version of the IBM MQ code running at the remote end of the channel.

For more information, see [Channel accounting data records](#).

New message indicating failed authentication

A new informational message, CSQX769I, reports when authentication has failed on a channel. It gives the channel name, the user ID that failed authentication, and the IP address of the connecting client. The message appears in the CHINIT job log. See [Distributed queuing messages \(CSQX...\)](#).

Related concepts

 [What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement](#)
For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.

  [What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only](#)
IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.

   [What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement](#)
For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

 [What's changed in IBM MQ 10.0.0](#)

Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

[New, changed, and removed messages in IBM MQ 10.0.0](#)

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

[New, changed, and removed messages since IBM MQ 9.4.5](#)

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

[Deprecated, stabilized, and removed features in IBM MQ 10.0.0](#)

A number of features are deprecated or removed from the product from IBM MQ 10.0.0.

[“IBM MQ license information” on page 9](#)

What you can purchase with IBM MQ and what each purchase entitles you to install.

What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

Administration

The following capabilities first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  [“Support for Kafka Connect” on page 43](#)
-  [“Latest Kafka Source and Sink connectors” on page 43](#)
-  [“Simplifying data conversion with the Kafka Connect XML Converter” on page 43](#)

Administration

Support for Kafka Connect

From IBM MQ 10.0.0, you get access to an IBM provided, and supported Kafka Connect framework, which can be used for running the IBM MQ source and sink Kafka connectors which are already provided and supported by IBM. This means you no longer need to obtain separate support for Kafka Connect, simplifying the deployment of the connectors.

For more information, see [Kafka Connect scenarios](#).

Latest Kafka Source and Sink connectors

The Kafka Source and Sink connectors included in the Kafka Connector Pack have been updated to their latest versions. The Source connector the version has been upgraded from version 2.1.0 to 2.3.0 and the Sink connector has been upgraded from version 2.2.0 to 2.2.1.

For more information, see [Kafka Connect scenarios](#).

Simplifying data conversion with the Kafka Connect XML Converter

The Kafka Connect XML Converter and transformation plug-ins, previously only available on GitHub, are now included in the Kafka Connector Pack alongside the existing Kafka sink and source connectors. The Kafka Connect XML Converter and transformation plug-ins make it easier to work with XML data in Kafka Connect pipelines.

For more information, see [Kafka Connect scenarios](#).

Related concepts

   [What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement](#)

For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.

[What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only](#)

IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.

[What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement](#)

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.

[What's changed in IBM MQ 10.0.0](#)

Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

[New, changed, and removed messages in IBM MQ 10.0.0](#)

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

[New, changed, and removed messages since IBM MQ 9.4.5](#)

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

[Deprecated, stabilized, and removed features in IBM MQ 10.0.0](#)

A number of features are deprecated or removed from the product from IBM MQ 10.0.0.

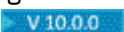
[“IBM MQ license information” on page 9](#)

What you can purchase with IBM MQ and what each purchase entitles you to install.

[What's changed in IBM MQ 10.0.0](#)

Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

IBM MQ 10.0.0 includes changes of behavior that were previously delivered in the CD releases of IBM MQ 9.4.0 through IBM MQ 9.4.5, along with some changes that are new at IBM MQ 10.0.0:

- Changes that are new to Long Term Support (LTS) users at IBM MQ 10.0.0 are indicated by a dark blue icon 
- Changes that are new to Continuous Delivery (CD) users at IBM MQ 10.0.0 are indicated by a light blue icon 

License entitlement, installation and migration

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-    [“\[IBM MQ Advanced\]\[IBM MQ Advanced VUE\]\[IBM MQ Advanced for z/OS\]IBM Aspera faspio Gateway version upgraded” on page 46](#)

Security

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  [“Configuring TLS client authentication in MQIPT” on page 46](#)
-   [“\[Removed\]Removal of support for the Java security manager in MQIPT” on page 46](#)
-  [“\[UNIX, Linux, Windows, IBM i\]Certificate labels with existing space or commas must be escaped” on page 46](#)

The following changes first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “[AIX, Linux, Windows]Increased support for the IBM Semeru Runtime 21 FIPS 140-3 security provider” on page 47
-  “[AIX, Linux, Windows]Changes to CipherSuites supported by MQIPT” on page 47
-  “Changes to CipherSuites supported by the IBM MQ AMQP service, Managed File Transfer, IBM MQ Console, REST API, and IBM MQ Telemetry server” on page 47
-  “Changes to Distinguished Name attributes that are supported by the runmqktool and mqiptKeytool commands” on page 47
-   “[Linux][AIX]JWT token typ parameter is now optional” on page 47
-  “Migrating FIPS clients from Java 8 to IBM Semeru Runtime Java with FIPS 140-3 ” on page 48
-  “Changes to FIPS operation” on page 48
-  “[Deprecated]Deprecation of RSA key exchange CipherSpecs” on page 48
-  “[Deprecated]Deprecation of SSL 3.0 and TLS 1.0 protocols” on page 49
-  “Removal of support for SSLv3, TLS 1.0, RC4, 3DES CipherSpecs” on page 49
-  “TLS_RSA_* CipherSpecs disabled in IBM Semeru Runtime 25” on page 49
-  “Restriction on minimum RSA keysize allowed” on page 49
-  “[AIX, Linux, Windows]Update to create keystores with secure algorithm by default” on page 49
-  “Support for longer User IDs for connected and authenticated applications” on page 49
-  “Stricter validation of User IDs” on page 49
-  “[AIX, Linux, Windows]Extended Key Usage (EKU) enhancements” on page 50

Administration

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-   “[AIX, Linux, Windows]Changes to the Java runtime environment shipped with IBM MQ” on page 50
-   “[z/OS]AMS and MFT standalone PID removal” on page 51
-   “[z/OS]SYSTEM.FTE.EVENT.agent_name and SYSTEM.FTE.STATE.agent_name queues on z/OS” on page 51
-   “Change to default TCP buffer size for IBM MQ clients” on page 51
-   “[z/OS]Changes to SM115REL and SMF116REL” on page 52
-   “[z/OS]A new column is added to two Db2 tables used by queue sharing groups” on page 52

The following changes first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “[IBM MQ Advanced][IBM MQ Advanced VUE][IBM MQ Advanced for z/OS]IBM Kafka Source and Sink Connector version upgraded” on page 50
-  “Message AMQ7366W added to ExcludeMessage and SuppressMessage lists” on page 50
-  Removal of Russian translation messaging component
-   “[z/OS]Changes to the Java runtime environment runtime for IBM MQ for z/OS components” on page 51

Application development

The following changes are new for Long Term Support and Continuous Delivery at IBM MQ 10.0.0:

-  “Customizing XMS .NET client connection keep alive behavior in XMS .NET applications” on page 52
-  “Removal of 32-bit JNI libraries on x86 architectures” on page 52

The following changes first appeared in IBM MQ 9.4.x Continuous Delivery releases and are new for Long Term Support at IBM MQ 10.0.0:

-  “[Windows][Jakarta Messaging 3.0]Support for IBM MQ resource adapter for Jakarta Messaging in GlassFish Server” on page 52
-  “Customizing JMS connection keep alive behavior in JMS applications” on page 53
-  “IBM Semeru Runtime 25 file encoding change” on page 53

License entitlement, installation and migration

IBM Aspera faspio Gateway version upgraded

From IBM MQ 10.0, the version of the IBM Aspera faspio Gateway is upgraded to 1.3.7. For more information, see [Defining an Aspera gateway connection on Linux or Windows platforms](#).

Security

Configuring TLS client authentication in MQIPT

From IBM MQ 10.0.0, the **SSLServerClientAuth** property can be used to configure whether client authentication is required for a IBM MQ Internet Pass-Thru (MQIPT) SSL/TLS server route. If required, this new property can be used to prevent MQIPT from requesting a certificate from the SSL/TLS client. The new **SSLServerClientAuth** property overrides the existing **SSLServerAskClientAuth** property, if both properties are specified.

For more information about the **SSLServerClientAuth** property, see [SSLServerClientAuth](#).

Removal of support for the Java security manager in MQIPT

Support for the Java security manager, which was previously deprecated, is removed at IBM MQ 10.0.0. The **SecurityManager** and **SecurityManagerPolicy** properties are both removed. For more information, see [Configuring IBM MQ Internet Pass-Thru](#).

Certificate labels with existing space or commas must be escaped

Prior to IBM MQ 10.0.0 on AIX, Linux, IBM i, and Windows, while not recommended, you could configure a certificate label such as client, RSA1. This value would be stored in the queue manager **CERTLABL** attribute as follows:

```
CERTLABL('client, RSA1')
```

From IBM MQ 10.0.0, you can configure multiple certificate labels, separated by a space or comma. These characters can still be used to identify a certificate, but any commas or spaces in the certificate label must be escaped with a backslash in the queue manager **CERTLABL** attribute. For IBM i only, spaces do not need to be escaped as a space character is not a valid delimiter.

In the case of the previous example, the value on AIX, Linux, and Windows would be:

```
CERTLABL('client\\,\\ RSA1')
```

or on IBM i, the value would be:

```
CERTLABL('client\\, RSA1')
```

This escaping ensures the queue manager selects the certificate labelled client, RSA1.

Note: If you are migrating from a pre-IBM MQ 10.0.0 queue manager, the **CERTLABL** attributes on the queue manager and channel objects will be updated automatically where necessary. If an attempt to migrate a certificate label fails an AMQ7841 message will be printed to the queue manager logs and action will be required to escape the certificate label.

ALW

Increased support for the IBM Semeru Runtime 21 FIPS 140-3 security provider

From IBM MQ 10.0.0, the JRE upgrade to IBM Semeru Runtime 21 extends FIPS 140-3 cryptography support to AMQP, MQTT, MFT, and IBM MQ Internet Pass-Thru. For each of these components you should review and update any configurations or environments previously using FIPS 140-2 to align with FIPS 140-3 requirements, and make changes to the clients to account for the new Java properties that enable the FIPS 140-3 security provider.

For more information, see [Securing AMQP clients](#), [MQ Telemetry channel configuration for channel authentication using TLS](#), [FIPS support in MFT](#), and [FIPS support in MQIPT](#).

ALW

Changes to CipherSuites supported by MQIPT

From IBM MQ 10.0.0, the JRE that runs IBM MQ Internet Pass-Thru (MQIPT) is upgraded to IBM Semeru Runtime 25. This upgrade changes the CipherSuites that are supported by MQIPT. The names of many of the supported CipherSuites are also changed. You must ensure that your MQIPT configuration specifies CipherSuites that are supported by IBM Semeru Runtime 25.

For more information about the CipherSuites that are supported by MQIPT, see [CipherSuites supported by MQIPT from IBM MQ 10.0.0](#).

Changes to CipherSuites supported by the IBM MQ AMQP service, Managed File Transfer, IBM MQ Console, REST API, and IBM MQ Telemetry server

From IBM MQ 10.0.0, the following CipherSuites are not supported for the IBM Semeru Runtime 25 used to run the IBM MQ AMQP service, Managed File Transfer, IBM MQ Console, REST API, and IBM MQ Telemetry server:

- TLS_ECDHE_ECDSA_WITH_3DES_EDE_CBC_SHA
- TLS_ECDHE_ECDSA_WITH_NULL_SHA
- TLS_ECDHE_ECDSA_WITH_RC4_128_SHA
- TLS_ECDHE_RSA_WITH_3DES_EDE_CBC_SHA
- TLS_ECDHE_RSA_WITH_NULL_SHA
- TLS_ECDHE_RSA_WITH_RC4_128_SHA
- TLS_RSA_WITH_3DES_EDE_CBC_SHA
- SSL_RSA_WITH_DES_CBC_SHA
- TLS_RSA_WITH_NULL_SHA256
- SSL_RSA_WITH_RC4_128_SHA

If you use any of these components, you must ensure that they use a CipherSuite supported by IBM Semeru Runtime 25. For more information, see [CipherSuites supported by the AMQP service from IBM MQ 10.0.0](#), [CipherSuites and CipherSpecs supported by Managed File Transfer from IBM MQ 10.0.0](#), and [CipherSuites supported by the IBM MQ Telemetry service from IBM MQ 10.0.0](#).

Changes to Distinguished Name attributes that are supported by the `runmqktool` and `mqiptKeytool` commands

From IBM MQ 10.0.0, the `runmqktool` and `mqiptKeytool` commands call the `keytool` certificate management utility in IBM Semeru Runtime 21. This JRE upgrade means that from IBM MQ 10.0.0 the **POSTALCODE** attribute cannot be specified in the Distinguished Name when these commands are used to create a certificate.

For more information about these commands, see [runmqktool](#) and [mqiptKeytool](#).

Linux

AIX

JWT token `typ` parameter is now optional

From IBM MQ 10.0.0, the `typ` (token type) parameter in a JSON Web Token (JWT) header is no longer required. If you do not specify this parameter, you no longer receive an error message. If you do

specify this parameter, its value must be "JWT". This change increases the compatibility of IBM MQ with various identity platforms.

For more information about this parameter and other JWT token requirements, see [Requirements for authentication tokens](#).

Migrating FIPS clients from Java 8 to IBM Semeru Runtime Java with FIPS 140-3

When migrating to IBM MQ 10.0.0, you will not see any change in behavior of your existing IBM MQ classes for JMS and IBM MQ classes for Java clients. However, if you are migrating FIPS clients from Java 8 to IBM Semeru Runtime Java, you will need to make changes to the clients to account for the new Java properties that you must specify to enable the FIPS 140-3 security provider.

With FIPS 140-2, you can add **SSLFIPSREQUIRED** to the connection factory to specify that a FIPS certified security provider is required. This property is not supported by IBM Semeru Runtime Java and is no longer necessary to create a FIPS certified connection. If a client connects with **SSLFIPSREQUIRED** set on the connection factory using IBM Semeru Runtime 11+ but the IBM Semeru Runtime Java properties are not specified, a JMS SSL configuration exception is thrown. For more information, see [TLS CipherSpecs and CipherSuites in IBM MQ classes for JMS](#) and [TLS CipherSpecs and CipherSuites in IBM MQ classes for Java](#).

From Java 11, the support for being able to use the SSL_ and TLS_ prefixes interchangeably in Cipher Suites has been removed so the cipher definition must be correctly defined.

IBM Semeru Runtime FIPS 140-3 does not support 32 bit clients. If your 32 bit client cannot be updated, you can override hardcoded connection factory properties by providing an override file.

Changes to FIPS operation

From IBM MQ 10.0.0, FIPS operation has changed to be more compliant with the current FIPS 140-2 specification. IBM MQ defers FIPS requirements to the underlying cryptographic service. The following changes apply due to this:

- Several CipherSpecs that were previously available in FIPS mode are no longer available. Table 1 in [Enabling CipherSpecs](#) has been updated to indicate which CipherSpecs are available in FIPS mode.
- A new AMQ9957 warning message has been added to indicate when a **REFRESH SECURITY** command must be executed for changes in FIPS mode to become active.

Note: As FIPS is managed by the underlying cryptographic driver, future versions of IBM MQ might have changes made to conform to FIPS requirements in both Continuous Delivery streams and Long Term Support streams.

Deprecation of RSA key exchange CipherSpecs

Following a recommendation from NIST, the CipherSpecs that use RSA for key exchange are deprecated and disabled by default from IBM MQ 10.0.0. This affects the following CipherSpecs:

- TLS_RSA_WITH_AES_128_CBC_SHA256
- TLS_RSA_WITH_AES_256_CBC_SHA256
- TLS_RSA_WITH_AES_128_GCM_SHA256
- TLS_RSA_WITH_AES_256_GCM_SHA384

You are advised to migrate to use the equivalent Diffie-Hellman key exchange CipherSpecs. These are:

- ECDHE_RSA_AES_128_CBC_SHA256
- ECDHE_RSA_AES_256_CBC_SHA384
- ECDHE_RSA_AES_128_GCM_SHA256
- ECDHE_RSA_AES_256_GCM_SHA384

Alternatively, the CipherSpecs can be re-enabled. For more information, see [Enabling deprecated CipherSpecs on IBM MQ for Multiplatforms](#).

Important: When using IBM MQ as a Service, these CipherSpecs are not able to be re-enabled and are permanently deprecated.

Deprecation of SSL 3.0 and TLS 1.0 protocols

The SSL 3.0 and TLS 1.0 protocols in IBM MQ .NET are deprecated from IBM MQ 10.0.0. Cipherspecs defined under property MQC.SSL_CIPHER_SPEC_PROPERTY or SSLCipherSpec in MQEnvironment that use SSL 3.0 or TLS 1.0 protocols should be avoided due to security vulnerabilities, and will be removed from support in the future releases. A warning message is produced in the client application error logs if either of these protocols is used and it is recommended to use TLS 1.2 protocol or higher.

Removal of support for SSLv3, TLS 1.0, RC4, 3DES CipherSpecs

IBM MQ 10.0.0 has removed support for several deprecated CipherSpecs as part of the upgrade to version 9 of GSKit:

- All SSLv3 CipherSpecs
- All TLS 1.0 CipherSpecs
- All CipherSpecs that use RC4 as an encryption algorithm
- All CipherSpecs that use Triple-DES (3DES) as an encryption algorithm

For more information, see [Deprecated and removed CipherSpecs](#).

TLS_RSA_* CipherSpecs disabled in IBM Semeru Runtime 25

From IBM MQ 10.0.0, TLS_RSA_* CipherSpecs have been disabled in IBM Semeru Runtime 25. If your IBM MQ classes for JMS/Jakarta Messaging or IBM MQ classes for Java application uses any of these CipherSpecs, either update the application to use a supported CipherSpec, or remove the algorithm from the disabled list in the `java.security` file.

For more information, see [TLS CipherSpecs and CipherSuites in IBM MQ classes for JMS](#), [TLS CipherSpecs and CipherSuites in IBM MQ classes for Java](#).

Restriction on minimum RSA keysize allowed

GSKit 9 has increased the requirements on RSA certificates. From IBM MQ 10.0.0, IBM MQ does not allow TLS communications to start when the TLS certificate in use is RSA with a keysize less than 2048. Elliptic curve (ECDSA) certificates are not affected. The **runmqakm** command does not allow the creation of RSA TLS certificates with a keysize less than 2048 while operating in **fips** mode, which is the default.

For more information, see [runmqakm -keydb \(manage key repositories\)](#).

Update to create keystores with secure algorithm by default

From IBM MQ 10.0.0, the **runmqakm** command creates keystores with a stronger algorithm by default. Keystores created with this algorithm might not be supported by a previous version of IBM MQ or Java. If **runmqakm** is being used to create a keystore for a previous version of IBM MQ, the older, insecure algorithm can be used by supplying the **-pqc false** parameter.

For more information, see [runmqakm -keydb \(manage key repositories\)](#).

Support for longer User IDs for connected and authenticated applications

From IBM MQ 10.0.0, in certain contexts, IBM MQ applications can now use user identities of up to 1024 bytes when connecting to the queue manager.

For more information see [User identity length limitations \(MQMD and downstream authorization\)](#).

Stricter validation of User IDs

From IBM MQ 10.0.0, IBM MQ performs more careful validation of the strings representing user identities when connecting to a queue manager, to ensure that these do not cause problems when messages are transmitted between different systems that support different character sets. See [Stricter validation of IBM MQ User ID characters](#).

To assist in detecting any issues during migration, if the IBM-provided Object Authority Manager detects any authority records referring to unsuitable user identities at startup, a warning message AMQ5793 is reported once for each such record found. You should modify such usernames to remove or replace unsupported characters at the earliest opportunity, to avoid unexpected behavior. If modification of users is difficult in your configuration, contact IBM Support.

ALW Extended Key Usage (EKU) enhancements

The Extended Key Usage certificate extension indicates one or more purposes for which a TLS certificate may be used. Whether this extension is validated depends on the certificate validation policy that is being used. From IBM MQ 10.0.0, Extended Key Usage extension validation is performed when RFC 5280 validation is enabled. If necessary, you can disable this validation by setting the **RFC5280EKUChecks=FALSE** attribute in the SSL stanza of the `mqclient.ini` and `qm.ini` files.

For more information, see [Certificate Extended Key Usage \(EKU\)](#).

Administration

MQ Adv. MQ Adv. VUE MQ Adv. z/OS IBM Kafka Source and Sink Connector version upgraded

From IBM MQ 10.0.0, IBM MQ Advanced for z/OS, IBM MQ Advanced for z/OS Value Unit Edition, IBM MQ Advanced for Multiplatforms, and IBM MQ Appliance upgrade the version of the IBM provided Kafka source connector from 2.0.0 to 2.1.0 and sink connector from 2.1.0 to 2.2.0.

For more information, see [Kafka Connect common topologies](#).

Message AMQ7366W added to ExcludeMessage and SuppressMessage lists

From IBM MQ 10.0.0, 7366 - Unable to identify queue manager to handle balance request for application is added to the ExcludeMessage and SuppressMessage lists.

For more information, see [Diagnostic message service stanzas](#) and [AMQ7xxx: IBM MQ product](#).

Linux Removal of Russian translation messaging component

From IBM MQ 10.0.0, support for Russian language translation is removed. If you are upgrading from an earlier version that includes this component on the Linux platform, you must manually uninstall it before proceeding with the upgrade. Failure to do so might result in the following error during the upgrade process:

```
MQSeriesRuntime = 9.x.x-0 is needed by (installed) MQSeriesMsg_ru-9.x.x-0.x86_64
```

ALW Changes to the Java runtime environment shipped with IBM MQ

From IBM MQ 10.0.0, the Java runtime environment (JRE) shipped with the product is updated from IBM Semeru Runtime 21 JRE to IBM Semeru Runtime 25. The JRE is shipped with the queue manager on the following platforms:

- AIX AIX
- Linux Linux for x86-64
- Linux Linux on Power Systems - Little Endian
- Linux Linux on IBM Z
- Windows Windows
- IBM MQ Toolkit for Mac

The following IBM MQ components use this JRE:

- Advanced Message Security (AMS)
- Managed File Transfer (MFT)
- IBM MQ Telemetry
- AMQP
- IBM MQ Console
- REST API

IBM MQ Explorer and IBM MQ Internet Pass-Thru are also updated to use IBM Semeru Runtime 25.

The IBM Semeru Runtime 25 contains a FIPS 140-3 security provider. Installations that use FIPS need to make configuration changes when upgrading to IBM MQ 10.0.0 to use the new provider. For more information, see [“Migrating FIPS clients from Java 8 to IBM Semeru Runtime Java with FIPS 140-3”](#) on page 48.

This upgrade supports all client applications that use Java versions from Java 8 to IBM Semeru Runtime 25. For more information about supported Java versions, see [System Requirements for IBM MQ](#).

IBM Semeru Runtime 25 does not support FIPS 140-2 cryptography. If you are using any FIPS 140-2 CipherSpecs, you will need to move to using FIPS 140-3 CipherSpecs.

Changes to the Java runtime environment runtime for IBM MQ for z/OS components

From IBM MQ 10.0 on z/OS, the following components can use IBM Semeru Runtime 21 and IBM Semeru Runtime 25 as well as Java 8:

- Managed File Transfer (MFT)
- REST API
- IBM MQ Console

Some code pages that were available in IBM SDK, Java Technology Edition 8 are no longer available in IBM Semeru Runtime 21. For more information, see [CCSIDs that are no longer supported](#) and [Available code pages for MFT](#).

IBM Semeru Runtime 21 uses a default file encoding of UTF-8 whereas in IBM SDK, Java Technology Edition 8, the default encoding was the system default (IBM-1047 on z/OS). MFT requires a file encoding of IBM-1047. As a result, if you are using MFT with IBM Semeru Runtime 21 on z/OS, you must specify the file encoding by using the **BFG_JVM_PROPERTIES** environment variable. For more information, see [Before you start configuring MFT for z/OS](#).

AMS and MFT standalone PID removal

Advanced Message Security for z/OS (AMS) was previously available as a separately purchasable product with PID 5655-AM9. This product was withdrawn in 2019, and at IBM MQ 10.0, support for this PID is being completely removed. AMS capabilities are now exclusively available through IBM MQ Advanced for z/OS (5656-ADA) and IBM MQ Advanced for z/OS Value Unit Edition (5656-AVA).

Managed File Transfer for z/OS (MFT) was previously available as a separately purchasable program with PID 5655-MF9. This product was withdrawn in 2019, and at IBM MQ 10.0.0, support for this PID is being completely removed. MFT capabilities are now exclusively available IBM MQ Advanced for z/OS (5656-ADA) and IBM MQ Advanced for z/OS Value Unit Edition (5656-AVA).

SYSTEM.FTE.EVENT.agent_name and SYSTEM.FTE.STATE.agent_name queues on z/OS

Managed File Transfer agents created on z/OS will have the `SYSTEM.FTE.EVENT.agent_name` and `SYSTEM.FTE.STATE.agent_name` queues configured with **INDXTYPE(MSGID)**. For more information, see [MFT Agent queue settings](#).

Change to default TCP buffer size for IBM MQ clients

Previously, different clients had different default TCP buffer sizes for sending and receiving data to and from queue managers. For example, the default TCP buffer size for C clients was set by the operating system's implementation of the network layer whereas for IBM MQ classes for JMS, IBM MQ classes for XMS.NET, and IBM MQ classes for .NET clients, it was approximately 32KB. If you wanted TCP buffer sizes for IBM MQ classes for JMS, IBM MQ classes for XMS.NET, and IBM MQ classes for .NET clients to be set by the network layer, you had to set the value of the **CIntRcvBuffSize** and **CIntSndBuffSize** IBM MQ MQI client configuration attributes to zero.

From IBM MQ 10.0.0, the behavior is the same for all clients. By default, the client queries the current TCP buffer size whenever it creates a new TCP connection. If the current size is less than 32768 bytes, the client requests a buffer size of 32768 bytes. If the current size is 32768 bytes or greater, the client allows the network layer to determine the buffer size, which generally results in greater throughput of messages.

For more information, see the **CIntRcvBuffSize** and **CIntSndBuffSize** attributes in [TCP stanza](#) of the client configuration file.

Changes to SM115REL and SMF116REL

The three character SM115REL and SMF116REL fields in IBM MQ SMF records are changing to contain an internal VRM, as they cannot contain the four character VRM used from IBM MQ 10.0.0. Instead a new SMF header, the QWHX, contains the queue manager's version. Additionally the QWHX will contain the name of the queue sharing group that the queue manager is a member of.

For more information, see [The SMF header](#) for 115 records, and [Layout of an SMF type 116 record](#) for 116 records.

A new column is added to two Db2 tables used by queue sharing groups

If you are migrating an existing queue sharing group to IBM MQ 10.0.0, the CSQ945TB sample JCL needs to be run to update the tables. For more information, see Step 4 in [Preparing to migrate a single IBM MQ for z/OS queue manager](#).

Application development

Customizing XMS .NET client connection keep alive behavior in XMS .NET applications

From IBM MQ 10.0.0, a new mechanism is available to ensure that the channel instances used by XMS connections are kept open and are not closed due to a channel disconnect interval (**DISCINT**). This improves the stability of the application.

For more information, see [Customizing XMS .NET client connection keep alive behavior in XMS .NET applications](#).

Support for IBM MQ resource adapter for Jakarta Messaging in GlassFish Server

From IBM MQ 10.0.0, you can install the IBM MQ resource adapter for Jakarta Messaging in a GlassFish Server 7.0 application server and test it using the installation verification test (IVT) application. You must be using GlassFish Server 7.0 Full version, not GlassFish Server 7.0 Web version.

For more information, see [Installing and testing the IBM MQ resource adapter for Jakarta Messaging in GlassFish Server](#).

Removal of 32-bit JNI libraries on x86 architectures

Java 25 removed support for 32-bit x86 architectures. So, from IBM MQ 10.0.0, 32-bit Java Native Interface (JNI) libraries are removed from IBM MQ on AIX, Linux on x86 architectures, and Windows.

The removed libraries include the following, under the `java/lib` subdirectory of IBM MQ. The file extension (`.xxx`) varies by platform: `.dll` or `.pdb` on Windows, and `.so` on AIX and Linux.

- `mqjbnd.xxx`
- `mqjexitstub02.xxx`
- `jdbcdb2.xxx`
- `jdbcora.xxx`

This change affects the following scenarios:

- 32-bit IBM MQ classes for JMS/Jakarta Messaging and IBM MQ classes for Java applications that connect to a queue manager by using the bindings transport. Migrate your applications to 64-bit and use the 64-bit JNI libraries under the `java/lib64` subdirectory of IBM MQ instead. For information about using the libraries, see [Configuring the Java Native Interface \(JNI\) libraries](#) (for IBM MQ classes for JMS/Jakarta Messaging applications) and [IBM MQ classes for Java libraries](#) (for IBM MQ classes for Java applications).
- 32-bit IBM MQ classes for JMS/Jakarta Messaging applications that connect to a queue manager by using the client transport and 32-bit channel exit programs that are written in languages other than Java. Either migrate the application and the channel exit programs to 64-bit and use 64-bit

native libraries, or rewrite the channel exits in Java code. For information about using the libraries, see the links in the previous list item. For information about migrating native code to 64-bit, see [Porting native code from 32-bit to 64-bit systems](#) in the IBM SDK, Java Technology Edition 8 documentation.

- 32-bit IBM MQ classes for JMS/Jakarta Messaging and IBM MQ classes for Java applications that use IBM MQ as a database coordinator. Migrate your application to 64-bit, ensure that your database client is 64-bit, then create and use a 64-bit switch library. For more information about switch libraries, see [JTA/JDBC coordination using IBM MQ classes for Java](#)

Customizing JMS connection keep alive behavior in JMS applications

From IBM MQ 10.0.0, a new mechanism is available to ensure that the channel instances used by JMS or Jakarta Messaging connections are kept open and are not closed due to a channel disconnect interval (**DISCINT**). This improves the stability of the application.

For more information, see [Customizing JMS connection keep alive behavior in JMS applications](#).

IBM Semeru Runtime 25 file encoding change

From IBM MQ 10.0 on z/OS, IBM MQ components can use IBM Semeru Runtime 21 as well as Java 8. If you choose to use Java 21 in your client applications too, note that the default file encoding in IBM Semeru Runtime 21 is UTF-8 whereas Java 8 uses the system default (IBM-1047 on z/OS). This change can affect how an application handles read or write operations of files. For more information, see [Developing JMS/Jakarta Messaging and Java applications](#).

Related concepts

 [What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement](#)
For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.

  [What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only](#)
IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.

 [What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement](#)
For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.

   [What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement](#)
For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

 [New, changed, and removed messages in IBM MQ 10.0.0](#)
Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

 [New, changed, and removed messages since IBM MQ 9.4.5](#)
For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

 [Deprecated, stabilized, and removed features in IBM MQ 10.0.0](#)
A number of features are deprecated or removed from the product from IBM MQ 10.0.0.

Related reference

[What's new and what's changed in IBM MQ Explorer](#)

Related information

[System Requirements for IBM MQ](#)

[IBM MQ, WebSphere MQ, and MQSeries product readmes web page](#)

New, changed, and removed messages in IBM MQ 10.0.0

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

For a list of just the messages that are new, changed or removed since IBM MQ 9.4.5, see [“New, changed, and removed messages since IBM MQ 9.4.5”](#) on page 65.

