Quick Start RabbitMQ (RMQ)

A Hitchhiker's Guide to AMQP 0-9-1
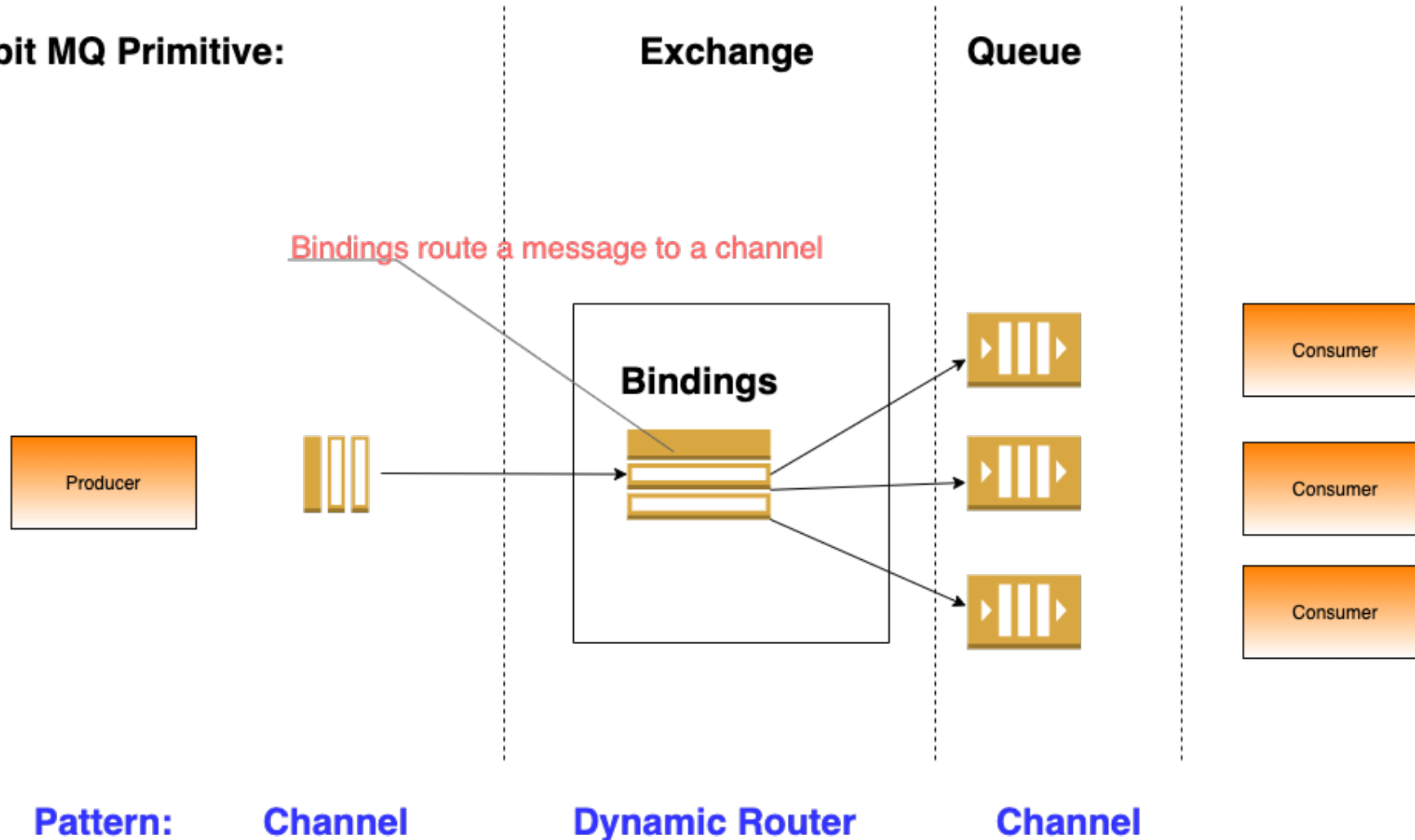
Protocol

- RMQ uses the AMQP protocol to transport messages
    - RMQ uses AQMP 0-9-1
    - This is a significantly different protocol to AMQP 1–0
    - AMQP 1-0 implementations include Azure Service Bus and Azure Event Hubs
- Further reading:
    - AMQP 0-9-1
    - RMQ and AMQP 0-9-1

Durable

RMQ uses the term durable for persistent configuration i.e. will survive restarts of the server. If a definition is not defined as durable it is transient and won't survive a restart

Rabbit MQ Primitive: **Exchange**   **Queue**

Bindings route a message to a channel

Bindings

Producer

Consumer

Consumer

Consumer

Pattern: **Channel**   **Dynamic Router**   **Channel**

Create a connection to RMQ

Connections

RMQ uses a multiplexed TCP/IP connections to connect to the server. A connection factory creates a connection, and you then create a channel on it. In production code **pool** connections.

