



## Department of Information Technology

**Academic Year: 2025-26**

**Semester: V**

**Class / Branch: TEIT/Div C**

**Subject: DevOps Lab**

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## Experiment No. 08

**Aim: To demonstrate container lifecycle using various docker commands.**

### Outputs:

Create dockerlab directory:

```
Activities Terminal Aug 1 08:50
root@vora: /home/apsit/git-shravani/dockerlab

apsit@vora:~$ sudo su
[sudo] password for apsit:
root@vora:/home/apsit# sudo git-shravanis
sudo: git-shravanis: command not found
root@vora:/home/apsit# git-shravanis
git-shravanis: command not found
root@vora:/home/apsit# cd git-shravanis
bash: cd: git-shravanis: No such file or directory
root@vora:/home/apsit# cd git-shravani
root@vora:/home/apsit/git-shravani# mkdir dockerlab
root@vora:/home/apsit/git-shravani# cd dockerlab
root@vora:/home/apsit/git-shravani/dockerlab#
```

## INFO:

```
Activities Terminal Aug 1 08:55
root@vora: /home/apsit/git-shravani/dockerlab

root@vora:/home/apsit/git-shravani/dockerlab# curl -fsSL https://get.docker.com -o get-docker.sh
root@vora:/home/apsit/git-shravani/dockerlab# sudo sh get-docker.sh
sh: 0: Can't open get.docker.sh
root@vora:/home/apsit/git-shravani/dockerlab# sudo sh get-docker.sh
# Executing docker install script, commit: bedc5deb3e782a5e59d3d2a870f5e1fb5a38d5c
Warning: the "docker" command appears to already exist on this system.

If you already have Docker installed, this script can cause trouble, which is
why we're displaying this warning and provide the opportunity to cancel the
installation.

If you installed the current Docker package using this script and are using it
again to update Docker, you can ignore this message, but be aware that the
script resets any custom changes in the deb and rpm repo configuration
files to match the parameters passed to the script.

You may press Ctrl+C now to abort this script.
+ sleep 20
^Z
[1]+  Stopped                  sudo sh get-docker.sh
root@vora:/home/apsit/git-shravani/dockerlab# docker info
Client:
Version:      28.1.1+1
Context:      default
Debug Mode:   false
Plugins:
buildx: Docker Buildx (Docker Inc.)
  Version:  v0.20.1
  Path:     /usr/libexec/docker/cli-plugins/docker-buildx
compose: Docker Compose (Docker Inc.)
  Version:  v2.33.1
  Path:     /usr/libexec/docker/cli-plugins/docker-compose
Server:
Containers: 3
Running: 0
Paused: 0
Stopped: 3
Images: 7
Server Version: 28.1.1+1
Storage Driver: overlay2
Backing Filesystem: extfs
Supports d_type: true
```

## VERSION:

```
root@vora:/home/apsit/git-shravani/dockerlab# docker -v
Docker version 28.1.1+1, build 068a01e
root@vora:/home/apsit/git-shravani/dockerlab#
```

## DOCKER USERNAME AND PASSWORD

```
[1]+  Stopped                  docker login
root@vora:/home/apsit/git-shravani/dockerlab# docker login -u shravani813

Info → A Personal Access Token (PAT) can be used instead.
To create a PAT, visit https://app.docker.com/settings

Password:

WARNING! Your credentials are stored unencrypted in '/root/.docker/config.json'.
Configure a credential helper to remove this warning. See
https://docs.docker.com/go/credential-store/

Login Succeeded
root@vora:/home/apsit/git-shravani/dockerlab#
```

```

root@vora:/home/apsit/git-shravani/dockerlab# docker container ls
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
root@vora:/home/apsit/git-shravani/dockerlab# docker network ls
docker: unknown command: docker network
Run 'docker --help' for more information
root@vora:/home/apsit/git-shravani/dockerlab# docker network ls
NETWORK ID     NAME      DRIVER    SCOPE
2d997f23d919   bridge    bridge    local
c97eb161f9d3   host      host      local
1a5adc6547dc   none      null      local
root@vora:/home/apsit/git-shravani/dockerlab#

```

```

root@vora:/home/apsit/git-shravani/dockerlab# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
mysql          <none>    245a6c909dc0   9 days ago    921MB
mysql          latest    fe7f726d39a6   9 days ago    921MB
ubuntu        latest    65ae7a6f3544   2 weeks ago   78.1MB
python        latest    4bbf6d52fe8d   7 weeks ago   1.02GB
apsithub.apsit.edu.in/network-lab latest    ee8119bcdcf21   3 months ago  2.83GB
hello-world    latest    74cc54e27dc4   6 months ago  10.1kB
sonarqube      latest    dc5df51c0ffc   23 months ago 702MB
root@vora:/home/apsit/git-shravani/dockerlab#

```

## DELETE IMAGES:

```

root@vora:/home/apsit/git-shravani/dockerlab# docker rmi -f mysql
Untagged: mysql:latest
Untagged: mysql@sha256:082063dca94535c76b91c6ef9b9f6748810e546887af5e8574a8cfa11eace184
Deleted: sha256:fe7f726d39a659b3a7b82c231211e334c568ffce9a14569a7b4618d7c5846e08
root@vora:/home/apsit/git-shravani/dockerlab#

```

## UBUNTU IMAGE CREATED

```

root@vora:/home/apsit/git-shravani/dockerlab# docker container run ubuntu cat /etc/os-release
PRETTY_NAME="Ubuntu 24.04.2 LTS"
NAME="Ubuntu"
VERSION_ID="24.04"
VERSION="24.04.2 LTS (Noble Numbat)"
VERSION_CODENAME=noble
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=noble
LOGO=ubuntu-logo
root@vora:/home/apsit/git-shravani/dockerlab#

```

```

root@vora:/home/apsit/git-shravani/dockerlab# 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 it
   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/

For more examples and ideas, visit:
https://docs.docker.com/get-started/

```



```

LOGO=ubuntu-logo
root@vora:/home/apsit/git-shravani/dockerlab# docker container ls -a

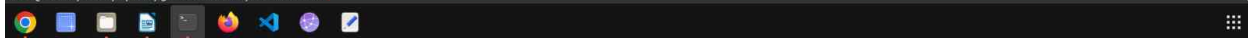
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
e1d99288bc7c	ubuntu	"cat /etc/os-release"	33 seconds ago	Exited (0) 31 seconds ago		eager_ritchie
fb85e2e9921	hello-world	"/hello"	2 minutes ago	Exited (0) About a minute ago		jolly_newton
3c3359aa14c9	ubuntu	"cat /etc/os-release"	4 minutes ago	Exited (0) 4 minutes ago		recursing_grothendieck
538ae4264928	ubuntu	"cat /etc/os-release"	5 minutes ago	Created		intelligent_maxwell
c4cb0bc71f43	fe7f726d39a6	"docker-entrypoint.s..."	46 hours ago	Exited (255) 44 hours ago	3306/tcp, 33060/tcp	yadnika
bc0a58e442d4	ubuntu	"/bin/bash"	46 hours ago	Exited (255) 44 hours ago		lucid_matsumoto
2b178b2c7eba	245a6c909dc0	"docker-entrypoint.s..."	2 days ago	Exited (255) 2 days ago	3306/tcp, 33060/tcp	test-mysql

```

root@vora:/home/apsit/git-shravani/dockerlab#

```



```

root@vora:/home/apsit/git-shravani/dockerlab# sudo su
root@vora:/home/apsit/git-shravani/dockerlab# docker container run ubuntu sleep 60

```



```

Activities  Terminal  Aug 1 09:26
root@vora:/home/apsit

```

```

apsit@vora:~$ sudo su
[sudo] password for apsit:
root@vora:/home/apsit# docker container ls -a

```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
85fcb2da09e	ubuntu	"sleep 60"	16 seconds ago	Up 16 seconds		magical_germain
e1d99288bc7c	ubuntu	"cat /etc/os-release"	3 minutes ago	Exited (0) 3 minutes ago		eager_ritchie
fb85e2e9921	hello-world	"/hello"	4 minutes ago	Exited (0) 4 minutes ago		jolly_newton
3c3359aa14c9	ubuntu	"cat /etc/os-release"	7 minutes ago	Exited (0) 7 minutes ago		recursing_grothendieck
538ae4264928	ubuntu	"cat /etc/os-release"	8 minutes ago	Created		intelligent_maxwell
c4cb0bc71f43	fe7f726d39a6	"docker-entrypoint.s..."	46 hours ago	Exited (255) 44 hours ago	3306/tcp, 33060/tcp	yadnika
bc0a58e442d4	ubuntu	"/bin/bash"	46 hours ago	Exited (255) 44 hours ago		lucid_matsumoto
2b178b2c7eba	245a6c909dc0	"docker-entrypoint.s..."	2 days ago	Exited (255) 2 days ago	3306/tcp, 33060/tcp	test-mysql

```

root@vora:/home/apsit#

```

```
root@vora:/home/apsit/git-shravani/dockerlab# docker container run ubuntu cat /etc/os-release
PRETTY_NAME="Ubuntu 24.04.2 LTS"
NAME="Ubuntu"
VERSION_ID="24.04"
VERSION="24.04.2 LTS (Noble Numbat)"
VERSION_CODENAME=noble
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=noble
LOGO=ubuntu-logo

root@vora:/home/apsit/git-shravani/dockerlab# docker container ls -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                               NAMES
e1d99280b7c7  ubuntu    "cat /etc/os-release"    33 seconds ago Exited (0)    31 seconds ago                    eager_ritchie
f8e85e2e9921  hello-world "/hello"                 2 minutes ago Exited (0)    About a minute ago                jolly_newton
3c3359aa14c9  ubuntu    "cat /etc/os-release"    4 minutes ago Exited (0)    4 minutes ago                    recurring_grothendieck
538ae4264928  ubuntu    "cat /etc/os-release"    5 minutes ago Created                                     intelligent_maxwell
c4cb0bc71f43  fe7f726d39a6 "docker-entrypoint.s..." 46 hours ago Exited (255)  44 hours ago                    yadnika
bc0a58e442d4  ubuntu    "/bin/bash"              46 hours ago Exited (255)  44 hours ago                    lucid_matsumoto
2b178b2c7eba  245a6c909dc0 "docker-entrypoint.s..." 2 days ago    Exited (255)  2 days ago                    test-mysql

root@vora:/home/apsit/git-shravani/dockerlab# sudo su
root@vora:/home/apsit/git-shravani/dockerlab# docker container run ubuntu sleep 60
root@vora:/home/apsit/git-shravani/dockerlab# docker container rm eid
eid
root@vora:/home/apsit/git-shravani/dockerlab# docker container run -it ubuntu /bin/bash
root@27848bc0c404:/# cat /etc/os-release
PRETTY_NAME="Ubuntu 24.04.2 LTS"
NAME="Ubuntu"
VERSION_ID="24.04"
VERSION="24.04.2 LTS (Noble Numbat)"
VERSION_CODENAME=noble
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=noble
LOGO=ubuntu-logo
root@27848bc0c404:/#
```

## REMOVING THE CONTAINERS:

```
exit
root@vora:/home/apsit/git-shravani/dockerlab# docker container ls -aq
27848bc0c404
85fcbc2da09e
f8e85e2e9921
3c3359aa14c9
538ae4264928
c4cb0bc71f43
bc0a58e442d4
2b178b2c7eba
root@vora:/home/apsit/git-shravani/dockerlab# docker container rm $(docker container ls -aq)
27848bc0c404
85fcbc2da09e
f8e85e2e9921
3c3359aa14c9
538ae4264928
c4cb0bc71f43
bc0a58e442d4
2b178b2c7eba
root@vora:/home/apsit/git-shravani/dockerlab# docker container ls -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                               NAMES
root@vora:/home/apsit/git-shravani/dockerlab#
```



```

root@vora:/home/apsit/git-shravani/dockerlab# docker container ls -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
root@vora:/home/apsit/git-shravani/dockerlab# docker pull mysql:latest
latest: Pulling from library/mysql
3ea90c3a51a3: Pull complete
afaae28bbbee0: Pull complete
2ba13c6c03c3: Pull complete
31c5b5c14efc: Pull complete
938fdecc6487: Pull complete
19f77cf53703: Pull complete
6c4bb10a796d: Pull complete
468bb678f509: Pull complete
90fd4b47993e: Pull complete
6dfd9f336bec: Pull complete
Digest: sha256:082063dca94535c76b91c6ef9b9f6748810e546887af5e8574a8cfa11eace184
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
root@vora:/home/apsit/git-shravani/dockerlab# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
mysql                latest             fe7f726d39a6       9 days ago         921MB
mysql                <none>            245a6c909dc0       9 days ago         921MB
ubuntu              latest             65ae7a6f3544       2 weeks ago        78.1MB
python              latest             4bbf6d52fe8d       7 weeks ago        1.02GB
apsithub.apsit.edu.in/network-lab latest             ee8119bcdcf21      3 months ago       2.83GB
hello-world         latest             74cc54e27dc4       6 months ago       10.1kB
sonarqube           latest             dc5df51c0ffc       23 months ago      702MB

```

## first terminal:

```

root@vora:/home/apsit/git-shravani/dockerlab# docker run --name test-shravanis -e MYSQL_ROOT_PASSWORD=shravani -d mysql
bd7a635e0464a4f26e3711833391b7d59edcd301d52a9fc3af9272dbf4fa68f9
root@vora:/home/apsit/git-shravani/dockerlab#

```

## second terminal:

```

root@vora:/home/apsit# docker container ls
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
27848bc0c404       ubuntu            "/bin/bash"        2 minutes ago      Up 2 minutes              suspicious_hamilton
root@vora:/home/apsit# docker container ls -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
bd7a635e0464       mysql              "docker-entrypoint.s..." 47 seconds ago     Up 47 seconds          3306/tcp, 33060/tcp  test-shravanis
root@vora:/home/apsit#

```

```

root@vora:/home/apsit/git-shravani/dockerlab# docker exec -it test-shravanis bash
bash-5.1# mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
bash-5.1# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 9.4.0 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>

```

```
Activities Terminal Aug 1 09:50 root@vora: /home/apsit/git-shravani/dockerlab

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select 'hello-world!!!';
+-----+
| hello-world!!! |
+-----+
| hello-world!!! |
+-----+
1 row in set (0.000 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.008 sec)

mysql> use mysql
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| mysql |
+-----+
1 row in set (0.000 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_mysql |
+-----+
| columns_priv |
| component |
| db |
| default_roles |
| engine_cost |
+-----+
```

```
Activities Terminal Aug 1 09:50 root@vora: /home/apsit/git-shravani/dockerlab

global_grants
gtid_executed
help_category
help_keyword
help_relation
help_topic
innodb_index_stats
innodb_table_stats
ndb_binlog_index
password_history
plugin
procs_priv
proxies_priv
replication_asynchronous_connection_failover
replication_asynchronous_connection_failover_managed
replication_group_configuration_version
replication_group_member_actions
role_edges
server_cost
serverS
slave_master_info
slave_relay_log_info
slave_worker_info
slow_log
tables_priv
time_zone
time_zone_leap_second
time_zone_name
time_zone_transition
time_zone_transition_type
user
+-----+
38 rows in set (0.004 sec)

mysql> SELECT NOW();
+-----+
| NOW() |
+-----+
| 2025-08-01 04:20:36 |
+-----+
1 row in set (0.000 sec)

mysql>
```

**Conclusion:** In this experiments student have learnt how to deal with containerization technology using various docker commands.

