

Preparing the Ubuntu 18.04 Desktop System

Note: Internet connectivity in your VM is a must please ensure the same using the following command.

```
devops@devops-VirtualBox:~$ ping www.google.co.in
PING www.google.co.in (142.250.67.67) 56(84) bytes of data.
64 bytes from maa05s13-in-f3.1e100.net (142.250.67.67): icmp_seq=1 ttl=118
time=10.1 ms
64 bytes from maa05s13-in-f3.1e100.net (142.250.67.67): icmp_seq=2 ttl=118
time=10.7 ms
64 bytes from maa05s13-in-f3.1e100.net (142.250.67.67): icmp_seq=3 ttl=118
time=10.2 ms
^C
--- www.google.co.in ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2004ms
rtt min/avg/max/mdev = 10.183/10.418/10.784/0.275 ms
```

Some software may already be preinstalled on your desktop in which case the output may display that the software is already the newest version (3.28.1-1ubuntu1.2). Specific software set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

1. Update the Operating System. This step is required each time before installing any software in Ubuntu 18.04

```
devops@devops-VirtualBox:~$ sudo apt update
```

2. Upgrade the Ubuntu 18.04 installation. Doing this one time occasionally would be enough during the training session.

```
devops@devops-VirtualBox:~$ sudo apt upgrade
```

3. Get the enhanced VI editor which has better utilities compared to default vi editor in Ubuntu 18.04 Desktop

```
devops@devops-VirtualBox:~$ sudo apt install vim
```

4. Install Graphical editor which may be used as an alternate to command line vi editor.

```
devops@devops-VirtualBox:~$ sudo apt install gedit
```

5. Install html client command curl which may be used to make http request to web portals or to any http servers.

```
devops@devops-VirtualBox:~$ sudo apt install curl
```

6. Install tree command useful to watch tree structure of folders and files

```
devops@devops-VirtualBox:~$ sudo apt install tree
```

7. Install wget command useful to download files directly from websites using http url

```
devops@devops-VirtualBox:~$ sudo apt install wget
```

8. Install unzip command useful to unzip the zipped files

```
devops@devops-VirtualBox:~$ sudo apt install unzip
```

9. Install ssh server to allow ssh connectivity to ubuntu desktop.

Please note this require network interface with proper ip address to allow incoming traffic and port 22 be allowed.

```
devops@devops-VirtualBox:~$ sudo apt install ssh
```

10. Install network tools which would help to check availability of network ports

```
devops@devops-VirtualBox:~$ sudo apt install net-tools
```

```
devops@devops-VirtualBox:~$ netstat --listen | grep 8080
```

11. Install JDK to allow working on Java programs. By default openjdk 11 is installed on Ubuntu 18.04

```
devops@devops-VirtualBox:~$ sudo apt install default-jdk
```

```
devops@devops-VirtualBox:~$ java -version
openjdk version "11.0.11" 2021-04-20
OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2.18.04)
OpenJDK 64-Bit Server VM (build 11.0.11+9-Ubuntu-0ubuntu2.18.04, mixed
mode, sharing)
```

To get the java path you may use following command

```
devops@devops-VirtualBox:~$ update-alternatives --list java
/usr/lib/jvm/java-11-openjdk-amd64/bin/java
```

This would be useful to set JAVA_HOME environment variable, which is required by some softwares

```
devops@devops-VirtualBox:~$ export JAVA_HOME=/usr/lib/jvm/java-11-openjdk-
amd64
```

```
devops@devops-VirtualBox:~$ echo $JAVA_HOME
/usr/lib/jvm/java-11-openjdk-amd64
```

12. Install Python 3 to allow working on Python programs

```
devops@devops-VirtualBox:~$ sudo apt install python3
```

```
devops@devops-VirtualBox:~$ python3 --version
Python 3.6.9
```

13. Install Git as version control tool

```
devops@devops-VirtualBox:~$ sudo apt install git
```

```
devops@devops-VirtualBox:~$ git --version
git version 2.17.1
```

14. Install Maven as build tool for java based application programs. JDK need to be installed before installing Maven.

```
devops@devops-VirtualBox:~$ sudo apt install maven
```

```
devops@devops-VirtualBox:~$ mvn --version
Apache Maven 3.6.0
Maven home: /usr/share/maven
Java version: 11.0.11, vendor: Ubuntu, runtime: /usr/lib/jvm/java-11-openjdk-amd64
Default locale: en_IN, platform encoding: UTF-8
OS name: "linux", version: "5.4.0-80-generic", arch: "amd64", family: "unix"
```

15. Install Ansible as Configuration Management Tool:

Install add-apt-repository command:

```
devops@devops-VirtualBox:~$ sudo apt install software-properties-common
```

Install the ppa repository to allow installation of latest version of Ansible

```
devops@devops-VirtualBox:~$ sudo add-apt-repository --yes --update
ppa:ansible/ansible
```

Install latest version of Ansible

```
devops@devops-VirtualBox:~$ sudo apt install ansible
```

16. Install Tomcat Server

Get the Tomcat tar file from the tomcat website

<https://tomcat.apache.org/download-90.cgi>

Link for download:

<https://mirrors.estointernet.in/apache/tomcat/tomcat-9/v9.0.50/bin/apache-tomcat-9.0.50.tar.gz>

9.0.50

Please see the [README](#) file for packaging information. It explains what every distribution contains.

