**Department of Information Technology**

| Semester | B.E. Semester VIII – INFT |
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| Subject | DevOps Lab |
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| Experiment Number | 7 | |
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| Experiment Title | To install and configure Jenkins to test | |
| Resources / Apparatus Required | **Hardware:**<br><br>● Intel Core i3/i5/i7 Processor with Intel VT–X support.<br>● 4 GB RAM<br>● 500 GB Hard disks | **Software:**<br><br>Operating systems: Linux |
| Theory | **JENKINS**<br><br>Jenkins is an open-source automation tool written in Java programming language that allows continuous integration. Jenkins **builds** and **tests** our software projects which continuously making it easier for developers to integrate changes to the project, and making it easier for users to obtain a fresh build. It also allows us to continuously **deliver** our software by integrating with a large number of testing and deployment technologies.<br><br>Jenkins offers a straightforward way to set up a continuous integration or continuous delivery environment for almost any combination of languages | |

and source code repositories using pipelines, as well as automating other routine development tasks.

With the help of Jenkins, organizations can speed up the software **Department of Information Technology**development process through automation. Jenkins adds development life cycle processes of all kinds, including build, document, test, package, stage, deploy static analysis and much more.

Jenkins achieves CI (Continuous Integration) with the help of plugins. Plugins is used to allow the integration of various DevOps stages. If you want to integrate a particular tool, you have to install the plugins for that tool. For example: Maven 2 Project, Git, HTML Publisher, Amazon EC2, etc.

| Steps | |
|---|---|
| | **INSTALLATION OF JENKINS** |

**INSTALLATION OF JENKINS**

**STEP 1: sudo apt-get install docker.io**

The sudo command is used to ensure that the command runs with root

access.

Apt –get This method installs packages from the Internet on to the Linux

system.

```
tanaya@tanaya-VirtualBox:~$ sudo apt-get install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd git git-man liberror-perl pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools btrfs-progs cgroupfs-mount | cgroup-lite debootstrap
  docker-doc rinse zfs-fuse | zfsutils git-daemon-run | git-daemon-sysvinit
  git-doc git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  bridge-utils containerd docker.io git git-man liberror-perl pigz runc
  ubuntu-fan
0 upgraded, 9 newly installed, 0 to remove and 179 not upgraded.
Need to get 76.4 MB of archives.
After this operation, 345 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://in.archive.ubuntu.com/ubuntu impish/universe amd64 pigz amd64 2.6-
1 [63.6 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu impish/main amd64 bridge-utils amd64
1.7-1ubuntu2 [34.4 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu impish/main amd64 runc amd64 1.0.1-0u
buntu2 [3,260 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu impish-updates/main amd64 containerd
amd64 1.5.5-0ubuntu3.1 [27.9 MB]
Get:5 http://in.archive.ubuntu.com/ubuntu impish-updates/universe amd64 docker.
io amd64 20.10.7-0ubuntu5.1 [41.1 MB]
```

**STEP 2 : sudo docker pull jenkins/jenkins**

Pulls the Jenkins from the public repo using the following command.

```
tanaya@tanaya-VirtualBox:~$ sudo docker pull jenkins/jenkins
Using default tag: latest
latest: Pulling from jenkins/jenkins
dbba69284b27: Pull complete
6c3a072e9d16: Pull complete
04fbda9c2d8a: Pull complete
8c5a208f0b2a: Pull complete
8955615fe0c0: Pull complete
3938c85ee158: Pull complete
03a79dcd645c: Pull complete
1ac5b0ffdc73: Pull complete
b10d483965a5: Pull complete
bcfc5e1d7cda: Pull complete
efe2bd60b1c0: Pull complete
7bacf74e8698: Pull complete
8d01c56dacb0: Pull complete
b620cf1f130d: Pull complete
eeb50c5d939c: Pull complete
756243c680bd: Pull complete
da88933e9bbe: Pull complete
Digest: sha256:763961aafce81e104bcafaf354817a4ab671eaf0e68d45b4354c366410338658
Status: Downloaded newer image for jenkins/jenkins:latest
docker.io/jenkins/jenkins:latest
```

**STEP 3: sudo docker images**

This command is used to display all the images currently installed on the system.

```
tanaya@tanaya-VirtualBox:~$ sudo docker images
REPOSITORY          TAG        IMAGE ID        CREATED          SIZE
jenkins/jenkins     latest     d7eeb548721f    23 hours ago     460MB
```

