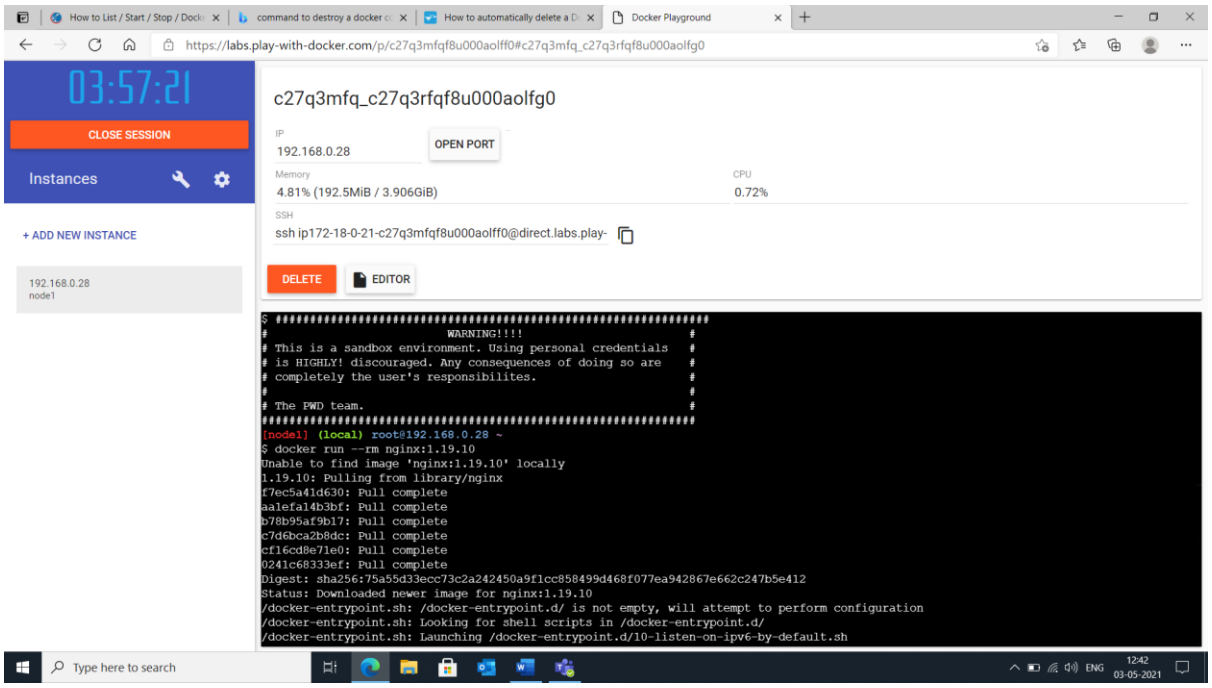
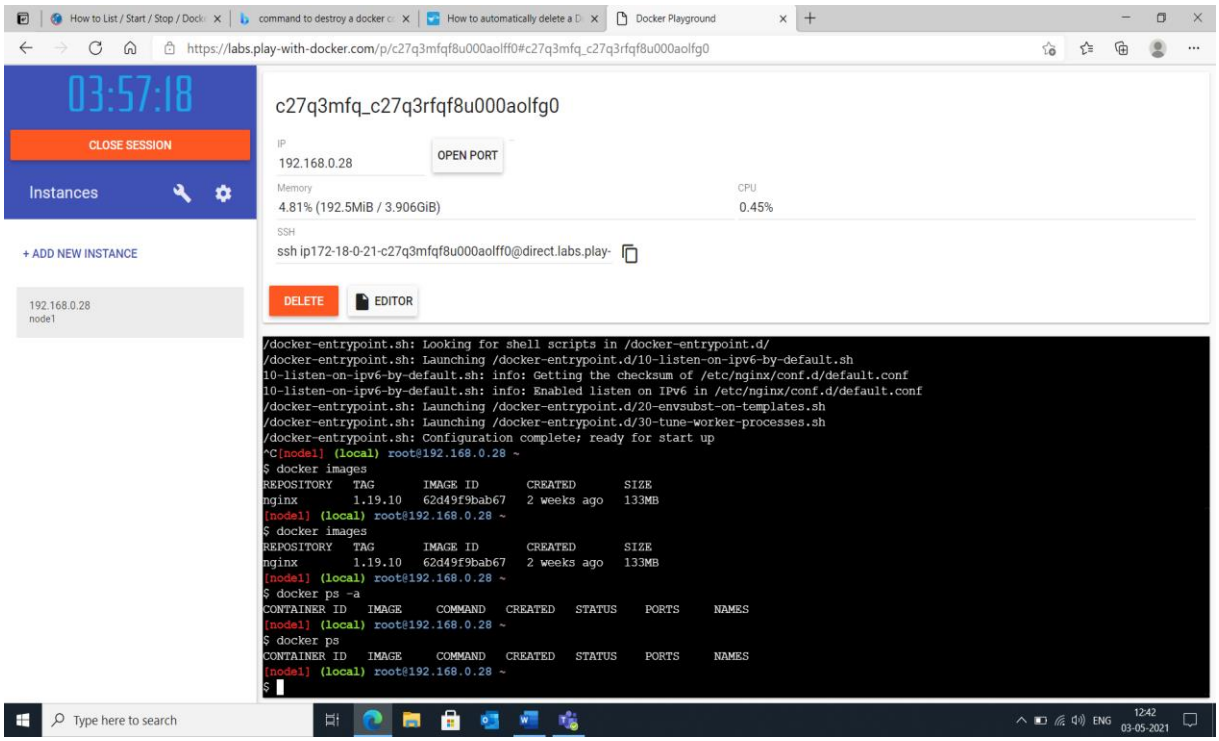
DOCKER – EXERCISES

1) Spin up a temporary container with image nginx:1.19.10 and execute inside it, such that the container should be destroyed, once you exit from the container

