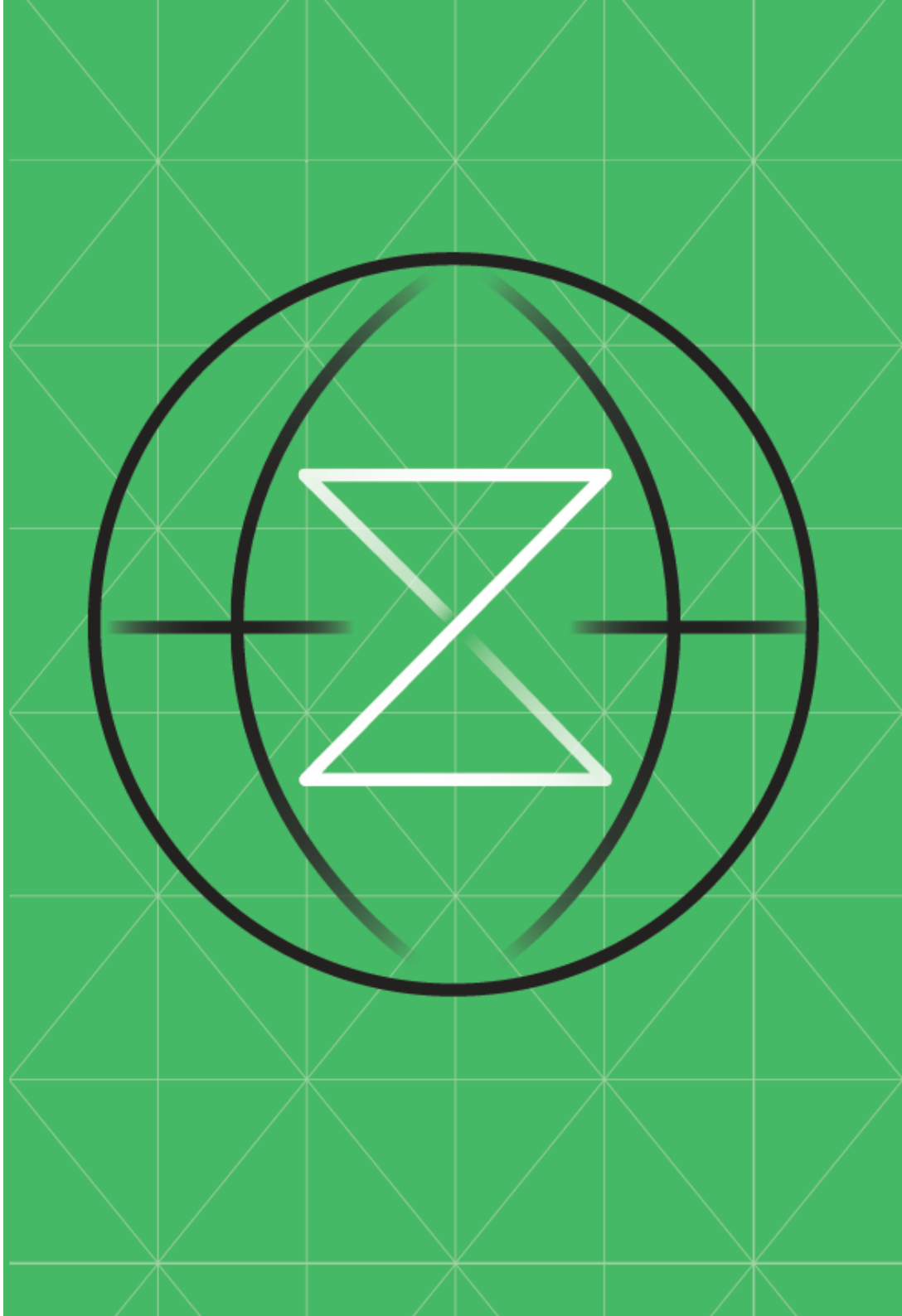
Extended

230628-0811

MQZ1

App to App chat



ENTERPRISE MESSAGING WITH MQ

Pass reliable messages from app to app ### The Challenge {-}

During this challenge you will get introduced to IBM MQ. MQ is a very powerful messaging and file transfer application. With MQ you can have applications running on different hosts and even infrastructures communicate and synchronize.

Before You Begin

Make sure you have a basic understanding of using the TSO interface to MQ.

