

Update on the MQ Portfolio

David Richards

Senior Product Manager for IBM Messaging

Agenda

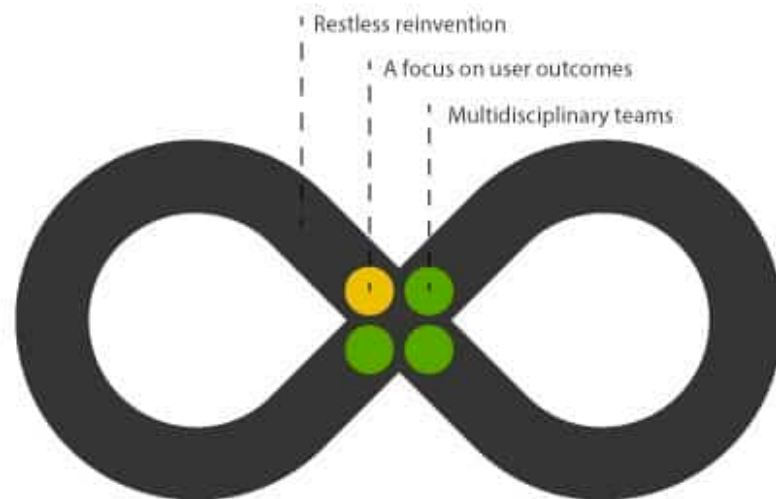
- Department Investment
- High level licensing changes
- MQ on Cloud
- Base MQ
- MQ on zOS
- MQ Advanced
- MQ Appliance
- Q&A
- Discussion

MQ Department Investment



IBM Design Thinking

Human-centered outcomes at speed and scale

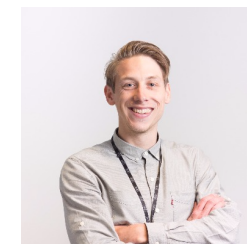


The Loop

- 1 Observe
- 2 Reflect
- 3 Make



Malcolm Couldwell
Design lead



John Morgan
User Experience
Designer



Sasha Williamson
Design Researcher



Chat Fernando
User Experience
Designer



Ashley Brimsted
User Interface Designer



Hills

Align your team around specific, worthwhile outcomes to achieve.



Playbacks

Reflect together in a safe space to give and receive criticism.



Sponsor Users

Give users a seat at the table. Invite them to observe, reflect, and make with you.

Would you like to take part in IBM MQ Design Research?

- The IBM MQ team is currently conducting some long term research with our MQ customer base.
- With this survey we would like to understand:
 - ▶ Who is interacting with MQ and what are their responsibilities?
 - ▶ Which customers are interested in moving IBM MQ into the cloud?
 - ▶ Which customers would like to take part in future research?
- We estimate the survey should take 4 minutes to complete.
- Please note: This survey is for distributed users only.
- If you're interested, go to ibm.biz/MQ-Customer-Survey

Help shape
the MQ of the
future...

IBM MQ

ibm.biz/MQ-Customer-Survey

Net Promoter Score (NPS)

We are including the NPS feedback opportunities in MQ, so please fill them in when you see them



% PROMOTERS - % DETRACTORS = NPS (NET PROMOTER SCORE)

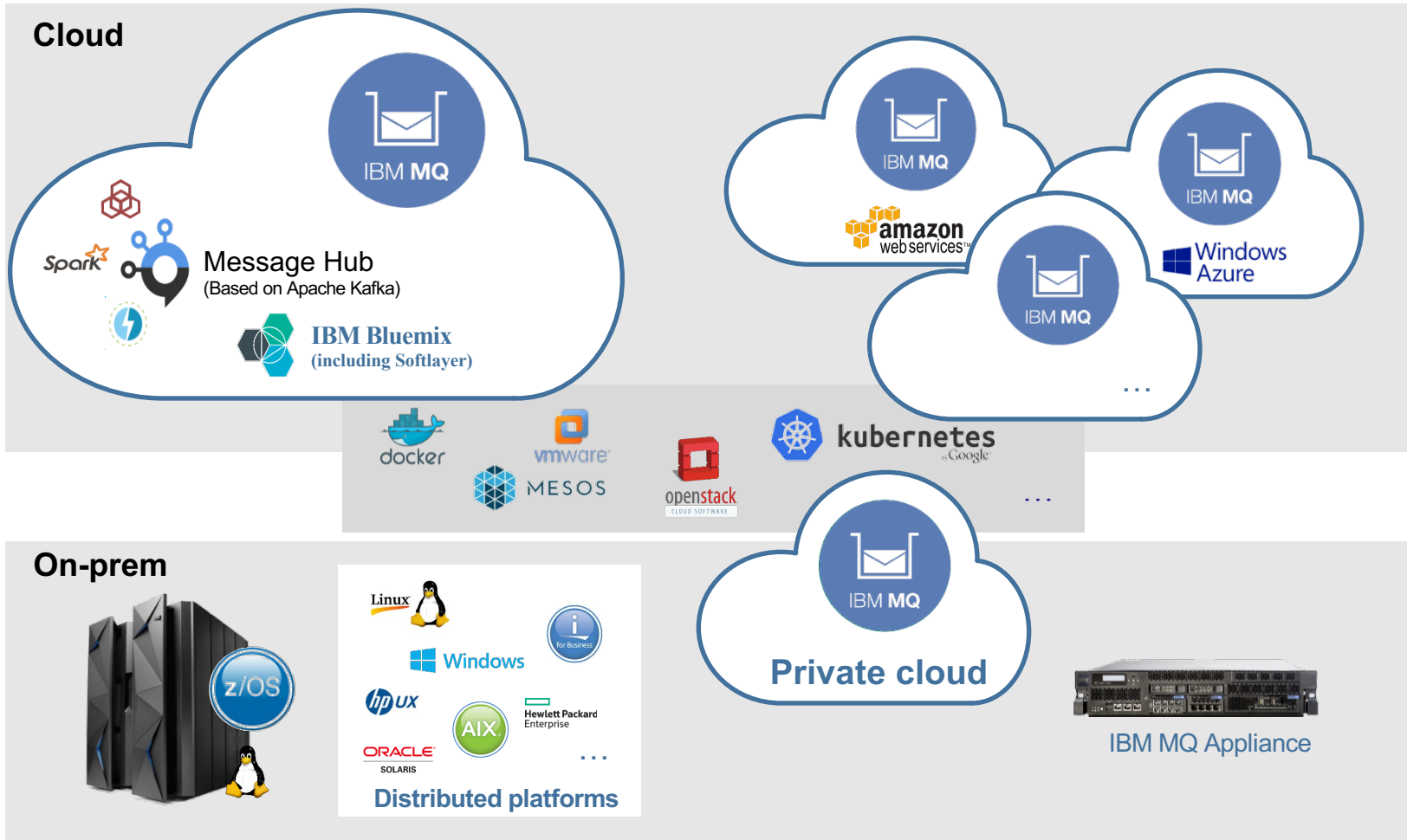
MQ Licensing

License changes since MQTC v2.0.1.6

- Monthly VPC licensing – in 9.0.3
- Advanced License overhauled
 - ▶ MFT license changed
- IBM MQ Advanced for z/OS Value Unit Edition (July 2016) with the connector pack (from 9.0.3. onwards)

