

CHƯƠNG 2: Bài thực hành số 2

Họ tên sinh viên: Phan Thành Đạt

MSSV:20173001

Mã Lớp: 118636

Mã học phần: IT4611

Câu 1:

a) Dịch vụ Catalog

Build

```
myvmw.cmd
G:\HePhanTan\TH2\microservices-demo>docker push phanhanhdat173001/microservice-kubernetes-demo-apache
The push refers to repository [docker.io/phanhanhdat173001/microservice-kubernetes-demo-apache]
93b2b73b0616: Pushed
2a16299816ce: Pushed

om library/ubuntu
30dbbc0b9f5e: Pushed
6b9794dbf2bd: Pushed
e27729ee6e59: Mounted from library/ubuntu
06859de2f3e3: Mounted from library/ubuntu
c4d7b15878d0: Mounted from library/ubuntu
f577d0e0bf70: Mounted from library/ubuntu
latest: digest: sha256:a43c6115afb0bc1d6b5f06d7245396d6b2d1699b31eb99328a9ba15d02a309 size: 1988

G:\HePhanTan\TH2\microservices-demo>docker build --tag=microservice-kubernetes-demo-catalog microservice-kubernetes-demo-catalog
[+] Building 21.6s (7/7) FINISHED
-> [internal] load .dockerignore 0.1s
-> [internal] load build definition from Dockerfile 0.0s
-> [internal] load metadata for docker.io/library/openjdk:10.0.2-jre-slim 0.1s
-> [internal] load build context 0.0s
-> [internal] load metadata for docker.io/library/openjdk:10.0.2-jre-slim 4.5s
-> [internal] load build context 0.9s
-> transferring context: 41.37MB 0.8s
-> [1/2] FROM docker.io/library/openjdk:10.0.2-jre-slim@sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 15.8s
-> resolve docker.io/library/openjdk:10.0.2-jre-slim@sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 0.0s
-> sha256:3ac6aae85cb5ee685511876e43026b65163450ee8c4a9f0ffabe065911b11d7 460.38kB / 460.38kB 1.3s
-> sha256:d1b0083810f5a1580b0f0d04ae3fef44e71ec2e3f9aa6e8ff466b096857324d5 237B / 237B 1.4s
-> sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 2.37kB / 2.37kB 0.0s
-> sha256:7e9a957c5738bc4f5787bbcbf5fff60f06562c3ddb3b0b23ffe76a38613b0c 1.36kB / 1.36kB 0.0s
-> sha256:4bd06752aca06d8a63639128a1284b31348639fcae122c9207a3e22e0b65c08 4.52kB / 4.52kB 0.0s
-> sha256:096beede6b534eadf6d1ae8173145e8f43aedf29f5ae179f8b2e899f84f344 26.57MB / 26.57MB 4.0s
-> sha256:cf7ae0d40212ecf57b3d98406b3812c7171c16286bfb0450da71b14c228dff5 131B / 131B 1.9s
-> sha256:0ab64f7fb1486a34cb500304417350ba3833b16369cf9357b484527d4e4eeaca 78.39MB / 78.39MB 12.3s
-> extracting sha256:096beede6b534eadf6d1ae8173145e8f43aedf29f5ae179f8b2e899f84f344 4.0s
-> extracting sha256:3ac6aae85cb5ee685511876e43026b65163450ee8c4a9f0ffabe065911b11d7 0.2s
-> extracting sha256:d1b0083810f5a1580b0f0d04ae3fef44e71ec2e3f9aa6e8ff466b096857324d5 0.0s
-> extracting sha256:cf7ae0d40212ecf57b3d98406b3812c7171c16286bfb0450da71b14c228dff5 0.0s
-> extracting sha256:0ab64f7fb1486a34cb500304417350ba3833b16369cf9357b484527d4e4eeaca 2.9s
-> [2/2] COPY target/microservice-kubernetes-demo-catalog-0.0.1-SNAPSHOT.jar . 0.8s
-> exporting to image 0.3s
-> writing image sha256:b789f77fc0d6fff83230e28a7ed84141a427e3738a2d2c16a61d2b45b49e37 0.0s
-> naming to docker.io/library/microservice-kubernetes-demo-catalog 0.0s

G:\HePhanTan\TH2\microservices-demo>
```

