Practical exercise for Chapter 2: Architectures

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Question 1: Commands used to push the microservices

My DockerHub account username: 10n9

Service *Order*

```
# docker build --tag=microservice-kubernetes-demo-order microservice-kubernetes-demo-order
# docker tag microservice-kubernetes-demo-order 10n9/microservice-kubernetes-demo-order
# docker 10n9/microservice-kubernetes-demo-order
```

Service *Catalog*

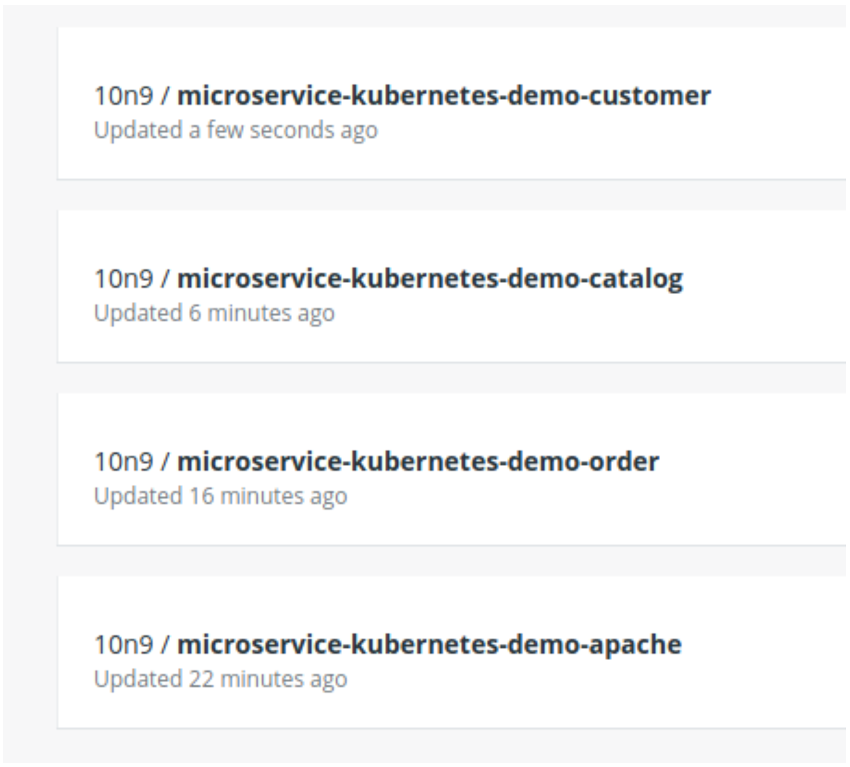
```
# docker build --tag=microservice-kubernetes-demo-catalog microservice-kubernetes-demo-catalog
# docker tag microservice-kubernetes-demo-catalog 10n9/microservice-kubernetes-demo-catalog
# docker 10n9/microservice-kubernetes-demo-catalog
```

Service *Customer*

```
# docker build --tag=microservice-kubernetes-demo-customer microservice-kubernetes-demo-customer
# docker tag microservice-kubernetes-demo-customer 10n9/microservice-kubernetes-demo-customer
# docker 10n9/microservice-kubernetes-demo-customer
```

Question 2: Repository on DockerHub account

After pushing the services, my public DockerHub account has 4 new repositories.


10n9 / **microservice-kubernetes-demo-customer**
Updated a few seconds ago

10n9 / **microservice-kubernetes-demo-catalog**
Updated 6 minutes ago

10n9 / **microservice-kubernetes-demo-order**
Updated 16 minutes ago

10n9 / **microservice-kubernetes-demo-apache**
Updated 22 minutes ago

Question 3: Status of Pods

Right after creating, the Pods all have status "ContainerCreating". After a few minutes, some Pods are terminated and all the others are "Running".

Question 4: Role of Glassfish

Glassfish is a webserver to deploy web applications.

Question 5: Reasons to create 2 JNDI

JNDI *myTopic* is to create mediator Topic, while JNDI *myTopicConnectionFactory* is to create connections between subscribers, publishers and Topic.

Question 6: Message passing method of Sender and Receiver

Event-based architecture consists of subscriber and publisher. In the message passing method, the Sender is the publisher and the Receiver is the subscriber. These 2 components are independent and has no constraint between each other.

Question 7: JMS vs DDS

- Both has publish-subscribe architecture
- Both are platform independence
- JMS
  - JNDI and JMS servers must be specified and configured
  - Generic objects and XML are not type safe
  - Limited ability to tailor communications

    - Does not have interoperability
    - Limited in Java language
- DDS
    - Has Dynamic Discovery, no need to specify endpoints
    - Strong type safety
    - QoS policies allow foe easy tailoring of communication behaviors
    - Open standard with proven interoperability
    - Available in various languages (C++, C#, Java, etc.)