-  [“New, changed, and removed IBM MQ AMQ messages”](#) on page 54
-  [“New, changed, and removed AMQP channel messages”](#) on page 60
- [“New, changed, and removed IBM MQ Console messages”](#) on page 61
-  [“\[AIX, Linux, Windows\]New, changed and removed IBM MQ Internet Pass-Thru messages”](#) on page 61
- [“New, changed and removed JSON messages”](#) on page 61
-    [“New, changed, and removed Managed File Transfer messages”](#) on page 61
- [“New, changed and removed MQJMS messages”](#) on page 62
- [“New, changed, and removed REST API messages”](#) on page 62
-   [“New, changed and removed IBM MQ Telemetry messages”](#) on page 62
-  [“New, changed, and removed z/OS messages”](#) on page 63

New, changed, and removed IBM MQ AMQ messages

Multi

AMQ3xxx: Utilities and tools

The following AMQ messages are new for IBM MQ 10.0.0:

AMQ3058I - AMQ3064E

AMQ3067E - AMQ3068E

AMQ3069 - AMQ3070

AMQ3072 - AMQ3086

AMQ3251 - AMQ3268

AMQ3270 - AMQ3299

AMQ3305 - AMQ3311

AMQ3312E (Message about Native HA)

AMQ3313E (Instance <insert_3> was previously started with a group name of <insert_4>)

AMQ3314E (Instance <insert_3> was previously started in a group with <insert_1> instance(s))

AMQ3315-3319 (Messages about Native HA)

AMQ3320-AMQ3325 (Messages about Native HA groups)

AMQ3326E (A queue manager was configured with a replicated log type but the NativeHALocalInstance stanza is missing from qm.ini)

AMQ3327-AMQ3331 (Native HA messages)

AMQ3434-AMQ3460 (Native HA messages)

AMQ3461 - AMQ3471

AMQ3472-84 (Messages for Open Telemetry Tracing)

AMQ3619 - AMQ3624 (Messages about the encryption of HA RQDM heartbeat links)

AMQ3625-3630 (Messages about RDQM)

AMQ3631E

AMQ4xxx: User interface messages (Windows and Linux systems)

AMQ4643 - AMQ4644 (Messages about FIPS compliant mode and IBM MQ Explorer)

AMQ4645E (The channel requires a valid quantum safe algorithm to be specified)

AMQ4646E (Quantum Safe algorithm wrong)

AMQ5xxx: Installable services

AMQ5709E

AMQ5790E - AMQ5791I

AMQ5792I (Warning about certain operating system directories preventing the full removal of queue manager files)

AMQ5793-7 (Messages about user name and ID length and contents)

AMQ5798I (Licensed entitlement unset)

AMQ6xxx: Common Services

AMQ6176W

AMQ6347W

AMQ6348E

AMQ6349 (Message about FIPS)

AMQ6634E (Initialization of the Replicated HA subsystem failed)

AMQ7xxx: IBM MQ product

AMQ7193I (UNIX and Linux) (Queue manager is quiescing after receiving a termination signal)

AMQ7194I (UNIX and Linux) (Queue manager received a termination signal)

AMQ7374 (Message about log replay)

AMQ7375 (Message about queue managers and authority events)

AMQ7738I

AMQ7841W (Message warning an attribute could not be migrated)

AMQ7842W - AMQ7844E

AMQ8xxx: Administration

AMQ8013I

AMQ8067I

AMQ8100I

AMQ8244I

AMQ8246 - AMQ8248

AMQ8252 - AMQ8255

AMQ8274I (Sync failed)

AMQ8329I

AMQ8400I

AMQ8515W

AMQ8516I (Usage information for the **rundotnetcred** command)

AMQ8798E (The channel requires a valid quantum safe algorithm to be specified)

AMQ8961E

AMQ8962E (The value provided in the **SSLQS** parameter is disabled or deprecated)

 AMQ8D44 (IBM i)

AMQ9xxx: Remote

AMQ9109-9111 (Messages for FIPS support in AMS)

AMQ9249I (Port number <insert_1> in use by Pid <insert_2> <insert_3>)

AMQ9454E (**REFRESH CLUSTER REPOS(YES)** command failed, because not all channels could be stopped)

AMQ9680E

AMQ9681E (During the TLS handshake, the quantum safe cryptography requirements were not met)

AMQ9681E (A connection was stopped as it was not quantum secure)

AMQ9726E (A channel could not start as the requested quantum algorithm is disabled)

AMQ9862E (Certificate label< insert_3> already in use for replication encryption)

AMQ9863E (No certificate present with label <insert_3> for replication encryption)

AMQ9890I

AMQ9891I - AMQ9894W

AMQ9895 (Process ending with unreported reason code)

AMQ9957W (FIPS mode change requires an environment refresh)

The following AMQ messages are changed for IBM MQ 10.0.0:

AMQ3xxx: Utilities and tools

AMQ3055I (New **-sm** parameter added for FIPS mode)

AMQ3058I (New command parameters added including **-s** parameter added for FIPS mode Usage information changed to list configuration file instead of keystore)

AMQ3069E (Link to IBM Support Assistant removed from Response)

AMQ3070I (New **-c** and **-t** parameters added to the **mqperfck** command, for better monitoring of Native HA instances)

AMQ3240I (Added more information to explanation, regarding recovery group leader)

AMQ3267E (Minor text change in Explanation)

AMQ3274E (More information added to explanation)

AMQ3275E (More information added to explanation)

AMQ3286I (Explanation expanded to include information about logs)

AMQ3296E (More information added to explanation)

AMQ3288I (Explanation updated to include additional reason for operation failure (relating to log data))

AMQ3317E (More information added to Explanation)

AMQ3318W (More information added to Response)

AMQ3627E (Minor corrections to message text and explanation)

AMQ3632I (New command parameter added)

AMQ3762I (Added new command parameter, for Native HA groups)

AMQ3821E (Added more information to message text)

AMQ3824I (New **-e** parameter added to the **rdqmadm** command, for HA group encryption)

AMQ3894I (New encryption parameters for the **crtmqm** command)

AMQ3966I (Added new command parameters)

AMQ3969I (Added new command parameters)

AMQ5xxx: Installable services

AMQ5005E (Link to IBM Support Assistant removed from Response)

AMQ5006E (Link to IBM Support Assistant removed from Response)

AMQ5009S (Link to IBM Support Assistant removed from Response)

AMQ5010W (Link to IBM Support Assistant removed from Response)

AMQ5501E-AMQ5513E (Link to IBM Support Assistant removed from Response)

AMQ5522E (Link to IBM Support Assistant removed from Response)

AMQ5534E (Response updated to mention ensuring that the authentication repository is correctly configured)

AMQ5600I (Added new command parameter, for authorization policy)

 AMQ5600I (IBM MQ Appliance) (New **-oa** (authorization policy) parameter added to usage information for the **crtmqm** command)

AMQ5613I (Added new command parameter, for Native HA groups)

AMQ5652E (Link to IBM Support Assistant removed from Response)

AMQ5686E (Explanation updated to add the relevant installation name)

AMQ5699E (Explanation updated to add the relevant installation path)

AMQ5767I (Message text and explanation updated to add information about the relevant entitlement)

AMQ5788E (Response is extended and updated to include information about FIPS)

AMQ5819W (Link to IBM Support Assistant removed from Response)

AMQ5859W (Link to IBM Support Assistant removed from Response)

AMQ5877W (Link to IBM Support Assistant removed from Response)

AMQ5878W (Link to IBM Support Assistant removed from Response)

AMQ5999E (Link to IBM Support Assistant removed from Response)

AMQ6xxx: Common Services

AMQ6004S (Link to IBM Support Assistant removed from Response)

AMQ6005E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6035E (Link to IBM Support Assistant removed from Response)

AMQ6037E (Link to IBM Support Assistant removed from Response)

AMQ6064S (Link to IBM Support Assistant removed from Response)

AMQ6088S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6089E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6090I (Link to IBM Support Assistant removed from Response)

AMQ6091I (Link to IBM Support Assistant removed from Response)

AMQ6109S (Link to IBM Support Assistant removed from Response)

AMQ6110S (Link to IBM Support Assistant removed from Response)

AMQ6114E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6115W (Link to IBM Support Assistant removed from Response)

AMQ6118-AMQ6122 (Link to IBM Support Assistant removed from Response)

AMQ6125E (Link to IBM Support Assistant removed from Response)

 AMQ6150W (Windows) (Added extra information to Explanation and Response)

AMQ6158E (Link to IBM Support Assistant removed from Response)

AMQ6162E-AMQ6163W (Link to IBM Support Assistant removed from Response)

AMQ6349W (CPU word size added as a cause)

AMQ6581I (Usage is extended and new command parameter added, for Open Telemetry Tracing logs)

AMQ6620I (New commands added to the list including **dspmqots** and **setmqots**)

AMQ6636I (Added new information to the **-n** parameter)

AMQ6637I (Added new information to the **-n** parameter)

AMQ6175E (Windows) (Link to IBM Support Assistant removed from Response)

AMQ6177E (Windows) (Link to IBM Support Assistant removed from Response)

AMQ6183W (Link to IBM Support Assistant removed from Response)

AMQ6184W (Link to IBM Support Assistant removed from Response)

AMQ6196E (Link to IBM Support Assistant removed from Response)

AMQ6276W (Link to IBM Support Assistant removed from Response)

AMQ6277W (Object insert in text message updated, link to IBM Support Assistant removed from Response)

AMQ6291E (Link to IBM Support Assistant removed from Response)

AMQ6537I (Usage information updated to include parameters **-re** (encrypt DR replication connection) and **-san** (group name of remote HA group))

AMQ6538I (Usage information updated to include parameters **-red** (encrypt DR replication connection), **-reh** (encrypt HA replication connection), and **-san** (group name of remote HA group))

AMQ6546E (Link to IBM Support Assistant removed from Response)

AMQ6623I (Message text updated to include the **dspscr1**, **dsprepcert**, **setcr1**, and **setrepcert** commands for the TLS Replication Handshake Daemon)

AMQ6642I (Usage information updated to include the parameters **-e** (enables heartbeat encryption between the HA appliances), **-n** (name of the HA group), and **-noname** (create group with no name))

AMQ6668I (Usage information updated to add a group name example and to include the parameters **-n** (update name of the HA group) and **-re** (enable encrypted replication for the new HA queue manager))

AMQ6729W (Updated Explanation to specify exact time)

AMQ6998S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6999T (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7xxx: IBM MQ product

AMQ7041E (More information added to response)

AMQ7059E-AMQ7060E (Link to IBM Support Assistant removed from Response)

AMQ7074W (More information added to message text and explanation)

AMQ7090S (Windows) (Explanation and response clarified)

AMQ7026E (Further information about principal or group name validity)

AMQ7112I (Minor change to Response)

AMQ7128E (Link to IBM Support Assistant removed from Response)

AMQ7155E (Link to IBM Support Assistant removed from Response)

AMQ7176E (More information added to response)

AMQ7230I (Added more information to Explanation)

AMQ7353E (Explanation updated to add information about the syncfile)

AMQ7433S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7434S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7435S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7472W (More detail added to explanation)

AMQ7485I (Rewrite of message text, explanation, and response)

AMQ7486I (Added more information to Explanation)

AMQ7602S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7605E (Link to IBM Support Assistant removed from Response)

AMQ7605E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7624E (Link to IBM Support Assistant removed from Response)

AMQ7705I (Added new command parameters)

AMQ7707E (Link to IBM Support Assistant removed from Response)

AMQ7717E (Link to IBM Support Assistant removed from Response)

 AMQ7705I (IBM MQ Appliance) (Added new command parameters)

 AMQ7705I (IBM i) (Added new command parameter)

 AMQ7886W (Windows) (Link to IBM Support Assistant removed from Response)

 AMQ7901E (Link to IBM Support Assistant removed from Response)

 AMQ7905E (Link to IBM Support Assistant removed from Response)

 AMQ7921E (Link to IBM Support Assistant removed from Response)

 AMQ7922E-AMQ7935E (Minor change to Response)

AMQ8xxx: Administration

AMQ8024I (Insert changed in Explanation)

AMQ8049E (Rewrite of response)

AMQ8053E - AMQ8059E (Rewrite of response)

AMQ8087-AMQ8091 (Link to IBM Support Assistant removed from Response)

AMQ8106I (Added more information to Response)

AMQ8240S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ8377S-AMQ8379S (Link to IBM Support Assistant removed from Response)

AMQ8385E (Windows) (Link to IBM Support Assistant removed from Response)

AMQ8397S (Link to IBM Support Assistant removed from Response)

AMQ8398S (Link to IBM Support Assistant removed from Response)

AMQ8499I (Typo fixed in Usage)

AMQ8586I (Usage updated to add where parameters are not valid for unregistered or non-installed versions of IBM MQ)

AMQ8688E (Link to IBM Support Assistant removed from Response)

AMQ8688E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ8751E (Link to IBM Support Assistant removed from Response)

AMQ8751E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ8760-AMQ8769 (Link to IBM Support Assistant removed from Response)

AMQ8797E (Link to IBM Support Assistant removed from Response)

AMQ8797E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ8797E (UNIX and Linux) (Link to IBM Support Assistant removed from Response)

AMQ8920E (Further explanation added)

AMQ9xxx: Remote

AMQ9098E (CPU word size added as a cause. More information added to response)

AMQ9209E (Explanation expanded to include another possible cause)

AMQ9233E (Link to IBM Support Assistant removed from Response)

AMQ9248E (Link to IBM Support Assistant removed from Response)

AMQ9272E (Typo fixed in Explanation, (Link to IBM Support Assistant removed from Response)

AMQ9273E (Link to IBM Support Assistant removed from Response)

AMQ9413E (Link to IBM Support Assistant removed from Response)

AMQ9415E-AMQ9416E (Link to IBM Support Assistant removed from Response)

AMQ9421E (Link to IBM Support Assistant removed from Response)

AMQ9422E (Link to IBM Support Assistant removed from Response)

AMQ9425E (Link to IBM Support Assistant removed from Response)
 AMQ9437E (Link to IBM Support Assistant removed from Response)
 AMQ9439E (Link to IBM Support Assistant removed from Response)
 AMQ9447E (Link to IBM Support Assistant removed from Response)
 AMQ9467E (Link to IBM Support Assistant removed from Response)
 AMQ9528W (Explanation expanded to include another possible cause)
 AMQ9543E (Link to IBM Support Assistant removed from Response)
 AMQ9556E (Explanation updated to add information about the syncfile)
 AMQ9558E (More information added to Explanation)
 AMQ9582E (Link to IBM Support Assistant removed from Response)
 AMQ9586E-AMQ9593E (Link to IBM Support Assistant removed from Response)
 AMQ9616E (Explanation expanded to include removed CipherSpecs)
 AMQ9620E (Link to IBM Support Assistant removed from Response)
 AMQ9620I (IBM i) (Link to IBM Support Assistant removed from Response)
 AMQ9633E (More information added to Explanation)
 AMQ9633E (IBM i) (More information added to Explanation)
 AMQ9635E (Response expanded to include removed CipherSpecs)
 AMQ9645E (More information added to Response)
 AMQ9697E (Response expanded to include removed CipherSpecs)
 AMQ9719E (Further explanation added)
 AMQ9773I (Usage expanded)
 AMQ9795E (Explanation and Response expanded)
 AMQ9797E (More information added to Explanation)
 AMQ9826I-AMQ9827I (Usage information updated to add the **-replication** parameter (create the self-signed certificate for use by TLS replication) and more information about the **-label** parameter)
 AMQ9828I-AMQ9831I (Usage information updated to add the **-replication** parameter)
 AMQ9833I-AMQ9834I (Usage information updated to add the **-replication** parameter and more information about the **-label** parameter)
 AMQ9835I (Usage information updated to add the **-replication** parameter and the **-rfc3339** parameter (display date/time as UTC))
 AMQ9836I (Usage information updated to add the **-replication** parameter)
 AMQ9837I (Usage information updated to add the **-replication** and **-rfc3339** parameters)
 AMQ9838I (Usage information updated to add the **-replication** parameter and more information about the **-label** parameter)
 AMQ9840I (Usage information updated to modify the description of the **-defer** parameter (do not refresh either **SSL** or **CONNAUTH** security))
 AMQ9853I (Usage information updated to add the **-replication** parameter and more information about the **-label** parameter)

The following AMQ messages are removed for IBM MQ 10.0.0:

AMQ9xxx: Remote

AMQ9767I - AMQ9769I

New, changed, and removed AMQP channel messages



There are no new, changed or removed [AMQP channel \(AMQAM\) messages](#) for IBM MQ 10.0.0.

New, changed, and removed IBM MQ Console messages

The following [IBM MQ Console](#) messages are new for IBM MQ 10.0.0:

MQWB20xx: IBM MQ Console messages

MQWB2030E (FIPS mode was requested but is unavailable)

There are no changed or removed IBM MQ Console messages for IBM MQ 10.0.0.

New, changed and removed IBM MQ Internet Pass-Thru messages

The following IBM MQ Internet Pass-Thru messages are new for IBM MQ 10.0.0:

MQCPxxxx: MQIPT messages

MQCPE123 (FIPS mode unavailable)

MQCPE124 (Algorithm not available when in FIPS mode)

MQCPE125 (Message warning about an invalid property value)

MQCPE126 (A property specified in the global stanza of the configuration file is invalid for this version of MQIPT)

MQCPW004 (More information added to explanation and user response)

The following IBM MQ Internet Pass-Thru messages are changed for IBM MQ 10.0.0:

MQCPxxxx: MQIPT messages

MQCPE014: (Updated User response to change the range from "1024 to 65535" to "0 to 65535")

MQCPE061 (URL updated for link to *CipherSuites supported by MQIPT*)

MQCPE062 (URL updated for link to *CipherSuites supported by MQIPT*)

MQCPW004 (Addition of SSLServerClientAuth information)

There following IBM MQ Internet Pass-Thru messages are removed for IBM MQ 10.0.0:

MQCPxxxx: MQIPT messages

(The following messages are all Java security manager messages)

MQCPI053-MQCPI055

MQCPI138

MQCPE049-MQCPE054

MQCPE085

New, changed and removed JSON messages

There are no new, changed or removed [JSON format diagnostic messages](#) for IBM MQ 10.0.0.

New, changed, and removed Managed File Transfer messages



The following Managed File Transfer messages are new for IBM MQ 10.0.0:

BFGCL0001 - BFGCL9999: MFT commands messages

BFGCI0017E

BFGCL0837E

BFGCL0838E

BFGCL0839E

BFGDB0001 - BFGDB9999: MFT database logger messages

BFGDB0086W (Failed to write a monitor action request to database as the size of the task definition exceeds the database column size)

BFGPR0001 - BFGPR9999: MFT miscellaneous messages

BFGPR0157W (Message about empty credential)

BFGPR0158E (FIPS Mode was requested but is unavailable)

BFGPR0159E

BFGSS0001 - BFGSS9999: MFT state store messages

BFGSS0092E

There are no changed or removed Managed File Transfer messages for IBM MQ 10.0.0.

New, changed and removed MQJMS messages

The following [JMS exception messages](#) are new for IBM MQ 10.0.0:

JMS exception messages

JMSCS0061

JMSCS0062

JMSMQ1124

JMSWMQ2034

There are no changed, or removed [JMS exception messages](#) for IBM MQ 10.0.0.

New, changed, and removed REST API messages

The following REST API messages are new for IBM MQ 10.0.0:

MQWB11xx: REST API messages MQWB1100 to 1199

MQWB1144E (Added more characters to the allowed list)

MQWB1161E (FIPS mode was requested but is unavailable)

There are no changed or removed REST API messages for IBM MQ 10.0.0.

New, changed and removed IBM MQ Telemetry messages



The following AMQXR IBM MQ Telemetry messages are new for IBM MQ 10.0.0:

Telemetry (AMQXR) messages

AMQXR0107E (Note that this message has the same number as an existing message, but different text)

AMQXR2073E (No password specified to access the TLS key repository)

AMQXR2074E (A TLS key repository was not specified to configure SSL)

AMQXR2124W

AMQXR2125-2127 (Extra FIPS messages)

AMQXR2128W (Modified message from client <insert_0> has been deleted. Reason: <insert_1>)

AMQXR2129W (Modified message from client <insert_0> has been released back on queue. Reason: <insert_1>)

AMQXR3125E (The queue manager SSL/TLS keystore password stash file <insert_0> does not exist or cannot be accessed)

AMQXR3126E (The queue manager is not available) (This message text was previously in AMQXR0107E)

The following AMQXR IBM MQ Telemetry messages are changed for IBM MQ 10.0.0:

Telemetry (AMQXR) messages

AMQXR0107E (Message corrected to "The client application <insert_0> running on host <insert_1> did not supply a user ID and password". Previously, this message contained text that is now in message AMQXR3126E)

There are no removed AMQXR IBM MQ Telemetry messages for IBM MQ 10.0.0.

There are also no new, changed, or removed AMQAM, AMQCO or AMQHT IBM MQ Telemetry messages for IBM MQ 10.0.0.

New, changed, and removed z/OS messages



The following IBM MQ for z/OS CSQ messages are new for IBM MQ 10.0.0:

Coupling Facility manager messages (CSQE...)

-

Security manager messages (CSQH...)

-

Data manager messages (CSQI...)

-

Recovery log manager messages (CSQJ...)

-

Message manager messages (CSQM...)

CSQM200I (Overlong connection name for a channel with a transmission protocol type of LU6.2)

CSQM534I (Connection names are incompatible between members of a queue-sharing group)

CSQM592E (The queue manager received a non-zero return code when writing data to SMF, so OTel data is lost)

Utilities messages (CSQU...)

CSQU568E (Added links for further information to System programmer response)

CSQU569E (Added links for further information to System programmer response)

CSQU680E (Added links for further information to System programmer response)

CSQU681I (Added links for further information to System programmer response)

CSQU682I (Added links for further information to System programmer response)

CSQU683E (Added links for further information to System programmer response)

CSQU688E (Added links for further information to System programmer response)

Distributed queuing messages (CSQX...)

CSQX168E (Certificate label cache for a TLS connection could not be generated)

CSQX769I (Authentication failed for channel *channel-name* from *ip-address*, unknown user *user-id*)

Initialization procedure and general services messages (CSQY...)

CSQY046I (Detection of a connection name that exceeds 48 characters during backwards migration to an IBM MQ version that supports no more than 48 characters)

CSQY047D (A number of channels have a connection name that exceeds 48 characters)

CSQY048I (Detection of a channel authentication record with an **ADDRESS** longer than 48 characters during backwards migration to an IBM MQ version that supports no more than 48 characters)

CSQY049D (A number of CHLAUTH records have an **ADDRESS** that exceeds 48 characters)

Db2 manager messages (CSQ5...)

The following IBM MQ for z/OS CSQ messages are changed for IBM MQ 10.0.0:

Coupling Facility manager messages (CSQE...)

CSQE042E (Corrected error in System programmer response)

CSQE222E (Added a link to more information about reason codes)

Security manager messages (CSQH...)

CSQH004I (Changed link in System programmer response from a PDF download to the IBM Documentation website)

Data manager messages (CSQI...)

CSQI053E (More information added to System action)

Recovery log manager messages (CSQJ...)

CSQJ077E (Typo fixed in System programmer response)

CSQJ111A (System programmer response reworked)

CSQJ167E (Corrected IBM MQ version in Explanation and System action, and added further information to System programmer response)

CSQJ370I (Explanation greatly extended)

Message manager messages (CSQM...)

CSQM528E (Link title updated in System programmer response)

CSQM532I (System programmer response updated to state that the **OTELTRAC** and **OTELPCTL** attributes are supported from IBM MQ 9.4.3 and on topic objects from IBM MQ 9.4.5)

CSQM533I (System programmer response updated to state that the **OTELTRAC** and **OTELPCTL** attributes are supported from IBM MQ 9.4.3 and on topic objects from IBM MQ 9.4.5)

Utilities messages (CSQU...)

CSQU568E (Explanation extended and added links for further information to System programmer response)

CSQU569E (Added links for further information to System programmer response)

CSQU680E (Added links for further information to System programmer response)

CSQU681I (Added links for further information to System programmer response)

CSQU682I (Added links for further information to System programmer response)

CSQU683E (Added links for further information to System programmer response)

CSQU688E (Added links for further information to System programmer response)

Distributed queuing messages (CSQX...)

CSQX407I (System programmer response updated to add further information)

CSQX633E (Extra information added to System programmer response)

CSQX634E (Certificate name format updated in System programmer response)

CSQX642E (Certificate name format updated in System programmer response)

CSQX644E (Certificate name format updated in System programmer response)

CSQX645E (Certificate name format updated in System programmer response)

CSQX686E (Certificate name format updated in Explanation)

Initialization procedure and general services messages (CSQY...)

CSQY036I (Product IDs updated in Explanation)

CSQY228E (Corrected an error in the message number mentioned in system action)

Advanced Message Security (CSQ0...)

CSQ0619I (AMSPROD=AMS example removed from Explanation) [

CSQ0629E (Expanded message text to include return code)

IBM MQ-IMS bridge Messages (CSQ2...)

CSQ2001I (System programmer response updated to add a more specific link to the IMS documentation for OTMA sense codes for NAK messages)

Subsystem support messages (CSQ3...)

CSQ3111I (Explanation extended)

The following IBM MQ for z/OS CSQ messages are removed for IBM MQ 10.0.0:

Data manager messages (CSQI...)

Recovery log manager messages (CSQJ...)

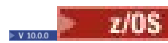
Utilities messages (CSQU...)

Related concepts

 [What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement](#)
For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.

  [What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only](#)
IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.

 [What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement](#)
For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.

   [What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement](#)
For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

[What's changed in IBM MQ 10.0.0](#)

Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

[New, changed, and removed messages since IBM MQ 9.4.5](#)

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

[Deprecated, stabilized, and removed features in IBM MQ 10.0.0](#)

A number of features are deprecated or removed from the product from IBM MQ 10.0.0.

“New, changed, and removed messages since IBM MQ 9.4.5” on page 65

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

Related reference

[IBM MQ AMQ messages](#)

[IBM MQ Console messages](#)

[IBM MQ Internet Pass-Thru messages](#)

[JSON format diagnostic messages](#)

[Managed File Transfer messages and return codes](#)

[JMS exception messages](#)

[REST API messages](#)

[Telemetry messages](#)

 [Messages for IBM MQ for z/OS](#)

New, changed, and removed messages since IBM MQ 9.4.5

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

For a list of all the messages that are new, changed or removed since IBM MQ 9.3.0, see “New, changed, and removed messages in IBM MQ 10.0.0” on page 54.

-  [“New, changed, and removed IBM MQ AMQ messages” on page 66](#)
- [“New, changed, and removed IBM MQ Console messages” on page 70](#)

-  “[AIX, Linux, Windows]New, changed and removed IBM MQ Internet Pass-Thru messages” on page 70
- “New, changed and removed JSON messages” on page 70
-    “New, changed, and removed Managed File Transfer messages” on page 70
- “New, changed and removed MQJMS messages” on page 70
- “New, changed, and removed REST API messages” on page 70
-   “New, changed and removed IBM MQ Telemetry messages” on page 70
-  “New, changed, and removed z/OS messages” on page 71

New, changed, and removed IBM MQ AMQ messages

Multi

The following AMQ messages are new since IBM MQ 9.4.5:

AMQ3xxx: Utilities and tools

- AMQ3313E (Instance <insert_3> was previously started with a group name of <insert_4>)
- AMQ3314E (Instance <insert_3> was previously started in a group with <insert_1> instance(s))
- AMQ3320-AMQ3325 (Messages about Native HA groups)
- AMQ3327-AMQ3331 (Native HA messages)
- AMQ3434-AMQ3460 (Native HA messages)

AMQ4xxx: User interface messages (Windows and Linux systems)

- AMQ4645E (The channel requires a valid quantum safe algorithm to be specified)
- AMQ4646E (Quantum Safe algorithm wrong)

AMQ6xxx: Common services

- AMQ6634E (Initialization of the Replicated HA subsystem failed)

AMQ7xxx: IBM MQ product

- AMQ7841W (Message warning an attribute could not be migrated)

AMQ8xxx: Administration

- AMQ8274I (Sync failed)
- AMQ8798E (The channel requires a valid quantum safe algorithm to be specified)
- AMQ8962E (The value provided in the **SSLQS** parameter is disabled or deprecated)

AMQ9xxx: Remote

- AMQ9681E (A connection was stopped as it was not quantum secure)
- AMQ9726E (A channel could not start as the requested quantum algorithm is disabled)
- AMQ9249I (Port number <insert_1> in use by Pid <insert_2> <insert_3>)
- AMQ9681E (During the TLS handshake, the quantum safe cryptography requirements were not met)
- AMQ9726E (Channel <insert_3> unable to start as a required quantum safe algorithm is disabled)
- AMQ9862E (Certificate label< insert_3> already in use for replication encryption)
- AMQ9863E (No certificate present with label <insert_3> for replication encryption)

The following AMQ messages are changed since IBM MQ 9.4.5:

AMQ3xxx: Utilities and tools

- AMQ3058I (Usage information changed to list configuration file instead of keystore)
- AMQ3069E (Link to IBM Support Assistant removed from Response)
- AMQ3267E (Minor text change in Explanation)
- AMQ3296E (More information added to Explanation)

AMQ3317E (More information added to Explanation)

AMQ3318W (More information added to Response)

AMQ5xxx: Installable services

AMQ5005E (Link to IBM Support Assistant removed from Response)

AMQ5006E (Link to IBM Support Assistant removed from Response)

AMQ5009S (Link to IBM Support Assistant removed from Response)

AMQ5010W (Link to IBM Support Assistant removed from Response)

AMQ5501E-AMQ5513E (Link to IBM Support Assistant removed from Response)

AMQ5522E (Link to IBM Support Assistant removed from Response)

AMQ5600I (IBM MQ Appliance) (-re parameter added to enable encryption HA data replication for the HA queue manager.)

AMQ5652E (Link to IBM Support Assistant removed from Response)

AMQ5819W (Link to IBM Support Assistant removed from Response)

AMQ5859W (Link to IBM Support Assistant removed from Response)

AMQ5877W (Link to IBM Support Assistant removed from Response)

AMQ5878W (Link to IBM Support Assistant removed from Response)

AMQ5999E (Link to IBM Support Assistant removed from Response)

AMQ6xxx: Common services

AMQ6004S (Link to IBM Support Assistant removed from Response)

AMQ6005E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6035E (Link to IBM Support Assistant removed from Response)

AMQ6037E (Link to IBM Support Assistant removed from Response)

AMQ6064S (Link to IBM Support Assistant removed from Response)

AMQ6088S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6089E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6090I (Link to IBM Support Assistant removed from Response)

AMQ6091I (Link to IBM Support Assistant removed from Response)

AMQ6109S (Link to IBM Support Assistant removed from Response)

AMQ6110S (Link to IBM Support Assistant removed from Response)

AMQ6114E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6115W (Link to IBM Support Assistant removed from Response)

AMQ6118-AMQ6122 (Link to IBM Support Assistant removed from Response)

AMQ6125E (Link to IBM Support Assistant removed from Response)

AMQ6158E (Link to IBM Support Assistant removed from Response)

AMQ6162E-AMQ6163W (Link to IBM Support Assistant removed from Response)

AMQ6175E (Windows) (Link to IBM Support Assistant removed from Response)

AMQ6177E (Windows) (Link to IBM Support Assistant removed from Response)

AMQ6183W (Link to IBM Support Assistant removed from Response)

AMQ6184W (Link to IBM Support Assistant removed from Response)

AMQ6196E (Link to IBM Support Assistant removed from Response)

AMQ6276W (Link to IBM Support Assistant removed from Response)

AMQ6277W (Object insert in text message updated, link to IBM Support Assistant removed from Response)

AMQ6291E (Link to IBM Support Assistant removed from Response)

AMQ6537I (Usage information updated to include parameters **-re** (encrypt DR replication connection) and **-san** (group name of remote HA group))

AMQ6538I (Usage information updated to include parameters **-red** (encrypt DR replication connection), **-reh** (encrypt HA replication connection), and **-san** (group name of remote HA group))

AMQ6546E (Link to IBM Support Assistant removed from Response)

AMQ6623I (Message text updated to include the **dspcrl**, **dsprepcert**, **setcrl**, and **setrepcert** commands for the TLS Replication Handshake Daemon)

AMQ6642I (Usage information updated to include the parameters **-e** (enables heartbeat encryption between the HA appliances), **-n** (name of the HA group), and **-noname** (create group with no name))

AMQ6668I (Usage information updated to add a group name example and to include the parameters **-n** (update name of the HA group) and **-re** (enable encrypted replication for the new HA queue manager))

AMQ6998S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ6999T (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7xxx: IBM MQ product

AMQ7059E-AMQ7060E (Link to IBM Support Assistant removed from Response)

AMQ7112I (Minor change to Response)

AMQ7128E (Link to IBM Support Assistant removed from Response)

AMQ7155E (Link to IBM Support Assistant removed from Response)

AMQ7433S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7434S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7435S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7602S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7605E (Link to IBM Support Assistant removed from Response)

AMQ7605E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ7624E (Link to IBM Support Assistant removed from Response)

AMQ7707E (Link to IBM Support Assistant removed from Response)

AMQ7717E (Link to IBM Support Assistant removed from Response)

AMQ7886W (Windows) (Link to IBM Support Assistant removed from Response)

AMQ7901E (Link to IBM Support Assistant removed from Response)

AMQ7905E (Link to IBM Support Assistant removed from Response)

AMQ7921E (Link to IBM Support Assistant removed from Response) AMQ7922E-AMQ7935E (Minor change to Response)

AMQ8xxx: Administration

AMQ8024I (Insert changed in Explanation)

AMQ8087-AMQ8091 (Link to IBM Support Assistant removed from Response)

AMQ8240S (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ8377S-AMQ8379S (Link to IBM Support Assistant removed from Response)

AMQ8385E (Windows) (Link to IBM Support Assistant removed from Response)

AMQ8397S (Link to IBM Support Assistant removed from Response)

AMQ8398S (Link to IBM Support Assistant removed from Response)

AMQ8688E (Link to IBM Support Assistant removed from Response)

AMQ8688E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ8751E (Link to IBM Support Assistant removed from Response)

AMQ8751E (IBM i) (Link to IBM Support Assistant removed from Response)

AMQ8760-AMQ8769 (Link to IBM Support Assistant removed from Response)

AMQ8797E (Link to IBM Support Assistant removed from Response)
AMQ8797E (IBM i) (Link to IBM Support Assistant removed from Response)
AMQ8797E (UNIX and Linux) (Link to IBM Support Assistant removed from Response)

AMQ9xxx: Remote

AMQ9233E (Link to IBM Support Assistant removed from Response)
AMQ9248E (Link to IBM Support Assistant removed from Response)
AMQ9272E (Typo fixed in Explanation, (Link to IBM Support Assistant removed from Response)
AMQ9273E (Link to IBM Support Assistant removed from Response)
AMQ9413E (Link to IBM Support Assistant removed from Response)
AMQ9415E-AMQ9416E (Link to IBM Support Assistant removed from Response)
AMQ9421E (Link to IBM Support Assistant removed from Response)
AMQ9422E (Link to IBM Support Assistant removed from Response)
AMQ9425E (Link to IBM Support Assistant removed from Response)
AMQ9437E (Link to IBM Support Assistant removed from Response)
AMQ9439E (Link to IBM Support Assistant removed from Response)
AMQ9447E (Link to IBM Support Assistant removed from Response)
AMQ9467E (Link to IBM Support Assistant removed from Response)
AMQ9543E (Link to IBM Support Assistant removed from Response)
AMQ9558E (More information added to Explanation)
AMQ9582E (Link to IBM Support Assistant removed from Response)
AMQ9586E-AMQ9593E (Link to IBM Support Assistant removed from Response)
AMQ9620E (Link to IBM Support Assistant removed from Response)
AMQ9620I (IBM i) (Link to IBM Support Assistant removed from Response)
AMQ9633E (More information added to Explanation)
AMQ9633E (IBM i) (More information added to Explanation)
AMQ9645E (More information added to Response)
AMQ9797E (More information added to Explanation)
AMQ9826I-AMQ9827I (Usage information updated to add the **-replication** parameter (create the self-signed certificate for use by TLS replication) and more information about the **-label** parameter)
AMQ9828I-AMQ9831I (Usage information updated to add the **-replication** parameter)
AMQ9833I-AMQ9834I (Usage information updated to add the **-replication** parameter and more information about the **-label** parameter)
AMQ9835I (Usage information updated to add the **-replication** parameter and the **-rfc3339** parameter (display date/time as UTC))
AMQ9836I (Usage information updated to add the **-replication** parameter)
AMQ9837I (Usage information updated to add the **-replication** and **-rfc3339** parameters)
AMQ9838I (Usage information updated to add the **-replication** parameter and more information about the **-label** parameter)
AMQ9840I (Usage information updated to modify the description of the **-defer** parameter (do not refresh either **SSL** or **CONNAUTH** security))
AMQ9853I (Usage information updated to add the **-replication** parameter and more information about the **-label** parameter)

There are no removed AMQ messages since IBM MQ 9.4.5.

New, changed, and removed IBM MQ Console messages

There are no new, changed or removed [IBM MQ Console messages](#) since IBM MQ 9.4.5.

New, changed and removed IBM MQ Internet Pass-Thru messages

The following IBM MQ Internet Pass-Thru messages are new since IBM MQ 9.4.5:

MQCPxxxx: MQIPT messages

MQCPE126 (A property specified in the global stanza of the configuration file is invalid for this version of MQIPT)

There following IBM MQ Internet Pass-Thru messages are removed for IBM MQ 10.0.0:

MQCPxxxx: MQIPT messages

(The following messages are all Java security manager messages)

MQCPI053-MQCPI055

MQCPI138

MQCPE049-MQCPE054

MQCPE085

There are no changed IBM MQ Internet Pass-Thru messages since IBM MQ 9.4.5.

New, changed and removed JSON messages

There are no new, changed or removed [JSON format diagnostic messages](#) since IBM MQ 9.4.5.

New, changed, and removed Managed File Transfer messages



The following Managed File Transfer messages are new since IBM MQ 9.4.5:

BFGDB0001 - BFGDB9999: MFT database logger messages

BFGDB0086W (Failed to write a monitor action request to database as the size of the task definition exceeds the database column size)

There are no changed or removed Managed File Transfer messages since IBM MQ 9.4.5.

