

School of Computer Science

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES



Containers & Docker Security

Lab File (2022-2026)

5th Semester

Submitted To:

Prof. Hitesh Kumar Sharma

Submitted By:

Khushi Jain

500105912

R2142220336

B.Tech CSE

Devops(B1)

EXPERIMENT 2

AIM: Working with Docker (Basic Commands)

Steps to Complete:

1. Search a Redis image on Docker Hub

>**docker pull Redis:**

```
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker pull redis
Using default tag: latest
latest: Pulling from library/redis
a2318d6c47ec: Pull complete
ed7fd66f27f2: Pull complete
410a3d5b3155: Pull complete
9312cf3f6b3e: Pull complete
c39877ab23d0: Pull complete
01394ffc7248: Pull complete
4f4fb708ef54: Pull complete
5a03cb6163ab: Pull complete
Digest: sha256:eadf354977d428e347d93046bba5569d701e8deb68f090215534a99dbcb23b9
Status: Downloaded newer image for redis:latest
docker.io/library/redis:latest

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview redis
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> |
```

2. Run Docker Container of Redis Image in background

- ✓ **docker run:** This command creates and starts a new container from an image.
- ✓ **it:** The **-i** flag keeps the STDIN open, and the **-t** flag allocates a pseudo-TTY, allowing you to interact with the container via a terminal session.
- ✓ **--name myredis:** This names the container "*myredis*" for easy reference.
- ✓ **redis: latest:** Specifies the Redis image (using the latest version) to use for the container.
- ✓ **/bin/bash:** This opens a Bash shell inside the container, allowing you to interact with it directly. While this command starts the container interactively.

What's Next?

```
View a summary of image vulnerabilities and recommendations → docker scout quickview redis
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker run -it --name myredis redis:latest /bin/bash
root@be07bbfddfd2:/data# mkdir devops
root@be07bbfddfd2:/data# cd devops
root@be07bbfddfd2:/data/devops# touch file.txt
```

3. Run Docker PS and Docker PS -a

- ✓ **docker ps:** This lists all running Docker containers. It shows container IDs, names, and other details about active containers.
- ✓ **docker ps -a:** This lists all containers, including those that are stopped. This is useful to see all containers that exist on your system, not just the ones that are currently running.

```
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
be07bbfddfd2   redis:latest  "docker-entrypoint.s..."  2 minutes ago  Exited (130) 10 seconds ago  myredis
97e55e6576c7   busybox      "sh"        12 days ago  Exited (137) 12 days ago  container2
88884bb44da5   busybox      "sh"        12 days ago  Exited (137) 12 days ago  container1
bad045719d62   ubuntu      "bin/bash"   3 weeks ago  Exited (255) 12 days ago  vigilant_perlman
6a949f94066f   docker/welcome-to-docker:latest  "/docker-entrypoint..."  6 months ago  Exited (0) 6 months ago  competent_clarke
4fcd593b28d5   docker/welcome-to-docker:latest  "/docker-entrypoint..."  6 months ago  Exited (0) 6 months ago  welcome-to-docker
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> |
```

4. Run Docker Container and take its console

What's Next?

```
View a summary of image vulnerabilities and recommendations → docker scout quickview redis
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker run -it --name myredis redis:latest /bin/bash
root@be07bbfddfd2:/data# mkdir devops
root@be07bbfddfd2:/data# cd devops
root@be07bbfddfd2:/data/devops# touch file.txt
```

5. Create a Docker Volume and connect it

- ✓ **--mount source=myredisdata2,target=/data** : This option mounts the myredisdata2 volume to the /data directory inside the container.
- ✓ **touch /data/lab2.txt**: This creates a new file named lab2.txt in the /data directory, demonstrating that the volume is correctly mounted.
- ✓ **Ls**: This lists the contents of the /data directory, showing that **lab2.txt** has been successfully created, confirming that the volume is connected and functioning.

```
See 'docker run --help'.
PS C:\Users\KHUSHI JAIN\OneDrive\Desktop\Docker_lab> docker run -it --name myredis2 --mount source=myredisdata2,target=
/data redis:latest /bin/bash
root@2f42463f5840:/data# touch /data/lab2.txt
root@2f42463f5840:/data# ls
lab2.txt
root@2f42463f5840:/data# |
```