

IBM Messaging (aka Websphere MQ, MQSeries)



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The digital economy and hybrid multi-cloud adoption is resulting in an ever-increasing distribution of applications and their data



Legacy
systems



Multiple public
clouds



Private
cloud



Mobile



SaaS
apps



Internet of
Things

Messaging connects those digital endpoints and their data in the most flexible, highly available, and scalable way



Messaging is essential to a modern enterprise

Business critical communication

Exactly once delivery
Reliable communication

Event driven enterprise

Event streaming
Stream history

High-speed data transfer

Regardless of file size,
transfer distance,
or network conditions

scalable and secure to the core

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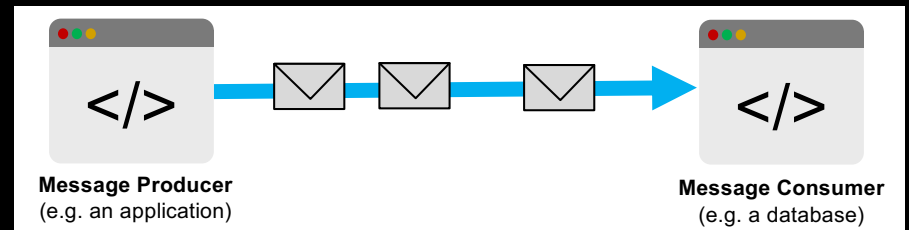
scalable and secure to the core

Business critical communication: Flexible, reliable, secure assured delivery

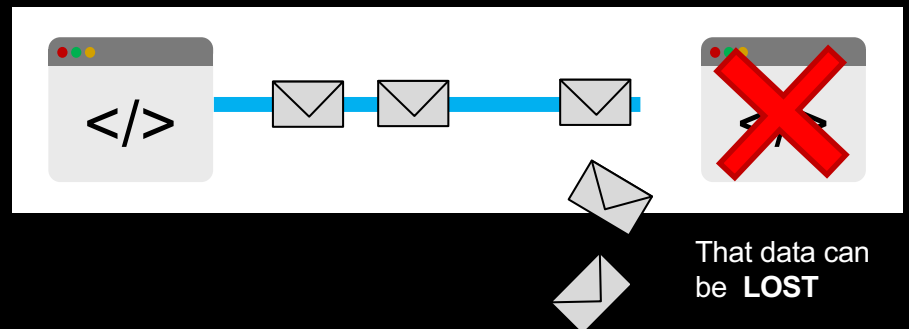
Proven technology for communicating business critical data to support applications and microservices.

- Once and once only
- Targeted delivery
- Platform agnostic

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



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

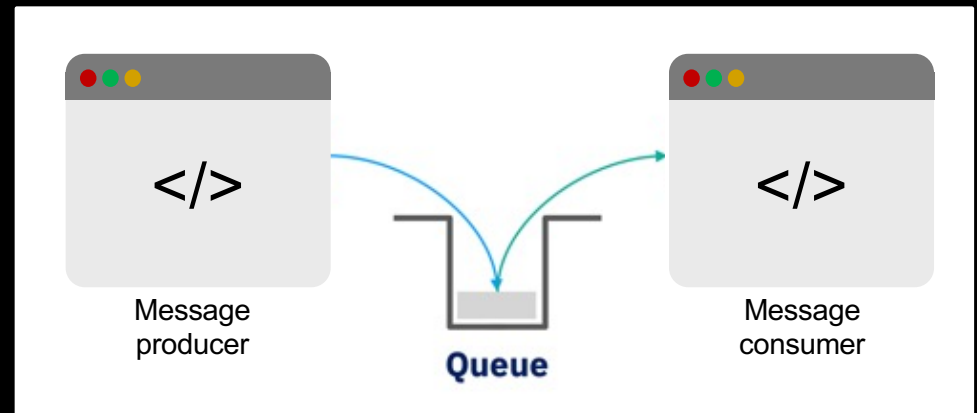


Business critical communication: Flexible, reliable, secure assured delivery

IBM MQ is placed between two or more applications, so they are not communicating directly.

Messages from applications are put on a queue. The sending application does not need the receiving application to be available at the same time, as the queue provides availability.

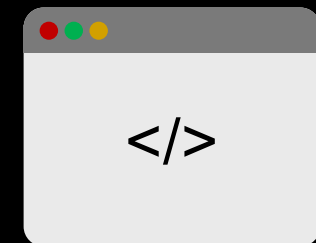
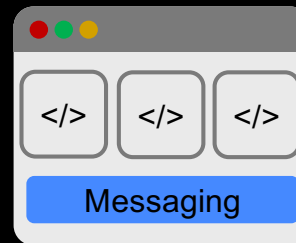
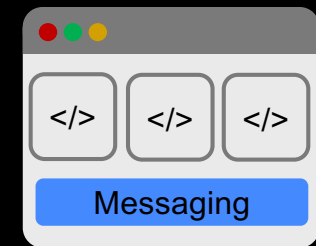
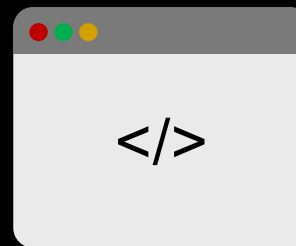
This model is known as asynchronous messaging.



