

Spring - Mar 14

Messaging system does not important than Spring, in the interview.

- Cuz it is related to design, not **particular** technique.
- talk very brief in our training
 - it will take very in depth where specific so that will take a long time in the interview

Messaging System

- JMS (java EE)
 - implementation or vendors to implement JMS specifications
 - active MQ(Apache)
 - IBM MQ series
- AMQP
 - rabbitMQ

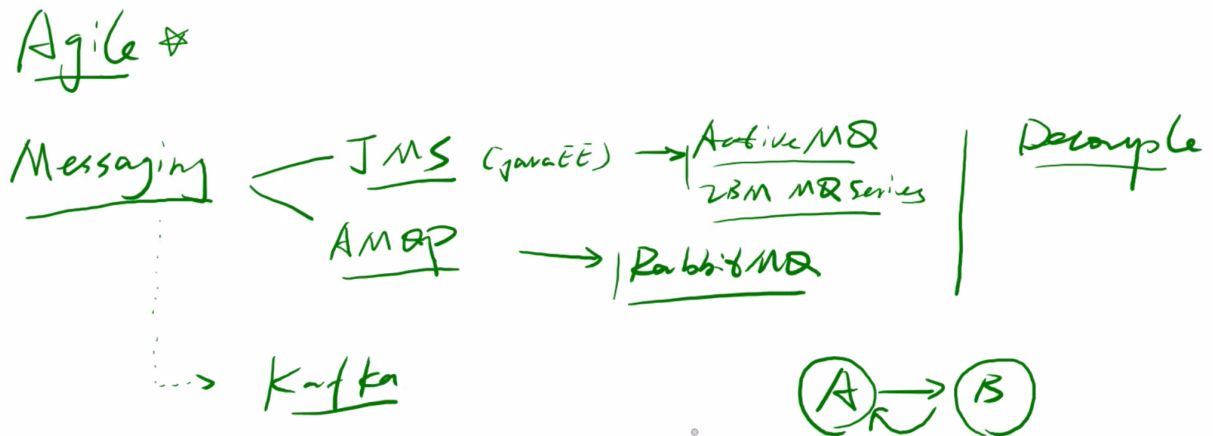
Kafka is separate messaging System, which is very similar with messaging system but with different use case.

- call it streaming system instead of messaging system
 - messaging system is used to decouple project/system
 - **have only one separate server**
 - Kafka, we also can used to decouple system, but it mainly uses for streaming process of data, like data analysis
 - have a very large volume of data, you want to process them in a very short period of time.

- Kafka is designed for distribution

Why we need to use message system?

The main idea is to decouple two systems



for example

A → B request, A need to wait for B response(sync system)

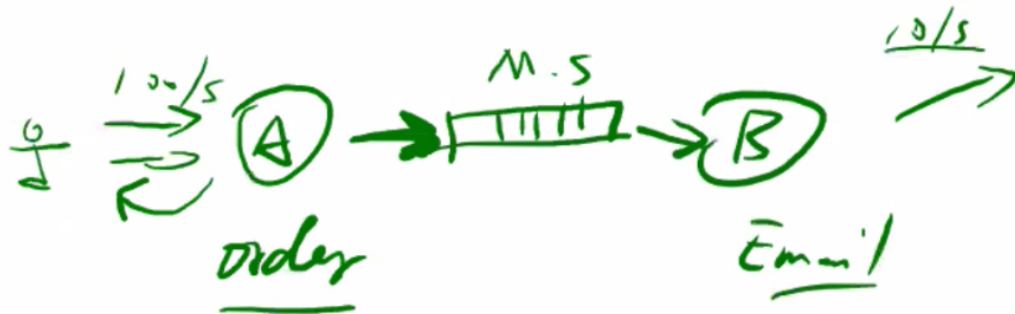
using messaging system(async system), A don't need to wait for B each other



in this case

whatever how powerful(CPU, Memory) A is, it still need to wait for B

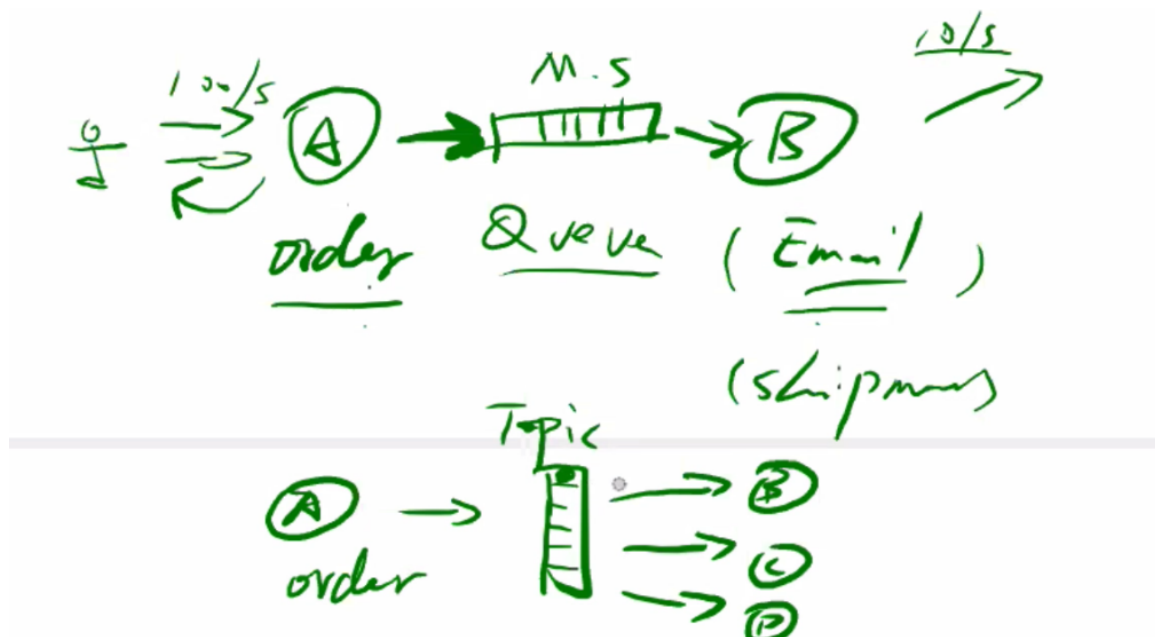
- messaging sys uses to decouple this situation



instead of sending request to B, A send messages to M.S directly. B receives request from M.S

Publish subscriber pattern

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- if it achieve one to one like $A \rightarrow B$, we can use queue(FIFO)
- multiple services (email just one of them), if use queue, the message will be consumed if just B(email) get the request. So we need use Topic
 - one topic can be subscribed by lots of services, achieve one to many communication
 - the order info will message to be a topic, whoever subscribe the topic will receive/get the message
 - still loosely couple

lots of concerns going on:

- how to get response
 - result/solution: create other queue/M.S to be responsible for response, and A listen to the queue(called response queue) → overhead
- lots of overhead
 - M.S could be down(error, issue)

so whether use M.S or just RESTful api is only considered if it's suitable

IQ: Why we need a messaging system? So REST API is good, right? It's convenient. Why do we still need a messaging system?

Kafka

- topic, not has Queue

Attention → reseach

AWS: