

Lesson 03 Demo 04

Selecting a Storage Driver

Objective: To configure storage drivers for Docker to ensure efficient storage management and system performance

Tools required: Ubuntu

Prerequisites: None

Steps to be followed:

1. Configure overlay2 storage driver
2. Configure fuse-overlayfs storage driver

Step 1: Configure overlay2 storage driver

1.1 Run the following command to create a **daemon.json**:

sudo nano /etc/docker/daemon.json

```
labsuser@ip-172-31-29-216:~$ sudo nano /etc/docker/daemon.json
labsuser@ip-172-31-29-216:~$
```

1.2 Add the following configuration to the **daemon.json** file:

```
{
  "data-root": "/mnt/docker-data",
  "storage-driver": "overlay2",
  "dns": ["8.8.8.8", "8.8.4.4"]
}
```

```
GNU nano 6.2 /etc/docker/daemon.json *
{
  "data-root": "/mnt/docker-data",
  "storage-driver": "overlay2",
  "dns": ["8.8.8.8", "8.8.4.4"]
}
I
```

1.3 Execute the following command to restart the Docker Daemon:

sudo service docker restart

```
labsuser@ip-172-31-29-216:~$ sudo service docker restart
labsuser@ip-172-31-29-216:~$
```

1.4 Run the following command to check the default storage driver:

sudo docker info | grep 'Storage Driver'

```
labsuser@ip-172-31-12-204:~$ sudo nano /etc/docker/daemon.json
labsuser@ip-172-31-12-204:~$ sudo service docker restart
labsuser@ip-172-31-12-204:~$ sudo docker info | grep 'Storage Driver'
Storage Driver: overlay2
labsuser@ip-172-31-12-204:~$
```

Step 2: Configure fuse-overlayfs storage driver

2.1 Click on the **worker1** option and navigate to the newly opened tab of worker1 node:

sudo apt install fuse-overlayfs

```
labsuser@ip-172-31-15-33:~$ sudo apt install fuse-overlayfs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  fuse-overlayfs
0 upgraded, 1 newly installed, 0 to remove and 248 not upgraded.
1 not fully installed or removed.
Need to get 44.7 kB of archives.
After this operation, 116 kB of additional disk space will be used.
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 fuse-overlayfs amd64 1.7.1-1 [44.7 kB]
Fetched 44.7 kB in 0s (2206 kB/s)
Selecting previously unselected package fuse-overlayfs.
(Reading database ... 218319 files and directories currently installed.)
Preparing to unpack .../fuse-overlayfs_1.7.1-1_amd64.deb ...
Unpacking fuse-overlayfs (1.7.1-1) ...
Setting up grub-efi-amd64-signed (1.187.6+2.06-2ubuntu14.4) ...
Installing grub to /boot/efi.
Installing for x86_64-efi platform.
```

2.2 Update the **docker.json** file:

sudo nano /etc/docker/daemon.json

```
Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
labsuser@ip-172-31-15-33:~$ sudo nano /etc/docker/daemon.json
```

2.3 Add the following configuration to the **daemon.json** file:

```
{
  "storage-driver": "fuse-overlayfs"
}
```

```
GNU nano 6.2 /etc/docker/daemon.json *
{
  "storage-driver": "fuse-overlayfs"
}
|
```

2.4 Execute the following command to restart the Docker Daemon:

sudo systemctl restart docker

```
No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
labsuser@ip-172-31-15-33:~$ sudo nano /etc/docker/daemon.json
labsuser@ip-172-31-15-33:~$ sudo systemctl restart docker
labsuser@ip-172-31-15-33:~$
```

2.5 Run the following command to check the default storage driver

sudo docker info | grep "Storage Driver:"

```
labsuser@ip-172-31-15-33:~$ sudo nano /etc/docker/daemon.json
labsuser@ip-172-31-15-33:~$ sudo systemctl restart docker
labsuser@ip-172-31-15-33:~$ docker info | grep "Storage Driver:"
ERROR: permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/info": dial unix
/var/run/docker.sock: connect: permission denied
errors pretty printing info
labsuser@ip-172-31-15-33:~$ sudo docker info | grep "Storage Driver:"
Storage Driver: fuse-overlayfs
labsuser@ip-172-31-15-33:~$
```

By following these steps, you have successfully configured Docker storage drivers to optimize storage management and enhance system performance.