Apache RocketMQ 101

Aliware中间件

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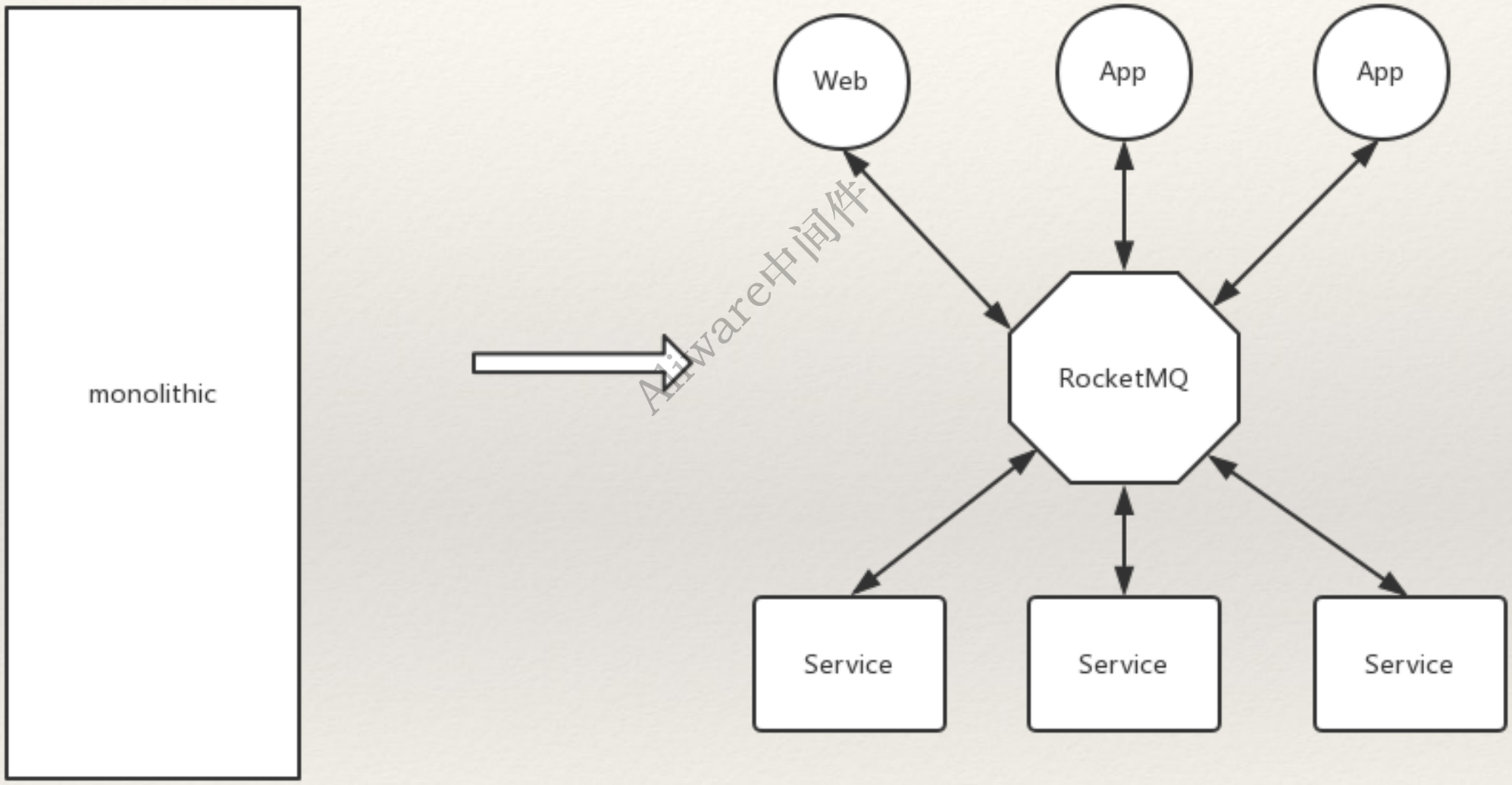
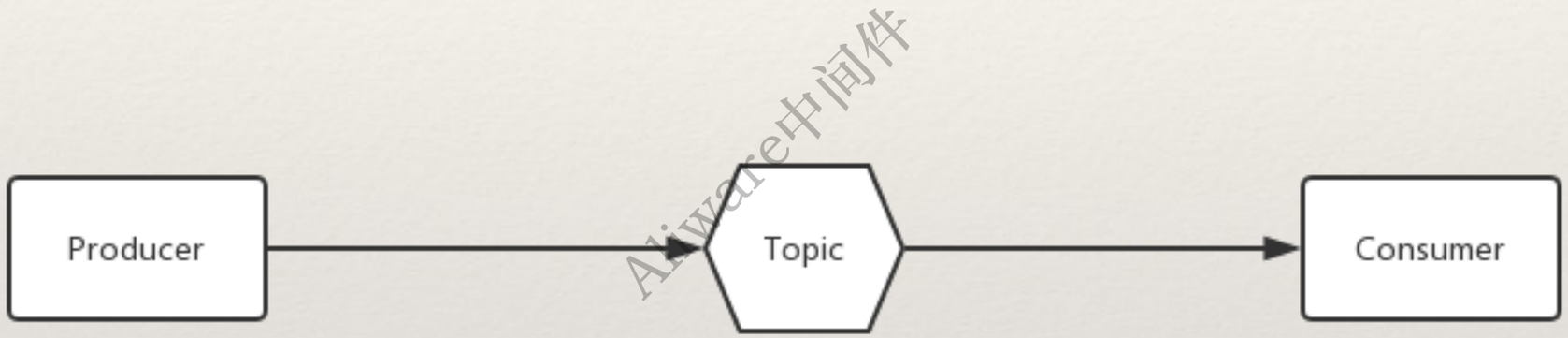
Origin



