Experiment 2 - Docker on Linux/Windows/Play-with-Docker

Name – B Pravena   Section – B

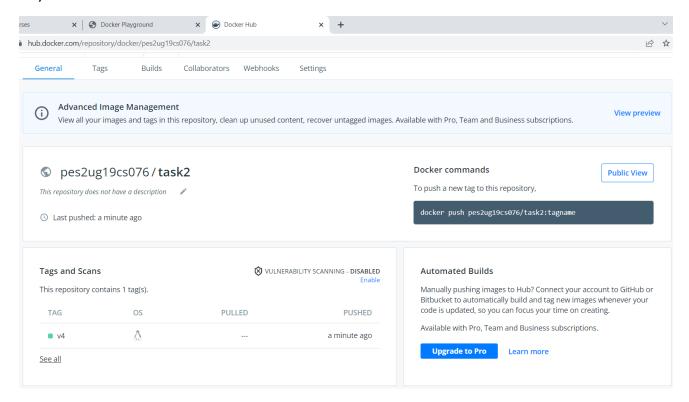SRN – PES2UG19CS076

Task 1: Installing Docker Engine

Task 2: Docker images and docker files

2a

2b)

Task 3: Exposing ports,docker networks

3a)

My SRN is PES2UG19CS076>

I am running a nginx container!

3b)

```
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2022/02/18 14:31:57 [notice] 1#1: using the "epoll" event method
2022/02/18 14:31:57 [notice] 1#1: nginx/1.21.6
2022/02/18 14:31:57 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2022/02/18 14:31:57 [notice] 1#1: OS: Linux 4.4.0-210-generic
2022/02/18 14:31:57 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2022/02/18 14:31:57 [notice] 1#1: start worker processes
2022/02/18 14:31:57 [notice] 1#1: start worker process 32
2022/02/18 14:31:57 [notice] 1#1: start worker process 33
2022/02/18 14:31:57 [notice] 1#1: start worker process 34
2022/02/18 14:31:57 [notice] 1#1: start worker process 35
2022/02/18 14:31:57 [notice] 1#1: start worker process 36
2022/02/18 14:31:57 [notice] 1#1: start worker process 37
2022/02/18 14:31:57 [notice] 1#1: start worker process 38
2022/02/18 14:31:57 [notice] 1#1: start worker process 39
```

3c)

```
Sending build context to Docker daemon   47.01MB
Step 1/5 : FROM python
 ---> dfce7257b7ba
Step 2/5 : RUN apt-get update
 ---> Using cache
 ---> 95b81c0f6c94
Step 3/5 : RUN pip install pymongo
 ---> Using cache
 ---> 32c82fdc2144
Step 4/5 : COPY sample.py sample.py
 ---> 29636ed569e8
Step 5/5 : CMD ["python", "sample.py"]
 ---> Running in 4034d91dd39c
Removing intermediate container 4034d91dd39c
 ---> 3c637490ca8b
Successfully built 3c637490ca8b
Successfully tagged task3b:latest
[node1] (local) root@192.168.0.8 ~
$ docker run task3b
Inserted into the MongoDb database!
Fetched from MongoDB:  {'_id': ObjectId('620fb487321c915532cf63ae'), 'Name:': 'Pravena', 'SRN': 'PES2UG19CS076'}
[node1] (local) root@192.168.0.8 ~
$
```

3d)

```
Removing intermediate container 4034d91dd39c
 ---> 3c637490ca8b
Successfully built 3c637490ca8b
Successfully tagged task3b:latest
[node1] (local) root@192.168.0.8 ~
$ docker run task3b
Inserted into the MongoDb database!
Fetched from MongoDB:  {'_id': ObjectId('620fb487321c915532cf63ae'), 'Name:': 'Pravena', 'SRN': 'PES2UG19CS076'}
[node1] (local) root@192.168.0.8 ~
$ docker ps
CONTAINER ID   IMAGE    COMMAND               CREATED         STATUS         PORTS                      NAMES
c64da2679066   mongo    "docker-entrypoint.s…"  20 minutes ago  Up 20 minutes  0.0.0.0:27017->27017/tcp   trusting_zhukovsky
[node1] (local) root@192.168.0.8 ~
$ docker stop c64da2679066
c64da2679066
[node1] (local) root@192.168.0.8 ~
$ docker network create my-bridge-network
8b398451fd02eca764bb26d10b69daebd9d4821b341b552149c440e94b235345
[node1] (local) root@192.168.0.8 ~
$ docker run -dp 27017:27017 --network=my-bridge-network --name=mongodb mongo:latest
cf29eb5badf2cad3a08de88347b78ece81e5e2215bc63675f321a0d03545ea96
[node1] (local) root@192.168.0.8 ~
$
```

