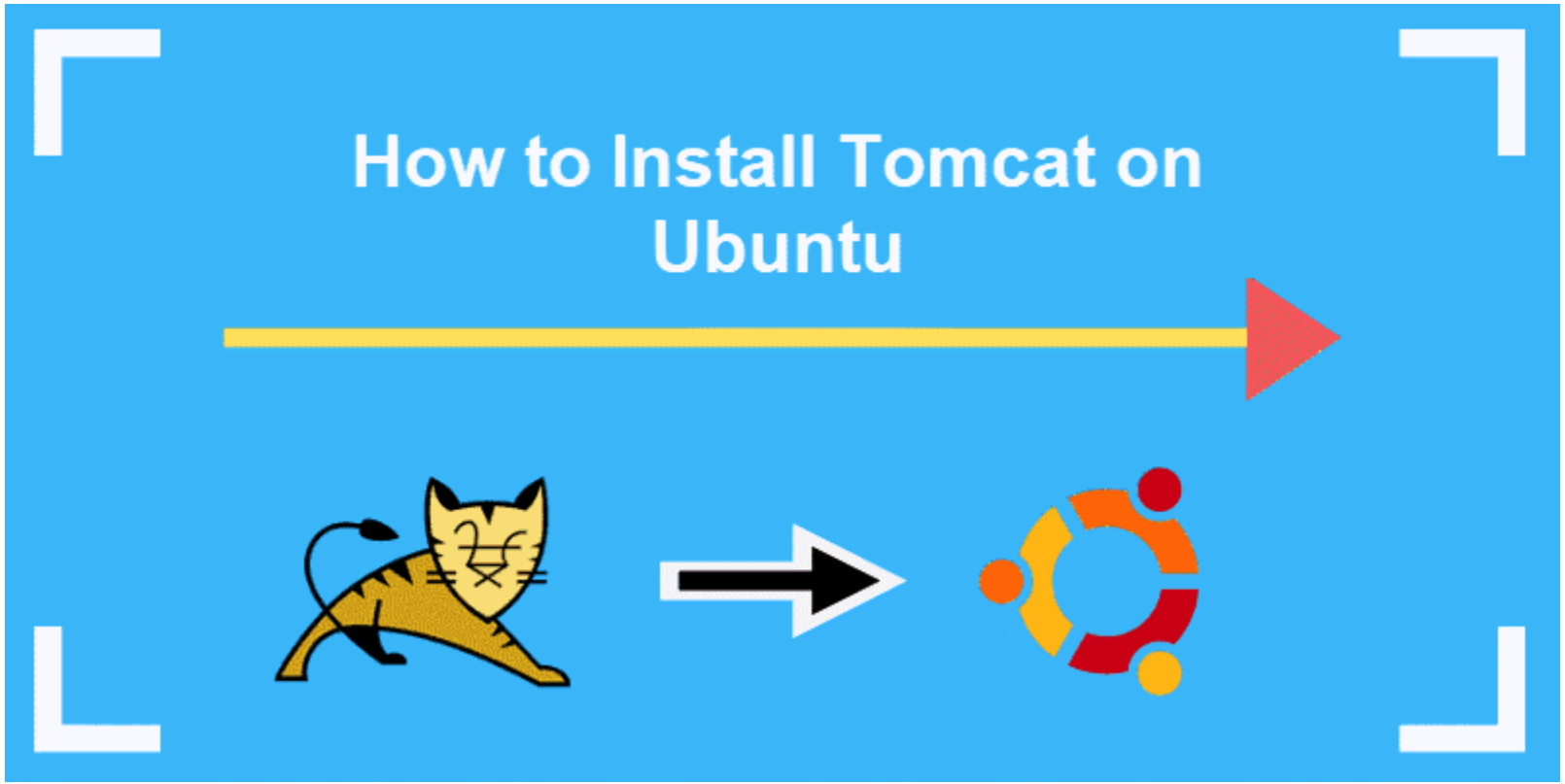
How To Install Apache Tomcat 9 On Ubuntu 18.04

Posted July 2, 2019 UBUNTU JAVA APACHE

Introduction

Apache Tomcat is a free, open-source, lightweight application server used for Java-based web applications.

Read this guide to learn how to install and configure Apache Tomcat on Ubuntu 18.04.



Elementary OS.