https://blog.iron.io/top-10-uses-for-message-queue/

Conceptual Model



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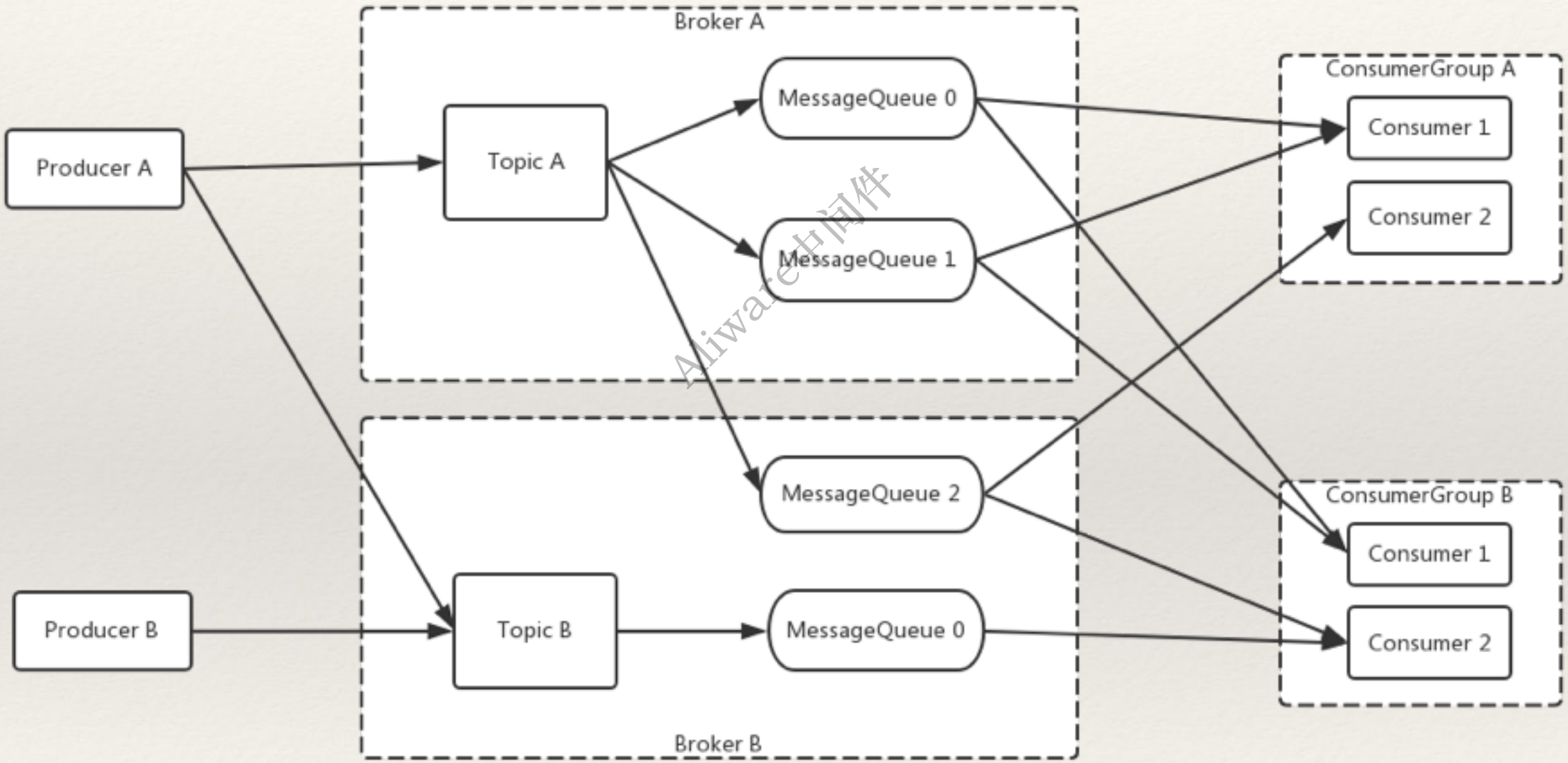
Conceptual Model



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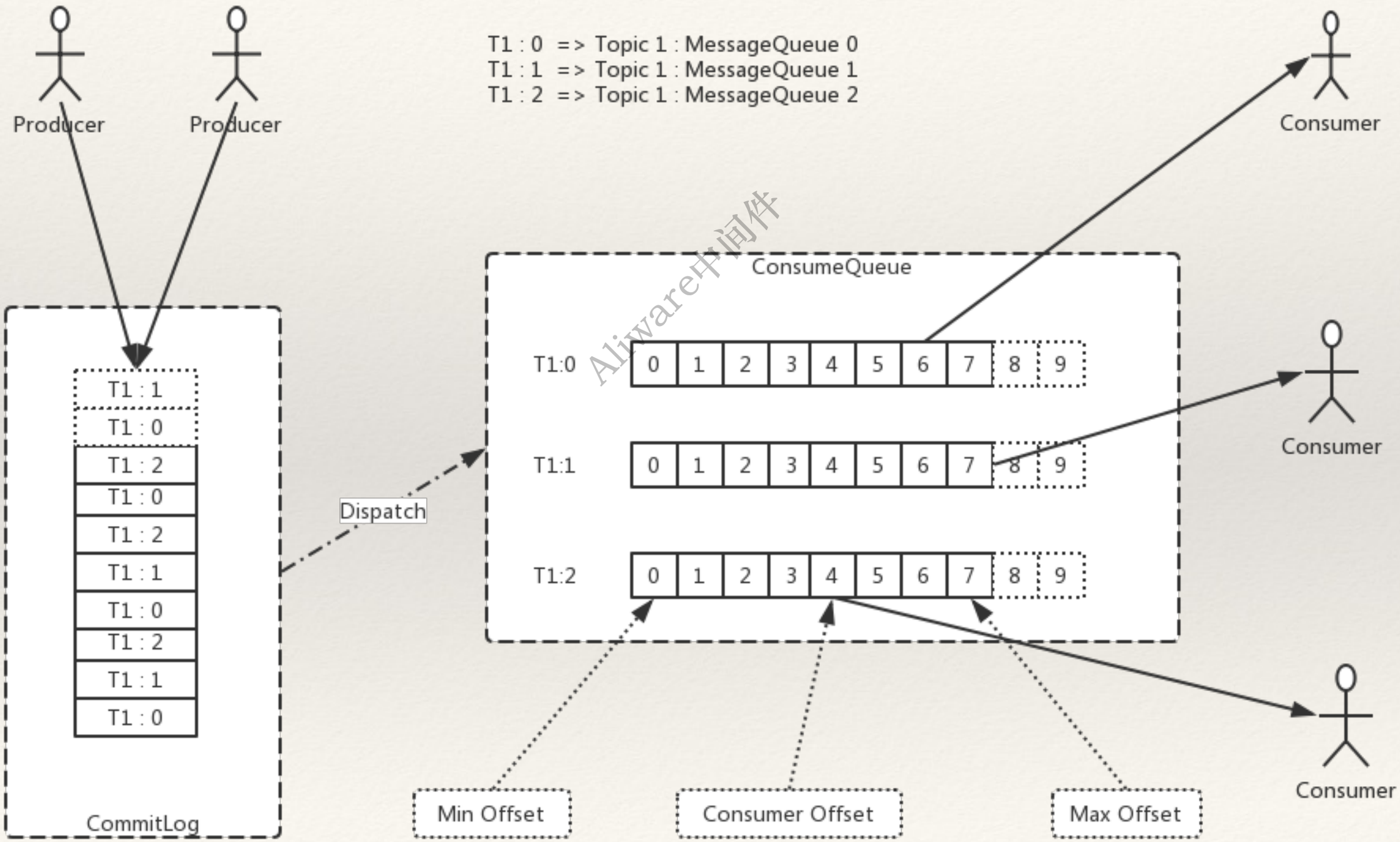
Storage Model



