TOMCAT SETUP IN PODMAN

1. Task Requirement

Set up Apache Tomcat on Podman, which is an alternative to Docker for running containers.

2. Definition Tomcat

Apache Tomcat, often referred to as Tomcat, is an open-source application server developed by the Apache Software Foundation. It is a popular choice for running Java-based web applications. Tomcat serves as a Java Servlet and JavaServer Pages (JSP) container, providing a runtime environment for executing these Java technologies.

3. Definition Podman

Podman is an open-source container management tool used for running and managing containerized applications on Linux-based systems.

4. Environment Details

- **Operating System:** Ubuntu 20.04

System Configuration:

- **CPU:** Intel Core i3-8350U CPU @ 1.70GHz x 8
- **RAM:** 8GB (4GB x 2 SODIMM DDR4)
- **Storage:** 256GB

5. List of Tools and Technologies

- Tomcat
- Podman

6. Command for the setup or configuration

Step 1 : Update system repositories.

```
sudo apt update
```

- sudo: This part of the command is used to execute the following command with administrative or superuser privileges.
- apt: Refers to the APT package manager, which is commonly used on Debian-based Linux distributions like Ubuntu.
- update: This is the action you want APT to perform. When you run "sudo apt update," it instructs APT to update the package lists and information about available software packages from the configured repositories.

Step 2 : Install podman.

```
sudo apt install podman
```

Problem : If you encountered an error while attempting to install Podman.

For solving this problem run below commands.

```
sudo sh -c "echo 'deb https://download.opensuse.org/repositories/devel:/kubic:/libconta
```

```
wget https://download.opensuse.org/repositories/devel:/kubic:/libcontainers:/stable/xUbu
```

```
sudo apt-key add - < Release.key
```

```
sudo apt update
```

```
sudo apt install -y podman
```

```
podman --version
```

"Note : Adding a repository is required for Ubuntu 20 version and is not needed for the latest version of Ubuntu."

Step 3 : Pull Tomcat Docker Image

You can pull the official Tomcat Docker image from Docker Hub. Open your terminal and run:

```
podman pull tomcat:latest
```

Output :

```
jatin@jatin1:~$ podman pull tomcat
✔ docker.io/library/tomcat:latest
Trying to pull docker.io/library/tomcat:latest...
Getting image source signatures
Copying blob 74594af5feb5 done
Copying blob 66bf1e8cc497 done
Copying blob 43f89b94cd7d done
Copying blob 190e928f9c42 done
Copying blob a4452d37e1e4 done
Copying blob 39b9b405c53f done
Copying blob 4cdcdf959377 done
Copying blob d9c9ec61c8dd done
Copying config 3db0f5668a done
Writing manifest to image destination
Storing signatures
3db0f5668a77664c221b187b735d86ed63b1d3b98a15d4e80676b13b9b155fdc
```

Step 4 : Create a Podman Container

```
podman run -d -p 8081:8080 --name my-tomcat docker.io/library/tomcat
```

Output :

```
jatin@jatin1:~$ podman run -d -p 8081:8080 --name my-tomcat docker.io/library/tomcat
d1cb2f106e2ce508755a24126b10b904325054faed69418071a8fc70c73d09e9
```

- -d: Runs the container in detached mode.
- -p 8081:8080: Maps port 8081 in the container to port 8080 on the host.
- --name my-tomcat: Names the container "my-tomcat."

Step 5 : Check container

```
podman ps
```

Output :

```
jatin@jatin1:~$ podman ps
CONTAINER ID  IMAGE                            COMMAND          CREATED             STAT
d1cb2f106e2c  docker.io/library/tomcat:latest  catalina.sh run  About a minute ago  Up A
```

- List the currently running containers managed by the Podman tool.
- Provides information about container IDs, names, status, ports, and more.

