RabbitMQ Introduction

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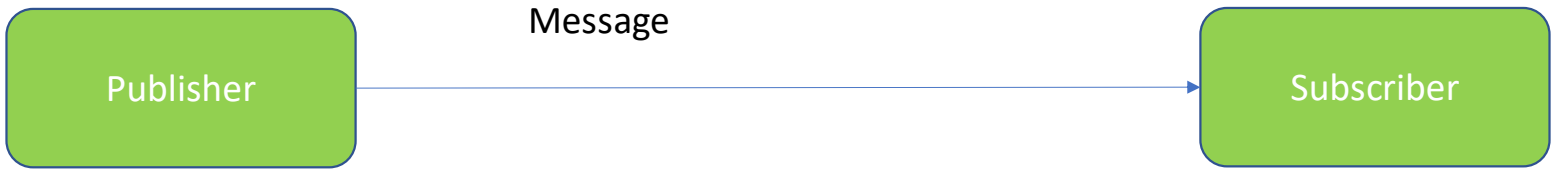
Communication Background

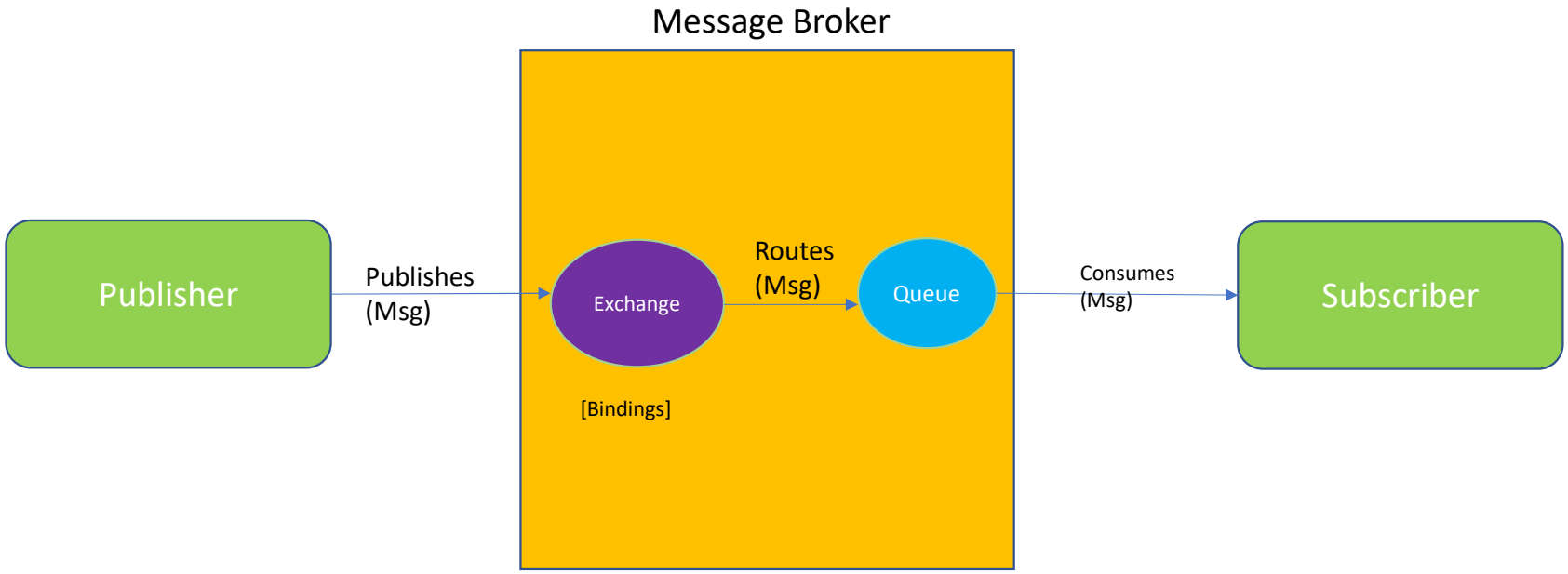


- TCP Socket
- UDP Socket

Disadvantages:

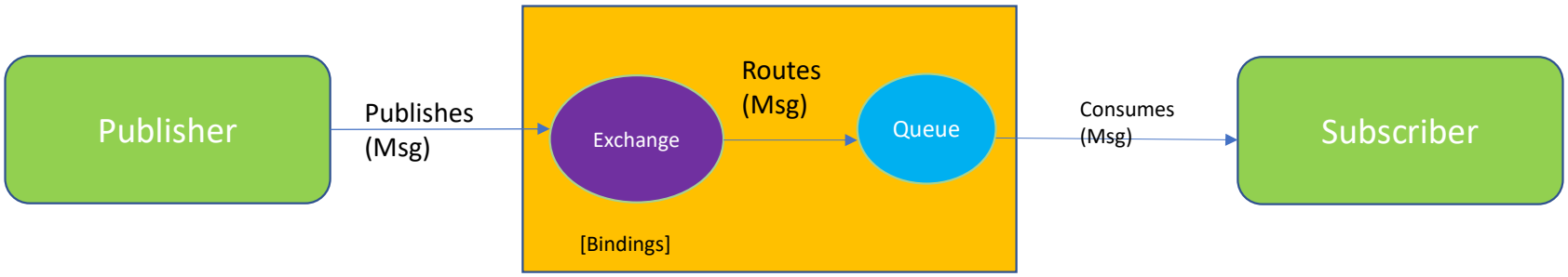
- Aware of Physical addresses
- Not flexible
- Not scalable
- No high availability (HA)

