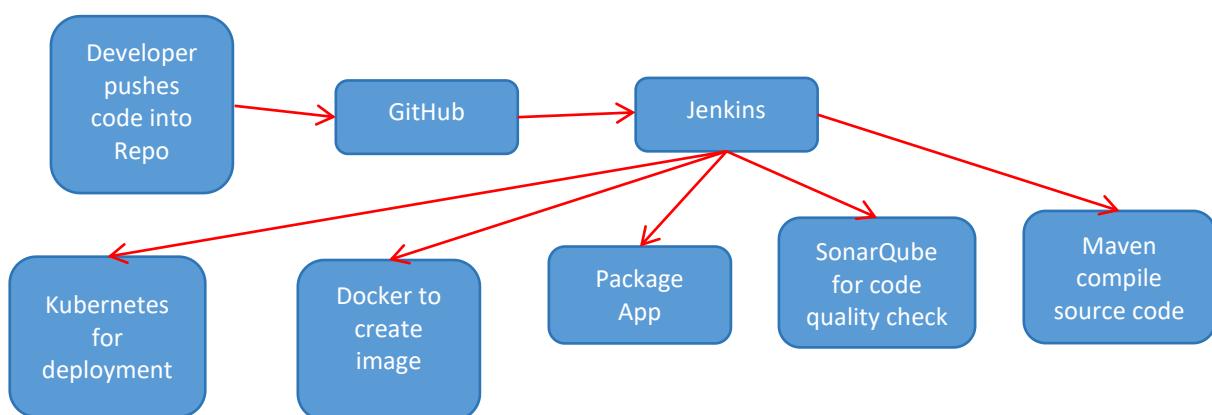


Jenkins Introduction:

SDLC: two major steps: development + build\_deploy

Developer will write the code --> Developer pushes the code to GitHub repository --> code is available on GitHub --> Compile and Build the code (we have Maven tools) --> Code quality will be done (we have SonarQube to check the code quality) --> Packaging our application (Java Jar or War) --> Docker image will be created --> Application is deployed using Kubernetes. DevOps team's responsibility is to build that code and compile that code. We have to repeat this process in multiple environments. Also when there is a new commit into GitHub then the same process you got to follow. To avoid manual build and deployment, we have one tool called as Jenkins. Jenkins will take care of entire Build and Deployment. Jenkins will take code from Git, will use Maven for compilation (Compile sourceCode). Jenkins will talk to Maven tool



You could manually do the same process but it is error-prone. For every new commit, you have to follow the process again and again. To automate process of Build and Deployment, Jenkins comes into picture. Alternative for Jenkins are GitLab and GitHub actions.

Jenkins is CI/CD tool, CI refers to Continuous Integration, CD refers to Continuous Deployment.

It is free and open-source software/tool, which is developed using Java language. CI/CD is an approach to automate project: build & deployment process.

Using Jenkins, we can deploy any type of projects, regardless of tech stacks used (Java, Python, .Net, React)

Software development involves many steps out of which two major steps are writing code and pushing code into GitHub then building and deploying that application.

To automate Build and Deployment process of our application, we can use tools such as GitLab, Jenkins

Build and Deployment process of an Application:

- > Taking latest code from Repo such as GitHub or BitBucket
- > Compile and Build source code using tools such as Maven
- > Perform code reviews using SonarQube
- > Upload project artifact using Nexus
- > Create a Docker image with Docker
- > Deploy Code/App into Server using K8s

Note this process can be done manually, however it is a time-consuming process and manual process of build-deployment could lead to error hence to overcome limitation associated with manual build-deployment process we have tools such as Jenkins, GitLab.

To automate the Build-Deployment process of our application we can use tools such as GitLab, Jenkins

Jenkins for Windows follow this link: <https://youtu.be/1LE1llhafOE?si=jvOZYSfcNLvK3lay>

Jenkins installation setup in Linux VM

Get an instance

**Instances (1/3) [Info](#)**

Find Instance by attribute or tag (case-sensitive)

All state

	Name <a href="#">🔗</a>	Instance ID	Instance state	Instance type	Status
<input checked="" type="checkbox"/>	DevOpsCourse...	i-0f87d8181852ad376	Pending <a href="#">🔗</a> <a href="#">Q</a>	t2.micro	-
<input type="checkbox"/>	TerraformEC2	i-0f3b562c215e434b7	Stopped <a href="#">🔗</a> <a href="#">Q</a>	t2.micro	-
<input type="checkbox"/>	EKS-host	i-01289fc5ca918b25f	Stopped <a href="#">🔗</a> <a href="#">Q</a>	t2.micro	-

```
~~ \#####
~~ \|##|
~~ \|/ _ __
~~ \~' ' ->
~~~ /
~~ ._. /_/
/_m/`
```

<https://aws.amazon.com/linux/amazon-linux-ami/>

```
Last login: Sun Mar  9 21:43:34 2025 from 99.228.11.52
[ec2-user@ip-172-31-13-80 ~]$
[ec2-user@ip-172-31-13-80 ~]$
[ec2-user@ip-172-31-13-80 ~]$ █
```

t2.medium is recommended for Jenkins

	Instance ID	Instance state	Instance type	Status	View alarms +	ca-central-
<input type="checkbox"/>	EKS-host	Stopped <a href="#">🔗</a> <a href="#">Q</a>	t2.micro	-	View alarms +	ca-central-
<input checked="" type="checkbox"/>	Jenkins-server	Running <a href="#">🔗</a> <a href="#">Q</a>	t2.medium	Initializing <a href="#">🔗</a>	View alarms +	ca-central-

**i-0abe9191466188c59 (Jenkins-server)**

Instance ID	<a href="#">i-0abe9191466188c59</a>	Public IPv4 address	<a href="#">35.183.77.174   open address</a> <a href="#">🔗</a>
IPv6 address	-	Instance state	<a href="#">Running</a>
Hostname type	IP name: ip-172-31-11-116.ca-central-1.compute.internal	Private IP DNS name (IPv4 only)	<a href="#">ip-172-31-11-116.ca-central-1.compute.internal</a>
Answer private resource DNS name	IPv4 (A)	Instance type	t2.medium

```
To check for new updates run: sudo apt update
```

The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/\*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.

```
/usr/bin/xauth:  file /home/ubuntu/.Xauthority does not exist
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

```
ubuntu@ip-172-31-11-116:~$ 
ubuntu@ip-172-31-11-116:~$ 
ubuntu@ip-172-31-11-116:~$ 
ubuntu@ip-172-31-11-116:~$ █
```

```
ubuntu@ip-172-31-11-116:~$ sudo apt update
```

```
Get:36 http://ca-central-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components
Get:37 http://ca-central-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata
Get:38 http://ca-central-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components
Get:39 http://ca-central-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata
Get:40 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [165 kB]
Get:41 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.6 kB]
Get:42 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [858 kB]
Get:43 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [188 kB]
Get:44 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:45 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [17.0 kB]
Get:46 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [1180 kB]
Get:47 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [248 kB]
Get:48 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:49 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [17.7 kB]
Get:50 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [3792 B]
Get:51 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Get:52 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [380 B]
Fetched 34.6 MB in 6s (6081 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
23 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-11-116:~$ █
```