Docker Image and push

```
mvnw.cmd
-> => transferring context: 2B 0.0s
-> [internal] load build definition from Dockerfile 0.1s
-> => transferring dockerfile: 251B 0.0s
-> [internal] load metadata for docker.io/library/openjdk:10.0.2-jre-slim 4.5s
-> [internal] load build context 0.9s
-> => transferring context: 41.37MB 0.8s
-> [1/2] FROM docker.io/library/openjdk:10.0.2-jre-slim@sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 15.8s
-> => resolve docker.io/library/openjdk:10.0.2-jre-slim@sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 0.0s
-> => sha256:3ac6aa685cb5ee685511876e43026b65163450ee8c4a9f0ffabe865911b11d7 460.38kB / 460.38kB 1.3s
-> => sha256:d1b0083010f5a1580b0f0d04ae3fef44e71ec2e3f9aa6e8ff466b096857324d5 237B / 237B 1.4s
-> => sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 2.37kB / 2.37kB 0.0s
-> => sha256:7e9a9557c5738bcf45787bbcbf5fff60f06562c2ddb3b9b23ffe76e38613b9c 1.36kB / 1.36kB 0.0s
-> => sha256:4bd06752ac4a6d8a63639128a1284b31348639fcae122c9207a3e22e0b65cb8 4.52kB / 4.52kB 0.0s
-> => sha256:096beede6b534eadf6d1ae8173145e8f43aedf29f5ae179f8b2e899f84f344 26.57MB / 26.57MB 4.0s
-> => sha256:cf7ae0d40212ecf57b3d98406b3812c7171c16286bfb9450da71b14c228dff5 131B / 131B 1.9s
-> => sha256:0ab64f7fb1486a34cb500304417350ba3833b16369cf9357b484527d4e4eeaca 78.39MB / 78.39MB 12.3s
-> => extracting sha256:006beede6b534eadf6d1ae8173145e8f43aedf29f5ae179f8b2e899f84f344 4.0s
-> => extracting sha256:3ac6aa685cb5ee685511876e43026b65163450ee8c4a9f0ffabe865911b11d7 0.2s
-> => extracting sha256:d1b0083010f5a1580b0f0d04ae3fef44e71ec2e3f9aa6e8ff466b096857324d5 0.0s
-> => extracting sha256:cf7ae0d40212ecf57b3d98406b3812c7171c16286bfb9450da71b14c228dff5 0.0s
-> => extracting sha256:0ab64f7fb1486a34cb500304417350ba3833b16369cf9357b484527d4e4eeaca 2.9s
-> [2/2] COPY target/microservice-kubernetes-demo-catalog-0.0.1-SNAPSHOT.jar . 0.8s
-> exporting image 0.3s
-> exporting layers 0.3s
-> writing image sha256:b709f77fc0d6ff83230e628a7ed8414a427e3738a2d2c10a61d2b45b49e37 0.0s
-> naming to docker.io/library/microservice-kubernetes-demo-catalog 0.0s

G:\HePhanTan\TH2\microservices-demo>docker tag microservice-kubernetes-demo-catalog phanthanhdat173001/microservice-kubernetes-demo-catalog:latest

G:\HePhanTan\TH2\microservices-demo>docker push phanthanhdat173001/microservice-kubernetes-demo-catalog
The push refers to repository [docker.io/phanthanhdat173001/microservice-kubernetes-demo-catalog]
4d77306f5df1: Pushed
5c58c0c8b5c1: Mounted from library/openjdk
124765dfe9ce: Mounted from library/openjdk
fd9537f0cb20: Mounted from library/openjdk
3ab952050949: Mounted from library/openjdk
3b0427d99930: Mounted from library/openjdk
latest: digest: sha256:00c9c0ff45640979c94f851b26aae70808471e88203dd8eff74f24936a126283 size: 1577

G:\HePhanTan\TH2\microservices-demo>
```