Message Broker

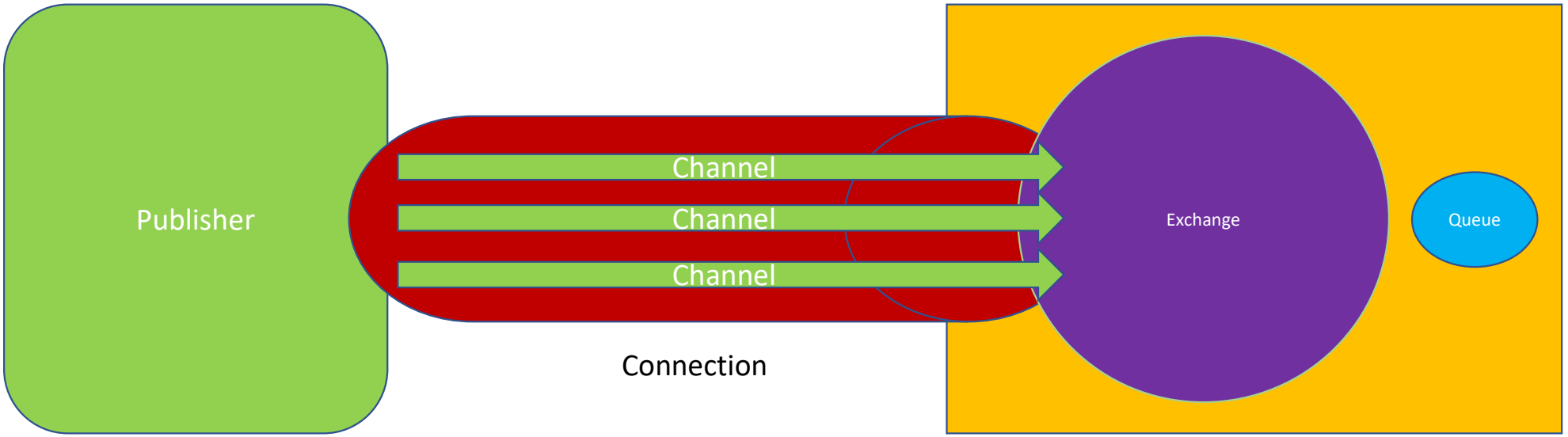


AMQP – Advanced Message Queuing Protocol

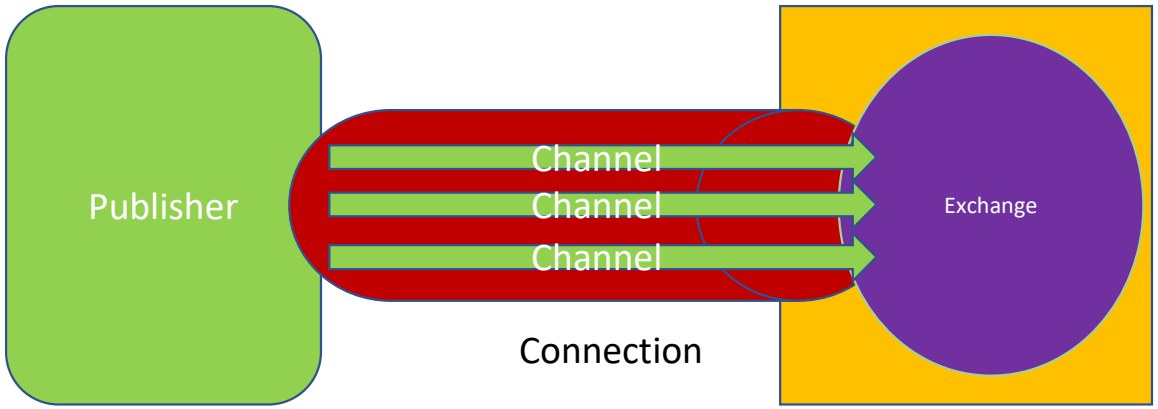
Advantages



- Publisher need not be aware of physical address of subscriber. Just a logical identifier e.g. subscriber name is sufficient
  - One subscriber may be replaced with another
  - More subscribers can be added to queue in case of load increase
  - Messages can be retained even in case of Message broker restart