To run Jenkins, which software is required: Java

```
ubuntu@ip-172-31-11-116:~$ sudo apt install default-jdk
```

```
update-alternatives: using /usr/lib/jvm/java-21-openjdk-amd64/bin/jstat to provide /usr/bin/jstat (jstat) in auto mode
update-alternatives: using /usr/lib/jvm/java-21-openjdk-amd64/bin/jstated to provide /usr/bin/jstated (jstated) in auto mode
update-alternatives: using /usr/lib/jvm/java-21-openjdk-amd64/bin/jwebserver to provide /usr/bin/jwebserver (jwebserver) in auto mode
update-alternatives: using /usr/lib/jvm/java-21-openjdk-amd64/bin/serialver to provide /usr/bin/serialver (serialver) in auto mode
update-alternatives: using /usr/lib/jvm/java-21-openjdk-amd64/bin/jhsdb to provide /usr/bin/jhsdb (jhsdb) in auto mode
Setting up default-jre-headless (2:1.21-75+exp1) ...
Setting up default-jre (2:1.21-75+exp1) ...
Setting up openjdk-21-jdk:amd64 (21.0.7+6~us1~ubuntu1~24.04) ...
update-alternatives: using /usr/lib/jvm/java-21-openjdk-amd64/bin/jconsole to provide /usr/bin/jconsole (jconsole) in auto mode
Setting up default-jdk-headless (2:1.21-75+exp1) ...
Setting up default-jdk (2:1.21-75+exp1) ...
Processing triggers for libc-bin (2.39-0ubuntu8.4) ...
Processing triggers for libgdk-pixbuf-2.0-0:amd64 (2.42.10+dfsg-3ubuntu3.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-11-116:~$ █
```

```
ubuntu@ip-172-31-11-116:~$ java -version
```

```
openjdk version "21.0.7" 2025-04-15
```

```
OpenJDK Runtime Environment (build 21.0.7+6-Ubuntu-0ubuntu124.04)
```

```
OpenJDK 64-Bit Server VM (build 21.0.7+6-Ubuntu-0ubuntu124.04, mixed mode, sharing)
```

```

ubuntu@ip-172-31-11-116:~$ 
ubuntu@ip-172-31-11-116:~$ 
ubuntu@ip-172-31-11-116:~$ java -version
openjdk version "21.0.7" 2025-04-15
OpenJDK Runtime Environment (build 21.0.7+6-Ubuntu-0ubuntu124.04)
OpenJDK 64-Bit Server VM (build 21.0.7+6-Ubuntu-0ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-11-116:~$ 

```

## 1. Create Linux VM on AWS Cloud - Ubuntu (preferred to use t2.medium as instance type)

Get connected to Linux VM using SSH Gitbash, Terminal or any medium

### 2. Install Java

- a) ubuntu@ip-172-31-11-116:~\$ sudo apt update
- b) ubuntu@ip-172-31-11-116:~\$ sudo apt install default-jdk
- c) ubuntu@ip-172-31-11-116:~\$ java -version

Go to <https://www.jenkins.io/>

<https://www.jenkins.io/download/>

<https://www.jenkins.io/doc/book/installing/linux/#debianubuntu>



You need to choose either the Jenkins Long Term Support release or the Jenkins weekly release.

### Long Term Support release

A [LTS \(Long-Term Support\)](#) release is chosen every 12 weeks from the stream of regular releases as the stable release for that time period. It can be installed from the [debian-stable apt repository](#).

```

sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc \
  https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc]" \
  https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
  /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins

```

### Weekly release

A new release is produced monthly, delivering fixes and features to users and plugin developers. It can be installed from the [debian-stable apt repository](#).

### 3. Install Jenkins

```

sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc \
  https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc]" \
  https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
  /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins

```

```

ubuntu@ip-172-31-11-116:~$ 
ubuntu@ip-172-31-11-116:~$ sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc \
  https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc] \
  https://pkg.jenkins.io/debian-stable binary/" | sudo tee \
  /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
--2025-06-22 00:23:53-- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.78.133, 2a04:4e42:83::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|146.75.78.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3175 (3.1K) [application/pgp-keys]
Saving to: '/etc/apt/keyrings/jenkins-keyring.asc'

/etc/apt/keyrings/jenkins-keyring.asc    100%[=====] 1.00M/s
```

#### 4. Start and verify Jenkins

```

sudo systemctl enable jenkins
sudo systemctl start jenkins
```

#### 5. Verify Jenkins

```
sudo systemctl status jenkins
```

#### 6. Open Jenkins server in browser (also make sure edit inbound rules and add 8080 in Security group)

a) <http://public-ip:8080/>

#### 7. Copy Jenkins admin password

```
/var/lib/jenkins/secrets/initialAdminPassword
```

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-11-116:~$ sudo systemctl enable jenkins
      sudo systemctl start jenkins
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
ubuntu@ip-172-31-11-116:~$
```

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-11-116:~$ sudo systemctl enable jenkins
      sudo systemctl start jenkins
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
ubuntu@ip-172-31-11-116:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
  Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
  Active: active (running) since Sun 2025-06-22 00:25:42 UTC; 1min 51s ago
    Main PID: 4546 (java)
       Tasks: 43 (limit: 4670)
      Memory: 587.5M (peak: 602.7M)
        CPU: 18.996s
       CGroup: /system.slice/jenkins.service
              └─4546 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war -
```

Make sure 8080 is enabled in the Security group

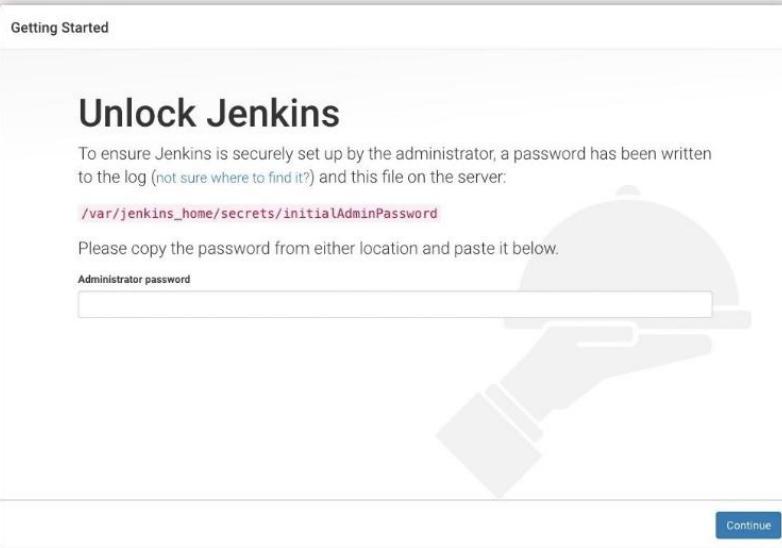
i-0abe9191466188c59 (Jenkins-server)				
<input type="text"/> Filter rules				
Name	Security group rule ID	Port range	Protocol	Source
-	sgr-026f70f6a193850f3	9090	TCP	0.0.0.0/0
-	sgr-0cbd813f092e2b88e	8080	TCP	0.0.0.0/0
-	sgr-0169ad192fb265f97	8484	TCP	0.0.0.0/0
-	sgr-01adffa81382cb320	3389	TCP	0.0.0.0/0

Scroll down copy the command

## Unlocking Jenkins

When you first access a new Jenkins controller, you are asked to unlock it using an automatically-generated password.

1. Browse to <http://localhost:8080> (or whichever port you configured for Jenkins when installing it) and wait until the **Unlock Jenkins** page appears.



2. From the Jenkins console log output, copy the automatically-generated alphanumeric password (between the 2 sets of asterisks).