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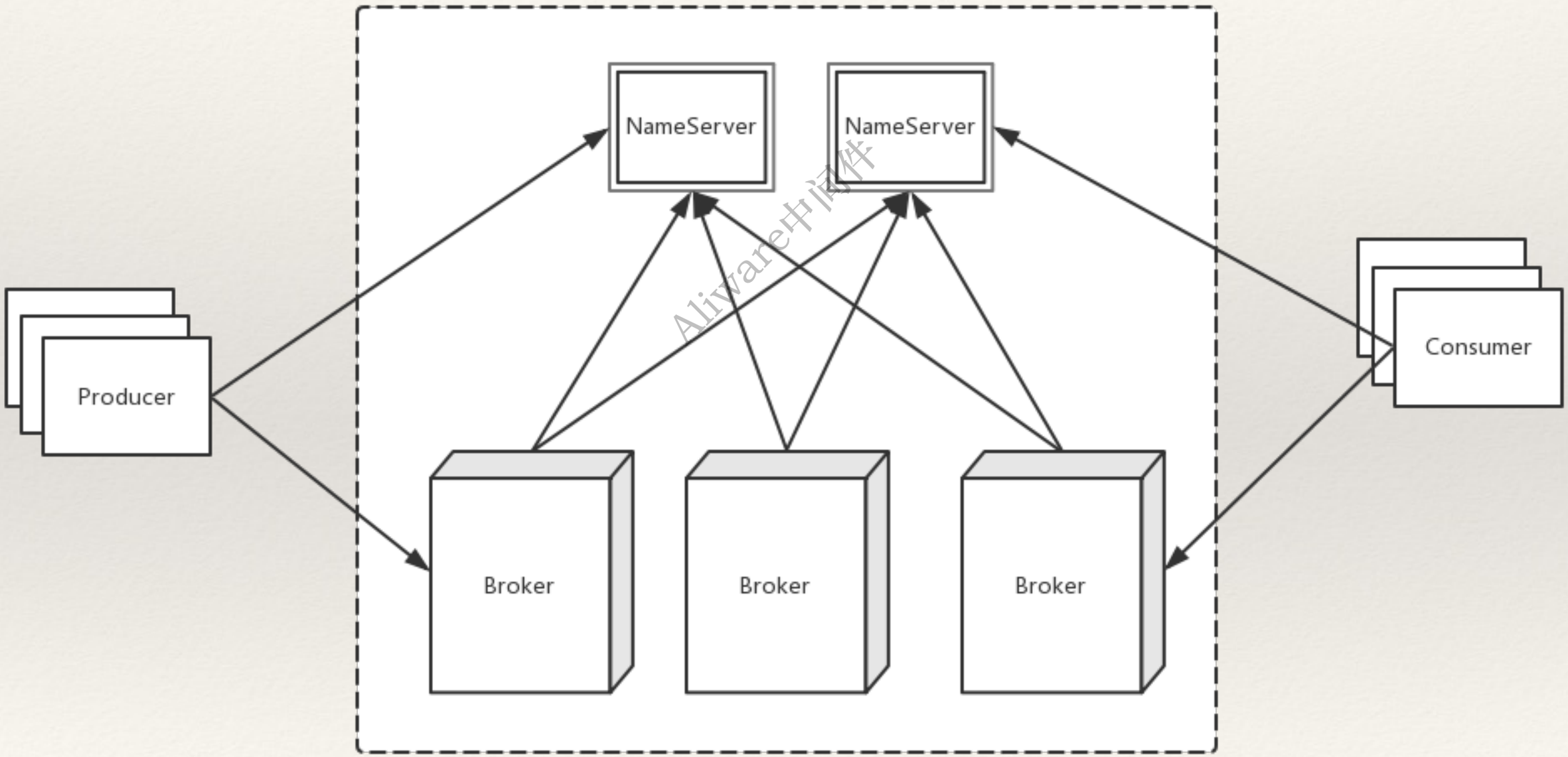
Deploy Model



Model Summary

- Pub-Sub / Producer / Consumer
- Topic / MessageQueue
- CommitLog / ConsumeQueue / Offset
- Broker / Nameserver

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Quick Start——Start Nameserver & Broker

Start Name Server

```
> nohup sh bin/mqnamesrv &
> tail -f ~/logs/rocketmqlogs/namesrv.log
The Name Server boot success...
```

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Start Broker

```
> nohup sh bin/mqbroker -n localhost:9876 &
> tail -f ~/logs/rocketmqlogs/broker.log
The broker[%s, 172.30.30.233:10911] boot success...
```

https://rocketmq.apache.org/docs/quick-start/

Quick Start——Start Nameserver & Broker

```
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$ jps
46741 BrokerStartup
46220 NamesrvStartup
46782 Jps
```

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```
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$ sh bin/mqadmin clusterList -n localhost:9876
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option PermSize=128m; support was removed in
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=128m; support was removed
#Cluster Name     #Broker Name            #BID  #Addr                  #Version                #I
CWait(ms) #Hour #SPACE
DefaultCluster    liuzhendongdeMacBook-Pro.local  0     10.173.158.165:10911   V4_3_0_SNAPSHOT
,0ms)          0 426590.45 0.8139
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$
```

https://rocketmq.apache.org/docs/quick-start/

Quick Start——Send Message

```
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$ sh bin/mqadmin sendMessage -t test -k 123 -p "Hello" -n localhost:9876
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option PermSize=128m; support was removed in 8.0
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=128m; support was removed in 8.0
#Broker Name                     #QID  #Send Result            #MsgId
liuzhendongdeMacBook-Pro.local    4     SEND_OK                 0AAD9EA5B6C50D7163619F51E32D0000
```

```
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$ sh bin/mqadmin queryMsgByUniqueKey -t test -i 0AAD9EA5B6C50D7163619F51E32D0000 -n loca
lhost:9876
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option PermSize=128m; support was removed in 8.0
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=128m; support was removed in 8.0
Topic:                test
Tags:                 [null]
Keys:                 [123]
Queue ID:             4
Queue Offset:         0
CommitLog Offset:     450
Reconsume Times:      0
Born Timestamp:       2018-08-31 22:29:03,917
Store Timestamp:      2018-08-31 22:29:03,924
Born Host:            10.173.158.165:61818
Store Host:           10.173.158.165:10911
System Flag:          0
Properties:           {KEYS=123, UNIQ_KEY=0AAD9EA5B6C50D7163619F51E32D0000, WAIT=true}
Message Body Path:    /tmp/rocketmq/msgbodys/0AAD9EA5B6C50D7163619F51E32D0000
```

Quick Start——Send Message

```
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$ sh bin/mqadmin topicStatus -t test -n localhost:9876
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option PermSize=128m; support was removed in 8.0
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=128m; support was removed in 8.0
#Broker Name                     #QID  #Min Offset           #Max Offset             #Last Updated
liuzhendongdeMacBook-Pro.local    0     0                     0
liuzhendongdeMacBook-Pro.local    1     0                     2                       2018-08-30 12:07:18,628
liuzhendongdeMacBook-Pro.local    2     0                     0
liuzhendongdeMacBook-Pro.local    3     0                     0
liuzhendongdeMacBook-Pro.local    4     0                     1                       2018-08-31 22:29:03,924
liuzhendongdeMacBook-Pro.local    5     0                     0
liuzhendongdeMacBook-Pro.local    6     0                     0
liuzhendongdeMacBook-Pro.local    7     0                     1                       2018-08-30 12:07:25,779
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$
```

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Quick Start——Consume

```java
public static void main(String[] args) throws InterruptedException, MQClientException {

    // Instantiate with specified consumer group name.
    DefaultMQPushConsumer consumer = new DefaultMQPushConsumer( consumerGroup: "CID-test");

    // Specify name server addresses.
    consumer.setNamesrvAddr("localhost:9876");

