

Assignment 1

* Title: Installation and configuration of web servers and application servers.

* Problem Statement:

Study assignment: Installation and configuration of Apache Tomcat server on Linux.

* Objective:

To understand the commands to install mentioned application servers and to understand the difference between web server and application server.

* S/w and H/w requirements:

- i) Apache Tomcat 8.5.24, v) Sudo (super user)
- ii) Linux OS (64 bit)
- iii) Keyboard, Mouse, Processor, Monitor
- iv) Web browser (Chrome)

* Theory:

Web server and Application server:
Most of the times, these terms are used interchangeably.

Web Server	Application Server
① Designed to serve HTTP only.	① Can also serve HTTP but not just limited to it. Also supports RMI/RPC.
② It is suitable for static content.	② It is suited for dynamic content.

Web Server

③ Multithreading is not supported.

④ It's capacity is lower than app. server.

eg. Apache Tomcat

Application Server

③ Multithreading is supported.

④ It's capacity is higher than web server.

eg. JBoss, Websphere

* Apache Tomcat vs Websphere vs Glassfish vs JBoss

JBoss and Glassfish are basically full Java BE Application Servers whereas Apache Tomcat is only a servlet container.

The main difference between JBoss, Glassfish, Websphere is in the functionality that a full app server offers.

* Steps and Commands used:

① Create a directory in /opt with the name "tomcat".

② Now, extract the zip file of Apache Tomcat and paste it in /opt/tomcat.

③ It will also include the bin directory where there are binaries for tomcat (cd bin)

④ Start the server using: ./startup.sh

⑤ Now copy the HTML files that need to be hosted on the server, into /webapps/ROOT

⑥ Open the browser and type the URL:
http://localhost:8080/filename.html

⑦ Shut down the tomcat server using ./shutdown.sh from the bin directory.

* Directory structure of Tomcat :

apache-tomcat

↳ bin

(Binaries)

↳ start up.sh

↳ shutdown.sh

↳ conf

↳ server.xml

↳ tomcat-users.xml

↳ lib

↳ *.jar

↳ logs

(log files of Tomcat)

↳ temp

(temporary files stored)

↳ webapps

↳ docs

↳ examples

↳ ROOT

↳ WEB-INF

↳ web.xml

↳ assets

↳ test.html

* Troubleshooting :

i) Check if tomcat server is running :

ps -ef | grep tomcat

It : the server is running, it will return the path of tomcat.

ii) Check port number being used:
nmap localhost

* Conclusion:

From this assignment, I was able to understand the basics of web servers, difference between application and web servers, how to install Apache Tomcat server (8.5.24) and hence host the webpage locally using Tomcat web server.