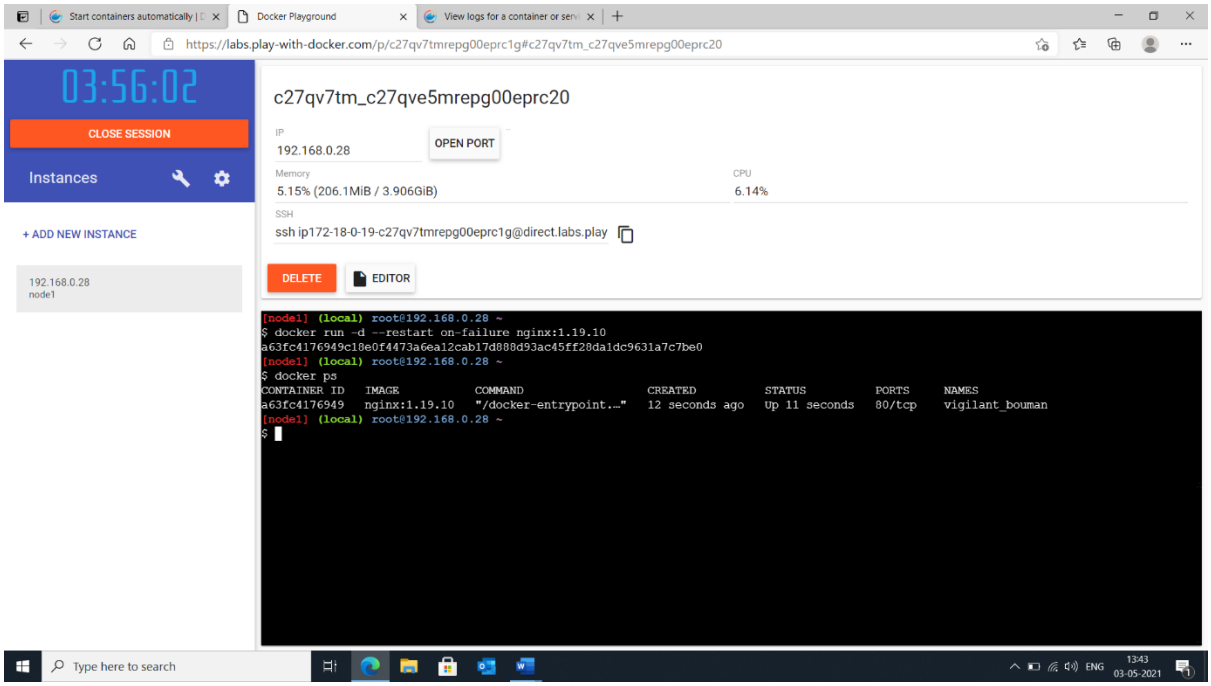
- docker run - -rm nginx:1.19.10
- docker ps -a





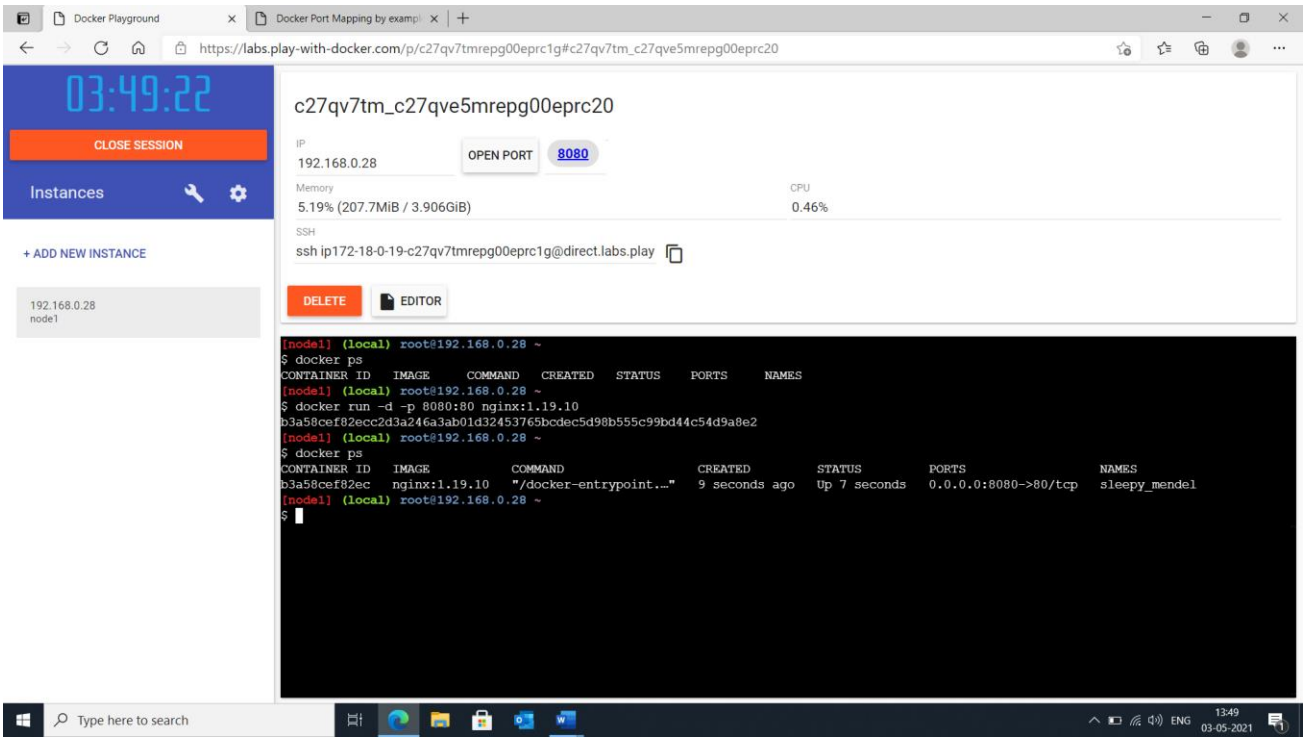
2) Spin up a container with image nginx:1.19.10 such that it should restart automatically if any fatal errors are encountered

