**Apache Tomcat Notes**

**Difference b/w Web sphere, Web Logic, J boss, Apache Tomcat:**

1. In Apache tom cat we can deploy only web applications
2. Before installing J boss and Apache we need to install Java as it prerequisites
3. The latest version of Apache tomcat is “7.0” “7.0.52”
4. We can install Apache tomcat in Linux by just extracting
5. Default tomcat port number Is “8080”
6. Default tomcat server shutdown port is “8005”
7. Default tomcat connector port no is “8009”

(Catlina\_home) : ( c:/ program file\apache software foundation\tomcat 7.0)

Under confg directorywe can find (server.xml) and we can change port number in server.xml file

**Step to Install Java in Linux Environment:**

1. Download JDK From Oracle site here we will get binary file like ( jdbc\_6U24\_linux\_i586.bin)
2. Change the file permission to that downloaded JDK binary file by using a command

( chmod 0755 JDK -6U24-lineux-i586.bin)

Go to the installation location and execute the jdk binary file like opt]# ./jdk-6u24-linux-i586-bin

At the time of jdk binary file execution it will prompt for the acceptance of agreement, once you press enter the installation will be completed and we can see jdk directory under your specified location

Once the Java installation is completed we have to set the Java path under a file called (bash \_ profile)

Open the file .bash\_ profileby using VI editor and we have to set the JAVA path like

JAVA\_HOME = (OPT) JKD1.6\_24

PATH =$JAVA\_HOME/bin: $PATH:$HOME/bin

EXPORT= PATH JAVA\_HOME

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**Step to install Apache Tomcat onLinux Environment**

1. Download the setup to Linux environment which is normally a zip file
2. Unzip the file by using a command ( unzip \*.zip)
3. Once we unzip it will create a directory under your location with the name Apache tomcat 7.0
4. Verify the tomcat installation success by executing command (./version.sh)under tomcat bin directory
5. If the installation is completed successfully we will get information about Catalina \_home , server version . OS version, architecture etc.

Then we can start the tomcat server by executing a command (./startup.sh) under tomcat bin directory and to shutdown Tomcat server we can execute the command (./ shutdown.sh) under tomcat bin directory

**Tomcat Configuration files**

1. All the tomcat configuration files are under catalane \_ home/config directory
2. The configuration files are Catalina. Policy,Catalina .properties, server.xml, tomcat\_user.xml, login. Properties and web.xml
3. Catalina .policy file describes the security policy permissions for tomcat 7.0 it in forces the security policy permissions by JVM as the web application
4. Catalina .properties files contain the shared definition of the server shared loader and jars which need to be scanned at the time of server start-up
5. Server.xml is the is important configuration file which holds port number. ip address, virtual host, context path etc. .
6. Tomcat\_user.xml file is used for authentication and authorization and role based definitions it is used to implement a database of users of passwords and roles for authentication and contains managed security
7. Logging. Properties it defines the logging properties of tomcat instances such as start-up logs
8. Web.xml file defines the default values for all web applications loaded in to the instance of tomcat at the times of tomcat start-up if any web application has its own deployment descriptor it content will always override the configuration setting specified in the default deployment descriptor

**Step to configure Oracle Database server with Apache tom**

1. Copy Oracle Jar file ojdbc14.jar (or) ojdbc6.jar till the lib directory to tomcat server
2. Modify the parameters in the server.xml file with your corresponding values the parameters are :
3. Driver class name
4. Type = java.sql. data source
5. url = jdbc :oracle :thin:@hostname:1521:database name
6. username= username and password = password of DB server
7. Define the JNDI name in the application Web.xml file under the parameter resource

–reference name and resource type , make sure that the application is referencing to the JNDI name which is defined in application web.xml file

**Step to configure MYSQL with apache tomcat:**

1. Copy mysql connection jar file to catalina\_home lib directory
2. Configure that database parameter in server.xml file, resource name resource type, java .sql .data source, driver class name = mysql.jdbc.driver , URL= jdbc:mysql://host name of the musql server>:3306/tomcat
3. Define the JNDI parameters in the application web.xml file reference name and the reference type
4. Make Shure that the same JNDI name is configured inside the application

**Types of deployment:**

In tomcat there are three types of deployment 1) stage mode 2) non stage mode 3) Extended stage mode