MQ on Cloud

Run MQ, exactly where and how you need it



Help and advice with MQ in the Cloud

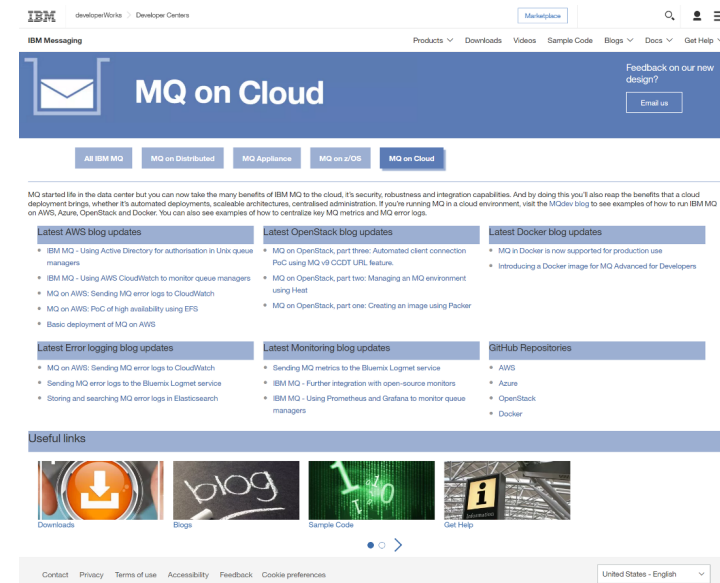
It has always been critical for MQ to run where it is needed and integrated into the tools of your choice

For many that means **cloud**

We have investigated running MQ in various **public** and **private** clouds.

Using a variety of tooling for provisioning, configuration and monitoring

And we've been sharing that information for everyone to use



<https://developer.ibm.com/messaging/mq-on-cloud/>



Help is at hand!



<https://developer.ibm.com/messaging/mq-on-cloud/>



MQ in Docker containers

IBM MQ is supported to run inside Docker containers, bringing the benefits of containers to MQ

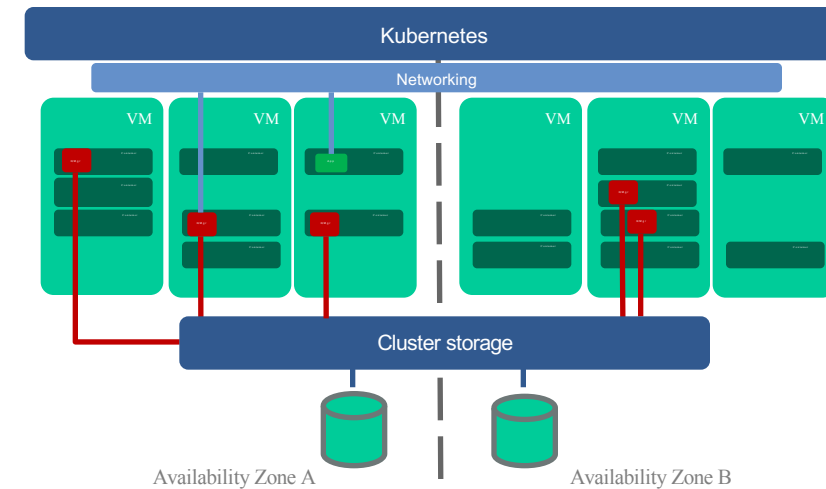
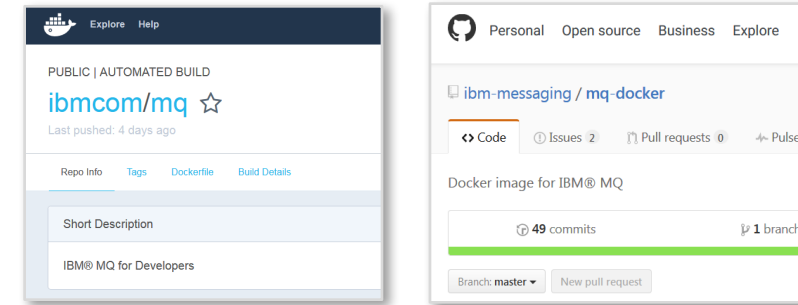
- Lightweight containers for running MQ
- Predictable and standardized units for deploying MQ
- Process, resource and dependency isolation
- Best practice guidance

IBM provided sample Docker files for customizing and building your own Docker images

IBM MQ Advanced for Developers V9 available direct from Docker Hub

Docker enables MQ deployments to be provisioned and managed within the same orchestration frameworks that make Docker so exciting

- Kubernetes, Mesos, Swarm, Fleet, ...
- Or individual IaaS cloud container services
- Bluemix, Amazon EC2, Azure, ...



Message Hub Bridge

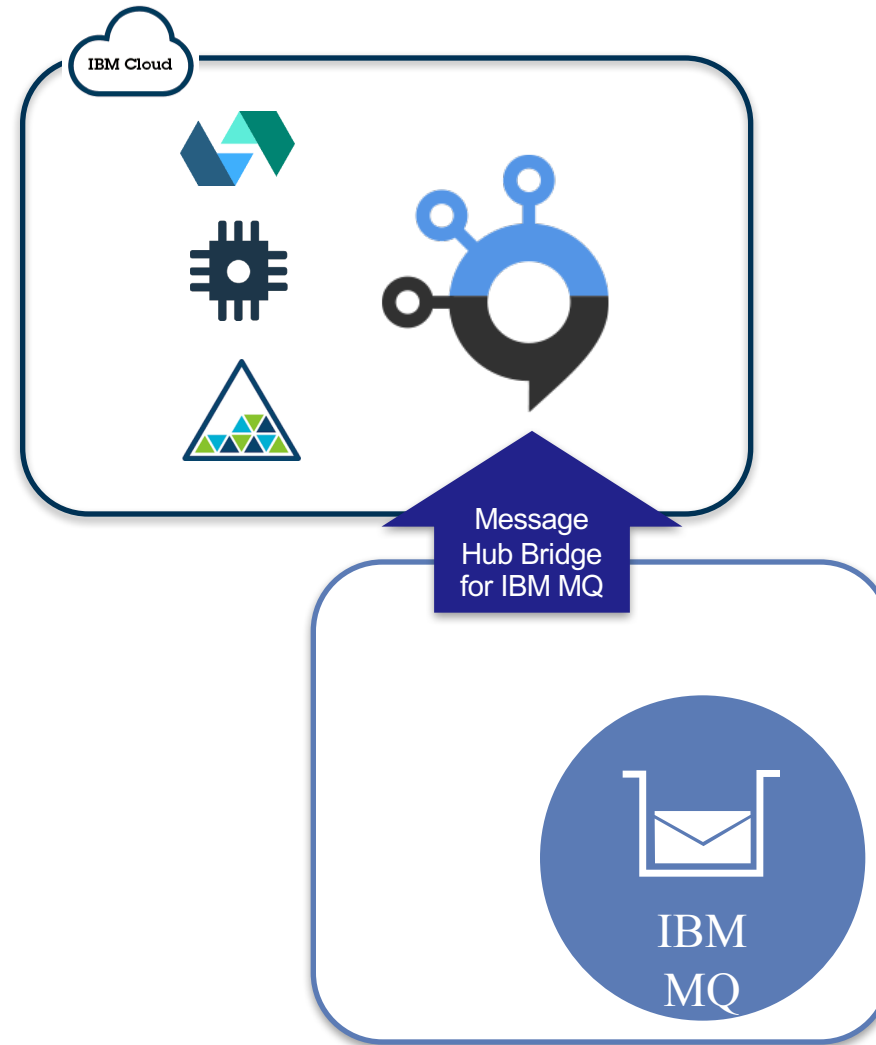
Message Hub is a scalable messaging service for **IBM Bluemix**. Based on Apache Kafka and ideally suited for streaming analytics