- docker run -d - -restart on-failure nginx:1.19.10
- docker ps



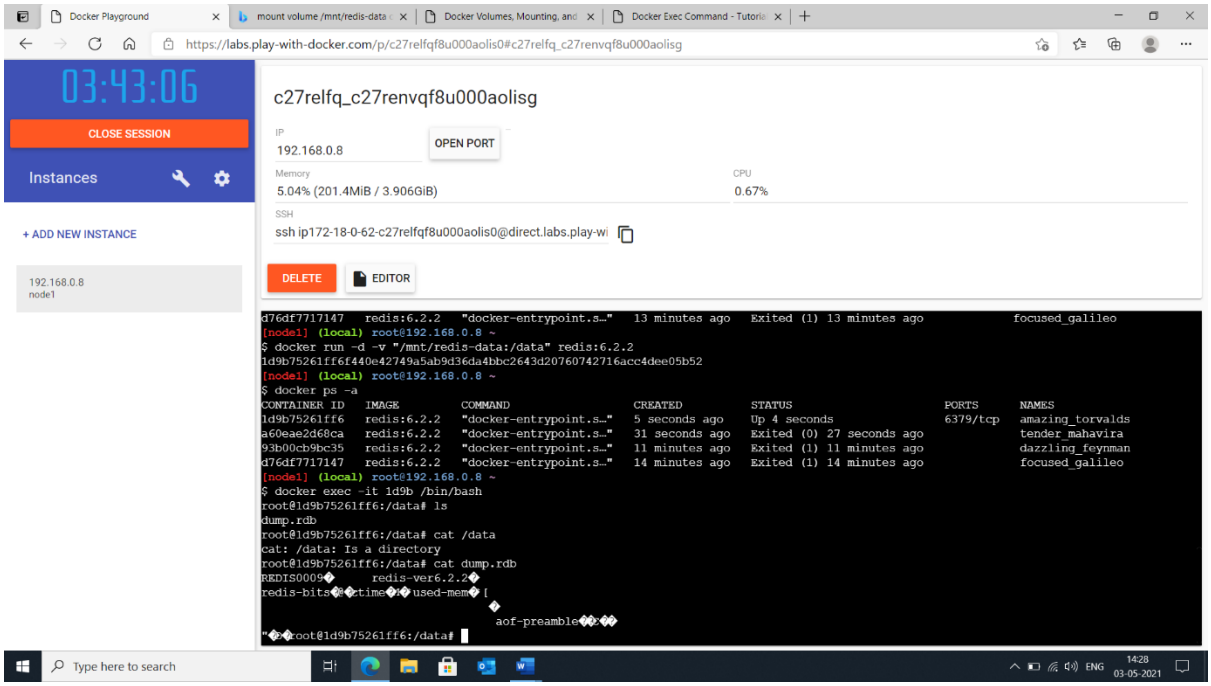
3) Spin up a container with image nginx:1.19.10 such that port 80 of the container can be connected from port 8080 of the host

- docker run -d -p 8080:80 nginx:1.19.10



4) Spin up a container with image redis:6.2.2 and mount volume /mnt/redis-data of host to the /data of the container

- docker run -d -v "/mnt/redis-data: /data " redis:6.2.2
- docker exec -it #container_id /bin/bash



5) Create a dockerfile with base image centos:7, and build an image with any sample application file

- **vi app.py**

```
from flask import Flask
app = Flask(_name_)
@app.route('/')
def disp():
        return ''This is Sakthi Sri's sample application''
```

- **vi Dockerfile**

```
# Dockerfile starts here
```

✓ FROM centos:7

✓ LABEL "about" = "This is a sample application file"

