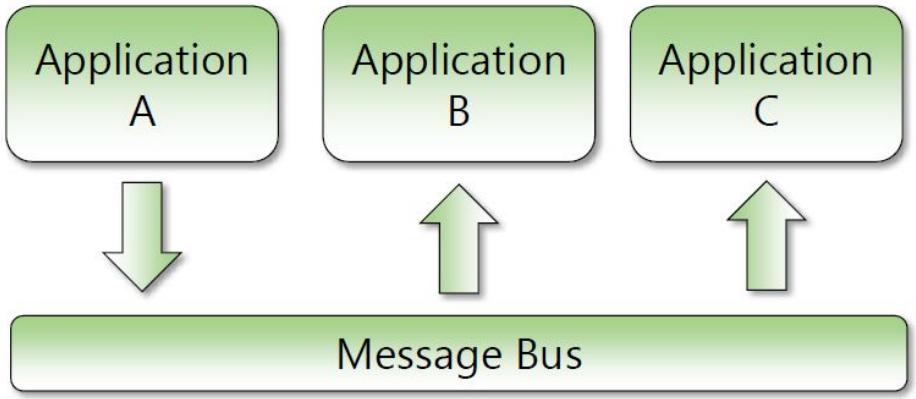
Messaging Queues 101

RabbitMQ
Azure Storage Queues
Azure Service Bus Queue

What is messaging?



Characteristics of Messaging

- Asynchronous
- Can be reliable
- Can be durable
- Routing
- Many message formats
- Recipient pulls message from queue

History of Messaging

1986	The Information Bus (TIB) developed
1993	IBM MQSeriesreleased
1997	Microsoft MSMQ released
2001	Java Messaging Service released

- Expensive
- Too complex
- Difficult to build solutions

AMQP

- Advanced Message Queue Protocol
- Developed by JP Morgan Chase and iMatix
- Open standard protocol for messaging
- Vendor agnostic
- http://www.amqp.org/

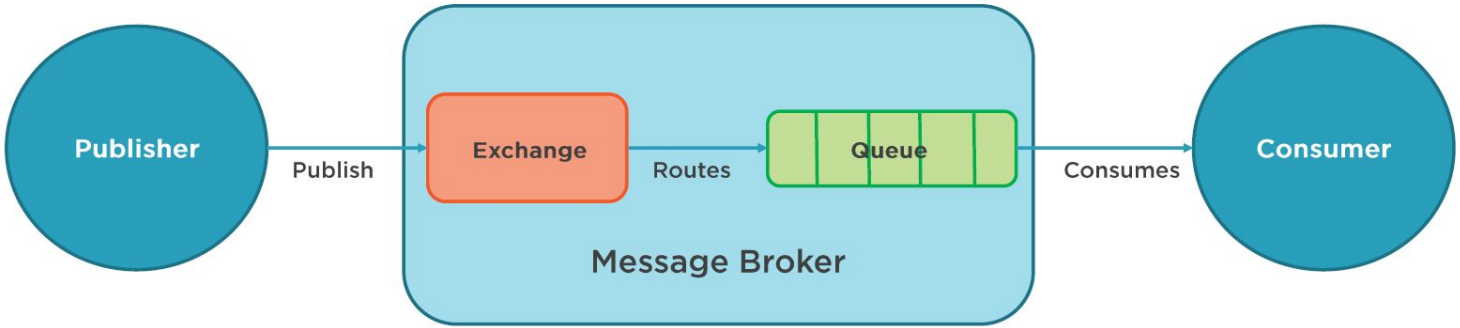
AMQP versions

- 2006 v0.8/v0.9
- 2011 v1.0
- RabbitMQ supports by default v0.9.1 (1.0 via an additional plugin)
- Key differences between 0.9.1 and 1.0

AMQP Key concepts

- Message Broker
- Exchanges
  - Direct
  - Fan-out
  - Topic
  - Headers
- Queues
- Bindings