You can use the **new MQ Bridge** capability to connect your MQ network to your Message Hub service in Bluemix, enabling the flow of MQ message data into your Bluemix applications

Connects to MQ as an MQI client

At-least-once reliability (as expected by Kafka)

Data partitioned into Kafka topics



MQ Bridge for Salesforce

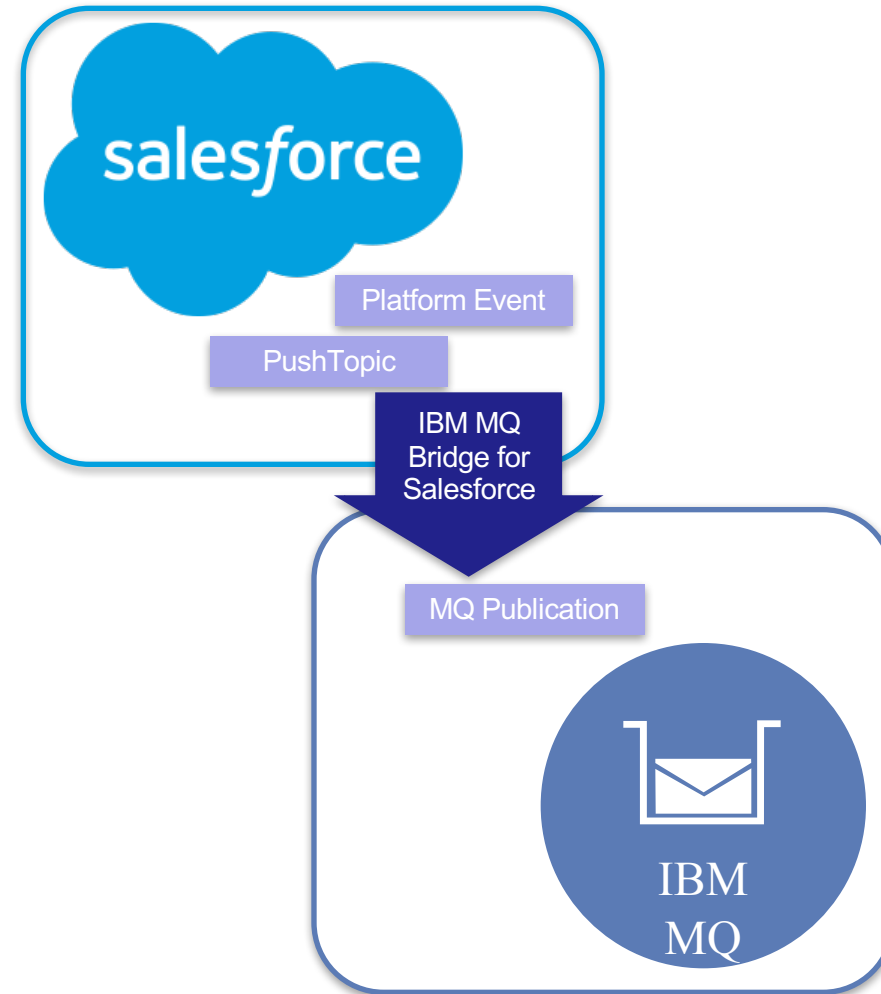
Salesforce's cloud-based CRM platform enables events to be emitted when changes are made to data, or when applications run

You can inject these Salesforce events into your own systems using the new MQ Bridge for Salesforce with no need for your backend applications to connect to Salesforce

Supports Salesforce Platform Events and PushTopics

Events are published into the MQ network

The bridge runs on Linux, but connects to any queue manager and is enabled for monitoring with system topic metrics



MQ on AWS Quick Start

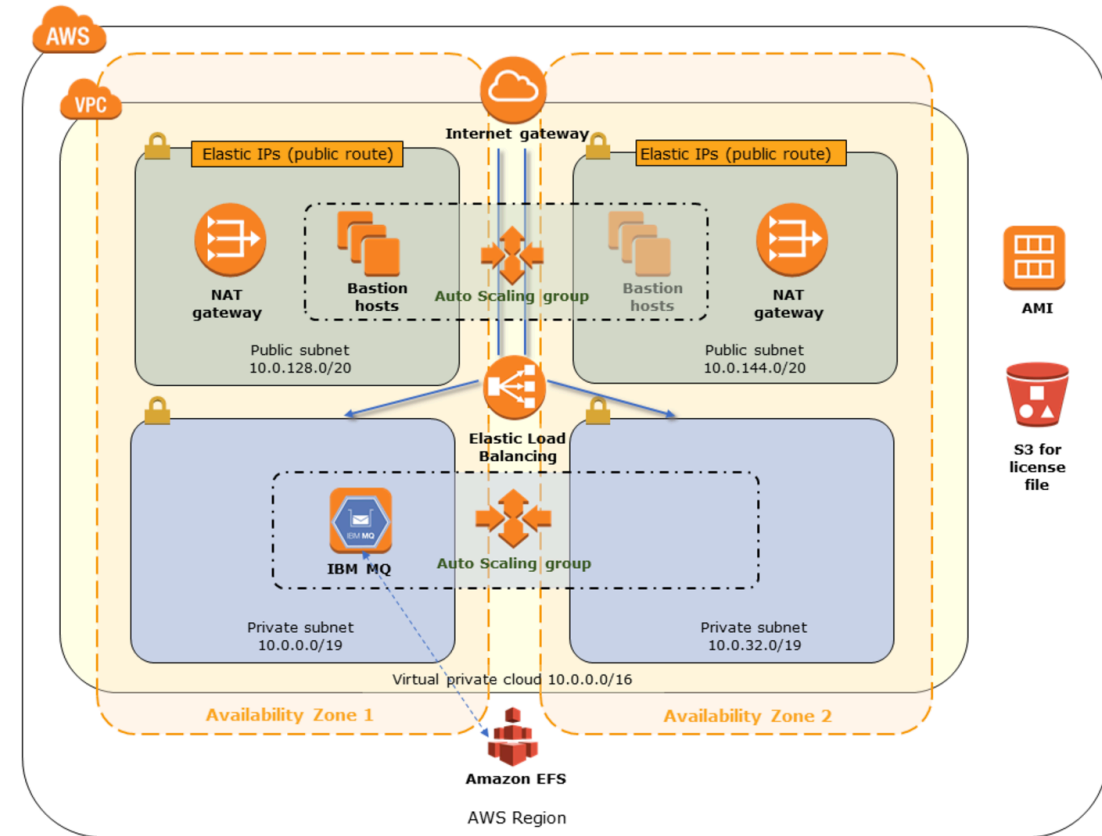
This Quick Start automatically deploys a highly available, production-ready IBM MQ server on the Amazon Web Services (AWS) Cloud in about 30 minutes, into a configuration of your choice.

