



IBM MQ on Cloud service

A managed service for IBM MQ in the Cloud

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IBM

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Agenda

- **Moving to the Cloud**
- **Why MQ**
- **MQ in the Cloud service – mini demo**
- **Technical details**
- **Summary**

Moving to the Cloud

Top business drivers for cloud

TOP BUSINESS DRIVERS

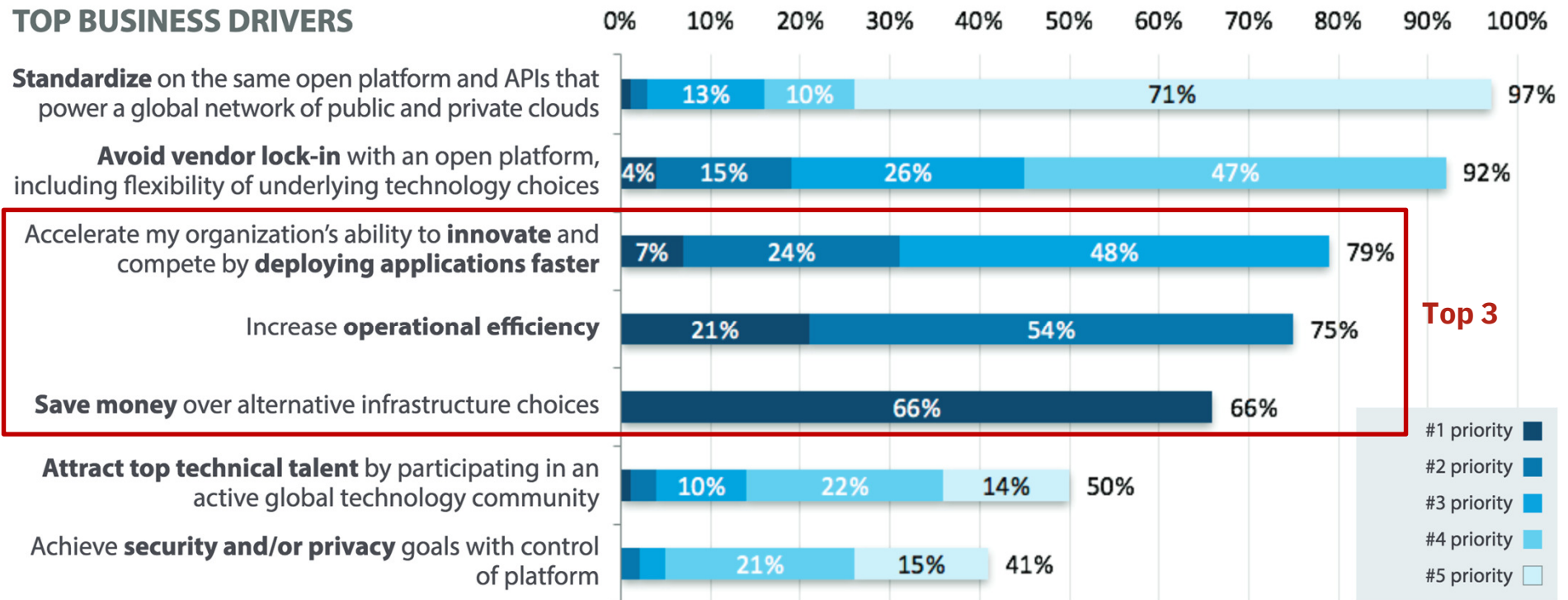


Figure 2.1 n=1183

In other words...



Be more effective!

- ...increase rate of innovation
- ...achieve more
- ...save money

Characteristics of a cloud environment

Self-service

Empowers users to provision resources without requiring human intervention, most likely using a web-based portal or an API.