3e)

```
Sending build context to Docker daemon   47.01MB
Step 1/5 : FROM python
 ---> dfce7257b7ba
Step 2/5 : RUN apt-get update
 ---> Using cache
 ---> 95b81c0f6c94
Step 3/5 : RUN pip install pymongo
 ---> Using cache
 ---> 32c82fdc2144
Step 4/5 : COPY sample.py sample.py
 ---> 3cf3b6b5cc68
Step 5/5 : CMD ["python", "sample.py"]
 ---> Running in a24500859a00
Removing intermediate container a24500859a00
 ---> 7c1002ce2f69
Successfully built 7c1002ce2f69
Successfully tagged task3c:latest
[node1] (local) root@192.168.0.8 ~
$ docker run --network=my-bridge-network task3c
Inserted into the MongoDb database!
Fetched from MongoDB:  {'_id': ObjectId('620fb60f3a28a9c87bb1c719'), 'Name:': 'Pravena', 'SRN': 'PES2UG19CS076'}
[node1] (local) root@192.168.0.8 ~
$
```

Task 4: Docker compose

4a)

```
a","attr":{"remote":"172.20.0.3:58050","client":"conn3","doc":{"driver":{"name":"PyMongo","version":"4.0.1"},"os":{"type":"Linux","name
":"Linux","architecture":"x86_64","version":"4.4.0-210-generic"},"platform":"CPython 3.10.2.final.0"}}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:18:35.315+00:00"},"s":"I",  "c":"STORAGE",  "id":20320,   "ctx":"conn2","msg":"createCollecti
on","attr":{"namespace":"sample_db.sample_collection","uuidDisposition":"generated","uuid":{"uuid":{"$uuid":"d60d880f-f88d-478f-9a73-9f
864ed2a228"}},"options":{}}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:18:35.322+00:00"},"s":"I",  "c":"INDEX",    "id":20345,   "ctx":"conn2","msg":"Index build: d
one building","attr":{"buildUUID":null,"namespace":"sample_db.sample_collection","index":"_id_","commitTimestamp":null}}
pycode_1   | Inserted into the MongoDb database!
pycode_1   | Fetched from MongoDB:  {'_id': ObjectId('620fb8cbd05f2e4e101d334c'), 'Name:' 'Pravena', 'SRN': 'PES2UG19CS076'}
mongodb_1  | {"t":{"$date":"2022-02-18T15:18:35.812+00:00"},"s":"I",  "c":"-",         "id":20883,   "ctx":"conn1","msg":"Interrupted op
eration as its client disconnected","attr":{"opId":13}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:18:35.813+00:00"},"s":"I",  "c":"NETWORK",  "id":22944,   "ctx":"conn1","msg":"Connection end
ed","attr":{"remote":"172.20.0.3:58046","uuid":"0d3cc192-1ca9-4b29-bd91-5afe1067564d","connectionId":1,"connectionCount":2}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:18:35.821+00:00"},"s":"I",  "c":"NETWORK",  "id":22944,   "ctx":"conn2","msg":"Connection end
ed","attr":{"remote":"172.20.0.3:58048","uuid":"9852d7ea-bb12-4629-8091-990f3fe2c4c2","connectionId":2,"connectionCount":1}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:18:35.821+00:00"},"s":"I",  "c":"NETWORK",  "id":22944,   "ctx":"conn3","msg":"Connection end
ed","attr":{"remote":"172.20.0.3:58050","uuid":"25861d9b-737e-42a4-95c7-25e5db4f3a7a","connectionId":3,"connectionCount":0}}
root_pycode_1 exited with code 0
mongodb_1  | {"t":{"$date":"2022-02-18T15:19:35.250+00:00"},"s":"I",  "c":"STORAGE",  "id":22430,   "ctx":"Checkpointer","msg":"WiredTi
ger message","attr":{"message":"[1645197575:250226][1:0x7fc1a3e50700], WT_SESSION.checkpoint: [WT_VERB_CHECKPOINT_PROGRESS] saving chec
kpoint snapshot min: 42, snapshot max: 42 snapshot count: 0, oldest timestamp: (0, 0) , meta checkpoint timestamp: (0, 0) base write ge
n: 1"}}
```