1. Stage mode: here the administrator first copies the application files to the staging directories of the target servers and then the target servers deploy that applications using their local copy of the deployment files and we can use the stage mode to deploy application under multiple instances in a cluster
2. No stage mode: administration wont copy any application files all server deploy using a same physical copy of the deployment files which can be directly accessible by target servers we can use no stage if the application are very large applications and if you wont to deploy under a clustered environment
3. External stage : 1) here the administration does not copy the deployment files but the administrator must answer the deployment file are distributed to the correct staging directory location before deployment

2) this will be used when there is no requirement for the dynamic updates of the deployment descriptors and when you want to control manually the distributing of deployment files to the target server

3) we can deploy application in five different ways

1) By using tomcat manager

2) WAR Deployment

3) Unpacked deployment

4) Tomcat deployer

5) By using ANT script

**Steps to deploy an Application (WAR Deployment)**

1. Copy WAR file to the <catalina\_home>/web apps directory and restart your server,

We can check the application is deployed or not under catalina logs (catalin.<timestamp>.log) we get a message deploying web application under webapps under war file name

1. We can deploy WAR application by using manager application also ,browse the location of the WAR file and select deploy the application will get deployed under web apps directory of <catalina\_home>

\*\* \* How to check whether the syntax is correct or not in Httpd.conf ?

(./apachectl –c) this command is used to check the syntax is correct or not .

\*\*\*(Revers proxy /forward proxy)

**Steps to configure apache webserver in Linux by using make install**

1. Download the apache web server setup from apache .org normally the file name is (httpd-2.2.x)
2. Extract that zip file by using a command (tar –zxvf httpd-2.2.x.tar.gz)
3. Then extract SUDO ./configure ->make ->make install
4. Before installing the server specify the hostname and port number :80
5. By default setup will be installed (/etc/local/apache2)

**Steps to configure the apache webserver with apache tomcat:**

1. To configure apache web server with tomcat by using a module (mode\_proxy.so) we need the modules mode\_proxy\_balances.so and mode\_proxy\_ajp.so in windows by default we will get this module with the apache installation under modular directory where as in Linux we won’t get this modules by default we have to enable by executing

[root@localhost http.2.2.19]#./configure – with –mpm=worker – prefix=/opt/httpd –enable-proxy-enable-proxyhttp

] #make

] #make install

1. Add the parameters in proxy \_ balancer, and AJP connector port number and the hostname of the tomcat and restart the web server

<proxy balancer://localhost sticky session = JSESS10N107>

Balancer member AJP://127.0.0.1:8010 min:10 max:100 route =node1 ,load factor =1

Proxy pass /DB sight balancer: //local host/db sight/

**Steps to configure apache web server with tomcat byusing mode\_ jk.so:**

1. Identify the Mode \_JK.SO is available under module directory of apache web server if it is not available download and copy to the modules directory of apache web server
2. Create a file with the name of (workers. Properties) under apache /conf directory and we have to define the parameters worker. Machine .port, (AJB connector port number) worker. Machine. Host, (ajb connector host name) worker. Machine .type (ajb connector )

Worker Machine: LB factor

Worker Machine: local \_worker

Worker Machine: sticky \_session

**Worker Root Type**

Worker Root: Balanced \_ worker

Worker Root: Local \_ worker

1. Configure mode \_ jk.so module and workers. Properties in httpd.conf file by adding parameters load module JK\_ module modules/mode\_jk.so JK workers file conf/ worker. Properties, and restart the web server

Interview questions of Apache tomcat

1. What is web server and ? why it is used?

Transaction with HTTP request and HTTP response is called webserver

2)what is tomcat? Can we deploy servlets in tomcat?

Tomcat is a webserver which is supports 3tier Architecture

Yes we can deploy servlets in web.xml < web-apps>, <servlets-name>,<servlet-class>

3) What is MCA stands for?

Medium Access Control

### 4)purpose of NAT([Network address translation](https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjbgcaLndPSAhXCFZQKHdawBUcQFggZMAA&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FNetwork_address_translation&usg=AFQjCNE95nfjWbl1rQTFLLmHPZs1rgUZkg&sig2=45D7VQsbxSiwNmjR4CluKg&bvm=bv.149397726,d.dGo)) protocol?

It is used to hide private IP address from Public IP address and provide certain level of security to organization

5)what is the different b/w apache tomcat 4.1 and tomcat 5.0?