New, changed and removed MQJMS messages

Jakarta Messaging 3.0 exception messages are added to the Javadoc information since IBM MQ 9.4.5.

New, changed, and removed REST API messages

There are no new, changed or removed REST API messages since IBM MQ 9.4.5.

New, changed and removed IBM MQ Telemetry messages



The following AMQXR IBM MQ Telemetry messages are new since IBM MQ 9.4.5:

Telemetry (AMQXR) messages

AMQXR2128W (Modified message from client <insert_0> has been deleted. Reason: <insert_1>)

AMQXR2129W (Modified message from client <insert_0> has been released back on queue. Reason: <insert_1>)

AMQXR3125E (The queue manager SSL/TLS keystore password stash file <insert_0> does not exist or cannot be accessed)

AMQXR3126E (The queue manager is not available) (This message text was previously in AMQXR0107E)

The following AMQXR IBM MQ Telemetry messages are changed since IBM MQ 9.4.5:

Telemetry (AMQXR) messages

AMQXR0107E (Message corrected to "The client application <insert_0> running on host <insert_1> did not supply a user ID and password". Previously, this message contained text that is now in message AMQXR3126E)

There are no removed AMQXR IBM MQ Telemetry messages since IBM MQ 9.4.5.

There are also no new, changed, or removed AMQAM, AMQCO or AMQHT IBM MQ Telemetry messages since IBM MQ 9.4.5.

New, changed, and removed z/OS messages



The following IBM MQ for z/OS CSQ messages are new since IBM MQ 9.4.5:

Distributed queuing messages (CSQX...)

CSQX769I (Authentication failed for channel *channel-name* from *ip-address*, unknown user *user-id*)

The following IBM MQ for z/OS CSQ messages are changed since IBM MQ 9.4.5:

Data manager messages (CSQI...)

CSQI053E (More information added to System action)

Message manager messages (CSQM...)

CSQM528E (Link title updated in System programmer response)

Initialization procedure and general services messages (CSQY...)

CSQY036I (Product IDs updated in Explanation)

Advanced Message Security (CSQ0...)

CSQ0619I (AMSPROD=AMS example removed from Explanation) [

There are no removed IBM MQ for z/OS CSQ messages since IBM MQ 9.4.5.

Related concepts



[What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement](#)

For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.



[What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only](#)

IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.



[What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement](#)

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.



[What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement](#)

For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

[What's changed in IBM MQ 10.0.0](#)

Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

[New, changed, and removed messages in IBM MQ 10.0.0](#)

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

 [Deprecated, stabilized, and removed features in IBM MQ 10.0.0](#)

A number of features are deprecated or removed from the product from IBM MQ 10.0.0.

[“New, changed, and removed messages in IBM MQ 10.0.0” on page 54](#)

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

Related reference

[IBM MQ AMQ messages](#)

[IBM MQ Console messages](#)

[IBM MQ Internet Pass-Thru messages](#)

[JSON format diagnostic messages](#)

[Managed File Transfer messages and return codes](#)

[JMS exception messages](#)

[REST API messages](#)

[Telemetry messages](#)

 [Messages for IBM MQ for z/OS](#)

Deprecated, stabilized, and removed features in IBM MQ 10.0.0

A number of features are deprecated or removed from the product from IBM MQ 10.0.0.



Attention: This topic lists the deprecations and removals that first occurred in IBM MQ 10.0.0.

For deprecations, stabilizations, and removals that occurred in IBM MQ versions from IBM WebSphere® MQ 7.1 to the current version, see [Deprecations, stabilizations, and removals in IBM MQ](#).

Deprecations, stabilizations, and removals made at a given version of the product apply to all subsequent versions.

- [“Deprecated features” on page 72](#)
- [“Removed features” on page 73](#)

Deprecated features

 **Deprecated**

Table 5. Deprecations at IBM MQ 10.0.0	
Feature	Description
Deprecations that are new at IBM MQ 10.0.0	

Table 5. Deprecations at IBM MQ 10.0.0 (continued)

Feature	Description
Deprecation: Java/JMS client packaging	IBM MQ classes for Java, IBM MQ classes for JMS and IBM MQ classes for Jakarta Messaging are being consolidated into fewer jar files. From IBM MQ 10.0.0 the following jar files are deprecated: • com.ibm.mq.headers.jar • com.ibm.mq.jar • com.ibm.mq.jmqi.jar • com.ibm.mq.pcf.jar • com.ibm.mqjms.jar The capability will continue to be available in the following jar files: • com.ibm.mq.allclient.jar • com.ibm.mq.jakarta.client.jar
Deprecations carried forward from IBM MQ 9.4.x Continuous Delivery	
Deprecation: MQIPT service on Linux	For Long Term Support, the service that is used to start MQIPT automatically at system startup on Linux is deprecated in IBM MQ 10.0.0. The service on Linux uses System V init, which is not supported on some recent versions of Linux. An alternative, such as systemd, can be used to start MQIPT automatically. For Continuous Delivery, this service is deprecated from IBM MQ 9.4.1.
 Deprecation: system.broker.clients.data queue	On z/OS, the system.broker.clients.data queue from the CSQ4INSR.jcl sample is deprecated as the queue is not used within the product.
Deprecation: RSA certificates with a key size less than 2048 bits	IBM intends to remove support for RSA certificates with a key size less than 2048 bits, for IBM MQ for Multiplatforms and IBM MQ Appliance firmware.
Deprecation: IBM MQ MacOS Toolkit support for macOS x86-64 hardware	IBM MQ MacOS Toolkit support for macOS x86-64 hardware is deprecated. The IBM MQ MacOS Toolkit continues to support ARM64 hardware.
 Deprecation: Using IBM z/OSMF to automate IBM MQ	On z/OS, the use of IBM z/OSMF to automate IBM MQ is deprecated from IBM MQ 10.0.0.

Removed features

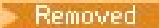
 Removed

Table 6. Removals at IBM MQ 10.0.0

Feature	Description
Removals that are new at IBM MQ 10.0.0	

Table 6. Removals at IBM MQ 10.0.0 (continued)

Feature	Description
 Removal: Sample IBM MQ z/OSMF workflows	From IBM MQ 10.0.0, the sample IBM MQ z/OSMF workflows have been removed. z/OSMF can still be used to automate provisioning of IBM MQ on z/OS but you must provide your own workflows.
 Removal: 32-bit Java Native Interface (JNI) libraries	From IBM MQ 10.0.0, 32-bit JNI libraries are removed from IBM MQ on x86 architectures. Migrate IBM MQ classes for JMS/Jakarta Messaging and IBM MQ classes for Java IBM MQ client applications to 64-bit and use the 64-bit JNI libraries. For applications that do database co-ordination, create and use 64-bit switch libraries. For applications that use 32-bit channel exits written in native code, either port the channel exits to 64-bit or rewrite the channel exit in Java code.
Removals carried forward from IBM MQ 9.4.x Continuous Delivery	
 Removal: IBM XL C/C++ for AIX 16 compiler	 For Long Term Support, the IBM XL C/C++ for AIX 16 compiler is removed from the product at IBM MQ 10.0.0. Compile AIX programs by using the IBM Open XL C/C++ for AIX 17 compiler instead.  For Continuous Delivery, the compiler was removed at IBM MQ 9.4.2.
Removal: IBM MQ classes for .NET and IBM MQ classes for XMS .NET methods and classes used for serialization and deserialization of objects	 For Long Term Support, from IBM MQ 10.0.0, in IBM MQ classes for .NET and IBM MQ classes for XMS .NET, the methods WriteObject(), ReadObject(), CreateObjectMessage(), and the classes ObjectMessage and XmsObjectMessageImpl used for serialization and deserialization of objects are removed. For more information, see https://learn.microsoft.com/en-us/dotnet/api/system.runtime.serialization.formatters.binary.binaryformatter?view=net-8.0 .  For Continuous Delivery, these methods and classes were removed at IBM MQ 9.4.4.
 Removal: Secure Sockets Layer v3 (SSLv3) and Transport Layer Security 1.0 (TLS 1.0)	 From IBM MQ 10.0.0, on Multiplatforms, support for the SSLv3 and TLS 1.0 protocols has been removed. For more information, see Deprecated and removed CipherSpecs .  For Continuous Delivery, this support was removed at IBM MQ 9.4.4.

Table 6. Removals at IBM MQ 10.0.0 (continued)

Feature	Description
Multi Removal: 3DES CipherSpecs for TLS communications	LTS From IBM MQ 10.0.0, on Multiplatforms, support for CipherSpecs using the Triple-DES encryption algorithm has been removed. For more information, see Deprecated and removed CipherSpecs . CD For Continuous Delivery, this support was removed at IBM MQ 9.4.4.
Multi Removal: RC4 CipherSpecs for TLS communications	LTS From IBM MQ 10.0.0, on Multiplatforms, support for CipherSpecs using the RC4 encryption algorithm has been removed. For more information, see Deprecated and removed CipherSpecs . CD For Continuous Delivery, this support was removed at IBM MQ 9.4.4.

Related concepts

Multi [What's new in IBM MQ 10.0.0 for Multiplatforms - base and Advanced entitlement](#)
 For Multiplatforms, IBM MQ 10.0.0 delivers a number of new features that are available with base product entitlement, and also with Advanced entitlement.

Multi **MQ Adv.** [What's new in IBM MQ 10.0.0 for Multiplatforms - Advanced entitlement only](#)
 IBM MQ 10.0.0 delivers a number of new features that are available only with IBM MQ Advanced for Multiplatforms entitlement.

z/OS [What's new in IBM MQ 10.0.0 for z/OS - base and Advanced VUE entitlement](#)
 For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with base and IBM MQ Advanced for z/OS Value Unit Edition (VUE) entitlement.

z/OS **MQ Adv. VUE** **MQ Adv. z/OS** [What's new in IBM MQ 10.0.0 for z/OS - Advanced and Advanced VUE entitlement](#)
 For z/OS, IBM MQ 10.0.0 delivers a number of new features and enhancements that are available with Advanced or IBM MQ Advanced for z/OS Value Unit Edition entitlement.

[What's changed in IBM MQ 10.0.0](#)

Before upgrading your queue managers to the latest product version, review these changes to functions and resources since IBM MQ 9.4.0 and decide whether you must plan to make changes to existing applications, scripts, and procedures before starting to migrate your systems.

[New, changed, and removed messages in IBM MQ 10.0.0](#)

Some new messages have been added and some existing messages have been changed or removed since IBM MQ 9.4.0.

[New, changed, and removed messages since IBM MQ 9.4.5](#)

For Continuous Delivery users, a summary of the new messages that have been added and the existing messages that have been changed or removed since IBM MQ 9.4.5.

[Deprecated Cipherspecs](#)

What was new and changed in earlier versions

Links to information about new features and changes to functions and resources, including stabilizations, deprecations and removals, that occurred in versions of the product before IBM MQ 10.0.

For information about what was new and what changed in an earlier version of the product, see the appropriate section in the product documentation for that version.

IBM MQ 9.4

- [What's new and changed in IBM MQ 9.4](#)

IBM MQ 9.3

- [What's new and changed in IBM MQ 9.3.0](#)
- [What's new and changed in IBM MQ 9.3.x Continuous Delivery](#)
- [What's changed in IBM MQ 9.3.0 Long Term Support](#)

IBM MQ 9.2

- [What's new and changed in IBM MQ 9.2.0](#)
-  [What's new and changed in IBM MQ 9.2.x Continuous Delivery](#)
-  [What's changed in Fix Packs for IBM MQ 9.2.x Long Term Support](#)

IBM MQ 9.1

- [What's new and changed in IBM MQ 9.1.0](#)
-  [What's new and changed in IBM MQ 9.1.x Continuous Delivery](#)
-  [What's changed in IBM MQ 9.1.0.x Long Term Support](#)

IBM MQ 9.0

- [What's new and changed in IBM MQ 9.0.0](#)
-  [What's new and changed in IBM MQ 9.0.x Continuous Delivery](#)
-  [What's changed in IBM MQ 9.0.0.x Long Term Support](#)

IBM MQ 8.0

- [What's new in IBM MQ 8.0](#)
- [What's changed in IBM MQ 8.0](#)
- [What's new and changed in IBM MQ 8.0 Fix Packs](#)

IBM WebSphere MQ 7.5

- [What's new in IBM WebSphere MQ 7.5](#)
- [What's changed in IBM WebSphere MQ 7.5](#)
- [What's changed in IBM WebSphere MQ 7.5 Fix Packs](#)
- [Behavior that has changed between IBM WebSphere MQ Advanced Message Security 7.0.1 and IBM WebSphere MQ 7.5](#)
- [What's new in previous versions of IBM WebSphere MQ File Transfer Edition](#)
- [Changes between IBM WebSphere MQ File Transfer Edition 7.0.4 or earlier and IBM WebSphere MQ 7.5](#)

IBM WebSphere MQ 7.1 and earlier

For older versions of products, where documentation is provided outside of IBM Documentation, see [Documentation for older versions of IBM MQ](#).

Related concepts

[“What's new and changed in IBM MQ 10.0.0” on page 25](#)

IBM MQ 10.0.0 is the follow-on Long Term Support (LTS) release to IBM MQ 9.4.0. It is also the follow-on Continuous Delivery (CD) release to IBM MQ 9.4.5, which is the final CD release for IBM MQ 9.4. IBM MQ 10.0.0 includes the features and enhancements that were previously delivered in the CD releases of IBM MQ 9.4.1 through IBM MQ 9.4.5 along with some features and enhancements that are new at IBM MQ 10.0.0. The features that you have access to depends on your product entitlement.

[Migration methods and concepts](#)

Related information

[System Requirements for IBM MQ](#)

[IBM MQ, WebSphere MQ, and MQSeries product readmes web page](#)

Readme for IBM MQ 10.0 and its maintenance

This document contains the readme information for IBM MQ 10.0.0 Long Term Support release and its maintenance, and also for IBM MQ 10.0.x Continuous Delivery releases.

A PDF copy of this document, in English and in translation, is available for download here: <https://public.dhe.ibm.com/software/integration/wmq/docs/V10.0/Readme/>.

The English version of this document is the most up-to-date version.

Content

The main sections of this document describe product limitations and known problems.

In addition to this document, you can find more information on the IBM MQ website: <https://www.ibm.com/products/mq>.

The SupportPac web page is here: <https://ibm.biz/mqsupportpacs>.

For current information about known problems and available fixes, see the IBM MQ Support page: https://www.ibm.com/mysupport/s/topic/OTO5000000024cJGAQ/mq?language=en_US&productId=01t0z000006zdYXAAY.

Product documentation for all supported versions of IBM MQ is available through IBM Documentation: <https://www.ibm.com/docs/ibm-mq>. Specifically, the IBM MQ 10.0 product information is available in IBM Documentation: <https://www.ibm.com/docs/ibm-mq/10.0.x>.

Announcement letters

The announcement letters for IBM MQ 10.0 (US English) are available at the following locations. The announcement letters provide these types of information:

- Detailed product description, including description of new function.
- Product-positioning statement.
- Ordering details.
- Hardware and software requirements.
- Hourly pricing.

Announcement letters for IBM MQ 10.0.0

IBM MQ 10.0 for Multiplatforms and IBM MQ for z/OS 10.0 <https://www.ibm.com/docs/en/announcements/AD26-0278>

Update history

Date	Summary
Jun 2026	Created for IBM MQ 10.0 for Multiplatforms and IBM MQ for z/OS 10.0

Installation instructions

Installation instructions are available as part of the IBM MQ 10.0 product information published in IBM Documentation: https://www.ibm.com/docs/SSYHRD_10.0.0/install/q008250_.html

Limitations and known problems for the initial IBM MQ 10.0.0 release

There are no limitations or known problems.

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IBM MQ 10.0 Quick Start Guide

Use this guide to get started with IBM MQ 10.0.

National Language Version

The Quick Start Guide is available in other languages from the Quick Start Guide eImage.

Product overview

IBM MQ is robust messaging middleware that simplifies and accelerates the integration of diverse applications and business data across multiple platforms. IBM MQ facilitates the assured, secure and reliable exchange of information between applications, systems, services and files by sending and receiving message data via messaging queues, thereby simplifying the creation and maintenance of business applications. It delivers Universal Messaging with a broad set of offerings to meet enterprise-wide messaging needs, and can be deployed across a range of different environments including on-premises, in cloud environments and supporting hybrid cloud deployments.

IBM MQ supports a number of different application programming interfaces (APIs) including Message Queue Interface (MQI), Java Message Service (JMS), .NET, AMQP, MQTT, and the messaging REST API.

Access the software and documentation

For IBM MQ Long Term Support and Continuous Delivery releases on distributed platforms, this product offering provides the following items, which are available from Passport Advantage®:

- A Server eAssembly for the full release on all supported platforms¹. The eImages that make up the full release can be downloaded individually if you do not need the full release.
- A Quick Start Guide eImage.

For more information on LTS and CD releases, fixpacks, security updates and optional components of IBM MQ, see [Downloading IBM MQ 10.0 \(https://www.ibm.com/support/pages/downloading-ibm-mq-100\)](https://www.ibm.com/support/pages/downloading-ibm-mq-100).

A Quick Start Guide PDF file can be downloaded from <https://www.ibm.com/support/pages/downloading-ibm-mq-100>. Alternatively, the Quick Start Guide is available in HTML format from [IBM Documentation \(https://www.ibm.com/docs/ibm-mq/10.0.x?topic=mq-100-quick-start-guide\)](https://www.ibm.com/docs/ibm-mq/10.0.x?topic=mq-100-quick-start-guide).

Notes:

1. IBM i is supported for Long Term Support but not for Continuous Delivery.
2. The non-install packages are provided only for building container images and are not supported for any other use cases. The packages are made available on IBM Fix Central at <http://ibm.biz/mq100noninstallqmgr>.

For more information about downloading the product from Passport Advantage, see [Downloading IBM MQ 10.0 \(https://www.ibm.com/support/pages/downloading-ibm-mq-100\)](https://www.ibm.com/support/pages/downloading-ibm-mq-100) and the [Passport Advantage and Passport Advantage Express website \(https://www.ibm.com/software/passportadvantage/\)](https://www.ibm.com/software/passportadvantage/).

Online documentation for all supported versions of IBM MQ is available through IBM Documentation (<https://www.ibm.com/docs/ibm-mq>). Specifically, the IBM MQ 10.0 documentation is available in [IBM Documentation \(https://www.ibm.com/docs/ibm-mq/10.0.x\)](https://www.ibm.com/docs/ibm-mq/10.0.x).

The IBM MQ 10.0 documentation is also available as a set of PDF files that can be downloaded from <https://public.dhe.ibm.com/software/integration/wmq/docs/V10.0/PDFs/>.

Information about how to use IBM MQ Explorer can be accessed either from within IBM MQ Explorer or in the IBM MQ 10.0 product information.

Evaluate the hardware and system configuration

For details of hardware and software requirements on all supported platforms, see the [System Requirements for IBM MQ web page \(https://www.ibm.com/support/pages/node/318077\)](https://www.ibm.com/support/pages/node/318077).

Review the installation architecture

IBM MQ architectures range from simple architectures that use a single queue manager, to more complex networks of interconnected queue managers. For more information about planning your IBM MQ architecture, see the [Planning](https://www.ibm.com/docs/ibm-mq/10.0.x?topic=mq-planning) section of the IBM MQ 10.0 documentation (<https://www.ibm.com/docs/ibm-mq/10.0.x?topic=mq-planning>).

For links to additional information, see the IBM MQ family information roadmap (https://www.ibm.com/docs/SSYHRD_latest/overview/mq-family-roadmap.html).

Installing the product on a server

For installation instructions for IBM MQ on all supported platforms, and for details of the hardware and software configurations that are required, see the [Installing](https://www.ibm.com/docs/ibm-mq/10.0.x?topic=migrating-installing-uninstalling) section of the IBM MQ 10.0 documentation (<https://www.ibm.com/docs/ibm-mq/10.0.x?topic=migrating-installing-uninstalling>).

Get started

For information to help you get started with IBM MQ, see the IBM MQ family information roadmap (https://www.ibm.com/docs/SSYHRD_latest/overview/mq-family-roadmap.html).

More information

For more information about IBM MQ, see the following resources:

IBM FAQ for Long Term Support and Continuous Delivery releases

From IBM MQ 9.0, IBM MQ introduced a Continuous Delivery (CD) support model. Following the initial release of a new version, new function and enhancements are made available by incremental updates within the same version and release. There is also a Long Term Support (LTS) release available for deployments that require security and defect fixes only. For more information, see [IBM MQ FAQ for Long Term Support and Continuous Delivery releases](https://www.ibm.com/support/pages/node/713169) (<https://www.ibm.com/support/pages/node/713169>).

Online product readme file

The latest version of the online product readme file is available from the [IBM MQ product readmes web page](https://www.ibm.com/support/pages/node/317955) (<https://www.ibm.com/support/pages/node/317955>).

IBM Support information

Support information includes the following resources:

- [IBM Support Site](https://www.ibm.com/mysupport) (<https://www.ibm.com/mysupport>)
- [IBM MQ for Multiplatforms Support web page](http://ibm.biz/mqsupport) (<http://ibm.biz/mqsupport>)
- [IBM MQ for z/OS Support web page](https://www.ibm.com/mysupport/s/topic/0TO0z0000006k52GAA/mq-for-zos) (<https://www.ibm.com/mysupport/s/topic/0TO0z0000006k52GAA/mq-for-zos>)
- [IBM Cloud Pak for Integration Support web page](https://www.ibm.com/mysupport/s/topic/0TO0z000000YsIrGAK/cloud-pak-for-integration) (<https://www.ibm.com/mysupport/s/topic/0TO0z000000YsIrGAK/cloud-pak-for-integration>)

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IBM MQ 10.0 PDF files for product documentation and Program Directories

You can download the IBM MQ 10.0 product documentation, and the IBM MQ for z/OS Program Directories, in PDF format.

IBM MQ 10.0 product documentation PDF files

The IBM MQ 10.0 PDF files contain the same information as the HTML version of the product documentation published in IBM Documentation. You can download them by clicking the links in the following table.

Note: You can also download the IBM MQ 10.0 product documentation in HTML format into an offline version of IBM Documentation that you install locally. For more information, see [“IBM MQ 10.0 in the IBM Documentation Offline app”](#) on page 83.

<i>Table 7. PDF files for the product documentation and how they correspond to the sections in IBM Documentation</i>	
PDF file name and download link	Equivalent section in IBM Documentation
mq100_readme_en.pdf Translations of this readme file are available to download here .	Readme for IBM MQ 10.0 and its maintenance
mq100_qsg_en.pdf (for a download link, see Downloading IBM MQ 10.0)	IBM MQ 10.0.0 Quick Start Guide
mq100.overview.pdf Translations of this PDF, and the PDFs in subsequent rows in this table, are available to download here .	About IBM MQ
mq100.techoview.pdf	Technical overview
mq100.scenarios.pdf	Scenarios
mq100.plan.pdf	Planning for IBM MQ
mq100.install.pdf	Installing and migrating IBM MQ
mq100.secure.pdf	Securing IBM MQ
mq100.configure.pdf	Configuring IBM MQ
mq100.administer.pdf	Administering IBM MQ
mq100.develop.pdf	Developing applications for IBM MQ
mq100.monitor.pdf	Monitoring and performance for IBM MQ
mq100.troubleshoot.pdf	Troubleshooting and support for IBM MQ
mq100.reference.pdf	IBM MQ Reference
mq100.refconfig.pdf	IBM MQ Configuration reference
mq100.refadmin.pdf	IBM MQ Administration reference
mq100.refdev.pdf	IBM MQ Developing applications reference
mq100.explorer.pdf	IBM MQ Explorer
mq100.container.pdf	IBM MQ in containers

Note: The PDF files must be in the same folder for links between PDF files to function correctly.

IBM MQ for z/OS Program Directory PDF files



The following IBM MQ for z/OS 10.0.0 Program Directory documents for Long Term Support are available for download as PDF files:

- [IBM MQ for z/OS 10 \(LTS\) Program Directory \(GI13-6103-00\)](#)
- [IBM MQ for z/OS Value Unit Edition 10.0 \(LTS\) Program Directory \(GI13-6104-00\)](#)
- [IBM MQ Advanced for z/OS 10.0 \(LTS\) Program Directory \(GI13-6105-00\)](#)
- [IBM MQ Advanced for z/OS Value Unit Edition 10.0 \(LTS\) Program Directory \(GI13-6106-00\)](#)



The following IBM MQ for z/OS 10.0.x Program Directory documents for Continuous Delivery are available for download as PDF files:

- [IBM MQ for z/OS 10.0 \(CD\) Program Directory \(GI13-6107-00\)](#)
- [IBM MQ for z/OS Value Unit Edition 10.0 \(CD\) Program Directory \(GI13-6108-00\)](#)
- [IBM MQ Advanced for z/OS 10.0 \(CD\) Program Directory \(GI13-6109-00\)](#)
- [IBM MQ Advanced for z/OS Value Unit Edition 10.0 \(CD\) Program Directory \(GI13-6110-00\)](#)

IBM MQ 10.0 in the IBM Documentation Offline app

If you are in an airgap environment without access to the internet, use our Dark Shop app "IBM Documentation Offline" to view downloads of the IBM MQ 10.0 product documentation.

IBM Documentation Offline has two components:

- **The IBM Documentation Offline app.** This is a locally-installable offline version of IBM Documentation.
- **The documentation package that you install into the app.** This package contains the same documentation that is published online in IBM Documentation. When you are logged in to IBM Documentation with your IBM ID, a link "Offline docs" is displayed at the bottom of the navigation pane. Click the link to download the documentation.

For more detailed instructions on downloading the app and the documentation package, see [IBM Documentation Offline](#).

Note:

You can install multiple IBM documentation sets in one copy of the app. For example you might want to install IBM MQ 10.0, IBM MQ 9.4, z/OS 3.2, and IBM Cloud Pak for Integration 16.1.3.

From IBM WebSphere MQ 7.5 onwards, when an IBM MQ version is no longer available in IBM Documentation, you can still download the documentation set from the IBM MQ documentation download site. See ["Documentation for older versions of IBM MQ" on page 133](#).

IBM MQ family information

Guidance to help you navigate through high-level information about IBM MQ.

Note: This topic and its children are not IBM MQ version-specific, they are family-level topics. They are always published in the latest IBM MQ version. If you want to bookmark this topic, please bookmark the following link. This link continues to work when a new IBM MQ version is released. https://www.ibm.com/docs/en/SSYHRD_latest/overview/mq-family-roadmap.html.

To go to the main IBM MQ documentation landing page, click **IBM MQ** in the breadcrumb trail at the top of this page.

- ["Version-to-version information for IBM MQ" on page 84](#)

- [“Detailed documentation for IBM MQ” on page 84](#)
- [“IBM MQ: Developers” on page 84](#)
- [“IBM MQ: Architects and Administrators” on page 84](#)
- [“Find Support” on page 85](#)

Version-to-version information for IBM MQ

Version-to-version feature comparison tables, and deprecation information.

- [“IBM MQ features by version” on page 85](#)
- [“Deprecations, stabilizations, and removals in IBM MQ” on page 113](#)
- [Announcements and sales manuals](#)

Detailed documentation for IBM MQ

Find online documentation for current versions of IBM MQ, IBM MQ Appliance, and IBM MQ on Cloud. For earlier versions, find documentation offline. Available offline formats are PDF, IBM Documentation Offline, and Information Center.

Go to the latest version

- [“IBM MQ” on page 6](#)

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- [“IBM MQ 10.0 in the IBM Documentation Offline app” on page 83](#)
- [IBM MQ documentation download site](#)

Download offline copies for IBM WebSphere MQ 7.5 and earlier

- [“Documentation for older versions of IBM MQ” on page 133](#)

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- [IBM MQ Appliance documentation](#)
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IBM MQ: Developers

Learn about developing applications for IBM MQ by visiting the IBM Developer site.

- [IBM MQ Developer Essentials](#) (learn the basics, run a demo, code an app, take more advanced tutorials)
- [IBM MQ Downloads for Developers](#) (including free developer editions and trial versions)

IBM MQ: Architects and Administrators

Find out about the benefits of using IBM MQ, get downloads, and view other learning resources.

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- [“Introduction to IBM MQ” on page 7](#)
- [Technical overview](#)
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- [IBM MQ Redbooks](#)
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View other learning resources

- [IBM MQ on Cloud](#)
- [MQ learning activities on IBM Training](#)
-  [A collection of tutorials for installing and upgrading IBM MQ on AIX, Linux, and Windows. The tutorials cover:](#)
 - Preparing a host for IBM MQ.
 - Downloading the IBM MQ code.
 - Installing and uninstalling the IBM MQ code, and applying fix packs.
 - Upgrading from one version of IBM MQ to another, and moving a queue manager from one host to another.

IBM MQ certification

Follow this link then search for "MQ":

- [IBM Professional Certification Program](#)

Find Support

Links to IBM and IBM MQ support resources including user forums, technotes, cloud and social media support channels and migration guides.

User forums and technotes

- [IBM Support Forums](#)
- [IBM Community for MQ](#)
- [MQSeries.net forum](#)
- [MQ technotes on IBM Support](#)

Other Support resources

- [IBM MQ for Multiplatforms Support web page](#)
-  [IBM MQ for z/OS Support web page](#)
- [IBM Cloud Pak for Integration Support web page](#)
- [IBM MQ Appliance Support web page](#)
- [IBMSupport @IBMSupport \(Twitter\)](#)
- [Social Media Channels within Cloud Technical Support](#)

Related reference

[IBM MQ landing page](#)

IBM MQ features by version

Version-to-version feature comparison tables.

Note: This topic is not IBM MQ version-specific, it is a family-level topic. It is always published in the latest IBM MQ version. If you want to bookmark this topic, please bookmark the following link. This link continues to work when a new IBM MQ version is released. https://www.ibm.com/docs/en/SSYHRD_latest/overview/mq_features.html.

To go to the main IBM MQ documentation landing page, click **IBM MQ** in the breadcrumb trail at the top of this page.

Features introduced at IBM MQ 10.0

The following tables show the features introduced at the IBM MQ 10.0 initial release and at each IBM MQ 10.x CD release.

- [Table 1 IBM MQ 10.0 license entitlement, installation and migration features](#)
- [Table 2 IBM MQ 10.0 security features](#)
- [Table 3 IBM MQ 10.0 administration features](#)
- [Table 4 IBM MQ 10.0 application development features](#)
- [Table 5 IBM MQ 10.0 monitoring features](#)
- [Table 6 IBM MQ 10.0 Containers features](#)

For feature tables for earlier versions of IBM MQ, see [“Features introduced at IBM MQ 9.4”](#) on page 90 and [“IBM MQ features introduced at older versions”](#) on page 100.

IBM MQ 10.0 License entitlement, installation and migration features

Table 8. License entitlement, installation and migration		
Feature	Requires entitlement	IBM MQ 10.0.0 initial release

IBM MQ 10.0 security features

Table 9. Security		
Feature	Requires entitlement	IBM MQ 10.0.0 initial release
JSON Web Token (JWT) support and token based authentication: •  JWKS support for automatic queue manager side certificate management		 10.0.0
•  JWT endpoint support in IBM MQ classes for JMS/Jakarta Messaging		 10.0.0
HTTPS connections: •  HTTPS supported for accessing a CCDT through a URL		 10.0.0
•  Support for customized SSLSocketFactory for CCDT and JWT retrieval over HTTPS		 10.0.0
TLS support: •  New dspmqcert program for checking SSL/TLS certificate dates		 10.0.0
•  Custom path for TLS certificates in IBM MQ .NET and XMS .NET client applications		  10.0.0
•  Improvements to how IBM MQ selects the keystores to use for TLS		 10.0.0

Table 9. Security (continued)

Feature	Requires entitlement	IBM MQ 10.0.0 initial release
Specify that replication links in your HA RDQM, DR RDQM, and DR/HA RDQM configuration are secured with TLS	MQ Adv.	Linux 10.0.0
Support for multiple certificate labels		Multi 10.0.0
Federal Information Processing Standards (FIPS) support: Support for the IBM Semeru Runtime FIPS 140-3 security provider		Multi 10.0.0
Support for FIPS in AMS, JWT, JWKS, HTTPS CCDT retrieval and the Password Protection system		Multi 10.0.0
Federal Information Processing Standard (FIPS) compliance with IBM MQ Explorer		Multi 10.0.0 z/OS 10.0.0
Support for FIPS 203 Quantum Safe ML-KEM key shares for TLS		ALW 10.0.0
IBM Global Security Kit (GSKit): Cryptographic library GSKit upgraded to version 9		ALW 10.0.0
Event monitoring: Extended authority events for positive authentication		Multi 10.0.0
Managed File Transfer: Managed File Transfer support for OpenSSH type Private key for SFTP servers	MQ Adv.	Linux AIX 10.0.0

IBM MQ 10.0 administration features

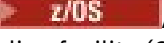
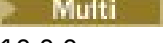
Table 10. Administration		
Feature	Requires entitlement	IBM MQ 10.0.0 initial release
IBM MQ Console: •  Customized column view •   Queue manager status view •  IBM MQ Console filtering and sorting •  Moving and copying messages in the IBM MQ Console •   Administer z/OS coupling facility (CF) structures •   Monitor shared message datasets on z/OS •   View detailed status for a Native HA configuration		 10.0.0  10.0.0
 Data conversion support for the latest GB18030 standard		 10.0.0
 Force option might be required when you change a queue manager CCSID		 10.0.0
 Simpler connectivity to cloud		 10.0.0
 Improved alternative site recovery		 10.0.0
Native High Availability (Native HA): •  Native High Availability and Cross Region Replication on Linux		 10.0.0
•   Native HA In-Region Replication (IRR) support		 10.0.0
RDQM (replicated data queue manager): •  Secure heartbeat for HA RDQM		 10.0.0
Kafka Connect: •  Simplifying data conversion with the Kafka Connect XML Converter •  Update to the Kafka Source and Sink connectors	  	 10.0.0  10.0.0

Table 10. Administration (continued)

Feature	Requires entitlement	IBM MQ 10.0.0 initial release
Support for Kafka Connect	  	 10.0.0  10.0.0

IBM MQ 10.0 application development features

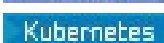
Table 11. Application development

Feature	Requires entitlement	IBM MQ 10.0.0 initial release
AMQP and MQTT: - Java heap dump generation to troubleshoot low memory exceptions for AMQP and MQTT - Simplified configuration of AMQP and MQTT application properties		 10.0.0
IBM MQ .NET and XMS .NET: Support for .NET 10 at runtime		  10.0.0
IBM MQ and XMS .NET.NET client libraries built with .NET 10		 10.0.0
IBM MQ classes for JMS and IBM MQ classes for Jakarta Messaging: Multiple JMS connections can be treated as a single application instance		 10.0.0
Providing trace for short-lived Java/JMS application containers		 10.0.0
Using MsgToken in a JMS selector		 10.0.0

IBM MQ 10.0 Monitoring features

Table 12. Monitoring		
Feature	Requires entitlement	IBM MQ 10.0.0 initial release
Integrated OpenTelemetry tracing support: •  Integrated OpenTelemetry tracing		 10.0.0
Native High Availability (Native HA): •  Enhancements for monitoring Native HA instances		  10.0.0

IBM MQ 10.0 Containers features

Table 13. Containers		
Feature	Requires entitlement	IBM MQ 10.0.0 initial release
 License tagging for non-production container workloads		 10.0.0
 Native HA cross-region replication in containers		  10.0.0

Related concepts

[“Icons used in the product documentation” on page 136](#)

The product documentation for all IBM MQ 10.0 release types (LTS, CD, CP4I-LTS), release versions, and platforms is provided in a single information set in IBM Documentation. If information is specific to a given release type, version, or platform, this is indicated by a rectangular icon. Information that applies to all release types, versions, and platforms is left unmarked. Icons are also used to distinguish between JMS and Jakarta messaging, and to highlight product features that are deprecated, stabilized or removed.