This Quick Start deploys IBM MQ into a virtual private cloud (VPC) in your AWS account. You can build a new VPC for IBM MQ, or deploy the software into your existing VPC. The deployment and configuration tasks are automated by AWS CloudFormation templates that you can customize during launch.

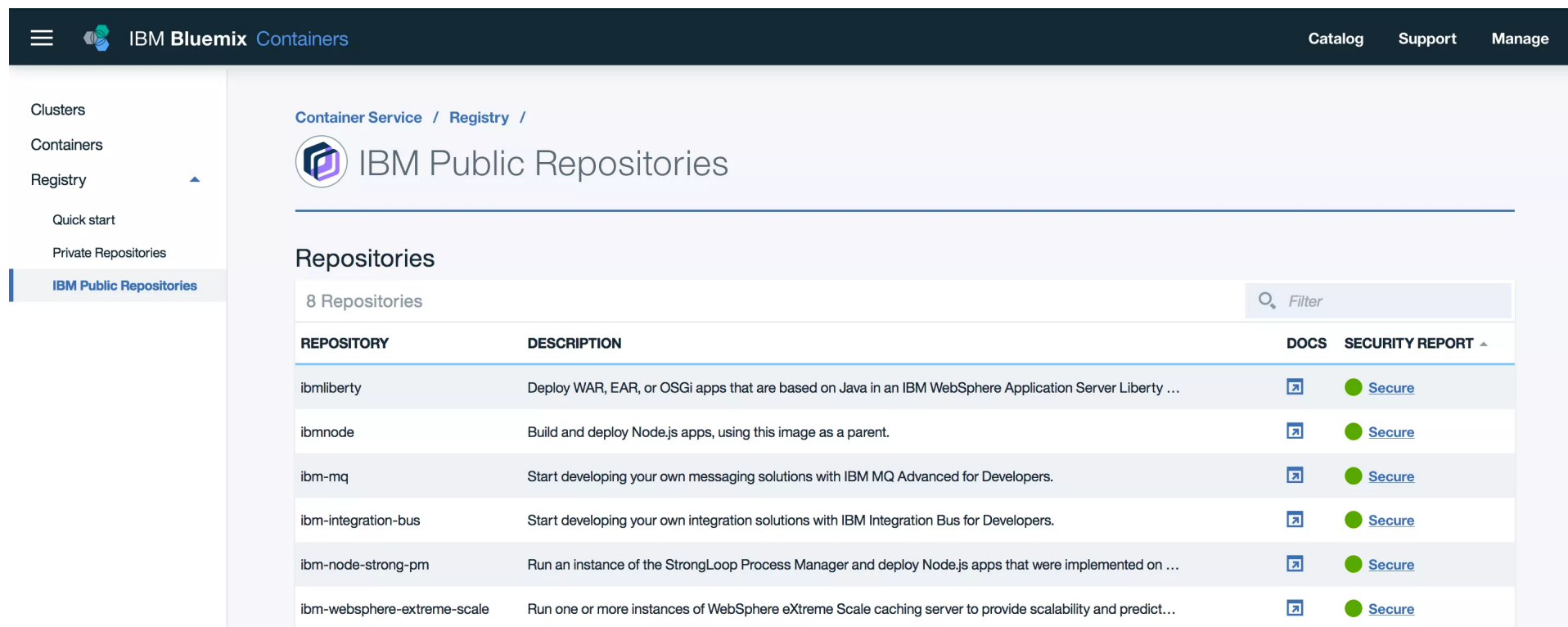
AWS Quick Starts

IBM MQ on AWS

Messaging platform for cloud, mobile, IoT, and on-premises environments



Running the MQ docker image on the Kubernetes service in Bluemix



IBM Bluemix Containers

Container Service / Registry /

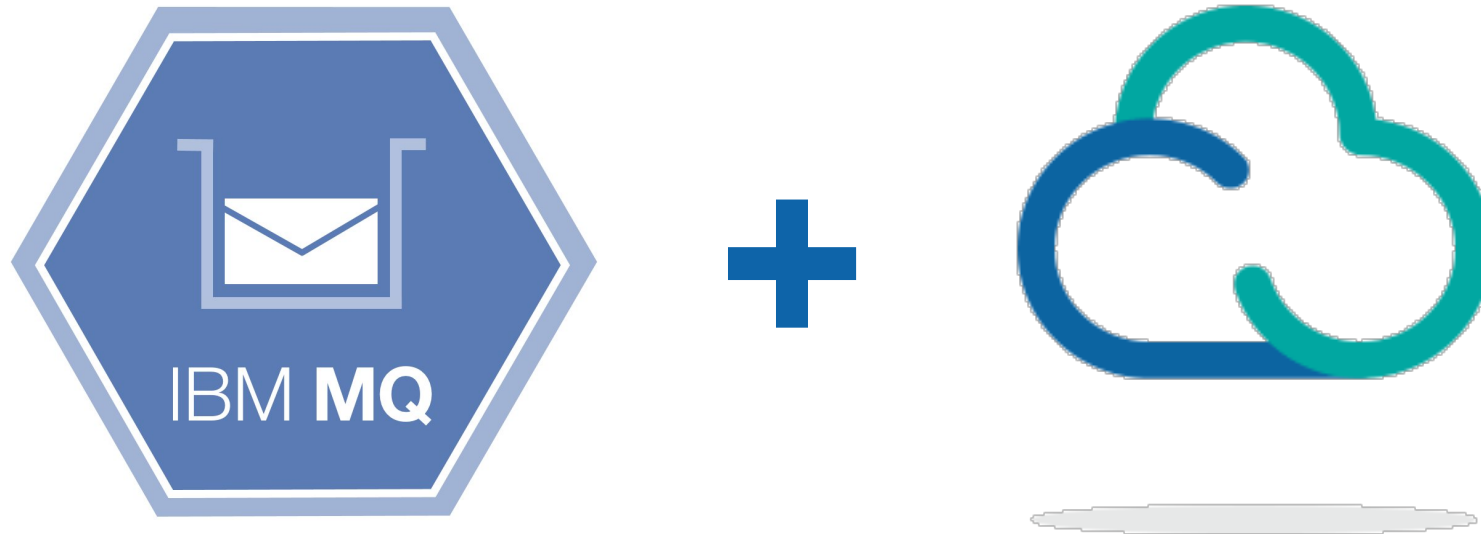
IBM Public Repositories

8 Repositories

REPOSITORY	DESCRIPTION	DOCS	SECURITY REPORT
ibm-liberty	Deploy WAR, EAR, or OSGi apps that are based on Java in an IBM WebSphere Application Server Liberty ...	DOCS	Secure
ibm-node	Build and deploy Node.js apps, using this image as a parent.	DOCS	Secure
ibm-mq	Start developing your own messaging solutions with IBM MQ Advanced for Developers.	DOCS	Secure
ibm-integration-bus	Start developing your own integration solutions with IBM Integration Bus for Developers.	DOCS	Secure
ibm-node-strong-pm	Run an instance of the StrongLoop Process Manager and deploy Node.js apps that were implemented on ...	DOCS	Secure
ibm-websphere-extreme-scale	Run one or more instances of WebSphere eXtreme Scale caching server to provide scalability and predict...	DOCS	Secure

