



Highlights

- Connects applications, systems and services on premises and cloud
 - Allows you to consume MQ your way
 - Helps secure and protect your business and your customers
 - Transfers files reliably
 - Generates new insights by integrating sensors, mobile, cloud services, web and IoT
 - Scales to meet your needs
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Connect your world with IBM MQ V9

*Reliable and scalable hybrid messaging solution
for a responsive, agile and more secure enterprise*

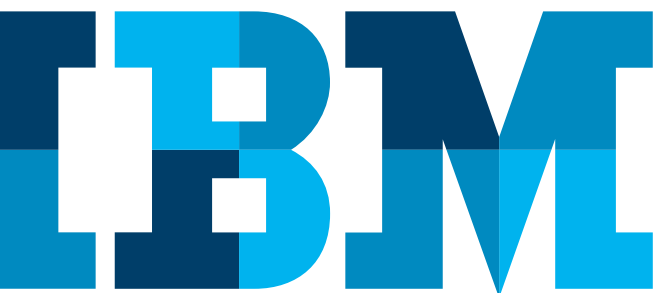
Introduction

With the adoption of cloud and the rise of digital, the way leaders run their businesses is rapidly changing. The explosion in connectivity within your business and between your partners, combined with the growth of IoT and mobile, is driving business leaders to explore new opportunities. At the same time, born-on-the-cloud initiatives are also challenging traditional ways of working. Cloud deployments and cloud usage models are affecting all businesses whether they are moving some, all or none of their workloads to public cloud environments.

Organizations are increasingly adopting a hybrid cloud model as a way of taking advantage of cloud benefits, whilst maximizing on-premises investments. Whilst the cloud promises agility, scalability, and flexibility, on-premises deployment offers security, reliability, compliance, and access to specific systems that cloud applications might not yet reach.

Messaging connects applications, systems, and services in your back-end on-premises systems and in the cloud by transporting valuable data within your enterprise. With asynchronous messaging, you have greater assurance that data is not lost and that systems continue to function when there are connectivity issues, as there might be between clouds and on-premises environments.

IBM® MQ is an enterprise messaging solution that securely and reliably connects applications, systems, services and files across multiple platforms. MQ transports data between these points via a queuing system that ensures delivery in case of network or application failure.



Since its initial release in 1992, MQ has grown to become a trusted solution worldwide across a diverse range of business sectors, including banking, healthcare, finance, government, and retail. And as business needs have changed, MQ has evolved and developed to meet these needs—MQ truly is adaptable. Built initially to support on-premises deployments, MQ has expanded to enable businesses to take advantage of cloud advancements, allowing them the choice of deploying on premises, on cloud, or in hybrid environments.

For those with more comprehensive requirements, an enhanced version on IBM MQ, IBM MQ Advanced, is also available. MQ Advanced builds upon MQ and offers extra encryption, file transfer capability, and a telemetry option which enables access to real time data from sensors and mobile.

Why IBM MQ stands out Connect almost anything on premises and cloud

IBM MQ is a truly versatile tool that connects applications, systems, and services spanning a variety of platforms, languages and environments. Applications that are written today in the latest language can be connected with those written 15 years ago. MQ's flexibility enables you to deploy applications and workloads wherever you choose—on the mainframe, on premises, or in the cloud. This gives you the choice and the ability to adapt and react faster to ever-changing markets and new opportunities.

Consume MQ your way

MQ is available in several forms, reflecting different business needs and customer preferences. Other than as the core option hitherto mentioned, IBM MQ is available in the following forms:

- *IBM MQ Appliance*: MQ software installed in a top specification physical appliance
- *IBM MQ Advanced*: MQ software with additional capabilities such as extra encryption, file transfer capability, and a telemetry option which enables access to real time data from sensors and mobile
- *IBM MQ on IBM z/OS®*: MQ on the mainframe, available separately or with the advanced security and managed file transfer options

There are also a variety of ways in which IBM MQ can be deployed and run in the cloud, be it on Openstack, as part of a repeatable pattern on PureApp, in a Docker container, and on Amazon Web Services or Microsoft Azure.

For businesses that are building cloud-native applications in IBM Bluemix®, MQ also works with Message Hub, IBM's cloud-based messaging service which is available as a messaging service in Bluemix.

Protect your business and your customers

Security breaches cost businesses millions in revenue and fines, and damage both company reputation and customer trust. With sensitive and valuable data running through your business, you cannot afford vulnerabilities. You also have to ensure that your systems are robust enough to meet and manage many industry standards and regulations.

IBM MQ protects the data that flows through your business through authorization (local OS user id, TLS peer and CHLAUTH for channels) and authentication (OAM and CHLAUTH on distributed, RACF on z/OS).* This security can be further improved by using the Advanced version of MQ which includes encryption of data at rest, meaning that data is protected at every stage of the journey.