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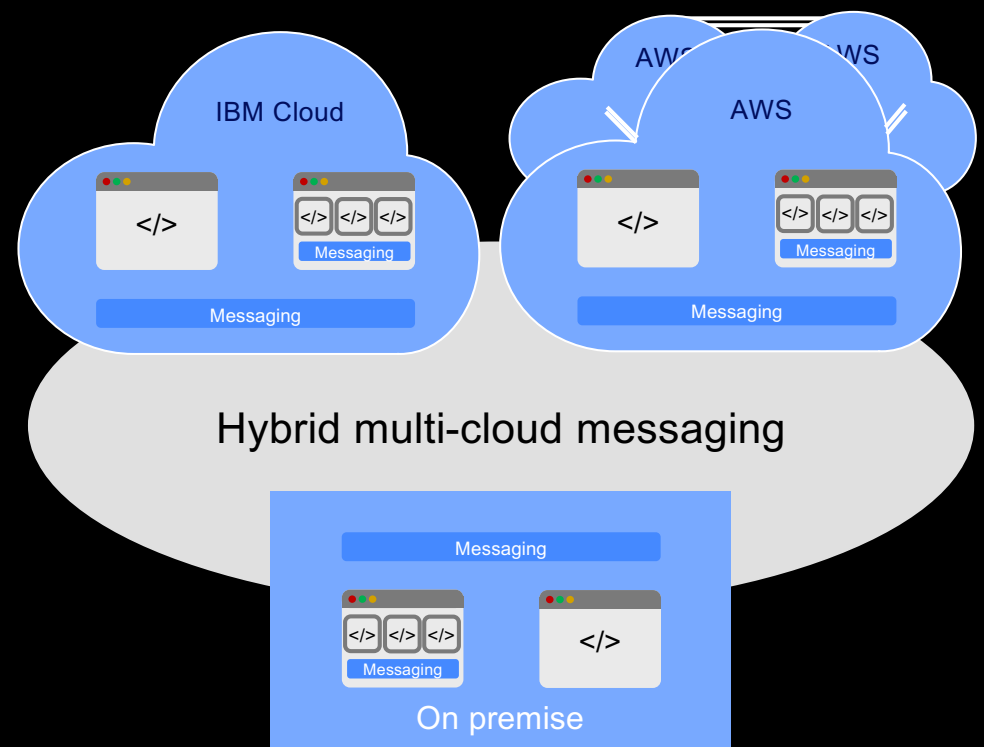


Business critical communication: Across a multi-cloud environment

Fragile networks between clouds can lead to a weak multi-cloud solution.

IBM Messaging overcomes fragile networks, enabling business critical data to be exchanged.

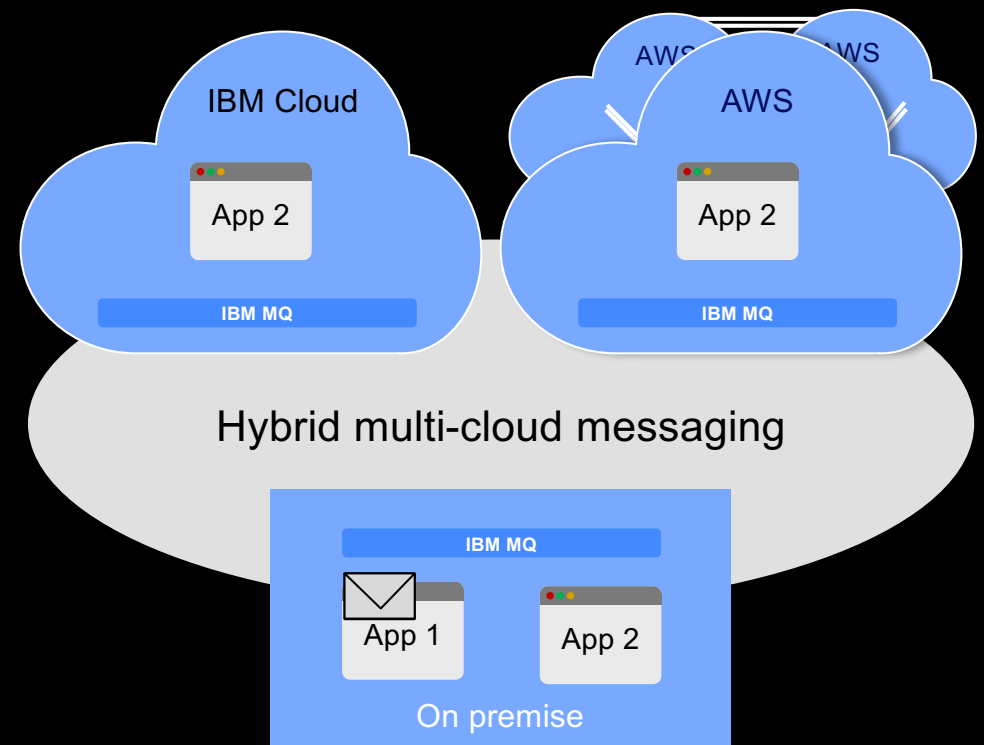
- Messaging available within each environment to assure local access
- Reliable and secure communication across environments, using messaging