b) Dịch vụ Customer

Build

```
G:\HePhanTan\TH2\microservices-demo>docker tag microservice-kubernetes-demo-catalog phanthanhdat173001/microservice-kubernetes-demo-catalog:latest

G:\HePhanTan\TH2\microservices-demo>docker push phanthanhdat173001/microservice-kubernetes-demo-catalog
The push refers to repository [docker.io/phanthanhdat173001/microservice-kubernetes-demo-catalog]
4d77306f5df1: Pushed
5c58c0c8b5c1: Mounted from library/openjdk
124765dfe9ce: Mounted from library/openjdk
fd9537f0cb20: Mounted from library/openjdk
3ab952050949: Mounted from library/openjdk
3b0427d99930: Mounted from library/openjdk
[+] Building 3.9s (7/7) FINISHED
-> [internal] load .dockerignore 0.1s
-> => transferring context: 2B 0.0s
-> [internal] load build definition from Dockerfile 0.1s
-> => transferring dockerfile: 253B 0.0s
-> [internal] load metadata for docker.io/library/openjdk:10.0.2-jre-slim 2.4s
-> [internal] load build context 0.6s
-> => transferring context: 41.37MB 0.5s
-> => CACHED [1/2] FROM docker.io/library/openjdk:10.0.2-jre-slim@sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 0.0s
-> [2/2] COPY target/microservice-kubernetes-demo-customer-0.0.1-SNAPSHOT.jar . 0.4s
-> exporting image 0.3s
-> exporting layers 0.2s
-> writing image sha256:768b33edd02415f0453734bf6189bf4091589d9ad29ac9fca43da2e863d24897 0.0s
-> naming to docker.io/library/microservice-kubernetes-demo-customer 0.0s

G:\HePhanTan\TH2\microservices-demo>
```

Docker Image and Push

```
G:\HePhanTan\TH2\microservices-demo>docker tag microservice-kubernetes-demo-customer phanthanhdat173001/microservice-kubernetes-demo-customer:latest

G:\HePhanTan\TH2\microservices-demo>docker push phanthanhdat173001/microservice-kubernetes-demo-customer
The push refers to repository [docker.io/phanthanhdat173001/microservice-kubernetes-demo-customer]
a22a7679ce25: Pushed
5c58c0c8b5c1: Mounted from phanthanhdat173001/microservice-kubernetes-demo-catalog
124765dfe9ce: Mounted from phanthanhdat173001/microservice-kubernetes-demo-catalog
fd9537f0cb20: Mounted from phanthanhdat173001/microservice-kubernetes-demo-catalog
3ab952050949: Mounted from phanthanhdat173001/microservice-kubernetes-demo-catalog
3b0427d99930: Mounted from phanthanhdat173001/microservice-kubernetes-demo-catalog
latest: digest: sha256:faf7639f999e503bedf6cbfa62afbedf707ec64d9dfb7be6ef30e6796d75d57 size: 1577

G:\HePhanTan\TH2\microservices-demo>
```