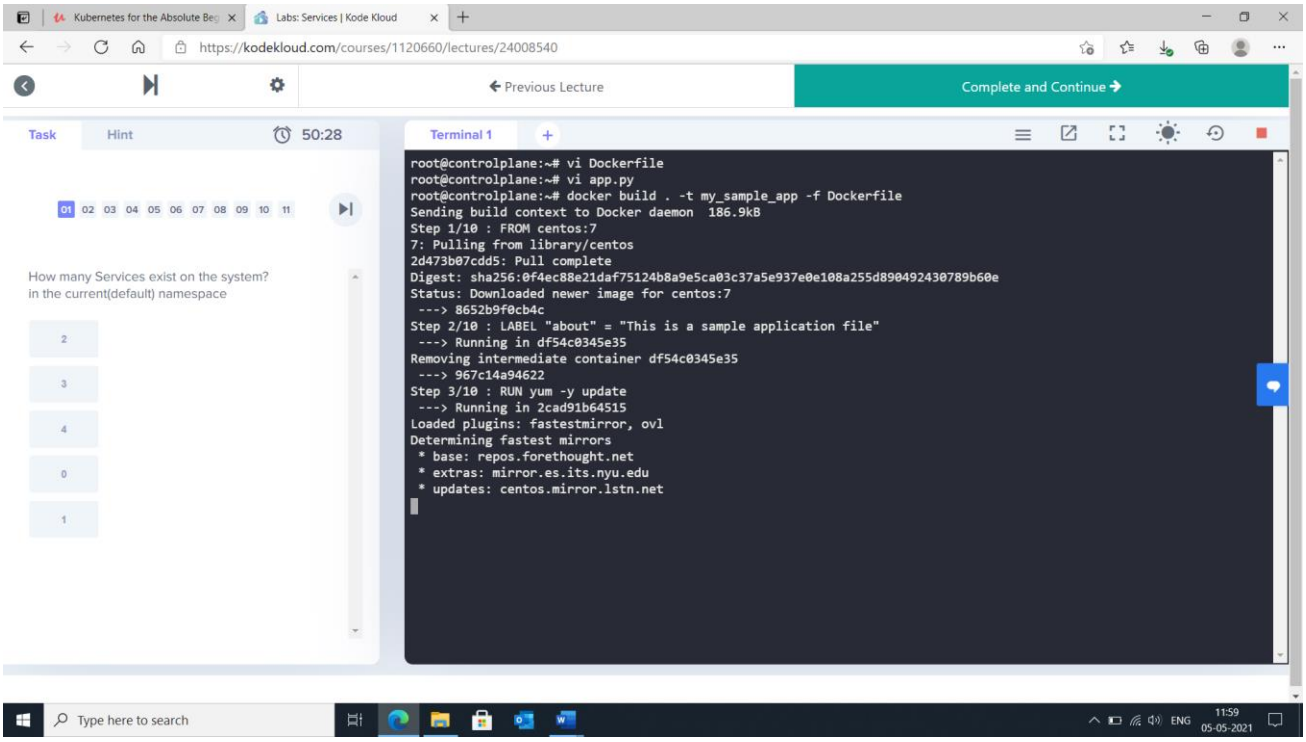
✓ RUN yum -y update

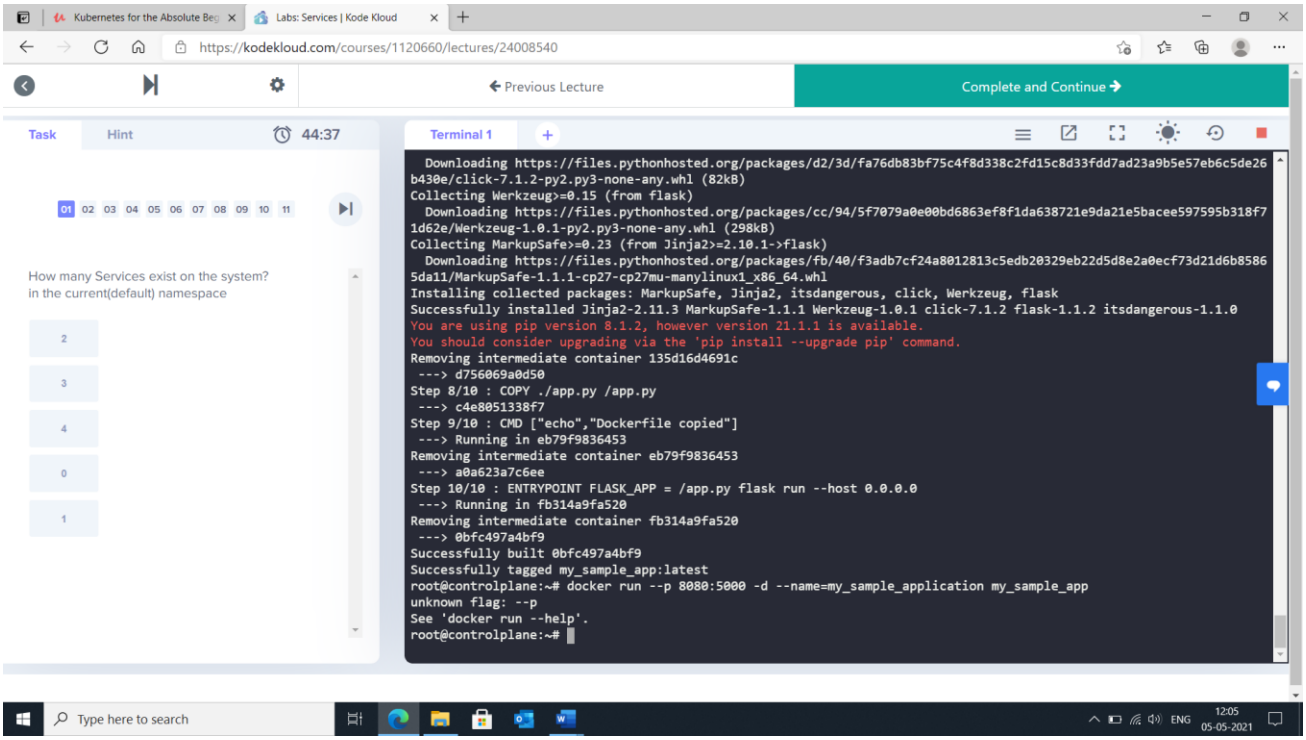
✓ RUN yum -y install python

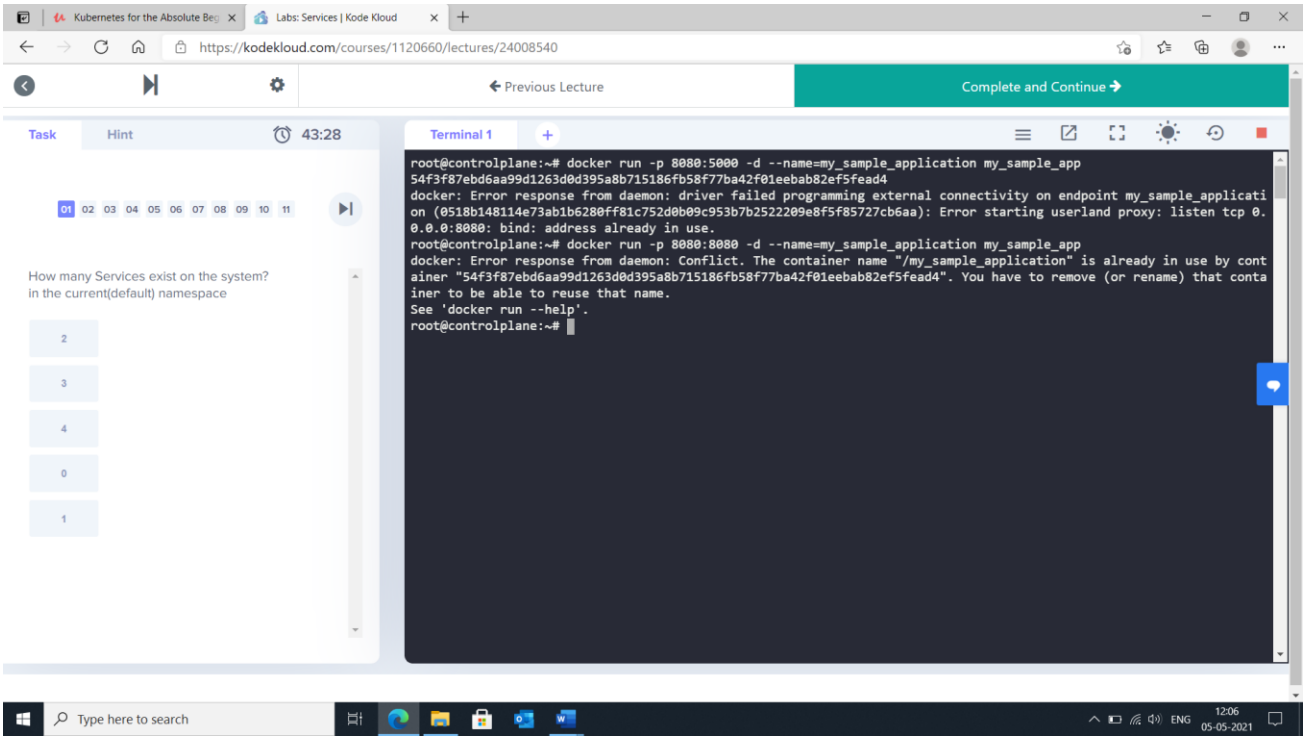
- ✓ RUN yum -y install epel-release && yum clean all
- ✓ RUN yum -y install python-pip
- ✓ RUN pip install flask
- ✓ COPY ./app.py /app.py
- ✓ CMD [“echo”, “Dockerfile copied”]
- ✓ ENTRYPOINT FLASK_APP = /app.py flask run - -host 0.0.0.0