Application portability: Lift and shift applications to the cloud

Application **portability** involves deploying the application with its dependencies, reconfiguring the communication in and out of the application.

IBM MQ can provide intelligent routing, transparent to the clients, redirecting messaging between clouds depending on your configuration.



IBM MQ is *the* solution for cloud native messaging

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

Your bank transfers complete without losing your money, with **98 of the top global 100 banks using IBM MQ***

1+1=2

Scalable



Simple



Precise

*2021 customer list compared against [Fortune 500](#) and [S&P Market Intelligence World's 100 largest banks ranked](#) Worlds 100 top banks ranked

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Connected



Reliable



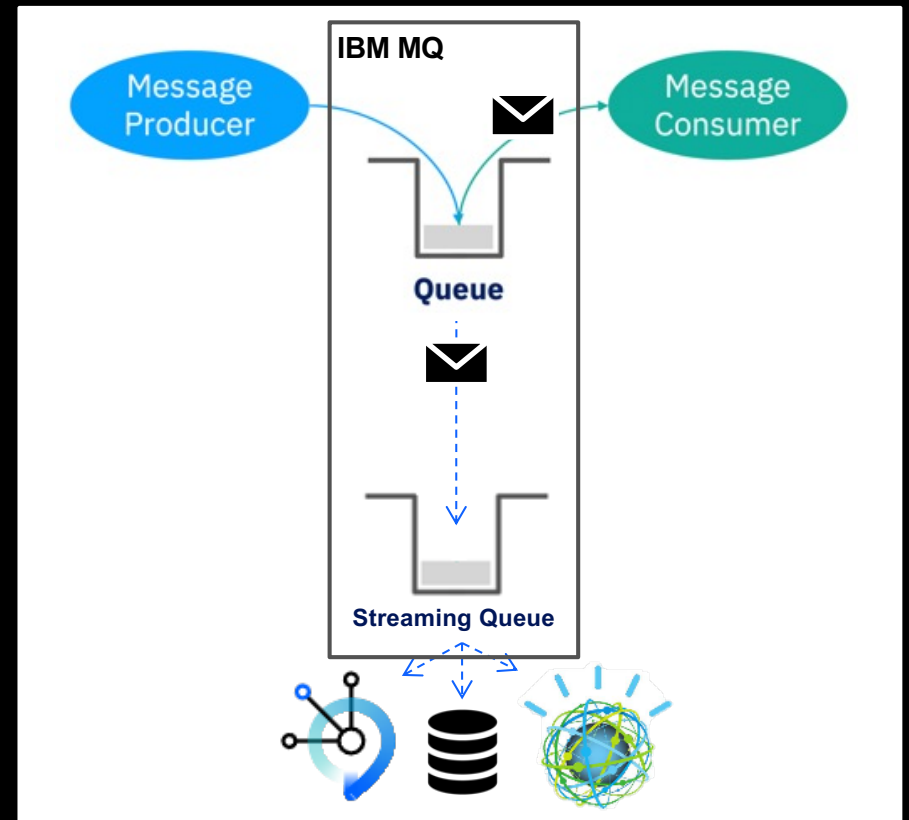
Secure

*2021 customer list compared against [Fortune 500](#) and [S&P Market Intelligence World's 100 largest banks ranked](#) Worlds 100 top banks ranked

Supercharging the value of critical data

Tap into the value of existing data flowing over MQ with **zero impact to the existing applications or their messages**, and without a need for re-architecting your message flows.

- **Real world data** to accurately simulate production workloads to test the impact of architectural changes on applications.
- **Auditing and Replay** of data in the event of disasters.
- **Streaming Processing** to accelerate time to insight from existing data.