[“IBM MQ features introduced at older versions” on page 100](#)

Version-to-version feature comparison tables for versions before IBM MQ 9.4.

Related reference

[IBM MQ landing page](#)

Features introduced at IBM MQ 9.4

Tables for features introduced at the IBM MQ 9.4.0 initial release and at each IBM MQ 9.4.x CD release.

Note: This topic is not IBM MQ version-specific, it is a family-level topic. It is always published in the latest IBM MQ version. If you want to bookmark this topic, please bookmark the following link. This link continues to work when a new IBM MQ version is released. https://www.ibm.com/docs/en/SSFSKJ_latest/overview/mq_features.html.

To go to the main IBM MQ documentation landing page, click **IBM MQ** in the breadcrumb trail at the top of this page.

- [Table 1 IBM MQ 9.4 license entitlement, installation and migration features](#)
- [Table 2 IBM MQ 9.4 security features](#)

- [Table 3 IBM MQ 9.4 administration features](#)
- [Table 4 IBM MQ 9.4 application development features](#)
- [Table 5 IBM MQ 9.4 Containers features](#)

IBM MQ 9.4 License entitlement, installation and migration features

Table 14. License entitlement, installation and migration			
Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
New method for applying maintenance on Windows and Linux		  9.4.0	
Native HA entitlement	 	  9.4.0	

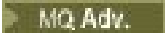
IBM MQ 9.4 security features

Table 15. Security			
Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
JSON Web Token (JWT) support and token based authentication: • JSON Web Token (JWT) support - authentication and authorization • JWT JMS client support • Administration of token based authentication is significantly simplified with support for JWKS key management		  9.4.0	
• JWKS support for automatic queue manager side certificate management			 9.4.2
• JWT endpoint support in IBM MQ classes for JMS/Jakarta Messaging			 9.4.3
HTTPS connections: • HTTPS supported for accessing a CCDT through a URL			 9.4.1
• Support for customized SSLSocketFactory for CCDT and JWT retrieval over HTTPS			 9.4.5

Table 15. Security (continued)

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
REST API: New property to set the user context that is used for authorization in the messaging REST API		 Multi 9.4.0  z/OS 9.4.0	
TLS support: Support for TLS1.3 on managed .NET clients		 Windows  Linux 9.4.0	
New TLS skip validation mode for IBM MQ client applications on C and JMS		 ALW 9.4.0  z/OS 9.4.0	
New dspmqcert program for checking SSL/TLS certificate dates			 Multi 9.4.1
Custom path for TLS certificates in IBM MQ .NET and XMS .NET client applications			 Windows  Linux 9.4.4
Improvements to how IBM MQ selects the keystores to use for TLS			 Multi 9.4.4
Specify that replication links in your HA RDQM, DR RDQM, and DR/HA RDQM configuration are secured with TLS	 MQ Adv.		 Linux 9.4.4
Federal Information Processing Standards (FIPS) support: Support for the IBM Semeru Runtime FIPS 140-3 security provider			 Multi 9.4.2
Support for FIPS in AMS, JWT, JWKS, HTTPS CCDT retrieval and the Password Protection system			 Multi 9.4.4

Table 15. Security (continued)

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
Federal Information Processing Standard (FIPS) compliance with IBM MQ Explorer			 Multi 9.4.5  z/OS 9.4.5
MQIPT: Changes to MQCSP password protection in MQIPT		 Multi 9.4.0	
New property to specify the protocols that MQIPT routes accept		 Multi 9.4.0	
New command to manage keystores and certificates that are used by MQIPT		 ALW 9.4.0	
Key and certificate management: New commands to manage keys, certificates, and certificate requests		 ALW 9.4.0	
Event monitoring: Extended authority events for positive authentication			 Multi 9.4.3
IBM Global Security Kit (GSKit): Cryptographic library GSKit upgraded to version 9			 Linux 9.4.4
Managed File Transfer: Managed File Transfer support for OpenSSH type Private key for SFTP servers	 MQ Adv.		 Linux  AIX 9.4.2

IBM MQ 9.4 administration features

Table 16. Administration			
Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
IBM MQ Console: - New IBM MQ Console layout at queue manager view level - Overview tab showing overall state of a queue manager - Queues tab view of objects associated with a queue - Applications Overview tab - MQ Network Overview tab - Improved application visibility and localized time zone - Add, view, delete and update storage classes on z/OS - View page sets and buffer pools can be viewed on z/OS		 9.4.0  9.4.0	
- Customized column view - Administer z/OS coupling facility (CF) structures - Monitor shared message datasets on z/OS			 9.4.2  9.4.2
Queue manager status view now available in the IBM MQ Console			 9.4.3
IBM MQ Console filtering and sorting			 9.4.4  9.4.4
Moving and copying messages in the IBM MQ Console			 9.4.5  9.4.5
IBM MQ Web Server Stand-alone IBM MQ Web Server		 9.4.0  9.4.0	

Table 16. Administration (continued)

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
Command and configuration enhancements: • CAPEXP attribute available on Multiplatforms • CAPEXP attribute available on z/OS		 Multi 9.4.0  z/OS 9.4.0	
• Extension of queue manager status attributes		 Multi 9.4.0	
• dspmquer command now reports release type		 Multi 9.4.0	
• Environment variables for tuning I/O operations that take too long		 Multi 9.4.0	
• LZ4 compression available for channels		 Multi 9.4.0	
• Increased scalability for channel initiator		 z/OS 9.4.0	
• Performance monitoring enhancements (mqperfck command)			 Multi 9.4.2
• Data conversion support for the latest GB18030 standard			 z/OS 9.4.2
• Force option might be required when you change a queue manager CCSID			 Multi 9.4.3
• Simpler connectivity to cloud			 z/OS 9.4.3
• Improved alternative site recovery			 z/OS 9.4.3
• Accessing error logs programmatically			 Multi 9.4.5
Native High Availability (Native HA): • Addition of Native HA status attributes		 CP4I 9.4.0	

Table 16. Administration (continued)

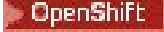
Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
Enhancements for monitoring Native HA instances			  9.4.5
LZ4 compression available for Native HA		 9.4.0	
Autorecovery of damaged objects for Native HA queue managers		 9.4.0	
Native High Availability and Cross Region Replication on Linux			 9.4.4
MQIPT: MQIPT trace file configuration enhancements		 9.4.0	
OpenTelemetry tracing support: - OpenTelemetry tracing with IBM MQ on AIX, Linux, and Windows - OpenTelemetry tracing with IBM MQ on z/OS		 9.4.0	 9.4.3
Integrated OpenTelemetry tracing with the IMS Bridge			 9.4.5
Integrated OpenTelemetry tracing with publish/subscribe			 9.4.5
IBM z/OS Management Facility (SMF): - Enhancements to SMF queue statistics records - Enhancements to SMF accounting data		 9.4.0	
Logging: Faster log throughput with zHyperLink		 9.4.0	
Media image scheduling - linear logging		 9.4.0	

Table 16. Administration (continued)

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
Media image scheduling - replicated logging	MQ Adv.	Multi 9.4.0	
RDQM (replicated data queue manager): RDQM available on RHEL 9	MQ Adv.	Linux 9.4.0	
Secure heartbeat for HA RDQM	MQ Adv.		Linux 9.4.5
Kafka Connect: Unlocking events from mission-critical data using Kafka Connect	MQ Adv. MQ Adv. VUE MQ Adv. z/OS	Multi 9.4.0 z/OS 9.4.0	
- Simplifying data conversion with the Kafka Connect XML Converter - Update to the Kafka Source and Sink connectors	MQ Adv. MQ Adv. VUE MQ Adv. z/OS		Multi 9.4.2 z/OS 9.4.2
Support for Kafka Connect	MQ Adv. MQ Adv. VUE MQ Adv. z/OS		Multi 9.4.3 z/OS 9.4.3
Additional capabilities for users with IBM MQ Advanced for z/OS entitlement	MQ Adv. z/OS	z/OS 9.4.0	
Managed File Transfer: - Managed File Transfer resource monitor verbose level logging events - Option to run fteRAS for specific MFT agents	MQ Adv. MQ Adv. VUE MQ Adv. z/OS	Multi 9.4.0 z/OS 9.4.0	

IBM MQ 9.4 application development features

Table 17. Application development

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
Support for AIX compiler IBM Open XL C/C++ for AIX 17.1.0		AIX 9.4.0	

Table 17. Application development (continued)

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
AMQP and MQTT: Performance improvements for processing of AMQP message acknowledgments		 9.4.0	
Enabling JSON formatted logs for AMQP and MQTT		 9.4.0	
Java heap dump generation to troubleshoot low memory exceptions for AMQP and MQTT			 9.4.1
Simplified configuration of AMQP and MQTT application properties			 9.4.2
IBM MQ .NET and XMS .NET: - New set of .NET 6 libraries - Ability to enable trace for IBM MQ .NET and XMS .NET client libraries with mqclient.ini - Improvements to IBM MQ .NET and XMS .NET client diagnostic messages - Support for .NET 8 applications using IBM MQ classes for .NET and IBM MQ classes for XMS .NET		  9.4.0	
Support for .NET 10 at runtime			  9.4.5
IBM MQ classes for JMS and IBM MQ classes for Jakarta Messaging: - New property to set the strategy for sharing TCP/IP connections in IBM MQ classes for JMS or IBM MQ classes for Jakarta Messaging - Support for using modular applications with IBM MQ classes for JMS and IBM MQ classes for Jakarta Messaging		 9.4.0  9.4.0	

Table 17. Application development (continued)

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
• Application re-balancing support for IBM MQ classes for JMS		 9.4.0	
• Multiple JMS connections can be treated as a single application instance			 9.4.2
REST API: • Remote messaging with the messaging REST API		 9.4.0  9.4.0	

IBM MQ 9.4 Containers features

Table 18. Containers

Feature	Requires entitlement	IBM MQ 9.4.0 initial release	IBM MQ 9.4.x CD only
Containers non-install image added for Linux ARM64 / Apple Silicon		 9.4.0	
Support for deployments outside OpenShift with the IBM MQ Advanced container image			 9.4.1
License tagging for non-production container workloads			 9.4.1
Native HA cross-region replication in containers			  9.4.2

Related concepts

[“Icons used in the product documentation” on page 136](#)

The product documentation for all IBM MQ 10.0 release types (LTS, CD, CP4I-LTS), release versions, and platforms is provided in a single information set in IBM Documentation. If information is specific to a given release type, version, or platform, this is indicated by a rectangular icon. Information that applies to all release types, versions, and platforms is left unmarked. Icon are also used to distinguish between JMS and Jakarta messaging, and to highlight product features that are deprecated, stabilized or removed.

[“IBM MQ features introduced at older versions” on page 100](#)

Version-to-version feature comparison tables for versions before IBM MQ 9.4.

Related reference

[IBM MQ landing page](#)

IBM MQ features introduced at older versions

Version-to-version feature comparison tables for versions before IBM MQ 9.4.

Note: This information is not IBM MQ version-specific. It is a family-level information that is always published in the latest IBM MQ version. If you want to bookmark this information,, please bookmark the following link. This link continues to work when a new version of IBM MQ is released. https://www.ibm.com/docs/en/SSFKSJ_latest/overview/mq_features.html.

To go to the main IBM MQ documentation landing page, click **IBM MQ** in the breadcrumb trail at the top of this page.

- [Table 2. Features introduced at IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3](#)
- [Table 3. Features introduced at IBM WebSphere MQ 7.5, IBM MQ 8.0, and IBM MQ 9.0](#)

Features introduced at IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3			
Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
Support for AIX compiler IBM Open XL C/C++ for AIX 17.1.0			 Yes (CD only)
OpenTelemetry tracing support			 Yes (CD only)
Additional JSON Web Token (JWT) support			 Yes (CD only)
Stand-alone IBM MQ Web Server			 Yes (CD only)  Yes (CD only)
IBM MQ Console: Improved application visibility and localized time zone			 Yes (CD only)  Yes (CD only)
IBM MQ Console: add, view, delete and update storage classes			 Yes (CD only)
IBM MQ Console: New Overview tab for queue managers			 Yes (CD only)  Yes (CD only)
Media image scheduling - linear logging			 Yes (CD only)

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
Environment variables for tuning I/O operations that take too long			 Multi Yes (CD only)
JSON Web Token (JWT) support - authentication and authorization			 Multi Yes (CD only)
Application re-balancing support for IBM MQ classes for JMS			 Multi Yes (CD only)
 Media image scheduling - replicated logging			 Multi Yes (CD only)
   Option to run fteRAS for specific MFT agents			 Multi Yes (CD only)  z/OS Yes (CD only)
Simplified Java application topologies			 z/OS Yes (CD only)
 Additional capabilities for users with IBM MQ Advanced for z/OS entitlement			Yes (CD only)
dspmquer command now reports release type			 Multi Yes
Improved processing of AMQP message acknowledgments			 Multi Yes (CD only)
Ability to enable trace for IBM MQ .NET and XMS .NET client libraries with mqclient.ini			 Multi Yes (CD only)
Improvements to IBM MQ .NET and XMS .NET client diagnostic messages			 Multi Yes (CD only)
  Autorecovery of damaged objects for Native HA queue managers			 Multi Yes (CD only)
Enhancements to SMF queue statistics records			 z/OS Yes (CD only)
Additions to IBM MQ console			 Multi Yes (CD only)  z/OS Yes (CD only)

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
Remote messaging with the messaging REST API			 Multi Yes (CD only)  z/OS Yes (CD only)
 MQ Adv.  MQ Adv. VUE  MQ Adv. z/OS Unlocking events from mission-critical data using Kafka Connect			 Multi Yes (CD only)  z/OS Yes (CD only)
Extension of queue manager status attributes			 Multi Yes (CD only)
Addition of Native HA status attributes			 Multi Yes (CD only)
MQIPT trace file configuration enhancements			 Multi Yes (CD only)
Support for TLS1.3 on managed .NET clients			 Multi Yes (CD only)
 MQ Adv. Native HA entitlement			Yes (CD only)
Enhancements to SMF accounting data			 z/OS Yes (CD only)
IBM MQ Console: New application view			 Multi Yes (CD only)  z/OS Yes (CD only)
New property to set the strategy for sharing TCP/IP connections in IBM MQ classes for JMS or IBM MQ classes for Jakarta Messaging			 Multi Yes (CD only)  z/OS Yes (CD only)
Support for using modular applications with IBM MQ classes for JMS and IBM MQ classes for Jakarta Messaging			 Multi Yes (CD only)  z/OS Yes (CD only)

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
New property to set the user context that is used for authorization in the messaging REST API			 Multi Yes (CD only)  z/OS Yes (CD only)
 MQ Adv.  MQ Adv. VUE  MQ Adv. z/OS Additional Managed File Transfer resource monitor events			 Multi Yes (CD only)  z/OS Yes (CD only)
New CAPEXPRI attribute			 Multi Yes (CD only)
Changes to MQCSP password protection in MQIPT			 Multi Yes (CD only)
New set of .NET 6 libraries			 Windows  Linux Yes (CD only)
 MQ Adv. RDQM available on RHEL 9			 Linux Yes (CD only)
Increased scalability for channel initiator			 z/OS Yes (CD only)
Enhancements to SMF queue statistics records			 z/OS Yes (CD only)
Streaming queues supported with shared queues			 z/OS Yes (CD only)
New IBM MQ Console layout			 Multi Yes (CD only)  z/OS Yes (CD only)
Support for PKCS#12 key repositories			 ALW Yes
Support for key repository passwords			 ALW Yes

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
► MQ Adv. The IBM MQ Advanced Container and the CP4I-LTS release model			► Linux Yes
► MQ Adv. IBM MQ Advanced Container support for Power Systems			► Linux Yes
User data traced by MQIPT can be configured			► Multi Yes ► z/OS Yes
Support for Jakarta Messaging 3.0			► Multi Yes ► z/OS Yes
Enhancements to SMF statistics			► z/OS Yes
► MQ Adv. ► MQ Adv. VUE ► MQ Adv. z/OS Enable MQCSP support by default for Managed File Transfer commands			► Multi Yes ► z/OS Yes
► MQ Adv. ► MQ Adv. VUE ► MQ Adv. z/OS The REST API and managed calls for Managed File Transfer			► Multi Yes ► z/OS Yes
Support for multiple queue manager certificates in MQIPT		► ALW Yes (CD only) ► z/OS Yes (CD only)	► Multi Yes ► z/OS Yes
TLS support for the IBM MQ .NET XA Monitor application		► Windows ► Linux Yes (CD only)	► Windows ► Linux Yes
Additional configuration option to control TLS environment in C clients		► ALW Yes (CD only)	► Multi Yes

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
Support for Transport Layer Security (TLS) 1.3 in MQIPT		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
REST Messaging API: greater access to message properties when sending and receiving messages using the REST API		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
New queue managers 64-bit RBA capable by default		 z/OS Yes (CD only)	 z/OS Yes
 MQ Adv.  MQ Adv. VUE  MQ Adv. z/OS Enhanced fteRAS logging		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
Support for influencing application re-balancing within uniform clusters		 ALW Yes (CD only)	 Multi Yes
Encryption of passphrases for MQTT channels		 ALW Yes (CD only)	 Multi Yes
.NET client changes for Application Pattern Support		 Windows  Linux Yes (CD only)	 Windows  Linux Yes
OutboundSNI property for NQMI and XMS .NET clients		 ALW Yes (CD only)	 Multi Yes
TLS 1.3 support from IBM MQ Java applications		 ALW Yes (CD only)	 Multi Yes
SecureCommsOnly setting available on the queue manager		 ALW Yes (CD only)	 Multi Yes
Configurable IBM MQ Console message browsing controls		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
Additional queue manager configuration attributes to control the connection and operation timeout for LDAP calls		 ALW Yes (CD only)	 Multi Yes

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
Option to capture installation-level diagnostics only with runmqras command		 ALW Yes (CD only)	 Multi Yes
IBM MQ code signing support		 ALW Yes (CD only)	 Multi Yes
Java 17 support for IBM MQ Clients		 ALW Yes (CD only)	 Multi Yes
Changes to statistics collection intervals		 z/OS Yes (CD only)	 z/OS Yes
CSQUDSPM utility supports upper case and lower case parameters		 z/OS Yes (CD only)	 z/OS Yes
 MQ Adv.  MQ Adv. VUE  MQ Adv. z/OS Enhanced credentials protection for Managed File Transfer		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
 MQ Adv.  MQ Adv. VUE  MQ Adv. z/OS Improvements to the fteRAS command		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
 MQ Adv.  MQ Adv. VUE  MQ Adv. z/OS Transfer logging on Managed File Transfer		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
Streaming queues to realize additional value from data already flowing through IBM MQ		 ALW Yes (CD only)	 Multi Yes  z/OS Yes
Remote queue manager support for the IBM MQ Console		 ALW Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
Improved password protection for IBM MQ clients using cryptographic hardware		 ALW Yes (CD only)	 Multi Yes
Support for dynamic balancing of Java Platform, Enterprise Edition inbound connections in a uniform cluster		 ALW Yes (CD only)	 Multi Yes

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

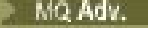
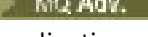
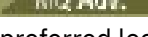
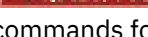
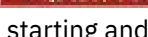
Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
New client option for runmqdlq command		 Yes (CD only)	 Yes
New client version of amqsdlqc sample		 Yes (CD only)	 Yes
Support for the Apache Qpid JMS client library		 Yes (CD only)	 Yes
 General availability of Native HA for IBM MQ containers		 Yes (CD only)	 Yes
 RDQM kernel module serviceability enhancements		 Yes (CD only)	 Yes
Browse support for IBM MQ AMQP channels		 Yes (CD only)	 Yes
 RDQM reports when an HA or DR node's replication was last in sync		 Yes (CD only)	 Yes
 RDQM summary status includes the preferred location for HA queue managers		 Yes (CD only)	 Yes
See and clear RDQM HA failed resource actions		 Yes (CD only)	 Yes
Improved password protection for Native Advanced Message Security clients		 Yes (CD only)	 Yes
   New Managed File Transfer commands for starting and stopping resource monitors		 Yes (CD only)  Yes (CD only)	 Yes  Yes
IBM MQ Console Application quick start		 Yes (CD only)  Yes (CD only)	 Yes  Yes
Ability to trace IBM MQ Console JavaScript running inside a browser		 Yes (CD only)  Yes (CD only)	 Yes  Yes
Confirm License Entitlement panel		 Yes (CD only)	 Yes

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
Permitting non-operating system users in the Object Authority Manager		 Linux  AIX Yes (CD only)	 Linux  AIX Yes
New IGNSTATE parameter for MQSC DELETE commands		 ALW Yes (CD only)	 ALW Yes
Support for zlibNX compression library		 AIX Yes (CD only)	 AIX Yes
Support for upgrading IBM MQ for Linux without uninstalling the earlier version		 Linux Yes (CD only)	 Linux Yes
Point-to-point messaging on AMQP channels		 ALW Yes (CD only)	 ALW Yes
More flexible configuration for SNI support		 Multi Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
 Deploying containers to IBM Cloud Pak for Integration		 Linux Yes (CD only)	 Linux Yes
   Redistributable Managed File Transfer Logger		 Windows  Linux Yes (CD only)  z/OS Yes (CD only)	 Windows  Linux Yes  z/OS Yes
   Limiting the number of file transfers for each FTP endpoint		 Multi Yes (CD only)  z/OS Yes (CD only)	 Multi Yes  z/OS Yes
Protection of passwords in IBM MQ component configuration files		Yes	Yes
AMQP shared subscription enhancement		 ALW Yes	 ALW Yes
Automatic balancing of application connections across a set of clustered queue managers; uniform clusters, introduction of application instances, single set of configuration files, application resource monitoring	 Multi Yes (CD only)	 Multi Yes	 Multi Yes
JSON format client channel definition table (CCDT)	 Multi Yes (CD only)	 Multi Yes	 Multi Yes

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

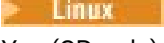
Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
IBM MQ Internet Pass-Thru a fully-supported optional component of IBM MQ	Yes (CD only)	Yes	Yes
Transport Layer Security (TLS) 1.3 support for a range of protocols	 Yes (CD only)	Yes	Yes
CipherSpecs: Dynamic CipherSpec negotiation; list of acceptable TLS CipherSpecs; addition of ANY_TLS1x CipherSpec; support for TLS Handshake Transcript	 Yes (CD only)	Yes	Yes
Version 2 of the REST API	 Yes	Yes	Yes
REST API for administration: Communicate with the queue manager in JSON format	Yes (CD only)	Yes	Yes
REST API for messaging: browse messages on a queue	Yes (CD only)	Yes	Yes
REST API for messaging: enhanced performance with connection pools	Yes (CD only)	Yes	Yes
REST API for messaging: publish messages to topics	Yes (CD only)	Yes	Yes
Host header validation for the IBM MQ Console and REST API	Yes (CD only)	Yes	Yes
IBM MQ Console	 Yes (CD only)	Yes	Yes
Configurable ephemeral directory	  Yes (CD only)	  Yes	  Yes
Full WebSphere Liberty XA support with client channel definition tables (CCDTs)	 Yes (CD only)	 Yes	 Yes
IBM MQ classes for .NET Standard: .NET Core support; application development on macOS; available to download from the NuGet repository	  Yes (CD only)	  Yes	  Yes
IBM MQ .NET project template	  Yes (CD only)	  Yes	  Yes
IBM MQ classes for XMS .NET Standard: .NET Core support; application development on macOS; available to download from the NuGet repository	  Yes (CD only)	  Yes	  Yes
IBM MQ XMS .NET project template	  Yes (CD only)	  Yes	  Yes
Data set encryption	 Yes (CD only)	 Yes	 Yes

Table 19. IBM MQ 9.1, IBM MQ 9.2, and IBM MQ 9.3 (continued)

Feature	IBM MQ 9.1	IBM MQ 9.2	IBM MQ 9.3
zHyperWrite: Improved log throughput	 z/OS Yes (CD only)	 z/OS Yes	 z/OS Yes
IBM z/OS Connect Enterprise Edition: Support for using client connections; support for Runnable Service Archive	 z/OS Yes (CD only)	 z/OS Yes	 z/OS Yes
 MQ Adv. Red Hat OpenShift support for the IBM MQ Advanced Container image	 Linux Yes (CD only)	 Linux Yes (CD only)	 Linux Yes
 MQ Adv. RDQM: High Availability and Disaster Recovery notifications combine with log targets for streaming to third-party monitoring tools; disaster recovery for high availability replicated data queue managers	 Linux Yes (CD only)	 Linux Yes	 Linux Yes
 MQ Adv. VUE Advanced Message Security interception on server-to-server message channels	 z/OS Yes (CD only)	 z/OS Yes	 z/OS Yes
 MQ Adv.  MQ Adv. VUE Aspera gateway streaming for IBM MQ messages	 Linux Yes (CD only)	 Windows  Linux Yes	 Windows  Linux Yes
 MQ Adv.  MQ Adv. VUE Highly available MFT agents	Yes (CD only)	Yes	Yes
 MQ Adv.  MQ Adv. VUE REST API for MFT: New REST API calls for administering resource monitors and file transfers; support for the MQWebUser role	Yes (CD only)	Yes	Yes
 MQ Adv.  MQ Adv. VUE Managed File Transfer: fteClearMonitorHistory command for clearing resource monitor history	Yes (CD only)	Yes	Yes
 MQ Adv.  MQ Adv. VUE Managed File Transfer: new <code>logger.properties</code> file options to specify MFT log file permissions and the wait time for database logger shut down	Yes (CD only)	Yes	Yes
 MQ Adv. IBM MQ Advanced queue manager identification	Yes	Yes	Yes
 MQ Appliance IBM MQ Appliance: Support for the REST API for messaging; floating IP aggregation	Yes	Yes	Yes
AMQP listener auto-enabled	 ULW Yes	 ALW Yes	 ALW Yes
FTP bridge retry time limit	Yes	Yes	Yes
Implicit syncpoint	Yes	Yes	Yes
LDAP using shortnames	Yes	Yes	Yes
Managed cloud offering	Yes	Yes	Yes

Features introduced at IBM WebSphere MQ 7.5, IBM MQ 8.0, and IBM MQ 9.0

Table 20. IBM WebSphere MQ 7.5, IBM MQ 8.0, and IBM MQ 9.0			
Feature	IBM WebSphere MQ 7.5	IBM MQ 8.0	IBM MQ 9.0
▶ z/OS ▶ MQ Adv. VUE Advanced Message Security on JMS for z/OS queue managers			Yes (CD only)
▶ Linux ▶ MQ Adv. ▶ MQ Adv. VUE IBM MQ Bridge to blockchain			Yes (CD only)
▶ Linux IBM MQ Bridge to Salesforce			Yes (CD only)
▶ z/OS CICS: Additional support for messaging within CICS Liberty JVM server			Yes (CD only)
IBM MQ Console			Yes (CD only)
▶ z/OS ▶ MQ Adv. VUE Java and JMS client connectivity to z/OS queue managers			Yes (CD only)
Logging: Improvements to the management and output of error logs; automatic management of linear log extents that are no longer required for recovery.			Yes (CD only)
▶ MQ Adv. ▶ MQ Adv. VUE MFT: Redistributable MFT Agent; MFT resource monitor event logging; separately installable MFT logger; REST API for MFT			Yes (CD only)
REST API for administration			Yes (CD only)
▶ Multi REST API for messaging			Yes (CD only)
▶ Linux ▶ MQ Adv. RDQM: High Availability and Disaster Recovery			Yes (CD only)
▶ z/OS IBM MQ for z/OS Service Provider for IBM z/OS Connect Enterprise Edition			Yes (CD only)
▶ z/OS IBM MQ for z/OS UNIX System Services Web Components			Yes (CD only)
▶ z/OS IBM MQ for z/OS improved workload balancing options for shared queues			Yes (CD only)
Advanced Message Security encryption-only policy			Yes
Advanced Message Security support for non-IBM Java runtime environment (JRE)			Yes
Client configuration remotely, accessible through URL			Yes
Subscription-based monitoring and activity tracking			Yes
LDAP authentication		Yes	Yes
Use of DNS host names in Channel Authentication Records		Yes	Yes
Routed publish-subscribe in clusters		Yes	Yes

Table 20. IBM WebSphere MQ 7.5, IBM MQ 8.0, and IBM MQ 9.0 (continued)

Feature	IBM WebSphere MQ 7.5	IBM MQ 8.0	IBM MQ 9.0
Enhanced status reporting for publish-subscribe		Yes	Yes
Queue manager scaling and multiplexed client performance		Yes	Yes
Support on all platforms for 64-bit queue managers		Yes	Yes
SSL/TLS certificates per channel		Yes	Yes
Advanced Message Security and Managed File Transfer availability on all platforms		Yes	Yes
Integrated Managed File Transfer	Yes	Yes	Yes
Integrated Advanced Message Security	Yes	Yes	Yes
 Integrated IBM MQ Telemetry	Yes	Yes	Yes
Multi-version install capability on distributed platforms	 Yes	 Yes	 Yes
Cloud support	Yes	Yes	Yes
Multicast capability	Yes	Yes	Yes
Support for .NET APIs	Yes	Yes	Yes
Multi-instance queue managers for higher availability	Yes	Yes	Yes
Automatic client reconnect for higher availability	Yes	Yes	Yes
SSL security support	Yes	Yes	Yes
Service Definition wizard	Yes	Yes	Yes
IBM MQ Message Service Client (XMS) for .NET developers	Yes	Yes	Yes
Windows Communication Foundation support for .NET developers	Yes	Yes	Yes
Simple File Transfer, Quick Tour	Yes	Yes	Yes
Cross-platform configuration tooling	Yes	Yes	Yes
 Exploiting z/OS services	Yes	Yes	Yes
64-bit address space	Yes	Yes	Yes
  Linux and Windows support	Yes	Yes	Yes
Intermediate queue manager	Yes	Yes	Yes
SSL support	Yes	Yes	Yes

Related concepts

[“Icons used in the product documentation” on page 136](#)

The product documentation for all IBM MQ 10.0 release types (LTS, CD, CP4I-LTS), release versions, and platforms is provided in a single information set in IBM Documentation. If information is specific to a given release type, version, or platform, this is indicated by a rectangular icon. Information that applies to all

release types, versions, and platforms is left unmarked. Icons are also used to distinguish between JMS and Jakarta messaging, and to highlight product features that are deprecated, stabilized or removed.

[“IBM MQ features by version” on page 85](#)
Version-to-version feature comparison tables.

Related reference

[IBM MQ landing page](#)

Deprecations, stabilizations, and removals in IBM MQ

Deprecations, stabilizations, and removals that occurred in IBM MQ versions from the current version back to IBM WebSphere MQ 7.1.

Note: This topic is not IBM MQ version-specific, it is a family-level topic. It is always published in the latest version of the IBM MQ documentation. If you want to bookmark this topic, please bookmark the following link. This link continues to work when a new IBM MQ version is released. https://www.ibm.com/docs/en/SSYHRD_latest/overview/mq_deprecations.html.

To go to the main IBM MQ documentation landing page, click **IBM MQ** in the breadcrumb trail at the top of this page.



Attention:

Deprecations, stabilizations, and removals made at a given version of the product apply to all subsequent versions.

- [“IBM MQ 10.0” on page 113](#)
- [“IBM MQ 9.4” on page 115](#)
- [“IBM MQ 9.3” on page 120](#)
- [“IBM MQ 9.2” on page 123](#)
- [“IBM MQ 9.1” on page 125](#)
- [“IBM MQ 9.0” on page 127](#)
- [“IBM MQ 8.0” on page 128](#)
- [“IBM WebSphere MQ 7.5” on page 129](#)
- [“IBM WebSphere MQ 7.1” on page 130](#)

IBM MQ 10.0

Table 21. Deprecations, stabilizations, and removals at IBM MQ 10.0	
Feature	Description
IBM MQ 10.0.0 release	

Table 21. Deprecations, stabilizations, and removals at IBM MQ 10.0 (continued)

Feature	Description
Deprecation: Java/JMS client packaging	IBM MQ classes for Java, IBM MQ classes for JMS and IBM MQ classes for Jakarta Messaging are being consolidated into fewer jar files. From IBM MQ 10.0.0 the following jar files are deprecated: • <code>com.ibm.mq.headers.jar</code> • <code>com.ibm.mq.jar</code> • <code>com.ibm.mq.jmqi.jar</code> • <code>com.ibm.mq.pcf.jar</code> • <code>com.ibm.mqjms.jar</code> The capability will continue to be available in the following jar files: • <code>com.ibm.mq.allclient.jar</code> • <code>com.ibm.mq.jakarta.client.jar</code>
 Removal: Sample IBM MQ z/OSMF workflows	From IBM MQ 10.0.0, the sample IBM MQ z/OSMF workflows have been removed. z/OSMF can still be used to automate provisioning of IBM MQ on z/OS but you must provide your own workflows.
 Removal: 32-bit Java Native Interface (JNI) libraries	From IBM MQ 10.0.0, 32-bit JNI libraries are removed from IBM MQ on x86 architectures. Migrate IBM MQ classes for JMS/Jakarta Messaging and IBM MQ classes for Java IBM MQ client applications to 64-bit and use the 64-bit JNI libraries. For applications that do database co-ordination, create and use 64-bit switch libraries. For applications that use 32-bit channel exits written in native code, either port the channel exits to 64-bit or rewrite the channel exit in Java code.
 Removal: IBM XL C/C++ for AIX 16 compiler	 For Long Term Support, the IBM XL C/C++ for AIX 16 compiler is removed from the product at IBM MQ 10.0.0. Compile AIX programs by using the IBM Open XL C/C++ for AIX 17 compiler instead.  For Continuous Delivery, the compiler was removed at IBM MQ 9.4.2.

