

ASSIGNMENT-4

1-Spin up 2 ec-2 instances for setting up Jenkins server and setting up docker

```
aws Services Search for services, features, blogs, docs, and more [Alt+S] Mumbai gourab.routray@globallogic.com @ 0671-7044-8639
```

```
Setting up slirp4netns (1.0.1-2) ...
Setting up docker-ce (5:20.10.21~3-0~ubuntu-jammy) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
Scanning processes...
Scanning linux images...

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No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-172-31-32-26:~# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
root@ip-172-31-32-26:~#
```

i-091e395450ad10806 (Master) ×

PublicIPs: 65.2.31.196 PrivateIPs: 172.31.32.26

2-Install docker in a vm

```
aws Services Search for services, features, blogs, docs, and more [Alt+S] Mumbai gourab.routray@globallogic.com @ 0671-7044-8639
```

```
Setting up slirp4netns (1.0.1-2) ...
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Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Processing triggers for man-db (2.10.2-1) ...
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Scanning processes...
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No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-172-31-32-26:~# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
root@ip-172-31-32-26:~#
```

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PublicIPs: 65.2.31.196 PrivateIPs: 172.31.32.26

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3-- Log in to the server and open the docker service file `/lib/systemd/system/docker.service`. Search for `ExecStart` and replace that line with the following as mentioned in the attached screenshot

```
[Unit]
Description=Docker Application Container Engine
Documentation=https://docs.docker.com
After=network-online.target docker.socket firewalld.service containerd.service
Wants=network-online.target
Requires=docker.socket containerd.service

[Service]
Type=notify
# the default is not to use systemd for cgroups because the delegate issues still
# exists and systemd currently does not support the cgroup feature set required
# for containers run by docker
ExecStart=/usr/bin/dockerd -H tcp://0.0.0.0:4243 -H unix:///var/run/docker.sock
ExecReload=/bin/kill -s HUP $MAINPID
TimeoutSec=0
RestartSec=2
Restart=always

# Note that StartLimit* options were moved from "Service" to "Unit" in systemd 229.
# Both the old, and new location are accepted by systemd 229 and up, so using the old location
"docker.service" 47L, 1708B
```

i-091e395450ad10806 (Master) ×

PublicIPs: 65.2.31.196 PrivateIPs: 172.31.32.26

4- Reload the docker service after changes and test the API connection

```
aws Services Search for services, features, blogs, docs, and more [Alt+S] Mumbai gourab.routray@globallogic.com @ 0671-7044-8639
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.677197788Z" level=info msg="ClientConn switching balancer to \"pick first\"
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.688899672Z" level=info msg="[graphdriver] using prior storage driver: overlayfs"
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.692064737Z" level=info msg="Loading containers: start."
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.821244331Z" level=info msg="Default bridge (docker0) is assigned with an IP of 172.17.0.1"
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.883427539Z" level=info msg="Loading containers: done."
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.899648114Z" level=info msg="Docker daemon" commit=3056208 graphdriver(s)=overlayfs
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.922818068Z" level=info msg="Daemon has completed initialization"
Oct 30 11:08:22 ip-172-31-32-26 systemd[1]: Started Docker Application Container Engine.
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.922818068Z" level=info msg="API listen on [::]:4243"
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.928145943Z" level=info msg="API listen on /var/run/docker.sock"

root@ip-172-31-32-26:/lib/systemd/system# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
root@ip-172-31-32-26:/lib/systemd/system# curl http://localhost:4243/version
{"Platform":{"Name":"Docker Engine - Community"},"Components":[{"Name":"Engine","Version":"20.10.21","Details":{"ApiVersion":"1.41","Arch":"amd64","BuildTime":"2022-10-25T17:59:49.000000000+00:00","Experimental":"false","GitCommit":"3056208","GoVersion":"go1.18.7","KernelVersion":"5.15.0-1019-aws"},"MinAPIVersion":"1.12","Os":"linux"}]},{"Name":"containerd","Version":"1.6.9","Details":{"GitCommit":"1c90a442489720e0ec95342e1789ee8a5e1b9536f"},"Name":"runc","Version":"1.1.4","Details":{"GitCommit":"v1.1.4-0-g5fd4c4d"}},{"Name":"docker-init","Version":"0.19.0","Details":{"GitCommit":"de40ad0"}],"Version":"20.10.21","ApiVersion":"1.41","MinAPIVersion":"1.12","GitCommit":"3056208","GoVersion":"go1.18.7","Os":"linux","Arch":"amd64","KernelVersion":"5.15.0-1019-aws","BuildTime":"2022-10-25T17:59:49.000000000+00:00"}
root@ip-172-31-32-26:/lib/systemd/system#
```