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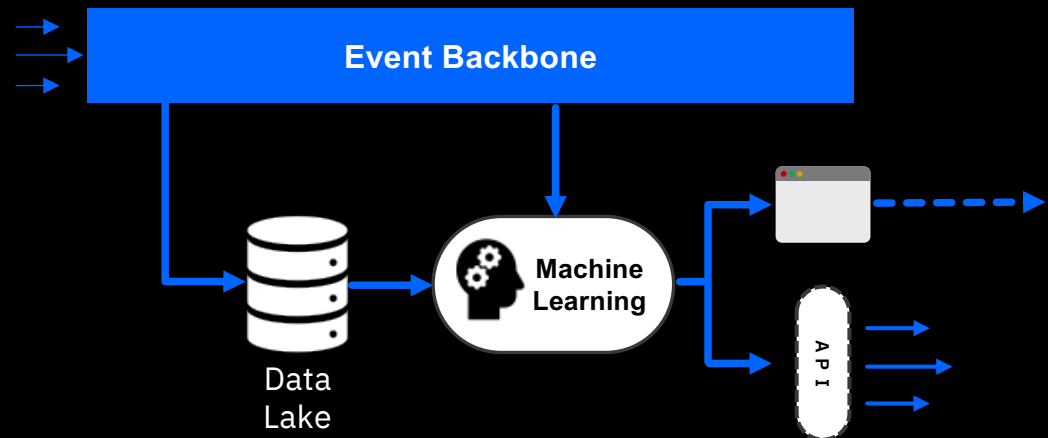
Event driven enterprise: Message driven processing – a "sidebar"

In case it gets forgotten:

- 1995 MQ 3 Tier – messaging based presentation + business + data application framework
- 1997 Early Cloud mDP - CICS and MQ solution for call center operations
- 1998 NEONet → MQSeries Integrator → WebSphere Message Broker → Integration Broker → ACE
- 1999 MQTT – Internet Of Things *de facto* protocol, and Facebook Messenger

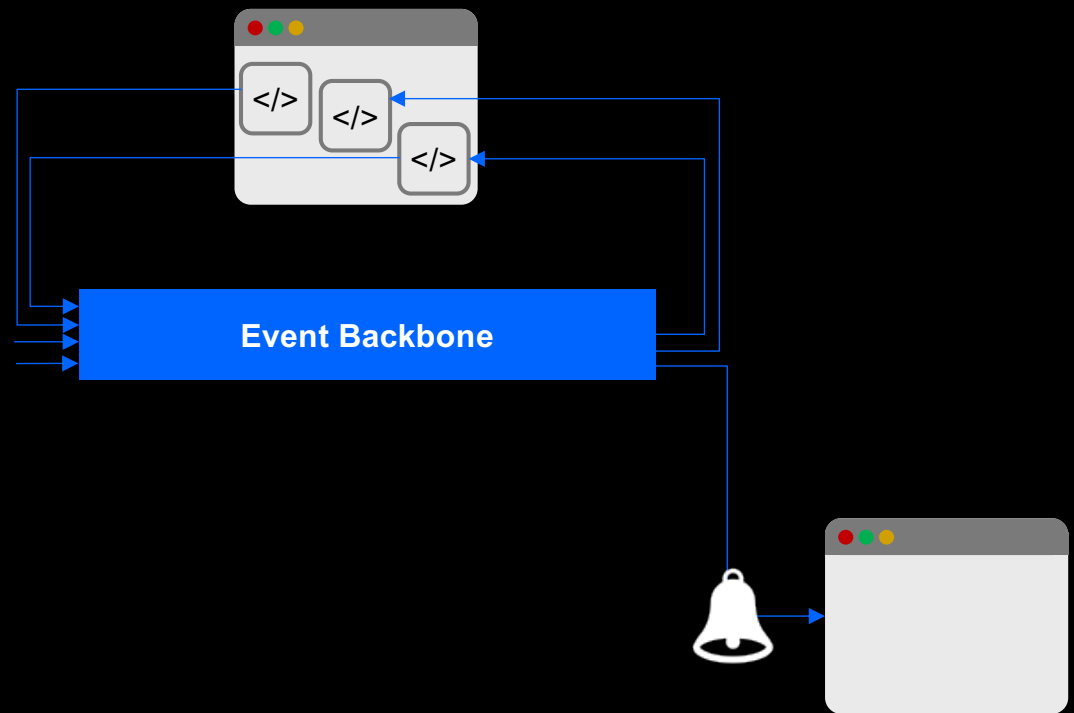
Event driven enterprise: Event feed for data analytics

Collect massive volumes of events from website tracking or backend systems, to feed into big data analytics



