

How Businesses Use IBM MQ to Achieve Growth with Flexible and Secure Hybrid Cloud Connectivity

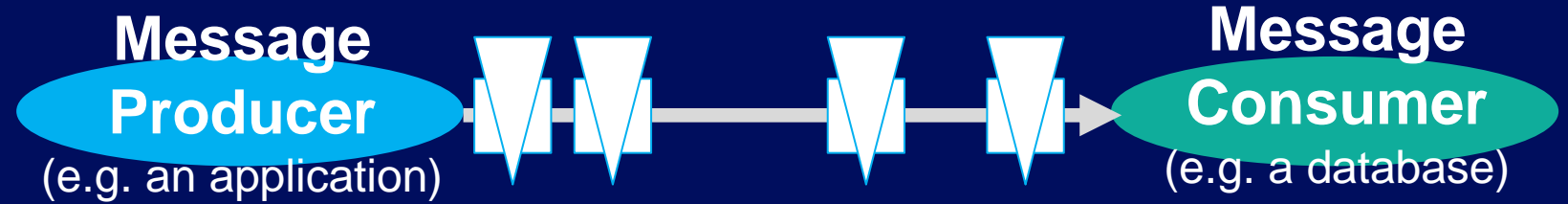
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Amy McCormick
IBM MQ Product Manager
amymccormick@uk.ibm.com

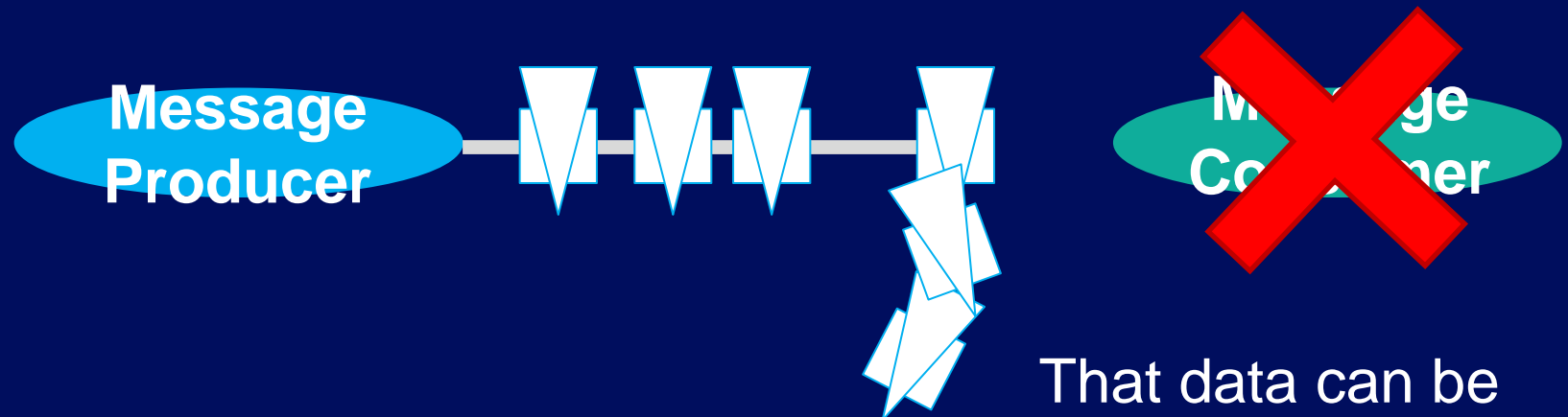


Why does enterprise messaging exist?

Applications, services, systems etc send data to each other.



But if there is a problem with infrastructure or the receiving application....



That data can be **LOST**

How does IBM MQ work?