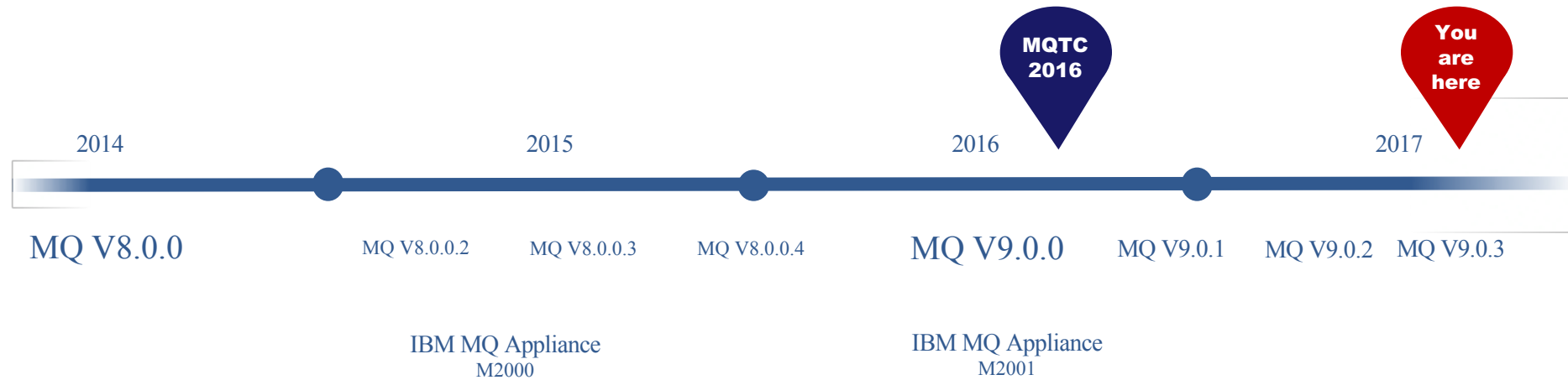
ibm.co/2xcafJK

The best is yet to come, watch this space...



Base MQ

IBM MQ



IBM MQ has been regularly delivering new function release on release

Through releases

New platforms and environments

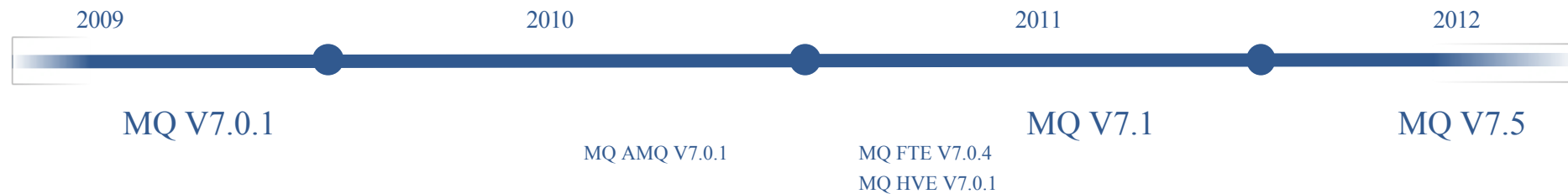
2016 was the start of MQ's **continuous delivery** model

Three CD releases so far

Base MQ

End of Service Dates

End of Service for the old versions



WebSphere MQ 7.1

- ▶ End of Service (Distributed) was **April 2017**
- ▶ End of Service (z/OS VUE) will be **September 2017**
- ▶ End of Service (z/OS) will be **November 2017**

WebSphere MQ 7.5

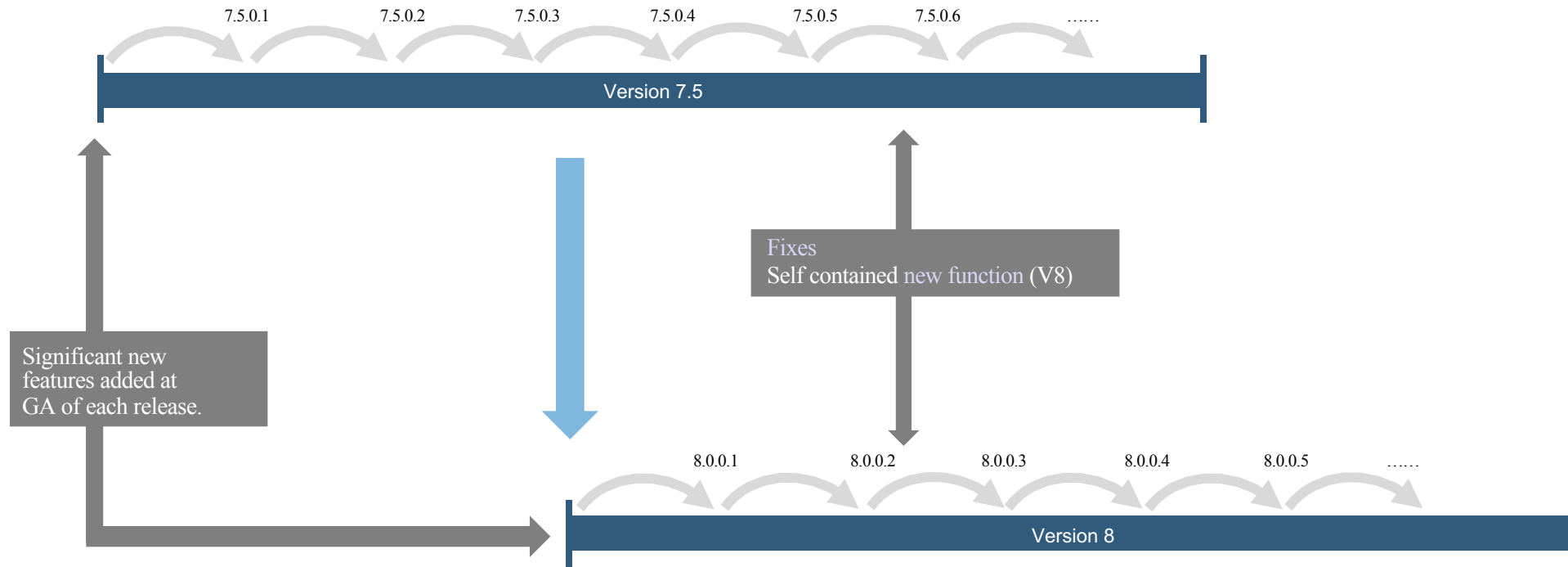
End of Service (Distributed) will be **April 2018**

