Assignment 2 – Docker Essentials

1. Create an AWS EC2 instance

2. Sudo yum update

3. Sudo yum install docker
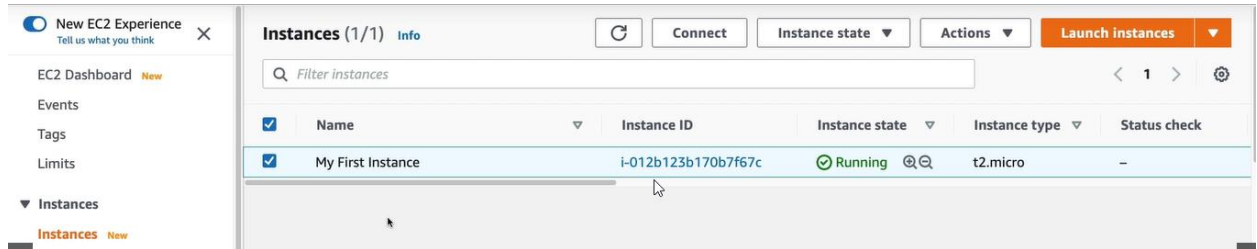
```
[root@localhost harshitraj04]# sudo yum install docker
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: mirror.xeonbd.com
 * extras: mirror.xeonbd.com
 * updates: mirror.xeonbd.com
Resolving Dependencies
--> Running transaction check
---> Package docker.x86_64 2:1.13.1-208.git7d71120.el7_9 will be installed
--> Processing Dependency: docker-common = 2:1.13.1-208.git7d71120.el7_9 for
package: 2:docker-1.13.1-208.git7d71120.el7_9.x86_64
--> Processing Dependency: docker-client = 2:1.13.1-208.git7d71120.el7_9 for
package: 2:docker-1.13.1-208.git7d71120.el7_9.x86_64
--> Processing Dependency: subscription-manager-rhsm-certificates for package
: 2:docker-1.13.1-208.git7d71120.el7_9.x86_64
--> Running transaction check
---> Package docker-client.x86_64 2:1.13.1-208.git7d71120.el7_9 will be insta
lled
---> Package docker-common.x86_64 2:1.13.1-208.git7d71120.el7_9 will be insta
lled
--> Processing Dependency: skopeo-containers >= 1:0.1.26-2 for package: 2:doc
```

4. docker

```
[root@localhost harshitraj04]# docker

Usage:  docker COMMAND

A self-sufficient runtime for containers

Options:
      --config string      Location of client config files (default "/root/.
ocker")
  -D, --debug              Enable debug mode
      --help               Print usage
  -H, --host list          Daemon socket(s) to connect to (default [])
  -l, --log-level string   Set the logging level ("debug", "info", "warn", "
rror", "fatal") (default "info")
      --tls                Use TLS; implied by --tlsverify
      --tlscacert string   Trust certs signed only by this CA (default "/roo
/.docker/ca.pem")
      --tlscert string     Path to TLS certificate file (default "/root/.doc
er/cert.pem")
      --tlskey string      Path to TLS key file (default "/root/.docker/key.
em")
      --tlsverify          Use TLS and verify the remote
  -v, --version            Print version information and quit
```

5. docker –version

```
[root@localhost harshitraj04]# docker --version
Docker version 1.13.1, build 7d71120/1.13.1
[root@localhost harshitraj04]#
```

6. service docker start

```
[root@localhost harshitraj04]# service docker start
Redirecting to /bin/systemctl start docker.service
```

7. service docker status

```
[root@localhost harshitraj04]# service docker status
Redirecting to /bin/systemctl status docker.service
● docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; vendor p
reset: disabled)
   Active: active (running) since Mon 2021-08-16 12:58:50 IST; 17s ago
     Docs: http://docs.docker.com
 Main PID: 4057 (dockerd-current)
   CGroup: /system.slice/docker.service
           ├─4057 /usr/bin/dockerd-current --add-runtime docker-runc=/usr/...
           └─4062 /usr/bin/docker-containerd-current -l unix:///var/run/do...

Aug 16 12:58:46 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:47 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:47 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:48 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:48 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:49 localhost.localdomain dockerd-current[4057]: time="2021-08...
```