    // Subscribe one more more topics to consume.
    consumer.subscribe( topic: "TopicTest",  subExpression: "*");
    // Register callback to execute on arrival of messages fetched from brokers.
    consumer.registerMessageListener(new MessageListenerConcurrently() {

        @Override
        public ConsumeConcurrentlyStatus consumeMessage(List<MessageExt> msgs,
            ConsumeConcurrentlyContext context) {
            System.out.printf("%s Receive New Messages: %s %n", Thread.currentThread().getName(), msgs);
            return ConsumeConcurrentlyStatus.CONSUME_SUCCESS;
        }
    });

    //Launch the consumer instance.
    consumer.start();

    System.out.printf("Consumer Started.%n");
}
```

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https://rocketmq.apache.org/docs/simple-example/

Quick Start——Query ConsumerProgress

```
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$ sh bin/mqadmin consumerProgress -g CID-test -n localhost:9876
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option PermSize=128m; support was removed in 8.0
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=128m; support was removed in 8.0
#Topic                          #Broker Name                    #QID  #Broker Offset       #Consumer Offset      #Client IP
        #Diff                   #LastTime
%RETRY%CID-test                 liuzhendongdeMacBook-Pro.local  0     0                    0                     N/A
        0                       N/A
test                            liuzhendongdeMacBook-Pro.local  0     0                    0                     N/A
        0                       N/A
test                            liuzhendongdeMacBook-Pro.local  1     2                    2                     N/A
        0                       2018-08-30 12:07:18
test                            liuzhendongdeMacBook-Pro.local  2     0                    0                     N/A
        0                       N/A
test                            liuzhendongdeMacBook-Pro.local  3     0                    0                     N/A
        0                       N/A
test                            liuzhendongdeMacBook-Pro.local  4     1                    1                     N/A
        0                       2018-08-31 22:29:03
test                            liuzhendongdeMacBook-Pro.local  5     0                    0                     N/A
        0                       N/A
test                            liuzhendongdeMacBook-Pro.local  6     0                    0                     N/A
        0                       N/A
test                            liuzhendongdeMacBook-Pro.local  7     1                    1                     N/A
        0                       2018-08-30 12:07:25