MQ FTE V7.0.x, MQ AMS 7.0.x & MQ HVE 7.0.1
EOS will be **September 2017**

Base MQ

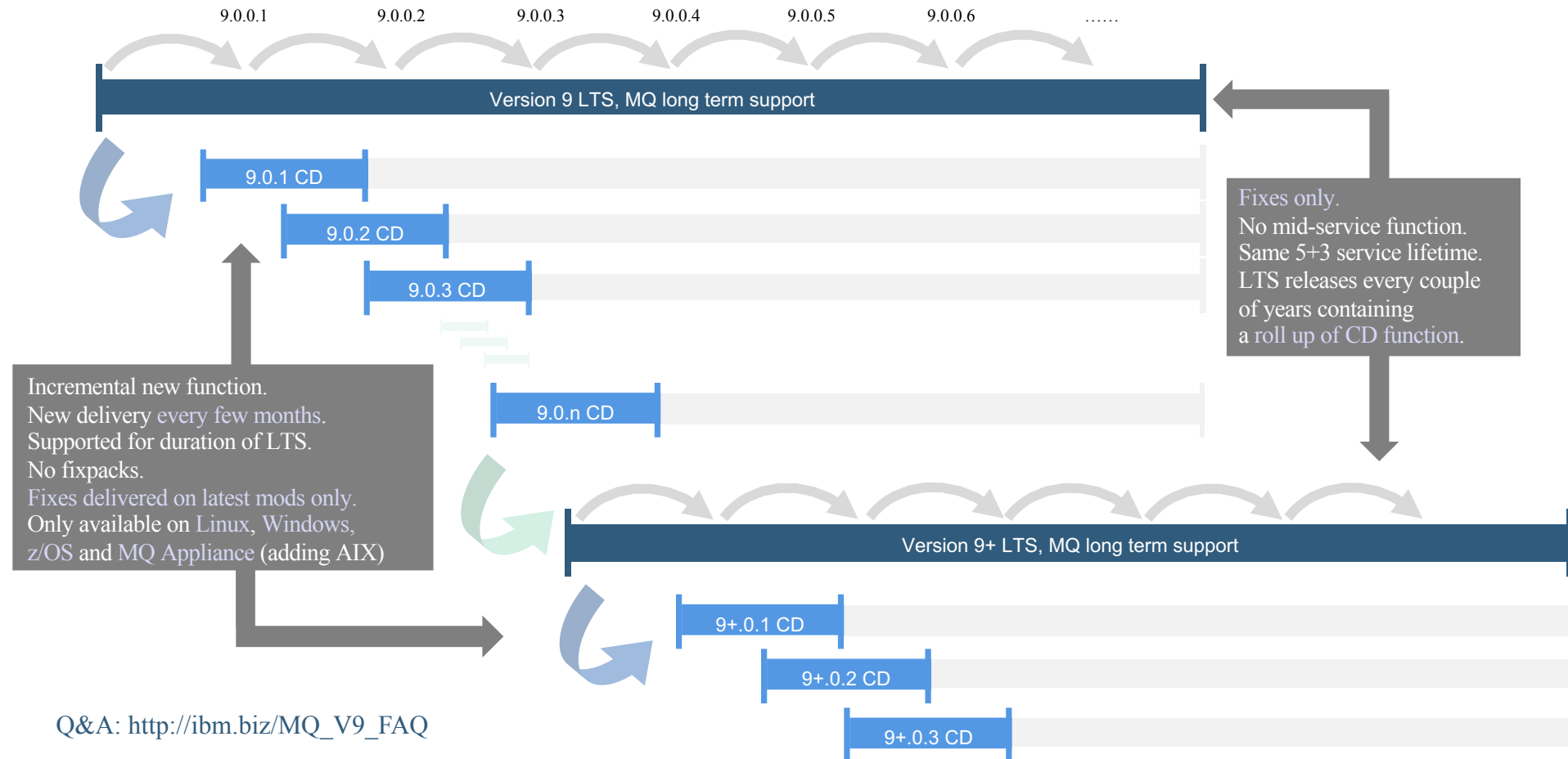
IBM MQ CD Releases Introduction

Previously: Service and continuous delivery combined



Q&A: http://ibm.biz/MQ_V9_FAQ

Today: Service and continuous delivery separated



MQ on zOS

Quick Reminder: MQ for z/OS Portfolio

MLC	<p>IBM MQ for z/OS</p> <ul style="list-style-type: none">Provides MQ capability, connectivity on and off the z/OS platform & excellent integration with z/OS s/w like CICS, IMS, WAS, DB2
OTC Offerings	<p>IBM MQ for z/OS Value Unit Edition (VUE)</p> <ul style="list-style-type: none">Same functionality as MQ for z/OS, but intended for new workloads running within a zNALC LPAR only. Can coexist and interact with MQ MLC offerings in other LPARs
	<p>IBM MQ Managed File Transfer (MFT) for z/OS</p> <ul style="list-style-type: none">Equivalent function as MFT on distributed platforms though more closely integrated with base MQ offering a of V8. Must be locally bound to a z/OS Queue Manager, no client/agent support hosted on z/OS
	<p>IBM MQ Advanced Message Security (AMS) for z/OS</p> <ul style="list-style-type: none">Provides end to end encryption of messages throughout the MQ networkData is encrypted at rest, not just on the wire
	<p>IBM MQ Advanced for z/OS</p> <ul style="list-style-type: none">Soft bundling of MQ MFT for z/OS and MQ AMS for z/OS only (i.e. <i>no MQ z/OS included</i>)Can be deployed with MQ MLC or VUE offerings
	<p>IBM MQ Advanced for z/OS Value Unit Edition (July 2016)</p> <ul style="list-style-type: none">Soft bundling of IBM MQ for z/OS VUE + IBM MQ MFT for z/OS + IBM MQ AMS for z/OS + connector pack (from 9.0.3 onwards)

MQ Advanced for z/OS VUE unique function

V9.0.3 CD

**The Richest Set of z/OS Messaging Capabilities
in a Single, Simple to Deploy Offering**

IBM Cloud Product Insights support

Provides registration and usage information to the Cloud Product Insights Service to offer insight into the usage of the entire MQ estate across z/OS and distributed systems

MQ Blockchain connector

Enables application integration with the IBM Blockchain service running in Bluemix, mediated via MQ.

Managed File Transfer Agent Connectivity

Allows a z/OS Managed File Transfer Agent to remotely connect to a z/OS Queue Manager to simplify the deployment of MFT on z/OS

Same MFT workload will require fewer z/OS queue managers



Blockchain Bridge

MQ is a natural fit to connect existing business transaction systems to remote intra-business ledger services

MQ → Blockchain

Asynchronous request reply MQ message flow for applications to [request information from Blockchain](#) over MQ messages

For example "what is the value of the balance on this account?"



V9.0.3 CD



MQ Advanced

Extending the value of your MQ deployments – MQ Advanced

The Richest Set of Messaging Capabilities in a Single, Simple to Deploy Offering



Managed file transfer

Provides reliable, secure and auditable file transfer that reduces the need for manual processes, using shared MQ infrastructure and tools to help reduce wasted time when dealing with failure analysis



End to end encryption

Provides end-to-end encryption of message contents to protect sensitive data from all forms of intrusion, attack or accidental disclosure, and with no need for application change!



Connection to mobile and sensor data

Enables sensors, mobile and Internet of Things devices to be rapidly and easily connected with existing enterprise applications and services



IBM MQ for Multiplatforms

Enables rapid, reliable exchange of business data across applications, systems and services on-premise, in the Cloud, or in Hybrid environments

Recent Licensing changes to IBM MQ Advanced

Simplified licensing, increased value

- As well as being available as IBM MQ Advanced, MQ extensions were also available separately
 - Multiple parts were confusing for everyone
 - IBM MFT licensing wasn't clear enough
- Announced a licensing change on January 24th 2017
 - Withdraw separate AMS, MFT and Telemetry new license parts with effect May 9th 2017
 - Keep existing S&S renewal parts to allow ongoing entitlement to continue for customers not wanting to upgrade to MQ Advanced
 - Change licensing for MQ MFT to simplify and align with MQ Advanced
- Changes not just MQ V9 but earlier versions
 - No change currently for MQ extensions on z/OS
 - z/OS offers both MQ Advanced for z/OS and MQ Advanced for z/OS VUE

MQ Advanced

End to End Encryption
(previously Advanced Message Security)

The realities of an increasingly connected environment

Increasing connectivity increases complexity

- Complexity is not just in the defining, building and operating environments but in the security of those environments as well



**MQ Security - Deep Dive into Advanced Security Configuration Options, including MQ AMS by Rob Parker
Tuesday 14:30 in Leopardwood**

What is a secure environment for an IT system?

- Connected systems are almost the definition of an insecure environment
- Every system and connection represents a point of possible attack and risk for your applications and data

Multiple different security layers across multiple different systems...

- Can create an insecure environment
- Will be very difficult to audit, and ensure you are protected
- Performance can also be an issue

The realities of an increasingly connected environment

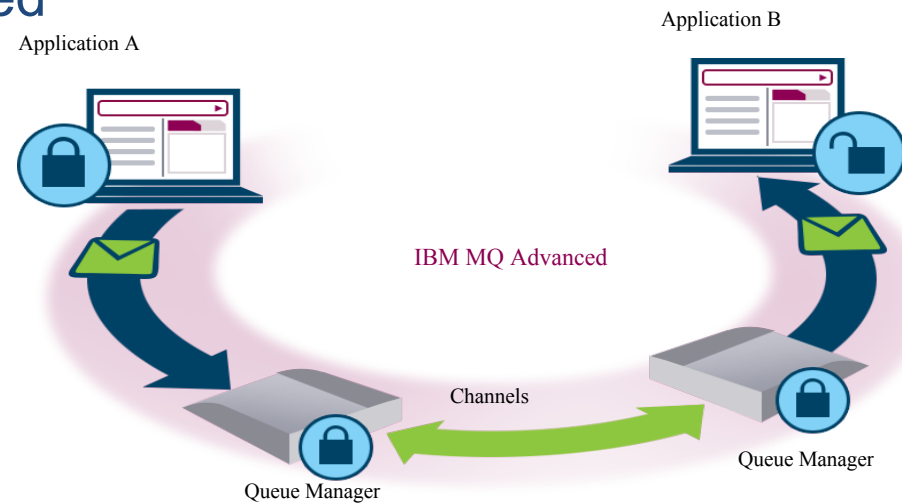
IBM MQ:

- **Authentication** – LDAP, PAM, Local OS user id, TLS peer and CHLAUTH for channels
- **Authorization** – Groups, OAM and CHLAUTH on distributed, RACF on z/OS

IBM MQ + IBM MQ Advanced

End-to-end encryption

- Protect **data at rest** in queues; detects and removes rogue messages.
- **Authenticate** and **protect** messages across the enterprise.
- Apply end-to-end encryption to existing systems with **minimal** disruption.
- **Confidentiality** option for encryption with **minimal** performance impact



Reduces the time and skills needed to comply with aspects of common security standards, including PCI-DSS.

No changes required for applications.

Huge performance improvement in MQ Advanced V9

Advanced Message Security

V9.0 LTS

high performance policy

New quality of service for AMS

We already had **Integrity**

This proves authenticity through digital signing

And **privacy**

This adds encryption to the digital signing

We've added **Confidentiality** to provide encryption *without the digital signing*

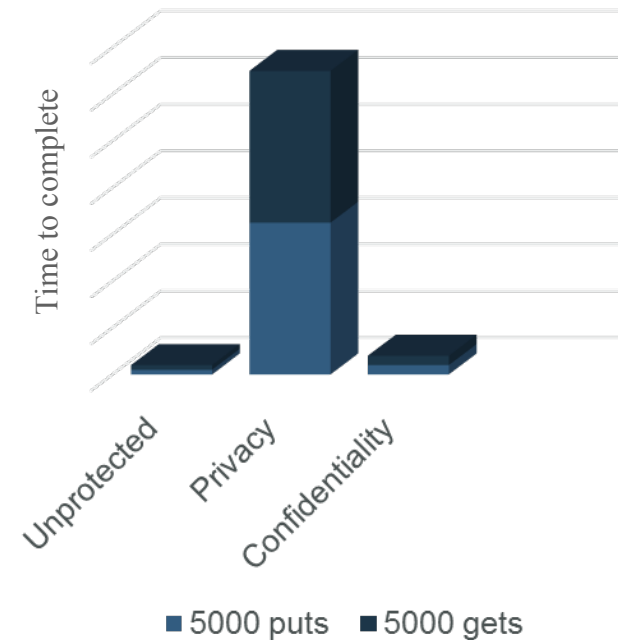
Significant performance gains over Integrity and Privacy

Especially with key reuse

Only receiver's certs require distribution to applications

Available for Distributed and z/OS

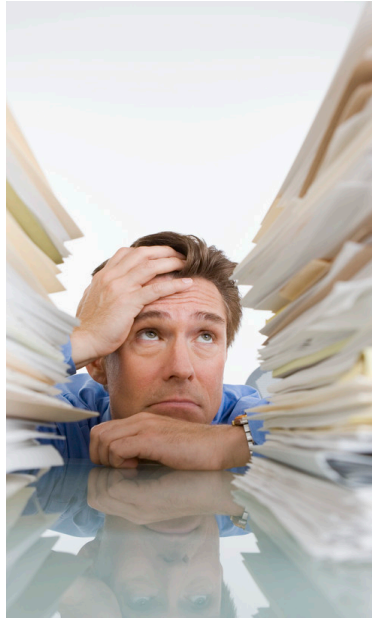
AMS Performance



MQ Advanced

Managed File Transfer

How prevalent is file data in your business?



- Every part of every business stores data in files at some point in their processes
 - Quick, simple, always there on every system and free!
- Complexity and problems occur which impact the business, both as a whole and the individual application owners as FTP has
 - Limited Reliability
 - Limited Security
 - Limited Flexibility
 - Limited Visibility and Traceability
- These limitations impact the business
 - Process Risk
 - Security Risk
 - Application Complexity
 - Wasted time, inefficient use of resources



Transferring both data and files with IBM MQ Advanced

IBM MQ: moves application data as messages

*Moving application data **and** file data as messages – IBM MQ Advanced*

How:

- File-to-file
- File-to-message
- Message-to-file

Benefits:

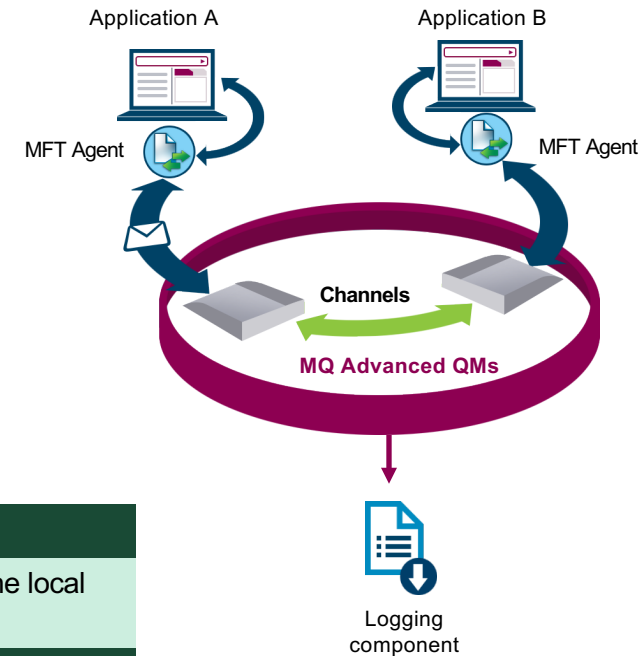
- Reliability of delivery
- Increased security of system and data
- Integrated management and recovery

MFT Agent:

Performs the fundamental file transfer function of sending and receiving files from the local system.