**STEP 4: sudo docker run –it –d –p 82:8080 jenkins/jenkins**

This command launchs the Jenkins Docker container.

```
tanaya@tanaya-VirtualBox:~$ sudo docker run -it -d -p 82:8080 jenkins/jenkins
9da999b6af7ac5eba87341a9c9fe74f45787d73253abc31db8f7c7bc7ea4497f
```
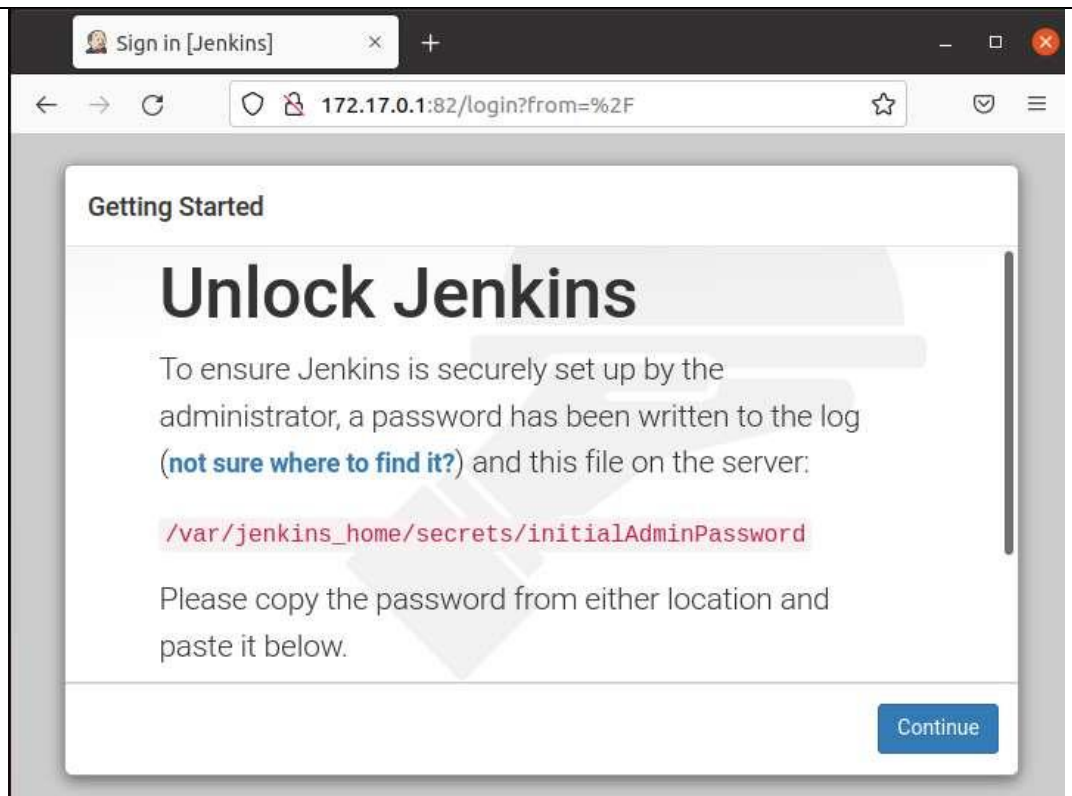
**STEP 5: sudo docker ps**

This command is used to list the running containers.

```
tanaya@tanaya-VirtualBox:~$ sudo docker ps
CONTAINER ID    IMAGE            COMMAND             CREATED         STATU
S               PORTS                                               NAMES
9da999b6af7a    jenkins/jenkins  "/sbin/tini -- /usr/…"  5 minutes ago   Up 5
minutes    50000/tcp, 0.0.0.0:82->8080/tcp, :::82->8080/tcp   ecstatic_feynman
```

**STEP 6: Go to browser and type IP address along with :82 to open Jenkins web page.**

**Getting Started**

# Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (**not sure where to find it?**) and this file on the server:

/var/jenkins_home/secrets/initialAdminPassword

Please copy the password from either location and paste it below.

Continue

**STEP 6: sudo docker exec –it 9da999b6af7a bash**

This command is used to access the running container.

tanaya@tanaya-VirtualBox:~$ sudo docker exec -it 9da999b6af7a bash

**STEP 7: cat /var/Jenkins_home/secrets/initialAdminPassword**

This command will give you Admin Password to enter in Jenkins web page.

jenkins@9da999b6af7a:/$ cat /var/jenkins_home/secrets/initialAdminPassword
896238935a7440bfb489237f9857c9d3

**STEP 8: Enter the Password in webpage and click on Continue.**

**STEP 9: Enter the details and Click on Save and continue.**

**STEP 10: Install Jenkins.**



896238935a7440bfb489237f9857c9d3

| Conclusion: | Thus installed and configured Jenkins for test. |
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