Elastic scaling

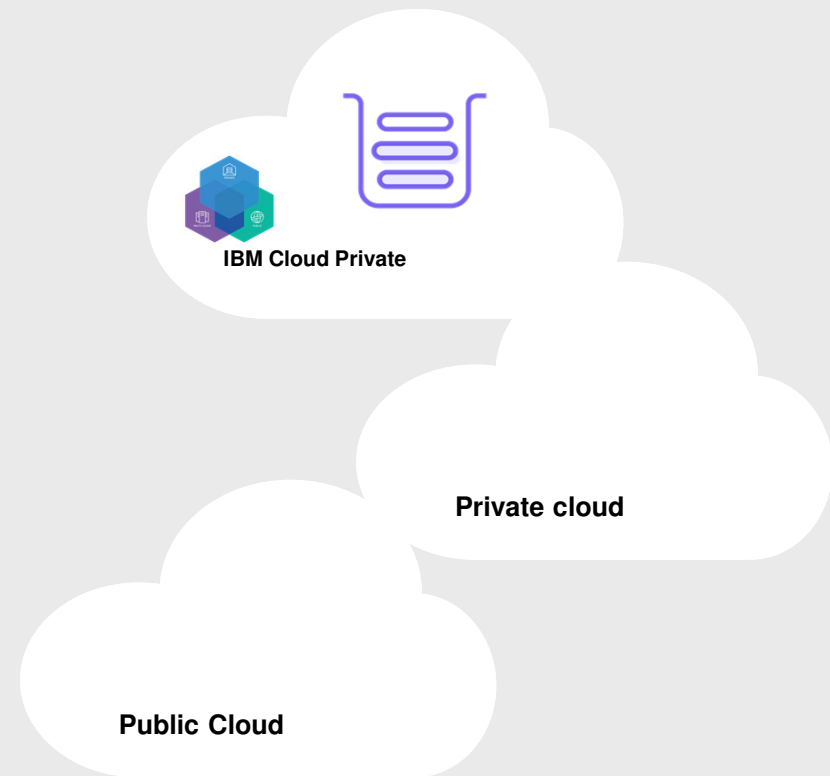
Enables scaling up and down on demand, driving the need for high levels of automation.

Shared resources

Offers economies of scale through the use of shared infrastructure and software, securely separating the resources at a logical level.

Metered usage

Allows pay-as-you-go billing through monitoring, measurement and reporting of usage.



Why MQ?

MQ's key value capabilities and why they matter...

The world depends on reliable, secure messaging

IBM MQ is the most reliable and trusted messaging solution

Your bank transfers complete without losing your money

Your credit card information is kept safe

You move your customer data between systems without exposing it to hackers

Your developers focus on the business needs, not transaction recovery or security

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Simple

Your applications are focused on the business, not fixing connectivity problems or tracking their progress

Scalable

Scales to meet the needs of your business, handling billions of messages per day

Exactly once delivery

MQ is designed from the ground up to ensure that when messages of worth are being processed and exactly once, transactional, messages are required, that really means exactly once

MQ's key value capabilities and why they matter...

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Connectivity

Simple queues and topics provide simple application messaging but MQ provides true routing capabilities to join applications and systems together, locally and globally

Reliable

Only MQ has 25 years of proven reliability and robustness when used by the most demanding customers in the most demanding systems, without you even knowing it's there

Secure

MQ is secure by design, from fine grain authentication and authorization of messaging resources, to encryption of data from one application to another, without the application even knowing or the administrators gaining access

Run IBM MQ in any
location or cloud
exactly as you need it

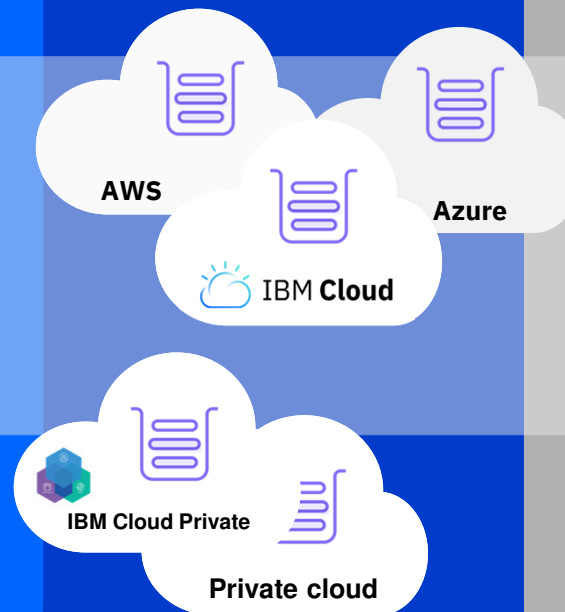


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On-premise, software
and the MQ Appliance



Run it yourself in any
cloud, public or private



Let IBM host it for you
with its new managed
MQ service in IBM
Cloud



Run IBM MQ in any
location or cloud
exactly as you
need it



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Let IBM host it for you with its new managed
MQ service in IBM Cloud