The command: `sudo cat /var/lib/jenkins/secrets/initialAdminPassword`

```
ubuntu@ip-172-31-11-116:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
cat: /var/lib/jenkins/secrets/initialAdminPassword : No such file or directory
```

```
ubuntu@ip-172-31-11-116:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
XXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

<input type="checkbox"/> EKS-host	i-01289fc5ca918b25f	<input type="checkbox"/> Stopped		t2.micro	-	<a href="#">View alarms +</a>	ca-c
<input checked="" type="checkbox"/> Jenkins-server	i-0abe9191466188c59	<input checked="" type="checkbox"/> Running		t2.medium	<input type="checkbox"/> Initializing	<a href="#">View alarms +</a>	ca-c

### i-0abe9191466188c59 (Jenkins-server)

Details	Status and alarms	Monitoring	Security	Networking	Storage	Tags
<b>Instance summary</b> <a href="#">Info</a>						
Instance ID	i-0abe9191466188c59			Public IPv4 address copied		
IPv6 address	-			Public IPv4 address	35.183.77.174   <a href="#">open address</a>	
Instance state						

<http://35.183.77.174:8080/login?from=%2F>

The screenshot shows the Jenkins 'Getting Started' page. At the top, there is a header bar with various icons and links. Below the header, a section titled 'Unlock Jenkins' contains instructions for finding the initial admin password from the log or server file. It includes a code snippet for the file path: `/var/lib/jenkins/secrets/initialAdminPassword`. A text input field labeled 'Administrator password' is provided for pasting the copied password.

Copy paste password: XXXXXXXXXXXXXXXXXXXXXXXX

Select Install Plugins

Click Install button in User Management and Security

The screenshot shows the Jenkins 'Getting Started' page with a table titled 'Install Plugins'. The table lists various Jenkins plugins categorized into groups like Folders, Pipeline, Git, and LDAP. Each plugin has a corresponding icon and a link to its documentation. The table is scrollable, indicated by a blue progress bar at the bottom.

✓ Folders	✓ OWASP Markup Formatter	✓ Build Timeout	✓ Credentials Binding	** Ionicons API Folders OWASP Markup Formatter ** ASM API ** JSON Path API ** Structs ** Pipeline: Step API ** Token Macro Build Timeout ** bouncycastle API ** Credentials ** Plain Credentials ** Variant ** SSH Credentials Credentials Binding ** SCM API
⌚ Timestamper	⌚ Workspace Cleanup	⌚ Ant	⌚ Gradle	
⌚ Pipeline	⌚ GitHub Branch Source	⌚ Pipeline: GitHub Groovy Libraries	⌚ Pipeline Graph View	
⌚ Git	⌚ SSH Build Agents	⌚ Matrix Authorization Strategy	⌚ PAM Authentication	
⌚ LDAP	⌚ Email Extension	⌚ Mailer	⌚ Dark Theme	

## Create First Admin User

Username

Password

Confirm password

Jenkins URL: <http://35.183.77.174:8080/>

Click Save and Finish

Getting Started

# Jenkins is ready!

Your Jenkins setup is complete.

[Start using Jenkins](#)

[Start using Jenkins](#)

[Click Logout](#)

# Sign in to Jenkins

Username

Password

Keep me signed in

**Sign in**

## Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

[Start building your software project](#)

[Create a job](#)



[Set up a distributed build](#)

[Set up an agent](#)



[Configure a cloud](#)



[Learn more about distributed builds](#)



### What's Jobs in Jenkins?

It refers to set of steps that are assigned to Jenkins to perform task

-> Taking code from Repo such as GitHub

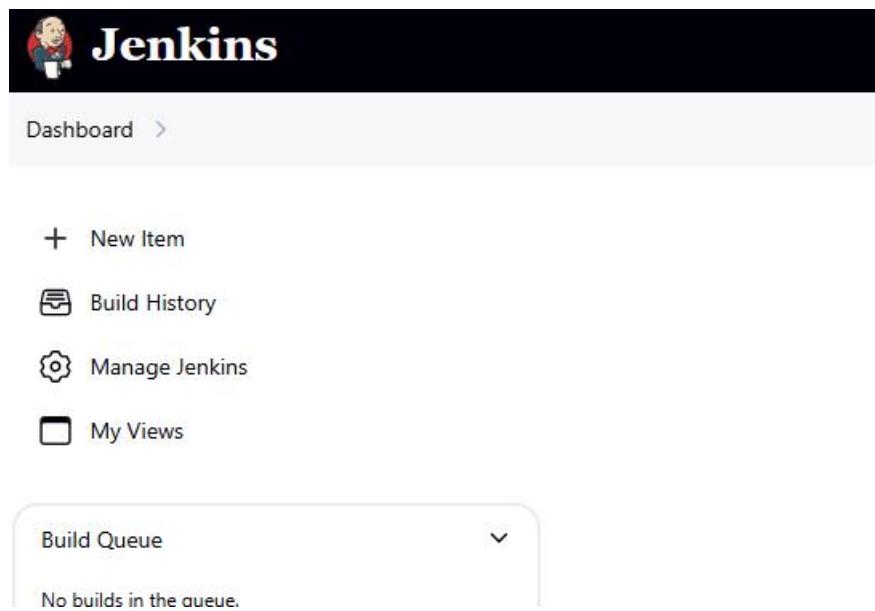
-> Perform Maven build

-> Build Docker image

-> Deploy app/docker image in K8s cluster

### Creating First Job

- > Go to Jenkins dashboard
- > Click on New Item -> Enter the Name -> Select Freestyle -> Enter some description --> add build step -> select execute shell -> enter shell script -> echo "Demo First Job" -> touch alien.txt -> echo "Demo first job completed"
- > Apply and Save
- See the job in Dashboard and click that job --> Build now --> Console output to see the job execution details
- > cd /var/lib/jenkins/workspace/DemoFirstJob



Click on New Item

## New Item

Enter an item name

DemoFirstJob

Select an item type



### Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes steps like archiving artifacts and sending email notifications.



### Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for complex workflows (parallel or sequential) and/or organizing complex activities that do not easily fit in free-style projects.



### Multi-configuration project

Suitable for projects that need a large number of different configurations, such as building for multiple platforms, or platform-specific builds, etc.



### Folder

Creates a container that stores nested items in it. Useful for grouping things together. A folder creates a separate namespace, so you can have multiple things of the same name in different folders.



### Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.



### Organization Folder

Creates a set of multibranch project subfolders by scanning for repositories.

OK

Click on Freestyle project then Ok

In Build steps click Execute shell

- Add timestamps to the Console Output
- Inspect build log for published build scans
- Terminate a build if it's stuck
- With Ant ?

## Build Steps

Automate your build process with ordered tasks like code compilation,

Add build step ^

Filter

- Execute Windows batch command
- Execute shell
- Invoke Ant
- Invoke Gradle script
- Invoke top-level Maven targets
- Run with timeout
- Set build status to "pending" on GitHub commit

sending notifications

## Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

≡ Execute shell ?

Command

See [the list of available environment variables](#)

```
echo "demo Jenkins first job"  
touch alien.txt  
echo "Demo first job completed"
```

Advanced ▾

Save

Apply