Declare an Exchange of Desired Type

Exchanges

An exchange is the routing table for your messages. You may use multiple exchanges if you want to create multiple routing scopes i.e. one per microservice that publishes messages.
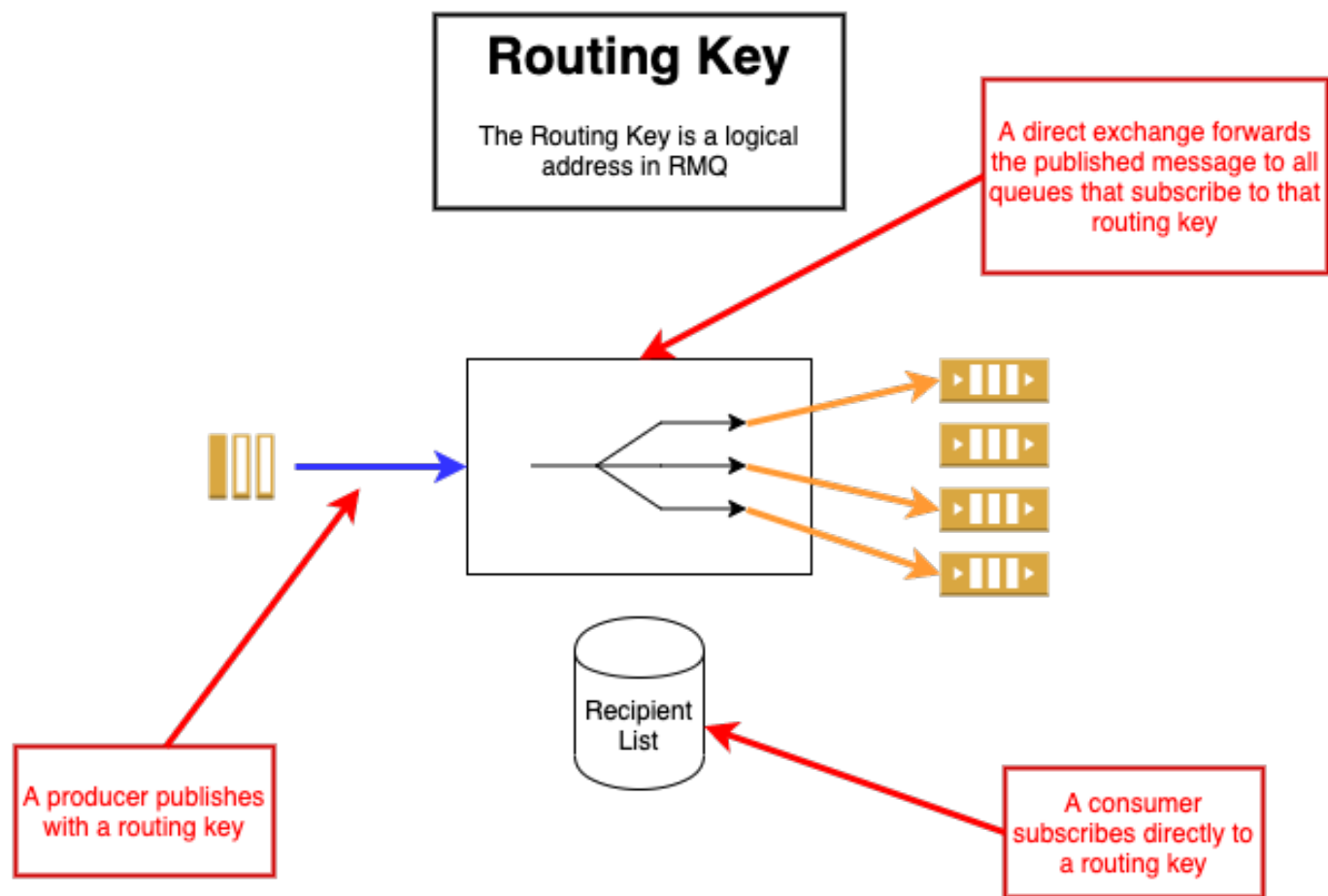
Create a Queue

Queues

An RMQ queue supports FIFO delivery of messages. A message is **locked** when read until acked or nacked. A queue supports multiple consumers as others can read past the locked message.