Prerequisites

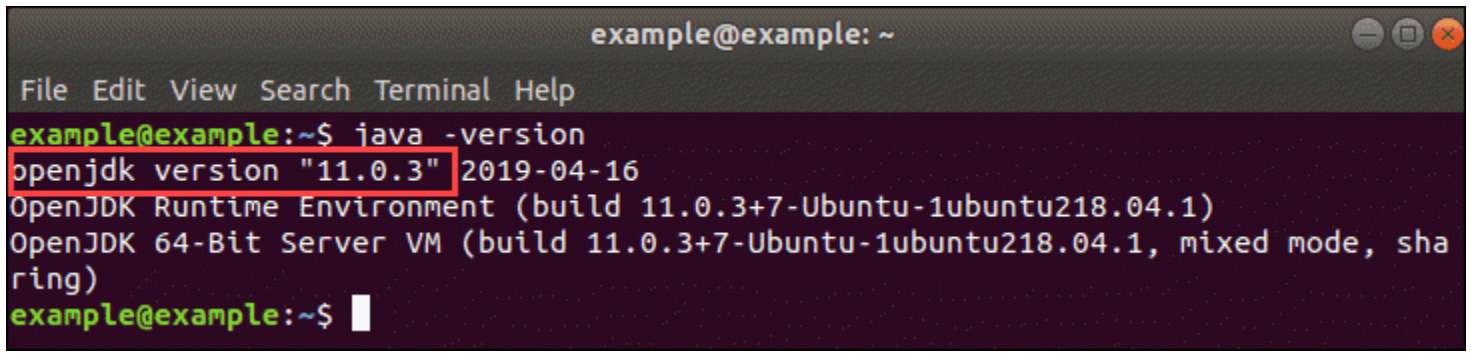
- An Ubuntu-based distribution (such as Ubuntu 18.04)
- A user account with **sudo** privileges
- A terminal window (**Ctrl**–**Alt**–**T**)
- The apt package manager, included by default

Steps for Installing Tomcat 9 on Ubuntu

Check if Java is Installed

```
java -version
```

The output will show the Java version running on your system. Currently, the latest release is **OpenJDK 11.0.3**:



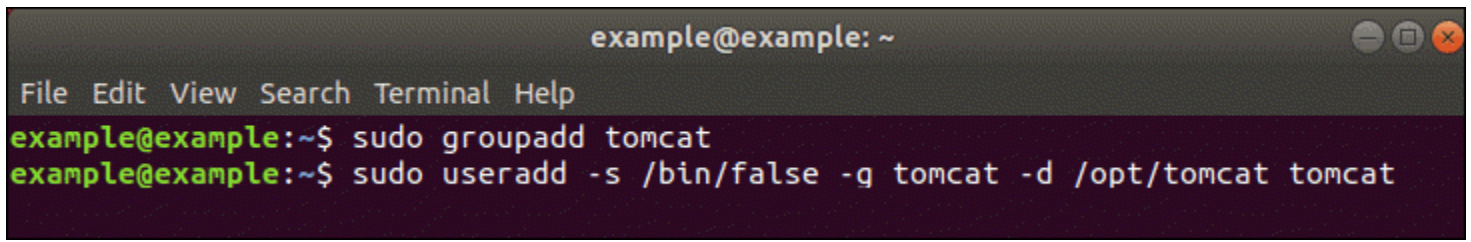
Install OpenJDK

If you do not have OpenJDK or have a version older than Java 8, install the newest release by typing the following:

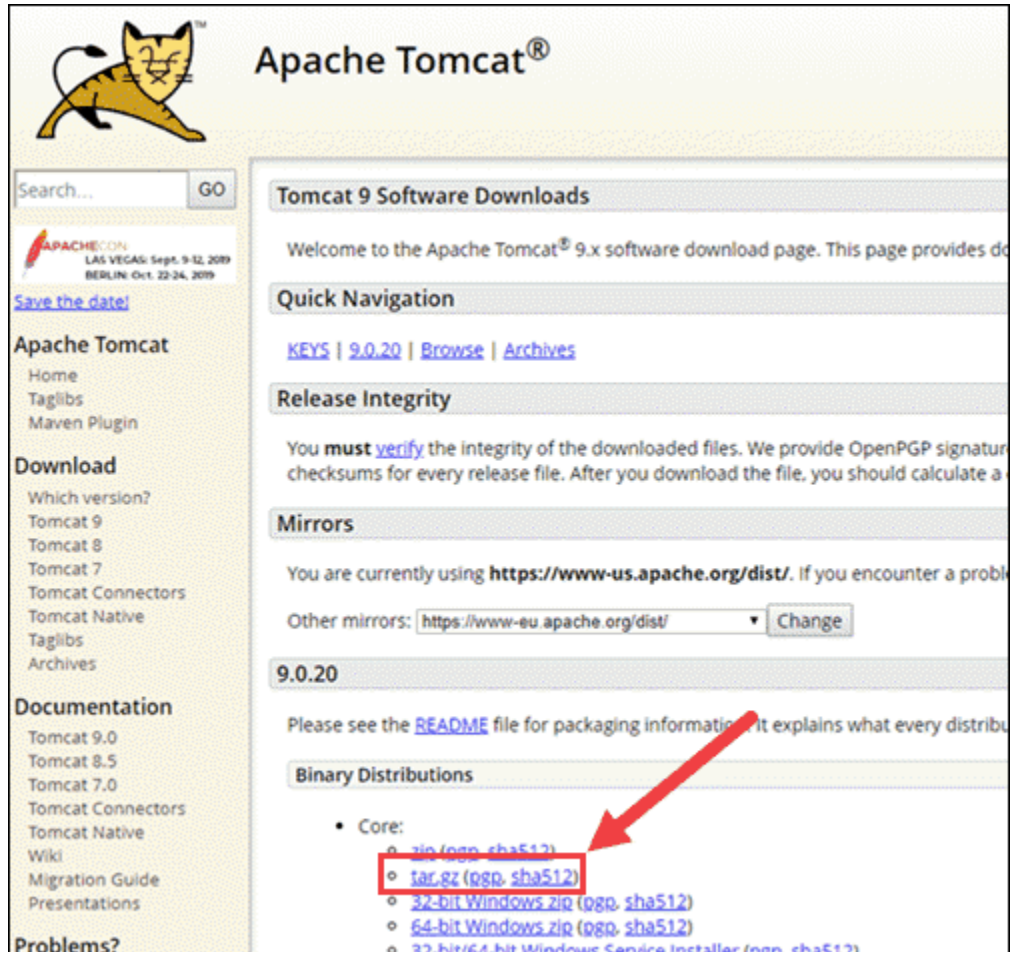
For security reasons, do not run Tomcat under the root user. Create a new group and system user to run the Apache Tomcat service from the **`/opt/tomcat`** directory.

```
sudo groupadd tomcat
```

```
sudo useradd -s /bin/false –g tomcat –d /opt/tomcat tomcat
```