```
echo "demo Jenkins first job"  
touch alien.txt  
echo "Demo first job completed"
```

Click Apply then Save

The screenshot shows a Jenkins job configuration page. At the top, there's a breadcrumb navigation: 'Dashboard > DemoFirstJob >'. Below this is a header with tabs: 'Status' (selected), 'Changes', 'Workspace', and 'Build Now'. The 'Status' tab contains the job name 'DemoFirstJob' and a description 'This is a trial job'. To the right of the status bar, there's a 'Permalinks' section. On the left side of the main content area, there are several buttons: 'Configure', 'Delete Project', and 'Rename'. A horizontal ellipsis '...' is located at the bottom of the sidebar. The main content area has a light gray background.

Click on Build Now

This screenshot shows the same Jenkins job configuration page as above, but with the 'Build Now' button highlighted. The 'Build Now' button is located in the sidebar under the 'Actions' section. The rest of the interface remains the same, with the 'Status' tab selected and the job details visible.

Click Build Now

In the Dashboard we have this

Dashboard >

+ New Item

Build History All +

Manage Jenkins

My Views

Build Queue ▾  
No builds in the queue.

Build Executor Status 0/2 ▾  
Icon: S M L

S	W	Name ↓	Last Success
✓	☀	DemoFirstJob	1 min 11 sec #2

Click on the + button

All +

Build Queue ▾  
No builds in the queue.

Build Executor Status 0/2 ▾  
Icon: S M L

S	W	Name ↓	Last Success
✓	☀	DemoFirstJob	2 min 47 sec #2

NewView > Edit View

## Edit View

### Name

### Description

Describe the purpose of this view.

▼

▼

Plain text [Preview](#)

### Jobs

Select the jobs to show in this view.

- Recurse in subfolders
- DemoFirstJob
- Use a regular expression to include jobs into the view [?](#)

### Filters

Filter the jobs that show in this view based on specific conditions.

[Save](#)

[Apply](#)

We can add new Columns also  
This is the default view: shows columns Name, Last Success, Last Failure, Last Duration

shboard >

New Item	All	+	
Build History			
Manage Jenkins			
My Views			
Build Queue	0 builds in the queue.	Icon: S M L	0/2
Build Executor Status			

Icon: S M L

S	W	Name	Last Success	Last Failure	Last Duration
Green circle	Sun icon	DemoFirstJob	5 min 6 sec #2	N/A	18 ms

Once you click Build Now



# Jenkins

Dashboard > DemoFirstJob > #3

Status #3 (Jun 22, 2025, 1:33:49 AM)

</> Changes

Console Output Started by user demo

Edit Build Information

This run spent:

- 4 ms waiting;
- 15 ms build duration;
- 19 ms total from scheduled to completion.

Delete build '#3'

Timings

Previous Build

</> No changes.

### Click on Console Output

Dashboard > DemoFirstJob > #3 > Console Output

Status Console Output

</> Changes

Console Output Started by user demo

Edit Build Information

Running as SYSTEM

Delete build '#3'

Building in workspace /var/lib/jenkins/workspace/DemoFirstJob

Timings

Previous Build

```
[DemoFirstJob] $ /bin/sh -xe /tmp/jenkins13814951831593322416.sh
+ echo demo Jenkins first job
demo Jenkins first job
+ touch alien.txt
+ echo Demo first job completed
Demo first job completed
Finished: SUCCESS
```

We can see Demo first job completed  
The file is also created in this workspace

Building in workspace /var/lib/jenkins/workspace/DemoFirstJob

Copy paste this location  
ubuntu@ip-172-31-11-116:~\$ ls -l /var/lib/jenkins/workspace/DemoFirstJob  
total 0  
-rw-r--r-- 1 jenkins jenkins 0 Jun 22 01:33 alien.txt

```

ubuntu@ip-172-31-11-116:~$ ls -l /var/lib/jenkins/workspace/DemoFirstJob
total 0
-rw-r--r-- 1 jenkins jenkins 0 Jun 22 01:33 alien.txt
ubuntu@ip-172-31-11-116:~$ 

```

Jenkins job with GitHub repo + Maven

Jenkins job with GitHub repo + Maven + Tomcat server

Jenkins job with GitHub Repo + Maven

1. Install Git client in Jenkins server (a Linux VM where Jenkins is installed)

2. Configuring Maven tool (Jenkins dashboard -> Manage Jenkins -> Tools -> Add Maven

3. Create a Jenkins job

- a) New item : enter name -> select freestyle job -> enter description -> Select Git (source code management)
- b) Enter the GitHub project link (<https://github.com/Haider7214/SpringApp.git>) -> Build steps -> Invoke top level Maven target

Maven Version

Goals

clean compile test package

--> apply and save

--> Jenkins Dashboard --> Get into job --> build now --> Jenkins home directory : cd /var/lib/Jenkins/workspace

Verify the target folder within the job and you can notice war file is created

`sudo apt install git -y`

Click on Manage Jenkins

## Maven installations

Add Maven

**Maven**

Name

! Required

Install automatically [?](#)

**Install from Apache**

Version

Add Installer [▼](#)

Add Maven

[Save](#) [Apply](#)



Dashboard > All >

+ New Item

Build History

All

Manage Jenkins

My Views

S



Build Queue

No builds in the queue.

## New Item

Enter an item name

Maven-git-job

Select an item type



Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different

Dashboard > Maven-git-job > Configuration

## Configure

### General

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Description

This is Maven GitHub repository project

Plain text [Preview](#)

Discard old builds ?

GitHub project

Project url ?

<https://github.com/Haider7214/spring-boot-mysql.git>

[Advanced](#) ▾

This project is parameterized ?

Git ?

Repositories ?

Repository URL ?

`https://github.com/Haider7214/spring-boot-mysql.git`

Credentials ?

- none -

+ Add

Advanced ▾

Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ?

`*/main`

Add Branch

Repository browser ?

(Auto)

## Build Steps

Automate your build process with ordered tasks like code compilation,

Add build step ^

Filter

- Execute Windows batch command
- Execute shell
- Invoke Ant
- Invoke Gradle script
- Invoke top-level Maven targets
- Run with timeout
- Set build status to "pending" on GitHub commit

sending notification:

## Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

≡ **Invoke top-level Maven targets** ?

Maven Version

(Default)

Goals

Advanced ▾

Add build step ▾

## Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.

Add post-build action ▾

## Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

≡ **Invoke top-level Maven targets** ?

Maven Version

(Default)

Goals

clean package

Advanced ▾

Add build step ▾

---

Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other

Add post-build action ▾

**Save**   **Apply**

Click Apply and Save

The screenshot shows the Jenkins dashboard. At the top, there's a navigation bar with a Jenkins logo and the word "Jenkins". Below it is a header bar with "Dashboard" and a back arrow. On the left, there are several links: "New Item", "Build History", "Manage Jenkins", and "My Views". A "Build Queue" section shows "No builds in the queue.". Below that is a "Build Executor Status" section showing "0/2". To the right, there's a list of jobs: "DemoFirstJob" (status green, icon checkmark) and "Maven-git-job" (status yellow, icon sun). There are buttons for "All" and "+" at the top of this list, and icons for "S", "W", and "Name" sorting below it. A legend at the bottom indicates that "Icon: S" is green, "M" is yellow, and "L" is blue.

```
ubuntu@ip-172-31-11-116:~$ cd /var/lib/jenkins/workspace/
ubuntu@ip-172-31-11-116:/var/lib/jenkins/workspace$ ls
DemoFirstJob
```

Only one job we executed that's present here  
1:30

We click Build Now and it failed

 Status

 Changes

 Workspace

 Build Now

 Configure

 Delete Project

 GitHub

 Rename

## Maven-git-job

This is Maven GitHub repository project

### Permalinks

 Builds

... ▾

No builds

Today

 #1 4:32 AM

▼

```
sudo systemctl enable jenkins  
sudo systemctl start jenkins
```

<http://3.99.132.101:8080/login?from=%2Fjob%2FMaven-git-job%2F>

Console output