i-091e395450ad10806 (Master) ×

PublicIPs: 65.2.31.196 PrivateIPs: 172.31.32.26

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4- Install Jenkins in another vm

```
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.692064737Z" level=info msg="Loading containers: start."
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.821244331Z" level=info msg="Default bridge (docker0) is assigned with an IP, docker0 is up: 172.17.0.1/16"
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.883427539Z" level=info msg="Loading containers: done."
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.899648114Z" level=info msg="Docker daemon" commit=3056208 graphdriver(s)=[overlayfs]
Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.899723854Z" level=info msg="Daemon has completed initialization"

root@ip-172-31-32-26:/lib/systemd/system# systemctl daemon-reload
root@ip-172-31-32-26:/lib/systemd/system# sudo service docker status
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Sun 2022-10-30 11:08:22 UTC; 1min 50s ago
     TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
    Main PID: 3068 (dockerd)
      Tasks: 8
     Memory: 22.1M
        CPU: 274ms
    CGroup: /system.slice/docker.service
            └─3068 /usr/bin/dockerd -H tcp://0.0.0.0:4243 -H unix:///var/run/docker.sock

Oct 30 11:08:22 ip-172-31-32-26 dockerd[3068]: time="2022-10-30T11:08:22.677197788Z" level=info msg="ClientConn switching balancer to \"pick first\""
```

i-091e395450ad10806 (Master)

PublicIPs: 65.2.31.196 PrivateIPs: 172.31.32.26

```
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.
root@ip-172-31-46-58:~# sudo apt-get install jenkins
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  net-tools
The following NEW packages will be installed:
  jenkins net-tools
0 upgraded, 2 newly installed, 0 to remove and 73 not upgraded.
Need to get 90.9 MB of archives.
After this operation, 94.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 net-tools amd64 1.60+git20181103.0eebece-lubuntu5 [204 kB]
Get:1 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.361.2 [90.7 MB]
19% [1 jenkins 10.2 MB/90.7 MB 11%] 426 kB/s 3min 8s
```

i-0825be8711a40de8d (Slave)

PublicIPs: 13.127.76.5 PrivateIPs: 172.31.46.58

```
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
   Active: active (running) since Sun 2022-10-30 11:23:45 UTC; 30s ago
     Main PID: 4801 (java)
       Tasks: 50 (limit: 4689)
      Memory: 1.2G
         CPU: 43.356s
    CGroup: /system.slice/jenkins.service
            └─4801 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Oct 30 11:23:25 ip-172-31-46-58 jenkins[4801]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Oct 30 11:23:25 ip-172-31-46-58 jenkins[4801]: *****
Oct 30 11:23:25 ip-172-31-46-58 jenkins[4801]: *****
Oct 30 11:23:25 ip-172-31-46-58 jenkins[4801]: *****
Oct 30 11:23:45 ip-172-31-46-58 jenkins[4801]: 2022-10-30 11:23:45.255+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: Co
Oct 30 11:23:45 ip-172-31-46-58 jenkins[4801]: 2022-10-30 11:23:45.275+0000 [id=22] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins
Oct 30 11:23:45 ip-172-31-46-58 systemd[1]: Started Jenkins Continuous Integration Server.
Oct 30 11:23:45 ip-172-31-46-58 jenkins[4801]: 2022-10-30 11:23:45.997+0000 [id=46] INFO h.m.DownloadService$Downloadable#load: Obt
Oct 30 11:23:45 ip-172-31-46-58 jenkins[4801]: 2022-10-30 11:23:45.998+0000 [id=46] INFO hudson.util.Retrier#start: Performed the a
Oct 30 11:23:46 ip-172-31-46-58 jenkins[4801]: 2022-10-30 11:23:46.002+0000 [id=46] INFO hudson.model.AsyncPeriodicWork#lambda$doRun$2
lines 1-20
```

i-0825be8711a40de8d (Slave)

PublicIPs: 13.127.76.5 PrivateIPs: 172.31.46.58

ASSIGNMENT-4

5-Configure the cloud and check for the connection with API

Jenkins > Configure Clouds

Container Cap: 100

Docker Agent templates

Docker Agent templates

Labels: demo-docker-slave

Enabled: ☒

Name: demo-docker-slave

Docker image: bibinwilson/jenkins-slave:latest

Container settings...

Registry Authentication...