c) Dịch vụ Order

Build

```
mvnw.cmd
3ab952050949: Mounted from phanthanhdat173001/microservice-kubernetes-demo-catalog
3b0427d99930: Mounted from phanthanhdat173001/microservice-kubernetes-demo-catalog
latest: digest: sha256:faf7639f999e503bedf6cfa62afbedf707ec64d9dfb7be6ef30e6796d75d57 size: 1577

G:\HePhanTan\TH2\microservices-demo>docker build --tag=microservice-kubernetes-demo-Order microservice-kubernetes-demo-order
[+] Building 3.9s (7/7) FINISHED
=> [internal] load build definition from Dockerfile                                0.1s
=> => transferring dockerfile: 247B                                              0.0s
=> [internal] load .dockerignore                                                  0.1s
=> => transferring context: 28                                                  0.0s
=> [internal] load metadata for docker.io/library/openjdk:10.0.2-jre-slim        2.5s
=> [internal] load build context                                                 0.6s
=> => transferring context: 41.38MB                                             0.5s
=> CACHED [1/2] FROM docker.io/library/openjdk:10.0.2-jre-slim@sha256:256f5b4dd532b43336da48b34d146ae5fee266908836e55328b3788e84af2253 0.0s
=> [2/2] COPY target/microservice-kubernetes-demo-order-0.0.1-SNAPSHOT.jar .    0.4s
=> exporting to image                                                            0.3s
=> => exporting layers                                                            0.2s
=> => writing image sha256:b7fa49c70db4d2e51ec100c28ad89265af929d3253578378678b1824127f7d2a 0.0s
=> => naming to docker.io/library/microservice-kubernetes-demo-order            0.0s

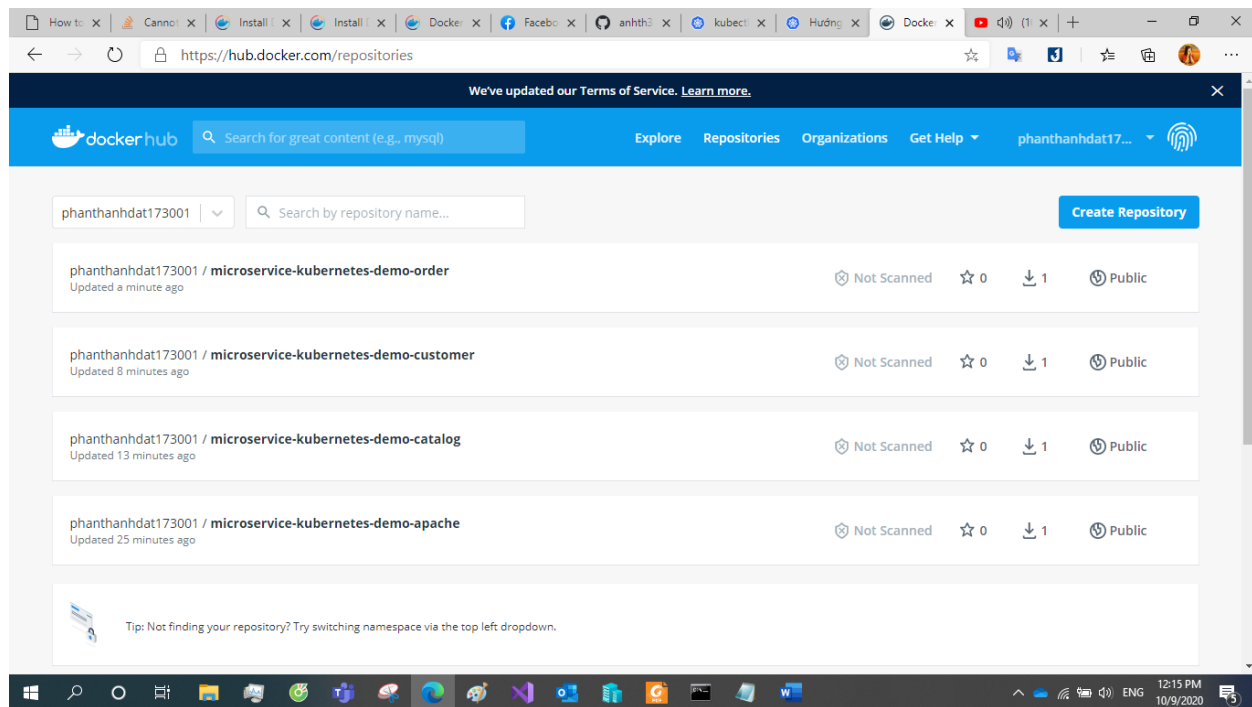
G:\HePhanTan\TH2\microservices-demo>
```

Docker Image and Push

```
mvnw.cmd
G:\HePhanTan\TH2\microservices-demo>docker push phanthanhdat173001/microservice-kubernetes-demo-order
The push refers to repository [docker.io/phanthanhdat173001/microservice-kubernetes-demo-order]
193d02570c3c: Pushed
5c58c0c8b5c1: Mounted from phanthanhdat173001/microservice-kubernetes-demo-customer
124765df9e9ce: Mounted from phanthanhdat173001/microservice-kubernetes-demo-customer
fd9537f0cb20: Mounted from phanthanhdat173001/microservice-kubernetes-demo-customer
3ab952050949: Mounted from phanthanhdat173001/microservice-kubernetes-demo-customer
3b0427d99930: Mounted from phanthanhdat173001/microservice-kubernetes-demo-customer
latest: digest: sha256:31e147e701b364496de1d758ce04e7c7fe11bf01485cb1f7756d1794764f21b8 size: 1577

G:\HePhanTan\TH2\microservices-demo>
```

Câu 2:



Sau khi thực hiện, trên docker hub repository có 4 repository được push.