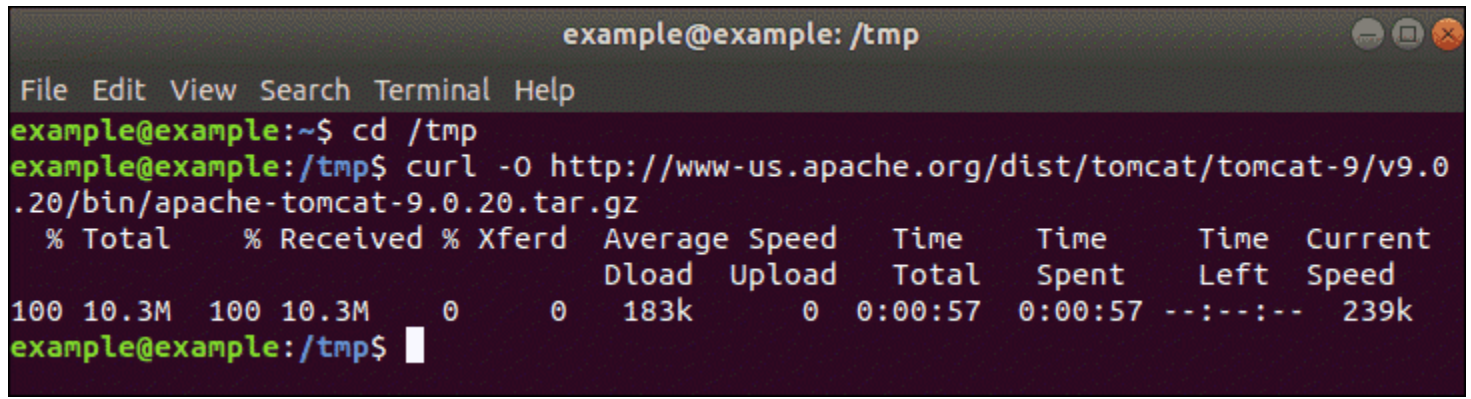
Download Tomcat 9


Apache Tomcat®
Search...
GO
Save the date!
Apache Tomcat
Home
Taglibs
Maven Plugin
Download
Which version?
Tomcat 9
Tomcat 8
Tomcat 7
Tomcat Connectors
Tomcat Native
Taglibs
Archives
Documentation
Tomcat 9.0
Tomcat 8.5
Tomcat 7.0
Tomcat Connectors
Tomcat Native
Wiki
Migration Guide
Presentations
Problems?
Tomcat 9 Software Downloads
Welcome to the Apache Tomcat® 9.x software download page. This page provides
Quick Navigation
KEYS | 9.0.20 | Browse | Archives
Release Integrity
You must verify the integrity of the downloaded files. We provide OpenPGP signatur
checksums for every release file. After you download the file, you should calculate a
Mirrors
You are currently using https://www-us.apache.org/dist/. If you encounter a probl
Other mirrors: https://www-eu.apache.org/dist/ Change
9.0.20
Please see the README file for packaging informati it explains what every distribu
Binary Distributions
Core:
tar.gz (pgp, sha512)
32-bit Windows zip (pgp, sha512)
64-bit Windows zip (pgp, sha512)

```
cd /tmp
```

4. Now, use the **`curl`** command with the **tar.gz** link you copied in step 2 to download the package:

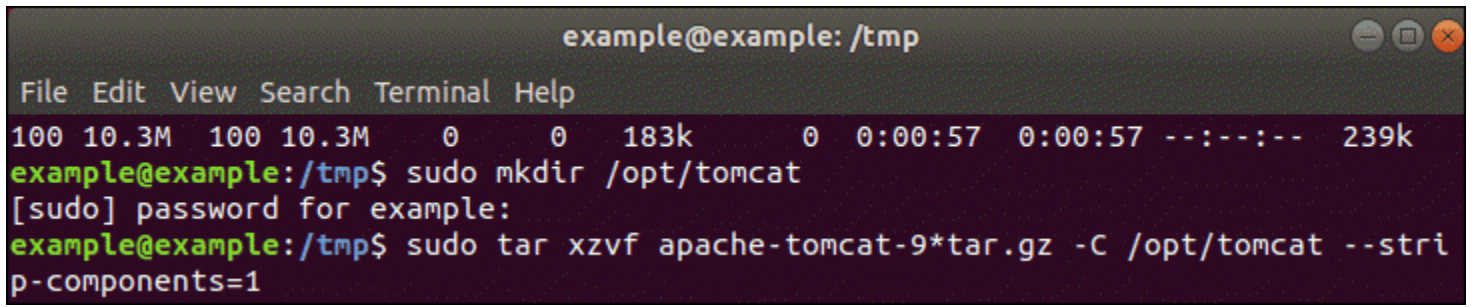
```
curl -O http://www-us.apache.org/dist/tomcat/tomcat-9/v9.0.20/bin/apache-tomcat-9.0.20.tar.gz
```



```
sudo mkdir /opt/tomcat
```

2. Then, extract the file in the new directory with the following command:

```
sudo tar xzvf apache-tomcat-9*tar.gz -C /opt/tomcat -strip-components=1
```



Modify Tomcat User Permission

directory. You need to setup execute privileges over the directory.

1. Move to the directory where the Tomcat installation is located:

```
cd /opt/tomcat
```

2. Grant group ownership over the installation directory to the **`tomcat`** group with the command:

```
sudo chgrp -R tomcat /opt/tomcat
```

3. Also, give it read access to the **`conf`** directory and its contents by typing:

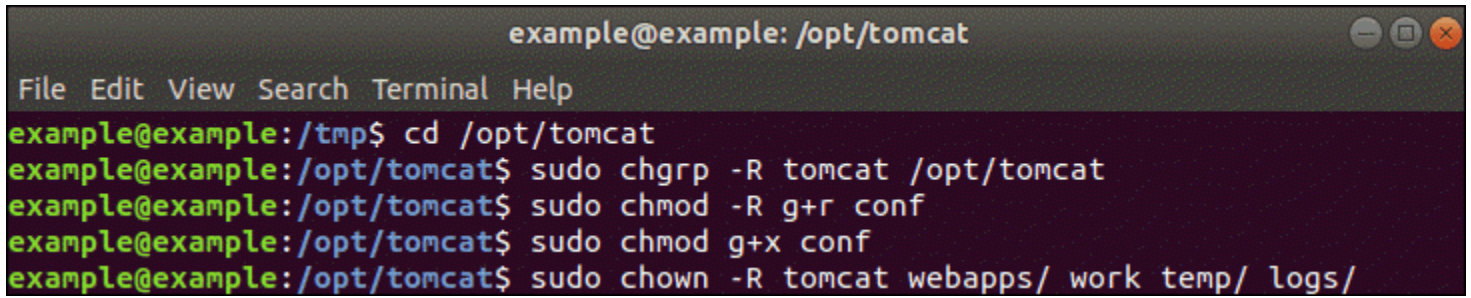
```
sudo chmod -R g+r conf
```

4. Followed by changing directory permissions to grant execute access with:

```
sudo chmod g+x conf
```

5. Finally, give the tomcat user ownership of the **`webapps`**, **`work`**, **`temp`**, and **`logs`** directories using the command:

```
sudo chown –R tomcat webapps/ work temp/ logs
```



