

# Application Deployment with Database (PAAS model)

## Step:1

→Launch 2 instances, one for Build and another for Deploy.

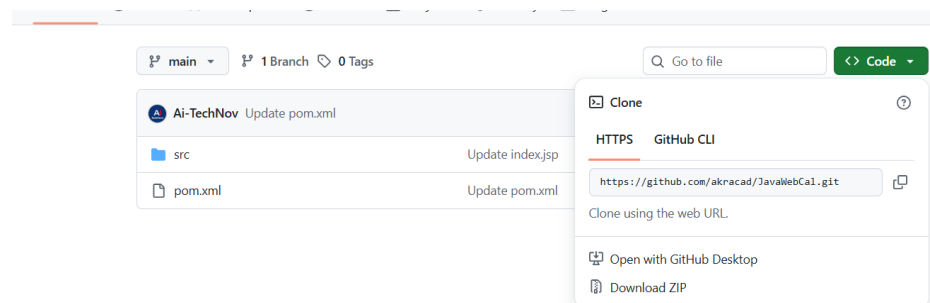
In Build server install java

```
ubuntu@ip-172-31-27-0:~$ java --version
Command 'java' not found, but can be installed with:
sudo apt install openjdk-17-jre-headless # version 17.0.16+8~us1-0ubuntu1~24.04.1, or
sudo apt install openjdk-21-jre-headless # version 21.0.8+9~us1-0ubuntu1~24.04.1
sudo apt install default-jre             # version 2:1.17-75
sudo apt install openjdk-11-jre-headless # version 11.0.28+6-1ubuntu1~24.04.1
sudo apt install openjdk-8-jre-headless  # version 8u462-ga~us1-0ubuntu2~24.04.2
sudo apt install openjdk-19-jre-headless # version 19.0.2+7-4
sudo apt install openjdk-20-jre-headless # version 20.0.2+9-1
sudo apt install openjdk-22-jre-headless # version 22~22ea-1
ubuntu@ip-172-31-27-0:~$ sudo apt install openjdk-17-jre-headless
```

→Install maven

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-27-0:~$ sudo apt install maven
```

→Clone the code from github.



```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-27-0:~$ git clone https://github.com/akracad/JavaWebCal.git
```

→Build the code by using “mvn package” command

```
ubuntu@ip-172-31-27-0:~/JavaWebCal$ >pom.xml
ubuntu@ip-172-31-27-0:~/JavaWebCal$ vi pom.xml
ubuntu@ip-172-31-27-0:~/JavaWebCal$ mvn package
```

→The build will be Success and the output will be shown as below

```
[INFO] Packaging webapp
[INFO] Assembling webapp [webapp] in [/home/ubuntu/JavaWebCal/target/webapp]
[INFO] Processing war project
[INFO] Copying webapp resources [/home/ubuntu/JavaWebCal/src/main/webapp]
[INFO] Building war: /home/ubuntu/JavaWebCal/target/webapp.war
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 20.638 s
[INFO] Finished at: 2025-10-07T06:35:36Z
[INFO] -----
ubuntu@ip-172-31-27-0:~/JavaWebCal$
```

## Step :2

Now in another server which is used to deploy the application,

→ Install Java (same step as installed in Build server)

→ Install Tomcat.

```
ubuntu@ip-172-31-26-7:~$ wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.110/bin/apache-tomcat-9.0.110.tar.gz
```

→ We get a tar file, then untar the tar file.

```
ubuntu@ip-172-31-26-7:~$ ls
apache-tomcat-9.0.110.tar.gz
ubuntu@ip-172-31-26-7:~$ tar -xvf apache-tomcat-9.0.110.tar.gz
```

→ Rename it.

```
ubuntu@ip-172-31-26-7:~$ ls
apache-tomcat-9.0.110  apache-tomcat-9.0.110.tar.gz
ubuntu@ip-172-31-26-7:~$ mv apache-tomcat-9.0.110 tomcat
```

→ Comment in webapps/host manager and manager /META/context.xml

```
<!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" /> -->

<!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" /> -->
```

→ Change the password in conf/tomcat-user.xml

```
<user username="admin" password="admin" roles="manager-gui"/>
<user username="robot" password="admin" roles="manager-script"/>
<!--
```

→ Give port number in Security group as 8080

**Edit inbound rules** [Info](#)

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional	
sgr-0c5bb9e3689ec7264	SSH	TCP	22	Custom		<a href="#">Delete</a>
-	Custom TCP	TCP	8080	Anywh...	0.0.0.0/0	<a href="#">Delete</a>

[Add rule](#)

Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Preview changes](#) [Save rules](#)

→ Start tomcat

./start.sh

