

Lesson 01 Demo 01

Configuring Docker Daemon to Start on Boot

Objective: To configure the Docker Daemon to start on boot and customize Docker's settings to control disk space for images and containers

Tools required: Docker

Prerequisites: None

Steps to be followed:

1. Configure Docker Daemon
2. Start and configure docker service using upstart command

Step 1: Configure Docker Daemon

1.1 Use the following command to update the package index:

sudo apt update

```
labsuser@ip-172-31-32-178:~$ sudo apt update
Hit:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 https://dl.google.com/linux/chrome/deb stable InRelease [1825 B]
Ign:5 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:6 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:7 https://download.docker.com/linux/ubuntu jammy InRelease [48.8 kB]
Get:8 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:9 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Get:10 https://prod-cdn.packages.k8s.io/repositories/isv:/kubernetes:/core:/stable:/v1.28/deb InRelease [1189 B]
Get:11 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1458 kB]
Get:12 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [283 kB]
Get:13 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1557 kB]
Get:14 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [259 kB]
Get:15 https://ppa.launchpadcontent.net/git-core/ppa/ubuntu jammy InRelease [23.8 kB]
```

- 1.2 Use the following command to install the required packages to allow apt to use a repository over HTTPS:

sudo apt install apt-transport-https ca-certificates curl software-properties-common

```
labsuser@ip-172-31-32-178:~$ sudo apt install apt-transport-https ca-certificates curl software-properties-common
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20230311ubuntu0.22.04.1).
curl is already the newest version (7.81.0-1ubuntu1.15).
software-properties-common is already the newest version (0.99.22.9).
The following packages were automatically installed and are no longer required:
  apport-symptoms python3-systemd
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 114 not upgraded.
Need to get 1510 B of archives.
After this operation, 170 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 apt-transport-https all 2.4.11 [1510 B]
```

- 1.3 Use the following command to add Docker's official GPG key:

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -

```
No VM guests are running outdated hypervisor (qemu) binaries on this host
labsuser@ip-172-31-32-178:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
OK
labsuser@ip-172-31-32-178:~$
```

- 1.4 Use the following command to add the Docker repository to your system's software sources:

sudo add-apt-repository "deb [arch=amd64]

https://download.docker.com/linux/ubuntu \$(lsb_release -cs) stable"

```
labsuser@ip-172-31-32-178:~$
labsuser@ip-172-31-32-178:~$
labsuser@ip-172-31-32-178:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"
Repository: deb [arch=amd64] https://download.docker.com/linux/ubuntu jammy stable
Description:
Archive for codename: jammy components: stable
More info: https://download.docker.com/linux/ubuntu
Adding repository.
Press [ENTER] to continue or Ctrl-c to cancel.
```

- 1.5 Use the following command to update the package database with the Docker packages from the newly added repo:

sudo apt update

```
labsuser@ip-172-31-32-178:~$ sudo apt update
Hit:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:6 https://download.docker.com/linux/ubuntu jammy InRelease
Hit:7 https://dl.google.com/linux/chrome/deb stable InRelease
Ign:8 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:9 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:5 https://prod-cdn.packages.k8s.io/repositories/iscv/kubernetes:/core:/stable:/v1.28/deb InRelease
Hit:10 https://ppa.launchpadcontent.net/git-core/ppa/ubuntu jammy InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

- 1.6 Use the following command to install Docker:

sudo apt install docker-ce

```
labsuser@ip-172-31-32-178: ~
labsuser@ip-172-31-32-178:~$ sudo apt install docker-ce
```

- 1.7 Use the following command to start the Docker service:

sudo systemctl start docker

```
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 114 not upgraded.
labsuser@ip-172-31-32-178:~$ sudo systemctl start docker
labsuser@ip-172-31-32-178:~$
```

- 1.8 Use the following command to enable Docker to start on boot:

sudo systemctl enable docker

```
labsuser@ip-172-31-32-178:~$ sudo systemctl enable docker
Synchronizing state of docker.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable docker
labsuser@ip-172-31-32-178:~$
```

1.9 Use the following command to disable Docker Daemon on the boot:

sudo systemctl disable docker

```
labsuser@ip-172-31-32-178:~$ sudo systemctl disable docker
Synchronizing state of docker.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install disable docker
Removed /etc/systemd/system/multi-user.target.wants/docker.service.
labsuser@ip-172-31-32-178:~$
```

1.10 Use the following command to reload Docker Daemon:

sudo systemctl daemon-reload

```
labsuser@ip-172-31-32-178:~$ sudo systemctl daemon-reload
labsuser@ip-172-31-32-178:~$
```

Step 2: Start and configure docker service using upstart command

2.1 Use the following command to disable Docker start on the system boot:

echo manual | sudo tee /etc/init/docker.override

```
labsuser@ip-172-31-32-178:~$ echo manual | sudo tee /etc/init/docker.override
```

2.2 Use the following command to move to /etc/docker/ folder:

cd /etc/docker/

```
labsuser@ip-172-31-32-178:~$ cd /etc/docker/
labsuser@ip-172-31-32-178:/etc/docker$
```

2.3 Use the following command to create the **daemon.json** file:

sudo vi daemon.json

```
labsuser@ip-172-31-32-178:~$ cd /etc/docker/  
labsuser@ip-172-31-32-178:/etc/docker$ sudo vi daemon.json  
labsuser@ip-172-31-32-178:/etc/docker$
```

2.4 Configure the **daemon.json** file by setting the appropriate flags to manage the disk space allocated for Docker images and containers

```
{  
  "data-root": "/mnt/docker-data",  
  "storage-driver": "overlay2"  
}
```

```
{  
  "data-root": "/mnt/docker-data",  
  "storage-driver": "overlay2"  
}
```

Note: After writing the above code in the **daemon.json** file, press the ESC button and type:**wq** to save the file and exit the editor

By following these steps, you have successfully configured the Docker Daemon to start on boot and customized Docker's settings to manage disk space for images and containers.