OS-UPSKIILL-2023-Application-Database-Servers-Installation

Prerequisite:-

- Java 11 (using Oracle login for download)

Download Link : https://www.oracle.com/in/java/technologies/javase/jdk11-archive-downloads.html

- Apache Tomcat 10

Download Link : https://archive.apache.org/dist/tomcat/tomcat-10/v10.0.18/bin/apache-tomcat-10.0.18.tar.gz

- Postgresql 15 (Install using apt Package Manage in Ubuntu)

❖ JAVA:-

Java is a widely used object-oriented programming language and software platform

Step 1: To check the java is already installed in linux.

Commands:

- `java -version ( It will show the version details )`

Step 2: JDK 11 tar file copy to the Linux machine in /home/demo/ path and extract using tar command

Commands:

- `cd /home/demo/`
- `tar -xvf jdk-11.0.15_linux-x64_bin.tar.gz ( extract the compressed file )`

Step 3: To configure java_executable_path in linux environment variables

Commands:

- `vi ~/.bashrc ( adding path through opening the file using vi editor)`

```
JAVA_HOME="/home/demo/jdk-11.0.15/"
PATH=$PATH:$HOME/bin:$JAVA_HOME/bin
export JAVA_HOME
export PATH
```

- `source ~/.bashrc ( To reload the bash to effect of our path added )`

`java -version ( Sample output java version "11.0.15" 2022-04-19 LTS)`

❖ Apache Tomcat:-

Apache Tomcat is an open source application server that executes Java Servlets, renders and delivers web pages that include JavaServer Page code, and serves Java Enterprise Edition (Java EE) applications.

Step 1: Apache Tomcat 10 tar file copy to the Linux machine in /home/demo/ path and extract using tar command

Commands:

- `cd /home/demo/`
- `tar -xvf apache-tomcat-10.0.18.tar.gz ( extract the compressed file)`

Step 2: To configure tomcat_catalina_path in linux environment variables

Commands:

- `vi ~/.bashrc ( adding path through opening the file using vi editor)`

```
export CATALINA_HOME=/home/demo/apache-tomcat-10.0.18
export CATALINA_BASE=/home/demo/apache-tomcat-10.0.18
```

- `source ~/.bashrc ( To reload the bash to effect of our path added )`

Step 3: Deploy an sample war file in /home/demo/apache-tomcat-10.0.18 /webapps path

Commands: (copy the sample war to /home/demo/ in linux machine)

- `cp /home/demo/sample.war /home/demo/apache-tomcat-10.0.18/webapps/`

Step 4: Start the Tomcat Application and access the application url through browser.

Commands:

- `cd /home/demo/apache-tomcat-10.0.18/bin`
- `sh startup.sh`
- `ps -ef | grep tomcat ( to check the apache tomcat process is running ).`

2.1 Apache Tomcat Directory Structure:

- **bin -** startup, shutdown and other scripts and executables
- **common** - common classes that Catalina and web applications can use
- **conf -** XML files for all configuration of the Tomcat
- **logs -** Catalina and application logs
- **server -** classes used only by Catalina
- **shared -** classes shared by all web applications
- **webapps -** directory containing the web applications
- **work -** temporary storage for files and directories

❖ Postgresql :-

PostgreSQL is an advanced, enterprise-class, and open-source relational database system. PostgreSQL supports both SQL (relational) and JSON (non-relational) querying.

Step 1: Enable PostgreSQL Package Repository

Commands:

- `sudo sh -c 'echo "deb http://apt.postgresql.org/pub/repos/apt $(lsb_release -cs)-pgdg main" > /etc/apt/sources.list.d/pgdg.list'`
- `wget -qO- https://www.postgresql.org/media/keys/ACCC4CF8.asc | sudo tee /etc/apt/trusted.gpg.d/pgdg.asc &>/dev/null`
- `sudo apt update`

Step 2: Install PostgreSQL 15 Database Server and Client

Commands:

- `sudo apt install postgresql postgresql-client -y`
- `sudo systemctl status postgresql`
- `psql --version`

Step 3: Update PostgreSQL Admin User Password

Commands:

- `sudo -u postgres psql`
- `postgres=# ALTER USER postgres PASSWORD 'demoPassword';`
- `postgres=# \q`
- `psql -h localhost -U postgres`

Step 4: Postgresql logs files

Commands:

- `cd $PG_DATA/log/`
- `Vi postgresql-Fri.log`

Step 5: Postgresql Configuration Files

Commands:

- `$PG_DATA/postgresql.conf ( one of the most parameter files inside the directory )`

- $PG_DATA/postgresql.conf (host-based access control file or host-based authentication file)