```
ubuntu@ip-172-31-26-7:~/tomcat/bin$ ./startup.sh
Using CATALINA_BASE:   /home/ubuntu/tomcat
Using CATALINA_HOME:   /home/ubuntu/tomcat
Using CATALINA_TMPDIR: /home/ubuntu/tomcat/temp
Using JRE_HOME:        /usr
Using CLASSPATH:        /home/ubuntu/tomcat/bin/bootstrap.jar:/home/ubuntu/tomcat/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
```

→ Access Tomcat in web browser with public ip and port number.


Not secure 13.62.48.74:8080

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## Apache Tomcat/9.0.110

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](#)

Server Status  
Manager App  
Host Manager

Developer Quick Start

- [Tomcat Setup](#)
- [Realms & AAA](#)
- [Examples](#)
- [Servlet Specifications](#)
- [First Web Application](#)
- [JDBC DataSources](#)
- [Tomcat Versions](#)

→ Login to Manager with username and password(admin)

### Tomcat Web Application Manager

Message: OK

Manager

[List Applications](#) [HTML Manager Help](#) [Manager Help](#) [Server Status](#)

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/docs	None specified	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/host-manager	None specified	Tomcat Host Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

## Step :3(Build server).

- Create ssh-keygen
- Cat public id generated
- Copy the public key and paste it in Deploy server (Authorized keys).