```

First time build. Skipping changelog.
[Maven-git-job] $ mvn clean package
FATAL: command execution failed
java.io.IOException: error=2, No such file or directory
        at java.base/java.lang.ProcessImpl.forkAndExec(Native Method)
        at java.base/java.lang.ProcessImpl.<init>(ProcessImpl.java:295)
        at java.base/java.lang.ProcessImpl.start(ProcessImpl.java:225)
        at java.base/java.lang.ProcessBuilder.start(ProcessBuilder.java:1126)
Caused: java.io.IOException: Cannot run program "mvn" (in directory "/var/lib/jenkins/workspace/Maven-git-job"): e
        at java.base/java.lang.ProcessBuilder.start(ProcessBuilder.java:1170)
        at java.base/java.lang.ProcessBuilder.start(ProcessBuilder.java:1089)
        at hudson.Proc$LocalProc.<init>(Proc.java:252)
        at hudson.Proc$LocalProc.<init>(Proc.java:221)
        at hudson.Launcher$LocalLauncher.launch(Launcher.java:995)
        at hudson.Launcher$ProcStarter.start(Launcher.java:507)
        at hudson.Launcher$ProcStarter.join(Launcher.java:518)
        at hudson.tasks.Maven.perform(Maven.java:369)
        at hudson.tasks.BuildStepMonitor$1.perform(BuildStepMonitor.java:20)
        at hudson.model.AbstractBuild$AbstractBuildExecution.perform(AbstractBuild.java:818)
        at hudson.model.AbstractBuild$AbstractBuildExecution.build(AbstractBuild.java:199)
        at hudson.model.AbstractBuild$AbstractBuildExecution.doRun(AbstractBuild.java:164)
        at hudson.model.Run.execute(Run.java:1840)
        at hudson.model.FreeStyleBuild.run(FreeStyleBuild.java:44)
        at hudson.model.ResourceController.execute(ResourceController.java:101)
        at hudson.model.Executor.run(Executor.java:446)
Build step 'Invoke top-level Maven targets' marked build as failure
Finished: FAILURE

```

Click Configure



# Jenkins

Dashboard > Maven-git-job > Configuration

## Configure

## General



General

Description



Source Code Management

This is Maven GitHub repository project



Triggers



Environment

Plain text [Preview](#)



Build Steps

Discard old builds [?](#)



Post-build Actions

GitHub project

Project url [?](#)

<https://github.com/Haider7214/spring-boot-mysql.git/>

<http://3.99.132.101:8080/manage/configureTools/>

## Maven installations

Maven installations ^  Edited

Add Maven

### ≡ Maven

Name

Maven

Install automatically ?

### ≡ Install from Apache

Version

3.9.10

Add Installer ▾

Add Maven

Save

Apply

## Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

### ≡ Invoke top-level Maven targets ?

Maven Version

(Default)

Goals

clean compile test package

Advanced ▾

Add build step ▾

## Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering downstream builds.

Add post-build action ▾

Save

Apply

## Build Steps

Automate your build process with ordered tasks like code compilation, testing

### ☰ Invoke top-level Maven targets ?

Maven Version

Maven

Goals

clean compile test package

Advanced ▾

Add build step ▾

## Post-build Actions

Define what happens after a build completes, like sending notifications, archiv

Add post-build action ▾

I am changing the git repo

<https://github.com/Haider7214/SpringApp.git>

Discard old builds ?

GitHub project

Project url ?

<https://github.com/Haider7214/SpringApp.git>

Advanced ▾

This project is parameterized ?

Throttle builds ?

Execute concurrent builds if necessary ?

Advanced ▾

This time it succeeded. Click Build Now

█ Status

</> Changes

📁 Workspace

▶ Build Now

⚙️ Configure

🗑️ Delete Project

👤 GitHub

✍️ Rename

## ✖️ Maven-git-job

This is Maven GitHub repository project

### Permalinks

- Last build (#5), 5 min 6 sec ago
- Last failed build (#5), 5 min 6 sec ago
- Last unsuccessful build (#5), 5 min 6 sec ago
- Last completed build (#5), 5 min 6 sec ago

Builds	...
<div style="display: flex; align-items: center;"> <span style="font-size: 1.5em; margin-right: 10px;">🔍</span> <input style="border: 1px solid #ccc; width: 150px; height: 25px; border-radius: 10px; padding: 5px; margin-right: 10px;" type="text"/> <span style="border: 1px solid #ccc; padding: 0 5px; border-radius: 10px; font-size: 1.2em;">/</span> </div> <p style="margin-top: 10px;">Today</p> <ul style="list-style-type: none"> <li><span style="color: green;">✓</span> #6 2:37 PM</li> <li><span style="color: red;">✖️</span> #5 2:31 PM</li> <li><span style="color: red;">✖️</span> #4 2:25 PM</li> <li><span style="color: red;">✖️</span> #3 2:19 PM</li> <li><span style="color: red;">✖️</span> #2 2:16 PM</li> <li><span style="color: red;">✖️</span> #1 4:32 AM</li> </ul>	

### Click on Console Output

```

Progress (1): 1.9 MB

Downloaded from central: https://repo.maven.apache.org/maven2/net/java/dev/jna/jna/5.13.0/jna-5.13.0.jar (1.9 MB at 1.1 MB/s)
[INFO] Replacing main artifact /var/lib/jenkins/workspace/Maven-git-job/target/FirstSpringWebApp-0.0.1-SNAPSHOT.war with repackaged archive, adding nested dependencies in BOOT-INF/.
[INFO] The original artifact has been renamed to /var/lib/jenkins/workspace/Maven-git-job/target/FirstSpringWebApp-0.0.1-SNAPSHOT.war.original
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 35.451 s
[INFO] Finished at: 2025-06-22T14:38:11Z
[INFO] -----
Finished: SUCCESS

```

See a war file is created

```
ubuntu@ip-172-31-11-116:~$ cd /var/lib/jenkins/workspace/Maven-git-job/target/
```

```

ubuntu@ip-172-31-11-116:~$ 
ubuntu@ip-172-31-11-116:~$ cd /var/lib/jenkins/workspace/Maven-git-job/target/
ubuntu@ip-172-31-11-116:/var/lib/jenkins/workspace/Maven-git-job/target$ ls -l
total 51916
drwxr-xr-x 5 jenkins jenkins 4096 Jun 22 14:38 FirstSpringWebApp-0.0.1-SNAPSHOT
-rw-r--r-- 1 jenkins jenkins 28070167 Jun 22 14:38 FirstSpringWebApp-0.0.1-SNAPSHOT.war
-rw-r--r-- 1 jenkins jenkins 25051845 Jun 22 14:38 FirstSpringWebApp-0.0.1-SNAPSHOT.war.original
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 14:37 classes
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 14:37 generated-sources
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 14:37 generated-test-sources
drwxr-xr-x 2 jenkins jenkins 4096 Jun 22 14:38 maven-archiver
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 14:37 maven-status
drwxr-xr-x 2 jenkins jenkins 4096 Jun 22 14:37 surefire-reports
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 14:37 test-classes
ubuntu@ip-172-31-11-116:/var/lib/jenkins/workspace/Maven-git-job/target$ 

```

Task 3:

Create Jenkins job Git repo + Maven + Tomcat server

Installing Tomcat into Linux server is one extra step

-> create new VM on EC2 --> Get connected to that Linux VM

-> Install Java

sudo apt update

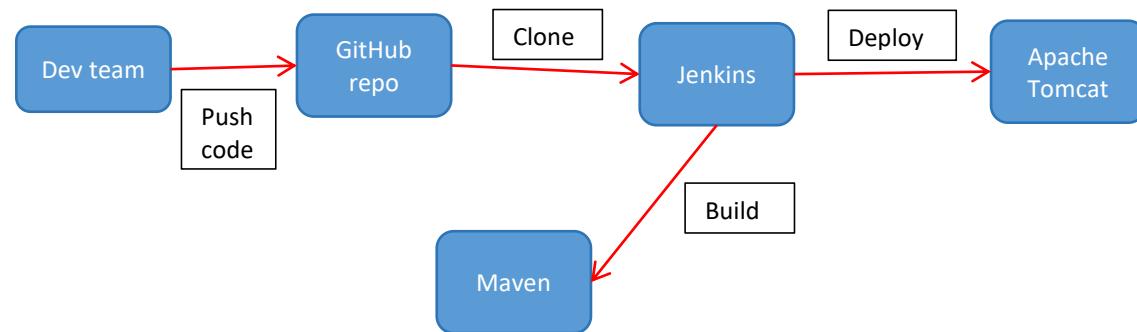
sudo apt install openjdk-21-jdk

--> Install Tomcat