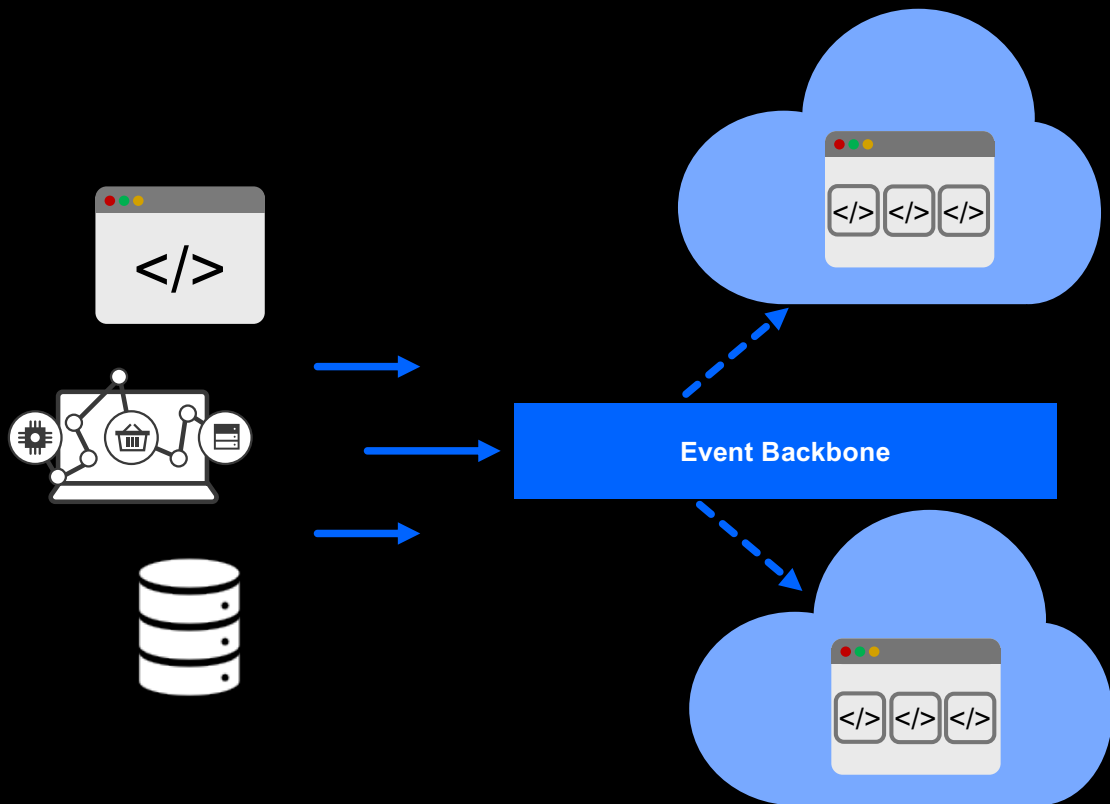
Event driven enterprise: Event-driven microservices powering reactive applications

Create agile, cloud-native applications built around a central event-bus using event-sourced patterns or reactive frameworks



Event driven enterprise: Bridge to cloud-native apps

Extract events from existing systems to power the next generation of responsive, cloud-native applications



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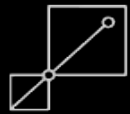
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Transferring large data over distance: Challenges



Size & Volume

Can't reliably send, share, and sync large files and data sets over global internet connections



Speed

Unable to move big data at high-speed with existing network bandwidth



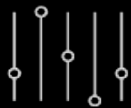
Distance

Subject to slower times and more congestion for global file transfers across public internet, corporate MPLS, wireless and mobile networks



Infrastructure

Limited options to access and store data to the cloud from on-premises infrastructures



Control

Need greater security & more control in moving files & data sets to employees, collaborators, and external data centers, without impacting other traffic

Transferring large data over distance: Requirements



Fastest possible transfers with predictable delivery times

- Regardless of distance
- Support for large files, large numbers of small files, and streams



Support for hybrid cloud infrastructures

- Any storage location
- Any leading cloud platform



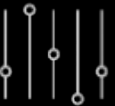
Enterprise-grade security

- Encryption, privacy, and integrity of data
- Authentication and access control



Fully managed service

- Software, infrastructure and security management are handled
- Allows an organization to focus on its business



Control and automation

- Over transfer activity, times, and resource usage
- Seamless integration and automation via APIs

IBM Aspera delivers performance at any distance

- Global hybrid multi-cloud transfer platform
- Transfer up to 100s of times faster using built-in **FASP®** protocol
- Predictable and reliable for any size or volume of data
- Adaptive bandwidth control for multi-Gbps speeds
- Enterprise-grade security to protect at rest and in motion, trusted and proven in heavily regulated industries