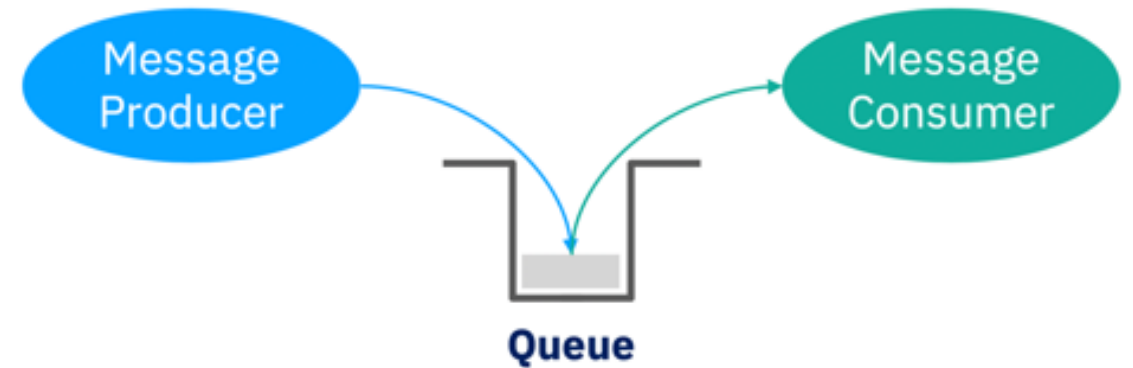
IBM MQ is placed between two or more programs.

Messages from a producing program are put on a 'message queue'.

The producer does not need the consumer to be available at the same time.

The queue provides a safe place for messages to reside until delivery to the consumer can be assured.

This model is known as asynchronous messaging.



Asynchronous messaging is sometimes referred to as “fire and forget” messaging, this is particularly true for IBM MQ as **IBM MQ delivers messages exactly-once**

Other ways to connect IT assets

HTTP

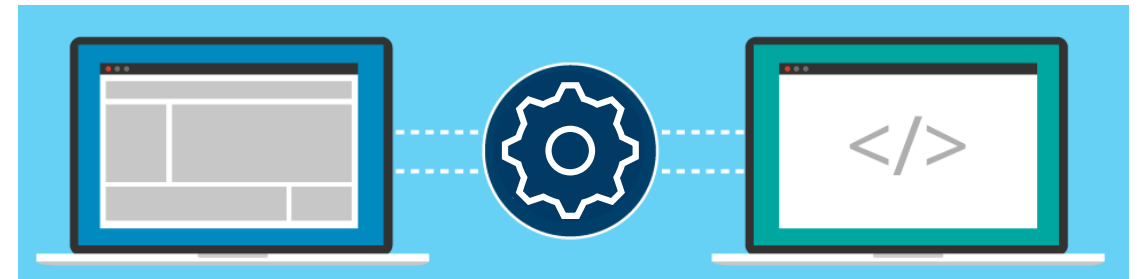
Need to consciously implement required QoS (security, transactionality, etc), scaling may cause challenges, knock-on effect to other applications when changing an endpoint

REST / HTTP APIs

Additional client reconnection logic implementation required, services may be waiting for responses due to synchronous pattern