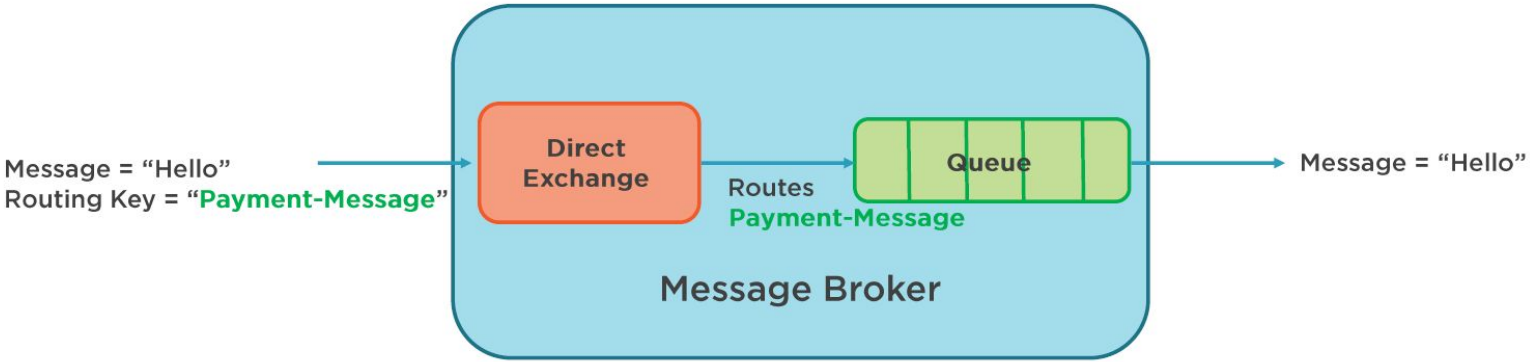
AMQP Messaging Standard



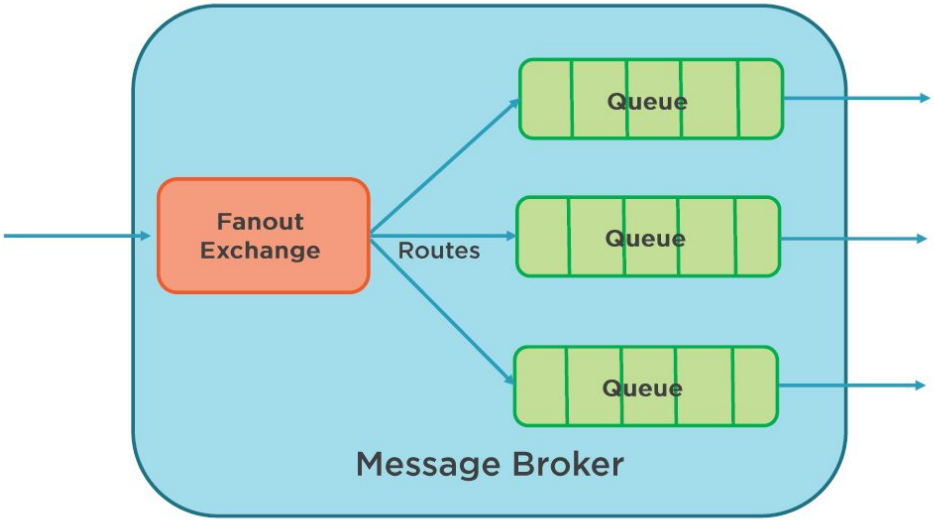
Exchanges

Name	*The name of the exchange*
Durability	*Persisting the messages to disk*
Auto-Delete	*Delete message when not needed*
Arguments	*These are message broker-dependent*