High-speed data transfer across hybrid cloud



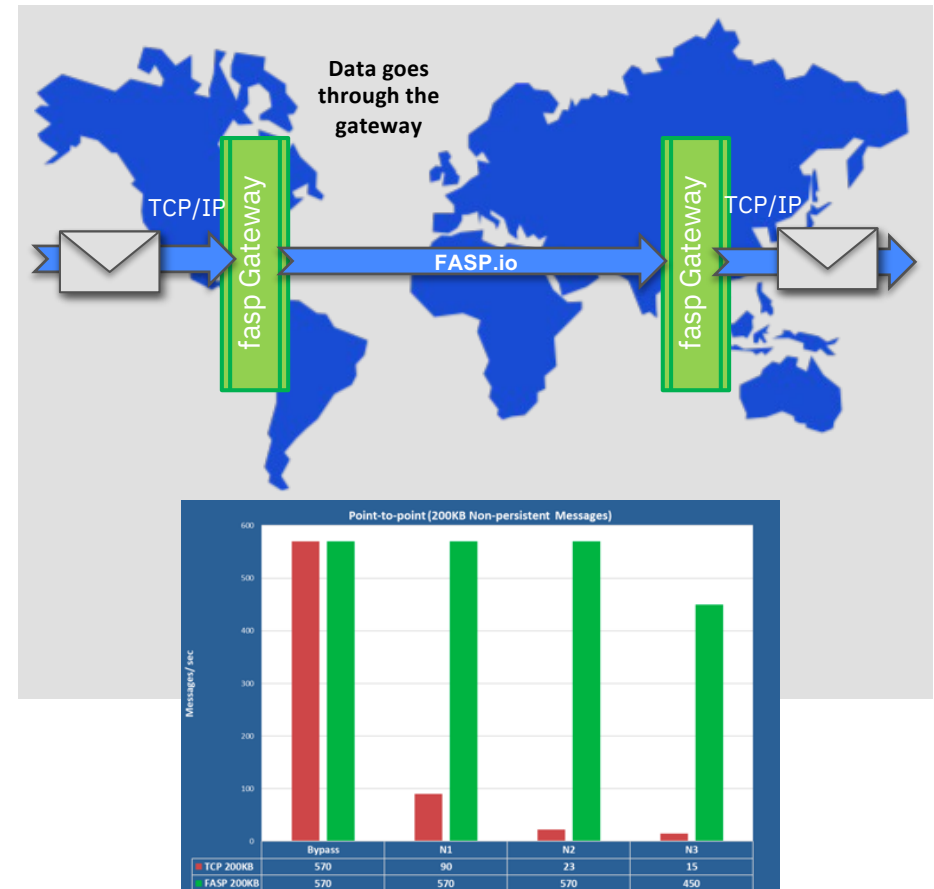
Moving a 10GB file

	Network Bandwidth	Across US	US-Europe	US-Asia
Legacy Transport	100 Mbps			
	1 Gbps	10–20 hours	15–20 hours	Impractical
	10 Gbps			
Aspera FASP®	100 Mbps	14 min	14 min	14 min
	1 Gbps	1.4 min	1.4 min	1.4 min
	10 Gbps	8.4 sec	8.4 sec	8.4 sec

IBM MQ: Power long distance transfer with IBM Aspera

Accelerate the speed of data transfer across long distances and/or poor networks with the **IBM Aspera fasp.io Gateway**:

- The **Fast and Secure Protocol (FASP)** is a network optimized protocol at the heart of IBM Aspera
- Dramatically increase capacity without requiring any network changes - go from millions to billions of messages per day!
- For more information about performance, see [IBM Messaging on GitHub](#)



Bypass: 0ms network latency (no packet loss)

N1: 25ms network latency (no packet loss)

N2: 40ms network latency (0.1% packet loss)

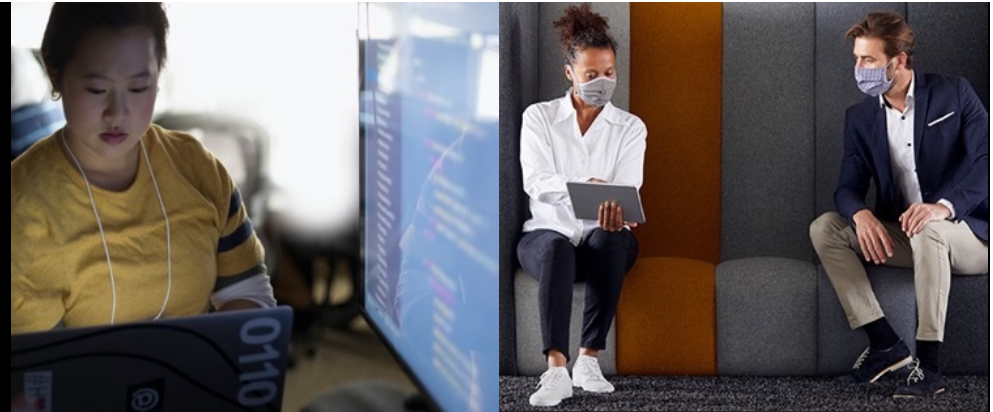
N3: 50ms network latency (0.5% packet loss)