Kafka

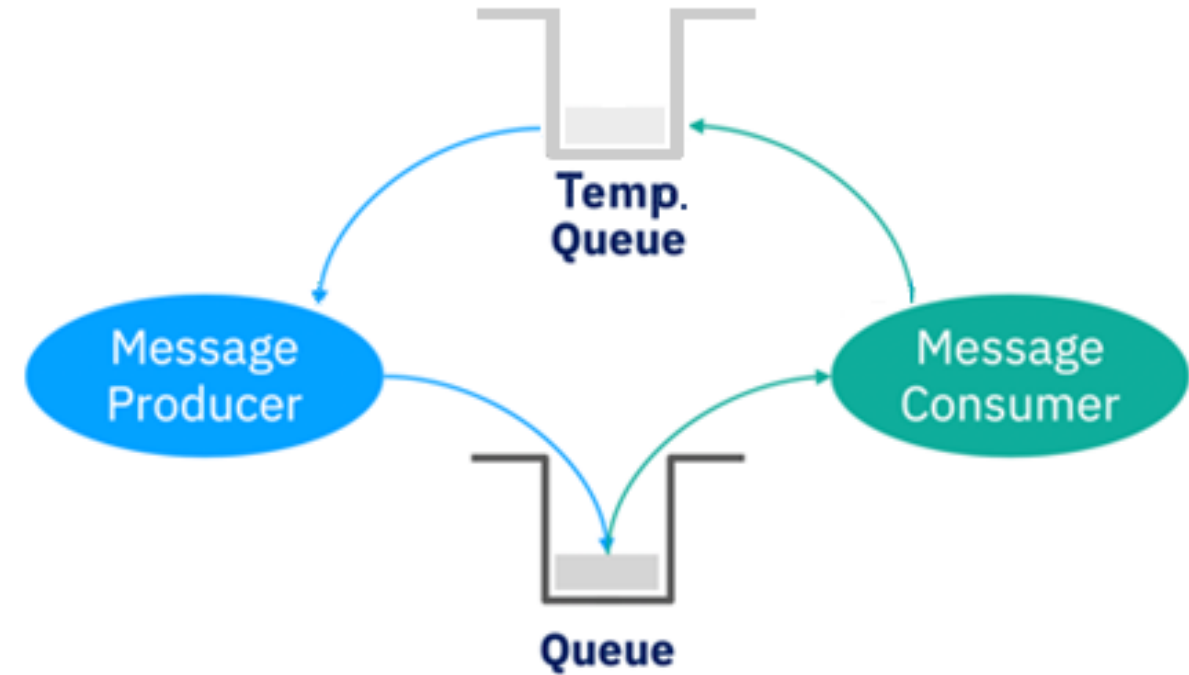
Complementary technology. Not designed for conversational messaging. Lots of components so more heavyweight and costly vs MQ. Additional data storage requirements. Challenges with transactionality (ACID properties)



Request/Response Messaging

Request/response messaging, or 'conversational messaging' is very similar to point-to-point, but in this case we need/want a response to our message.

To make things run more smoothly, many customers create special temporary queues for response messages – so the sending application can send the message, get on with other tasks and monitor the temporary queue for a response.



IBM MQ is *the* solution for mission-critical hybrid cloud messaging

The world depends on reliable, secure messaging and **85% of the fortune 100** depend on IBM MQ¹

- 98 of the top 100 global **banks** using IBM MQ²
- 8 of the top 10 global **manufacturers**³
- 9 of the top 10 global **healthcare providers**⁴
- 6 of the top 10 global **retailers**⁵
- 9 of the world's top 10 global **airlines**⁶
- 9 of the top 10 global **insurers**⁷
- 9 of the top 10 global **IT services companies**⁸

1 + 1 = 2

Simple



Scalable



Precise



Connected



Reliable



Secure

IBM MQ connects data within and across **hybrid multi-cloud**, ensuring your mission-critical applications, wherever they are, get the data they need.



Private datacenters

Software for VMs or containers and a dedicated **MQ Appliance**

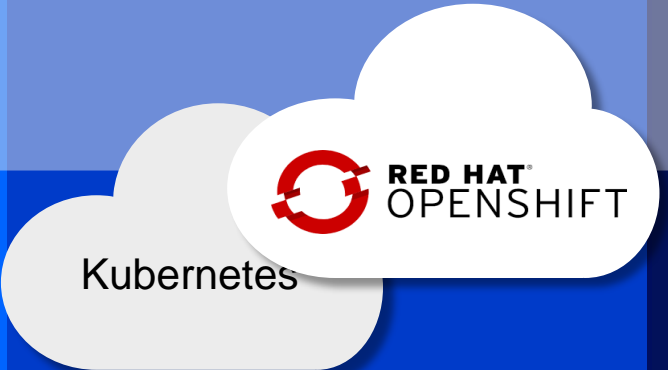
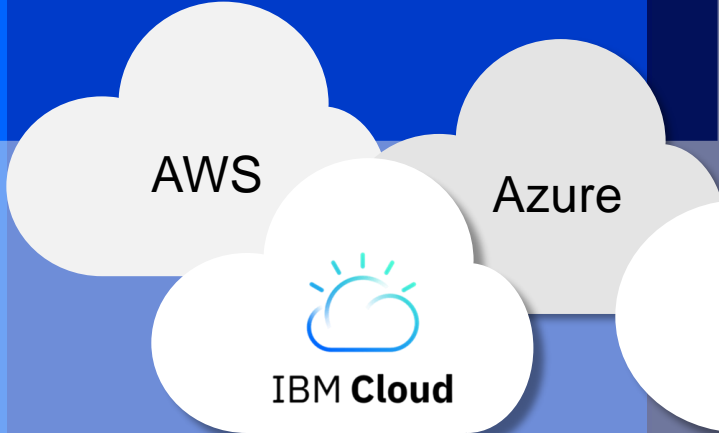