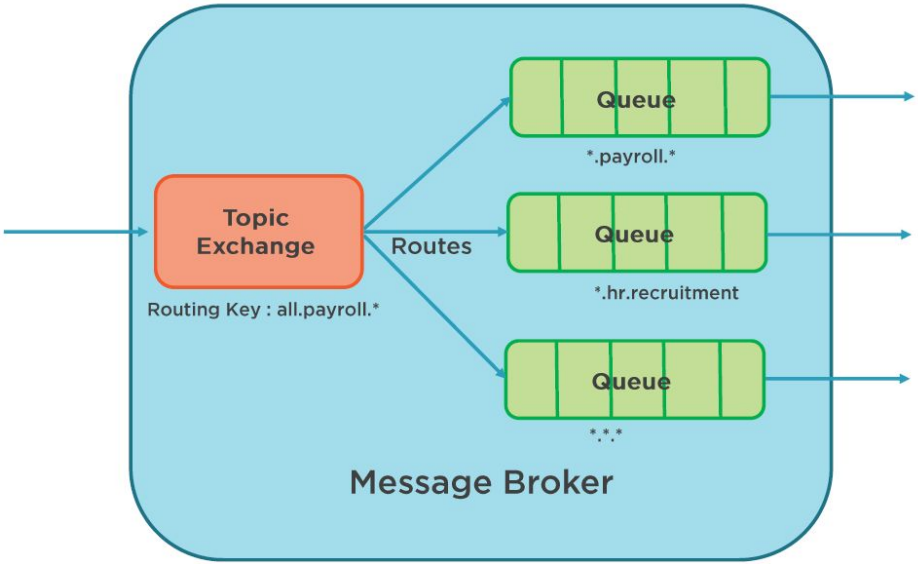
Direct Exchange



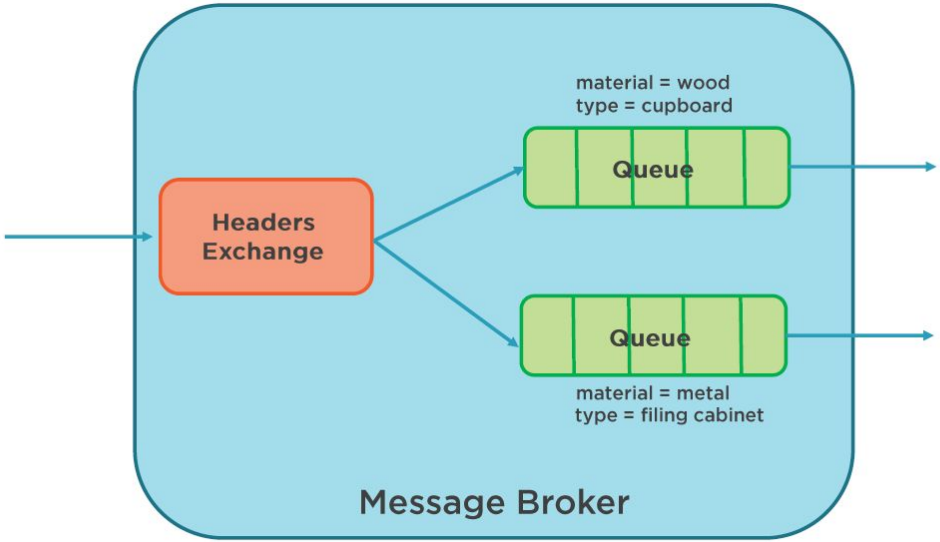
Fanout Exchange



Topic Exchange



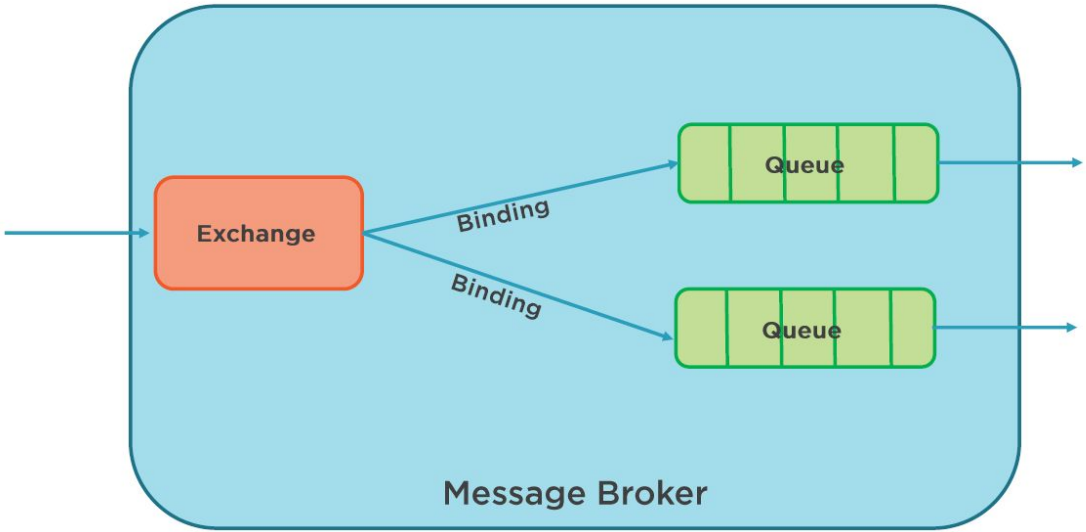
Headers Exchange



Queues

Name	*The name of the queue*
Durable	*Persisting the queue to disk*
Exclusive	*Delete queue when not needed*
Auto Delete	*Queue deleted when consumer unsubscribes*

Bindings



Azure Storage Queue

- Lightweight queuing service
- 64kB size limit
- Cheapest messaging solution

Azure Service Bus Queues

- Azure Messaging
- Message-based reliable messaging
- FIFO
- Message size 256 (1MB)
- Duplicate detection

Azure Storage Queues

REST interfaces

Azure to Azure communication

Smaller, higher volume of messages

Cheaper

Azure Service Bus

Multi-platform support

Need FIFO

Supports in order and at-most-once

Publish & Subscribe features

Dead-letter and expirations

Need other Enterprise features