Table 21. Deprecations, stabilizations, and removals at IBM MQ 10.0 (continued)

Feature	Description
Removal: IBM MQ classes for .NET and IBM MQ classes for XMS .NET methods and classes used for serialization and deserialization of objects	LTS For Long Term Support, from IBM MQ 10.0.0, in IBM MQ classes for .NET and IBM MQ classes for XMS .NET, the methods WriteObject(), ReadObject(), CreateObjectMessage(), and the classes ObjectMessage and XmsObjectMessageImpl used for serialization and deserialization of objects are removed. CD For Continuous Delivery, these methods and classes were removed at IBM MQ 9.4.4.
Removal: Secure Sockets Layer v3 (SSLv3) and Transport Layer Security 1.0 (TLS 1.0) Multi	LTS From IBM MQ 10.0.0, on Multiplatforms, support for the SSLv3 and TLS 1.0 protocols has been removed. For more information, see Deprecated and removed CipherSpecs. CD For Continuous Delivery, this support was removed at IBM MQ 9.4.4.
Multi Removal: 3DES CipherSpecs for TLS communications	LTS From IBM MQ 10.0.0, on Multiplatforms, support for CipherSpecs using the Triple-DES encryption algorithm has been removed. For more information, see Deprecated and removed CipherSpecs. CD For Continuous Delivery, this support was removed at IBM MQ 9.4.4.
Multi Removal: RC4 CipherSpecs for TLS communications	LTS From IBM MQ 10.0.0, on Multiplatforms, support for CipherSpecs using the RC4 encryption algorithm has been removed. For more information, see Deprecated and removed CipherSpecs. CD For Continuous Delivery, this support was removed at IBM MQ 9.4.4.

IBM MQ 9.4

Table 22. Deprecations, stabilizations, and removals at IBM MQ 9.4

Feature	Description
IBM MQ 9.4.0 release	
Deprecated Deprecation: Use of the Java security manager with IBM MQ Internet Pass-Thru	The use of the Java security manager with IBM MQ Internet Pass-Thru (MQIPT) is deprecated from February 16 2023, due to the Java security manager having been deprecated for removal in a future release of Java.

Table 22. Deprecations, stabilizations, and removals at IBM MQ 9.4 (continued)

Feature	Description
 Deprecation: CMS keystores and stash files support for IBM MQ Java applications	For Long Term Support, CMS keystores and stash files for IBM MQ Java applications are deprecated from IBM MQ 9.4.0. The migration path is to move to PKCS#12 keystores and use the keystore password feature. Note: From IBM MQ 9.4.0, CMS keystores and stash files are not supported for configuring AMQP and MQTT channels with SSL/TLS. Use PKCS#12 and keystore passwords instead. For more information, see Setting up a key repository on AIX, Linux, and Windows and Telemetry channel configuration for channel authentication using TLS. For Continuous Delivery, CMS keystores and stash files for IBM MQ Java applications, AMQP and MQTT were deprecated from IBM MQ 9.3.4.
  Deprecation: XL C/C++ for AIX 16 compiler support on AIX	For Long Term Support, support for the XL C/C++ for AIX 16 compiler on AIX is deprecated from IBM MQ 9.4.0. For Continuous Delivery, support for the XL C/C++ for AIX 16 compiler on AIX is deprecated from IBM MQ 9.3.5. You can compile AIX programs using the IBM Open XL C/C++ for AIX 17 compiler alongside the IBM XL C/C++ for AIX 16 compiler. For more information, see External library and control command links to primary installation on AIX and Linux for details of the additional library names, and Building C++ programs on AIX and Preparing C programs in AIX for examples of the additional commands.
 Deprecation: IBM MQ classes for .NET and IBM MQ classes for XMS .NET methods and classes used for serialization and deserialization of data	From IBM MQ 9.4.0, in IBM MQ classes for .NET and IBM MQ classes for XMS .NET, the methods WriteObject(), ReadObject(), CreateObjectMessage(), and the classes ObjectMessage and XmsObjectMessageImpl used for serialization and deserialization of data are deprecated. For more information, see https://learn.microsoft.com/en-us/dotnet/api/system.runtime.serialization.formatters.binary.binaryformatter?view=net-8.0.
 Deprecation: REST API v1	The REST API v1 is deprecated from IBM MQ Advanced for Multiplatforms 9.4.0. The replacement is the REST API v2.
 Deprecation: Secure Sockets Layer v3 (SSLv3) and Transport Layer Security 1.0 (TLS 1.0) support	IBM MQ 9.4 Long Term Support is the last IBM MQ release to provide Secure Sockets Layer v3 (SSLv3) and Transport Layer Security 1.0 (TLS 1.0) support.

Table 22. Deprecations, stabilizations, and removals at IBM MQ 9.4 (continued)

Feature	Description
 Deprecated Deprecation: Support for AMS Encryption with RC2, DES or 3DES ciphers and AMS Signing with MD5 or SHA1 ciphers	IBM MQ 9.4 Long Term Support is the last IBM MQ release to provide support for Advanced Message Security (AMS) Encryption with RC2, DES or 3DES ciphers and (AMS) Signing with MD5 or SHA1 ciphers, across all IBM MQ form factors
 Removed Removal: MQIPT certificate management commands	From IBM MQ 9.4.0, the following commands to manage certificates in MQIPT keystores are removed: • mqiptKeycmd • mqiptKeyman A new command, mqiptKeytool, can be used instead of mqiptKeycmd to manage certificates in MQIPT keystores. There is no replacement for mqiptKeyman. Users who wish to continue using a graphical tool for certificate management are encouraged to use PKCS#12 keystores which can be manipulated by any graphical certificate management tool available. For more information about the mqiptKeytool command, see mqiptKeytool (manage certificates). For more information about managing MQIPT keystores, see Managing MQIPT keystores.
 Removed  ALW Removal: runmqckm and strmqikm commands	From IBM MQ 9.4.0, the runmqckm and strmqikm commands are removed. The Manage SSL Certificates option in IBM MQ Explorer, which starts the strmqikm (iKeyman) GUI, is also removed. Users of the removed command line runmqckm tool should use the runmqakm, or the new runmqktool, command line tools. There is no replacement for the graphical strmqikm (iKeyman) tool. Users who wish to continue using a graphical tool for certificate management are encouraged to use PKCS#12 keystores, which can be manipulated by any graphical certificate management tool available. For more information, see runmqakm and runmqktool commands on AIX, Linux, and Windows and Working with SSL/TLS on AIX, Linux, and Windows.
 Removed  Linux Removal: IBM MQ Bridge to Salesforce	The IBM MQ Bridge to Salesforce is removed from the product at IBM MQ 9.4.0. Salesforce connectivity can be achieved with IBM App Connect Enterprise. Salesforce Input and Salesforce Request nodes can be used to interact with Salesforce applications. For more information, see Using Salesforce with IBM App Connect Enterprise.

Table 22. Deprecations, stabilizations, and removals at IBM MQ 9.4 (continued)

Feature	Description
 Removal: Operations Dashboard (IBM MQ in Containers)	From IBM MQ Operator 2.4.0 the Operations Dashboard is removed. For version support for the IBM MQ Operator, see Available IBM MQ versions.
 Removal: traceControl.jar dynamic tracing utility	 For Long Term Support, the trace control utility is removed from the product at IBM MQ 9.4.0  For Continuous Delivery, the trace control utility was removed from the product at IBM MQ 9.3.3. If dynamic trace is needed to diagnose an issue, IBM Support can guide you through the steps to gather trace as required. For more information, see Collecting an IBM MQ classes for JMS trace dynamically and Collecting an IBM MQ classes for Java trace dynamically.
 Removal: com.ibm.mq.cfg.useIBMCipherMappings Java System Property	 For Long Term Support, the Java System Property <code>com.ibm.mq.cfg.useIBMCipherMappings</code>, which was previously used for configuring IBM Java or Oracle Java Cipher mappings, is removed from the product at IBM MQ 9.3.3. A Cipher can be defined as either the CipherSpec or CipherSuite name and is handled correctly by IBM MQ. For more information, see TLS CipherSpecs and CipherSuites in IBM MQ classes for JMS and TLS CipherSpecs and CipherSuites in IBM MQ classes for Java.  For Continuous Delivery, <code>com.ibm.mq.cfg.useIBMCipherMappings</code> was removed from the product at IBM MQ 9.3.3.
 Removal: IBM MQ .NET Standard libraries	From IBM MQ 9.4.0, the IBM MQ .NET (<code>amqmdnetstd.dll</code>) and XMS .NET (<code>amqmxsstd.dll</code>) .NET Standard libraries are removed. For more information, see Installing IBM MQ classes for .NET and Installing IBM MQ classes for XMS .NET.
  Removal: XPARM utility	The XPARM utility for the channel initiator parameter module, used to migrate to IBM WebSphere MQ for z/OS 7.0, is removed from IBM MQ 9.4.0.

Table 22. Deprecations, stabilizations, and removals at IBM MQ 9.4 (continued)

Feature	Description
➤ Removed ➤ Linux Removal: 31-bit library support for IBM MQ for Linux on IBM Z	From IBM MQ 9.4.0, 31-bit library support for IBM MQ for Linux on IBM Z is removed due to some of the supported operating systems removing support. ➤ Deprecated From IBM MQ 9.3.0, the 32-bit IBM MQ application libraries are deprecated for all platforms, both for network and local binding connections.
IBM MQ 9.4.1 Continuous Delivery	
➤ Deprecated Deprecation: RSA key exchange CipherSpecs	Following a recommendation from NIST, the CipherSpecs that use RSA for key exchange are deprecated and disabled by default from IBM MQ 9.4.1.
➤ Deprecated Deprecation: SSL 3.0 and TLS 1.0 protocols	The SSL 3.0 and TLS 1.0 protocols in IBM MQ .NET are deprecated from IBM MQ 9.4.1. Cipherspecs defined under property MQC.SSL_CIPHER_SPEC_PROPERTY or SSLCipherSpec in MQEnvironment that use SSL 3.0 or TLS 1.0 protocols should be avoided due to security vulnerabilities, and will be removed from support in the future releases. A warning message is produced in the client application error logs if either of these protocols is used and it is recommended to use TLS 1.2 protocol or higher.
➤ Deprecated ➤ Linux Deprecation: MQIPT service on Linux	The service that is used to start MQIPT automatically at system startup on Linux is deprecated in IBM MQ 9.4.1. The service on Linux uses System V init, which is not supported on some recent versions of Linux. An alternative, such as systemd, can be used to start MQIPT automatically.
IBM MQ 9.4.2 Continuous Delivery	
➤ Deprecated ➤ z/OS Deprecation: system.broker.clients.data queue	On z/OS, the system.broker.clients.data queue from the CSQ4INSR.jcl sample is deprecated as the queue is not used within the product.
➤ Removed ➤ AIX Removal: IBM XL C/C++ for AIX 16 compiler	For Continuous Delivery, the IBM XL C/C++ for AIX 16 compiler is removed from the product at IBM MQ 9.4.2. Compile AIX programs by using the IBM Open XL C/C++ for AIX 17 compiler instead.
IBM MQ 9.4.3 Continuous Delivery	
➤ Deprecated Deprecation: 3DES CipherSpecs for TLS communications	IBM intends to remove 3DES CipherSpecs for TLS communications, including the deprecated TLS 1.2 3DES CipherSpecs ECDHE_ECDSA_3DES_EDE_CBC_SHA256 and ECDHE_RSA_3DES_EDE_CBC_SHA256, in the next mod level release of IBM MQ 9.4.x.

Table 22. Deprecations, stabilizations, and removals at IBM MQ 9.4 (continued)

Feature	Description
 Deprecation: 3DES CipherSpecs for TLS communications	IBM intends to remove support for RSA certificates with a key size less than 2048 bits, for IBM MQ for Multiplatforms and IBM MQ Appliance firmware.
 Deprecation: 3DES CipherSpecs for TLS communications	IBM MQ MacOS Toolkit support for macOS x86-64 hardware is deprecated. The IBM MQ MacOS Toolkit continues to support ARM64 hardware.
IBM MQ 9.4.4 Continuous Delivery	
  Deprecation: Using IBM z/OSMF to automate IBM MQ	On z/OS, the use of IBM z/OSMF to automate IBM MQ is deprecated from IBM MQ 9.4.4.
 Removal: IBM MQ classes for .NET and IBM MQ classes for XMS .NET methods and classes used for serialization and deserialization of data	From IBM MQ 9.4.4, in IBM MQ classes for .NET and IBM MQ classes for XMS .NET, the methods WriteObject(), ReadObject(), CreateObjectMessage(), and the classes ObjectMessage and XmsObjectMessageImpl used for serialization and deserialization of objects are removed. For more information, see https://learn.microsoft.com/en-us/dotnet/api/system.runtime.serialization.formatters.binary.binaryformatter?view=net-8.0 .
  Removal: Secure Sockets Layer v3 (SSLv3) and Transport Layer Security 1.0 (TLS 1.0)	From IBM MQ 9.4.4, on Multiplatforms, support for the SSLv3 and TLS 1.0 protocols has been removed.
  Removal: 3DES CipherSpecs for TLS communications	From IBM MQ 9.4.4, on Multiplatforms, support for CipherSpecs using the Triple-DES encryption algorithm has been removed. For more information, see Deprecated and removed CipherSpecs .
  Removal: RC4 CipherSpecs for TLS communications	From IBM MQ 9.4.4, on Multiplatforms, support for CipherSpecs using the RC4 encryption algorithm has been removed. For more information, see Deprecated and removed CipherSpecs .

IBM MQ 9.3

Table 23. Deprecations, stabilizations, and removals at IBM MQ 9.3

Feature	Description
IBM MQ 9.3.0 release	
 Deprecation: Ciphers used by AMS	The following signing and encryption algorithms from the Advanced Message Security (AMS) component are deprecated from IBM MQ 9.3.0: MD5, SHA1, RC2, DES and 3DES. IBM intends to remove support for these algorithms in a future IBM MQ release. Customers using these algorithms should migrate to stronger algorithms such as: SHA256, SHA384, SHA512, AES128 or AES256.

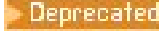
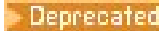
Table 23. Deprecations, stabilizations, and removals at IBM MQ 9.3 (continued)

Feature	Description
 Deprecation: 32-bit IBM MQ application libraries	The 32-bit IBM MQ application libraries have been deprecated from IBM MQ 9.3.0 for all platforms, both for network and local binding connections. 32-bit applications will be supported for the duration of the IBM MQ 9.3.0 LTS lifecycle, but might be removed in a future CD or LTS release. 32-bit applications should be recompiled as 64-bit to ensure that IBM MQ applications can be migrated to future IBM MQ application libraries.
 Deprecation: IBM MQ Bridge to blockchain	The IBM MQ Bridge to blockchain component of IBM MQ Advanced is deprecated across all releases from November 22 2022 (see US Announcement letter 222-341) and IBM intends to remove the capability from Long Term Support releases in upcoming fix packs. Blockchain connectivity can be achieved with IBM App Connect or through App Connect capabilities available with IBM Cloud Pak for Integration. If you have applications that will be impacted by this change, please contact IBM Support.
 Deprecation: Operations Dashboard (IBM MQ in Containers)	From IBM MQ Operator 2.0.0 the Operations Dashboard is deprecated, and receives no further updates. No new uses of the Operations Dashboard should be created.
 Removal: Dashboard Web Console	The widget-based Dashboard Web Console is removed from IBM MQ 9.3.0. For more information about the Dashboard Web Console, see The Dashboard Web Console in the IBM MQ 9.1 documentation.
 Removal: XMS .NET Multicast messaging	XMS .NET Multicast messaging (using RMM) is removed from IBM MQ 9.3.0.
 Removal: fteMigrateAgent, fteMigrateConfigurationOptions, and fteMigrateLogger commands	 For Long Term Support, the fteMigrateAgent, fteMigrateConfigurationOptions, and fteMigrateLogger commands are removed at IBM MQ 9.3.0.  For Continuous Delivery, these commands are removed at IBM MQ 9.2.1.
IBM MQ 9.3.1 Continuous Delivery	
 Deprecation: IBM MQ .NET Standard client libraries	From IBM MQ 9.3.1. the existing IBM MQ .NET Standard libraries, <code>amqmdnetstd.dll</code> and <code>amqmxmstd.dll</code>, are deprecated. IBM intends to remove support for these libraries in a future IBM MQ release.

Table 23. Deprecations, stabilizations, and removals at IBM MQ 9.3 (continued)

Feature	Description
 Deprecation: IBM MQ Bridge to blockchain	The IBM MQ Bridge to blockchain component of IBM MQ Advanced is deprecated across all releases from November 22 2022 (see US Announcement letter 222-341). Blockchain connectivity can be achieved with IBM App Connect or through App Connect capabilities available with IBM Cloud Pak for Integration.
 Deprecation: IBM MQ Bridge to Salesforce	The IBM MQ Bridge to Salesforce component of IBM MQ Advanced is deprecated across all releases from November 22 2022 (see US Announcement letter 222-341). Salesforce connectivity can be achieved with IBM App Connect or through App Connect capabilities available with IBM Cloud Pak for Integration.
IBM MQ 9.3.2 Continuous Delivery	
 Deprecation: The LOG_FORMAT environment variable of the IBM MQ Advanced for Developers container image .	For the IBM MQ Advanced for Developers container image, the LOG_FORMAT environment variable is deprecated across all releases from February 16 2023. It is superseded by the MQ_LOGGING_CONSOLE_FORMAT variable. See IBM MQ Advanced for Developers container image.
 Deprecation: Use of the Java security manager with IBM MQ Internet Pass-Thru	The use of the Java security manager with IBM MQ Internet Pass-Thru (MQIPT) is deprecated from February 16 2023, due to the Java security manager having been deprecated for removal in a future release of Java.
 Removal: IBM MQ Bridge to blockchain	 For Continuous Delivery, the IBM MQ Bridge to blockchain is removed from the product at IBM MQ 9.3.2.  For Long Term Support, IBM MQ Bridge to blockchain is removed at IBM MQ 9.3.0 Fix Pack 15.
IBM MQ 9.3.3 Continuous Delivery	
 Removal: traceControl.jar dynamic tracing utility	For Continuous Delivery, the trace control utility is removed from the product at IBM MQ 9.3.3. IBM MQ 9.3.2 is the last Continuous Delivery release that it is delivered with. If dynamic trace is needed to diagnose an issue, IBM Support can guide you through the steps to gather trace as required.
 Removal: Operations Dashboard (IBM MQin Containers)	From IBM MQ Operator 2.4.0 the Operations Dashboard is removed. Note that the Operations Dashboard may still be used for existing queue managers that are older than 9.3.3.0-r1 if on an IBM MQ Operator that supports that queue manager container image. For version support for the IBM MQ Operator, see Available IBM MQ versions.

Table 23. Deprecations, stabilizations, and removals at IBM MQ 9.3 (continued)

Feature	Description
 Removed Removal: com.ibm.mq.cfg.useIBMCipherMappings Java System Property	For Continuous Delivery, the Java System Property <code>com.ibm.mq.cfg.useIBMCipherMappings</code>, which was previously used for configuring IBM Java or Oracle Java Cipher mappings, is removed from the product at IBM MQ 9.3.3. From IBM MQ 9.3.3, a Cipher can be defined as either the <code>CipherSpec</code> or <code>CipherSuite</code> name and is handled correctly by IBM MQ.
IBM MQ 9.3.4 Continuous Delivery	
 Deprecated Deprecation: CMS keystore support for IBM MQ Java applications, AMQP and MQTT and associated tools	CMS keystore support for IBM MQ Java applications, AMQP and MQTT is deprecated from IBM MQ 9.3.4. The <code>runmqckm</code>, <code>strmqikm</code>, <code>mqiptKeycmd</code> and <code>mqiptKeyman</code> tools are also deprecated.
 Deprecated Deprecation: XPARM utility	The XPARM utility for the channel initiator parameter module, used to migrate to IBM WebSphere MQ for z/OS 7.0, is deprecated from IBM MQ 9.3.4.
IBM MQ 9.3.5 Continuous Delivery	
  Deprecated Deprecation: XL C/C++ for AIX 16 compiler support	Support for the XL C/C++ for AIX 16 compiler on AIX is deprecated from IBM MQ 9.3.5. From IBM MQ 9.3.5, you can compile AIX programs using the IBM Open XL C/C++ for AIX 17 compiler alongside the IBM XL C/C++ for AIX 16 compiler.

IBM MQ 9.2

Table 24. Deprecations, stabilizations, and removals at IBM MQ 9.2

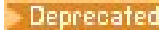
Feature	Description
IBM MQ 9.2.0 initial release	
 Deprecated Deprecation: Secure Sockets Layer v3 (SSLv3) and Transport Layer Security 1.0 (TLS 1.0)	For Long Term Support, Secure Sockets Layer v3 (SSLv3) and Transport Layer Security 1.0 (TLS 1.0) have been deprecated from IBM MQ 9.2.0. This means that IBM MQ 9.2.0 is the last release to provide SSLv3 and TLS 1.0 support for Long Term Support. The plan is to remove support in a future Continuous Delivery release after that.
 Deprecated Deprecation: support for <code>-credentialsFile</code> parameter	The <code>-credentialsFile</code> parameter of the <code>fteObfuscate</code> command, used in IBM MQ prior to IBM MQ 9.2, is deprecated from IBM MQ 9.2.0. You can use the <code>-f</code> parameter instead.
 Deprecated Deprecation: Support for all Managed File Transfer environment variables beginning with <code>FTE</code>	Support for all Managed File Transfer environment variables that begin with <code>FTE</code> is deprecated from IBM MQ 9.2.0. You can substitute <code>FTE</code> environment variables with those that begin with <code>BFG</code>.

Table 24. Deprecations, stabilizations, and removals at IBM MQ 9.2 (continued)

Feature	Description
➤ Deprecated Deprecation: Dashboard Web Console	The widget-based Dashboard Web Console is deprecated from IBM MQ 9.2.0. In IBM MQ 9.2, the IBM MQ Console is enabled by default, although you can switch back to the Dashboard Web Console if required. See Switching between console types in the IBM MQ 9.2 documentation.
➤ Deprecated Deprecation: XMS .NET Multicast messaging	XMS .NET Multicast messaging (using RMM) is deprecated from IBM MQ 9.2.0.
➤ Stabilized Stabilization: amqmdnet.dll library	The amqmdnet.dll library for .NET Framework is still supplied, but this library is stabilized; that is, no new features will be introduced into it. For any of the latest features you must migrate to the amqmdnetstd.dll library. However, you can continue to use the amqmdnet.dll library on IBM MQ 9.1 or later Long Term Support or Continuous Delivery releases.
➤ Stabilized Stabilization: IBM.XMS.* libraries	All the IBM.XMS.* libraries are still supplied, but these libraries are stabilized; that is, no new features will be introduced into them. For any of the latest features, you must migrate to the amqmxmsstd.dll library. However, you can continue to use the existing libraries on IBM MQ 9.1 Long Term Support or Continuous Delivery releases.
➤ Removed Removal: Support for the Oracle Solaris operating system	Support for Solaris for all IBM MQ components, including server and clients, is removed from IBM MQ 9.2.0.
➤ Removed Windows Linux Removal: Postcard application and Default Configuration wizard	The Postcard application and its supporting Default Configuration wizard, which were used in earlier versions of IBM MQ for installation verification and were deprecated from IBM MQ 9.1.0, are removed from the product at IBM MQ 9.2.0.
➤ Removed Windows Removal: IBM MQ support for Microsoft Active X	From IBM MQ 9.0, support for Microsoft Active X is deprecated, and is removed from the product at IBM MQ 9.2.0. You can use the IBM MQ classes for .NET as the replacement technology.
➤ Removed z/OS Removal: Queue sharing group samples not using Universal Table Spaces	The queue sharing group samples for setting up a Db2 environment that did not use Universal Table Spaces are removed at IBM MQ 9.2.0, following their deprecation in IBM MQ 9.1.
➤ Removed Removal: IPT Administration Client	The IPT Administration Client graphical user interface is removed at IBM MQ 9.2.0. To configure and administer MQIPT, edit the mqipt.conf configuration file and use the mqiptAdmin command.

Table 24. Deprecations, stabilizations, and removals at IBM MQ 9.2 (continued)

Feature	Description
Removed z/OS Removal: IBM MQ service provider for IBM z/OS Connect EE no longer shipped with IBM MQ	From IBM MQ 9.2.0, the IBM MQ service provider for IBM z/OS Connect EE is no longer shipped as part of the IBM MQ product.
IBM MQ 9.2.0 Long Term Support Fix Packs or Cumulative Security Updates	
Removal: IBM MQ Bridge to blockchain	The IBM MQ Bridge to blockchain component of IBM MQ Advanced is deprecated across all releases from November 22 2022 (see US Announcement letter 222-341). For Long Term Support, IBM MQ Bridge to blockchain is removed at IBM MQ 9.2.0 CSU 21. If you have applications that will be impacted by this change, contact IBM Support.
IBM MQ 9.2.x Continuous Delivery	
Deprecated Deprecation: AllowOutboundSNI property	For Continuous Delivery, the AllowOutboundSNI property is deprecated at IBM MQ 9.2.1. You should use the OutboundSNI property instead.
Removed Removal: fteMigrateAgent , fteMigrateConfigurationOptions , and fteMigrateLogger commands	For Continuous Delivery, the fteMigrateAgent , fteMigrateConfigurationOptions and fteMigrateLogger commands are removed at IBM MQ 9.2.1. These commands are still available for IBM MQ 9.2 Long Term Support.

IBM MQ 9.1

Table 25. Deprecations, stabilizations, and removals at IBM MQ 9.1

Feature	Description
IBM MQ 9.1.0 initial release	
Deprecated Deprecation: IBM MQ classes for Java package <code>com.ibm.mq.pcf</code>	The IBM MQ classes for Java package <code>com.ibm.mq.pcf</code> is deprecated from IBM MQ 9.1.0.
Deprecated Deprecation: IBM Cloud Product Insights service	The IBM Cloud Product Insights service is deprecated on all platforms from IBM MQ 9.1.0 and has been replaced by the <i>ICP metering service</i> , referred to within this documentation as the <code>metering</code> service.
Windows Deprecated Linux Deprecation: Postcard application and Default Configuration wizard	The use of the Postcard application and its supporting Default Configuration wizard for installation verification is deprecated from IBM MQ 9.1.0.

Table 25. Deprecations, stabilizations, and removals at IBM MQ 9.1 (continued)

Feature	Description
 z/OS Deprecation: Buffer pools located below the bar	From IBM MQ 9.1.0, the LOCATION(BELOW) parameter of the DEFINE BUFFPOOL command is deprecated and you should use LOCATION(ABOVE) only. This deprecation applies to buffer pools that were not defined with the LOCATION/LOC attribute, or were defined with LOCATION(BELOW) .
 z/OS Deprecation: MAKECLNT CSQUTIL tool	The MAKECLNT CSQUTIL tool was stabilized at the IBM WebSphere MQ 7.1 level and is deprecated from IBM MQ 9.1.0. You should use runmqsc -n instead.
 z/OS Deprecation: Use of queue sharing groups with Db2 table spaces of any type other than universal table spaces	Db2 11 deprecated support for any table space type that was not a universal table space. Support for queue sharing groups using non-universal table spaces is deprecated from IBM MQ for z/OS 9.1.0. You should consider migrating existing table spaces to universal table spaces if possible. If you are creating a new queue sharing group, ensure that you use the samples that define universal table spaces.
 z/OS Deprecation: Using hexadecimal strings in the SSLCIPH attribute	Using hexadecimal strings in the SSLCIPH attribute is deprecated from IBM MQ for z/OS 9.1.0. In a future release, the SSLCIPH attribute on a channel definition will not accept hexadecimal string values. Only IBM MQ cipher strings will be accepted.
 Removal: Support for HP-UX	Support for the HP-UX operating system for all IBM MQ components, including server and clients, is removed at IBM MQ 9.1.0.
 Removal: Support for installing IBM MQ on Linux Ubuntu systems using rpm	The ability to install IBM MQ on Linux Ubuntu systems using rpm is removed at IBM MQ 9.1.0. The product must be installed using the supplied Debian-style packages.
 Windows Removal: Support for Microsoft Internet Explorer 11 browser	Microsoft Internet Explorer 11 browser support is removed at IBM MQ 9.1.0. The Microsoft Edge browser is now supported by the IBM MQ Console.
 Removal: IBM MQ transport for SOAP and HTTP bridge	The IBM MQ transport for SOAP, and IBM MQ HTTP bridge components are deprecated from IBM MQ 8.0.0. These components are removed at IBM MQ 9.1.0.
 z/OS Removal: Support for the MQ Service Provider in z/OS Connect V1	The zosConnectMQ-1.0 feature is removed at IBM MQ for z/OS 9.1.0. You can, instead, use the MQ Service Provider for IBM z/OS Connect EE.
IBM MQ 9.1.0 Long Term Support Fix Packs or Cumulative Security Updates	

Table 25. Deprecations, stabilizations, and removals at IBM MQ 9.1 (continued)

Feature	Description
Removal: IBM MQ Bridge to blockchain	The IBM MQ Bridge to blockchain component of IBM MQ Advanced is deprecated across all releases from November 22 2022 (see US Announcement letter 222-341). For Long Term Support, IBM MQ Bridge to blockchain is removed at IBM MQ 9.1.0 CSU 31. If you have applications that will be impacted by this change, contact IBM Support.
IBM MQ 9.1.x Continuous Delivery	
   Removal: Postcard application and Default Configuration wizard	The Postcard application and its supporting Default Configuration wizard, which were deprecated from IBM MQ 9.1.0, are removed from the product for Continuous Delivery at IBM MQ 9.1.2.

IBM MQ 9.0

Table 26. Deprecations, stabilizations, and removals at IBM MQ 9.0

Feature	Description
IBM MQ 9.0.0 initial release	
  Deprecation: compatibility mode for RPG and COBOL applications on IBM i	From IBM MQ 9.0.0, IBM MQ no longer provides support for RPG or COBOL applications that use dynamic linkage known as compatibility mode. Applications that use this compatibility mode of operation need to be recompiled to use the static bound MQ calls that are provided by the LIBMQM and LIBMQM_R service programs.
 Deprecation: IBM MQ transport for SOAP	The following product features are deprecated from IBM MQ 9.0.0: • IBM MQ Java Listener • IBM MQ .NET 1 and 2 Listener • IBM MQ Java Axis2 Client This is in addition to the deprecation of the IBM MQ transport for SOAP clients and HTTP bridge announced at IBM MQ 8.0.0.
 Deprecation: MD5 in AMS	From IBM MQ 9.0.0, MD5 and SHA-1 signature algorithms and RC2 and DES encryption algorithms on Advanced Message Security policies are disabled in default configurations. It is not possible to define new security policies that use these algorithms.
 Deprecation: IBM MQ support for Microsoft Active X and Microsoft Visual Basic 6.0	IBM MQ support for Microsoft Active X and Microsoft Visual Basic 6.0 is deprecated from IBM MQ 9.0.0. IBM MQ classes for .NET are the recommended replacement technology.

Table 26. Deprecations, stabilizations, and removals at IBM MQ 9.0 (continued)

Feature	Description
➤ Stabilized Stabilization: IBM MQ classes for Java	From IBM MQ 9.0.0, IBM will make no further enhancements to the IBM MQ classes for Java and they are functionally stabilized at the level shipped in IBM MQ 8.0.0.
➤ Removed Removal: Managed File Transfer Web Gateway support	The Web Gateway was deprecated at IBM MQ 8.0.0, and is removed at IBM MQ 9.0.0. The fteCreateWebAgent command is removed at IBM MQ 9.0.0.
➤ Removed Removal: IBM Cloud Product Insights support	The IBM Cloud Product Insights service is no longer available, therefore IBM MQ support for this service is no longer relevant.
IBM MQ 9.0.x Continuous Delivery	
➤ Deprecated Deprecation: RPM support for Ubuntu	RPM support for Ubuntu is deprecated from IBM MQ 9.0.2.
➤ Deprecated Deprecation: CipherSpecs (CD)	For Continuous Delivery, from IBM MQ 9.0.1, a number of CipherSpecs are deprecated.
➤ Removed Removal: JSON4J .jar file and com.ibm.msg.client.mqlight package (CD)	The JSON4J .jar file and com.ibm.msg.client.mqlight package are not needed by the IBM MQ classes for Java and IBM MQ classes for JMS, and are therefore removed at IBM MQ 9.0.5 for Continuous Delivery.
IBM MQ 9.0.0 Long Term Support Fix Packs	
➤ Deprecated Deprecation: CipherSpecs (LTS)	For Long Term Support, from IBM MQ 9.0.0 Fix Pack 1, a number of CipherSpecs are deprecated.
➤ Removed Removal: JSON4J .jar file and com.ibm.msg.client.mqlight package (LTS)	The JSON4J .jar file and com.ibm.msg.client.mqlight package are not needed by the IBM MQ classes for Java and IBM MQ classes for JMS, and are therefore removed at IBM MQ 9.0.0 Fix Pack 3 for Long Term Support.

IBM MQ 8.0

Table 27. Deprecations, stabilizations, and removals at IBM MQ 8.0

Feature	Description
IBM MQ 8.0.0 initial release	
➤ Deprecated Deprecation: linking with libmqmcs and libmq	On Solaris, linking with the libmqmcs and libmqmzse libraries is deprecated from IBM MQ 8.0.0. You must relink your applications to avoid using the libmqmcs and libmqmzse libraries.
➤ Deprecated Deprecation: Managed File Transfer Web Gateway	The Managed File Transfer Web Gateway is deprecated from IBM MQ 8.0.0. In future releases, IBM does not expect that any additional enhancements will be applied to the Managed File Transfer Web Gateway function.