IBM Z	Linux
AIX	
Windows	IBMi
HPE NonStop	zLinux
Appliance	



Public clouds

Customer-managed **software** deployed to VMs or in **containers**



SaaS

IBM-managed **SaaS**, hosted in IBM Cloud and **AWS public cloud**



Delivering exceptional customer experiences

Usecase: Real-time inventory

To deliver exceptional customer experiences, sales channel data needs to be united with third-party providers to gain clear visibility into inventory levels.

Data may be locked away in silos at the far reaches of the business, or one of a hundred applications may be down due to a fault, causing systems to be updated with incorrect data or missing key information.

Improving the accuracy of inventory records can grow sales by 4-8%, for a businesses and ensures your customers can get what they want, across every channel, exactly when they want it.



How MQ helps

Responsive

IBM MQ's publish/subscribe enables you to act on events as they occur across the omnichannel business. Make mission-critical data available to event streaming applications, such as kafka, to create a single source of truth for auditing and data-derived decision making

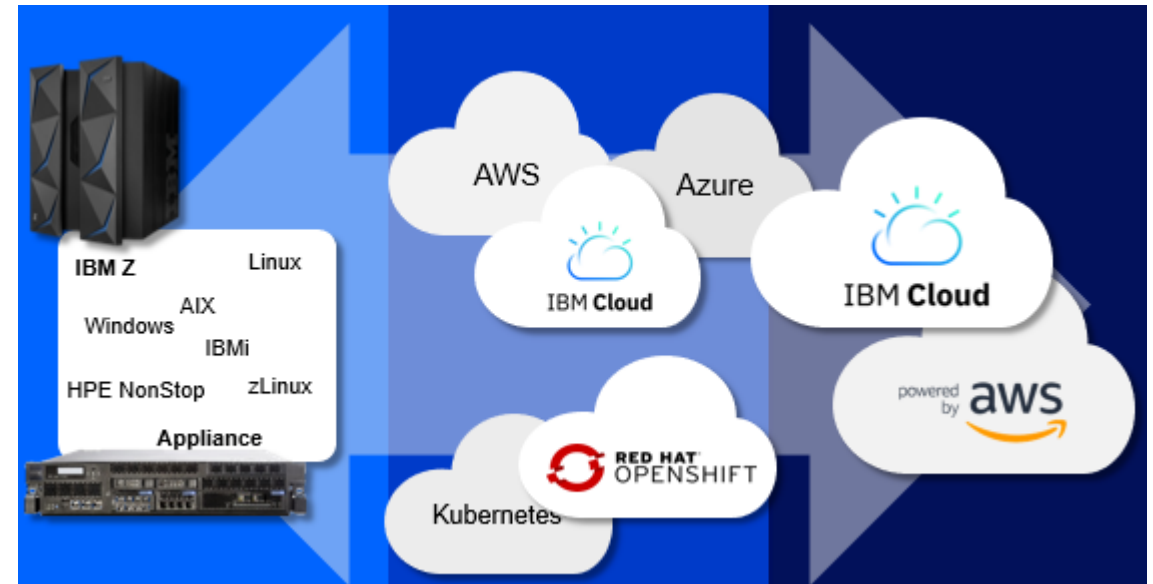
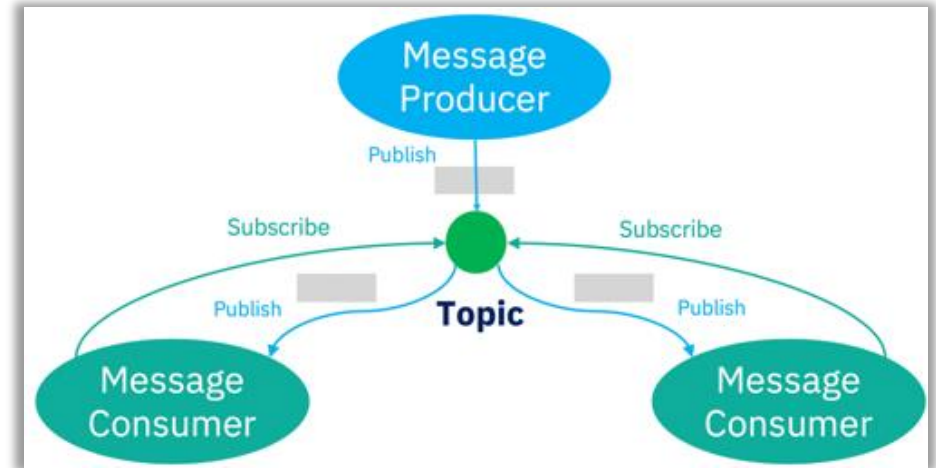
ibm.biz/MessageAndEventsDifferences