  # Dockerfile ends here

- docker build .-t my_sample_app -f Dockerfile
- docker images
- docker run -p 8080:5000 -d - -name=my_sample_application my_sample_app
- docker ps

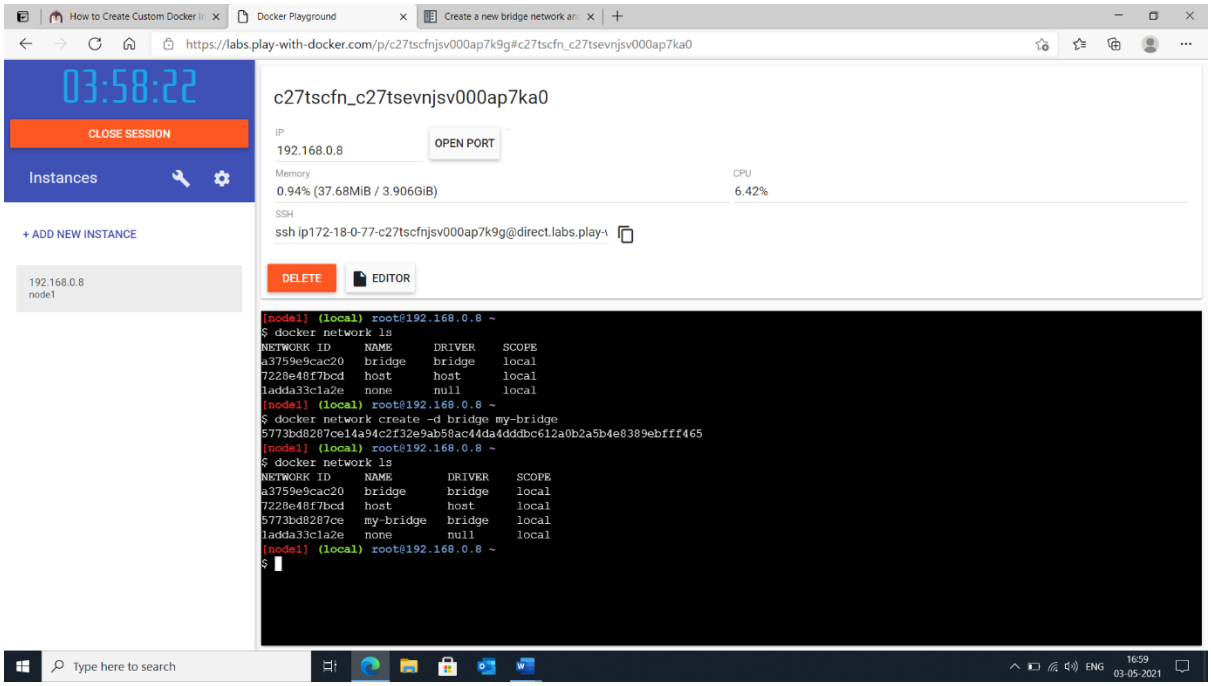


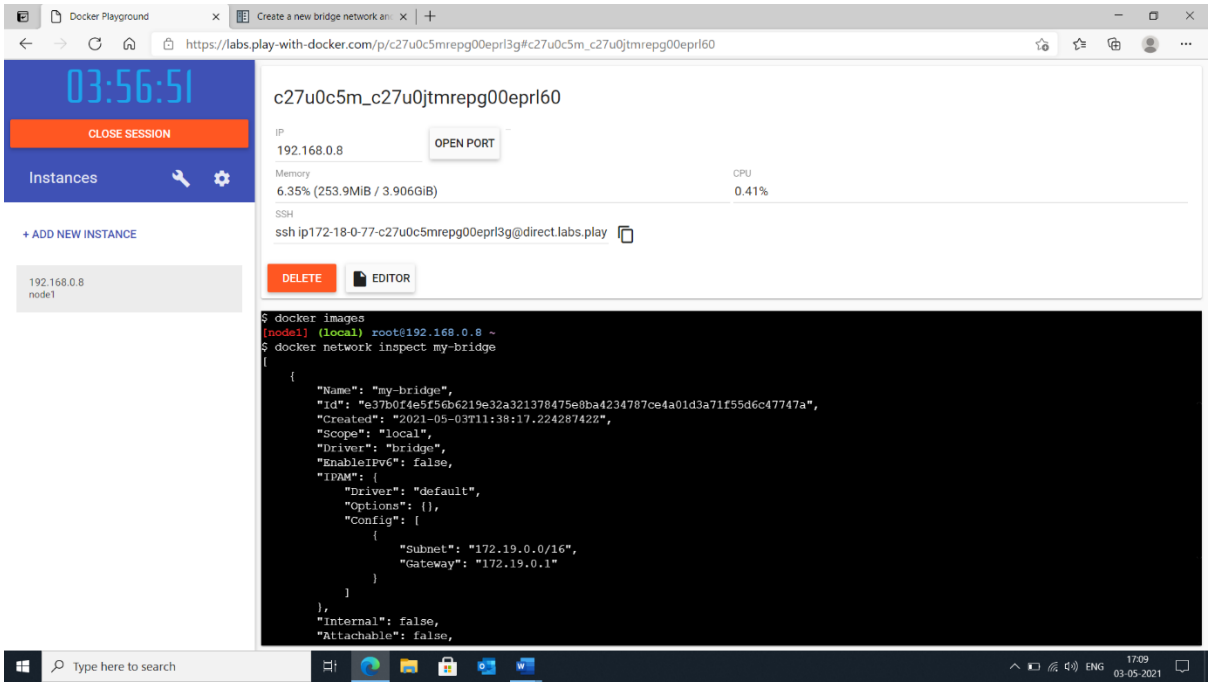

Kubernetes for the Absolute Beg
Labs: Services | Kode Kloud
https://kodekloud.com/courses/1120660/lectures/24008540
Previous Lecture
Complete and Continue
Task
Hint
44:37
01 02 03 04 05 06 07 08 09 10 11
How many Services exist on the system?
in the current(default) namespace
2
3
4
0
1
Terminal 1
Downloading https://files.pythonhosted.org/packages/d2/3d/fa76db83bf75c4f8d338c2fd15c8d33fdd7ad23a9b5e57eb6c5de26b430e/click-7.1.2-py2.py3-none-any.whl (82kB)
Collecting Werkzeug>=0.15 (from flask)
Downloading https://files.pythonhosted.org/packages/cc/94/5f7079a0e00bd6863ef8f1da638721e9da21e5bacee597595b318f71d62e/Werkzeug-1.0.1-py2.py3-none-any.whl (298kB)
Collecting MarkupSafe>=0.23 (from Jinja2>=2.10.1->flask)
Downloading https://files.pythonhosted.org/packages/fb/40/f3adb7cf24a8012813c5edb20329eb22d5d8e2a0ecf73d21d6b85865da11/MarkupSafe-1.1.1-cp27-cp27mu-manylinux1_x86_64.whl
Installing collected packages: MarkupSafe, Jinja2, itsdangerous, click, Werkzeug, flask
Successfully installed Jinja2-2.11.3 MarkupSafe-1.1.1 Werkzeug-1.0.1 click-7.1.2 flask-1.1.2 itsdangerous-1.1.0
You are using pip version 8.1.2, however version 21.1.1 is available.
You should consider upgrading via the 'pip install --upgrade pip' command.
Removing intermediate container 135d16d4691c
---> d756069a0d50
Step 8/10 : COPY ./app.py /app.py
---> c4e8051338f7
Step 9/10 : CMD ["echo","Dockerfile copied"]
---> Running in eb79f9836453