Table 27. Deprecations, stabilizations, and removals at IBM MQ 8.0 (continued)

Feature	Description
➤ Deprecated Deprecation: IBM MQ Explorer Service Definition Wizard	The IBM MQ Explorer Service Definition Wizard, which was introduced in IBM WebSphere MQ 7.0, is deprecated from IBM MQ 8.0.0.
➤ Deprecated Deprecation: IBM MQ transport for SOAP clients and HTTP bridge	The IBM MQ transport for SOAP Java client and listener for JAX-RPC, the IBM MQ transport for SOAP .NET 1 and 2, and the IBM MQ bridge for HTTP are deprecated from IBM MQ 8.0.0.
➤ Stabilized ➤ z/OS Stabilization: MAKECLNT CSQUTIL tool	The MAKECLNT CSQUTIL tool is stabilized from IBM MQ 8.0.0. You should use runmqsc -n instead.
➤ Removed Removal: migmbbrk and ➤ z/OS CSQUMGMB	The migmbbrk command and, on z/OS, the CSQUMGMB command are removed at IBM MQ 8.0.0. These commands were introduced to migrate the publish/subscribe configuration to the IBM WebSphere MQ 7.0 constructs of topics and subscriptions.
➤ Removed Removal: Direct and DirectHTTP transport support	Direct and DirectHTTP transport were deprecated in a previous release of IBM MQ and they have been removed at IBM MQ 8.0.0.
➤ Removed Removal: Support for Microsoft Visual Basic	Support for Microsoft Visual Basic is removed at IBM MQ 8.0.0.  Attention: Microsoft Visual Basic on .NET is still supported. Software product Compatibility report for Windows
IBM MQ 8.0.0 Fix Packs	
➤ Deprecated Deprecation: SSLv3 protocol	The SSLv3 protocol and the use of some IBM MQ CipherSpecs is deprecated from IBM MQ 8.0.0 Fix Pack 2.
➤ Deprecated Deprecation: weaker cryptographic algorithms	Support for weaker cryptographic algorithms is deprecated from IBM MQ 8.0.0 Fix Pack 3. Changes have been made to the IBM MQ queue manager to disallow the configuration of CipherSpecs using cryptographic algorithms, or protocols, that are considered to be weak.
➤ Deprecated Deprecation: CipherSpecs	A number of CipherSpecs are deprecated from IBM MQ 8.0.0 Fix Pack 6.

IBM WebSphere MQ 7.5

Table 28. Deprecations, stabilizations, and removals at IBM WebSphere MQ 7.5

Feature	Description
IBM WebSphere MQ 7.5.0 initial release	

Table 28. Deprecations, stabilizations, and removals at IBM WebSphere MQ 7.5 (continued)

Feature	Description
 Removal: dspmqsver command	The dspmqsver command is removed from IBM WebSphere MQ 7.5.0. Before IBM WebSphere MQ 7.5.0, this command was used to display the version of Advanced Message Security. From IBM WebSphere MQ 7.5.0, this information is displayed with the dspmqver command.
IBM WebSphere MQ 7.5.0 initial release Fix Packs	
 Deprecation: CipherSpecs	A number of CipherSpecs are deprecated from IBM WebSphere MQ 7.5.0 Fix Pack 6.
 Deprecation: CipherSpecs	A number of CipherSpecs are deprecated from IBM WebSphere MQ 7.5.0 Fix Pack 7.
 Deprecation: CipherSpecs	A number of CipherSpecs are deprecated from IBM WebSphere MQ 7.5.0 Fix Pack 8.

IBM WebSphere MQ 7.1

Table 29. Deprecations, stabilizations, and removals at IBM WebSphere MQ 7.1

Feature	Description
IBM WebSphere MQ 7.1.0 initial release	
 Deprecation: CipherSpecs	A number of CipherSpecs are deprecated from IBM WebSphere MQ 7.5.0 Fix Pack 6.
  Removal: /usr/lpp/mqm symbolic link	On AIX, before IBM WebSphere MQ 6.0, the product placed a symbolic link in /usr/lpp/mqm. The link ensured queue managers and applications migrated from versions before IBM WebSphere MQ 5.3 continued to work, without change. The link is not created in IBM WebSphere MQ 7.1.0 or later.
   Removal: rtmqlnk and dltmqlnk commands	On UNIX and Linux, the rtmqlnk and dltmqlnk commands are removed at IBM WebSphere MQ 7.1.0. Before IBM WebSphere MQ 7.1.0, these commands created symbolic links in subdirectories of /usr. From IBM WebSphere MQ 7.1.0 onwards, you must use the setmqinst command instead.
   Removal: /usr symbolic links	From IBM WebSphere MQ 7.1.0, on all UNIX and Linux platforms, the links from the /usr file system are no longer made automatically. In order to take advantage of these links, you must set an installation as the primary installation or set the links up manually.
  Removal: amqmsrvn.exe process	On Windows, from IBM WebSphere MQ 7.1.0, the amqmsrvn.exe DCOM process is replaced by a Windows service, amqsvc.exe.
IBM WebSphere MQ 7.1.0 Fix Packs	

Note: The IBM WebSphere MQ 7.1 product documentation is provided outside of IBM Documentation. Available formats are PDF files, customer-installable Knowledge Center, and Information Center. For more information, see [“Documentation for older versions of IBM MQ” on page 133](#).

Related concepts

[“IBM MQ features by version” on page 85](#)
[Version-to-version feature comparison tables](#).

Related reference

[IBM MQ Welcome page](#)

IBM MQ downloads

The IBM MQ download pages provide links to download the full IBM MQ product, fix packs, CSUs, and additional IBM MQ resources including resource adapters and clients.

Note: This topic is not IBM MQ version-specific, it is a family-level topic. It is always published in the latest IBM MQ version. If you want to bookmark this topic, please bookmark the following link. This link continues to work when a new IBM MQ version is released. https://www.ibm.com/docs/en/SSYHRD_latest/overview/mq_downloads_admins.html.

To go to the main IBM MQ documentation landing page, click **IBM MQ** in the breadcrumb trail at the top of this page.

Any MQ version, all downloads

To download the full product, the latest Continuous Delivery (CD) release, or the latest maintenance release (fix pack or cumulative security update), click one of the following links to go to the download document for your IBM MQ version, then click the **CD** tab for the latest Continuous Delivery release or Cumulative Security Update (CSU), or the **LTS** tab for the latest Long Term Support fix pack or CSU.

[IBM MQ 10.0](#) | [IBM MQ 9.4](#) | [IBM MQ 9.3](#) | [IBM MQ 9.2](#) | [IBM MQ 9.1](#) | [IBM MQ 9.0](#) | [IBM MQ 8.0](#) | [IBM MQ 7.5](#)

Each download document also gives additional links to clients and other resources that are available on Fix Central and elsewhere. For the latest version of IBM MQ, these additional links are also given in the following section: [“Resource adapter, clients and other resources” on page 131](#).

A free 90-day trial version of the LTS release, for each of the last two IBM MQ major versions, is available for download here: <https://www.ibm.biz/ibmmqtrial>. This is useful if you want to try out IBM MQ, or if you are waiting for a full version purchase to complete. When your purchase completes, you can convert your trial installation to a full production copy.

Resource adapter, clients and other resources

Clients:

- [IBM MQ C and .NET clients](#)
- [IBM MQ Message Service Client \(XMS\) for C/C++ \(IA94 SupportPac\) and IA94 SupportPac documentation \(1 book\)](#)
- [IBM MQ Java / JMS client](#)
- [IBM MQ Java client components \(on Maven\)](#)
- [IBM MQ redistributable clients](#)
- [IBM MQ Resource Adapter](#) - For use with any Java EE 7 or Jakarta EE compliant application server
- [IBM MQ redistributable Managed File Transfer \(MFT\) Agents](#)
- [IBM MQ classes for .NET Standard \(on NuGet\)](#)
- [IBM MQ classes for XMS .NET Standard \(on NuGet\)](#)

Components:

- [IBM MQ Internet Pass-Thru \(MQIPT\)](#)
- [IBM MQ Explorer stand-alone install image](#) - CD only, but can be used to perform administration on any supported release of IBM MQ.
- [IBM MQ Native HA on AWS](#)
- [IBM MQ Kafka Connectors](#)
- [IBM MQ Web Server stand-alone install image](#)
- [IBM Instana Tracing Exit for IBM MQ](#)

Containers:

- Prebuilt: [IBM MQ Advanced Container](#) (subject to entitlement).
- Build your own: <https://github.com/ibm-messaging/mq-container>. This works in conjunction with the non-install (unzippable) IBM MQ images to build an IBM MQ container image that can run under the Red Hat OpenShift anyuid security context constraint (SCC).
 - For production environments the three non-install images for Linux (subject to entitlement) are available here:
 - [IBM MQ Advanced non-install images for Linux](#)
 - For development environments the non-install packages can be found at the following locations:
 - [IBM MQ Advanced for Developers non-install image for Linux x86-64](#)
 - [IBM MQ Advanced for Developers non-install image for Linux PPCLE](#)
 - [IBM MQ Advanced for Developers non-install image for Linux systemZ](#)
 - [IBM MQ Advanced for Developers non-install image for Linux ARM64](#)
 - A sample helm chart is available here: <https://github.com/ibm-messaging/mq-helm>

Development:

- IBM MQ Advanced for Developers is available as an installable package for the following platforms:
 - [Windows](#)
 - [Linux x86-64 \(rpm\)](#)
 - [Ubuntu x86-64 \(deb\)](#)
 - [Linux ARM64 \(deb\)](#)
 - [Raspberry Pi \(deb\)](#) (ARM32, as-is, see the [readme](#))
- [IBM MQ Mac toolkit for development](#) lets you run IBM MQ commands (for example MQSC commands) on macOS (both ARM64 and x86-64). It also contains client libraries for developing client applications that are executed on macOS. The client is used in the [IBM MQ Developer Essentials](#) tutorials.
- [IBM MQ Advanced for Developers container image \(Linux x86-64\)](#) is available on IBM Container Registry. Or you can [build your own container image](#) to run on ARM64 and Linux x86-64.
- [IBM MQ Managed File Transfer Agent for Developers container image](#) is available on IBM Container Registry. Or you can [build your own](#).

SupportPacs

IBM MQ SupportPacs provide downloadable code and documentation that complements the IBM MQ family of products. Each SupportPac supplies a particular function or service that can be used with one or more of the IBM MQ products.

- [SupportPacs for IBM MQ and other project areas](#)
- [IBM MQ - SupportPacs by Product](#)

Related concepts

[“IBM MQ 10.0 PDF files for product documentation and Program Directories” on page 82](#)

You can download the IBM MQ 10.0 product documentation, and the IBM MQ for z/OS Program Directories, in PDF format.

[Where to find product requirements and support information](#)

[Where to find downloadable installation images](#)

Related reference

[IBM MQ landing page](#)

Related information

[IBM MQ downloads for developers](#)

Documentation for older versions of IBM MQ

For older versions of IBM MQ products, and of scenarios describing connecting IBM MQ with other IBM products, documentation is provided outside of IBM Documentation. Available formats are PDF, IBM Documentation Offline, and Information Center.

Note: This topic is not IBM MQ version-specific, it is a family-level topic. It is always published in the latest IBM MQ version. If you want to bookmark this topic, please bookmark the following link. This link continues to work when a new IBM MQ version is released. https://www.ibm.com/docs/en/SSYHRD_latest/overview/doc_older_versions.html.

To go to the main IBM MQ documentation landing page, click **IBM MQ** in the breadcrumb trail at the top of this page.

Table 30. Older IBM MQ documentation: What exists, where it is, and in what formats			
IBM MQ product or scenario	PDFs or ePubs	IBM Documentation Offline ¹	Information Center
MQ Advanced Message Security 7.0.1	-	-	-
 MQ Advanced Message Security for z/OS 7.0.1	-	-	-
MQ File Transfer Edition 7.0.4	• MQ FTE 7.0.4 (1 book), MFT for SOA - July 2009 (1 book)	-	-
MQ product connectivity scenarios ²	• 15 scenarios, grouped under 3 major headings. Each scenario is documented in both PDF and ePub formats.	-	-
MQSeries Everyplace	• 1.0, 1.1, 1.2 (12 books)	-	-

¹ IBM Documentation Offline has two components:

- **The IBM Documentation Offline app.** This is a locally-installable offline version of IBM Documentation.
- **The documentation packages that you install into the IBM Documentation Offline app.** These packages contain the same documentation as is published online in IBM Documentation.

For older versions of IBM MQ, use the links in this table to download the documentation packages. To download the app, see [IBM Documentation Offline](#).

² The product connectivity scenarios give guidance on connecting MQ to other IBM products (WebSphere Application Server classic, Liberty profile, IBM MessageSight, and MQTT mobile apps).

Table 30. Older IBM MQ documentation: What exists, where it is, and in what formats (continued)

IBM MQ product or scenario	PDFs or ePubs	IBM Documentation Offline ¹	Information Center
MQTT Clients	-	-	-
MS81 Internet Pass-Thru 1.2	• MS81 IPT 1.2 (1 book)	-	-
MQ 7.5	• MQ 7.5 (20 books)	WebSphere-MQ-75-Product-Documentation-Windows.zip	-
MQ 7.1	• MQ 7.1 (5 books)	-	• MQ 71 Product Documentation (Windows and Linux)
MQ 7.0.1	• MQ 7.0.1 Features and Enhancements (1 book) • MQ 7.0.1.4 (33 books)	-	• MQ 7 Information Centers (Windows and Linux)
MQ 7.0	• MQ 7.0 2008 (33 books) • MQ 7.0 2009 (33 books)	-	• MQ 7.0.0 Information Centers (Windows and Linux)
MQ 6.0	• 10 books	-	• MQ 6 Information Centers (Windows and Linux)
MQ 5.3	• 31 books	-	• MQ 5.3 Information Center (Windows)
MQ 5.2	• 18 books	-	-
MQ 5.1	• 33 books	-	-
MQ 3.0	• MQ for zVSE System Management (1 book)	-	-
MQ 2.1	• MQ for zVSE System Management (1 book)	-	-

Related concepts

[“IBM MQ 10.0 in the IBM Documentation Offline app” on page 83](#)

¹ IBM Documentation Offline has two components:

- **The IBM Documentation Offline app.** This is a locally-installable offline version of IBM Documentation.
- **The documentation packages that you install into the IBM Documentation Offline app.** These packages contain the same documentation as is published online in IBM Documentation.

For older versions of IBM MQ, use the links in this table to download the documentation packages. To download the app, see [IBM Documentation Offline](#).

If you are in an airgap environment without access to the internet, use our Dark Shop app "IBM Documentation Offline" to view downloads of the IBM MQ 10.0 product documentation.

Related reference

[IBM MQ documentation landing page](#)

Related information

[IBM Support Software lifecycle](#)

IBM MQ Deployment and Usage Data collection

In a future update IBM MQ might collect product deployment and usage data. Learn what data is collected for each IBM MQ product offering, and how to disable the capability.

IBM MQ

IBM MQ does not currently collect any deployment or usage data.

IBM MQ for z/OS

IBM MQ for z/OS products do not currently collect any deployment or usage data.

At any time, this feature can be disabled in z/OS by referring to the **Feedback** tab in z/OSMF General Settings in [z/OS documentation](#).

IBM MQ Appliance

IBM MQ Appliance firmware does not currently collect any deployment or usage data.

Accessibility features for IBM MQ

Accessibility features assist users who have a disability, such as restricted mobility or limited vision, to use information technology content successfully.

Accessibility features

IBM MQ includes the following major accessibility features:

- Keyboard-only operation
- Operations that use a screen reader

IBM MQ uses the latest W3C Standard, WAI-ARIA 1.0 (<https://www.w3.org/TR/wai-aria/>), to ensure compliance to US Section 508 (<https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/section-508-standards>), and Web Content Accessibility Guidelines (WCAG) 2.0 (<https://www.w3.org/TR/WCAG20/>). To take advantage of accessibility features, use the latest release of your screen reader in combination with the latest web browser that is supported by this product.

The IBM MQ online product documentation in IBM Documentation is enabled for accessibility. The accessibility features of IBM Documentation are described at [../..about/releasenotes.html](#).

Keyboard navigation

This product uses standard navigation keys.

Interface information

The fully accessible way of using IBM MQ is to use the command line interface. For more information about using commands, see [Administering IBM MQ for Multiplatforms using control commands and Administering IBM MQ using MQSC commands](#).

For Windows, the accessible way to install IBM MQ is by using a non interactive installation. For further information, see [Advanced installation using msixexec](#).

The IBM MQ user interfaces do not have content that flashes 2 - 55 times per second.

The IBM MQ web user interface does not rely on cascading style sheets to render content properly and to provide a usable experience. However, the product documentation does rely on cascading style sheets. IBM MQ provides an equivalent way for low-vision users to use a user's system display settings, including high-contrast mode. You can control font size by using the device or browser settings.

Related accessibility information

In addition to standard IBM help desk and support websites, IBM has established a TTY telephone service for use by deaf or hard of hearing customers to access sales and support services:

TTY service
800-IBM-3383 (800-426-3383)
(within North America)

IBM and accessibility

For more information about the commitment that IBM has to accessibility, see [IBM Accessibility](#) (www.ibm.com/able).

Icons used in the product documentation

The product documentation for all IBM MQ 10.0 release types (LTS, CD, CP4I-LTS), release versions, and platforms is provided in a single information set in IBM Documentation. If information is specific to a given release type, version, or platform, this is indicated by a rectangular icon. Information that applies to all release types, versions, and platforms is left unmarked. Icons are also used to distinguish between JMS and Jakarta messaging, and to highlight product features that are deprecated, stabilized or removed.

Icons for release types and release versions

If a product feature applies to a specific release, icons are used to identify the release type to which the feature applies, and the release version at which a feature is first made available. For more information about the different release types, see [“IBM MQ release types and versioning” on page 23](#).

Release type icons

Long Term Support (LTS)

Information that applies to the IBM MQ Long Term Support release in general is indicated by a dark blue icon with the text LTS:



Continuous Delivery (CD)

Information that applies to the Continuous Delivery release in general is indicated by a light blue icon with the text CD:



IBM MQ Advanced

Information that applies to the IBM MQ Advanced product in general is indicated by a green icon with the text MQ Adv.:



IBM MQ Advanced for z/OS

Information that applies to IBM MQ Advanced for z/OS is indicated by a red icon with the text MQ Adv. z/OS:



IBM MQ Advanced for z/OS Value Unit Edition

Information that applies to IBM MQ Advanced for z/OS Value Unit Edition is indicated by a red icon with the text MQ Adv. VUE:



IBM Cloud Pak for Integration - Support Cycle 2 (formerly Long Term Support)

Information that applies to the IBM Cloud Pak for Integration - Support Cycle 2 (formerly Long Term Support) release in general is indicated by a dark blue icon with the text CP4I-SC2:



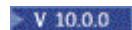
Release version icons

Initial release icons

For IBM MQ 10.0, the initial release is both an LTS and a CD release.

LTS initial release

Product features that are new to LTS customers in the initial release of IBM MQ 10.0 are indicated by a dark blue icon that contains the initial release number. Note that features that are new to LTS customers includes all features that were introduced throughout the lifetime of the previous release for CD customers.



CD initial release

Product features that are new to CD customers in the initial release of IBM MQ 10.0 are indicated by a light blue icon that contains the initial release number.



Platform icons

Platform icons are used to identify information that applies only to a specific platform, or group of platforms.

Table 31. Icons for MQ core platforms	
Icon	Platform
	AIX
	All supported UNIX platforms. That is, all platforms listed previously in this table. From IBM MQ 9.2.0, AIX is the only supported UNIX platform.
	Linux
	Windows
	AIX, Linux, and Windows
	All supported UNIX, Linux, and Windows platforms. That is, all platforms listed previously in this table.
	IBM i. Not supported for CD releases.

Table 31. Icons for MQ core platforms (continued)

Icon	Platform
	Multiplatforms. That is, all platforms listed previously in this table. - For CD releases, this means AIX, Linux, and Windows. - For LTS releases, this means AIX, Linux, Windows, and IBM i.
	z/OS

Note:

- The supported platforms for CD releases are AIX, Linux, Windows, and z/OS.
- The supported platforms for LTS releases are AIX, Linux, Windows, IBM i, and z/OS.
- Any information not explicitly flagged as IBM i or z/OS also applies to the IBM MQ Appliance.
- Support for Solaris for all IBM MQ components, including server and clients, is removed from IBM MQ 9.2.
- Support for HP-UX for all IBM MQ components, including server and clients, is removed from IBM MQ 9.1.

Table 32. Icons for MQ in containers

Icon	Platform
	Red Hat OpenShift. A containers platform. Runs on Linux
	Amazon Elastic Kubernetes Service. A containers platform.
	Kubernetes. An open source containers platform.
	IBM Cloud Pak for Integration. Brings together a range of IBM integration products, including IBM MQ in containers.
	IBM MQ Operator. Indicates the operator version from which a containers feature is available.

From IBM MQ 9.3.0, Jakarta Messaging 3.0 is supported for developing new applications. IBM MQ 9.3.0 and later continue to support JMS 2.0 for existing applications. It is not supported to use both the Jakarta Messaging 3.0 API and the JMS 2.0 API in the same application. For more information, see [Using IBM MQ classes for JMS/Jakarta Messaging](#). The following icons are used to identify information that applies to either JMS or Jakarta Messaging only.

Table 33. JMS and Jakarta Messaging

Icon	API
	Java Message Service 2.0 (JMS 2.0)
	Jakarta Messaging 3.0

Icons for product features that are deprecated, stabilized or removed

For IBM WebSphere MQ 7.1 and later versions, [Deprecations, stabilizations, and removals in IBM MQ](#) provides a list of product features that are deprecated, stabilized, or removed. Information about each of these features is flagged with one of the following icons.

Table 34. <i>Deprecated, stabilized or removed features</i>	
Icon	Description
	Used to highlight information for an IBM MQ feature that is deprecated.
	Used to highlight information for an IBM MQ feature that is stabilized.
	Used to highlight information for an IBM MQ feature that is removed.

Related concepts

[“IBM MQ release types and versioning” on page 23](#)

There are two main types of release for IBM MQ; Long Term Support (LTS) and Continuous Delivery (CD). There is also a separate Container Long Term Support (Container-LTS) with its own support duration.

[“What's new and changed in IBM MQ 10.0.0” on page 25](#)

IBM MQ 10.0.0 is the follow-on Long Term Support (LTS) release to IBM MQ 9.4.0. It is also the follow-on Continuous Delivery (CD) release to IBM MQ 9.4.5, which is the final CD release for IBM MQ 9.4. IBM MQ 10.0.0 includes the features and enhancements that were previously delivered in the CD releases of IBM MQ 9.4.1 through IBM MQ 9.4.5 along with some features and enhancements that are new at IBM MQ 10.0.0. The features that you have access to depends on your product entitlement.

[“What was new and changed in earlier versions” on page 76](#)

Links to information about new features and changes to functions and resources, including stabilizations, deprecations and removals, that occurred in versions of the product before IBM MQ 10.0.

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Glossary

This glossary provides terms and definitions for the IBM MQ software and products.

The following cross-references are used in this glossary:

- *See* refers you from a nonpreferred term to the preferred term or from an abbreviation to the spelled-out form.
- *See also* refers you to a related or contrasting term.

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A

abend reason code

A 4-byte hexadecimal code that uniquely identifies a problem with a program that runs on the z/OS operating system.

abstract class

In object-oriented programming, a class that represents a concept; classes derived from it represent implementations of the concept. An object cannot be constructed from an abstract class; that is, it cannot be instantiated. See also [parent class](#).

Abstract Syntax Notation One (ASN.1)

The international standard for defining the syntax of information data. It defines a number of simple data types and specifies a notation for referencing these types and for specifying values of these types. The ASN.1 notations can be applied whenever it is necessary to define the abstract syntax of information without constraining in any way how the information is encoded for transmission.

access control

In computer security, the process of ensuring that users can access only those resources of a computer system for which they are authorized.

access control list (ACL)

In computer security, a list associated with an object that identifies all the subjects that can access the object and their access rights.

ACL

See [access control list](#).

active log

A data set with a fixed size where recovery events are recorded as they occur. When the active log is full, the contents of the active log are copied to the archive log.

active queue manager instance

The instance of a running multi-instance queue manager that is processing requests. There is only one active instance of a multi-instance queue manager.

adapter

An intermediary software component that allows two other software components to communicate with one another.

address space

The range of addresses available to a computer program or process. Address space can refer to physical storage, virtual storage, or both. See also [allied address space](#), [buffer pool](#).

administration bag

In the IBM MQ Administration Interface (MQAI), a type of data bag that is created for administering IBM MQ by implying that it can change the order of data items, create lists, and check selectors within a message.

administrative topic object

An object that allows you to assign specific, non-default attributes to topics.

administrator command

A command used to manage IBM MQ objects, such as queues, processes, and namelists.

Advanced Message Queuing Protocol (AMQP)

An open-source wire protocol that is used to receive, queue, route, and deliver messages.

Advanced Program-to-Program Communication (APPC)

An implementation of the SNA LU 6.2 protocol that allows interconnected systems to communicate and share the processing of programs.

affinity

An association between objects that have some relationship or dependency upon each other.

alert

A message or other indication that signals an event or an impending event that meets a set of specified criteria.

alert monitor

In IBM MQ for z/OS, a component of the CICS adapter that handles unscheduled events occurring as a result of connection requests to IBM MQ for z/OS.

alias queue

An IBM MQ object, the name of which is an alias for a base queue or topic that is defined to the local queue manager. When an application or a queue manager uses an alias queue, the alias name is resolved and the requested operation is performed on the associated base object. For further information, see [Alias queues](#).

alias queue object

An IBM MQ object, the name of which is an alias for a base queue defined to the local queue manager. When an application or a queue manager uses an alias queue, the alias name is resolved and the requested operation is performed on the associated base queue.

allied address space

A z/OS address space that is connected to IBM MQ for z/OS.

ally

See [allied address space](#).

alternate user authority

The ability of a user ID to supply a different user ID for security checks. When an application opens an IBM MQ object, it can supply a user ID on the MQOPEN, MQPUT1, or MQSUB call that the queue manager uses for authority checks instead of the one associated with the application. For further information, see the topic [Alternate user authority](#).

alternate user security

On z/OS, the authority checks that are performed when an application requests alternate user authority when opening an IBM MQ object.

AMQP

See [Advanced Message Queuing Protocol](#).

AMQP channel

A type of channel that provides a level of support for AMQP 1.0-compliant applications. MQ Light clients or other AMQP 1.0 compatible clients can be connected to an IBM MQ AMQP channel.

APAR

See [authorized program analysis report](#).

APF

See [authorized program facility](#).

API-crossing exit

A user written program that is similar in concept to an API exit. It is supported only for CICS applications on IBM MQ for z/OS.

API exit

A user-written program that monitors or modifies the function of an MQI call. For each MQI call issued by an application, the API exit is called before the queue manager starts to process the call and again after the queue manager has completed processing the call. The API exit can inspect and modify any of the parameters on the MQI call.

APPC

See [Advanced Program-to-Program Communication](#).

application-defined format

Application data in a message for which the user application defines the meaning. See also [built-in format](#).

application environment

The environment that includes the software and the server or network infrastructure that supports it.

application level security

The security services that are started when an application issues an MQI call.

application log

In Windows systems, a log that records significant application events.

application queue

A local queue that is used by applications for messaging, through the Message Queue Interface (MQI). Application queues are often set up as triggered queues.

archive log

A data set on a storage device to which IBM MQ copies the contents of each active log data set when the active log reaches its size limit. See also [recovery log](#).

ARM

See [automatic restart manager](#).

ASN.1

See [Abstract Syntax Notation One](#).

asymmetric key cryptography

A system of cryptography that uses two keys: a public key known to everyone and a private key known only to the receiver or sender of the message. See also [symmetric key cryptography](#). For further information, see the topic [Cryptography](#).

asynchronous consumption

A process that uses a set of MQI calls that allow an application to consume messages from a set of queues. Messages are delivered to the application by using a unit of code identified by the application, passing either the message or a token representing the message.

asynchronous messaging

A method of communication between programs in which a program places a message on a message queue, then proceeds with its own processing without waiting for a reply to its message. See also [synchronous messaging](#).

asynchronous put

A put of a message by an application, without waiting for a response from the queue manager.

attribute

1. A characteristic or trait of an entity that describes the entity; for example, the telephone number of an employee is one of the employee attributes. See also [entity](#).
2. In object-oriented programming, a property of an object or class that can be distinguished distinctly from any other properties. Attributes often describe state information.

authentication

A security service that provides proof that a user of a computer system is genuinely who that person claims to be. Common mechanisms for implementing this service are passwords and digital signatures.

authentication information object

An object that provides the definitions needed to check certificate revocation lists (CRLs) using LDAP servers, in support for Secure Sockets Layer (SSL) security.

authority check

See [authorization check](#).

authorization

The process of granting a user, system, or process either complete or restricted access to an object, resource, or function.

authorization check

A security check that is performed when a user or application attempts to access a system resource; for example, when an administrator attempts to issue a command to administer IBM MQ or when an application attempts to connect to a queue manager.

authorization file

A file that provides security definitions for an object, a class of objects, or all classes of objects.

authorization service

In IBM MQ on AIX and Linux systems and IBM MQ for Windows, a service that provides authority checking of commands and MQI calls for the user identifier associated with the command or call.

authorized program analysis report (APAR)

A request for correction of a defect in a supported release of a program supplied by IBM.

authorized program facility (APF)

In a z/OS environment, a facility that permits the identification of programs that are authorized to use restricted functions.

automatic restart manager (ARM)

A z/OS recovery function that can automatically restart batch jobs and started tasks after they or the system on which they are running end unexpectedly.

B**backout**

An operation that reverses all changes to resources made during the current unit of work. See also [commit](#).

bag

See [data bag](#).

bar

A z/OS memory limit, which in 64-bit systems is set at 2 GB. The bar separates storage below the 2-gigabyte address from storage above the 2 GB address. The area above the bar is intended for data; no programs run above the bar.

basic mapping support (BMS)

An interface between CICS and application programs that formats input and output display data and routes multiple-page output messages without regard for control characters used by various terminals.

behavior

In object-oriented programming, the functionality embodied within a method.

BMS

See [basic mapping support](#).

Booch methodology

An object-oriented methodology that helps users design systems using the object-oriented paradigm.

bootstrap data set (BSDS)

A VSAM data set that contains an inventory of all active and archived log data sets known to IBM MQ for z/OS, and a wrap-around inventory of all recent IBM MQ for z/OS activity. The BSDS is required to restart the IBM MQ for z/OS subsystem.

browse

In message queuing, to copy a message without removing it from the queue. See also [get](#), [put](#).

browse cursor

In message queuing, an indicator used when browsing a queue to identify the message that is next in sequence.

BSDS

See [bootstrap data set](#).

buffer pool

An area of memory into which data pages are read and in which they are modified and held during processing. See also [address space](#).

built-in format

Application data in a message for which the queue manager defines the meaning. See also [application-defined format](#).

C**CA**

See [certificate authority](#).

CAF

See [client attachment feature](#).

callback

A message consumer or an event handler routine.

CCDT

See [client channel definition table](#).

CCF

See [channel control function](#).

CCSID

See [coded character set identifier](#).

CDF

See [channel definition file](#).

certificate authority (CA)

A trusted third-party organization or company that issues the digital certificates. The certificate authority typically verifies the identity of the individuals who are granted the unique certificate. See also [Secure Sockets Layer](#). For further information, see the topic [Certificate Authorities](#).

certificate chain

A hierarchy of certificates that are cryptographically related to one another, starting with the personal certificate and ending with root at the top of the chain.

certificate expiration

A digital certificate contains a date range when the certificate is valid. Outside the valid date range, the certificate is said to be "expired".

certificate request (CR)

Synonym for [certificate signing request](#).

certificate revocation list (CRL)

A list of certificates that have been revoked before their scheduled expiration date. Certificate revocation lists are maintained by the certificate authority and used, during a Secure Sockets Layer (SSL) handshake to ensure that the certificates involved have not been revoked. For further information, see the topic [Certificate management](#).

certificate signing request (CSR)

An electronic message that an organization sends to a certificate authority (CA) to obtain a certificate. The request includes a public key and is signed with a private key; the CA returns the certificate after signing with its own private key.

certificate store

The Windows name for a key repository. For further information, see the topic [Personal certificate store](#).

CF

See [coupling facility](#).

CFSTRUCT

An IBM MQ object used to describe the queue manager's use of a Coupling Facility list structure

channel

An IBM MQ object that defines a communication link between two queue managers (message channel) or between a client and a queue manager (MQI channel). See also [message channel](#), [MQI channel](#), [queue manager](#).

channel callback

A mechanism that ensures that the channel connection is established to the correct machine. In a channel callback, a sender channel calls back the original requester channel using the sender's definition.

channel control function (CCF)

A program to move messages from a transmission queue to a communication link, and from a communication link to a local queue, together with an operator panel interface to allow the setup and control of channels.

channel definition file (CDF)

A file containing communication channel definitions that associate transmission queues with communication links.

channel event

An event reporting conditions detected during channel operations, such as when a channel instance is started or stopped. Channel events are generated on the queue managers at both ends of the channel.

channel exit program

A user-written program that is called from one of a defined number of places in the processing sequence of a message channel agent (MCA).

channel initiator

A component of IBM MQ distributed queuing that monitors the initiation queue and starts the sender channel when triggering criteria are met.

channel listener

A component of IBM MQ distributed queuing that monitors the network for a startup request and then starts the receiving channel.

checkpoint

A place in a program at which a check is made, or at which a recording of data is made to allow the program to be restarted in case of interruption.

CI

See [control interval](#).

CipherSpec

The combination of encryption algorithm and hash function applied to an SSL message after authentication completes.

cipher suite

The combination of authentication, key exchange algorithm, and the Secure Sockets Layer (SSL) cipher specification used for the secure exchange of data.

ciphertext

Data that is encrypted. Ciphertext is unreadable until it is converted into plaintext (decrypted) with a key. See also [cleartext](#).

circular logging

In IBM MQ on AIX and Linux systems and IBM MQ for Windows, the process of keeping all restart data in a ring of log files. See also [linear logging](#). For further information, see the topic [Types of logging](#).

CL

See [Command Language](#).

class

In object-oriented design or programming, a model or template that can be used to create objects with a common definition and common properties, operations, and behavior. An object is an instance of a class.

class hierarchy

The relationships between classes that share a single inheritance.

class library

In object-oriented programming, a collection of prewritten classes or coded templates, any of which can be specified and used by a programmer when developing an application.

cleartext

A string of characters sent over a network in readable form. It might be encoded for the purposes of compression, but it can easily be decoded. See also [ciphertext](#).

client

A runtime component that provides access to queuing services on a server for local user applications. The queues used by the applications reside on the server. See also [IBM MQ fully managed .NET client](#), [IBM MQ Java client](#), [IBM MQ MQI client](#).

client application

An application, running on a workstation and linked to a client, that gives the application access to queuing services on a server.

client attachment feature (CAF)

An option that supports the attachment of clients to z/OS.

client channel definition table (CCDT)

A file that contains one or more client-connection channel definitions. For further information, see the topic [Client channel definition table](#).

client-connection channel type

The type of MQI channel definition associated with an IBM MQ client. See also [server-connection channel type](#).

CLUSRCVR

See [cluster-receiver channel](#).