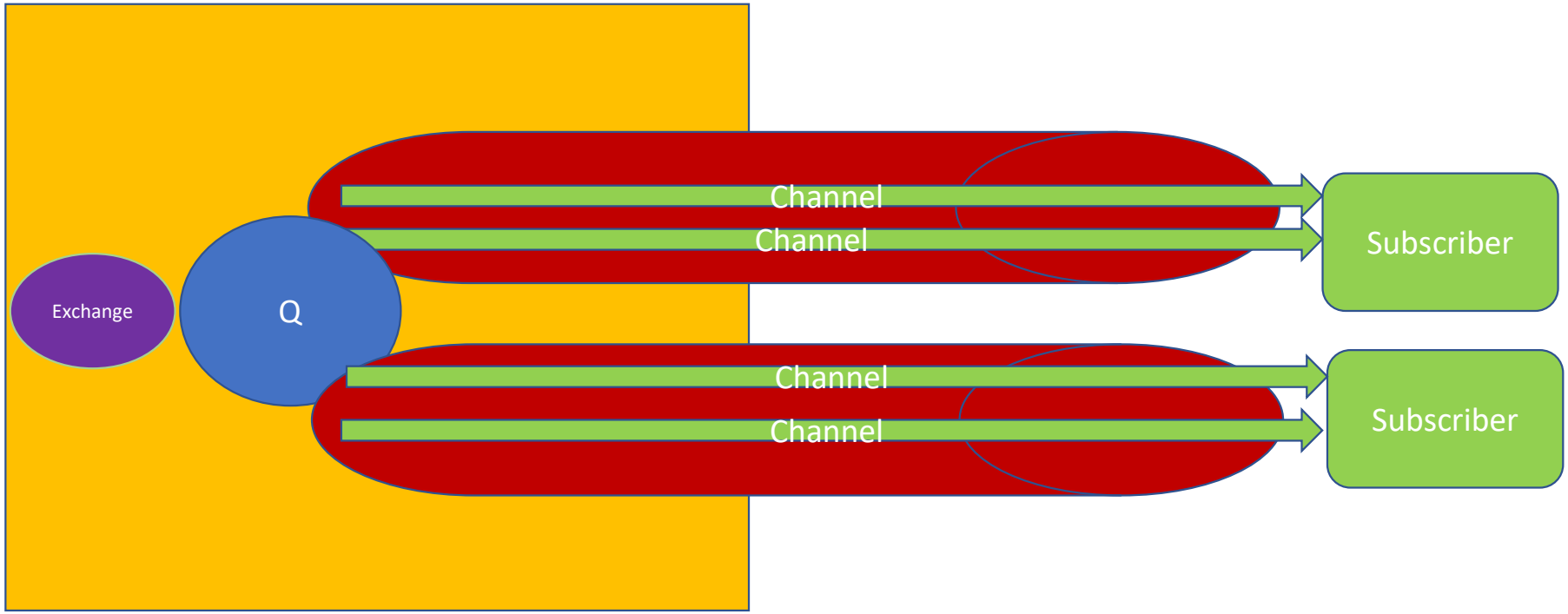


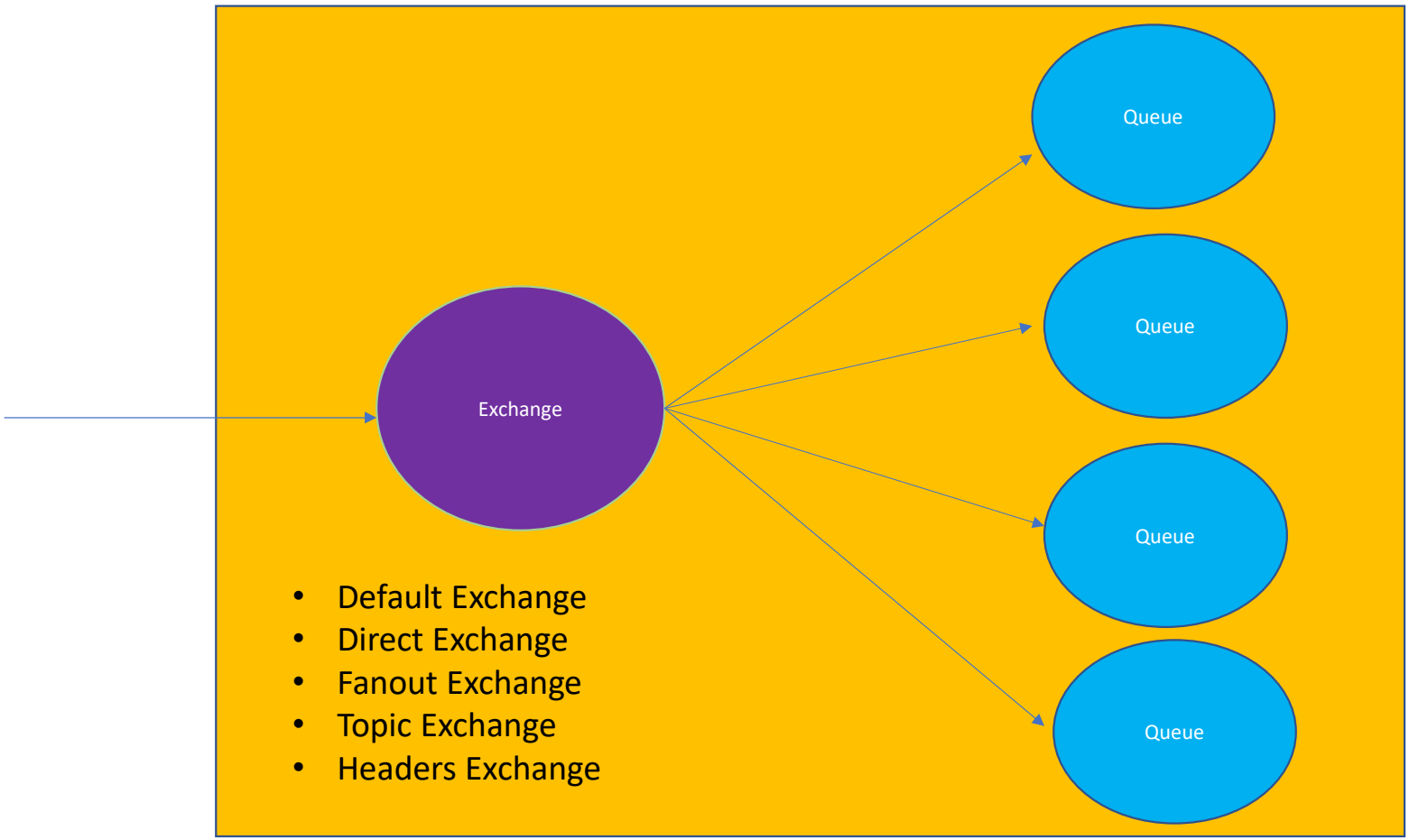
Publisher publishes the message on a channel along with a routing information



- Connection
  - Uses TCP
  - Uses Authentication
  - Can be protected by TLS

- Channel
  - Lightweight Connections that share a TCP connection (AMQP connection)
  - Example: every thread of a multithreaded application can have its own channel
  - Connection closed -> All underlying channels closed
  - No channel without connection


Exchange
Q
Channel
Channel
Channel
Channel
Subscriber
Subscriber


Queue
Queue
Exchange
Queue
Queue
• Default Exchange
• Direct Exchange
• Fanout Exchange
• Topic Exchange
• Headers Exchange

Steps

- Publisher
  - [Optional] Create an Exchange
    - Specify the bindings
  - Create a connection, say CN
  - Create a channel in CN, say CH
  - If the queue does not exist already
    - Create a queue through the channel
  - Publish the message
  - Close the connection
    - Automatically closes the channel

- Consumer
  - Create a connection say CN
  - Create a channel in CN, say CH
  - Create the queue, if it does not exist already and associate it with the channel CH
  - Associate a call-back function with the message queue
  - Start consuming the messages