Removing intermediate container eb79f9836453
---> a0a623a7c6ee
Step 10/10 : ENTRYPOINT FLASK_APP = /app.py flask run --host 0.0.0.0
---> Running in fb314a9fa520
Removing intermediate container fb314a9fa520
---> 0bfc497a4bf9
Successfully built 0bfc497a4bf9
Successfully tagged my_sample_app:latest
root@controlplane:~# docker run --p 8080:5000 -d --name=my_sample_application my_sample_app
unknown flag: --p
See 'docker run --help'.
root@controlplane:~#
Type here to search
ENG
12:05
05-05-2021

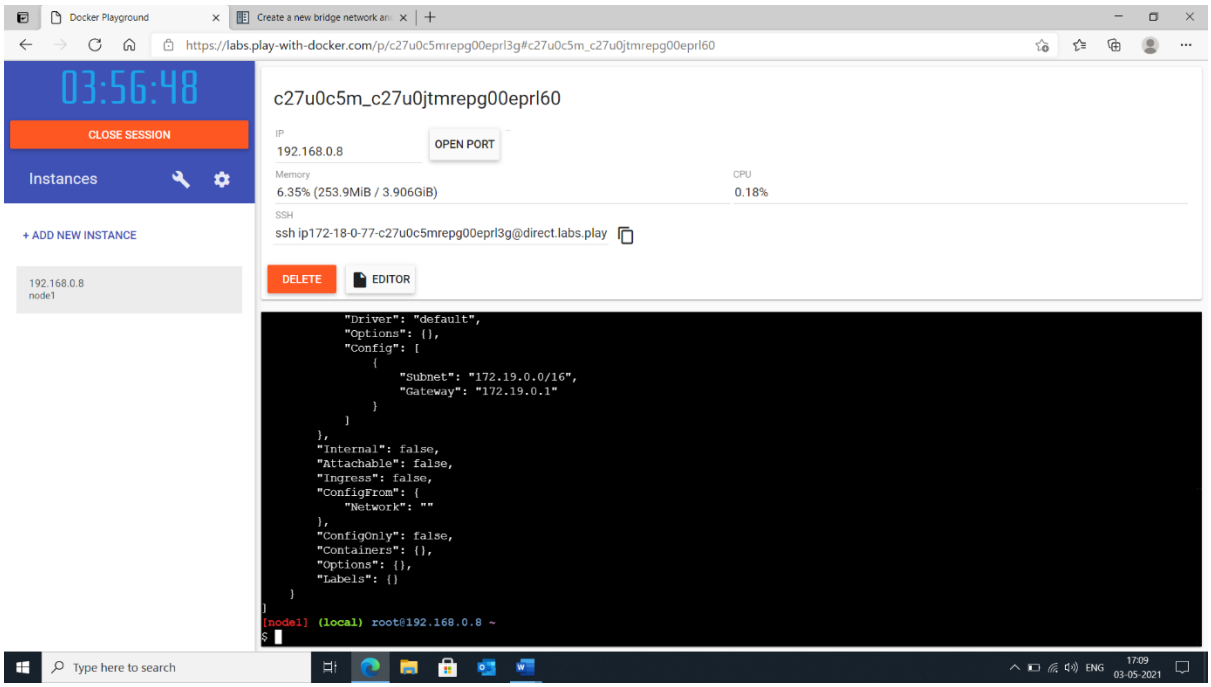

Kubernetes for the Absolute Beg
Labs: Services | Kode Kloud
https://kodekloud.com/courses/1120660/lectures/24008540
Previous Lecture
Complete and Continue
Task
Hint
43:28
01 02 03 04 05 06 07 08 09 10 11
How many Services exist on the system?
in the current(default) namespace
2
3
4
0
1
Terminal 1
root@controlplane:~# docker run -p 8080:5000 -d --name=my_sample_application my_sample_app
54f3f87ebd6aa99d1263d0d395a8b715186fb58f77ba42f01eebab82ef5fead4
docker: Error response from daemon: driver failed programming external connectivity on endpoint my_sample_application (0518b148114e73ab1b6280ff81c752d0b09c953b7b2522209e8f5f85727cb6aa): Error starting userland proxy: listen tcp 0.0.0.0:8080: bind: address already in use.
root@controlplane:~# docker run -p 8080:8080 -d --name=my_sample_application my_sample_app
docker: Error response from daemon: Conflict. The container name "/my_sample_application" is already in use by container "54f3f87ebd6aa99d1263d0d395a8b715186fb58f77ba42f01eebab82ef5fead4". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
root@controlplane:~#
Type here to search
ENG
12:06
05-05-2021