Simple integration, everywhere

With several deployment options on public cloud, private cloud, hybrid or at the edge of the enterprise, including a Red Hat OpenShift certified container for outstanding portability, businesses can choose the optimal cloud computing environment for their applications and know that business data, wherever it's coming from or going to, will get there with IBM MQ.

Flexible, high performance

IBM MQ scales effortlessly to handle peak traffic, and provides unparalleled [fault tolerance](http://ibm-messaging.github.io/mqperf/) for always-on communication between your enterprise applications. (<http://ibm-messaging.github.io/mqperf/>)



Achieving better outcomes through surfacing data in real-time to analytics or machine learning technologies

Use case: Powering AI / Machine Learning

Data is the fuel that powers artificial intelligence.

It takes hard work to get data to the point where it's usable for AI, but ultimately it comes down to two things: data quantity and data quality.

Digital transformation and modernization can intensify data issues.

Before taking the AI plunge, you need to have the right data and enough of it to can gain insights, predict future outcomes, and transform business decision-making.



INFUSE – Operationalize AI with trust and transparency

ANALYZE - Scale insights with AI everywhere

ORGANIZE - Create a trusted analytics foundation

COLLECT - Make data simple and accessible

Data of every type, regardless of where it is



How MQ helps

Universal connectivity

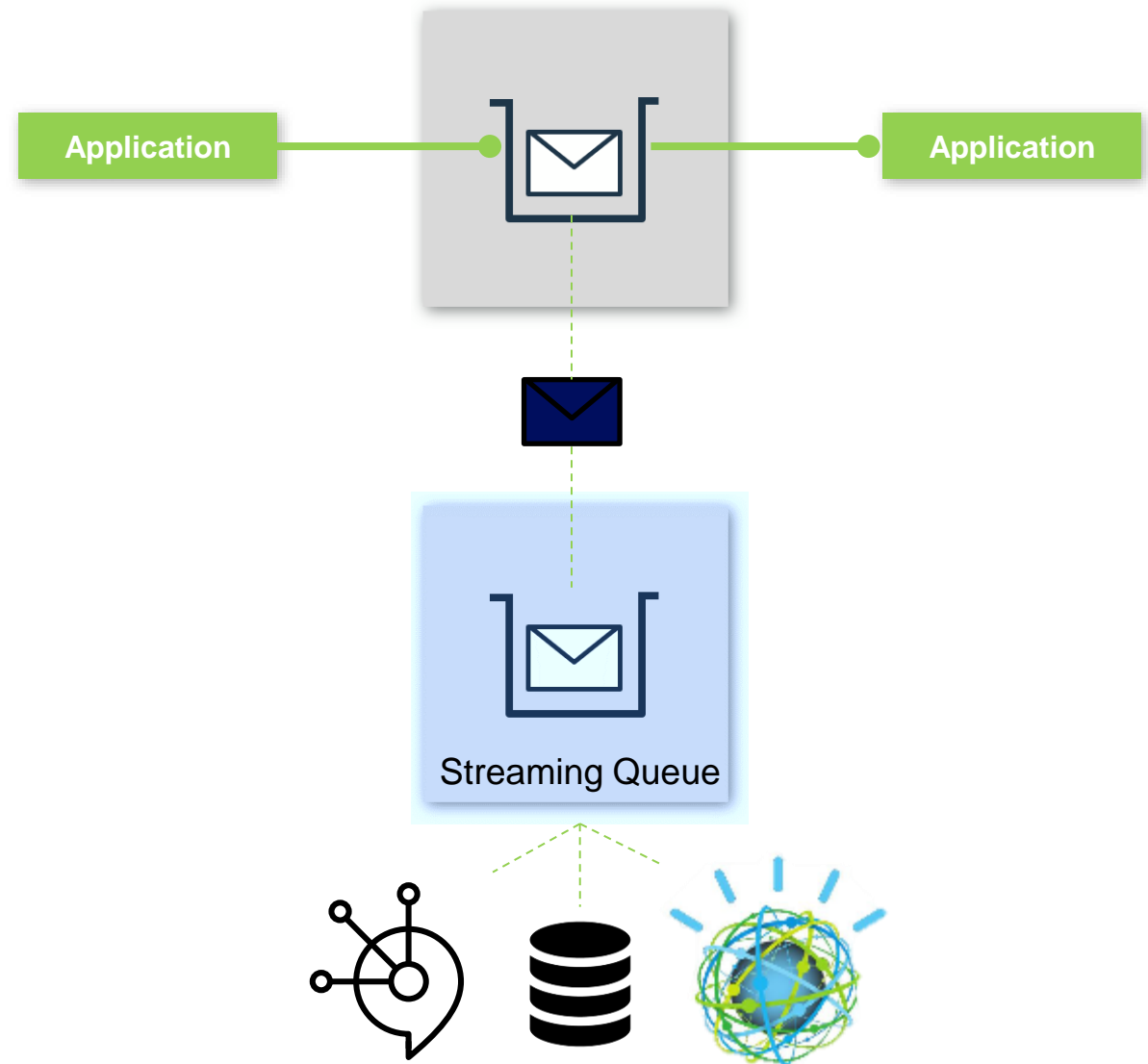
IBM MQ connects applications and systems across the business, whether they are running in a private cloud on premises, in public clouds, or a mixture of both. Bring together every piece of data with support for open protocols such as [AMQP](#) as well as IoT devices using [MQTT](#).

Assured message delivery

IBM MQ assures message delivery - it will never lose a message or accidentally deliver a message more than once - so you can rest assured that your AI system is receiving the right data for insights and predictions.

Smart data collection

With IBM MQ, you can optionally choose to siphon a copy of each message off to an [MQ streaming queue](#) without interrupting the main flow of data to mission-critical applications. In addition, to capture event data for AI, IBM MQ offers [durable Publish and Subscribe](#) to enable Analytics or AI applications to subscribe to messages from a particular producing application.