Step 6 : Enter Tomcat Container

```
podman exec -it my-tomcat /bin/bash
```

Output :

```
jatin@jatin1:~$ podman exec -it my-tomcat /bin/bash
root@d1cb2f106e2c:/usr/local/tomcat#
```

podman exec: This part of the command tells Podman to execute a command within an existing container.

- -it: These are options used to make the interaction with the container's shell interactive. "i" stands for interactive, and "t" allocates a pseudo-TTY for the shell.
- my-tomcat: This is the name of the container you want to access. In this case, it's "my-tomcat."
- /bin/bash: This is the command that you want to run inside the container. It launches a Bash shell, providing you with an interactive terminal session within the container.

Step 6 : Changed The Current Directory

```
cd webapps.dist/
```

Output :

```
root@d1cb2f106e2c:/usr/local/tomcat# cd webapps.dist/
root@d1cb2f106e2c:/usr/local/tomcat/webapps.dist#
```

- The command cd webapps.dist/ is used to change the current working directory to a directory called "webapps.dist."

Step 7 : Check List of Files

```
ls
```

Output :

```
root@d1cb2f106e2c:/usr/local/tomcat/webapps.dist# ls
docs  examples  host-manager  manager  ROOT
root@d1cb2f106e2c:/usr/local/tomcat/webapps.dist#
```

Step 8 : Copy All The Contents

```
cp -R * ../webapps
```

Output :

```
root@d1cb2f106e2c:/usr/local/tomcat/webapps.dist# cp -R * ../webapps
root@d1cb2f106e2c:/usr/local/tomcat/webapps.dist#
```

- cp -R * ../webapps: Here, you've used the cp command to copy all the contents (including subdirectories and files) of the webapps.dist directory to the webapps directory located one level above. The -R flag indicates a recursive copy to ensure that all contents are copied.

Step 9 : Change Directory

```
cd ..
```

Output :

```
root@d1cb2f106e2c:/usr/local/tomcat/webapps.dist# cd ..
root@d1cb2f106e2c:/usr/local/tomcat#
```

Step 10 : Changed The Current Directory

```
cd webapps/
```

- cd webapps: You changed the current directory to webapps again

Output :

```
root@d1cb2f106e2c:/usr/local/tomcat# cd webapps/
root@d1cb2f106e2c:/usr/local/tomcat/webapps#
```