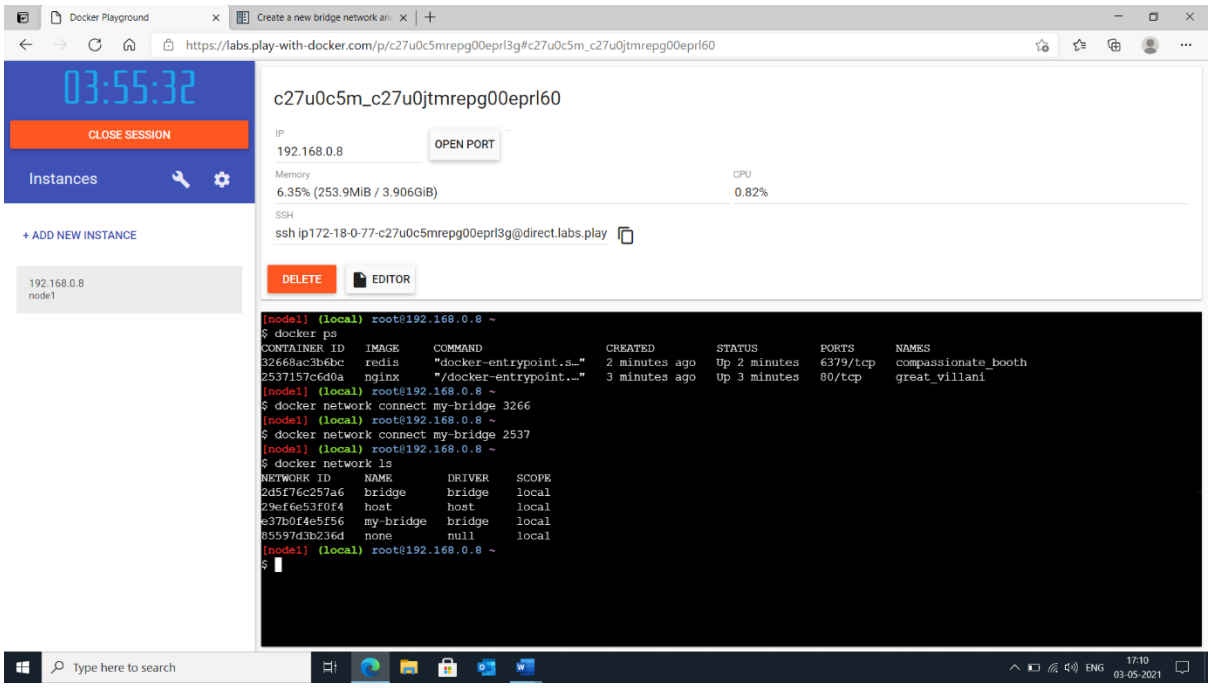
6) Create a bridge network called test-app and spin up nginx and redis containers in that network

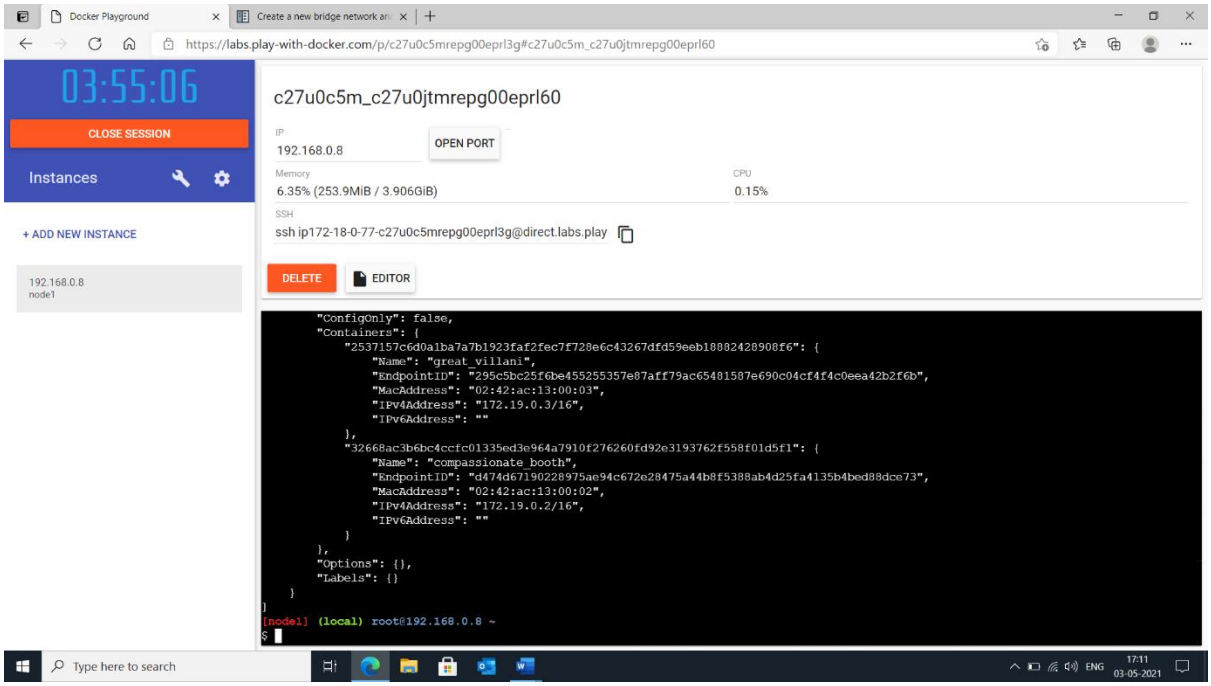
- docker network ls
- docker network create -d bridge my-bridge
- docker images
- docker network inspect my-bridge
- docker network ls
- docker run -d nginx
- docker run -d redis
- docker ps
- docker images
- docker network connect my-bridge #container_id_of_nginx
- docker network connect my-bridge #container_id_of_redis
- docker network inspect my-bridge