Instance Capacity:

Remote File System Root:

Usage: Use this node as much as possible

Idle timeout: 10

Connect method: Attach Docker container

Prerequisites:

- Docker image must have [Java](#) installed.
- Entrypoint must be able to accept jenkins slave connection parameters. See docker container [jenkins/info-slave](#) and/or source [jenkinsci/docker-info-slave](#) as an example.

User:

Remove volumes: ☐

Pull strategy: Pull all images every time

Pull timeout: 300

Node Properties: Add Node Property

Save Apply

Jenkins > Configure Clouds

enabled: ☒

Name: demo-docker-slave

Docker Image: bibinwilson/jenkins-slave:latest

Container settings...

Registry Authentication...

Instance Capacity:

Remote File System Root: /home/jenkins

Usage: Use this node as much as possible

Idle timeout: 10

Connect method: Connect with SSH

Prerequisites:

- The docker container's mapped SSH port, typically a port on the docker host, has to be accessible over network from the master.
- Docker image must have [ssh](#) installed.
- Docker image must have [Java](#) installed.
- Log in details configured as per [ssh-slaves](#) plugin.

SSH key: Use configured SSH credentials

SSH Credentials: none Add

Host Key Verification Strategy: Known hosts file Verification Strategy

Advanced...

Remove volumes: ☐

Pull strategy: Pull all images every time

Save Apply

ASSIGNMENT-4

6-Configure the job

Jenkins » demo-job »

General Source Code Management Build Triggers Build Environment Build Post-build Actions

☐ Execute concurrent builds if necessary

☒ Restrict where this project can be run

Label Expression

[Label demo-docker-slave](#) is serviced by no nodes and 1 cloud. Permissions or other restrictions provided by plugins may prevent this job from running on those nodes. [Advanced...](#)

Source Code Management

☒ None

☐ Git

☐ Subversion

Build Triggers

☐ Trigger builds remotely (e.g., from scripts)

☐ Build after other projects are built

☐ Build periodically

☐ GitHub hook trigger for GITScm polling

☐ Poll SCM

Build Environment

☐ Delete workspace before build starts

☐ Use secret text(s) or file(s)

☐ Abort the build if it's stuck

☐ Add timestamps to the Console Output

☐ [Configure build scans](#)

[Save](#) [Apply](#)

Jenkins » demo-job »

General Source Code Management Build Triggers Build Environment Build Post-build Actions

[\[Plain text\] Preview](#)

☐ Commit agent's Docker container

☐ Define a Docker template

☐ Discard old builds

☐ GitHub project

☐ This build requires lockable resources

☐ This project is parameterised

☐ Throttle builds

☐ Disable this project

☐ Execute concurrent builds if necessary

☒ Restrict where this project can be run

Label Expression

[demo-docker-slave](#)

Source Code Management

☒ None

☐ Git

☐ Subversion

Build Triggers

☐ Trigger builds remotely (e.g., from scripts)

☐ Build after other projects are built

[Save](#) [Apply](#)

ASSIGNMENT-4

Jenkins > demo-job >

General Source Code Management **Build Triggers** Build Environment Build Post-build Actions

☐ Trigger builds remotely (e.g., from scripts) ⓘ
☐ Build after other projects are built ⓘ
☐ Build periodically ⓘ
☐ GitHub hook trigger for GITScm polling ⓘ
☐ Poll SCM ⓘ

Build Environment

☐ Delete workspace before build starts ⓘ
☐ Use secret text(s) or file(s) ⓘ
☐ Abort the build if it's stuck ⓘ
☐ Add timestamps to the Console Output ⓘ
☐ Inspect build log for published Gradle build scans ⓘ
☐ With Ant ⓘ

Build

Add build step +

Save Apply

Jenkins > demo-job >

General Source Code Management Build Triggers **Build Environment** Build Post-build Actions

☐ Delete workspace before build starts ⓘ
☐ Use secret text(s) or file(s) ⓘ
☐ Abort the build if it's stuck ⓘ
☐ Add timestamps to the Console Output ⓘ
☐ Inspect build log for published Gradle build scans ⓘ
☐ With Ant ⓘ

Build

☒ Execute shell ⓘ

Command `echo "this is run on a docker slave"`

See [the list of available environment variables](#)

Advanced...

Add build step +

Post-build Actions

Add post-build action +

Save Apply

ASSIGNMENT-4

Build executed successfully

New Item

People

Build History

Manage Jenkins

My Views

Lockable Resources

Credentials

New View

Build Queue

No builds in the queue.

Build Executor Status

All

S	W	Name ↓	Last Success	Last Failure	Last Duration	
		Demo:Application	52 sec - #1	N/A	20 sec	

Icon: S M L

Legend Atom feed for all Atom feed for failures Atom feed for just latest builds