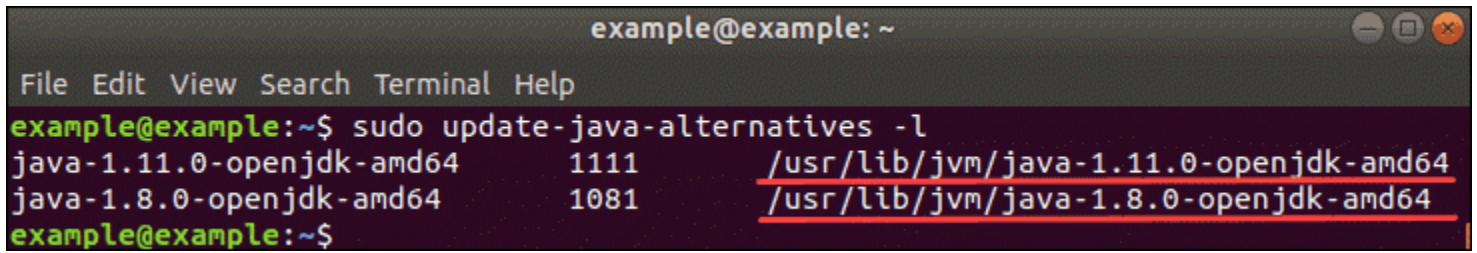
Create System Unit File

Since you are going to to use Tomcat as a service, you need to create a **systemd service file**.

package.

To do so, prompt the system to give you information about the Java packages installed on the system. In the terminal, type:

```
sudo update-java-alternatives -1
```



As the output shows, there are two available versions of Java. Accordingly, it also shows two paths displaying their location.

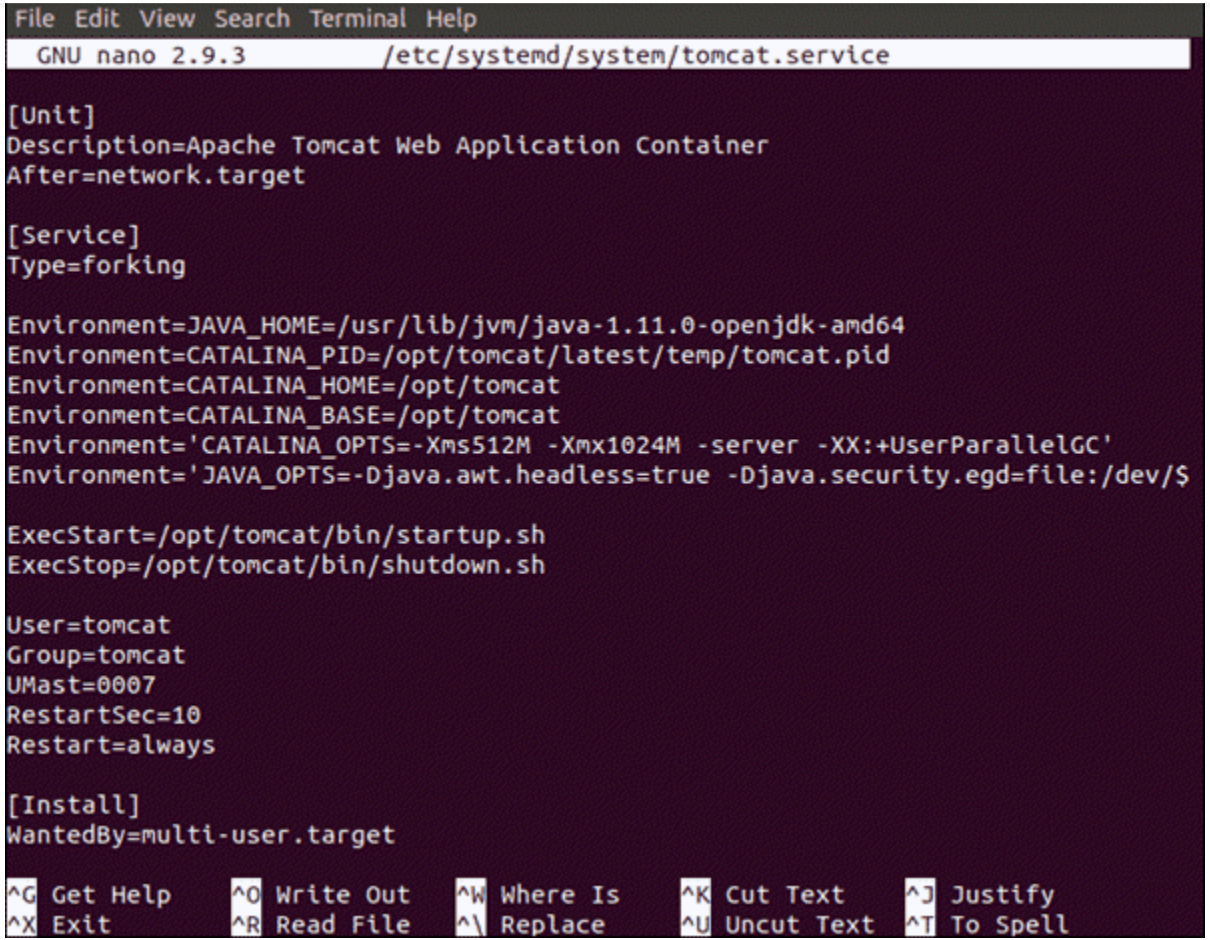
Choose the version you want to use and copy its location. With that, you can move on to create the service file.

```
sudo nano /etc/systemd/system/tomcat.service
```