CLUSSDR

See [cluster-sender channel](#).

cluster

In IBM MQ, a group of two or more queue managers on one or more computers, providing automatic interconnection, and allowing queues and topics to be advertised among them for load balancing and redundancy.

cluster queue

A local queue that is hosted by a cluster queue manager, and defined as a target for messages being put from an application connected to any queue manager within the cluster. All applications retrieving messages must be locally connected.

cluster queue manager

A queue manager that is a member of a cluster. A queue manager can be a member of more than one cluster.

cluster-receiver channel (CLUSRCVR)

A channel on which a cluster queue manager can receive messages from other queue managers in the cluster, and cluster information from the repository queue managers.

cluster-sender channel (CLUSSDR)

A channel on which a cluster queue manager can send messages to other queue managers in the cluster, and cluster information to the repository queue managers.

cluster topic

An administrative topic that is defined on a cluster queue manager and made available to other queue managers in the cluster.

cluster transmission queue

A transmission queue that holds all messages from a queue manager destined for another queue manager that is in the same cluster. The queue is called `SYSTEM.CLUSTER.TRANSMIT.QUEUE`.

CMS key database

A CMS key database is the format of the Database supported by AIX, Linux, and Windows platforms, and the clients of those platforms. Files ending with ".kdb" are CMS format. The ".kdb" files contain the certificates and the keys.

coded character set identifier (CCSID)

A 16-bit number that includes a specific set of encoding scheme identifiers, character set identifiers, code page identifiers, and other information that uniquely identifies the coded graphic-character representation.

coexistence

The ability of two or more different versions of IBM MQ to function on the same computer.

command

A statement used to initiate an action or start a service. A command consists of the command name abbreviation, and its parameters and flags if applicable.

command bag

In the MQAI, a type of bag that is created for administering IBM MQ objects, but cannot change the order of data items or create lists within a message.

command event

A notification that an MQSC or PCF command has run successfully.

Command Language (CL)

In IBM MQ for IBM i, a language that can be used to issue commands, either at the command line or by writing a CL program.

command prefix (CPF)

1. In IBM MQ for z/OS, a character string that identifies the queue manager to which IBM MQ for z/OS commands are directed, and from which IBM MQ for z/OS operator messages are received.
2. A 1-character to 8-character command identifier. The command prefix distinguishes the command as belonging to an application or subsystem rather than to z/OS.

command server

The IBM MQ component that reads commands from the system-command input queue, verifies them, and passes valid commands to the command processor.

commit

To apply all the changes made during the current unit of recovery (UR) or unit of work (UOW). After the operation is complete, a new UR or UOW can begin.

common name (CN)

The component in a Distinguished Name (DN) attribute of an X.509 certificate that represents the name normally associated with the owner of the certificate. For people, the CN is usually their actual name. For web servers, the CN is the fully qualified host and domain name of the server. For IBM MQ there are no specific requirements on this field, however many administrators use the name of the queue manager. See also "Distinguished Name"

completion code

A return code indicating how a message queue interface (MQI) call has ended.

confidentiality

The security service that protects sensitive information from unauthorized disclosure. Encryption is a common mechanism for implementing this service.

configuration event

Notifications about the attributes of an object. The notifications are generated when the object is created, changed, or deleted and also by explicit requests.

connection affinity

A channel attribute that specifies the client channel definition that client applications use to connect to the queue manager, if multiple connections are available.

connection factory

A set of configuration values that produces connections that enable a Java EE component to access a resource. Connection factories provide on-demand connections from an application to an enterprise information system (EIS) and allow an application server to enroll the EIS in a distributed transaction.

connection handle

The identifier or token by which a program accesses the queue manager to which it is connected.

constructor

In object-oriented programming, a special method used to initialize an object.

consume

To remove a message from a queue and return its contents to the calling application.

consumer

An application that receives and processes messages. See also [message consumer](#).

context security

On z/OS, the authority checks that are performed when an application opens a queue and specifies that it will set the context in messages that it puts on the queue, or pass the context from messages that it has received to messages that it puts on the queue.

control command

In IBM MQ on AIX and Linux systems and IBM MQ for Windows, a command that can be entered interactively from the operating system command line. Such a command requires only that the IBM MQ product be installed; it does not require a special utility or program to run it.

control interval (CI)

A fixed-length area of direct access storage in which VSAM stores records and creates distributed free space. The control interval is the unit of information that VSAM transmits to or from direct-access storage. A control interval always includes an integral number of physical records.

controlled shutdown

See [quiesced shutdown](#).

correlation identifier

A field in a message that provides a means of identifying related messages. Correlation identifiers are used, for example, to match request messages with their corresponding reply message.

coupling facility (CF)

A special logical partition that provides high-speed caching, list processing, and locking functions in a sysplex.

CPF

See [command prefix](#).

CRL

See [certificate revocation list](#).

cross-system coupling facility (XCF)

A component of z/OS that provides functions to support cooperation between authorized programs running within a sysplex.

cryptography

A method for protecting information by transforming it (encrypting it) into an unreadable format, called ciphertext. Only users who possess a secret key can decipher (or decrypt) the message into plaintext.

D

DAE

See [dump analysis and elimination](#).

daemon

A program that runs unattended to perform continuous or periodic functions, such as network control.

data bag

A container of object properties that the MQAI uses in administering queue managers. There are three types of data bag: user (for user data), administration (for administration with assumed options), and command (for administration with no options assumed).

data-conversion interface (DCI)

The IBM MQ interface to which customer-written or vendor-written programs that convert application data between different machine encodings and CCSIDs must conform.

data-conversion service

A service that converts application data to the character set and encoding that are required by applications on other platforms.

datagram

A form of asynchronous messaging in which an application sends a message, but does not require a response. See also [request/reply](#).

data integrity

The security service that detects whether there has been unauthorized modification of data, or tampering. The service detects only whether data has been modified; it does not restore data to its original state if it has been modified.

data item

In the MQAI, an integer or character-string item that is contained within a data bag. A data item can be either a user item or a system item.

DCE

See [Distributed Computing Environment](#).

DCE principal

A user ID that uses the distributed computing environment.

DCI

See [data-conversion interface](#).

DCM

See [Digital Certificate Manager](#).

dead-letter queue (DLQ)

A queue to which a queue manager or application sends messages that cannot be delivered to their correct destination.

dead-letter queue handler

A utility that monitors a dead-letter queue (DLQ) and processes messages on the queue in accordance with a user-written rules table. A sample dead letter queue handler is provided by IBM MQ.

decryption

The process of decoding data that has been encrypted into a secret format. Decryption requires a secret key or password.

default object

A definition of an object (for example, a queue) with all attributes defined. If a user defines an object but does not specify all possible attributes for that object, the queue manager uses default attributes in place of any that were not specified.

deferred connection

A pending event that is activated when a CICS subsystem tries to connect to IBM MQ for z/OS before it has started.

derivation

In object-oriented programming, the refinement or extension of one class from another.

destination

1. An end point to which messages are sent, such as a queue or topic.
2. In JMS, an object that specifies where and how messages should be sent and received.

Diffie-Hellman key exchange

A public, key-exchange algorithm that is used for securely establishing a shared secret over an insecure channel.

digital certificate

An electronic document used to identify an individual, a system, a server, a company, or some other entity, and to associate a public key with the entity. A digital certificate is issued by a certification authority and is digitally signed by that authority.

Digital Certificate Manager (DCM)

On IBM i systems, the method of managing digital certificates and using them in secure applications on the IBM i server. Digital Certificate Manager requests and processes digital certificates from certification authorities (CAs) or other third-parties.

digital signature

Information that is encrypted with a private key and is appended to a message or object to assure the recipient of the authenticity and integrity of the message or object. The digital signature proves

that the message or object was signed by the entity that owns, or has access to, the private key or shared-secret symmetric key.

direct routing

An option for routing publications in a publish/subscribe cluster. With direct routing, every queue manager in the cluster sends publications from any publishing queue manager direct to any other queue manager in the cluster with a matching subscription.

disconnect

To break the connection between an application and a queue manager.

distinguished name (DN)

A set of name-value pairs (such as CN=person name and C=country or region) that uniquely identifies an entity in a digital certificate.

distributed application

In message queuing, a set of application programs that can each be connected to a different queue manager, but that collectively comprise a single application.

Distributed Computing Environment (DCE)

In network computing, a set of services and tools that supports the creation, use, and maintenance of distributed applications across heterogeneous operating systems and networks.

distributed publish/subscribe

Publish/subscribe messaging performed in a multiple queue manager environment.

distributed queue management

In message queuing, the setup and control of message channels between distributed queue managers.

distributed queuing

Sending messages from one queue manager to another. The receiving queue manager could be on the same machine or on a remote one.

distribution list

A list of queues to which a message can be put with a single statement.

DLQ

See [dead-letter queue](#).

DN

See [distinguished name](#).

dual logging

A method of recording IBM MQ for z/OS activity, where each change is recorded on two data sets, so that if a restart is necessary and one data set is unreadable, the other can be used. See also [single logging](#).

dual mode

See [dual logging](#).

dump analysis and elimination (DAE)

A z/OS service that enables an installation to suppress SVC dumps and ABEND SYSUDUMP dumps that are not needed because they duplicate previously written dumps.

durable subscription

A subscription that is retained when the connection from a subscribing application to the queue manager is closed. When the subscribing application disconnects, the durable subscription remains in place and publications continue to be delivered. When the application reconnects, it can use the same subscription by specifying the unique subscription name. See also [nondurable subscription](#).

dynamic queue

A local queue created when a program opens a model queue object.

E

eavesdropping

A breach of communication security in which the information remains intact, but its privacy is compromised. See also [impersonation](#), [tampering](#).

Eclipse

An open-source initiative that provides independent software vendors (ISVs) and other tool developers with a standard platform for developing plug-compatible application development tools.

encapsulation

In object-oriented programming, the technique that is used to hide the inherent details of an object, function, or class from client programs.

encryption

In computer security, the process of transforming data into an unintelligible form in such a way that the original data either cannot be obtained or can be obtained only by using a decryption process.

enqueue

To put a message or item in a queue.

entity

A user, group, or resource that is defined to a security service, such as RACF®.

environment variable

A variable that specifies how an operating system or another program runs, or the devices that the operating system recognizes.

ESM

See [external security manager](#).

ESTAE

See [extended specify task abnormal exit](#).

event data

In an event message, the part of the message data that contains information about the event (such as the queue manager name, and the application that gave rise to the event). See also [event header](#).

event header

In an event message, the part of the message data that identifies the event type of the reason code for the event. See also [event data](#).

event message

A message that contains information (such as the category of event, the name of the application that caused the event, and queue manager statistics) relating to the origin of an instrumentation event in a network of IBM MQ systems.

event queue

The queue onto which the queue manager puts an event message after it detects an event. Each category of event (queue manager, performance, configuration, instrumentation, or channel event) has its own event queue.

Event Viewer

A tool provided by Windows systems to examine and manage log files.

exception listener

An instance of a class that can be registered by an application and for which the `onException()` method is called to pass a JMS exception to the application asynchronously.

exclusive method

In object-oriented programming, a method that is not intended to exhibit polymorphism; one with specific effect.

extended specify task abnormal exit (ESTAE)

A z/OS macro that provides recovery capability and gives control to the user-specified exit routine for processing, diagnosing an abend, or specifying a retry address.

external security manager (ESM)

A security product that performs security checking on users and resources. RACF is an example of an ESM.

F**failover**

An automatic operation that switches to a redundant or standby system or node in the event of a software, hardware, or network interruption.

FAP

See [Formats and Protocols](#).

Federal Information Processing Standard

A standard produced by the National Institute of Standards and Technology when national and international standards are nonexistent or inadequate to satisfy the U.S. government requirements.

FFDC

See [first-failure data capture](#).

FFST

See [First Failure Support Technology](#).

FFST file

See [First Failure Support Technology file](#).

FIFO

See [first-in first-out](#).

FIPS

See [Federal Information Processing Standard](#).

first-failure data capture (FFDC)

1. The i5/OS implementation of the FFST architecture providing problem recognition, selective dump of diagnostic data, symptom string generation, and problem log entry.
2. A problem diagnosis aid that identifies errors, gathers and logs information about these errors, and returns control to the affected runtime software.

First Failure Support Technology (FFST)

An IBM architecture that defines a single approach to error detection through defensive programming techniques. These techniques provide proactive (passive until required) problem recognition and a description of diagnostic output required to debug a software problem.

First Failure Support Technology file (FFST file)

A file containing information for use in detecting and diagnosing software problems. In IBM MQ, FFST files have a file type of FDC.

first-in first-out (FIFO)

A queuing technique in which the next item to be retrieved is the item that has been in the queue for the longest time.

forced shutdown

A type of shutdown of the CICS adapter where the adapter immediately disconnects from IBM MQ for z/OS, regardless of the state of any currently active tasks. See also [quiesced shutdown](#).

format

In message queuing, a term used to identify the nature of application data in a message.

Formats and Protocols (FAP)

In message queuing, a definition of how queue managers communicate with each other, and of how clients communicate with server queue managers.

Framework

In IBM MQ, a collection of programming interfaces that allow customers or vendors to write programs that extend or replace certain functions provided in IBM MQ products. The interfaces are the following: data conversion interface (DCI), message channel interface (MCI), name service interface (NSI), security enabling interface (SEI), trigger monitor interface (TMI).

friend class

A class in which all member functions are granted access to the private and protected members of another class. It is named in the declaration of another class and uses the keyword `friend` as a prefix to the class.

FRR

See [functional recovery routine](#).

full repository

A complete set of information about every queue manager in a cluster. This set of information is called the repository or sometimes the full repository and is usually held by two of the queue managers in the cluster. See also [partial repository](#).

function

A named group of statements that can be called and evaluated and can return a value to the calling statement.

functional recovery routine (FRR)

A z/OS recovery and termination manager that enables a recovery routine to gain control in the event of a program interrupt.

G**gateway queue manager**

A cluster queue manager that is used to route messages from an application to other queue managers in the cluster.

generalized trace facility (GTF)

A z/OS service program that records significant system events such as I/O interrupts, SVC interrupts, program interrupts, and external interrupts.

Generic Security Services API

See [Generic Security Services application programming interface](#).

Generic Security Services application programming interface (Generic Security Services API, GSS API)

A common application programming interface (API) for accessing security services.

get

In message queuing, to use the `MQGET` call to remove a message from a queue and return its contents to the calling application. See also [browse](#), [put](#).

globally defined object

On z/OS, an object whose definition is stored in the shared repository. The object is available to all queue managers in the queue sharing group. See also [locally defined object](#).

global trace

An IBM MQ for z/OS trace option where the trace data comes from the entire IBM MQ for z/OS subsystem.

global transaction

A recoverable unit of work performed by one or more resource managers in a distributed transaction environment and coordinated by an external transaction manager.

GSS API

See [Generic Security Services application programming interface](#).

GTF

See [generalized trace facility](#).

H**handshake**

The exchange of messages at the start of a Secure Sockets Layer session that allows the client to authenticate the server using public key techniques (and, optionally, for the server to authenticate the

client) and then allows the client and server to cooperate in creating symmetric keys for encryption, decryption, and detection of tampering.

hardened message

A message that is written to auxiliary (disk) storage so that the message is not lost in the event of a system failure.

header

See [message header](#).

heartbeat

A signal that one entity sends to another to convey that it is still active.

heartbeat flow

A pulse that is passed from a sending message channel agent (MCA) to a receiving MCA when there are no messages to send. The pulse unblocks the receiving MCA, which would otherwise remain in a wait state until a message arrived or the disconnect interval expired.

heartbeat interval

The time, in seconds, that is to elapse between heartbeat flows.

hierarchy

In publish/subscribe messaging topology, a local queue manager connected to a parent queue manager.

HTTP

See [Hypertext Transfer Protocol](#).

Hypertext Transfer Protocol (HTTP)

An Internet protocol that is used to transfer and display hypertext and XML documents on the web.

I

IBM MQ

A family of IBM licensed programs that provides message queuing services.

IBM MQ Administration Interface (MQAI)

A programming interface that performs administration tasks on an IBM MQ queue manager through the use of data bags. Data bags allow the user to handle properties (or parameters) of IBM MQ objects.

IBM MQ classes for .NET

A set of classes that allow a program written in the .NET programming framework to connect to IBM MQ as an IBM MQ client or to connect directly to an IBM MQ server.

IBM MQ classes for C++

A set of classes that encapsulate the IBM MQ Message Queue Interface (MQI) in the C++ programming language.

IBM MQ classes for Java

A set of classes that encapsulate the IBM MQ Message Queue Interface (MQI) in the Java programming language.

IBM MQ fully managed .NET client

Part of an IBM MQ product that can be installed on a system without installing the full queue manager. The IBM MQ .NET client is used by fully-managed .NET applications and communicates with a queue manager on a server system. A .NET application that is not fully managed uses the IBM MQ MQI client. See also [client](#), [IBM MQ Java client](#), [IBM MQ MQI client](#).

IBM MQ Java client

Part of an IBM MQ product that can be installed on a system without installing the full queue manager. The IBM MQ Java client is used by Java applications (both IBM MQ classes for Java and IBM MQ classes for JMS) and communicates with a queue manager on a server system. See also [client](#), [IBM MQ fully managed .NET client](#), [IBM MQ MQI client](#).

IBM MQ MQI client

Part of an IBM MQ product that can be installed on a system without installing the full queue manager. The IBM MQ MQI client accepts MQI calls from applications and communicates with a queue manager on a server system. See also [client](#), [IBM MQ fully managed .NET client](#), [IBM MQ Java client](#).

IBM MQ script commands (MQSC)

Human readable commands, uniform across all platforms, that are used to manipulate IBM MQ objects. See also [programmable command format](#).

IBM MQ server

A queue manager that provides queuing services to one or more clients. All the IBM MQ objects, for example queues, exist only on the queue manager system, that is, on the MQI server machine. A server can support normal local MQI applications as well.

IBM MQ Telemetry

Supports small client libraries that can be embedded into smart devices running on a number of different device platforms. Applications built with the clients use the IBM MQ Telemetry Transport (MQTT) protocol and the IBM MQ Telemetry service to publish and subscribe messages reliably with IBM MQ.

IBM MQ Telemetry daemon for devices

See [MQTT daemon for devices](#).

identification

The security service that enables each user of a computer system to be identified uniquely. A common mechanism for implementing this service is to associate a user ID with each user.

identity context

Information that identifies the user of the application that first puts the message on a queue

IFCID

See [instrumentation facility component identifier](#).

ILE

See [Integrated Language Environment](#)[®].

immediate shutdown

In IBM MQ, a shutdown of a queue manager that does not wait for applications to disconnect. Current message queue interface (MQI) calls are allowed to complete, but new MQI calls fail after an immediate shutdown has been requested. See also [preemptive shutdown](#), [quiesced shutdown](#).

impersonation

A breach of communication security in which the information is passed to a person posing as the intended receiver or information is sent by a person posing as someone else. See also [eavesdropping](#), [tampering](#).

inbound channel

A channel that receives messages from another queue manager.

in-built format

See [built-in format](#).

index

In the IBM MQ Administration Interface (MQAI), a means of referencing data items.

indoubt unit of recovery

The status of a unit of recovery for which a sync point has been requested but not yet confirmed.

inflight

The state of a resource or unit of recovery that has not yet completed the prepare phase of the commit process.

inheritance

An object-oriented programming technique in which existing classes are used as a basis for creating other classes. Through inheritance, more specific elements incorporate the structure and behavior of more general elements.

initialization input data set

A data set that is used by IBM MQ for z/OS when it starts.

initiation queue

A local queue on which the queue manager puts trigger messages.

initiator

In distributed queuing, a program that requests network connections on another system. See also [responder](#).

input parameter

A parameter of an MQI call in which information is supplied.

insertion order

In the IBM MQ Administration Interface (MQAI), the order that data items are placed into a data bag.

installable service

In IBM MQ on UNIX and Linux systems and IBM MQ for Windows, additional functionality provided as independent component. The installation of each component is optional: in-house or third-party components can be used instead.

instance

A specific occurrence of an object that belongs to a class. See also [object](#).

instance data

In object-oriented programming, state information associated with an object.

intermediate certificate

A signer certificate that is not the root certificate. It is issued by the trusted root specifically to issue end-entity server certificates. The result is a certificate chain that begins at the trusted root CA, through a number of intermediates, and ends with the SSL certificate issued to the organization.

instrumentation event

A way of monitoring queue manager resource definitions, performance conditions, and channel conditions in a network of IBM MQ systems.

instrumentation facility component identifier (IFCID)

In Db2 for z/OS, a value that names and identifies a trace record of an event. As a parameter on the START TRACE and MODIFY TRACE commands, it specifies that the corresponding event is to be traced.

Integrated Language Environment (ILE)

A set of constructs and interfaces that provides a common runtime environment and runtime bindable application programming interfaces (APIs) for all ILE-conforming high-level languages.

Interactive Problem Control System (IPCS)

A component of MVS and z/OS that permits online problem management, interactive problem diagnosis, online debugging for disk-resident abend dumps, problem tracking, and problem reporting.

Interactive System Productivity Facility (ISPF)

An IBM licensed program that serves as a full-screen editor and dialog manager. Used for writing application programs, it provides a means of generating standard screen panels and interactive dialogs between the application programmer and the terminal user.

interface

In object-oriented programming, an abstract model of behavior; a collection of functions or methods.

Internet Protocol (IP)

A protocol that routes data through a network or interconnected networks. This protocol acts as an intermediary between the higher protocol layers and the physical network. See also [Transmission Control Protocol](#).

interprocess communication (IPC)

The process by which programs send messages to each other. Sockets, semaphores, signals, and internal message queues are common methods of interprocess communication. See also [client](#).

intersystem communication (ISC)

A CICS facility that provides inbound and outbound support for communication from other computer systems.

IP

See [Internet Protocol](#).

IPC

See [interprocess communication](#).

IPCS

See [Interactive Problem Control System](#).

ISC

See [intersystem communication](#).

ISPF

See [Interactive System Productivity Facility](#).

J**JAAS**

See [Java Authentication and Authorization Service](#).

Java Authentication and Authorization Service (JAAS)

In Java EE technology, a standard API for performing security-based operations. Through JAAS, services can authenticate and authorize users while enabling the applications to remain independent from underlying technologies.

Java Message Service (JMS)

An application programming interface that provides Java language functions for handling messages. See also [Message Queue Interface](#).

Java runtime environment (JRE)

A subset of a Java developer kit that contains the core executable programs and files that constitute the standard Java platform. The JRE includes the Java virtual machine (JVM), core classes, and supporting files.

JMS

See [Java Message Service](#).

JMSAdmin

An administration tool that enables administrators to define the properties of JMS objects and to store them within a JNDI namespace

journal

A feature of OS/400® that IBM MQ for IBM i uses to control updates to local objects. Each queue manager library contains a journal for that queue manager.

JRE

See [Java runtime environment](#).

K**keepalive**

A TCP/IP mechanism where a small packet is sent across the network at predefined intervals to determine whether the socket is still working correctly.

Kerberos

A network authentication protocol that is based on symmetric key cryptography. Kerberos assigns a unique key, called a ticket, to each user who logs on to the network. The ticket is embedded in messages that are sent over the network. The receiver of a message uses the ticket to authenticate the sender.

key authentication

See [authentication](#).

key repository

A store for digital certificates and their associated private keys.

key ring

In computer security, a file that contains public keys, private keys, trusted roots, and certificates.

keystore

In security, a file or a hardware cryptographic card where identities and private keys are stored, for authentication and encryption purposes. Some keystores also contain trusted or public keys. See also [truststore](#).

L

last will and testament

An object that is registered with a monitor by a client, and used by the monitor if the client ends unexpectedly.

LDAP

See [Lightweight Directory Access Protocol](#).

Lightweight Directory Access Protocol (LDAP)

An open protocol that uses TCP/IP to provide access to directories that support an X.500 model and that does not incur the resource requirements of the more complex X.500 Directory Access Protocol (DAP). For example, LDAP can be used to locate people, organizations, and other resources in an Internet or intranet directory.

linear logging

In IBM MQ on UNIX and Linux systems, and IBM MQ for Windows, the process of keeping restart data in a sequence of files. New files are added to the sequence as necessary. The space in which the data is written is not reused. See also [circular logging](#). For further information, see the topic [Types of logging](#).

link level security

The security services that are started, directly or indirectly, by a message channel agent (MCA), the communications subsystem, or a combination of the two working together.

listener

A program that detects incoming requests and starts the associated channel.

local definition of a remote queue

An IBM MQ object belonging to a local queue manager that defines the attributes of a queue that is owned by another queue manager. In addition, it is used for queue manager aliasing and reply-to-queue aliasing.

locale

A setting that identifies language or geography and determines formatting conventions such as collation, case conversion, character classification, the language of messages, date and time representation, and numeric representation.

locally defined object

On z/OS, an object whose definition is stored on page set zero. The definition can be accessed only by the queue manager that defined it. See also [globally defined object](#).

local queue

A queue that belongs to the local queue manager. A local queue can contain a list of messages waiting to be processed. See also [remote queue](#).

local queue manager

The queue manager to which the program is connected and that provides message queuing services to the program. See also [remote queue manager](#).

log

In IBM MQ, a file recording the work done by queue managers while they receive, transmit, and deliver messages, to enable them to recover in the event of failure.

log control file

In IBM MQ on UNIX and Linux systems, and IBM MQ for Windows, the file containing information needed to monitor the use of log files (for example, their size and location, and the name of the next available file).

log file

In IBM MQ on UNIX and Linux systems, and IBM MQ for Windows, a file in which all significant changes to the data controlled by a queue manager are recorded. If the primary log files become full, IBM MQ allocates secondary log files.

logical unit (LU)

An access point through which a user or application program accesses the SNA network to communicate with another user or application program.

logical unit 6.2 (LU 6.2)

An SNA logical unit that supports general communication between programs in a distributed processing environment.

logical unit of work identifier (LUWID)

A name that uniquely identifies a thread within a network. This name consists of a fully qualified logical unit network name, a logical unit of work instance number, and a logical unit of work sequence number.

log record

A set of data that is treated as a single unit in a log file.

log record sequence number (LRSN)

A unique identifier for a log record that is associated with a data sharing member. Db2 for z/OS uses the LRSN for recovery in the data sharing environment.

LRSN

See [log record sequence number](#).

LU

See [logical unit](#).

LU 6.2

See [logical unit 6.2](#).

LU 6.2 conversation

In SNA, a logical connection between two transaction programs over an LU 6.2 session that enables them to communicate with each other.

LU 6.2 conversation level security

In SNA, a conversation level security protocol that enables a partner transaction program to authenticate the transaction program that initiated the conversation.

LU 6.2 session

In SNA, a session between two logical units (LUs) of type 6.2.

LU name

The name by which VTAM® refers to a node in a network.

LUWID

See [logical unit of work identifier](#).

M

managed destination

A queue that is provided by the queue manager, as the destination to which published messages are to be sent, for an application that elects to use a managed subscription. See also [managed subscription](#).

managed handle

An identifier that is returned by the MQSUB call when a queue manager is specified to manage the storage of messages that are sent to the subscription.

managed subscription

A subscription for which the queue manager creates a subscriber queue to receive publications because the application does not require a specific queue to be used. See also [managed destination](#).

marshalling

See [serialization](#).

MCA

See [message channel agent](#).

MCI

See [message channel interface](#).

media image

In IBM MQ on UNIX and Linux systems and IBM MQ for Windows, the sequence of log records that contain an image of an object. The object can be re-created from this image.

message

1. In system programming, information intended for the terminal operator or system administrator.
2. A string of bytes that is passed from one application to another. Messages typically comprise a message header (used for message routing and identification) and a payload (containing the application data being sent). The data has a format that is compatible with both the sending and receiving application.

message affinity

The relationship between conversational messages that are exchanged between two applications, where the messages must be processed by a particular queue manager or in a particular sequence.

message channel

In distributed message queuing, a mechanism for moving messages from one queue manager to another. A message channel comprises two message channel agents (a sender at one end and a receiver at the other end) and a communication link. See also [channel](#).

message channel agent (MCA)

A program that transmits prepared messages from a transmission queue to a communication link, or from a communication link to a destination queue. See also [Message Queue Interface](#).

message channel interface (MCI)

The IBM MQ interface to which customer-written or vendor-written programs that transmit messages between an IBM MQ queue manager and another messaging system must conform. See also [Message Queue Interface](#).

message consumer

1. In JMS, an object that is created within a session to receive messages from a destination.
2. A program, function, or organization that gets and processes messages. See also [consumer](#).

message context

Information about the originator of a message that is held in fields in the message descriptor. There are two categories of context information: identity context and origin context.

message descriptor

Control information describing the message format and presentation that is carried as part of a IBM MQ message. The format of the message descriptor is defined by the MQMD structure.

message exit

A type of channel exit program that is used to modify the contents of a message. Message exits usually work in pairs, one at each end of a channel. At the sending end of a channel, a message exit is called after the message channel agent (MCA) has got a message from the transmission queue. At the receiving end of a channel, a message exit is called before the message channel agent (MCA) puts a message on its destination queue.

message flow control

A distributed queue management task that involves setting up and maintaining message routes between queue managers.

Message Format Service (MFS)

An IMS editing facility that allows application programs to deal with simple logical messages instead of device-dependent data, thus simplifying the application development process.

message group

A logical group of related messages. The relationship is defined by the application putting the messages, and ensures that the messages are retrieved in the sequence put if both the producer and consumer honor the grouping.

message handle

A reference to a message. The handle can be used to obtain access to the message properties of the message.

message header

The part of a message that contains control information such as a unique message ID, the sender and receiver of the message, the message priority, and the type of message.

message input descriptor (MID)

The Message Format Service (MFS) control block that describes the format of the data presented to the application program. See also [message output descriptor](#).

message listener

An object that acts as an asynchronous message consumer.

message output descriptor (MOD)

The Message Format Service (MFS) control block that describes the format of the output data produced by the application program. See also [message input descriptor](#).

message priority

In IBM MQ, an attribute of a message that can affect the order in which messages on a queue are retrieved, and whether a trigger event is generated.

message producer

In JMS, an object that is created by a session and that is used to send messages to a destination. See also [producer](#).

message property

Data associated with a message, in name-value pair format. Message properties can be used as message selectors to filter publications or to selectively get messages from queues. Message properties can be used to include business data or state information about processing without having to alter the message body.

Message Queue Interface (MQI)

The programming interface provided by IBM MQ queue managers. The programming interface allows application programs to access message queuing services. See also [Java Message Service](#), [message channel agent](#), [message channel interface](#).

message queuing

A programming technique in which each program within an application communicates with the other programs by putting messages on queues.

message-retry

An option available to an MCA that is unable to put a message. The MCA can wait for a predefined amount of time and then try to put the message again.

message segment

One of a number of segments of a message that is too large either for the application or for the queue manager to handle.

message selector

In application programming, a variable-length string that is used by an application to register its interest in only those messages whose properties satisfy the Structured Query Language (SQL) query that the selection string represents. The syntax of a message selector is based on a subset of the SQL92 conditional expression syntax.

message sequence numbering

A programming technique in which messages are given unique numbers during transmission over a communication link. This number enables the receiving process to check whether all messages are received, to place them in a queue in the original order, and to discard duplicate messages.

message token

A unique identifier of a message within an active queue manager.

method

In object-oriented design or programming, the software that implements the behavior specified by an operation.

MFS

See [Message Format Service](#).

MGAS

See [mostly global address space](#).

Microsoft Cluster Server (MSCS)

A technology that provides high availability by grouping computers running Windows into MSCS clusters. If one of the computers in the cluster hits any one of a range of problems, MSCS shuts down the disrupted application in an orderly manner, transfers its state data to another computer in the cluster, and re-initiates the application there. For further information, see the topic [Supporting the Microsoft Cluster Service \(MSCS\)](#).

Microsoft Transaction Server (MTS)

A facility that helps Windows users run business logic applications in a middle tier server. MTS divides work up into activities, which are short independent chunks of business logic.

MID

See [message input descriptor](#).

MOD

See [message output descriptor](#).

model queue object

A set of queue attributes that act as a template when a program creates a dynamic queue.

mostly global address space (MGAS)

A flexible virtual address space model, used in some UNIX systems, that preserves most of the address space for shared applications. This model can enhance performance for processes that share a lot of data. See also [mostly private address space](#).

mostly private address space (MPAS)

A flexible virtual address space model, used in some UNIX systems, that can allocate larger address space blocks to processes. This model can enhance performance for processes that require a lot of data space. See also [mostly global address space](#).

MPAS

See [mostly private address space](#).

MQAI

See [IBM MQ Administration Interface](#).

MQI

See [Message Queue Interface](#).

MQI channel

A connection between an IBM MQ client and a queue manager on a server system. An MQI channel transfers only MQI calls and responses in a bidirectional manner. See also [channel](#).

MQSC

See [IBM MQ script commands](#).

MQSeries

A previous name for IBM MQ and IBM WebSphere MQ.

IBM MQ Telemetry Transport (MQTT)

An open, lightweight publish/subscribe messaging protocol flowing over TCP/IP to connect large numbers of devices such as servos, actuators, smart phones, vehicles, homes, health, remote sensors, and control devices. MQTT is designed for constrained devices and low-bandwidth, high-latency or unreliable networks. The protocol minimises network bandwidth and device resource requirements, while ensuring some degree of reliability and assured delivery. It is used increasingly in the *machine-to-machine* (M2M) or *Internet of Things* world of connected devices, and for mobile applications where bandwidth and battery power are at a premium.

MQTT

See [IBM MQ Telemetry Transport](#).

MQTT client

An MQTT client application connects to MQTT capable servers such as IBM MQ Telemetry channels. You can write your own clients to use the published protocol, or download the free Paho clients. A typical client is responsible for collecting information from a telemetry device and publishing the information to the server. It can also subscribe to topics, receive messages, and use this information to control the telemetry device.

MQTT daemon for devices

The MQTT daemon for devices was an advanced MQTT V3 client. It was a very small footprint MQTT server designed for embedded systems. Its primary use was to store and forward messages from telemetry devices and other MQTT clients, including other MQTT daemons for devices.

MQTT server

A messaging server that supports the IBM MQ Telemetry Transport protocol. It enables mobile apps and devices, supported by MQTT clients, to exchange messages. It typically allows many MQTT clients to connect to it at the same time, and provides a hub for messages distribution to the MQTT clients. MQTT servers are available from IBM and others. IBM MQ Telemetry is an MQTT server from IBM.

MQXR service

See [telemetry service](#).

MSCS

See [Microsoft Cluster Server](#). For further information, see the topic [Supporting the Microsoft Cluster Service \(MSCS\)](#).