Provision queue managers directly into IBM Cloud

IBM owns the infrastructure and the responsibility to keep the systems running

The customer owns the application-level configuration and the monitoring



Configured & monitored by the **customer**

Queues, topics, channels, clustering, applications

Managed & operated by **IBM**

MQ installation, basic configuration, security, maintenance

Hardware, virtualization, servers, network, storage

Division of responsibility based on form factor

On-premises software MQ	MQ in IBM Cloud Private	MQ Appliance	BYOL Cloud IaaS install	MQ on Cloud service
Application	Application	Application	Application	Application
Clustering	Clustering	Clustering	Clustering	Clustering
Q / Msg monitoring	Q / Msg monitoring	Q / Msg monitoring	Q / Msg monitoring	Q / Msg monitoring
Queues, Topics	Queues, Topics	Queues, Topics	Queues, Topics	Queues, Topics
QM failover	QM failover	QM failover	QM failover	QM failover
QM availability/restart	QM availability/restart	QM availability/restart	QM availability/restart	QM availability/restart
MQ patching	MQ patching	MQ patching	MQ patching	MQ patching
OS patching	OS patching	OS patching	OS patching	OS patching
System monitoring	System monitoring	System monitoring	System monitoring	System monitoring
Virtual machine	Virtual machine	Virtual machine	Virtual machine	Virtual machine
Hypervisor	Hypervisor	Hypervisor	Hypervisor	Hypervisor
Storage	Storage	Storage	Storage	Storage
Servers	Servers	Servers	Servers	Servers
Networking	Networking	Networking	Networking	Networking
Data centre	Data centre	Data centre	Data centre	Data centre

Customer

IBM / Vendor

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Adopting managed cloud services

The benefits we get from using cloud services sometimes require different expectations for consuming those services compared to running in a bespoke on-premises deployment

Benefits of cloud services

**Self service
provisioning in
minutes**

**“Infinite” compute
capacity at the touch
of a button**

**Automatically
keep up to date
with security
patches**

**Installation /
maintenance
overhead handled
by the provider**

**Lower price due to
economies of scale**

Common implications of cloud services

**Multi-tenancy /
shared
infrastructure**

**Limited points of
variability**

**Shared responsibility
for the overall
solution**

“One” size fits all

**Standardized
configurations**

**Design for
failure**

**Updates applied
regularly**

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Infrastructure

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Infrastructure

Compute

Build your virtual environments.



Bare Metal Server

Bare metal servers provide the raw horsepower you demand for your processor-intensive applications.

[IBM](#)


Virtual Server

Our virtual servers deliver a higher degree of transparency, predictability, and automatic scaling.

[IBM](#)

Storage

Order storage.



Block Storage

Persistent iSCSI based storage with high-powered performance and capacity up to 100TB.

[IBM](#)


File Storage

Fast and flexible NFS-based file storage with capacity options from 20GB to 12TB.

[IBM](#)


Object Storage

Provides flexible, cost-effective, and scalable cloud storage for unstructured data.

[Lite](#)
[IBM](#)

Network

Order network.

Find IBM MQ in the “Integrate” section of the IBM Cloud catalog

☰ IBM Cloud

Catalog Docs Support Manage

Getting startedManage

Integrate /

MQ-demo

Resource Group: default Location: US South

Queue managersUser permissionsApplication permissions

Create

No queue managers... yet

Why not use our interactive guide to quickly get up and running with your first queue manager.

Guided tourStep 1 of 3

Introductory guide

Welcome! To help you get up and running this guide takes you through the following steps:

1. Create a queue manager

2. Connect a demo application

3. Launch the MQ Console

Get started

Get started in minutes with the interactive guided tour

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Catalog Docs Support Manage

Getting started

Manage

Integrate /

MQ-demo

Resource Group: default Location: US South

← Create queue manager

Size

T

Trial

Perfect for trying out the service. Valid for 30 days.
Approximately 200 messages per second and 20 concurrent connections.

Free

S

Small

Appropriate for light workloads such as supporting an individual department or application.
Approximately 200 messages per second and 50 concurrent connections.

\$1.30 per hour
1 x VPC-hour price

M

Medium

Appropriate for shared use by a number of light to moderate workload applications.
Approximately 1000 messages per second and 200 concurrent connections.

\$5.20 per hour
4 x VPC-hour price

L

Large

Appropriate for heavy throughput scenarios where transaction performance is critical.
Approximately 2500 messages per second and 1000 concurrent connections.

\$15.60 per hour
12 x VPC-hour price

☰ Create a queue manager

Step 1 of 3

Select the size

Selecting the right size queue manager will help you get the appropriate performance for your scenario.

For this guide, select the **Trial** queue manager as it is free and will expire after 30 days.

Select the Trial queue manager size

Paid options in sizes to suit typical workloads

Free Trial so you can get started at no cost

Quickly provision messaging capability in the Cloud

☰ IBM Cloud

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Getting started

Manage

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MQ-demo

Resource Group: default Location: US South

⋮

Queue managers

User permissions

Application permissions

Refresh ↻

Create

Name ▲	Display name	Version	Location	Status	Actions
QM1	My first queue manager	9.0.5 r1	IBM Cloud US South	● Deploying	⋮

<

Up and running in minutes!