Câu 3:

Ban đầu sẽ thấy trạng thái ContainerCreating

```
G:\HePhanTan\TH2\microservices-demo>kubectl get all
NAME                                READY    STATUS              RESTARTS   AGE
pod/apache-7d65475d9b-7mbq8        0/1     ContainerCreating   0           6s
pod/catalog-6875bdd95f-s6hvl        0/1     ContainerCreating   0           6s
pod/customer-8778c8894-wjgfg        0/1     ContainerCreating   0           6s
pod/order-6686c586d8-7szvg         0/1     ContainerCreating   0           6s

NAME                                TYPE                CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
service/apache                     LoadBalancer       10.103.27.7   <pending>      80:31745/TCP     6s
service/catalog                    LoadBalancer       10.110.37.48  <pending>      8080:31647/TCP   6s
service/customer                   LoadBalancer       10.103.91.143 <pending>      8080:30292/TCP   6s
service/kubernetes                 ClusterIP            10.96.0.1     <none>         443/TCP          26h
service/order                      LoadBalancer       10.109.41.82  <pending>      8080:30532/TCP   6s

NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
deployment.apps/apache              0/1      1              0            6s
deployment.apps/catalog              0/1      1              0            6s
deployment.apps/customer             0/1      1              0            6s
deployment.apps/order               0/1      1              0            6s

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/apache-7d65475d9b   1          1          0        6s
replicaset.apps/catalog-6875bdd95f  1          1          0        6s
replicaset.apps/customer-8778c8894  1          1          0        6s
replicaset.apps/order-6686c586d8    1          1          0        6s
```

Sau đó sẽ chuyển sang trạng thái running

C:\Windows\System32\cmd.exe

```
G:\HePhanTan\TH2\microservices-demo>kubect1 get all
```

NAME	READY	STATUS	RESTARTS	AGE
pod/apache-7d65475d9b-7mbq8	1/1	Running	0	2m5s
pod/catalog-6875bbd95f-s6hvl	1/1	Running	0	2m5s
pod/customer-8778c8894-wjgfq	1/1	Running	0	2m5s
pod/order-6686c586d8-7szvg	1/1	Running	0	2m5s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/apache	LoadBalancer	10.103.27.7	<pending>	80:31745/TCP	2m5s
service/catalog	LoadBalancer	10.110.37.48	<pending>	8080:31647/TCP	2m5s
service/customer	LoadBalancer	10.103.91.143	<pending>	8080:30292/TCP	2m5s
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	26h
service/order	LoadBalancer	10.109.41.82	<pending>	8080:30532/TCP	2m5s

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/apache	1/1	1	1	2m5s
deployment.apps/catalog	1/1	1	1	2m5s
deployment.apps/customer	1/1	1	1	2m5s
deployment.apps/order	1/1	1	1	2m5s

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/apache-7d65475d9b	1	1	1	2m5s
replicaset.apps/catalog-6875bbd95f	1	1	1	2m5s
replicaset.apps/customer-8778c8894	1	1	1	2m5s
replicaset.apps/order-6686c586d8	1	1	1	2m5s

G:\HePhanTan\TH2\microservices-demo>

Order Processing

127.0.0.1:54291

Order Processing

- Customer
- Catalog
- Catalog
- Order

- List / add / remove customers
- List / add / remove items
- Search items
- Create an order