MFT Service:

Installs a file transfer agent on a MQ server with additional capabilities



Unlimited deployments of MQ MFT Agents when connecting them to MQ Advanced Queue Managers

Positioning MQ MFT and Aspera – what's the difference?

Leverage both market leading products for the best business outcomes



Optimized performance for large number of small files over LANs

- Application connectivity and file transfers underpinned by IBM MQ, market leader in flexible and near universal connectivity
- Complements Aspera large file transfer with MQ's high performance, high volume, secure messaging
- Broad platform support
- APIs and monitoring tools to track transfers throughout the MQ network



Inland Revenue Authority of Singapore

Inland Revenue Authority of Singapore (IRAS) exchanges information with external entities, such as banks, corporate taxpayers, government agencies and business partners. IRAS receives a large volume of these files, which must be processed within a certain time frame to meet service-level agreements and auditing regulations that require the records to be correct.

IRAS uses IBM WebSphere MQ File Transfer Edition software to transfer large number of files reliably. This software includes an audit database that allows the client to keep records of all file transfers

40



Maximum performance for large files & data sets over global WANs

- Totally reliable file transfers regardless of transfer distance, size or network conditions
- Complements MQ file transfer, especially for WAN transfer of 100+MB (e.g. genomic, financial, or replication data; video/images)
- Unrivalled speed for file transfer, streaming, synchronization, automation
- Patented FASP® technology and optimized cloud I/O for hybrid cloud deployments



Beijing Genomics Institute

BGI transferred 24 Gigabytes of genomic data from Beijing to UC Davis in under 30 seconds, while a file of the same size sent over the public Internet a few days earlier took more than 26 hours

"Aspera is the industry standard for the transport and management of large data files produced by life sciences,"
Sifei He, cloud product director at BGI.

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MQ Advanced

MQ Telemetry (MQTT)

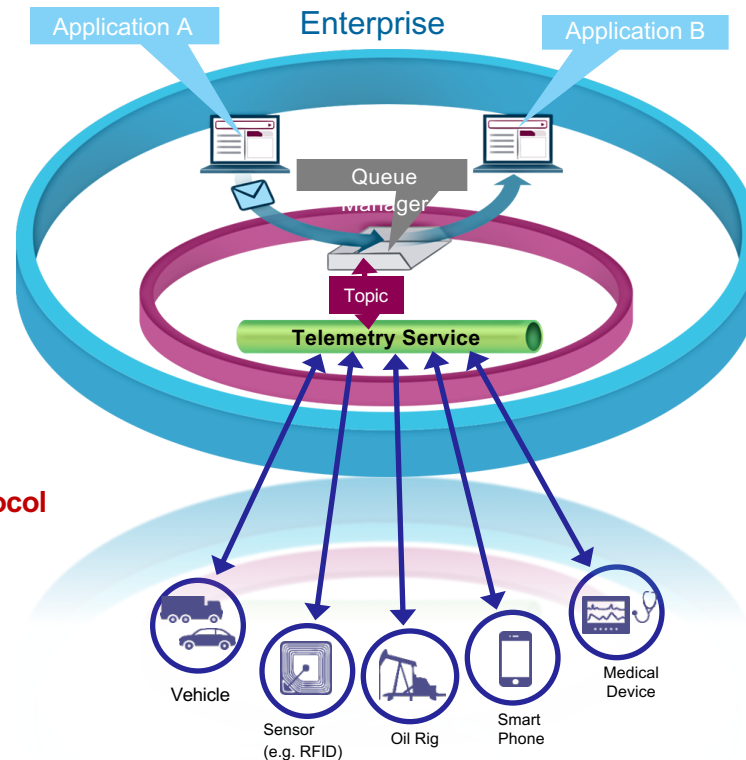
Extending to mobile and internet of Things: MQ Telemetry

 = "MQ Things Transport"

IBM MQ: connection to on-prem applications, services, etc

IBM MQ + MQTT = real-time connection to mobile devices, sensors, etc
- Available in MQ Advanced

Uses **MQTT protocol** (OASIS standard)



Telemetry clients:

Distributed to remote devices and applications

Telemetry Service:

Runs on the IBM MQ Advanced server

Easy to instrument devices



Ideal to connect devices within the enterprise

Key attributes for MQTT use

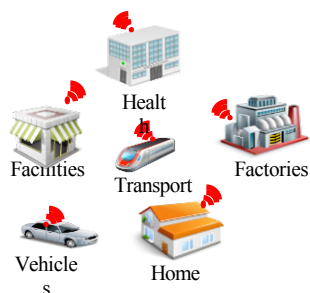
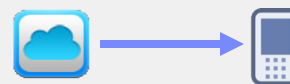
Reliable Transportation

- ✓ Reliable and Security Delivery
- ✓ Large Scale & High Availability Support
- ✓ Easy Integration with Enterprise Service



Mobile Push

- ✓ Real-time Alerts
- ✓ Rich Contents Push
- ✓ Flexible Pub-Sub
- ✓ Message Store & Filtering



Low Bandwidth, Power Usage & Cost

- ✓ Small Footprint in mobile application
- ✓ Efficient bandwidth usage
- ✓ Low power cost
- ✓ Much cheaper alternative to SMS



MQ Appliance

The IBM MQ Appliance

The scalability, security and reliability of IBM MQ

The convenience, fast time-to-value and low total cost of ownership of an appliance

Built in high availability and disaster recovery capabilities

Ideal for use as a messaging hub running queue managers accessed by clients, or to extend MQ connectivity to a remote location

Familiar feel for existing MQ users – application interfaces, administration, networking/clustering, security....



Introducing the IBM MQ Appliance by Sam Goulden
Monday 15:50 & Wednesday 9:50 in Zebrawood

Questions & Answers



Discussion

- **What do you like most about MQ?**
 - ▶ What are we doing well?
- **What don't you like about MQ?**
 - ▶ What are we not doing well?
 - ▶ What can we do better?
- **How can we help you more?**
- **Are you interested in an MQ service?**
 - ▶ What does that mean to you?
 - ▶ Messaging as a service?
- **Does your organisation understand the value of you and MQ?**

**Help shape
the MQ of the
future...**

IBM MQ

ibm.biz/MQ-Customer-Survey