Consume TPS: 0.0
Diff Total: 0
```

Quick Start

- Start Nameserver & Broker
- Send Message & Query Topic Status
- Consume Message & Query Consumer Progress

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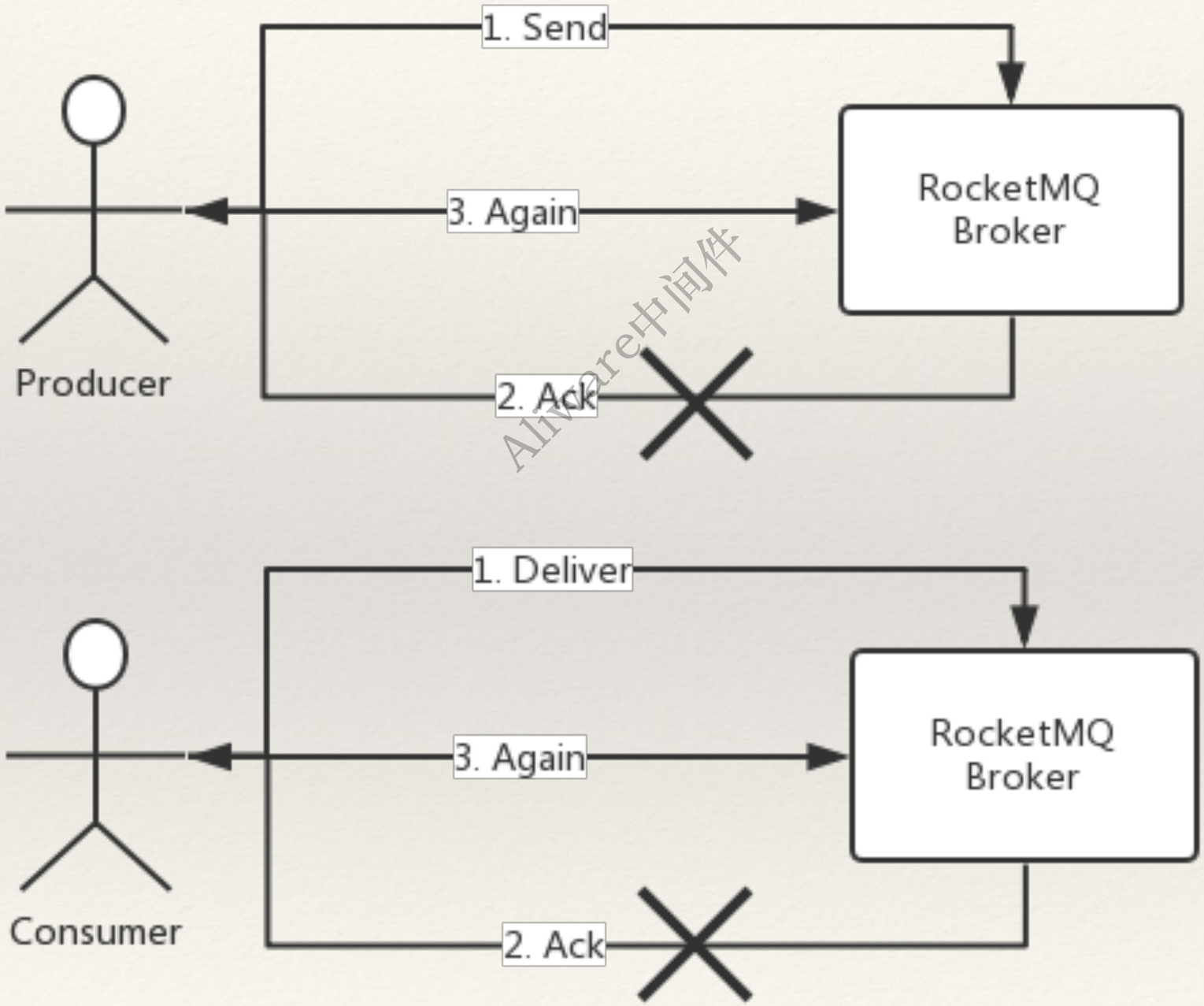
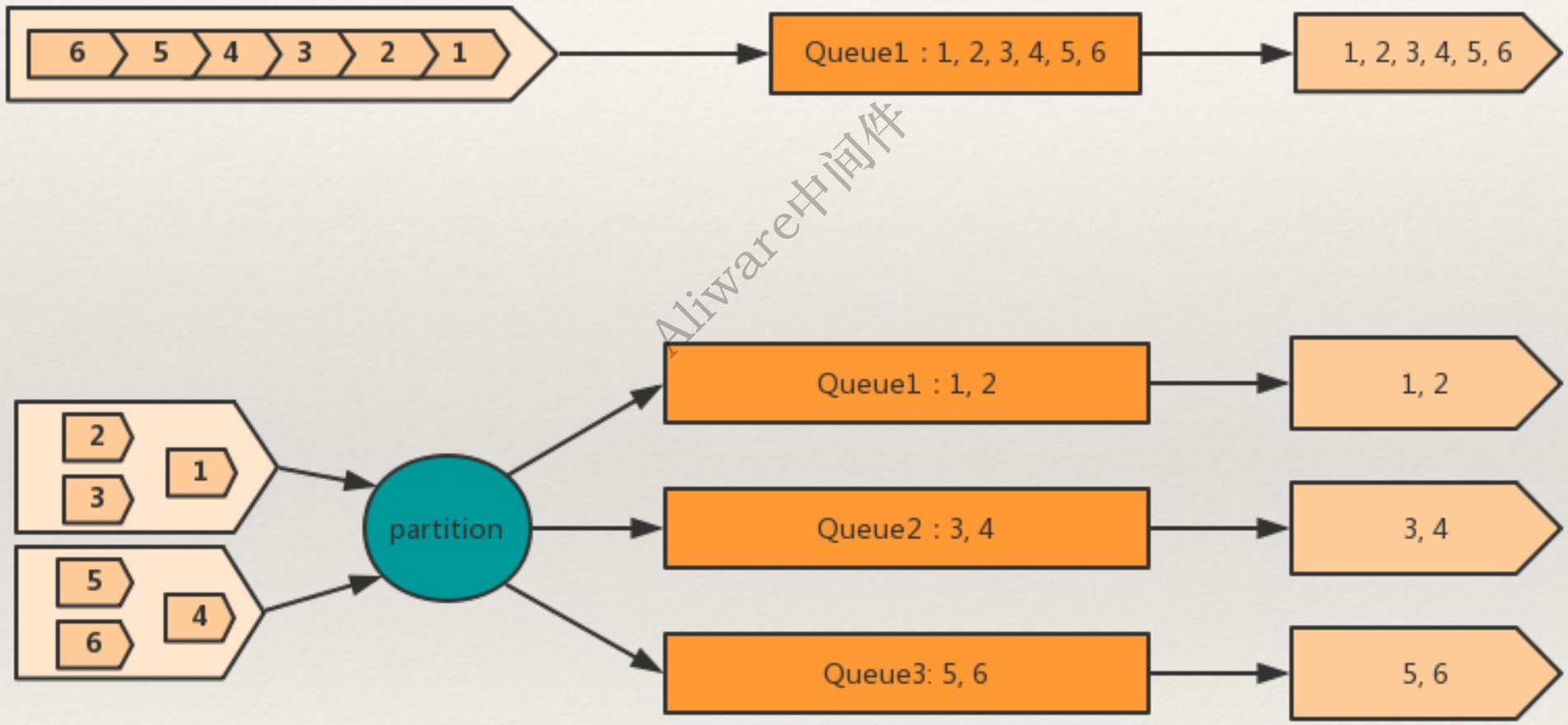
Best Practise——Idempotency