```
$ wget https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.8/bin/apache-tomcat-11.0.8.tar.gz
```

Dev team -> Push code into --> GitHub repo --> Jenkins

Jenkins should clone with project



For Tomcat go to

<https://tomcat.apache.org/download-11.cgi>

You are currently using <https://dlcdn.apache.org/>. If you encounter a problem

Other mirrors: <https://dlcdn.apache.org/> ▾ [Change](#)

11.0.8

Please see the [README](#) file for packaging information. It explains what every

[Binary Distributions](#)

- Core:
  - [zip \(pgp, sha512\)](#)
  - [tar.gz \(pgp, sha512\)](#)
  - [Windows zip \(pgp, sha512\)](#)
  - [Windows Service Installer \(pgp, sha512\)](#)
- Full documentation:
  - [tar.gz \(pgp, sha512\)](#)
- Deployer:
  - [zip \(pgp, sha512\)](#)
  - [tar.gz \(pgp, sha512\)](#)
- Embedded:
  - [tar.gz \(pgp, sha512\)](#)

Copy tar link address

<https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.8/bin/apache-tomcat-11.0.8.tar.gz>

```
ubuntu@ip-172-31-11-116:/var/lib/jenkins/workspace/Maven-git-job/target$ wget
```

```
https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.8/bin/apache-tomcat-11.0.8.tar.gz
```

```
ubuntu@ip-172-31-11-116:~$  
ubuntu@ip-172-31-11-116:~$ wget https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.8/bin/apache-tomcat-11.0.8.tar.gz  
--2025-06-22 16:30:33-- https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.8/bin/apache-tomcat-11.0.8.tar.gz  
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644  
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 14097830 (13M) [application/x-gzip]  
Saving to: 'apache-tomcat-11.0.8.tar.gz'  
  
apache-tomcat-11.0.8.tar.gz          100%[=====] 2025-06-22 16:30:49 (943 KB/s) - 'apache-tomcat-11.0.8.tar.gz' saved [14097830/14097830]  
  
ubuntu@ip-172-31-11-116:~$ ls -l  
total 13768  
-rw-rw-r-- 1 ubuntu ubuntu 14097830 Jun  5 18:36 apache-tomcat-11.0.8.tar.gz  
ubuntu@ip-172-31-11-116:~$
```

```
ubuntu@ip-172-31-11-116:~$ tar -xvf apache-tomcat-11.0.8.tar.gz
```

```
startup.sh for Linux and startup.bat for Windows  
apache-tomcat-11.0.8/webapps/manager/xhtml.xls  
apache-tomcat-11.0.8/bin/catalina.sh  
apache-tomcat-11.0.8/bin/ciphers.sh  
apache-tomcat-11.0.8/bin/configtest.sh  
apache-tomcat-11.0.8/bin/daemon.sh  
apache-tomcat-11.0.8/bin/digest.sh  
apache-tomcat-11.0.8/bin/makebase.sh  
apache-tomcat-11.0.8/bin/migrate.sh  
apache-tomcat-11.0.8/bin/setclasspath.sh  
apache-tomcat-11.0.8/bin/shutdown.sh  
apache-tomcat-11.0.8/bin/startup.sh  
apache-tomcat-11.0.8/bin/tool-wrapper.sh  
apache-tomcat-11.0.8/bin/version.sh  
ubuntu@ip-172-31-11-116:~$  
ubuntu@ip-172-31-11-116:~$
```

```
total 13772  
drwxrwxr-x 9 ubuntu ubuntu 4096 Jun 22 16:31 apache-tomcat-11.0.8  
-rw-rw-r-- 1 ubuntu ubuntu 14097830 Jun  5 18:36 apache-tomcat-11.0.8.tar.gz  
ubuntu@ip-172-31-11-116:~$  
ubuntu@ip-172-31-11-116:~$  
ubuntu@ip-172-31-11-116:~$ cd apache-tomcat-11.0.8/  
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8$ ls -l  
total 152  
-rw-r----- 1 ubuntu ubuntu 24262 Jun  5 17:49 BUILDING.txt  
-rw-r----- 1 ubuntu ubuntu 6166 Jun  5 17:49 CONTRIBUTING.md  
-rw-r----- 1 ubuntu ubuntu 60517 Jun  5 17:49 LICENSE  
-rw-r----- 1 ubuntu ubuntu 2333 Jun  5 17:49 NOTICE  
-rw-r----- 1 ubuntu ubuntu 3291 Jun  5 17:49 README.md  
-rw-r----- 1 ubuntu ubuntu 6469 Jun  5 17:49 RELEASE-NOTES  
-rw-r----- 1 ubuntu ubuntu 16109 Jun  5 17:49 RUNNING.txt  
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 bin  
drwxr-x--- 2 ubuntu ubuntu 4096 Jun  5 17:49 conf  
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 lib  
drwxr-x--- 2 ubuntu ubuntu 4096 Jun  5 17:49 logs  
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 temp  
drwxr-x--- 7 ubuntu ubuntu 4096 Jun  5 17:49 webapps  
drwxr-x--- 2 ubuntu ubuntu 4096 Jun  5 17:49 work  
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8$
```

```

drwxr-x--- 8 ubuntu ubuntu 4096 Jun 22 16:31 manager
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/webapps$ cd manager/
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/webapps/manager$ ls -l
total 36
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 META-INF
drwxr-x--- 3 ubuntu ubuntu 4096 Jun 22 16:31 WEB-INF
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 css
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 images
-rw-r---- 1 ubuntu ubuntu 913 Jun 5 17:49 index.jsp
-rw-r---- 1 ubuntu ubuntu 4374 Jun 5 17:49 status.xsd
-rw-r---- 1 ubuntu ubuntu 4709 Jun 5 17:49 xform.xsl
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/webapps/manager$ cd WEB-INF/
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/webapps/manager/WEB-INF$ cd ..
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/webapps/manager$ cd META-INF/
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/webapps/manager/META-INF$ ls -l
total 4
-rw-r---- 1 ubuntu ubuntu 1376 Jun 5 17:49 context.xml
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/webapps/manager/META-INF$ █

```

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

-->
<Context antiResourceLocking="false" privileged="true" ignoreAnnotations="true">
    <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
        sameSiteCookies="strict" />
    <Valve className="org.apache.catalina.valves.RemoteAddrValve"
        allow="127\\.\\d+\\.\\d+\\.\\d+|::1|0:0:0:0:0:0:1" />
    <Manager sessionAttributeValueClassNameFilter="java\\.lang\\.\\{Boolean|Integer|Long|Number
ache(?:\$1)?|java\\.util\\.\\{Linked}\\?HashMap"/>
</Context>

    <!--
    -->
<Context antiResourceLocking="false" privileged="true" ignoreAnnotations="true">
    <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
        sameSiteCookies="strict" />
    <Valve className="org.apache.catalina.valves.RemoteAddrValve"
        allow=".\\*\" />
    <Manager sessionAttributeValueClassNameFilter="java\\.lang\\.\\{Boolean|Integer|Long|Number
ache(?:\$1)?|java\\.util\\.\\{Linked}\\?HashMap"/>
</Context>
~>

```

Change to “.\*”

```

ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8$ ls -l
total 152
-rw-r---- 1 ubuntu ubuntu 24262 Jun 5 17:49 BUILDING.txt
-rw-r---- 1 ubuntu ubuntu 6166 Jun 5 17:49 CONTRIBUTING.md
-rw-r---- 1 ubuntu ubuntu 60517 Jun 5 17:49 LICENSE
-rw-r---- 1 ubuntu ubuntu 2333 Jun 5 17:49 NOTICE
-rw-r---- 1 ubuntu ubuntu 3291 Jun 5 17:49 README.md
-rw-r---- 1 ubuntu ubuntu 6469 Jun 5 17:49 RELEASE-NOTES
-rw-r---- 1 ubuntu ubuntu 16109 Jun 5 17:49 RUNNING.txt
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 bin
drwx----- 2 ubuntu ubuntu 4096 Jun 5 17:49 conf
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 lib
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 5 17:49 logs
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 22 16:31 temp
drwxr-x--- 7 ubuntu ubuntu 4096 Jun 5 17:49 webapps
drwxr-x--- 2 ubuntu ubuntu 4096 Jun 5 17:49 work
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8$ 
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8$ 
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8$ cd conf