4b)

```
[node1] (local) root@192.168.0.8 ~
$ docker-compose up --scale pycode=3
Starting root_mongodb_1 ... done
Starting root_pycode_1 ... done
Creating root_pycode_2 ... done
Creating root_pycode_3 ... done
Attaching to root_mongodb_1, root_pycode_1, root_pycode_2, root_pycode_3
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:14.989+00:00"},"s":"I",  "c":"CONTROL",  "id":23285,   "ctx":"-","msg":"Automatically disa
bling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'"}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:14.990+00:00"},"s":"I",  "c":"NETWORK",  "id":4915701, "ctx":"main","msg":"Initialized wir
e specification","attr":{"spec":{"incomingExternalClient":{"minWireVersion":0,"maxWireVersion":13},"incomingInternalClient":{"minWireVe
rsion":0,"maxWireVersion":13},"outgoing":{"minWireVersion":0,"maxWireVersion":13},"isInternalClient":true}}}
pycode_2   | Inserted into the MongoDb database!
pycode_2   | Fetched from MongoDB:  {'_id': ObjectId('620fb8cbd05f2e4e101d334c'), 'Name:' 'Pravena', 'SRN': 'PES2UG19CS076'}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:14.993+00:00"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLay
er configured during NetworkInterface startup"}
pycode_1   | Inserted into the MongoDb database!
pycode_1   | Fetched from MongoDB:  {'_id': ObjectId('620fb8cbd05f2e4e101d334c'), 'Name:' 'Pravena', 'SRN': 'PES2UG19CS076'}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:14.994+00:00"},"s":"I",  "c":"NETWORK",  "id":4648601, "ctx":"main","msg":"Implicit TCP Fa
stOpen unavailable. If TCP FastOpen is required, set tcpFastOpenServer, tcpFastOpenClient, and tcpFastOpenQueueSize."}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:14.997+00:00"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLay
er configured during NetworkInterface startup"}
```
```
ed","attr":{"remote":"172.20.0.4:57228","uuid":"2b9baa97-e29f-4899-af21-22f0898cfe61","connectionId":6,"connectionCount":1}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:18.595+00:00"},"s":"I",  "c":"NETWORK",  "id":22944,   "ctx":"conn5","msg":"Connection end
ed","attr":{"remote":"172.20.0.4:57226","uuid":"88ecd3bc-c3c3-496c-ae0a-46da48d451e3","connectionId":5,"connectionCount":0}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:18.976+00:00"},"s":"I",  "c":"NETWORK",  "id":22943,   "ctx":"listener","msg":"Connection
accepted","attr":{"remote":"172.20.0.5:59762","uuid":"5adba3fb-fd97-4213-a233-0bd1f0ceb231","connectionId":7,"connectionCount":1}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:18.977+00:00"},"s":"I",  "c":"NETWORK",  "id":51800,   "ctx":"conn7","msg":"client metadat
a","attr":{"remote":"172.20.0.5:59762","client":"conn7","doc":{"driver":{"name":"PyMongo","version":"4.0.1"},"os":{"type":"Linux","name
":"Linux","architecture":"x86_64","version":"4.4.0-210-generic"},"platform":"CPython 3.10.2.final.0"}}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:18.981+00:00"},"s":"I",  "c":"NETWORK",  "id":22943,   "ctx":"listener","msg":"Connection
accepted","attr":{"remote":"172.20.0.5:59764","uuid":"497c2bce-d328-48a3-8dc8-a1b20cd783dc","connectionId":8,"connectionCount":2}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:18.981+00:00"},"s":"I",  "c":"NETWORK",  "id":22943,   "ctx":"listener","msg":"Connection
accepted","attr":{"remote":"172.20.0.5:59766","uuid":"d54b88cb-476e-45f4-bdca-3b42190cd673","connectionId":9,"connectionCount":3}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:18.982+00:00"},"s":"I",  "c":"NETWORK",  "id":51800,   "ctx":"conn9","msg":"client metadat
a","attr":{"remote":"172.20.0.5:59766","client":"conn9","doc":{"driver":{"name":"PyMongo","version":"4.0.1"},"os":{"type":"Linux","name
":"Linux","architecture":"x86_64","version":"4.4.0-210-generic"},"platform":"CPython 3.10.2.final.0"}}}
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:18.982+00:00"},"s":"I",  "c":"NETWORK",  "id":51800,   "ctx":"conn8","msg":"client metadat
a","attr":{"remote":"172.20.0.5:59764","client":"conn8","doc":{"driver":{"name":"PyMongo","version":"4.0.1"},"os":{"type":"Linux","name
":"Linux","architecture":"x86_64","version":"4.4.0-210-generic"},"platform":"CPython 3.10.2.final.0"}}}
pycode_3   | Inserted into the MongoDb database!
pycode_3   | Fetched from MongoDB:  {'_id': ObjectId('620fb8cbd05f2e4e101d334c'), 'Name:' 'Pravena', 'SRN': 'PES2UG19CS076'}
root_pycode_2 exited with code 0
mongodb_1  | {"t":{"$date":"2022-02-18T15:22:19.481+00:00"},"s":"I",  "c":"-",         "id":20883,   "ctx":"conn7","msg":"Interrupted op
eration as its client disconnected","attr":{"opId":42}}
```