This Advanced Message Security(AMS) feature has been further enhanced in IBM MQ V9 to include a confidentiality option, which lowers overheads by offering strong encryption without a substantial processing overhead, and a flexible security-to-speed ratio, set by you. This latest update provides the option to reuse symmetric keys, thereby lowering CPU costs and ensuring that you can determine the right balance between performance, throughput and level of encryption—without leaving your data unprotected and at risk. It is also important to understand that in all AMS modes, there is no need for any application changes as this additional protection is completely done within IBM MQ settings.

Transfer files reliably

Whilst some businesses rely on FTP (File Transfer Protocol) or on homegrown solutions to transport some or all file data around their business, IBM MQ offers a reliable and secure way of doing this with its IBM MQ Advanced offering. MQ sends and receives the contents of files as messages over the MQ network. The file contents can therefore be delivered to an application as a message, or a group of messages by splitting the file up. Alternatively, you can take a message, or a group of messages and use them to create and write a file. Both options enable the business to transform their processing by making use of the data in the file in a timely and dynamic way, without the additional burden of being subjected to the unmanaged failures and security risks inherent in FTP transfers.

Generate new insights by integrating sensors, mobile, cloud services, web and IoT

The amount of data to which businesses have access continues to grow exponentially. Cloud, IoT and big data have prompted them to rethink their digital strategy. A lot of data is generated outside the walls of the enterprise and provide new opportunities for engaging with customers and evolving to meet their needs. Integrating new and existing forms of data and analyzing them in a timely fashion is crucial for businesses that want to remain competitive.

MQ Advanced provides real-time access to a range of mobile devices, remote sensors, actuators and other telemetry devices, by using the lightweight MQ Telemetry Transport (MQTT) protocol to transport robust messages to even the smallest devices for near-instantaneous data exchange.

Scale to meet your needs

IBM MQ has the capacity for processing billions of messages per day, and scales up very effectively. This means that when your workload increases, you can rely on MQ to support you. The recent releases made scaling workloads even easier by updating the way in which connections between MQ clients and the queue managers are handled in MQ. Instead of manually updating every connection, your admin can update in one place, enabling your systems to have that flexibility to expand quickly without making any MQ client or application changes.

This can help to allow the parts of your MQ workload that you run in the cloud to be set up quickly to respond to demand, and de-provisioned just as quickly if they become unnecessary. This dynamic scaling saves costs and enables quick reactions to changing markets.

What's new in IBM MQ Version 9? New delivery model:

IBM MQ V9 changes the delivery approach, compared to previous versions of IBM MQ, to give you more choice about when to accept new fixes and functions, allowing you to move forward at your pace. This is all part of the new, more agile approach which enables you to be more flexible in your MQ adoption. MQ's new delivery and support model makes it easier for you to use the latest capabilities without having to wait for the next major release.

You can choose between:

- *Continuous delivery*: Fixes and new functional enhancements as a set of modification-level updates. This enables you to obtain rapid access to functional enhancements
- *Long term support*: A set of fix packs to be applied to the delivered MQ version 9 function that deliver fixes, but no new function

A set of function mostly aligning with key themes will be delivered throughout the lifetime of version 9 that will be incrementally enhanced in each mod level in the continuous delivery stream.

The key themes for IBM MQ V9 are:

- *Rapid MQ provisioning*: Enabling self-service provisioning of messaging capability and lowering the cost of ownership with simplified definition, deployment and management of MQ in any deployment environment—on premises, off premises or hybrid
- *Dynamic resourcing to match workload*: Helping your business to scale elastically with enterprise messaging that responds to the more dynamic needs of the connected business, whether the business is deployed on premises or spans hybrid environments

- *Building in resiliency through flexibility:* Providing greater freedom to change your infrastructure without impacting applications or business by allowing messages to connect to IBM MQ rather than a specific queue manager
- *Enhancements to IBM MQ Managed File Transfer:* Enabling businesses to make faster, more secure and reliable use of data stored in files by enhancing existing capabilities for Managed File Transfer to support increased use cases and deployment, and add further business value
- *Protecting your data without pain:* Reducing performance overheads by providing new encryption options for messages in Advanced Message Security

What has changed since IBM MQ V8? Security enhancements:

MQ provides security through authentication and authorization. Security can be further improved in MQ by using the Advanced Message Security (AMS) feature in MQ Advanced, which adds encryption. This ensures that data is protected not only at rest, but also whilst on the move. With version 9, AMS has been improved to add a new confidentiality feature. This enables you to choose the level of encryption with symmetric keys to reduce overheads and latency.

The flexibility of AMS is also improved in version 9. In previous versions, there was limited choice when selecting the Java Runtime Environment (JRE). Now, developers can use non-IBM JREs, and experience a wider choice.