IBM Cloud

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MQ-demo

Resource Group: defaultLocation: US South


Queue managersUser permissionsApplication permissions


Refresh

Create

Name	Display name	Version	Location	Status	Actions
QM1	My first queue manager	9.0.5 r1	IBM Cloud US South	Running	

Up and running in minutes!

 IBM Cloud


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RefreshCreate

Name ▲	Display name	Version	Location	Status	Actions
QM1	My first queue manager	9.0.5 r1	IBM Cloud US South	 Running	...

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Integrated User and Application management, backed by IBM Cloud


 IBM Cloud

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Getting started

Manage

Integrate /

 MQ-demo

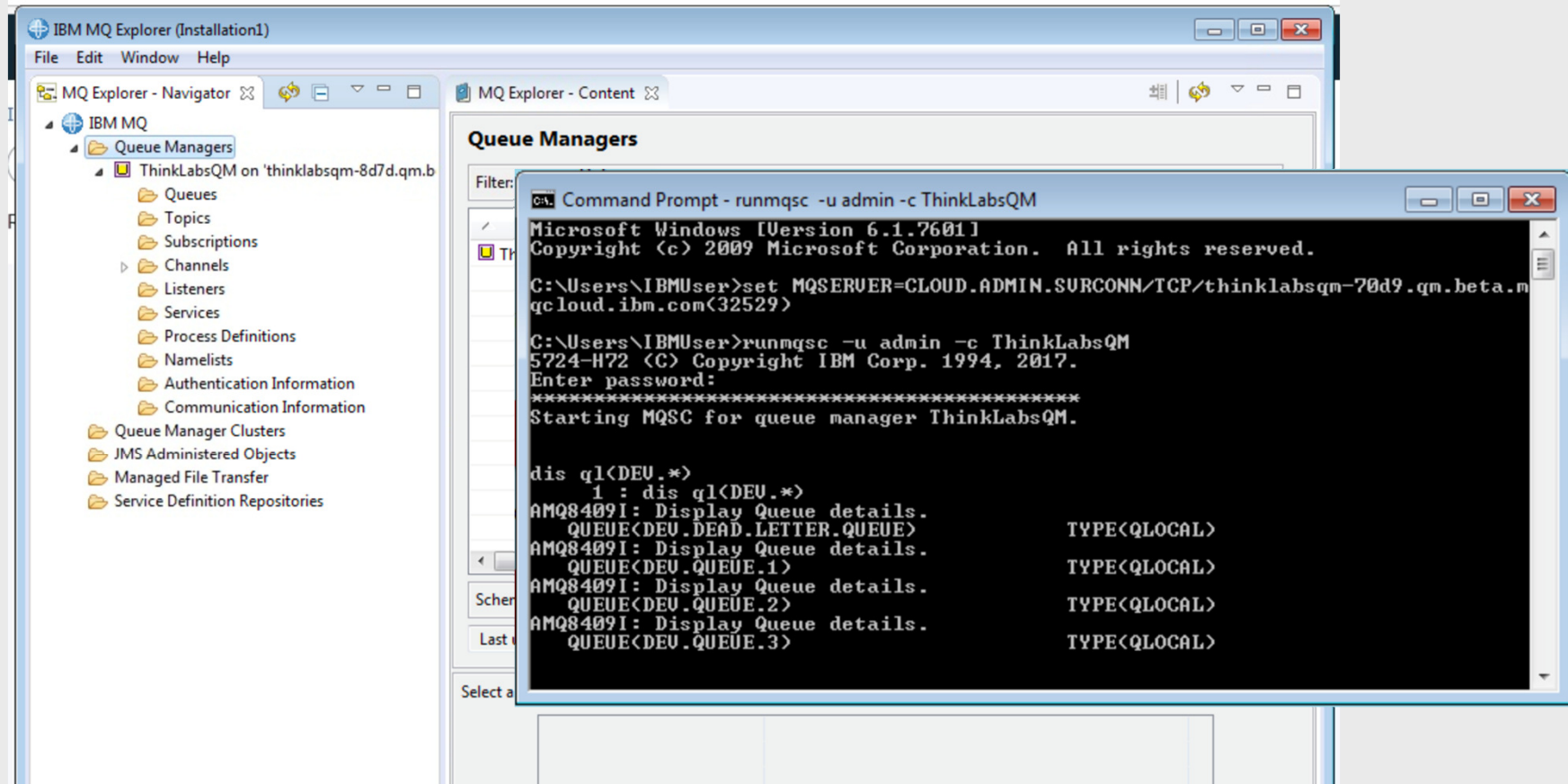
Resource Group: defaultLocation: US South

Queue managersUser permissionsApplication permissions

Add application

Name ^	MQ username	Description	Actions
ibm demo app	ibmdemoapp		...