Investment

Steps	Duration
5	90 minutes

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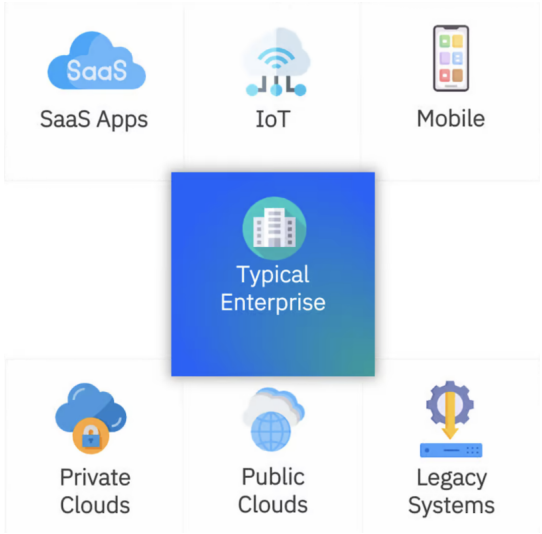
1 INTRODUCTION TO ENTERPRISE MESSAGING

Imagine a world where thousands of employees, applications, and systems need to share information and work together seamlessly. That's where Enterprise Messaging comes in - it's the unsung hero that ensures smooth internal communication and collaboration, allowing organizations to thrive in today's fast-paced digital world.

So, while you may not see it on your phone's home screen, Enterprise Messaging is hard at work behind the scenes, powering the organizations we rely on every day.



1.1 MESSAGING VS. ENTERPRISE MESSAGING

Messaging, in general, refers to the exchange of information between applications, systems, or services through messages. It can be as simple as sending data from one component to another within an application or more complex, involving multiple services and systems across an organization.

- Messaging Solutions:

Typically include basic features such as message queuing, point-to-point communication, and publish-subscribe communication patterns.

Purpose: Focuses on the general communication between applications and services through messages

- Enterprise Messaging: Messaging solutions designed specifically for large-scale, complex organizations with diverse and often mission-critical requirements. These solutions offer additional features and capabilities tailored to the needs of enterprise environments, such as: high availability, security, scalability, integration with other enterprise systems

  Purpose: Targets the specific needs of large organizations by providing advanced features and capabilities for security, availability, scalability, and integration.

Check out the video

2 COMMUNICATION STYLES

Synchronous and asynchronous communication are two fundamental paradigms in messaging systems, such as IBM MQ. Understanding the differences between these two modes of communication is essential for designing efficient and robust message-based applications.

2.1 SYNCHRONOUS COMMUNICATION

In synchronous communication, the sender and the receiver are dependent on each other. When the sender sends a message, it waits for a response from the receiver before proceeding. The sender is “blocked” until it receives the response, and during this time, it cannot perform any other tasks.

This mode of communication is often used in scenarios where the sender requires an immediate response, such as request-response patterns or remote procedure calls.

However, the limitations of synchronous communication include:

Latency
: The sender is blocked while waiting for a response, which may cause delays and reduced efficiency

Scalability
: Synchronous communication can become a bottleneck in distributed systems, affecting performance as the number of participants increases

2.2 ASYNCHRONOUS COMMUNICATION

In asynchronous communication, the sender and the receiver are independent of each other. The sender sends a message and continues with its tasks without waiting for a response from the receiver. The receiver processes the message at its convenience and may send a response later, if needed.

This mode of communication is often used in scenarios where immediate feedback is not necessary, such as event-driven architectures or fire-and-forget patterns.

This provides you with:

Scalability
: Asynchronous communication can handle more traffic and participants, making it suitable for large-scale distributed systems.

Responsiveness
: The sender and the receiver can continue with their tasks while messages are being processed, improving overall system performance.

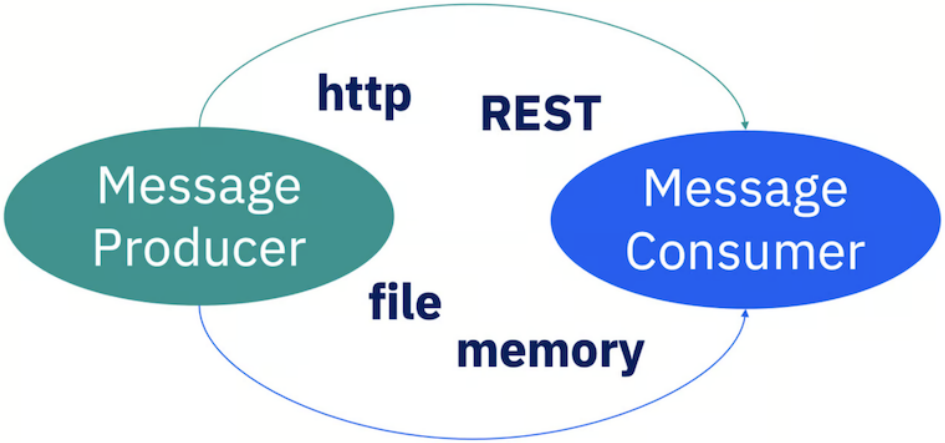
IBM MQ supports both synchronous and asynchronous communication.