Business-wide hybrid cloud connectivity

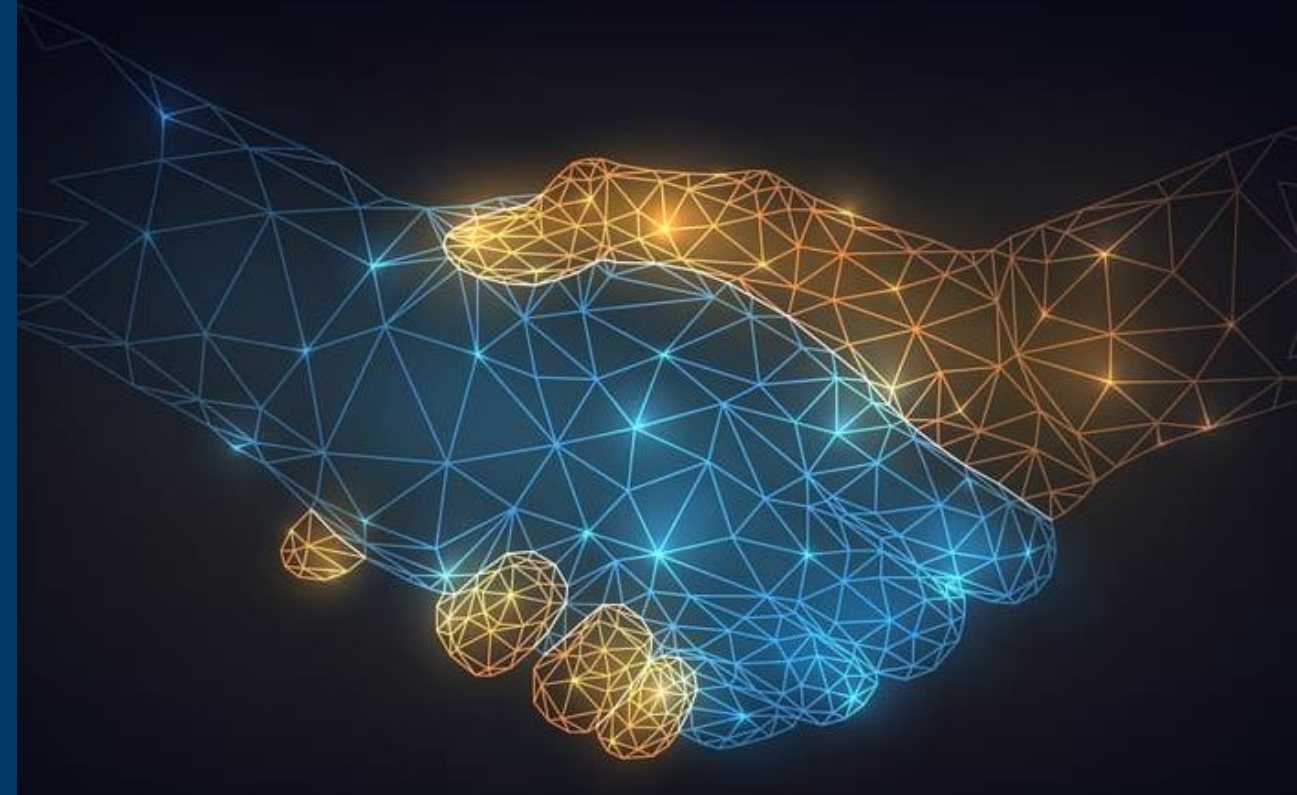
Usecase: Securing partner transactions

Participating in an ecosystem requires the ability to manage relationships securely and with trust, as well as enabling the business to generate the right products and services that will drive growth.

Business have different connectivity requirements depending on factors like industry and business size:

- SMBs generally need cost-effective connectivity to multiple partners and light footprint/minimal infrastructure to drive down costs.
- Larger organisations typically need connectivity that automates management as well as the ability to exchange high volumes of messages and files.

All organizations share the need for resilience and availability. Customers, trading partners and stakeholders want to be assured that operations are secured against cyberthreats.



How MQ helps

Low cost standardisation

Organizations can [redistribute IBM MQ](#) to third parties for free simply, with a single package, enabling partners to transfer messages from their applications into an MQ network. MQ is lightweight, not only perfect for containers but a small footprint means it is cost effective for smaller workloads.