3. Once the file opens, copy and paste the content below, changing the **JAVA_HOME** value to the information you found in the previous step.

```
[Unit]
Description=Apache Tomcat Web Application Container
After=network.target

[Service]
Type=forking

Environment=JAVA_HOME=/usr/lib/jvm/java-1.11.0-openjdk-amd64
Environment=CATALINA_PID=/opt/tomcat/latest/temp/tomcat.pid
Environment=CATALINA_HOME=/opt/tomcat
Environment=CATALINA_BASE=/opt/tomcat
```

```
ExecStart=/opt/tomcat/bin/startup.sh
ExecStop=/opt/tomcat/bin/shutdown.sh

User=tomcat
Group=tomcat
UMast=0007
RestartSec=10
Restart=always

[Install]
WantedBy=multi-user.target
```


File Edit View Search Terminal Help
GNU nano 2.9.3 /etc/systemd/system/tomcat.service
[Unit]
Description=Apache Tomcat Web Application Container
After=network.target
[Service]
Type=forking
Environment=JAVA_HOME=/usr/lib/jvm/java-1.11.0-openjdk-amd64
Environment=CATALINA_PID=/opt/tomcat/latest/temp/tomcat.pid
Environment=CATALINA_HOME=/opt/tomcat
Environment=CATALINA_BASE=/opt/tomcat
Environment='CATALINA_OPTS=-Xms512M -Xmx1024M -server -XX:+UserParallelGC'
Environment='JAVA_OPTS=-Djava.awt.headless=true -Djava.security.egd=file:/dev/$
ExecStart=/opt/tomcat/bin/startup.sh
ExecStop=/opt/tomcat/bin/shutdown.sh
User=tomcat
Group=tomcat
UMast=0007
RestartSec=10
Restart=always
[Install]
WantedBy=multi-user.target
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell

```
sudo systemctl daemon-reload
```

6. Now, you can finally start the Tomcat service:

```
sudo systemctl start tomcat
```

7. Verify the Apache Tomcat service is running with the command:

```
sudo systemctl status tomcat
```

The message you want to receive is that the service is **active (running)**.

Adjust Firewall

Tomcat uses Port 8080, which is outside your local network.