(4.1)Web server for that supports servlets 2.3 and JSP 1.2 in (5.0) servlets 2.4 and JSP 2.0

6)When we startup .sh file of tomcat server it is not started .DOS window appears for a Second only, what we need to do ?

Your set up might have been not done well directly path in the CATALINA\_HOME environment variable and added the bin path in the path variable

6)how web server Chanles multiple requests for same action class (struts) concurrently?

Struts or any webserver makes new thread for each new request so multiple request is served with new request object.

6)How to communicate between tow webservers in two diff systems ?

By suing plug module

8)what is the location of log file for apache server

/var/log/httpd

9)what is the command to restart the apache server?

Service httpd restart /start

10)what is the command to check version of apache server?

Rpm-qa |grephttpd

11)what is meaning of “ Listen” in httpd.confile?

Port number on which to listen for non-secure (http) transfers.

12)what is document root ?

It is a location of files which are accessible by clients by drfaultthe apache HTTP SERVER IN Redhat Enterprise Linux is configured to serve files from the /var/www/html/directory.

13) Apache server works on which port?

http-port 80

https-443

14)tell me name of main configuration file of apache server

HTTPD.conf file

15) on which version of apache you worked?

Httpd-2.2.3

16) what you mean by a valid server Name directive?

The DNS System is used to associate ip addresses with domain names the value of server name is returned when the server generates a URL if your using a certain domain name you must make sure that it is included in your DNS system and will be available to clients visiting your site

17)What is the difference between directory section and Location section?

Directory sections refer to file system objects , Location sections refer to elements in the address bar of the web page.

18) what is the difference between a restart and graceful restart of a web server?

During normal restart the server is stopped and then started causing some request to be lost , a graceful restart allows apache children to continue to serve their current request until they can be replaced with children running the new configuration

19)what is the use of mode \_ perl module?

Mode \_ perl module scripting module to allow better perl script performance and easy integration with the web server

20)if you have add “loglevel debug” in httpd.conf file , then what will happen?

It will give you more information in the error log in order to debug a problem

21)is it possible to record the MAC address of clinets that access your server?

NO

22) if there is one IP address then how to host two web sites on server

In this case I will use named based virtual hosting

Server Name :10.111.203.25

Name virtual host :80

Server name web1:test.com

Document root /var /www/html/web1

Server name web2:test2.com

Document root /var/www/html/web2

23) can I serve content out of a directory other than the document root directory ?

Yes we can do it by using “ Alias” command

24) if you have to more than one URL map to the same directory but you don’t have multiple Alias directives what you will do?

In this case I will use Alias match directives the Alias Match Directives will allows you to use regulr expression to match arbitrary patterns in URLs and ap anything matching the pattern to the desired URL

25)Can you record all the cookies sent to your server by clients in web server logs?

Yes , add following lines in HTTPD.CONF file custom log logs/cokkies\_in.log”%(UNIQUE\_ID)e% (cookies) Custom log logs/cookies2\_in.log”%(UNIQUE\_ID)E%(cookies2)I”

26)can we automatically roll over the apache logs at specific time without having to shut down and restart the server

Yes, use Customlog and the rotatelogs programs add following line in httpd.conf file customlog “I/path/to /rotatelogs/path/to logs/access\_log.%y-%m-%d86400” combined

27) What we should do to find out how people are your site?

Add the following effect or to your activity log format. % (Referer)

28) How will you put a limit on uploads on your web server?

This can be achieved by limitrequestBody directive.

LimitRequestBody 100000

Hear I need to put limit 100000 bytes

29) Which toolyou have used for apache benchmarking?

AB (Apache Bench)

AB –N 1000 –C10,<HTTP://www.test.com/test.html>

30) Can we cache the files which are viewed frequently?

Yes we can do it by using mode\_file \_cache module. Cache file /www/htdocs/index.html

31)can we have two apache servers having diff versions?

Yes you can have two different apache servers on one server but they cant listen to the same port at the same time , normally apache listens to port 80 which is the default HTTP port the second apache version should listen to another port with the listen option in httpd.conf, for example to port 81.

For testing a new apache version before moving your sites from one version to another this might be a good option you just type [www.example.com:81](http://www.example.com:81) in the browser window and you will be connected to the second apache instance.