By understanding the differences and trade-offs between these two modes, developers can make informed decisions on which approach to use in their specific use cases, optimizing application performance, and scalability.

3 WHY IBM MQ?

3.1 APP LOGIC & DEVELOPMENT

By using an enterprise messaging system like IBM MQ, you can focus on developing your application logic rather than worrying about the details of how messages are transmitted and processed.



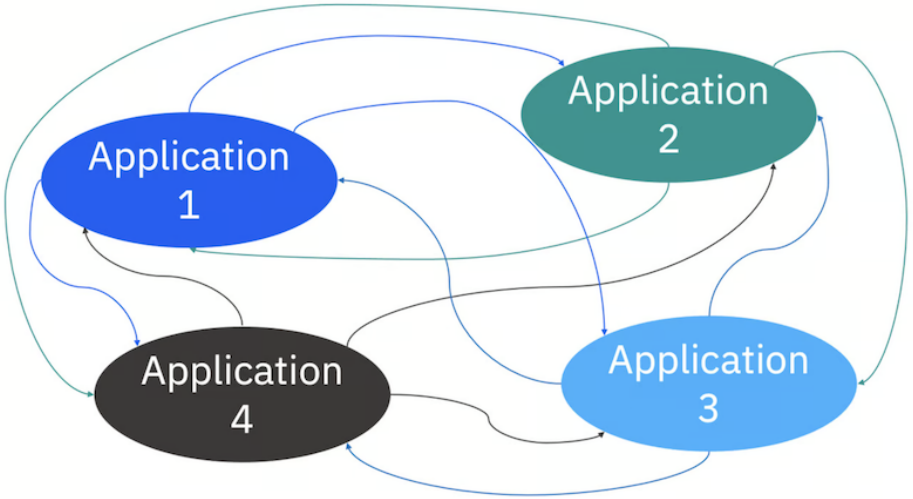
This can help to improve the quality and reliability of your applications and reduce the amount of time and effort required to develop them.

Example:

> If you are developing a mobile app that requires real-time messaging between users,
> using an enterprise messaging system can help you focus on the app logic,
> such as handling user input and displaying messages,
> rather than worrying about the details of how messages are transmitted and processed.

3.2 REDUCING COMPLEXITY

IBM MQ can help to reduce the complexity of your application architecture by providing a standardized way of communicating between different components.



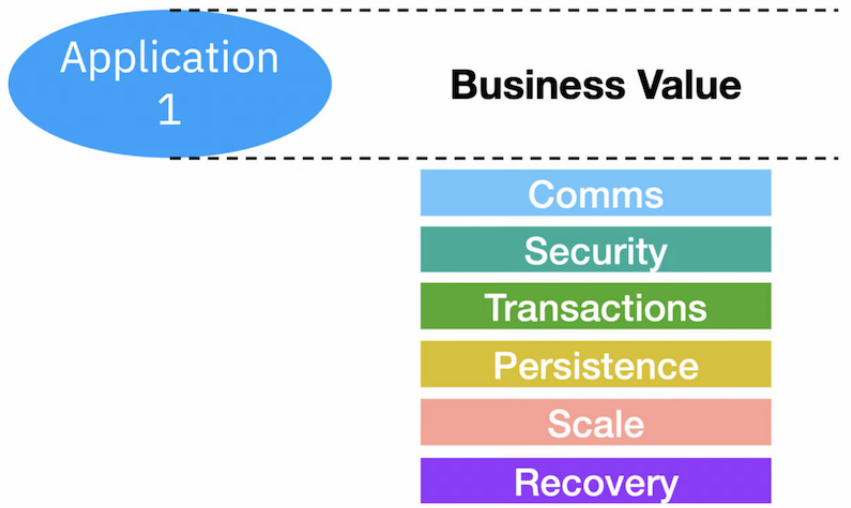
This can help to simplify the development and maintenance of your applications and make it easier to integrate with other systems.

Example:

> Imagine you have a large e-commerce website with multiple systems handling orders, inventory management, and customer data.
> Using an enterprise messaging system can help to standardize the way these systems communicate, reducing the complexity of the overall architecture and making it easier to add new functionality.

3.3 THE BUSINESS VALUE

IBM MQ can help to showcase the business value of your applications by enabling real-time data processing and analytics.



This can help you to make better decisions, respond more quickly to changing market conditions, and improve the overall performance of your business.

Example:

> A retail store that uses an enterprise messaging system to track sales data in real time can quickly respond to changes in demand,
> adjust inventory levels, and improve the customer experience.

A great start - let's recap	Next up …
You have seen that there are different types of messaging used in enterprise systems. you have seen how IBM MQ implements a variety of	MQZ2 will give you hands-on experience with the IBM MQ console

A great start - let’s recap	Next up …
messaging styles across many different platforms and operating systems	

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