```

```
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/conf$ ls -l
total 212
-rw----- 1 ubuntu ubuntu 6636 Jun  5 17:49 catalina.properties
-rw----- 1 ubuntu ubuntu 1411 Jun  5 17:49 context.xml
-rw----- 1 ubuntu ubuntu 1149 Jun  5 17:49 jaspic-providers.xml
-rw----- 1 ubuntu ubuntu 2313 Jun  5 17:49 jaspic-providers.xsd
-rw----- 1 ubuntu ubuntu 4003 Jun  5 17:49 logging.properties
-rw----- 1 ubuntu ubuntu 6905 Jun  5 17:49 server.xml
-rw----- 1 ubuntu ubuntu 2756 Jun  5 17:49 tomcat-users.xml
-rw----- 1 ubuntu ubuntu 2558 Jun  5 17:49 tomcat-users.xsd
-rw----- 1 ubuntu ubuntu 172995 Jun  5 17:49 web.xml
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/conf$ vi tomcat-users.xml
```

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

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

```
them. You will also need to set the passwords to something appropriate.  
-->  
<!--  
<role rolename="tomcat"/>  
<role rolename="role1"/>  
<user username="tomcat" password="" roles="tomcat"/>  
<user username="both" password="" roles="tomcat,role1"/>  
<user username="role1" password="" roles="role1"/>  
-->  
  
<role rolename="manager-gui"/>  
<role rolename="manager-script"/>  
<role rolename="admin-gui"/>  
  
<user username="tomcat" password="tomcat" roles="manager-gui"/>  
<user username="admin" password="admin" roles="manager-script, admin-gui"/>  
  
</tomcat-users>  
~
```

```
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/conf$ cd ..  
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8$ cd bin/
```

Lets launch a new EC2 instance for Tomcat-server due to some port availability issue  
t2.medium is not needed

```
wget https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.8/bin/apache-tomcat-11.0.8.tar.gz
```

```
[ec2-user@ip-172-31-13-80 ~]$ wget https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.8/bin/apache-tomcat-11.0.8.tar.gz
```

```
[ec2-user@ip-172-31-13-80 ~]$ tar -xvf apache-tomcat-11.0.8.tar.gz
```

```
[ec2-user@ip-172-31-13-80 ~]$  
[ec2-user@ip-172-31-13-80 ~]$ cd apache-tomcat-11.0.8/  
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ ls -l  
total 172  
-rw-r----- 1 ec2-user ec2-user 24262 Jun  5 17:49 BUILDING.txt  
-rw-r----- 1 ec2-user ec2-user  6166 Jun  5 17:49 CONTRIBUTING.md  
-rw-r----- 1 ec2-user ec2-user 60517 Jun  5 17:49 LICENSE  
-rw-r----- 1 ec2-user ec2-user  2333 Jun  5 17:49 NOTICE  
-rw-r----- 1 ec2-user ec2-user  3291 Jun  5 17:49 README.md  
-rw-r----- 1 ec2-user ec2-user  6469 Jun  5 17:49 RELEASE-NOTES  
-rw-r----- 1 ec2-user ec2-user 16109 Jun  5 17:49 RUNNING.txt  
drwxr-x--- 2 ec2-user ec2-user 16384 Jun 22 18:30 bin  
drwxr-x--- 2 ec2-user ec2-user 16384 Jun  5 17:49 conf  
drwxr-x--- 2 ec2-user ec2-user 16384 Jun 22 18:30 lib  
drwxr-x--- 2 ec2-user ec2-user     6 Jun  5 17:49 logs  
drwxr-x--- 2 ec2-user ec2-user    30 Jun 22 18:30 temp  
drwxr-x--- 7 ec2-user ec2-user   81 Jun  5 17:49 webapps  
drwxr-x--- 2 ec2-user ec2-user     6 Jun  5 17:49 work  
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ cd webapps/  
[ec2-user@ip-172-31-13-80 webapps]$ ls -l  
total 32  
drwxr-x---  3 ec2-user ec2-user 16384 Jun 22 18:30 ROOT  
drwxr-x--- 16 ec2-user ec2-user 16384 Jun 22 18:30 docs  
drwxr-x---  7 ec2-user ec2-user    99 Jun 22 18:30 examples  
drwxr-x---  6 ec2-user ec2-user    79 Jun 22 18:30 host-manager  
drwxr-x---  6 ec2-user ec2-user   114 Jun 22 18:30 manager  
[ec2-user@ip-172-31-13-80 webapps]$ cd ..  
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ ls -l  
total 172  
-rw-r----- 1 ec2-user ec2-user 24262 Jun  5 17:49 BUILDING.txt  
-rw-r----- 1 ec2-user ec2-user  6166 Jun  5 17:49 CONTRIBUTING.md  
-rw-r----- 1 ec2-user ec2-user 60517 Jun  5 17:49 LICENSE  
-rw-r----- 1 ec2-user ec2-user  2333 Jun  5 17:49 NOTICE  
-rw-r----- 1 ec2-user ec2-user  3291 Jun  5 17:49 README.md  
-rw-r----- 1 ec2-user ec2-user  6469 Jun  5 17:49 RELEASE-NOTES  
-rw-r----- 1 ec2-user ec2-user 16109 Jun  5 17:49 RUNNING.txt  
drwxr-x--- 2 ec2-user ec2-user 16384 Jun 22 18:30 bin  
drwxr-x--- 2 ec2-user ec2-user 16384 Jun 22 18:30 conf  
drwxr-x--- 2 ec2-user ec2-user    6 Jun  5 17:49 lib  
drwxr-x--- 2 ec2-user ec2-user     6 Jun  5 17:49 logs
```

```
[ec2-user@ip-172-31-13-80 webapps]$ cd ..
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ ls -l
total 172
-rw-r-----. 1 ec2-user ec2-user 24262 Jun  5 17:49 BUILDING.txt
-rw-r-----. 1 ec2-user ec2-user  6166 Jun  5 17:49 CONTRIBUTING.md
-rw-r-----. 1 ec2-user ec2-user 60517 Jun  5 17:49 LICENSE
-rw-r-----. 1 ec2-user ec2-user 2333 Jun  5 17:49 NOTICE
-rw-r-----. 1 ec2-user ec2-user 3291 Jun  5 17:49 README.md
-rw-r-----. 1 ec2-user ec2-user 6469 Jun  5 17:49 RELEASE-NOTES
-rw-r-----. 1 ec2-user ec2-user 16109 Jun  5 17:49 RUNNING.txt
drwxr-x---. 2 ec2-user ec2-user 16384 Jun 22 18:30 bin
drwxr-----. 2 ec2-user ec2-user 16384 Jun  5 17:49 conf
drwxr-x---. 2 ec2-user ec2-user 16384 Jun 22 18:30 lib
drwxr-x---. 2 ec2-user ec2-user      6 Jun  5 17:49 logs
drwxr-x---. 2 ec2-user ec2-user     30 Jun 22 18:30 temp
drwxr-x---. 7 ec2-user ec2-user    81 Jun  5 17:49 webapps
drwxr-x---. 2 ec2-user ec2-user      6 Jun  5 17:49 work
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ cd webapps/
[ec2-user@ip-172-31-13-80 webapps]$ cd manager/
[ec2-user@ip-172-31-13-80 manager]$ ls -l
total 20
drwxr-x---. 2 ec2-user ec2-user    25 Jun 22 18:30 META-INF
drwxr-x---. 3 ec2-user ec2-user    32 Jun 22 18:30 WEB-INF
drwxr-x---. 2 ec2-user ec2-user    25 Jun 22 18:30 css
drwxr-x---. 2 ec2-user ec2-user    44 Jun 22 18:30 images
-rw-r-----. 1 ec2-user ec2-user   913 Jun  5 17:49 index.jsp
-rw-r-----. 1 ec2-user ec2-user  4374 Jun  5 17:49 status.xsd
-rw-r-----. 1 ec2-user ec2-user  4709 Jun  5 17:49 xform.xsl
[ec2-user@ip-172-31-13-80 manager]$ cd META-INF/
[ec2-user@ip-172-31-13-80 META-INF]$ ls -l
total 4
-rw-r-----. 1 ec2-user ec2-user 1376 Jun  5 17:49 context.xml
```

```
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

-->
<Context antiResourceLocking="false" privileged="true" ignoreAnnotations="true">
  <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
  <Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow="127\\.\\d+\\.\\d+\\.\\d+|::1|0:0:0:0:0:0:1" />
  <Manager sessionAttributeValueClassNameFilter="java\\.lang\\.\\{Boolean|Integer|Long|Number|String}\\|org\\.apache\\(?!\\$1\\)?\\|java\\.util\\(?!\\Linked)\\?HashMap\\\"/>
</Context>
~
~
~
~
```

```
 limitations under the License.

-->
<Context antiResourceLocking="false" privileged="true" ignoreAnnotations="true">
  <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
  <Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow=".\\*\\\" />
  <Manager sessionAttributeValueClassNameFilter="java\\.lang\\.\\{Boolean|Integer
  apache\\(?!\\$1\\)?\\|java\\.util\\(?!\\Linked)\\?HashMap\\\"/>
</Context>
~
```

```
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ cd conf
```

```
[ec2-user@ip-172-31-13-80 conf]$ ls -l
total 212
-rw----- 1 ec2-user ec2-user 6636 Jun  5 17:49 catalina.properties
-rw----- 1 ec2-user ec2-user 1411 Jun  5 17:49 context.xml
-rw----- 1 ec2-user ec2-user 1149 Jun  5 17:49 jaspic-providers.xml
-rw----- 1 ec2-user ec2-user 2313 Jun  5 17:49 jaspic-providers.xsd
-rw----- 1 ec2-user ec2-user 4003 Jun  5 17:49 logging.properties
-rw----- 1 ec2-user ec2-user 6905 Jun  5 17:49 server.xml
-rw----- 1 ec2-user ec2-user 2756 Jun  5 17:49 tomcat-users.xml
-rw----- 1 ec2-user ec2-user 2558 Jun  5 17:49 tomcat-users.xsd
-rw----- 1 ec2-user ec2-user 172995 Jun  5 17:49 web.xml
```

```
[ec2-user@ip-172-31-13-80 webapps]$
[ec2-user@ip-172-31-13-80 webapps]$
[ec2-user@ip-172-31-13-80 webapps]$ cd ..
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ cd conf
[ec2-user@ip-172-31-13-80 conf]$ ls -l
total 212
-rw----- 1 ec2-user ec2-user 6636 Jun  5 17:49 catalina.properties
-rw----- 1 ec2-user ec2-user 1411 Jun  5 17:49 context.xml
-rw----- 1 ec2-user ec2-user 1149 Jun  5 17:49 jaspic-providers.xml
-rw----- 1 ec2-user ec2-user 2313 Jun  5 17:49 jaspic-providers.xsd
-rw----- 1 ec2-user ec2-user 4003 Jun  5 17:49 logging.properties
-rw----- 1 ec2-user ec2-user 6905 Jun  5 17:49 server.xml
-rw----- 1 ec2-user ec2-user 2756 Jun  5 17:49 tomcat-users.xml
-rw----- 1 ec2-user ec2-user 2558 Jun  5 17:49 tomcat-users.xsd
-rw----- 1 ec2-user ec2-user 172995 Jun  5 17:49 web.xml
[ec2-user@ip-172-31-13-80 conf]$ █
```