```
ubuntu@ip-172-31-27-0:~$ cd .ssh/
ubuntu@ip-172-31-27-0:~/.ssh$ ls
authorized_keys id_ed25519 id_ed25519.pub
ubuntu@ip-172-31-27-0:~/.ssh$ cat id_ed25519.pub
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIEQtEz++8uG8v4KDNb54KbgC9vryMChQi9TyvQKzd4qJ ubuntu@ip-172-31-27-0
ubuntu@ip-172-31-27-0:~/.ssh$
```

## Step:4(Deploy server)

→ Go to .ssh

→ vi authorized keys paste the keys generated in Build server.

## Step:5

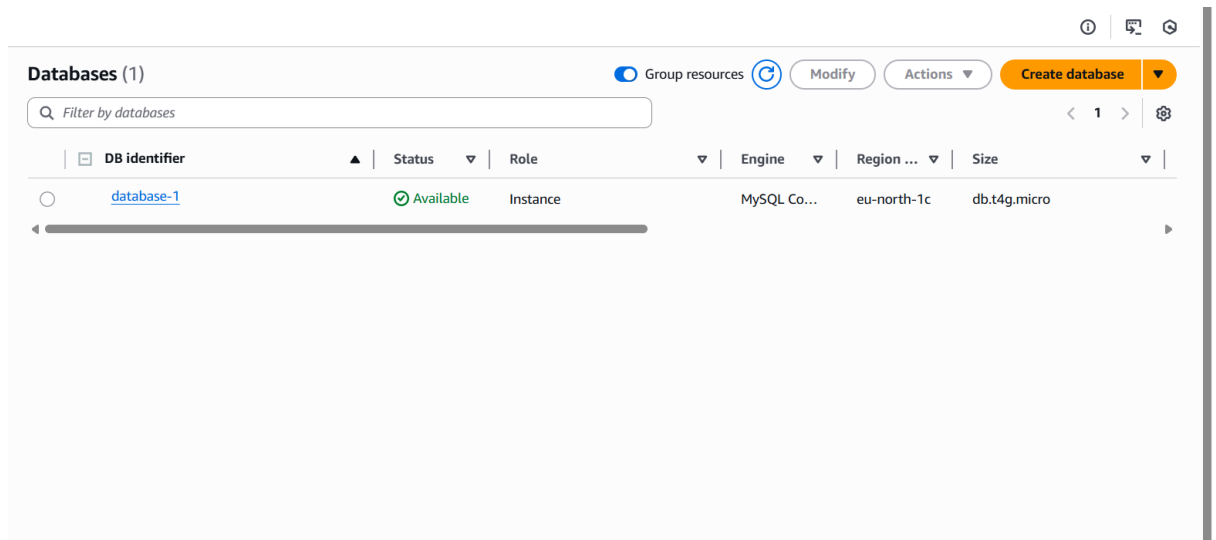
→ Copying the War file from Build server to Deploy server.

(scp /home/ubuntu/Javawebcal/target/\*.war  
ubuntu@deploy-public-  
ip:/home/ubuntu/tomcat/webapps).

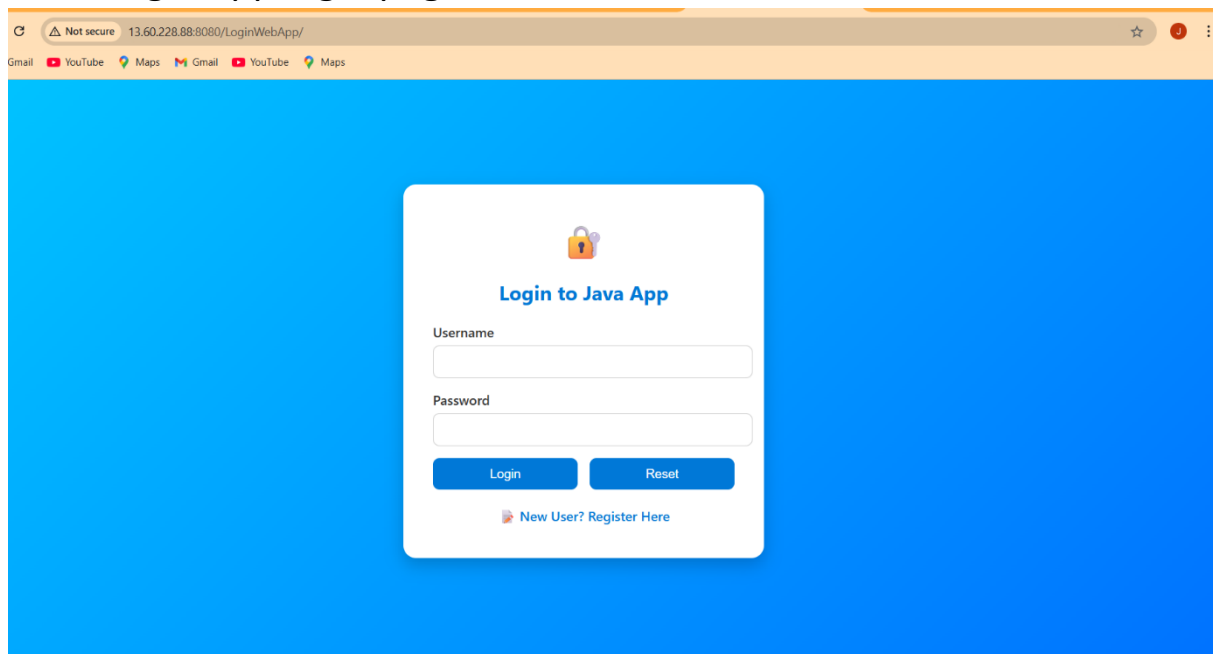
```
ubuntu@ip-172-31-26-7:~/tomcat/webapps$ ls
ROOT docs examples host-manager manager webapp webapp.war
ubuntu@ip-172-31-26-7:~/tomcat/webapps$
ubuntu@ip-172-31-27-0:~$ scp /home/ubuntu/Javawebcal/target/*.war ubuntu@13.62.48.74:/home/u
buntu/tomcat/webapps
webapp.war
ubuntu@ip-172-31-27-0:~$ 100% 3901 8.1MB/s 00:00
```

Tomcat Web Application Manager						
Message:		OK				
Manager						
List Applications		HTML Manager Help		Manager Help		Server Status
Applications						
Path	Version	Display Name	Running	Sessions	Commands	
/	None specified	Welcome to Tomcat	true	0	Start <input type="button" value="Stop"/> <input type="button" value="Reload"/> <input type="button" value="Undeploy"/> <input type="button" value="Expire sessions"/> with idle ≥ <input type="text" value="30"/> minutes	
/docs	None specified	Tomcat Documentation	true	0	Start <input type="button" value="Stop"/> <input type="button" value="Reload"/> <input type="button" value="Undeploy"/> <input type="button" value="Expire sessions"/> with idle ≥ <input type="text" value="30"/> minutes	
/examples	None specified	Servlet and JSP Examples	true	0	Start <input type="button" value="Stop"/> <input type="button" value="Reload"/> <input type="button" value="Undeploy"/> <input type="button" value="Expire sessions"/> with idle ≥ <input type="text" value="30"/> minutes	
/host-manager	None specified	Tomcat Host Manager Application	true	0	Start <input type="button" value="Stop"/> <input type="button" value="Reload"/> <input type="button" value="Undeploy"/> <input type="button" value="Expire sessions"/> with idle ≥ <input type="text" value="30"/> minutes	
/manager	None specified	Tomcat Manager Application	true	1	Start <input type="button" value="Stop"/> <input type="button" value="Reload"/> <input type="button" value="Undeploy"/> <input type="button" value="Expire sessions"/> with idle ≥ <input type="text" value="30"/> minutes	
/webapp	None specified	Servlet	true	0	Start <input type="button" value="Stop"/> <input type="button" value="Reload"/> <input type="button" value="Undeploy"/> <input type="button" value="Expire sessions"/> with idle ≥ <input type="text" value="30"/> minutes	

Create data base:



We will get app login page



Final output



Not secure

54.177.121.90:8080/LoginWebApp/success.jsp

Welcome subbu [Log out](#)