Manage MQ using the integrated MQ Console in your browser



... or using familiar tools like MQ Explorer and runmqsc

The MQ on IBM Cloud service

IBM MQ that you know and trust
... but in a managed Cloud service!

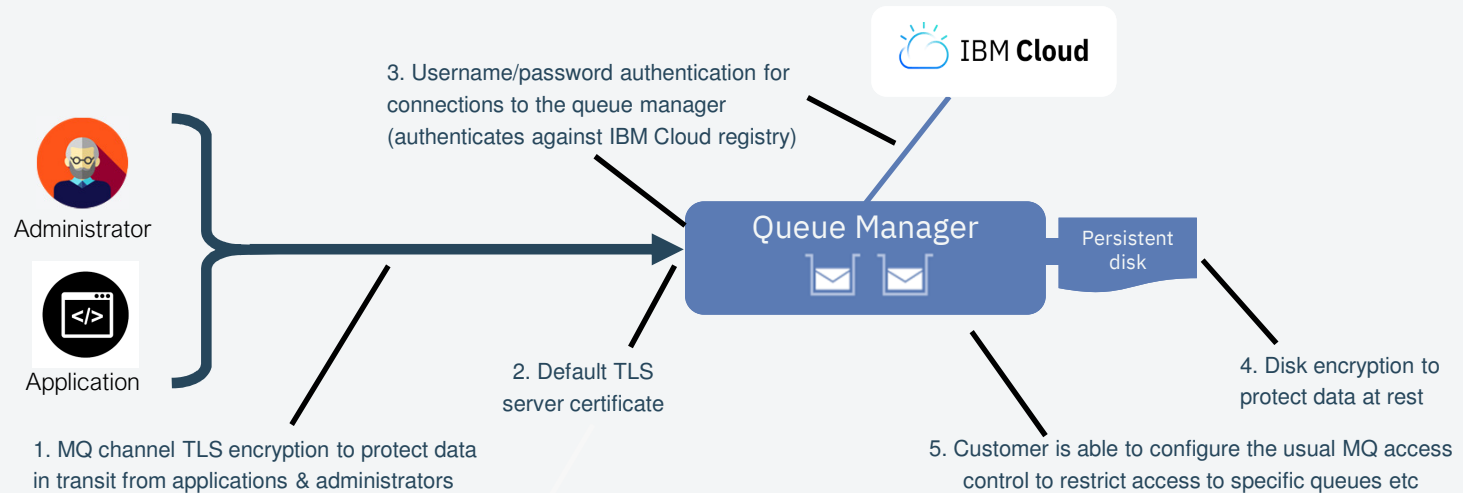
Try the service for free at:
console.bluemix.net/catalog/services/mq



Security

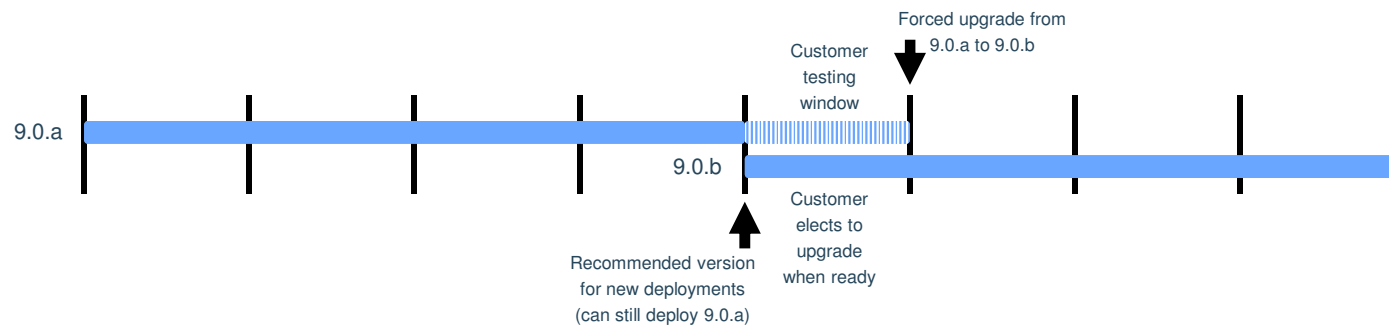
A deployed queue manager is automatically configured with an appropriate level of out-of-the-box security that protects customer application data while enabling users to get started quickly