Step 10 : Check List of Files

```
ls
```

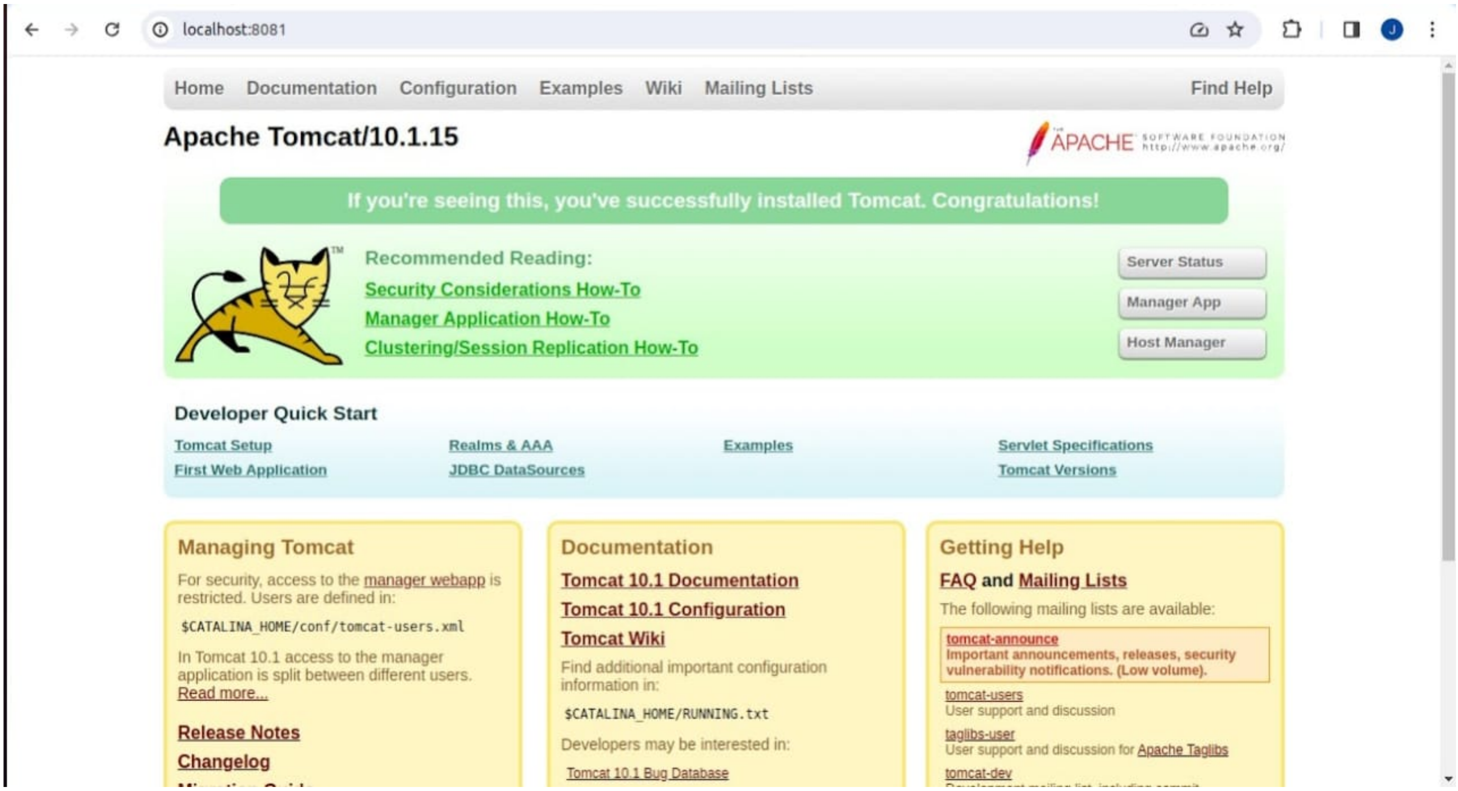
Output :

```
root@d1cb2f106e2c:/usr/local/tomcat/webapps# ls
docs  examples  host-manager  manager  ROOT
root@d1cb2f106e2c:/usr/local/tomcat/webapps#
```

- ls: Finally, you used the ls command to list the contents of the webapps directory, which should now include the directories docs, examples, host-manager, manager, and ROOT. This indicates that you've successfully copied the contents from webapps.dist to webapps

Step 11 : Access Deployed Web Application

- You can access your deployed web application by visiting http://localhost:8081/your-app in your web browser. Replace "your-app" with the name of your deployed application.



Apache Tomcat/10.1.15

If you're seeing this, you've successfully installed Tomcat. Congratulations!

Recommended Reading:

Security Considerations How-To

Manager Application How-To

Clustering/Session Replication How-To

Developer Quick Start

Tomcat Setup	Realms & AAA	Examples	Servlet Specifications
First Web Application	JDBC DataSources		Tomcat Versions

Managing Tomcat

For security, access to the manager webapp is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 10.1 access to the manager application is split between different users. Read more...

Release Notes

Changelog

Migration Guide

Documentation

Tomcat 10.1 Documentation

Tomcat 10.1 Configuration

Tomcat Wiki

Find additional important configuration information in:

```
$CATALINA_HOME/RUNNING.txt
```

Developers may be interested in:

Tomcat 10.1 Bug Database

Getting Help

FAQ and Mailing Lists

The following mailing lists are available:

tomcat-announce
Important announcements, releases, security vulnerability notifications. (Low volume).

tomcat-users
User support and discussion

taglibs-user
User support and discussion for Apache Taglibs

tomcat-dev
Development mailing list, including commit