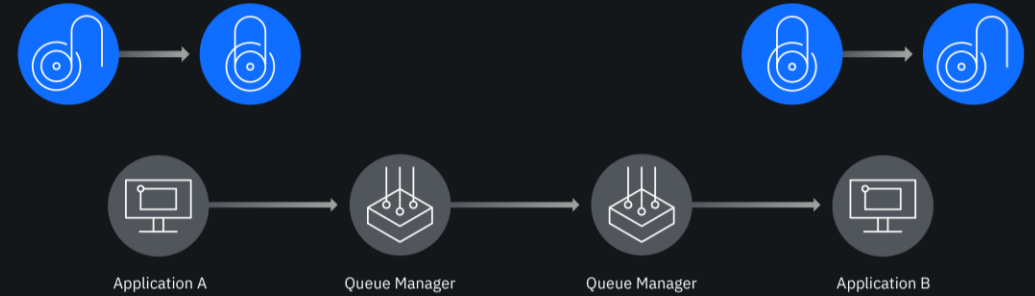
Secure

From message level security – end to end encryption – to user authentication and authorization, IBM MQ has you covered. Partners can trust that the messages they are receiving from you have not been tampered with or the data viewed. Event messages can also be issued to record activity for auditing.

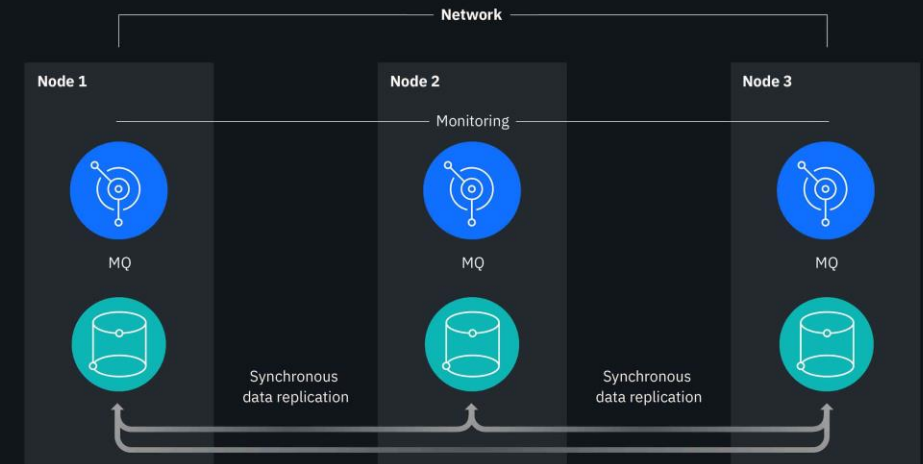
Always-on messaging

IBM MQ offers multiple options to keep your data flowing without interruption – from simple active/passive failover and cloud native quorum High Availability, to automated workload balancing and scalability to handle peaks in workload.

MQ Advanced Message Security (AMS)



MQ Replicated Data Queue Managers (RDQM)





Enterprise Messaging with IBM MQ

Reliable enterprise messaging for mission critical applications

- **Data transfer across new cloud-based applications and core business systems** leveraging message queues and publish/subscribe models to fit application needs.
- **Once-and-only-once message delivery** to ensure your critical business data can be processed accurately and efficiently.
- **Robust message security** with protection for data at rest, in memory, and in-flight through fine grained authentication and powerful data encryption.
- **Exceptional fault tolerance** with workload balancing, high availability, and disaster recovery capabilities ensures you never lose a message.
- **Performance and scalability** proven to match your needs under any situation

Welcome to IBM MQ
Let's get you going!

The dashboard features a central diagram of a messaging architecture with servers, queues, and users. Below the diagram is a grid of management and learning tiles:

Manage Your queue managers (4) Running: 1 Stopped: 3	Create a queue manager Queue managers are MQ engines that host your messaging resources such as queues and topics.	Create a queue Queues enable you to store messages until they need to be consumed.	Application quick start Setup MQ to interact with your application in just a few simple steps.
Download connection file Generate a connection file for applications to use	MQ basics Learn the basics about key MQ concepts, such as queue managers, queues and channels.	Messaging styles Learn about the three main types of messaging styles in MQ: point to point, publish and subscribe, and request-response.	Understanding queues Learn the four main queue types in MQ: local, remote, alias and model.
Learn MQ Learn how to develop an application that uses MQ.			

Thank you!

For webinars, blogs, forums and more, visit the [IBM Community](#)

Listen in to the Podcast at www.doyouMQ.com



Amy McCormick
IBM MQ Product Manager
amymccormick@uk.ibm.com