Bind the Queue to a Routing Key in the Exchange

Binding

Binding is the key step in association the queue with an exchange

Routing Key

The Routing Key is a logical address in RMQ

A direct exchange forwards the published message to all queues that subscribe to that routing key

A producer publishes with a routing key

Recipient List

A consumer subscribes directly to a routing key

Rabbit MQ Direct Exchange

Routing Key

The Routing Key is a logical address in RMQ

A default exchange forwards the published message to the queue whose routing key corresponds to its name

A producer publishes with the routing key as the name of the queue

Recipient List

A queue creates a routing key with the same name as the queue
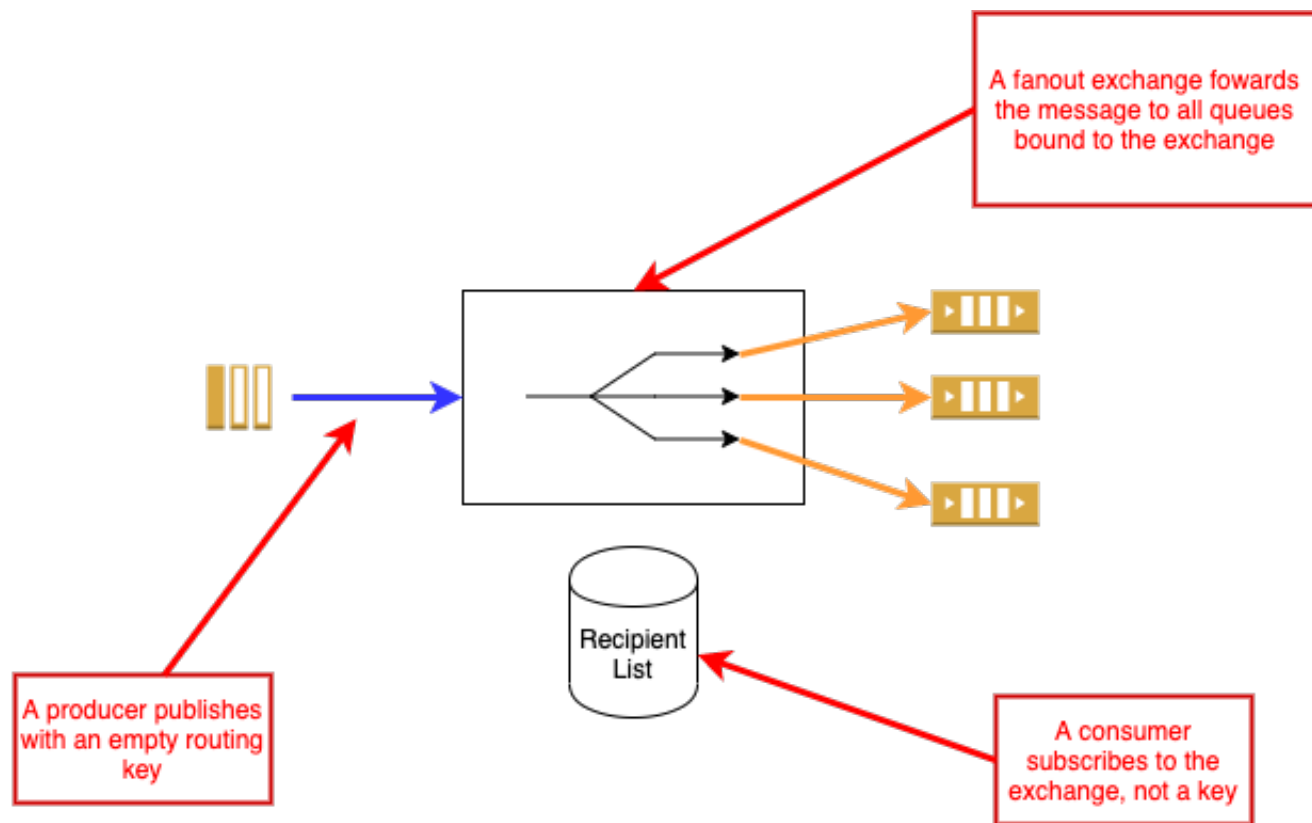
Point-to-Point

RMQ uses an exchange as a router in all topologies. The closest approach to point-to-point is the direct exchange as a message will always go to one, and only one queue.