Out of the box configuration



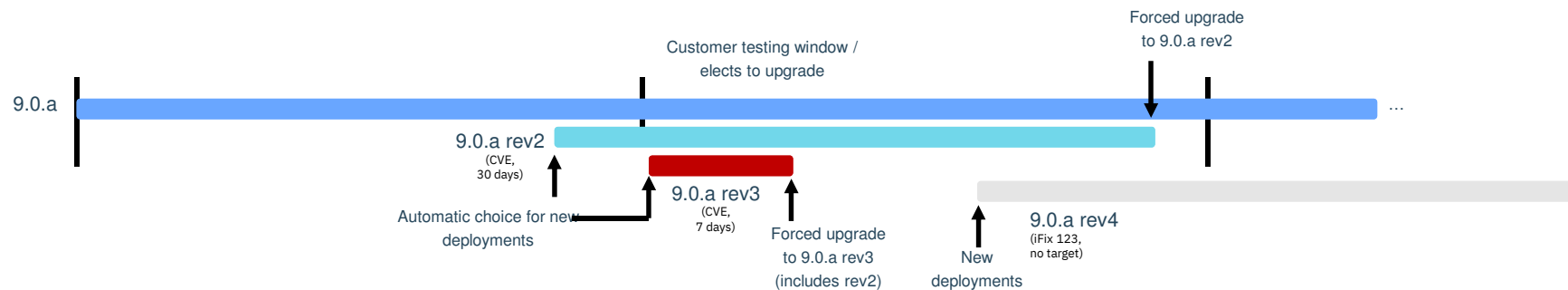
Versions and Upgrade

- The MQ on IBM Cloud service provides the MQ Continuous Delivery (CD) release for customers to deploy
 - This is the same approach taken by the MQ Appliance, and enables new features and capabilities to be made available faster than the LTS release cycle
- The service provides an automated mechanism to upgrade from one build/release to the next, for example;
 - Customer initiates the upgrade to take place immediately
- Each update comes with a required update window, e.g. 30 days for the next CD release
 - Updates will be automatically applied by the system when the update window expires if the customer has not already elected to trigger the upgrade



Security fixes

- Within a CD release (such as 9.0.4.0) IBM will periodically make available new revisions of the server image in order to apply **high priority** security updates in the operating system or MQ components
 - High severity security updates are generally much less common than low severity, but do occur
 - Each revision comes with an update window based on the severity of the fix, e.g. 7, 30, 90 days
 - Revisions are cumulative, and the latest revision is automatically selected for any new queue manager deployments
 - The user may initiate the upgrade to any pending revision, including applying multiple at once
 - In order to minimize the number of updates, a forced upgrade will apply the latest available revision with an expiry less than 14 days in the future (to avoid doing one upgrade immediate after another)
 - Low priority security updates (e.g. 180+ days window) are rolled in to the next CD release
- From time to time MQ iFixes for urgent customer problems may also be made available within a CD release. These are optional upgrades, but will be picked up as part of cumulative security fixes

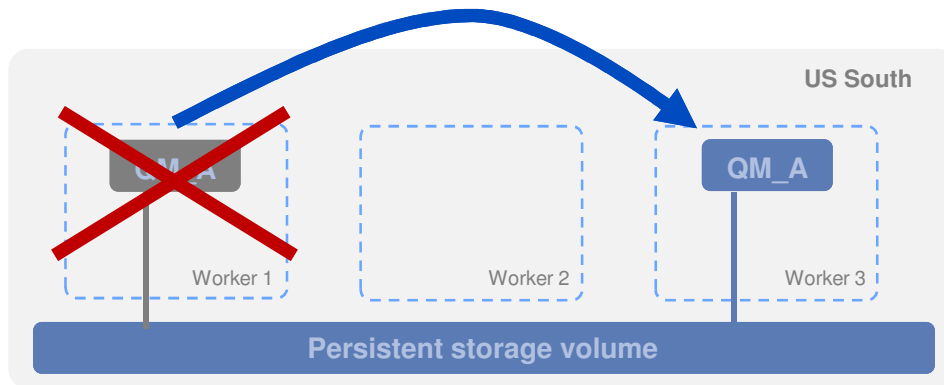


Availability and failover

- IBM Cloud public provides a standard SLA that all services are required to comply with ([section 3.2.1](#))

IBM provides a 99.95% availability SLA for Platform Services configured for high availability and distributed across multiple IBM Cloud public regions

- For example two queue managers with identical configuration deployed across multiple regions, so traffic can be served independently of any single failure
- Use MQ client capabilities such as CCDT, ConnectionNameList, Auto Re-connect to provide automatic failover



- Within a data centre, high availability is provided by automatic failover of the queue manager across multiple available instances, backed by network storage