Best Practise——Message Order



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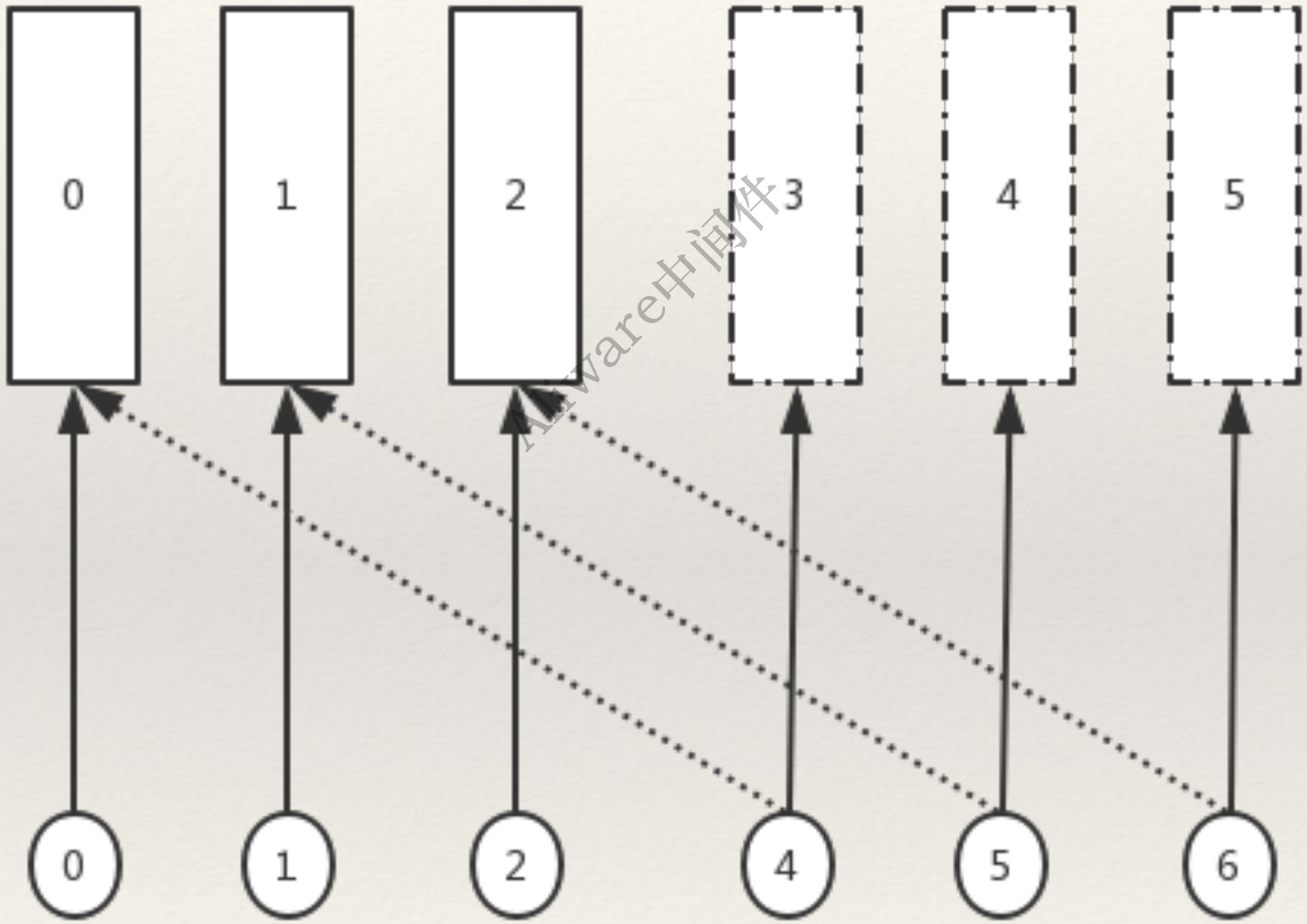
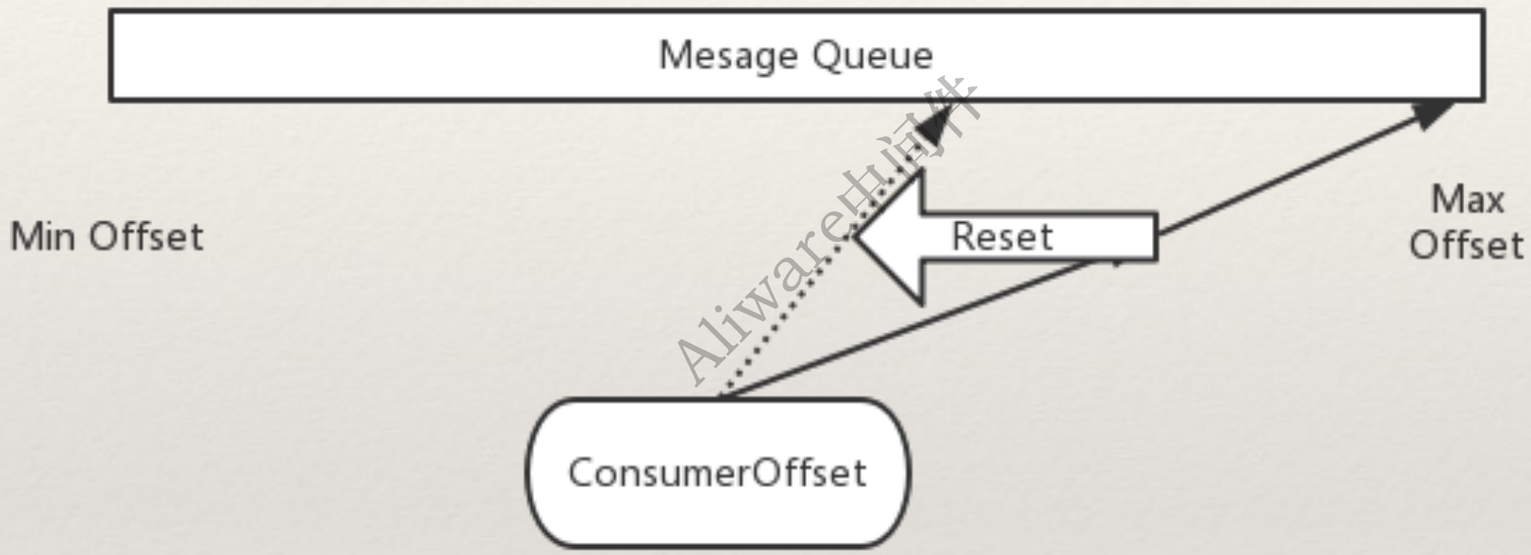
Best Practise——Message Order——Expand



Best Practise——ResetOffset



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Best Practise——Fill up Missed Data

