

<b>Apache Tomcat</b>	<b>1</b>
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## What is web application?

Applications accessed via web browsers is called as web application

## Technologies used for developing web applications

- Java
- .Net
- Python
- PHP
- Node JS (MEAN)
- Ruby on rails
- HTML/CSS/Javascript
- Cold Fusion

## What is the runtime for Web applications?

Web servers are the runtime for running web applications

- Apache (PHP/HTML)
- Nginx (PHP/HTML)
- Apache Tomcat (Java)
- IIS (.NET)
- Weblogic (Java)
- JBoss (Java)
- Sun glassfish (Java)
- Pramati Application Server (Java)
- Websphere (Java)

Is a web server used for deploying java based web applications

## Why do we use web servers?

Web servers come with built in features, like

- http/https implementations
- Multi threading capabilities, using thread we can handle multiple requests concurrently
- Application lifecycle management
- Etc..

## App servers

Web server features + transaction management + Directory services + EJB containers etc..

- Webshphere
- Weblogic
- JBoss
- etc...

## Installing Tomcat on linux machine

- Java is the dependency for tomcat to work
  - Installing java
  - `sudo yum install java-1.8.0-openjdk-devel -y`
- `cd /opt`
- Download tomcat
  - `sudo wget`  
<http://www-us.apache.org/dist/tomcat/tomcat-8/v8.5.20/bin/apache-tomcat-8.5.20.tar.gz>
- Untar the file
  - `sudo tar -xf apache-tomcat-8.5.20.tar.gz`
- Rename the file
  - `sudo mv apache-tomcat-8.5.20 tomcat8`
- Change the ownership of tomcat to ec2-user
- `sudo chown -R ec2-user:ec2-user tomcat8`
- Starting tomcat server
  - `${TOMCAT_HOME}/bin/startup.sh`
  - Note: default port of tomcat is **8080**
- Stopping tomcat server
  - `${TOMCAT_HOME}/bin/shutdown.sh`

## Deploying web application on the tomcat server

Deployment can be done in many ways

1. Place the war file under \${TOMCAT\_HOME}/webapps  
**webapps** folder is called as tomcat's deployment directory
2. Upload war file via tomcat manager application

## Troubleshooting tomcat specific issues

Troubleshooting is done with help of tomcat log files  
\${TOMCAT\_HOME}/logs

## Tomcat manager application

Tomcat manager is the web application, using this we manage applications running on tomcat  
By default access is restricted to this application.

- Remove the restriction to manager application  
vi /opt/tomcat8/webapps/manager/META-INF/context.xml  
Remove the `<Value> .....</Value>` from this file.
- Add user to access tomcat manager application  
vi /opt/tomcat8/conf/tomcat-users.xml

`<role rolename="manager-gui"/>`

`<role rolename="manager-script"/>`

`<user username="javahome" password="javahome" roles="manager-gui,manager-script"/>`