Binary Distributions

- Core:
 - [zip](#) ([pgp](#), [sha512](#))
 - [tar.gz](#) ([pgp](#), [sha512](#))
 - [32-bit Windows zip](#) ([pgp](#), [sha512](#))
 - [64-bit Windows zip](#) ([pgp](#), [sha512](#))
 - [32-bit/64-bit Windows Service Installer](#) ([pgp](#), [sha512](#))

Download Tomcat Tar file and unarchive the same

```
devops@devops-VirtualBox:~$ wget
https://mirrors.estointernet.in/apache/tomcat/tomcat-9/v9.0.50/bin/apache-
tomcat-9.0.50.tar.gz
```

```
devops@devops-VirtualBox:~$ ls
apache-tomcat-9.0.50.tar.gz
```

```
devops@devops-VirtualBox:~$ tar xvzf apache-tomcat-9.0.50.tar.gz
```

```
devops@devops-VirtualBox:~$ ls
apache-tomcat-9.0.50      apache-tomcat-9.0.50.tar.gz
```

```
devops@devops-VirtualBox:~$ ls apache-tomcat-9.0.50
bin          CONTRIBUTING.md  logs          RELEASE-NOTES  webapps
BUILDING.txt lib              NOTICE       RUNNING.txt    work
conf         LICENSE          README.md     temp
```

Change the port address of Tomcat Server

```
devops@devops-VirtualBox:~$ vi apache-tomcat-9.0.50/conf/server.xml
```

```
<Connector port="8080" protocol="HTTP/1.1"
            connectionTimeout="20000"
            redirectPort="8443" />
```

Change port 8080 to 10200

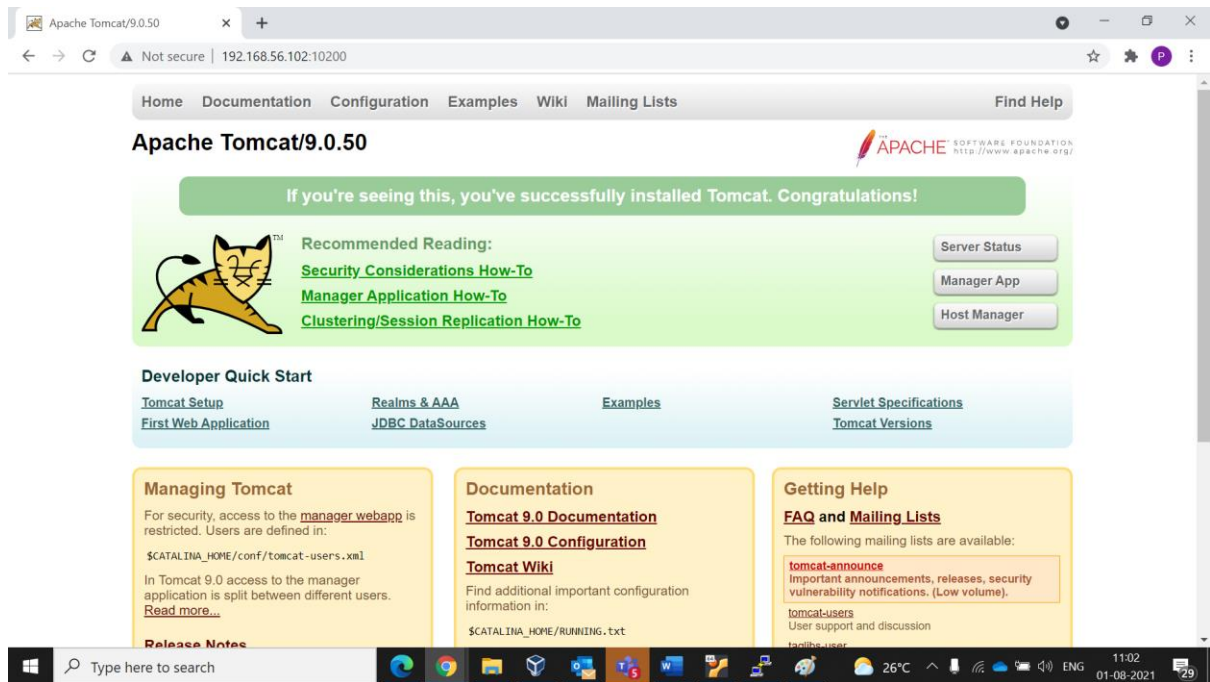
```
<Connector port="10200" protocol="HTTP/1.1"
            connectionTimeout="20000"
            redirectPort="8443" />
```

Start the Tomcat Server

```
devops@devops-VirtualBox:~$ bash apache-tomcat-9.0.50/bin/startup.sh
```

Access the tomcat server at the following URL

```
http://192.168.56.102:10200/
```



Check the running tomcat process

```
devops@devops-VirtualBox:~$ ps -ef | grep tomcat
```

Stop the Tomcat Server

```
devops@devops-VirtualBox:~$ bash apache-tomcat-9.0.50/bin/shutdown.sh
```