IBM MQ provides the most versatile, reliable and secure messaging capabilities for your most important solutions



IBM MQ

Explore and Try



Try it for yourself with a free trial of
Cloud Pak for Integration

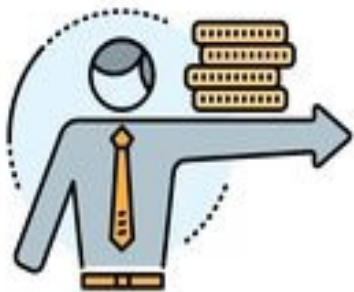
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Explore use cases and industry
examples

ibm.com/products/mq

ibm.com/products/aspera

ibm.com/cloud/event-streams



EXPENDITURE



REVENUE



ASSETS



PAYABLE



REVIEW



CREDIT

A large accountancy firm is a leader in the industry, as well as being one of the largest professional services networks in the world by revenue and number of professionals.



Challenges

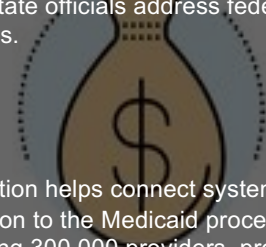
- Forward-looking company constantly looking for new ways to disrupt and improve business models.
- The company and IBM wanted to collaborate to improve the Medicaid process for US states.

Solutions

- Anchored on IBM Cloud infrastructure as a service (IaaS), the 2 pronged hybrid cloud solution is designed to help state officials address federal Medicaid mandates.

Benefits

- The solution helps connect systems, people and information to the Medicaid process, already connecting 300,000 providers, processing 700 transactions per second and supporting 13 million people.



BUDGET



University Medical Center Freiburg accelerates integration across critical systems

Challenges

- The integration architecture team at University Medical Center (UMC) Freiburg (Universitätsklinikum Freiburg) needed to connect the hospital's business and patient care applications with its clinical and patient data storage systems to provide a full view of patient care in one location, resulting in better overall care.

Solutions

- The hospital implemented IBM Integration Bus plus Healthcare Connectivity Pack and IBM MQ software to provide integration, messaging and data transformation.

Benefits

- The integration architecture team saves critical time when implementing new information-system interfaces, allowing the hospital to seamlessly adopt new systems of record and applications.



Grocery retailer

This company is a large grocery retailer based in the United States. Its brands include grocery, multidepartment, convenience and jewelry stores. The company employs more than 339,000 associates.

Challenges

- At this company, transaction data from 2,400 grocery stores reached a central data warehouse via daily batch transfers. This batch processing method delayed analysis and hampered theft-prevention efforts.

Solutions

- The company implemented an integrated message queuing infrastructure that can transfer data from any store endpoint to the central hub in near-real time.

Benefits

- The company's data warehouse now receives transaction data in near-real time, supporting more-informed decisions.



Promising a high level of service at a low cost, this North American airline launched its service in 1996 with just three planes. Now, it fills more than 100 planes, carrying 50,000 guests a day on more than 450 flights to 85 destinations throughout North America, Central America and the Caribbean.

Challenges

- A North American airline wanted to extend its thoughtful customer service, especially during flight cancellations or delays, by sending customers personalized, rules-generated e-mail or text messages.

Solutions

- A rules-based travel notification system uses IBM Operational Decision Manager, IBM Integration Bus, IBM MQ, IBM WebSphere DataPower and IBM Tivoli Directory Integrator.

Benefits

- With millions of messages sent, the travel experience is improved, passenger traffic is up 7.8%, 60% of passengers click for more information and just 0.5% have opted out.



Deutsche Bahn cuts messaging costs by 60%

Challenges

- Deutsche Bahn, a major European train operator, wanted displays that informed passengers at smaller stations on train status, while also reporting back centrally about display and message status.

Solutions

- The company deployed IBM MQ Telemetry because of its reliable messaging and a bidirectional capability that can send information to LED displays and report back on device status.

Benefits

- IBM MQ Telemetry cut messaging costs by 60% vs SMS, and its bidirectional messaging enables remote monitoring and re-booting, significantly reducing maintenance costs.



Headquartered in the city of Busan, South Korea, Busan Bank offers retail banking services through 250 branch offices and a large network of ATMs. It employs more than 3,300 people.

Challenges

- When their staff went into the field, they brought all the forms and information they thought they would need. But if a customer asked an unexpected question, the employee had to return to the office to find the answer. This not only wasted time, it left customers with a bad impression.

Solutions

- Implemented a mobile development platform that makes it fast and simple to create and update security-rich, easy-to-use mobile applications.
- Today, employees can use their smartphones to access comprehensive information about the bank's services, and the forms they use in the field are electronic and live.

Benefits

- Busan Bank can develop new mobile applications 30% faster than it could in the past.
- Employee productivity has increased by 25%.
- Saving up to USD 500,000 per year by being able to develop new applications internally.