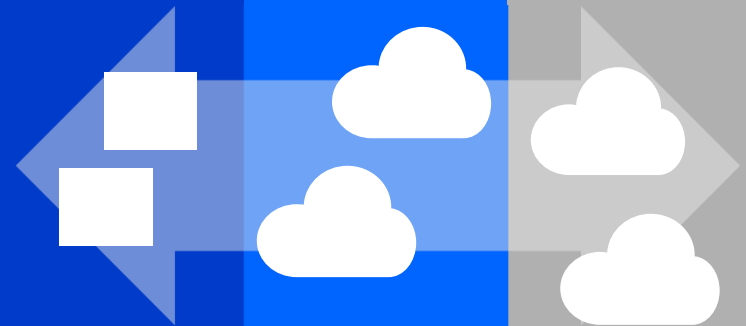
Supported capabilities under different MQ consumption models

	On-premises software install	MQ Appliance (on-premises)	BYOL cloud container install	MQ on IBM Cloud (service)
Customer-defined MQ Exits, Services and Processes	Yes	No	Yes	No
Custom monitoring agents local to the queue manager	Yes	No	Yes	No
Server binding (local) applications	Yes	No	Yes (at customer's discretion)	No
Client binding (remote) applications	Yes	Yes	Yes	Yes
Non-TLS MQ channels	Yes	Yes	Yes (at customer's discretion)	Yes (but not recommended)
Encryption of data at rest	If configured by customer	Requires use of AMS	If configured by customer	Disk encryption by default (does not require AMS)
Advanced Message Security (AMS)	Yes (with MQ Advanced license)	Yes – out of the box	Yes (with MQ Advanced license)	Not yet

MQ on IBM Cloud - Frequently asked questions

Question	Answer
Is “MQ on IBM Cloud” a fully managed service?	Depends on your definition of “fully managed” – the customer is responsible for managing some aspects of the deployment such as creating queues for applications to use, monitoring queue depth and application availability etc.
Does IBM monitor my queue manager?	Yes (and No) – IBM monitors the availability of the queue manager and the networking that routes requests through to the queue manager. The customer is responsible for monitoring “inside” the queue manager, such as queue depths
Can I configure my own TLS server certificate and/or TLS mutual authentication for my queue manager channel?	Not currently, but something that we have as a strong requirement from customers
How do I debug problems in my deployed queue managers?	Customers is able to self-service download queue manager logs.
How do I raise support tickets for problems encountered through my use of the “MQ on IBM Cloud” service?	Customers must raise support tickets through the IBM Cloud support system (not the Service Request tool) for queue managers deployed using the “MQ on IBM Cloud” service. If the problem is determined to require an APAR fix in the queue manager or other components provided by IBM then that process will be handled transparently via the same IBM Cloud support ticket.

MQ for hybrid cloud connectivity



MQ has always been about hybrid connectivity!

The requirements for Reliable, Secure Connectivity are even more important in the era of hybrid cloud

Use IBM MQ as the reliable messaging fabric for communication between different deployment zones

Connectivity

Simple queues and topics provide simple application messaging but MQ provides true routing capabilities to join applications and systems together, locally and globally

Reliable

Only MQ has 25 years of proven reliability and robustness when used by the most demanding customers in the most demanding systems, without you even knowing it's there

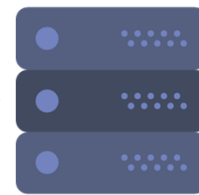
Secure

MQ is secure by design, from fine grain authentication and authorization of messaging resources, to encryption of data from one application to another, without the application even knowing or the administrators gaining access