8. service docker stop

```
[root@localhost harshitraj04]# service docker stop
Redirecting to /bin/systemctl stop docker.service
```

```
Redirecting to /bin/systemctl status docker.service
● docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; vendor p
reset: disabled)
   Active: inactive (dead) since Mon 2021-08-16 13:01:23 IST; 39s ago
     Docs: http://docs.docker.com
  Process: 4057 ExecStart=/usr/bin/dockerd-current --add-runtime docker-runc=
/usr/libexec/docker/docker-runc-current --default-runtime=docker-runc --exec-
opt native.cgroupdriver=systemd --userland-proxy-path=/usr/libexec/docker/doc
ker-proxy-current --init-path=/usr/libexec/docker/docker-init-current --secco
mp-profile=/etc/docker/seccomp.json $OPTIONS $DOCKER_STORAGE_OPTIONS $DOCKER_
NETWORK_OPTIONS $ADD_REGISTRY $BLOCK_REGISTRY $INSECURE_REGISTRY $REGISTRIES
(code=exited, status=0/SUCCESS)
 Main PID: 4057 (code=exited, status=0/SUCCESS)

Aug 16 12:58:49 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:50 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:50 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 12:58:50 localhost.localdomain systemd[1]: Started Docker Applicati...
Aug 16 12:58:50 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 13:01:22 localhost.localdomain systemd[1]: Stopping Docker Applicat...
Aug 16 13:01:22 localhost.localdomain dockerd-current[4057]: time="2021-08...
Aug 16 13:01:22 localhost.localdomain dockerd-current[4057]: time="2021-08...
```

9. docker run hello-world

```
[root@localhost harshitraj04]# docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent i
t
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/
```

10.   docker run –it ubuntu bash

```
[root@localhost harshitraj04]# docker run -it ubuntu bash
Unable to find image 'ubuntu:latest' locally
Trying to pull repository docker.io/library/ubuntu ...
latest: Pulling from docker.io/library/ubuntu
16ec32c2132b: Pull complete
Digest: sha256:82becede498899ec668628e7cb0ad87b6e1c371cb8a1e597d83a47fac21d6a
f3
Status: Downloaded newer image for docker.io/ubuntu:latest
root@c948d5f1ff77:/# ls
bin    dev   home   lib32   libx32   mnt   proc   run    srv   tmp   var
boot   etc   lib    lib64   media    opt   root   sbin   sys   usr
root@c948d5f1ff77:/#
```

11.   Working with volumes
   a. docker volume create

```
[root@localhost harshitraj04]# docker volume create
43eca51bc2f2507f995c89df903148037dfd92af94be1e364a921f386daebf15
[root@localhost harshitraj04]#
```

   b. Docker volume inspect

```
[root@localhost harshitraj04]# docker volume inspect 43eca51bc2f2507f995c89df
903148037dfd92af94be1e364a921f386daebf15
[
    {
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/43eca51bc2f2507f995c89df903148
037dfd92af94be1e364a921f386daebf15/_data",
        "Name": "43eca51bc2f2507f995c89df903148037dfd92af94be1e364a921f386dae
bf15",
        "Options": {},
        "Scope": "local"
    }
]
```

c. docker volume rm volumeid

```
[root@localhost harshitraj04]# docker volume rm 43eca51bc2f2507f995c89df90314
8037dfd92af94be1e364a921f386daebf15
43eca51bc2f2507f995c89df903148037dfd92af94be1e364a921f386daebf15
```

```
[root@localhost harshitraj04]# docker volume inspect 43eca51bc2f2507f995c89df
903148037dfd92af94be1e364a921f386daebf15
[]
Error: No such volume: 43eca51bc2f2507f995c89df903148037dfd92af94be1e364a921f
386daebf15
```

d. docker volume ls

```
[root@localhost harshitraj04]# docker volume create
1058816b18aae963fed0392661082a21a6568b0d269fa5166804f0ba99ce9935
[root@localhost harshitraj04]# docker volume ls
DRIVER              VOLUME NAME
local               1058816b18aae963fed0392661082a21a6568b0d269fa5166804f0ba9
9ce9935
```

12.   service docker stop

```
[root@localhost harshitraj04]# service docker stop
Redirecting to /bin/systemctl stop docker.service
```