ELM is an e-services development company that works with this agency to create safe and secure portal services for private sector and government organizations. Originally founded in 1986 as a research company, today ELM aims to deliver creative and modern technology solutions.

Challenges

- To better serve its residents, this government agency wanted to update its e-services portal by shortening the development cycle, improving the portal interface and adding mobile capabilities..

Solutions

- ELM, an e-services solution provider that serves government organizations, delivered a solution based on a suite of IBM offerings to streamline e-services development, add mobile capabilities and create a more intuitive portal interface.

Benefits

- More efficient processes helped reduce development time. The solution also facilitated cutting the number of support calls the agency receives.



The Ethiopia Commodity Exchange (ECX) offers a state-of-the-art marketplace for the nation's traditional agricultural economy, bringing integrity, security, and efficiency to the market. The organization currently serves five million farmers and trades billions of dollars of goods each year.

Challenges

- Agriculture is the lifeblood of the Ethiopian economy. To keep the industry sustainable, the Ethiopia Commodity Exchange (ECX) set out to help farmers get a fair price for their produce..

Solutions

- Joining forces with IBM, the ECX pioneered a first-of-its-kind traceability solution that tracks coffee beans throughout the supply chain, and delivers game-changing analytical capabilities..

Benefits

- Deep insights enable production-chain optimization and raise quality, boosting farmers' profit margins and strengthening Ethiopia's economy..



This oil company operates more than 11,000 miles of pipeline in the United States. It transports raw and finished petroleum products, including crude oil, propane and refined products such as gasoline, diesel and jet fuel. The organization also stores motor fuels at terminals, where tanker trucks pick them up for delivery to local retail outlets

Challenges

- Operating 11,000 miles of pipeline through harsh, inaccessible terrain presents formidable challenges. To protect the environment, this oil company must be able to detect potential failures quickly..

Solutions

- The business engaged IBM to expand the use of its existing IBM MQ Telemetry software, which has delivered 99.999 percent reliability for more than 10 years while monitoring 33,000 sensors..

Benefits

- The organization achieved greater integration among systems and improved the availability of near-real-time data to systems, leading to faster response times to potential safety issues.



US Architecture Company headquartered in Miami, engages in home-building activities, including the construction and sale of single-family attached and detached homes and the purchase, development and sale of residential land.

Challenges


- The company was looking to switch from a traditional on-premise environment to a cloud computing model. Its data center had run out of capacity and was getting too expensive to maintain.

Solutions

- The company selected IBM Integration Bus software as its company-wide enterprise service bus (ESB) solution.
- Also, they invested in an IBM WebSphere DataPower Integration Appliance and IBM MQ software. Going forward, the company plans to deploy IBM Operational Decision Manager (ODM) software.

Benefits

- Development and testing processes have been simplified.
- Several tasks are now automated which helps the company manage IT with fewer errors, thus gaining faster deployments.



A Chicago-based financial services company was considering a consolidation of its MQ Series workloads to a single platform.

Challenges

- The company was considering a consolidation of its MQ workloads to a single platform. The z Systems account focal asked the Eagle team to assist with an assessment, as such a move would jeopardize the client's mainframe environment.

Solutions

- The team demonstrated that consolidation of MQ onto the mainframe with an HA solution using z/OS would be the most cost effective and robust technical solution for the company.
- To strengthen the financial savings of a mainframe based solution the team provided special bid MQ Series on z/OS pricing. The analysis persuaded Northern Trust to use the mainframe for MQ Series and its HA

Benefits

- The analysis persuade the company to use the mainframe for MQ and its HA, defending \$3.3M in MQ on z/OS revenue stream over three years. The direction also saved the company approximately \$1.5M in replatforming costs.



One of the largest, and most famous police departments in the world.

Challenges

- An officer responds to a call about vandalism. When the officer arrives, the suspect has a gun out. That information was already in the system but it had not yet gotten to the officers. Fast response is not enough. The was struggling to get the right information to the right officers in real-time with low latency, much faster than what is possible with HTTP request/response architectures.

Solutions

- IBM radically simplified the mobile development model using MQTT publish/subscribe rather than developing with RESTful HTTP. It enabled decoupling the publishing of information from the client side development, which uses the IBM contributed Eclipse Paho MQTT HTML5 JavaScript. MQTT is open standard, open source.

Benefits

- Teams no longer navigate around a UI trying to find the right information. As soon as the department has information, it is reliably pushed to officers in real-time.
- The IBM Mobile solution will also extend client support to newer mobile devices, which can include iOS, Android and RIM-based clients.

Thank you

<https://ibm.biz/ibmz-xplore>

[MQTC_v2018_Introduction_to_MQ](#)

[MQTC_2018_Getting_The_Most_From_ACE](#)

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