10:49 AM 10/10/2020

Câu 4

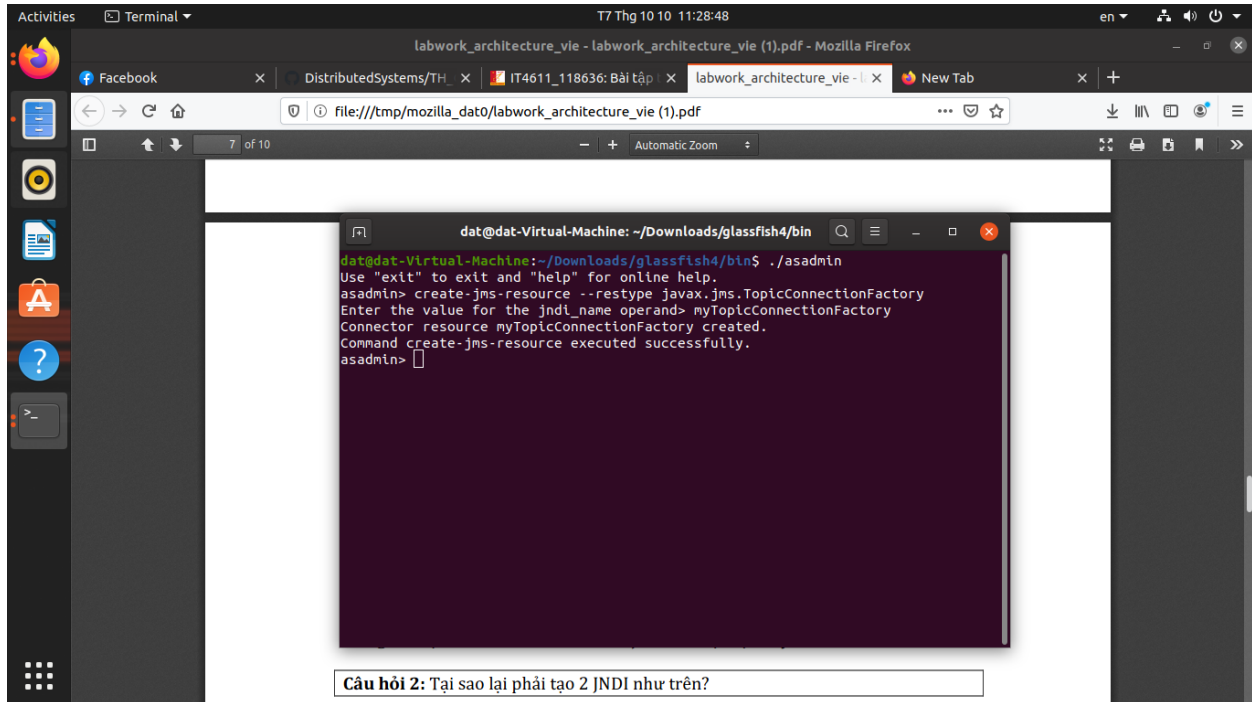
Vai trò của application server glassfish:

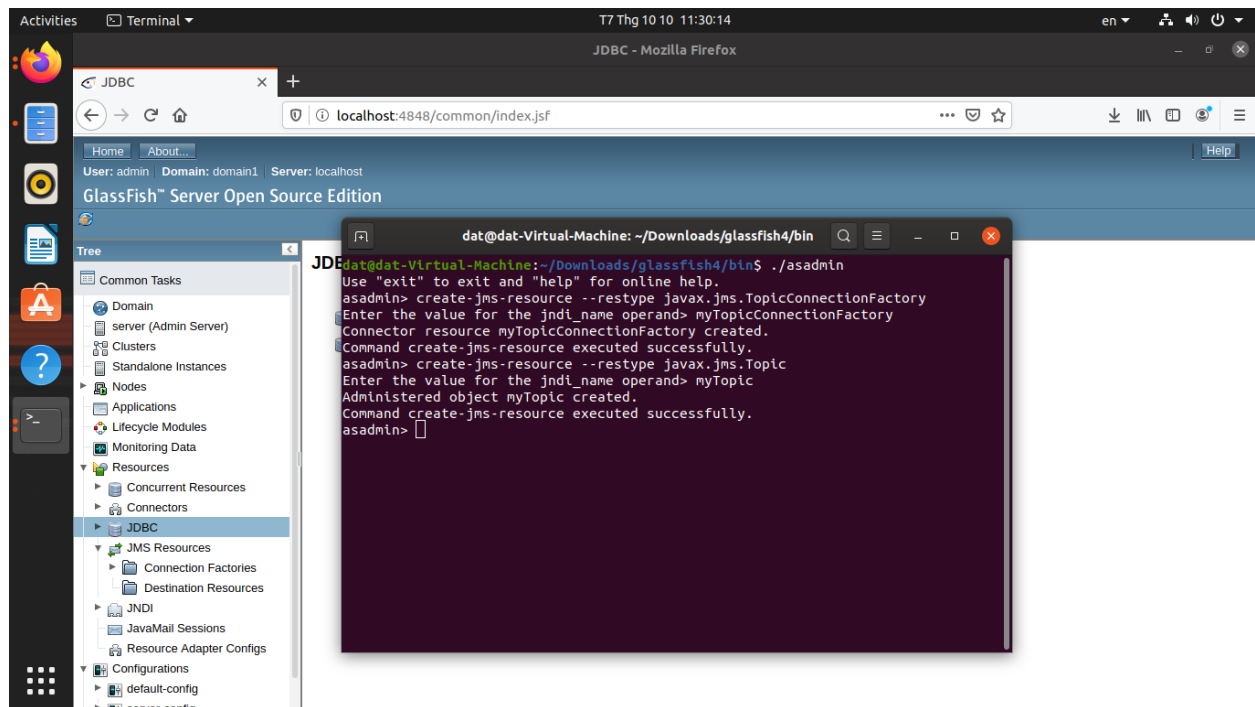
- Glassfish server là một Webserver, cho phép triển khai các ứng dụng web viết bằng Java lên đó sử dụng giao thức http.
- Glassfish server cung cấp môi trường nơi các ứng dụng có thể chạy.
- Glassfish server cho phép quản lý, cấu hình nhanh và linh hoạt.

Câu 5:

Chúng ta phải tạo 2 JNDI vì:

- myTopicConnectionFactory: Chính là Broker – Nhà môi giới. Nơi đây sẽ quản lý các kết nối, thiết lập các session cho Publisher và Subscriber.
- Topic: Chính là hàng đợi tin nhắn, các Publisher sẽ gửi tin nhắn đến 1 kho (tên kho là “myTopic”) do Broker quản lý, các Subscriber sẽ đến kho nhận tin nhắn và xử lý. Vì Broker quản lý rất nhiều loại thông điệp, tức rất nhiều kho nên phải chỉ rõ là kho nào.