Georgia, USA

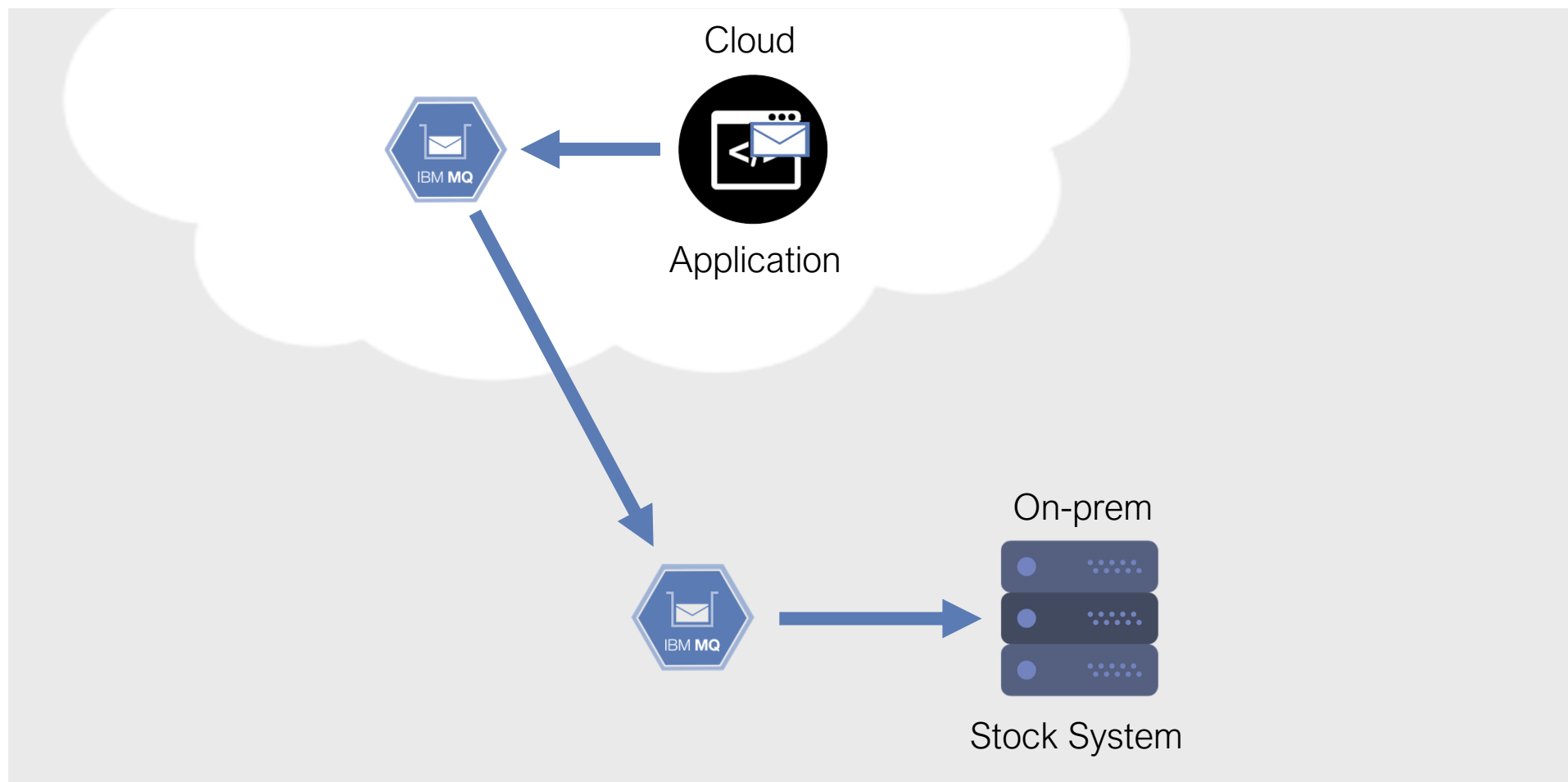


Web App



Service

Use IBM MQ to connect enterprise applications within a cloud location

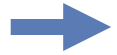


... to reliably connect the Cloud to your on-premises data center

IBM Cloud



App A



AWS

App B

... to connect different cloud providers



... or to transfer data between different geographies!

IBM MQ Console - Login

Please enter your username and password

User Name: admin

Password:

Please note that after some time you will be signed out automatically and asked to sign in again

Login

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IBM MQ Console - Login

Please enter your username and password

User Name: mqconsoleadmin

Password:

Please note that after some time you will be signed out automatically and asked to sign in again

Login

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In summary

Run IBM MQ in any
location or cloud
exactly as you need it

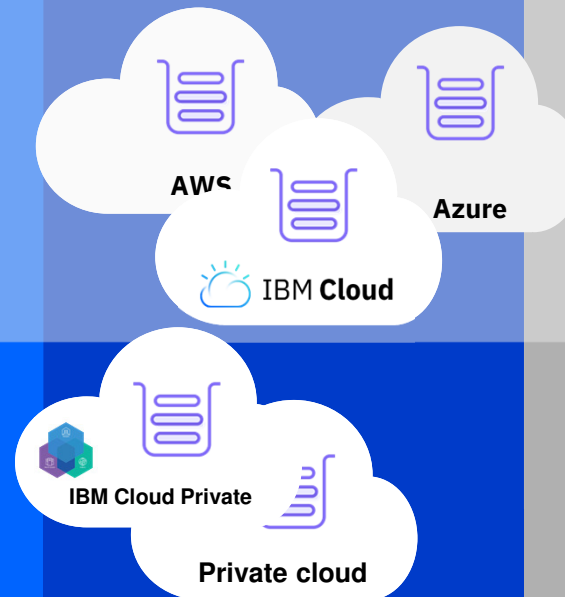


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On-premise, software
and the MQ Appliance



Run it yourself in any
cloud, public or private



Let IBM host it for you
with its new managed
MQ service in IBM
Cloud