```
liuzhenongdeMBP:rocketmq-4.3.1 liuzhendong$ sh bin/mqadmin consumerProgress -g CID-test -n localhost:9876
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option PermSize=128m; support was removed in 8.0
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=128m; support was removed in 8.0
#Topic                          #Broker Name                    #QID  #Broker Offset       #Consumer Offset      #Client IP
        #Diff                   #LastTime
%RETRY%CID-test                    liuzhendongdeMacBook-Pro.local    0  0                    0                     N/A
        0                       N/A
test                               liuzhendongdeMacBook-Pro.local    0    0                    0                     N/A
        0                       N/A
test                               liuzhendongdeMacBook-Pro.local    1    2                    2                     N/A
        0                       2018-08-30 12:07:18
test                               liuzhendongdeMacBook-Pro.local    2    0                    0                     N/A
        0                       N/A
test                               liuzhendongdeMacBook-Pro.local    3    0                    0                     N/A
        0                       N/A
test                               liuzhendongdeMacBook-Pro.local    4    1                    1                     N/A
        0                       2018-08-31 22:29:03
test                               liuzhendongdeMacBook-Pro.local    5    0                    0                     N/A
        0                       N/A
test                               liuzhendongdeMacBook-Pro.local    6    0                    0                     N/A
        0                       N/A
test                               liuzhendongdeMacBook-Pro.local    7    1                    1                     N/A
        0                       2018-08-30 12:07:25

Consume TPS: 0.0
Diff Total: 0
```

Best Practise

- Idempotency
- Message Order
- Reset Offsets
- Fill up Missed Data

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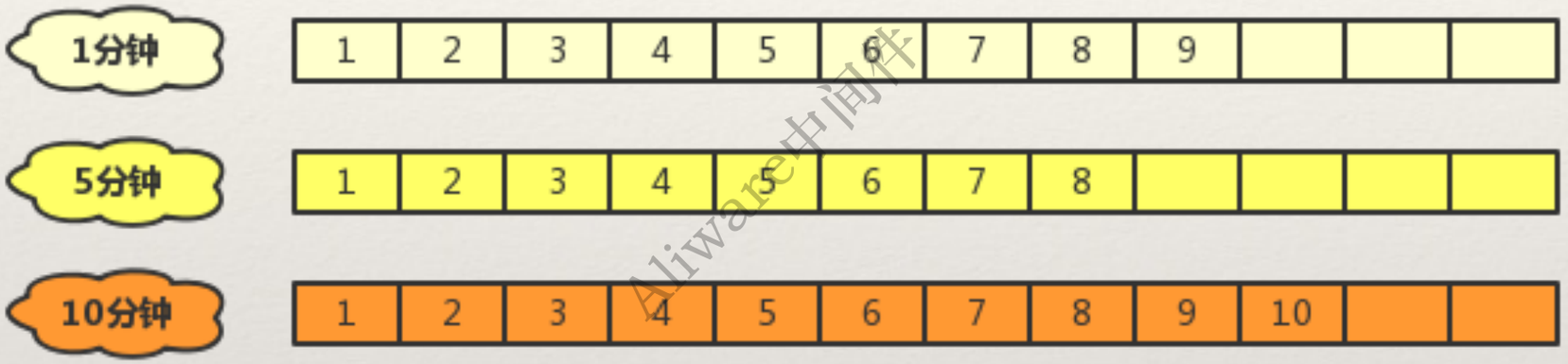
Features——Schedule



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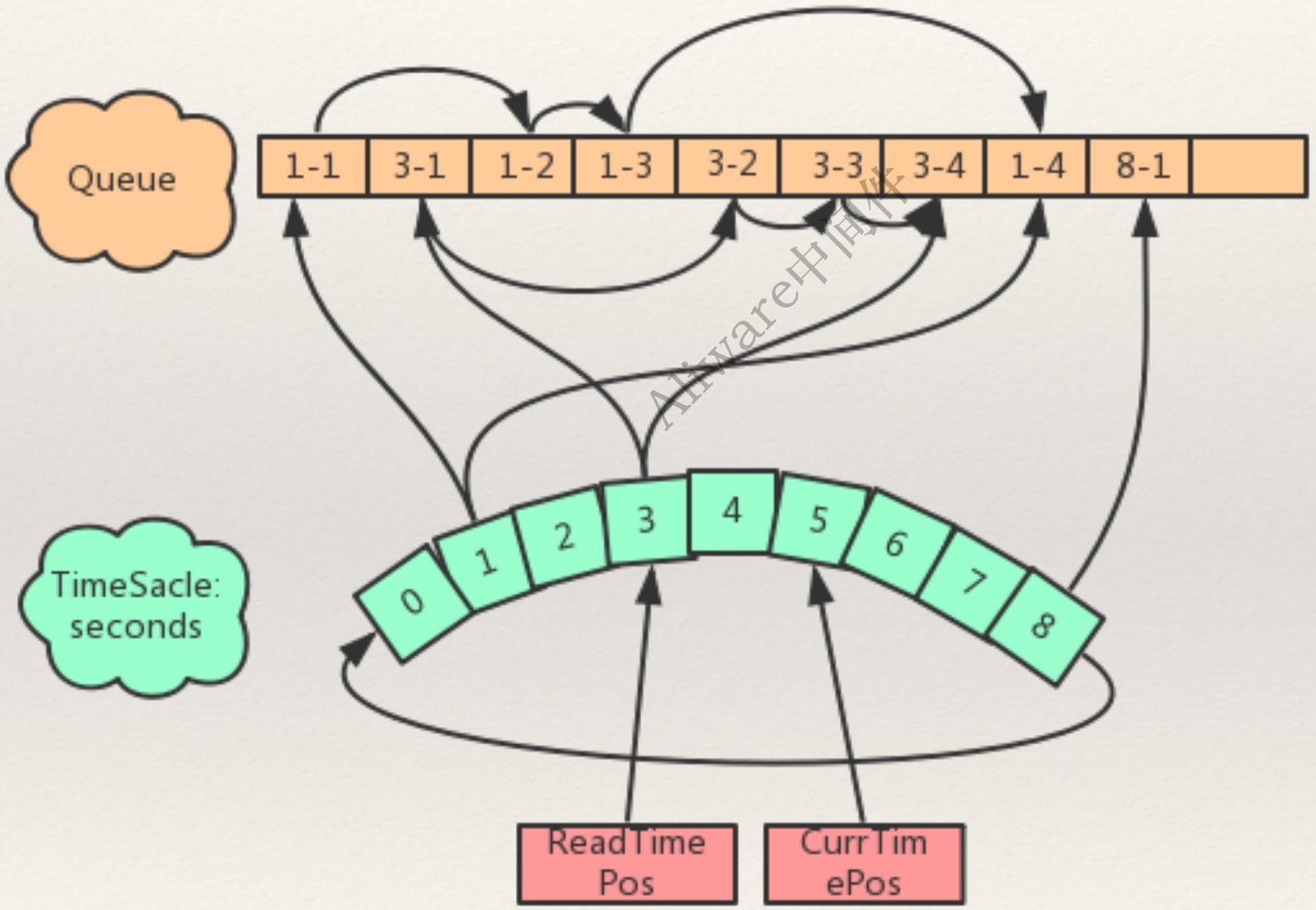
https://rocketmq.apache.org/docs/schedule-example/

Features——Schedule



Features——Batch