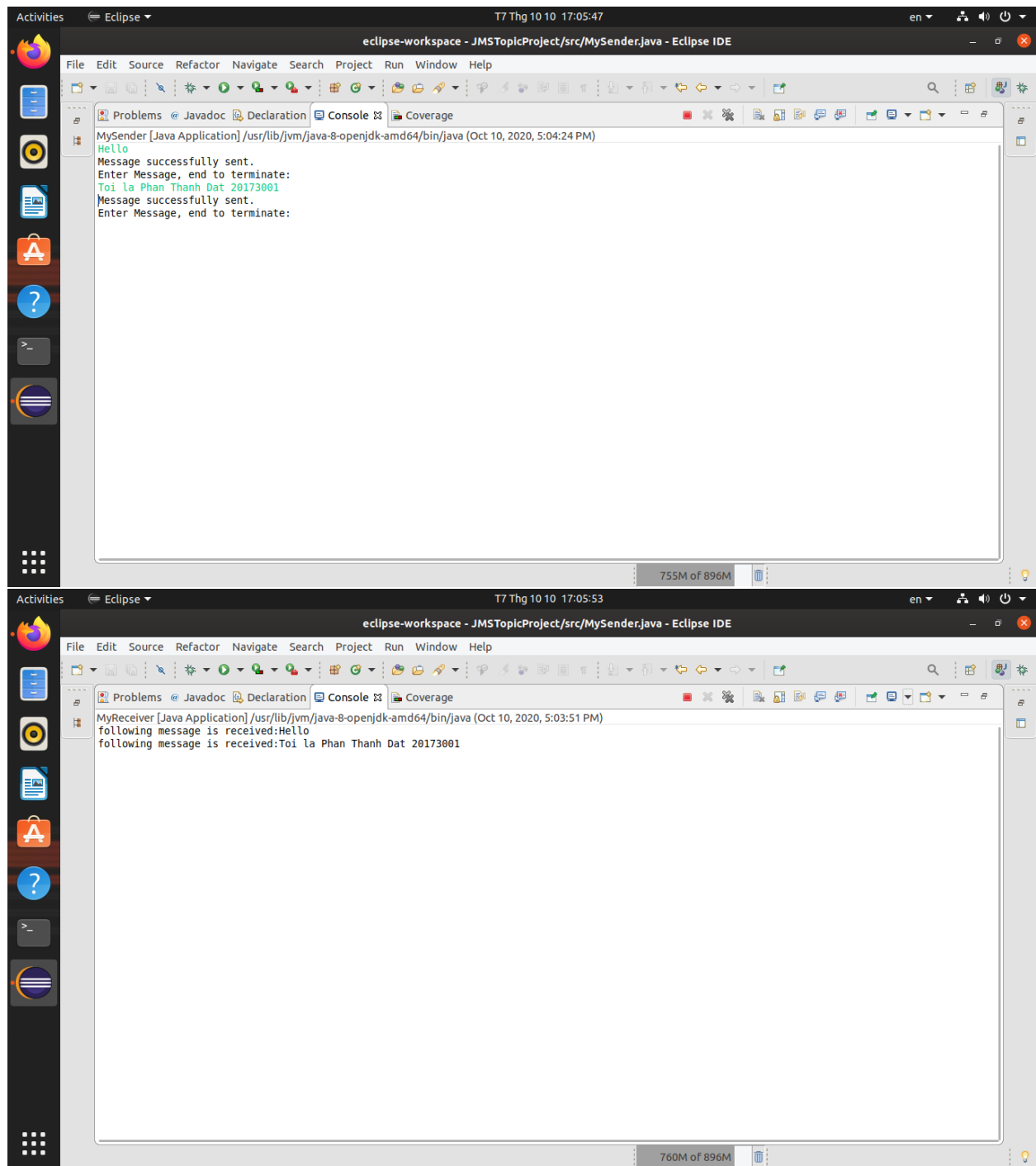
Câu 6:

Sender:

- Tìm kiếm và bắt đầu kết nối với một Connection Factory(Broker).
- Tạo hàng đợi Session
- Tìm kiếm và bắt đầu kết nối với Topic của Connection Factory.
- Tạo một đối tượng Publisher
- Tạo đối tượng thông điệp
- Ghi thông điệp
- Đẩy đối tượng thông điệp đó và Publisher
- Kết thúc Connection.

Receiver

- Tìm kiếm và bắt đầu kết nối với một Connection Factory(Broker).
- Tạo hàng đợi Session
- Tìm kiếm và bắt đầu kết nối với Topic để nhận Messages.
- Tạo đối tượng Subcrieber
- Tạo đối tượng Listen khi Subcrieber nhận được Messages.
- Đăng ký Subscriber với Connection Factory (Broker).



Câu 7:

JMS	DDS
<ul style="list-style-type: none"> • Java Messaging Service • Tập trung • Middleware API bởi Java Messenger • Sử dụng cho việc gửi thông điệp giữa 2 hoặc nhiều client. • Cho phép giao tiếp giữa các thành phần khác nhau của mộ ứng dụng phân tán • Xây dựng bằng ngôn ngữ java 	<ul style="list-style-type: none"> • Data distributed service • Phi tập trung • DDS là phần mềm mạng trung gian giúp đơn giản hóa sự phức tạp của lập trình mạng • Là một thể hiện của mô hình pub/sub cho việc gửi, nhận dữ liệu, sự kiện giữa các node • Có thể được xây dựng bởi nhiều ngôn ngữ khác nhau, nhiều nền tảng khác nhau.