1. Open Port 8080 to allow traffic through it with the command:

```
sudo ufw allow 8080/tcp
```

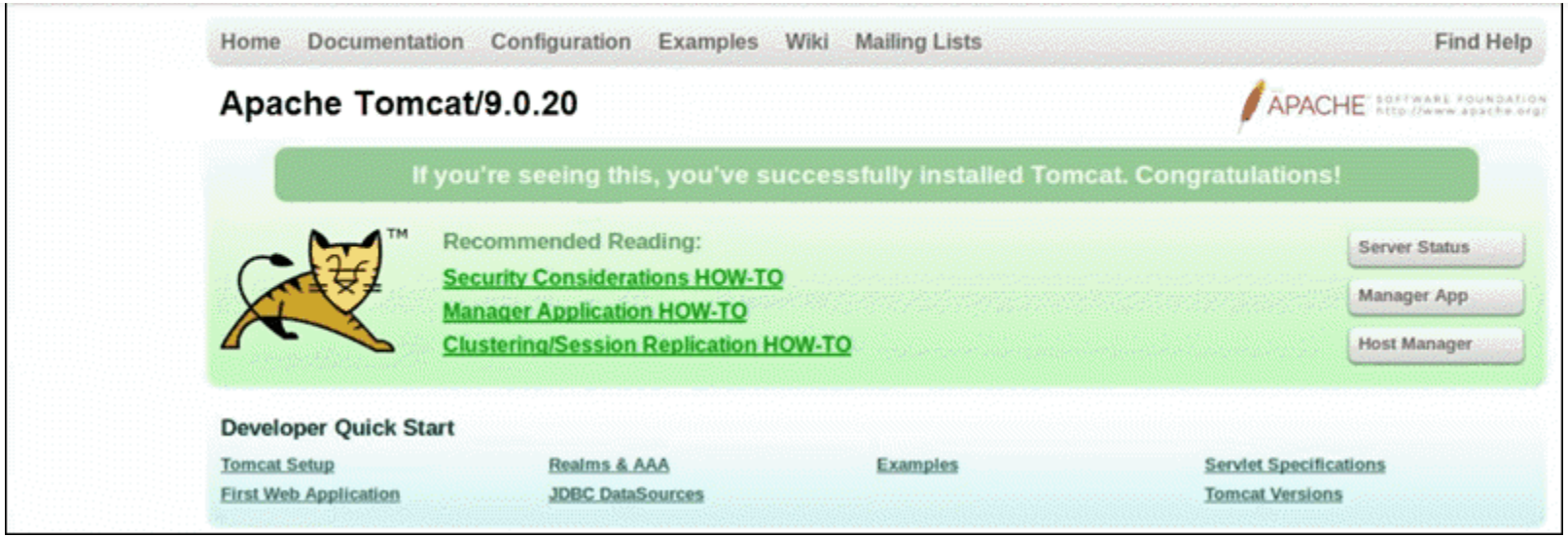
2. If the port is open, you should be able to see the Apache Tomcat splash page. Type the following in the browser window:

http://server_ip:8080

or

http://localhost:8080

Your web browser should open the web page as in the image below:



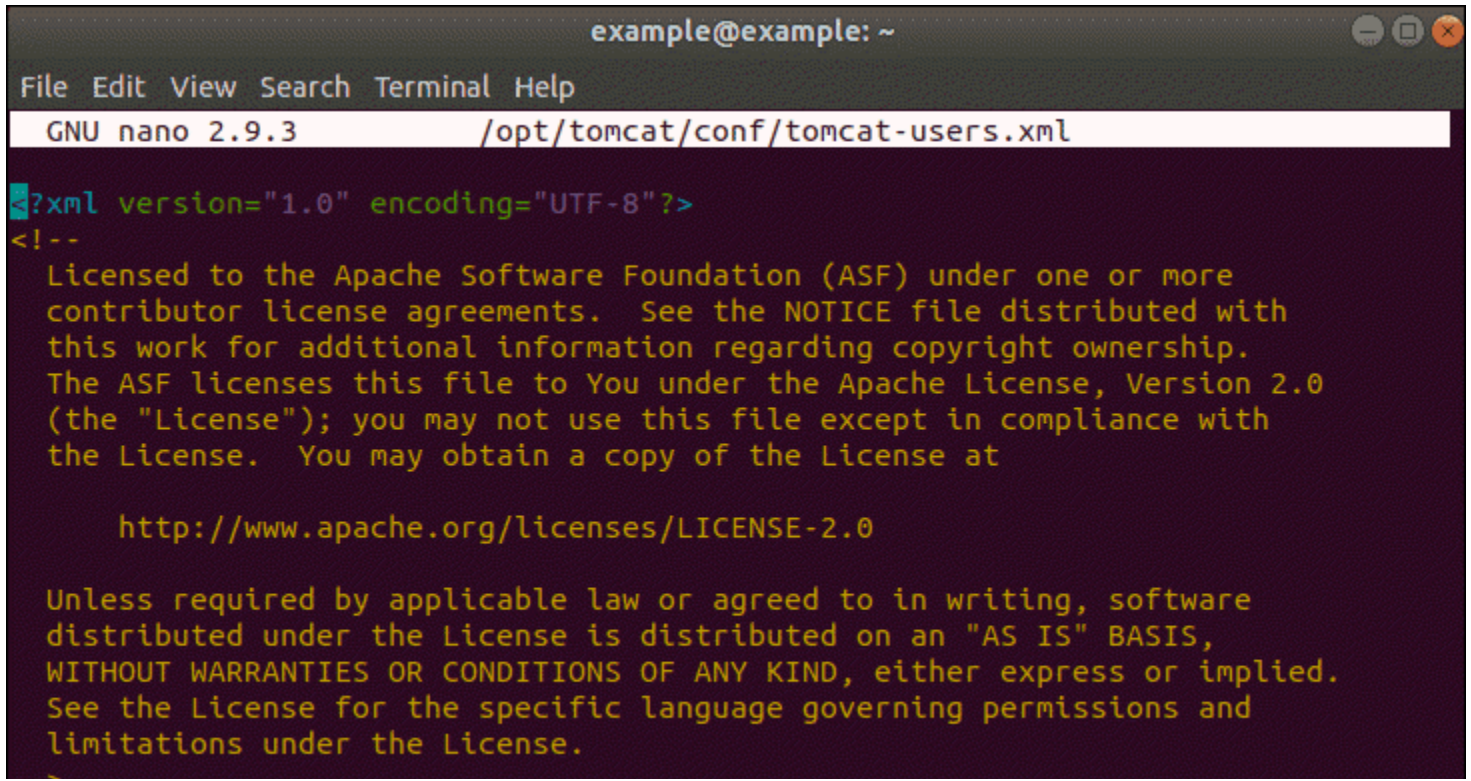
Configure Web Management Interface

Once you verified the service is running properly, you need to create a user who can use the web management interface.

To do this, open and edit the users file.

```
sudo nano /opt/tomcat/latest/conf/tomcat=users.xml
```

The file should appear like the one in the image below:



```
<tomcat-users>
<! --
Comments
-- >
<role rolename=”admin-gui”/>
<role rolename=”manager-gui”/>
<user username=”admin” password=”Your_Password” roles=”admin-gui, manager-gui”/>
</tomcat-users>
```

Make sure to replace the **`Your_Password`** value with a strong password of your preference.

3. **Save** and **Exit** the file.

Configure Remote Access

```
sudo nano /opt/tomcat/latest/webapps/manager/META-INF/context.xml
```

2. Next, decide whether to grant access from a) **anywhere** or b) **from a specific IP address**.

1) To make it publicly accessible, add the following lines to the file:

```
<Context antiResourceLocking=”false” privileged=”true”>
<! --

<Valve className=”org.apache.catalina.valves.RemoteAddrValve”
allow=”127\.\d+\.\d+\.\d+|::1|0000:1” />

-- >

</Context>
```

```
<Context antiResourceLocking=”false” privileged=”true”>
<! --

<Valve className=”org.apache.catalina.valves.RemoteAddrValve”
allow=”127\.\d+\.\d+\.\d+|::1|0000:1|THE.IP.ADDRESS.” />

-- >

</Context>
```

3. Repeat the same process for the **host-manager** file.

Start by opening the file with the command:

```
sudo nano /opt/tomcat/latest/webapps/host-manager/META-INF/context.xml
```

Conclusion

With the help of this guide, you have installed and setup Tomcat on Ubuntu 18.04! You now have a working Tomcat installation on your Apache server and can start deploying your Java web applications.

Next you should also read

SysAdmin, DevOps And Development

How to Install Yarn on Ubuntu 18.04

September 11, 2019

SysAdmin, DevOps And Development

How to Install Java on Ubuntu 18.04

June 19, 2019

Web Servers,

DevOps And Development

How to Install Tomcat 9 on CentOS 7

June 14, 2019

SysAdmin, Virtualization

How to Install VirtualBox on Ubuntu

June 2, 2019

managing, updating, and sharing your Java code. It works through node.js, and it helps to…

READ MORE

popular programming languages used for developing anything from lightweight mobile to…

READ MORE

source Java implementation package developed by the Apache Software Foundation. In…

READ MORE

tool for running a virtual operating system on your computer. In this tutorial learn…

READ MORE

Author

Sofija Simic

Sofija Simic is an aspiring Technical Writer at phoenixNAP. Alongside her educational background in teaching and writing, she has had a lifelong passion for information technology. She is committed to unscrambling confusing IT concepts and streamlining intricate software installations