```
String topic = "BatchTest";
List<Message> messages = new ArrayList<>();
messages.add(new Message(topic, "TagA", "OrderID001", "Hello world 0".getBytes()));
messages.add(new Message(topic, "TagA", "OrderID002", "Hello world 1".getBytes()));
messages.add(new Message(topic, "TagA", "OrderID003", "Hello world 2".getBytes()));
try {
    producer.send(messages);
} catch (Exception e) {
    e.printStackTrace();
    //handle the error
}
```

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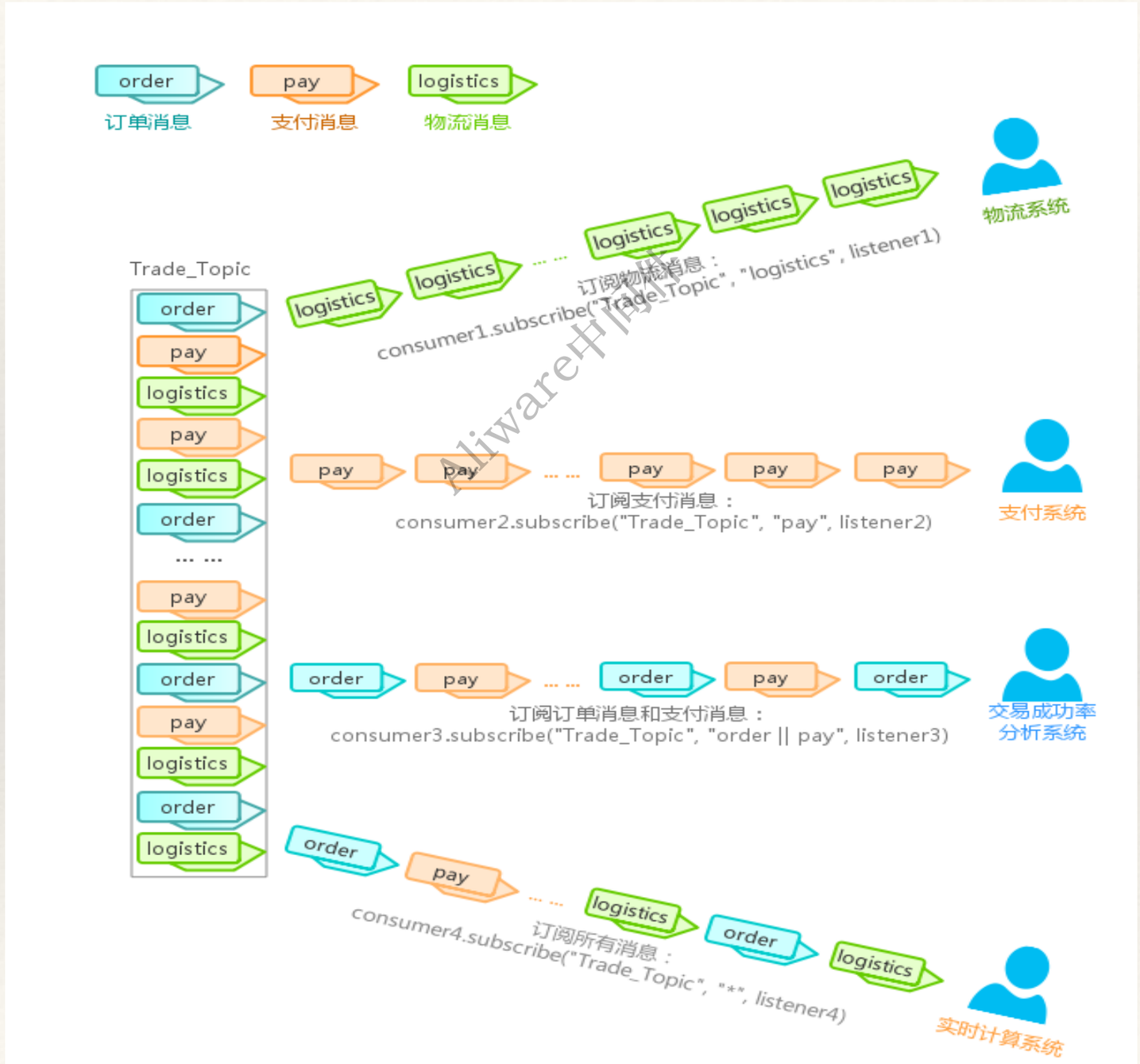
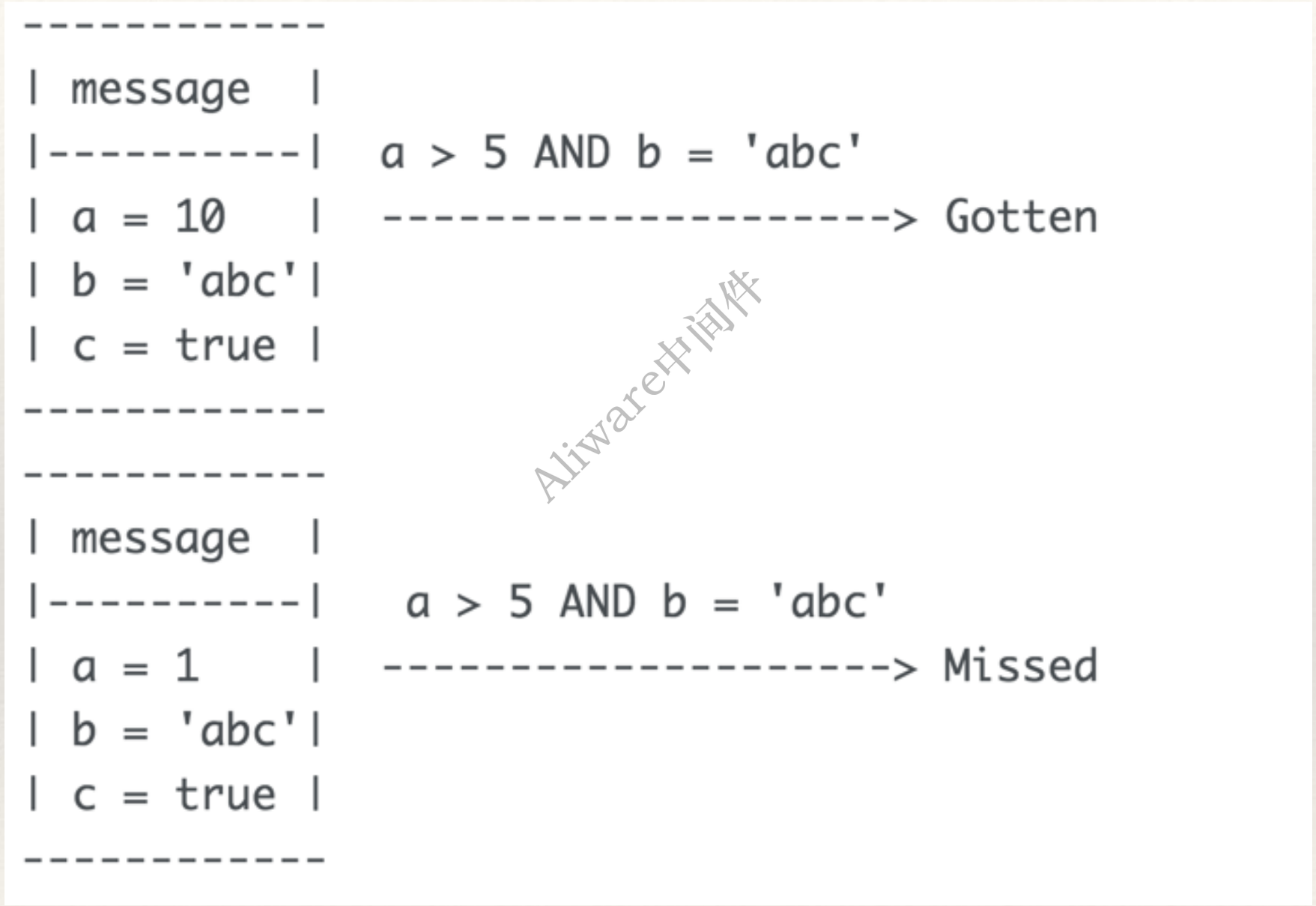
https://rocketmq.apache.org/docs/batch-example/

Features——Filtered by Tag



Features——Filtered by SQL



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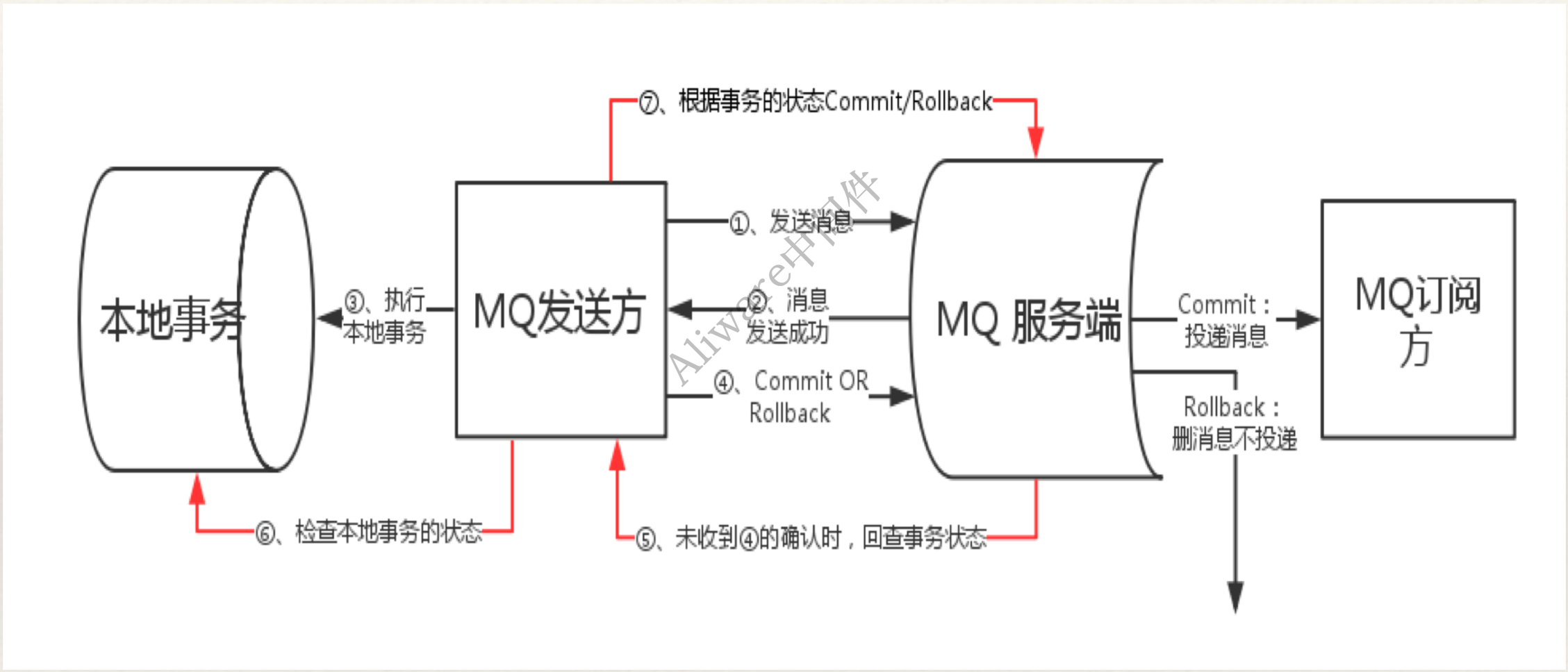
https://rocketmq.apache.org/docs/filter-by-sql92-example/

Features——Transaction



Features

- Schedule
- Batch
- Filter
- Transaction

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Summary

- Origin
- Model
- Quick Start
- Best Practise
- Features

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