Rabbit MQ Default Exchange

A fanout exchange fowards the message to all queues bound to the exchange

A producer publishes with an empty routing key

Recipient List

A consumer subscribes to the exchange, not a key

Binding

In a Fanout Exchange, we just bind with an empty routing key, because all queues recieve each message

Rabbit MQ Fanout Exchange

RabbitMQ™

RabbitMQ 3.8.4   Erlang 23.0.2

Overview   Connections   Channels   Exchanges   Queues   Admin

Overview

▶ **Totals**

▶ **Nodes**

▶ **Churn statistics**

▼ **Ports and contexts**

Listening ports

Protocol	Bound to	Port
amqp	::	5672
clustering	::	25672
http	::	15672

Web contexts

Context	Bound to	Port	SSL	Path
RabbitMQ Management	0.0.0.0	15672	○	/

▶ **Export definitions**

▶ **Import definitions**

RabbitMQ™   RabbitMQ 3.8.4   Erlang 23.0.2

Overview   **Connections**   **Channels**   **Exchanges**   **Queues**   **Admin**

Overview

▼ **Totals**

Queued messages last minute ?

Ready	■ 1
Unacked	■ 0
Total	■ 1

1.5
1.0
0.5
0.0
18:46:30 18:46:40 18:46:50 18:47:00 18:47:10 18:47:20

Message rates last minute ?
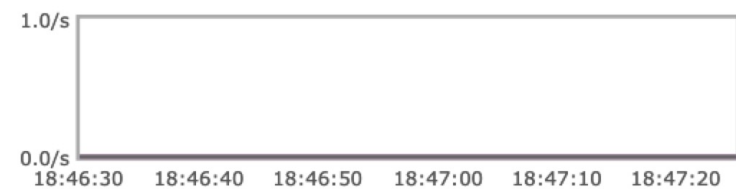
Publish	■ 0.00/s	Unroutable (drop)	■ 0.00/s
Publisher confirm	■ 0.00/s	Disk read	■ 0.00/s
Unroutable (return)	■ 0.00/s	Disk write	■ 0.00/s

1.0/s
0.0/s
18:46:30 18:46:40 18:46:50 18:47:00 18:47:10 18:47:20

Global counts ?

Connections: **0**   Channels: **0**   Exchanges: **8**   Queues: **1**   Consumers: **0**

▼ **Nodes**

Name	File descriptors ?	Socket descriptors ?	Erlang processes	Memory ?	Disk space	Uptime	Info	Reset stats	+/-
rabbit@6220692416be	34 1048576 available	0 943629 available	444 1048576 available	100MiB 3.1GiB high watermark	47GiB 48MiB low watermark	54m 34s	basic disc 1 rss	This node All nodes	

RabbitMQ™ RabbitMQ 3.8.4 Erlang 23.0.2

Refreshed 2020-06-06 18:48:53 Refresh every 5 seconds

Virtual host All

Cluster **rabbit@6220692416be**

| Overview | Connections | Channels | Exchanges | **Queues** | Admin |

User **guest** Log out

Queues

▼ All queues (1)

Pagination

Page 1 of 1 - Filter: ☐ Regex **?**

Displaying 1 item , page size up to: 100

Overview				Messages			Message rates			+/-
Name	**Type**	Features	**State**	**Ready**	**Unacked**	**Total**	**incoming**	**deliver / get**	**ack**	
hello-p2p	classic		idle	1	0	1	0.00/s			

▶ Add a new queue

| HTTP API | Server Docs | Tutorials | Community Support | Community Slack | Commercial Support | Plugins | GitHub | Changelog |

▶ Add a new exchange

| HTTP API | Server Docs | Tutorials | Community Support | Community Slack | Commercial Support | Plugins | GitHub | Changelog |