Web addressable access to the Client Channel Definition Table (CCDT):

To simplify administration of your architecture, MQ now makes the CCDT a web addressable file, accessible through a URI or FTP access. Instead of having to create a new file for every change, and distributing to every client, administrators can update a single CCDT file, which lowers administration costs and speeds your ability to make changes.

Simplification of transfer from FTP network:

With the reliability of FTP in doubt, businesses are looking for alternative ways to transfer file data. For those wishing to use the Managed File Transfer feature of MQ Advanced instead of FTP, we have simplified the process of migration by offering a staged approach. This enables you to reduce the cost and complexity of your existing infrastructure by using a single reliable way of data transfer.

Other enhancements in IBM MQ V9 include:

- Lightweight Directory Access Protocol (LDAP) authorizations on Microsoft Windows operating system
- Updated Classic IBM WebSphere® Application Server Resource Adapter
- UTF-16 code page support

First update to IBM MQ V9 Continuous Delivery Release: IBM MQ V9.0.1

In addition to the new functions mentioned above delivered in the initial release of IBM MQ V9, the first update in the continuous delivery stream has been made available—IBM MQ V9.0.1. There are several key new capabilities and functions that work towards the key themes in this update.

New tooling as well as management and monitoring options:

In MQ V9.0.1 there is a new browser-based tooling option called the MQ Console. This was initially available only for the IBM MQ Appliance, but it is now available to support the MQ software deployment. While not a complete replacement for existing tooling options such as the MQ Explorer, and other tools such as MQSC; it adds a new dimension and additional choice with no installation needed. Now administrators have the ability to configure the browser window to display just what the user wants.

In addition to the MQ Console, there is the initial availability of a REST API for MQ. In the MQ V9.0.1 release there are just two verbs available to allow custom tooling to be created that make use of these API calls, but it is expected that in subsequent MQ V9 continuous delivery releases, more REST API calls will be added to allow a full range of MQ configuration and monitoring commands to be called through this new API.

Updates to MQ Managed File Transfer:

In addition, as part of IBM MQ V9.0.1, the MQ MFT Agents are now available in a separate package from the larger IBM MQ install package, and are available as a zip file rather than enforcing a separate install procedure. This allows, subject to suitable license entitlement, the MQ MFT Agent to be embedded in applications or solutions and deployed as needed, without additional installation of the MFT Agent being required.

IBM MQ V9.0.1 on the MQ Appliance:

As part of the continuous delivery stream, the IBM MQ Appliance has also been updated to MQ V9.0.1. In addition to the functions available for MQ itself such as the new MQ AMS option, there are additional features shipped on the MQ Appliance in this update.

Floating IP support:

This feature allows the HA pair of MQ Appliances to move the active IP address between MQ Appliances in case of a failover.

Additional management and monitoring functions:

In this release, there are changes that add extra capabilities to enhance features that aid deployment in production environments. These include support for SNMP monitoring, and more granular security such as support for LDAP authentication of Appliance administration accounts.

Conclusion

In a hyper-connected world, you can help enable a more complete integration between the simplest pair of applications or between highly complex business environments with IBM MQ. Enable your applications, your business, and your partners to exchange data in a faster, simpler, more reliable and security-rich manner, and provide connectivity from mainframe to mobile to sensors—across multiple platforms and deployment options—for a more agile and responsive enterprise.

Upgrade to IBM MQ V9 to benefit from additional and improved functions, enhanced usability and further enhancements to the security-rich messaging infrastructure. In addition, benefit from a more agile deployment approach. Deploy with improved usability through new, simple but powerful tooling, and help enable optimal exploitation of the z/ OS platform with higher connectivity and the use of the workload from other platforms—all with IBM MQ V9.

With this new version, and the option to choose continuous delivery or long term support streams, you can help enable significantly reduced risk of security breaches as it offers end-to-end encryption of message contents without a high-performance impact on workload processing. Moreover, with the combination of simple powerful tooling, easier install and deployment updates, and additional functional enhancements, you can target a more agile business as well as a reduced total cost of ownership when you deploy IBM MQ V9 as your messaging platform.

Why IBM?

IBM is a leading provider of messaging-oriented middleware software. With messaging middleware, IBM specialists have helped business leaders in organizations across the world, in various sectors and of different sizes achieve value. IBM specialists have provided messaging solutions for more than 20 years. Globally, IBM messaging solutions have been deployed at more than 12000 organizations.

For more information

To learn more about the IBM MQ, please contact your IBM representative or IBM Business Partner, or visit the following website:

ibm.com/software/products/en/ibm-mq



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Software Group
Route 100
Somers, NY 10589

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* TLS = transport layer security; CHLAUTH = channel authentication; OAM = operations, administration and management; RACF = Resource Access Control Facility



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