MTS

See [Microsoft Transaction Server](#).

multi-hop

To pass through one or more intermediate queue managers when there is no direct communication link between a source queue manager and the target queue manager.

multi-instance queue manager

A queue manager that is configured to share the use of queue manager data with other queue manager instances. One instance of a running multi-instance queue manager is active, other instances are on standby ready to take over from the active instance. See also [queue manager](#), [single instance queue manager](#).

N

namelist

An IBM MQ object that contains a list of object names, for example, queue names.

name service

In IBM MQ on UNIX and Linux systems and IBM MQ for Windows, the facility that determines which queue manager owns a specified queue.

name service interface (NSI)

The IBM MQ interface to which customer-written or vendor-written programs that resolve queue-name ownership must conform.

name transformation

In IBM MQ on UNIX and Linux systems and IBM MQ for Windows, an internal process that changes a queue manager name so that it is unique and valid for the system being used. Externally, the queue manager name remains unchanged.

nested bag

In the IBM MQ Administration Interface (MQAI), a system bag that is inserted into another data bag

nesting

In the IBM MQ Administration Interface (MQAI), a means of grouping information returned from IBM MQ.

NetBIOS (Network Basic Input/Output System)

A standard interface to networks and personal computers that is used on local area networks to provide message, print-server, and file-server functions. Application programs that use NetBIOS do not have to handle the details of LAN data link control (DLC) protocols.

Network Basic Input/Output System

See [NetBIOS](#).

New Technology File System (NTFS)

One of the native file systems in Windows operating environments.

node

In Microsoft Cluster Server (MSCS), each computer in the cluster.

nondurable subscription

A subscription that exists only while the connection from the subscribing application to the queue manager remains open. The subscription is removed when the subscribing application disconnects from the queue manager either deliberately or by loss of connection. See also [durable subscription](#).

nonpersistent message

A message that does not survive a restart of the queue manager. See also [persistent message](#).

NSI

See [name service interface](#).

NTFS

See [New Technology File System](#).

NUL

See [null character](#).

null character (NUL)

A control character with the value of X'00' that represents the absence of a displayed or printed character.

O

OAM

See [object authority manager](#).

object

1. In IBM MQ, a queue manager, queue, process definition, channel, namelist, authentication information object, administrative topic object, listener, service object, or (on z/OS only) a CF structure object or storage class.
2. In object-oriented design or programming, a concrete realization (instance) of a class that consists of data and the operations associated with that data. An object contains the instance data that is defined by the class, but the class owns the operations that are associated with the data.

object authority manager (OAM)

In IBM MQ on UNIX and Linux systems, IBM MQ for IBM i, and IBM MQ for Windows, the default authorization service for command and object management. The OAM can be replaced by, or run in combination with, a customer-supplied security service.

object descriptor

A data structure that identifies a particular IBM MQ object. Included in the descriptor are the name of the object and the object type.

object handle

The identifier or token by which a program accesses the IBM MQ object with which it is working.

object-oriented programming

A programming approach based on the concepts of data abstraction and inheritance. Unlike procedural programming techniques, object-oriented programming concentrates not on how something is accomplished but instead on what data objects compose the problem and how they are manipulated.

OCSP

See [Online Certificate Status Protocol](#).

offloading

In IBM MQ for z/OS, an automatic process whereby a queue manager's active log is transferred to its archive log.

Online Certificate Status Protocol

A method of checking if a certificate is revoked.

one way authentication

In this method of authentication, the queue manager presents the certificate to the client, but the authentication is not checked from the client to the queue manager.

open

To establish access to an object, such as a queue, topic, or hyperlink.

open systems interconnection (OSI)

The interconnection of open systems in accordance with standards of the International Organization for Standardization (ISO) for the exchange of information.

Open Transaction Manager Access (OTMA)

A component of IMS that implements a transaction-based, connectionless client/server protocol in an MVS sysplex environment. The domain of the protocol is restricted to the domain of the z/OS Cross-System Coupling Facility (XCF). OTMA connects clients to servers so that the client can support a large network (or a large number of sessions) while maintaining high performance.

OPM

See [original program model](#).

original program model (OPM)

The set of functions for compiling source code and creating high-level language programs before the Integrated Language Environment (ILE) model was introduced.

OSGi Alliance

A consortium of more than 20 companies, including IBM, that creates specifications to outline open standards for the management of voice, data and multimedia wireless and wired networks.

OSI

See [open systems interconnection](#).

OSI directory standard

The standard, known as X.500, that defines a comprehensive directory service, including an information model, a namespace, a functional model, and an authentication framework. X.500 also defines the Directory Access Protocol (DAP) used by clients to access the directory. The Lightweight Directory Access Protocol (LDAP) removes some of the burden of X.500 access from directory clients, making the directory available to a wider variety of machines and applications.

OTMA

See [Open Transaction Manager Access](#).

outbound channel

A channel that takes messages from a transmission queue and sends them to another queue manager.

output log-buffer

In IBM MQ for z/OS, a buffer that holds recovery log records before they are written to the archive log.

output parameter

A parameter of an MQI call in which the queue manager returns information when the call completes or fails.

overloading

In object-oriented programming, the capability of an operator or method to have different meanings depending on the context. For example, in C++, a user can redefine functions and most standard operators when the functions and operators are used with class types. The method name or operator remains the same, but the method parameters differ in type, number, or both. This difference is

collectively called the function's or the operator's signature and each signature requires a separate implementation.

P

page set

A VSAM data set used when IBM MQ for z/OS moves data (for example, queues and messages) from buffers in main storage to permanent backing storage (DASD).

parent class

A class from which another class inherits instance methods, attributes, and instance variables. See also [abstract class](#).

partial repository

A partial set of information about queue managers in a cluster. A partial repository is maintained by all cluster queue managers that do not host a full repository. See also [full repository](#).

partner queue manager

See [remote queue manager](#).

PassTicket

In RACF secured sign-on, a dynamically generated, random, one-time-use, password substitute that a workstation or other client can use to sign on to the host rather than sending a RACF password across the network.

PCF

See [programmable command format](#).

pending event

An unscheduled event that occurs as a result of a connect request from a CICS adapter.

percolation

In error recovery, the passing along a preestablished path of control from a recovery routine to a higher-level recovery routine.

performance event

A category of event indicating that a limit condition has occurred.

performance trace

An IBM MQ trace option where the trace data is to be used for performance analysis and tuning.

permanent dynamic queue

A dynamic queue that is deleted when it is closed only if deletion is explicitly requested. Permanent dynamic queues are recovered if the queue manager fails, so they can contain persistent messages. See also [temporary dynamic queue](#).

persistent message

A message that survives a restart of the queue manager. See also [nonpersistent message](#).

personal certificate

Certificate for which you own the corresponding private key. Associated with queue managers or applications.

PGM

See [Pragmatic General Multicast](#).

PID

See [process ID](#).

ping

The command that sends an Internet Control Message Protocol (ICMP) echo-request packet to a gateway, router, or host with the expectation of receiving a reply.

PKCS

Public Key Cryptography Standards. A set of standards for cryptography, of which:

11 is for hardware security modules
12 is for the file format used in the key repository

PKI

See [public key infrastructure](#).

plain text

See [cleartext](#).

point of recovery

In IBM MQ for z/OS, a set of backup copies of IBM MQ for z/OS page sets and the corresponding log data sets required to recover these page sets. These backup copies provide a potential restart point in the event of page set loss (for example, page set I/O error).

poison message

In a queue, an incorrectly formatted message that the receiving application cannot process. The message can be repeatedly delivered to the input queue and repeatedly backed out by the application.

polymorphism

An object-oriented programming characteristic that allows a method to perform differently, depending on the class that implements it. Polymorphism allows a subclass to override an inherited method without affecting the method of the parent class. Polymorphism also enables a client to access two or more implementations of an object from a single interface.

Pragmatic General Multicast (PGM)

A reliable multicast transport protocol that provides a reliable sequence of packets to multiple recipients simultaneously.

preemptive shutdown

In IBM MQ, a shutdown of a queue manager that does not wait for connected applications to disconnect, or for current MQI calls to complete. See also [immediate shutdown](#), [quiesced shutdown](#).

preferred computer

The primary computer used by an application running under Microsoft Cluster Server control. After a failover to another computer, MSCS monitors the preferred computer until it is repaired, and as soon as it is running correctly again, moves the application back to it.

principal

An entity that can communicate securely with another entity. A principal is identified by its associated security context, which defines its access rights.

privately defined object

See [locally defined object](#).

private methods and instance data

In object-oriented programming, methods and instance data that are only accessible to the implementation of the same class.

process definition object

An IBM MQ object that contains the definition of an IBM MQ application. For example, a queue manager uses the definition when it works with trigger messages.

process ID (PID)

The unique identifier that represents a process. A process ID is a positive integer and is not reused until the process lifetime ends.

producer

An application that creates and sends messages. See also [message producer](#), [publisher](#).

programmable command format (PCF)

A type of IBM MQ message used by the following applications: user administration applications, to put PCF commands onto the system command input queue of a specified queue manager, user administration applications, to get the results of a PCF command from a specified queue manager, and a queue manager, as a notification that an event has occurred. See also [IBM MQ script commands](#).

program temporary fix (PTF)

For System i, System p, and IBM Z products, a package containing individual or multiple fixes that is made available to all licensed customers. A PTF resolves defects and might provide enhancements.

property

A characteristic of an object that describes the object. A property can be changed or modified. Properties can describe an object name, type, value, or behavior, among other things.

protected methods and instance data

In object-oriented programming, methods and instance data that are only accessible to the implementations of the same or derived classes, or from friend classes.

proxy subscription

A proxy subscription is a subscription made by one queue manager for topics published on another queue manager. A proxy subscription flows between queue managers for each individual topic string that is subscribed to by a subscription. You do not create proxy subscriptions explicitly, the queue manager does so on your behalf.

PTF

See [program temporary fix](#).

public key cryptography

A cryptography system that uses two keys: a public key known to everyone and a private or secret key known only to the recipient of the message. The public and private keys are related in such a way that only the public key can be used to encrypt messages and only the corresponding private key can be used to decrypt them.

public key infrastructure (PKI)

A system of digital certificates, certification authorities, and other registration authorities that verify and authenticate the validity of each party involved in a network transaction.

public methods and instance data

In object oriented programming, methods and instance data that are accessible to all classes.

public-private key cryptography

See [public key cryptography](#).

publish

To make information about a specified topic available to a queue manager in a publish/subscribe system.

publisher

An application that makes information about a specified topic available to a broker in a publish/subscribe system. See also [producer](#).

publish/subscribe

A type of messaging interaction in which information, provided by publishing applications, is delivered by an infrastructure to all subscribing applications that registered to receive that type of information.

publish/subscribe cluster

A set of queue managers that are fully interconnected and that form part of a multi queue manager network for publish/subscribe applications.

put

In message queuing, to use the MQPUT or MQPUT1 calls to place messages on a queue. See also [browse](#), [get](#).

Q

queue

An object that holds messages for message-queuing applications. A queue is owned and maintained by a queue manager.

queue index

In IBM MQ for z/OS, a list of message identifiers or a list of correlation identifiers that can be used to increase the speed of MQGET operations on the queue.

queue-manager

A component of a message queuing system that provides queuing services to applications. See also [channel](#), [multi-instance queue manager](#).

queue-manager-event

An event that indicates that an error condition has occurred in relation to the resources used by a queue manager (for example, a queue is unavailable), or a significant change has occurred in the queue manager (for example, a queue manager has stopped or started).

queue-manager-group

In a client channel definition table (CCDT), the group of queue managers a client tries to connect to when a connection is established to a server.

queue-manager-level-security

In IBM MQ for z/OS, the authorization checks that are performed using RACF profiles specific to a queue manager.

queue-manager-set

A grouping of queue managers in IBM MQ Explorer that allows a user to perform actions on all of the queue managers in the group.

queue sharing group

In IBM MQ for z/OS, a group of queue managers in the same sysplex that can access a single set of object definitions stored in the shared repository, and a single set of shared queues stored in the coupling facility. See also [shared queue](#).

queue sharing group level security

In IBM MQ for z/OS, the authorization checks that are performed using RACF profiles that are shared by all queue managers in a queue sharing group.

quiesce

To end a process or shut down a system after allowing normal completion of active operations.

quiesced shutdown

1. In IBM MQ, a shutdown of a queue manager that allows all connected applications to disconnect. See also [immediate shutdown](#), [preemptive shutdown](#).
2. A type of shutdown of the CICS adapter where the adapter disconnects from IBM MQ, but only after all the currently active tasks have been completed. See also [forced shutdown](#).

quiescing

In IBM MQ, the state of a queue manager before it stops. In this state, programs are allowed to finish processing, but no new programs are allowed to start.

quorum disk

The disk accessed exclusively by Microsoft Cluster Server to store the cluster recovery log, and to determine whether a server is up or down. Only one server can own the quorum disk at a time. Servers in the cluster can negotiate for the ownership.

R

RACF

See [Resource Access Control Facility](#).

RAID

See [Redundant Array of Independent Disks](#).

RAS

Reliability, Availability, and Serviceability.

RBA

See [relative byte address](#).

RC

See [return code](#).

read ahead

An option that allows messages to be sent to a client before an application requests them.

reason code

A return code that describes the reason for the failure or partial success of a Message Queue Interface (MQI) call.

receive exit

A type of channel exit program that is called just after the message channel agent (MCA) has regained control following a communications receive and has received a unit of data from a communications connection. See also [send exit](#).

receiver channel

In message queuing, a channel that responds to a sender channel, takes messages from a communication link, and puts them on a local queue.

recovery log

In IBM MQ for z/OS, data sets containing information needed to recover messages, queues, and the IBM MQ subsystem. See also [archive log](#).

recovery termination manager (RTM)

A program that handles all normal and abnormal termination of tasks by passing control to a recovery routine associated with the terminating function.

Redundant Array of Independent Disks (RAID)

A collection of two or more physical disk drives that present to the host an image of one or more logical disk drives. In the event of a physical device failure, the data can be read or regenerated from the other disk drives in the array due to data redundancy.

reference message

A message that refers to a piece of data that is to be transmitted. The reference message is handled by message exit programs, which attach and detach the data from the message so allowing the data to be transmitted without having to be stored on any queues.

registry

A repository that contains access and configuration information for users, systems, and software.

Registry Editor

In Windows systems, the program that allows the user to edit the registry.

registry hive

In Windows systems, the structure of the data stored in the registry.

relative byte address (RBA)

The offset of a data record or control interval from the beginning of the storage space that is allocated to the data set or file to which it belongs.

reliable multicast messaging (RMM)

A high-throughput low-latency transport fabric designed for one-to-many data delivery or many-to-many data exchange, in a message-oriented middleware publish/subscribe fashion. RMM uses the IP multicast infrastructure to ensure scalable resource conservation and timely information distribution.

remote queue

A queue that belongs to a remote queue manager. Programs can put messages on remote queues, but they cannot get messages from remote queues. See also [local queue](#).

remote queue manager

A queue manager to which a program is not connected, even if it is running on the same system as the program. See also [local queue manager](#).

remote queue object

An IBM MQ object belonging to a local queue manager. This object defines the attributes of a queue that is owned by another queue manager. In addition, it is used for queue manager aliasing and reply-to-queue aliasing.

remote queuing

In message queuing, the provision of services to enable applications to put messages on queues belonging to other queue managers.

reply message

A type of message used for replies to request messages. See also [report message](#), [request message](#).

reply-to queue

The name of a queue to which the program that issued an MQPUT call wants a reply message or report message sent.

report message

A type of message that gives information about another message. A report message can indicate that a message has been delivered, has arrived at its destination, has expired, or could not be processed for some reason. See also [reply message](#), [request message](#).

repository

A collection of information about the queue managers that are members of a cluster. This information includes queue manager names, their locations, their channels, and what queues they host.

repository queue manager

A queue manager that hosts the full repository of information about a cluster.

requester channel

In message queuing, a channel that can be started locally to initiate operation of a server channel. See also [server channel](#).

request message

A type of message used to request a reply from another program. See also [reply message](#), [report message](#).

request/reply

A type of messaging application in which a request message is used to request a reply from another application. See also [datagram](#).

RESLEVEL

In IBM MQ for z/OS, an option that controls the number of user IDs checked for API-resource security.

resolution path

The set of queues that are opened when an application specifies an alias or a remote queue on input to an MQOPEN call.

resource

A facility of a computing system or operating system required by a job, task, or running program. Resources include main storage, input/output devices, the processing unit, data sets, files, libraries, folders, application servers, and control or processing programs.

Resource Access Control Facility (RACF)

An IBM licensed program that provides access control by identifying users to the system; verifying users of the system; authorizing access to protected resources; logging unauthorized attempts to enter the system; and logging accesses to protected resources.

resource adapter

An implementation of the Java Enterprise Edition Connector Architecture that allows JMS applications and message driven beans, running in an application server, to access the resources of an IBM MQ queue manager.

resource manager

An application, program, or transaction that manages and controls access to shared resources such as memory buffers and data sets. IBM MQ, CICS, and IMS are resource managers.

Resource Recovery Services (RRS)

A component of z/OS that uses a sync point manager to coordinate changes among participating resource managers.

responder

In distributed queuing, a program that replies to network connection requests from another system. See also [initiator](#).

resynch

In IBM MQ, an option to direct a channel to start and resolve any in-doubt status messages, but without restarting message transfer.

return code (RC)

A value returned by a program to indicate the result of its processing. Completion codes and reason codes are examples of return codes.

return-to-sender

An option available to an MCA that is unable to deliver a message. The MCA can send the message back to the originator.

Rivest-Shamir-Adleman algorithm (RSA)

A public-key encryption technology developed by RSA Data Security, Inc, and used in the IBM implementation of SSL.

RMM

See [reliable multicast messaging](#).

rollback

See [backout](#).

root certificate

The top certificate in the chain. If this is a self-signed certificate, it is used only for signing other certificates. See also [self-signed certificate](#).

RRS

See [Resource Recovery Services](#).

RSA

See [Rivest-Shamir-Adleman algorithm](#).

RTM

See [recovery termination manager](#).

rules table

A control file containing one or more rules that the dead-letter queue handler applies to messages on the dead letter queue (DLQ).

S

SAF

See [store and forward](#).

Scalable Parallel 2 (SP2)

IBM's parallel UNIX system: effectively parallel AIX systems on a high-speed network.

SDK

See [software development kit](#).

SDWA

See [system diagnostic work area](#).

SECMEC

See [security mechanism](#).

Secure Sockets Layer (SSL)

A security protocol that provides communication privacy. With SSL, client/server applications can communicate in a way that is designed to prevent eavesdropping, tampering, and message forgery. See also [certificate authority](#).

security enabling interface (SEI)

The IBM MQ interface to which customer-written or vendor-written programs that check authorization, supply a user identifier, or perform authentication must conform.

security exit

A channel exit program that is called immediately after the initial data negotiation has completed on channel startup. Security exits normally work in pairs and can be called on both message channels and MQI channels. The primary purpose of the security exit is to enable the message channel agent (MCA) at each end of a channel to authenticate its partner.

security identifier (SID)

On Windows systems, a supplement to the user ID that identifies the full user account details on the Windows security account manager database where the user is defined.

security mechanism (SECMEC)

A technical tool or technique that is used to implement a security service. A mechanism might operate by itself, or in conjunction with others, to provide a particular service. Examples of security mechanisms include access control lists, cryptography, and digital signatures.

security message

One of the messages, sent by security exits that are called at both ends of a channel, to communicate with each other. The format of a security message is not defined and is determined by the user.

security service

A service within a computer system that protect its resources. Access control is an example of a security service.

Security Support Provider Interface (SSI)

The means for networked applications to call one of several security support providers (SSPs) to establish authenticated connections and to exchange data securely over those connections. It is available for use on Windows systems.

segmentation

The division of a message that is too large for a queue manager, queue, or application, into a number of smaller physical messages, which are then reassembled by the receiving queue manager or application.

SEI

See [security enabling interface](#).

selector

An identifier for a data item. In the IBM MQ Administration Interface (MQAI), there are two types of selector: a user selector and a system selector.

self-signed certificate

A certificate that is constructed like a digital certificate, but is signed by its subject. Unlike a digital certificate, a self-signed certificate cannot be used in a trustworthy manner to authenticate a public key to other parties.

semaphore

In UNIX and Linux systems, a general method of communication between two processes that extends the features of signals.

sender channel

In message queuing, a channel that initiates transfers, removes messages from a transmission queue, and moves them over a communication link to a receiver or requester channel.

send exit

A type of channel exit program that is called just before a message channel agent (MCA) issues a communications send to send a unit of data over a communications connection. See also [receive exit](#).

Sequenced Packet Exchange protocol (SPX)

A session-oriented network protocol that provides connection-oriented services between two nodes on the network, and is used primarily by client/server applications. It relies on the Internet Packet Exchange (IPX) protocol, provides flow control and error recovery, and guarantees reliability of the physical network.

sequence number wrap value

In IBM MQ, a method of ensuring that both ends of a communication link reset their current message sequence numbers at the same time. Transmitting messages with a sequence number ensures that the receiving channel can reestablish the message sequence when storing the messages.

serialization

In object-oriented programming, the writing of data in sequential fashion to a communications medium from program memory.

server

1. A software program or a computer that provides services to other software programs or other computers. See also [client](#).
2. A queue manager that provides queue services to client applications running on a remote workstation.

server channel

In message queuing, a channel that responds to a requester channel, removes messages from a transmission queue, and moves them over a communication link to the requester channel. See also [requester channel](#).

server-connection channel type

The type of MQI channel definition associated with the server that runs a queue manager. See also [client-connection channel type](#).

service interval

A time interval, against which the elapsed time between a put or a get and a subsequent get is compared by the queue manager in deciding whether the conditions for a service interval event have been met. The service interval for a queue is specified by a queue attribute.

service interval event

An event related to the service interval.

service object

An object that can start additional processes when the queue manager starts and can stop the processes when the queue manager stops.

session

A logical or virtual connection between two stations, software programs, or devices on a network that allows the two elements to communicate and exchange data for the duration of the session.

session ID

See [session identifier](#).

session identifier (session ID)

In IBM MQ for z/OS, the identifier, unique to CICS, that defines the communication link to be used by a message channel agent when moving messages from a transmission queue to a link.

session-level authentication

In Systems Network Architecture (SNA), a session level security protocol that enables two logical units (LUs) to authenticate each other while they are activating a session. Session level authentication is also known as LU-LU verification.

session-level cryptography

In Systems Network Architecture (SNA), a method of encrypting and decrypting data that flows on a session between two logical units (LUs).

shared inbound channel

In IBM MQ for z/OS, a channel that was started by a listener using the group port. The channel definition of a shared channel can be stored either on page set zero (private) or in the shared repository (global).

shared outbound channel

In IBM MQ for z/OS, a channel that moves messages from a shared transmission queue. The channel definition of a shared channel can be stored either on page set zero (private) or in the shared repository (global).

shared queue

In IBM MQ for z/OS, a type of local queue. The messages on the queue are stored in the coupling facility and can be accessed by one or more queue managers in a queue sharing group. The definition of the queue is stored in the shared repository. See also [queue sharing group](#).

shared repository

In IBM MQ for z/OS, a shared Db2 database that is used to hold object definitions that have been defined globally.

sharing conversations

The facility for more than one conversation to share a channel instance, or the conversations that share a channel instance.

shell

A software interface between users and an operating system. Shells generally fall into one of two categories: a command line shell, which provides a command line interface to the operating system; and a graphical shell, which provides a graphical user interface (GUI).

SID

See [security identifier](#).

signal

A mechanism by which a process can be notified of, or affected by, an event occurring in the system. Examples of such events include hardware exceptions and specific actions by processes.

signaling

In IBM MQ for z/OS and IBM MQ, a feature that allows the operating system to notify a program when an expected message arrives on a queue.

signature

The collection of types associated with a method. The signature includes the type of the return value, if any, as well as the number, order, and type of each of the method's arguments.

signer certificate

The digital certificate that validates the issuer of a certificate. For a CA, the signer certificate is the root CA certificate. For a user who creates a self-signed certificate for testing purposes, the signer certificate is the user's personal certificate.

single instance queue manager

A queue manager that does not have multiple instances. See also [multi-instance queue manager](#).

single logging

A method of recording IBM MQ for z/OS activity where each change is recorded on one data set only. See also [dual logging](#).

single-phase backout

A method in which an action in progress must not be allowed to finish, and all changes that are part of that action must be undone.

single-phase commit

A method in which a program can commit updates to a commitment resource without coordinating those updates with updates the program has made to resources controlled by another resource manager.

SIT

See [system initialization table](#).

SMF

See [System Management Facilities](#).

SNA

See [Systems Network Architecture](#).

software development kit (SDK)

A set of tools, APIs, and documentation to assist with the development of software in a specific computer language or for a particular operating environment.

source queue manager

See [local queue manager](#).

SP2

See [Scalable Parallel 2](#).

SPX

See [Sequenced Packet Exchange protocol](#).

SSI

See [Security Support Provider Interface](#).

SSL

See [Secure Sockets Layer](#).

SSLPeer

The value in the issuer represents the distinguished name of the remote personal certificate.

SSL or TLS client

The initiating end of the connection. One outbound channel from a queue manager is also an SSL or TLS client.

standby queue manager instance

An instance of a running multi-instance queue manager ready to take over from the active instance. There are one or more standby instances of a multi-instance queue manager.

stanza

A group of lines in a file that together have a common function or define a part of the system. Stanzas are usually separated by blank lines or colons, and each stanza has a name.

star-connected communications network

A network in which all nodes are connected to a central node.

storage class

In IBM MQ for z/OS, the page set that is to hold the messages for a particular queue. The storage class is specified when the queue is defined.

store and forward (SAF)

The temporary storing of packets, messages, or frames in a data network before they are retransmitted toward their destination.

streaming

In object-oriented programming, the serialization of class information and object instance data.

subscribe

To request information about a topic.

subsystem

In z/OS, a service provider that performs one or many functions but does nothing until a request is made. For example, each IBM MQ for z/OS queue manager or instance of a Db2 for z/OS database management system is a z/OS subsystem.

supervisor call (SVC)

An instruction that interrupts the program being run and passes control to the supervisor so that it can perform the specific service indicated by the instruction.

SVC

See [supervisor call](#).

switchover

The change from the active multi-instance queue manager instance to a standby instance. A switchover results from an operator intentionally stopping the active multi-instance queue manager instance.

switch profile

In IBM MQ for z/OS, a RACF profile used when IBM MQ starts up or when a refresh security command is issued. Each switch profile that IBM MQ detects turns off checking for the specified resource.

symmetric key cryptography

A system of cryptography in which the sender and receiver of a message share a single, common, secret key that is used to encrypt and decrypt the message. See also [asymmetric key cryptography](#).

symptom string

Diagnostic information displayed in a structured format designed for searching the IBM software support database.

synchronous messaging

A method of communication between programs in which a program places a message on a message queue and then waits for a reply to its message before resuming its own processing. See also [asynchronous messaging](#).

sync point

A point during the processing of a transaction at which protected resources are consistent.

sysplex

A set of z/OS systems that communicate with each other through certain multisystem hardware components and software services.

system bag

A type of data bag that is created by the MQAI.

system control commands

Commands used to manipulate platform-specific entities such as buffer pools, storage classes, and page sets.

system diagnostic work area (SDWA)

In a z/OS environment, the data that is recorded in a SYS1.LOGREC entry that describes a program or hardware error.

system initialization table (SIT)

A table containing parameters used by CICS at startup.

system item

A type of data item that is created by the MQAI.

System Management Facilities (SMF)

A component of z/OS that collects and records a variety of system and job-related information.

system selector

In the IBM MQ Administration Interface (MQAI), a system item identifier that is included in the data bag when it is created.

Systems Network Architecture (SNA)

The description of the logical structure, formats, protocols, and operational sequences for transmitting information through and controlling the configuration and operation of networks.

T

tampering

A breach of communication security in which information in transit is changed or replaced and then sent on to the recipient. See also [eavesdropping](#), [impersonation](#).

target library high-level qualifier (thlqual)

A high-level qualifier for z/OS target data set names.

target queue manager

See [remote queue manager](#).

task control block (TCB)

A z/OS control block that is used to communicate information about tasks within an address space that is connected to a subsystem.

task switching

The overlapping of I/O operations and processing between several tasks.

TCB

See [task control block](#).

TCP

See [Transmission Control Protocol](#).

TCP/IP

See [Transmission Control Protocol/Internet Protocol](#).

technote

A short document about a single topic.

telemetry channel

A communication link between a queue manager on IBM MQ, and MQTT clients. Each channel might have one or more telemetry devices connected to it.

telemetry service

The IBM MQ Telemetry service is an IBM MQ service that handles the server side of the MQTT protocol (see *MQTT Server*). The IBM MQ Telemetry service hosts telemetry channels. It is sometimes referred to as the MQXR (MQ extended reach) service.

temporary dynamic queue

A dynamic queue that is deleted when it is closed. Temporary dynamic queues are not recovered if the queue manager fails, so they can contain nonpersistent messages only. See also [permanent dynamic queue](#).

teraspaces

A one terabyte temporary storage area that provides storage that is private to a process.

termination notification

A pending event that is activated when a CICS subsystem successfully connects to IBM MQ for z/OS.

thlqual

See [target library high-level qualifier](#).

thread

A stream of computer instructions that is in control of a process. In some operating systems, a thread is the smallest unit of operation in a process. Several threads can run concurrently, performing different jobs.

TID

See [transaction identifier](#).

time-independent messaging

See [asynchronous messaging](#).

TLS

See [Transport Layer Security](#).

TMI

See [trigger monitor interface](#).

topic host routing

An option for routing publications in a publish/subscribe cluster. With topic host routing, only selected cluster queue managers host the topic definitions. Publications from non-hosting queue managers are routed through the hosting queue managers to any queue manager in the cluster with a matching subscription.

TP

See [transaction program](#).

trace

A record of the processing of a computer program or transaction. The information collected from a trace can be used to assess problems and performance.

transaction ID

See [transaction identifier](#).

transaction identifier (TID, transaction ID, XID)

A unique name that is assigned to a transaction and is used to identify the actions associated with that transaction.

transaction manager

A software unit that coordinates the activities of resource managers by managing global transactions and coordinating the decision to commit them or roll them back.

transaction program (TP)

A program that processes transactions in an SNA network.

Transmission Control Protocol (TCP)

A communication protocol used in the Internet and in any network that follows the Internet Engineering Task Force (IETF) standards for internetwork protocol. TCP provides a reliable host-to-host protocol in packet-switched communication networks and in interconnected systems of such networks. See also [Internet Protocol](#).

Transmission Control Protocol/Internet Protocol (TCP/IP)

An industry-standard, nonproprietary set of communication protocols that provides reliable end-to-end connections between applications over interconnected networks of different types.

transmission program

See [message channel agent](#).

transmission queue

A local queue on which prepared messages destined for a remote queue manager are temporarily stored.

transmission segment

The data sent in each single flow between a pair of message channel agents or a pair of client-server connection MQI agents.

Transport Layer Security

A set of encryption rules that uses verified certificates and encryption keys to secure communications over the Internet. TLS is an update to the SSL protocol.

triggered queue

A local queue, usually an application queue, that has triggering enabled so that a message is written when a trigger event occurs. The trigger message is often written to an initiation queue.

trigger event

An event, such as a message arriving on a queue, that causes a queue manager to create a trigger message on an initiation queue.

triggering

In IBM MQ, a facility that allows a queue manager to start an application automatically when predetermined conditions on a queue are satisfied.

trigger message

A message that contains information about the program that a trigger monitor is to start.

trigger monitor

A continuously running application that serves one or more initiation queues. When a trigger message arrives on an initiation queue, the trigger monitor retrieves the message. It uses the information in the trigger message to start a process that serves the queue on which a trigger event occurred.

trigger monitor interface (TMI)

The IBM MQ interface to which customer-written or vendor-written trigger monitor programs must conform.

truststore

In security, a storage object, either a file or a hardware cryptographic card, where public keys are stored in the form of trusted certificates, for authentication purposes. In some applications, these trusted certificates are moved into the application keystore to be stored with the private keys.

two-phase commit

A two-step process by which recoverable resources and an external subsystem are committed. During the first step, the database manager subsystems are polled to ensure that they are ready to commit. If all subsystems respond positively, the database manager instructs them to commit.

two way authentication

In this method of authentication, the queue manager and the client, present the certificate to each other. Also known as mutual authentication.

type

A characteristic that specifies the internal format of data and determines how the data can be used.

U

UDP

See [User Datagram Protocol](#).

unauthorized access

Gaining access to resources within a computer system without permission.

undelivered message queue

See [dead-letter queue](#).

undo/redo record

A log record used in recovery. The redo part of the record describes a change to be made to an IBM MQ object. The undo part describes how to back out the change if the work is not committed.

unit of recovery

A recoverable sequence of operations within a single resource manager, such as an instance of Db2 for z/OS. See also [unit of work](#).

unit of work (UOW)

A recoverable sequence of operations performed by an application between two points of consistency. A unit of work begins when a transaction starts or at a user-requested sync point. It ends either at a user-requested sync point or at the end of a transaction.

UOW

See [unit of work](#).

user bag

In the MQAI, a type of data bag that is created by the user.

User Datagram Protocol (UDP)

An Internet protocol that provides unreliable, connectionless datagram service. It enables an application program on one machine or process to send a datagram to an application program on another machine or process.

user item

In the MQAI, a type of data item that is created by the user.

user selector

In the IBM MQ Administration Interface (MQAI), the identifier that is placed with a data item into a data bag to identify the data item. IBM MQ provides predefined user selectors for IBM MQ objects.

user token (UTOKEN)

The RACF security token that encapsulates or represents the security characteristics of a user. RACF assigns a UTOKEN to each user in the system.

utility

In IBM MQ, a supplied set of programs that provide the system operator or system administrator with facilities in addition to those provided by the IBM MQ commands.

UTOKEN

See [user token](#).

V

value

The content of a data item. The value can be an integer, a string, or the handle of another data bag.

virtual method

In object-oriented programming, a method that exhibits polymorphism.

W

WCF custom channel

Microsoft Windows Communication Foundation (WCF) custom channel for IBM MQ .

IBM WebSphere MQ

A previous name for IBM MQ.

wiretapping

The act of gaining access to information that is flowing along a wire or any other type of conductor used in communications. The objective of wiretapping is to gain unauthorized access to information without being detected.

X

X509

International Telecommunications Union standard for PKI. Specifies the format of the public key certificate and the public key cryptography.

XCF

See [cross-system coupling facility](#).

XID

See [transaction identifier](#).

X/Open XA

The X/Open Distributed Transaction Processing XA interface. A proposed standard for distributed transaction communication. The standard specifies a bidirectional interface between resource managers that provide access to shared resources within transactions, and between a transaction service that monitors and resolves transactions.

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