How to Create Custom Docker
Docker Playground
Create a new bridge network
https://labs.play-with-docker.com/p/c27tscfnjsv000ap7k9g#c27tscfn_c27tsevnjsv000ap7ka0
03:58:22
CLOSE SESSION
Instances
+ ADD NEW INSTANCE
192.168.0.8
node1
c27tscfn_c27tsevnjsv000ap7ka0
IP
192.168.0.8
OPEN PORT
Memory
0.94% (37.68MiB / 3.906GiB)
CPU
6.42%
SSH
ssh ip172-18-0-77-c27tscfnjsv000ap7k9g@direct.labs.play-
DELETE
EDITOR
[node1] (local) root@192.168.0.8 ~
$ docker network ls
NETWORK ID NAME DRIVER SCOPE
a3759e9cac20 bridge bridge local
7228e48f7bcd host host local
1adda33c1a2e none null local
[node1] (local) root@192.168.0.8 ~
$ docker network create -d bridge my-bridge
5773bd8287ce14a94c2f32e9ab58ac44da4dddbc612a0b2a5b4e8389ebfff465
[node1] (local) root@192.168.0.8 ~
$ docker network ls
NETWORK ID NAME DRIVER SCOPE
a3759e9cac20 bridge bridge local
7228e48f7bcd host host local
5773bd8287ce my-bridge bridge local
1adda33c1a2e none null local
[node1] (local) root@192.168.0.8 ~
$
Type here to search
ENG
16:59
03-05-2021


Docker Playground
Create a new bridge network
https://labs.play-with-docker.com/p/c27u0c5mrepg00eprl3g#c27u0c5m_c27u0jtmrepg00eprl60
03:56:51
CLOSE SESSION
Instances
+ ADD NEW INSTANCE
192.168.0.8
node1
c27u0c5m_c27u0jtmrepg00eprl60
IP
192.168.0.8
OPEN PORT
Memory
6.35% (253.9MiB / 3.906GiB)
CPU
0.41%
SSH
ssh ip172-18-0-77-c27u0c5mrepg00eprl3g@direct.labs.play
DELETE
EDITOR
$ docker images
[node1] (local) root@192.168.0.8 ~
$ docker network inspect my-bridge
[
{
"Name": "my-bridge",
"Id": "e37b0f4e5f56b6219e32a321378475e8ba4234787ce4a01d3a71f55d6c47747a",
"Created": "2021-05-03T11:38:17.22428742Z",
"Scope": "local",
"Driver": "bridge",
"EnableIPv6": false,
"IPAM": {
"Driver": "default",
"Options": {},
"Config": [
{
"Subnet": "172.19.0.0/16",
"Gateway": "172.19.0.1"
}
]
},
"Internal": false,
"Attachable": false,
Type here to search
ENG
17:09
03-05-2021


Docker Playground
Create a new bridge network and
https://labs.play-with-docker.com/p/c27u0c5mrepg00eprl3g#c27u0c5m_c27u0jtmrepg00eprl60
03:56:48
CLOSE SESSION
Instances
+ ADD NEW INSTANCE
192.168.0.8
node1
c27u0c5m_c27u0jtmrepg00eprl60
IP
192.168.0.8
OPEN PORT
Memory
6.35% (253.9MiB / 3.906GiB)
CPU
0.18%
SSH
ssh ip172-18-0-77-c27u0c5mrepg00eprl3g@direct.labs.play
DELETE
EDITOR
"Driver": "default",
"Options": {},
"Config": [
{
"Subnet": "172.19.0.0/16",
"Gateway": "172.19.0.1"
}
]
},
"Internal": false,
"Attachable": false,
"Ingress": false,
"ConfigFrom": {
"Network": ""
},
"ConfigOnly": false,
"Containers": {},
"Options": {},
"Labels": {}
}
]
[node1] (local) root@192.168.0.8 ~
$
Type here to search
ENG
17:09
03-05-2021


Docker Playground
Create a new bridge network and
https://labs.play-with-docker.com/p/c27u0c5mrepg00eprl3g#c27u0c5m_c27u0jtmrepg00eprl60
03:55:32
CLOSE SESSION
Instances
+ ADD NEW INSTANCE
192.168.0.8
node1
c27u0c5m_c27u0jtmrepg00eprl60
IP
192.168.0.8
OPEN PORT
Memory
6.35% (253.9MiB / 3.906GiB)
CPU
0.82%
SSH
ssh ip172-18-0-77-c27u0c5mrepg00eprl3g@direct.labs.play
DELETE
EDITOR
[node1] (local) root@192.168.0.8 ~
$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
32668ac3b6bc redis "docker-entrypoint.s…" 2 minutes ago Up 2 minutes 6379/tcp compassionate_booth
2537157c6d0a nginx "/docker-entrypoint.…" 3 minutes ago Up 3 minutes 80/tcp great_villani
[node1] (local) root@192.168.0.8 ~
$ docker network connect my-bridge 3266
[node1] (local) root@192.168.0.8 ~
$ docker network connect my-bridge 2537
[node1] (local) root@192.168.0.8 ~
$ docker network ls
NETWORK ID NAME DRIVER SCOPE
2d5f76c257a6 bridge bridge local
29ef6e53f0f4 host host local
e37b0f4e5f56 my-bridge bridge local
85597d3b236d none null local
[node1] (local) root@192.168.0.8 ~
$
Type here to search
ENG
17:10
03-05-2021


Docker Playground
Create a new bridge network
https://labs.play-with-docker.com/p/c27u0c5mrepg00eprl3g#c27u0c5m_c27u0jtmrepg00eprl60
03:55:06
CLOSE SESSION
Instances
+ ADD NEW INSTANCE
192.168.0.8
node1
c27u0c5m_c27u0jtmrepg00eprl60
IP
192.168.0.8
OPEN PORT
Memory
6.35% (253.9MiB / 3.906GiB)
CPU
0.15%
SSH
ssh ip172-18-0-77-c27u0c5mrepg00eprl3g@direct.labs.play
DELETE
EDITOR
"ConfigOnly": false,
"Containers": {
"2537157c6d0a1ba7a7b1923faf2fec7f728e6c43267dfd59eeb18882428908f6": {
"Name": "great_villani",
"EndpointID": "295c5bc25f6be455255357e87aff79ac65481587e690c04cf4f4c0eea42b2f6b",
"MacAddress": "02:42:ac:13:00:03",
"IPv4Address": "172.19.0.3/16",
"IPv6Address": ""
},
"32668ac3b6bc4ccfc01335ed3e964a7910f276260fd92e3193762f558f01d5f1": {
"Name": "compassionate_booth",
"EndpointID": "d474d67190228975ae94c672e28475a44b8f5388ab4d25fa4135b4bed88dce73",
"MacAddress": "02:42:ac:13:00:02",
"IPv4Address": "172.19.0.2/16",
"IPv6Address": ""
}
},
"Options": {},
"Labels": {}
}
]
[node1] (local) root@192.168.0.8 ~
$
Type here to search
ENG
17:11
03-05-2021