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

<user username="tomcat" password="tomcat" roles="manager-gui"/>
<user username="admin" password="admin" roles="manager-script, admin-gui"/>
    <user username="both" password="<must-be-changed>" roles="tomcat,role1"/>
    <user username="role1" password="<must-be-changed>" roles="role1"/>
-->

    <role rolename="manager-gui"/>
    <role rolename="manager-script"/>
    <role rolename="admin-gui"/>

    <user username="tomcat" password="tomcat" roles="manager-gui"/>
    <user username="admin" password="admin" roles="manager-script, admin-gui"/>

</tomcat-users>
```

```
[ec2-user@ip-172-31-13-80 bin]$ sh startup.sh
```

```
[ec2-user@ip-172-31-13-80 bin]$ sh startup.sh
Neither the JAVA_HOME nor the JRE_HOME environment variable is defined
At least one of these environment variable is needed to run this program
```

We have to install Java

```
[ec2-user@ip-172-31-13-80 ~]$ sudo apt install openjdk-21-jdk
```

```
sudo rpm --import https://yum.corretto.aws/corretto.key
sudo curl -Lo /etc/yum.repos.d/corretto.repo https://yum.corretto.aws/corretto.repo
sudo yum install -y java-21-amazon-corretto-devel
```

```
java -version
```

```
[ec2-user@ip-172-31-13-80 ~]$ cd apache-tomcat-11.0.8/
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ cd bin/
[ec2-user@ip-172-31-13-80 bin]$ sh startup.sh
Using CATALINA_BASE: /home/ec2-user/apache-tomcat-11.0.8
Using CATALINA_HOME: /home/ec2-user/apache-tomcat-11.0.8
Using CATALINA_TMPDIR: /home/ec2-user/apache-tomcat-11.0.8/temp
Using JRE_HOME:      /usr
Using CLASSPATH:     /home/ec2-user/apache-tomcat-11.0.8/bin/bootstrap.jar:/home/ec2-
user/apache-tomcat-11.0.8/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
```

```
[ec2-user@ip-172-31-13-80 ~]$ sh startup.sh
sh: startup.sh: No such file or directory
[ec2-user@ip-172-31-13-80 ~]$ cd apache-tomcat-11.0.8/
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ cd bin/
[ec2-user@ip-172-31-13-80 bin]$ sh startup.sh
Using CATALINA_BASE: /home/ec2-user/apache-tomcat-11.0.8
Using CATALINA_HOME: /home/ec2-user/apache-tomcat-11.0.8
Using CATALINA_TMPDIR: /home/ec2-user/apache-tomcat-11.0.8/temp
Using JRE_HOME:      /usr
Using CLASSPATH:     /home/ec2-user/apache-tomcat-11.0.8/bin/bootstrap.j
Using CATALINA_OPTS:
Tomcat started.
[ec2-user@ip-172-31-13-80 bin]$
```

<http://3.98.128.146.8080/>

#### 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	Info
sgr-062f0a404b824867a	SSH	TCP	22	Custom	<input type="text"/> 0.0.0.0/0 <span style="border: 1px solid #ccc; padding: 2px;">X</span>
sgr-0456f48ff19f5a3dd	HTTP	TCP	80	Custom	<input type="text"/> 0.0.0.0/0 <span style="border: 1px solid #ccc; padding: 2px;">X</span>
-	Custom TCP	TCP	8080	Anywhere	<input type="text"/> 0.0.0.0/0 <span style="border: 1px solid #0072bc; background-color: #e6f2ff; padding: 2px;">X</span>

[Add rule](#)

⚠ Not secure 3.98.128.146:8080

Where should finge... http://3.96.216.255/ Move or copy cells... Email Finder hunter.io Heroicons loghmanb/daily-co... CloudSkew Excalid

Home Documentation Configuration Examples Wiki Mailing Lists

## Apache Tomcat/11.0.8

If you're seeing this, you've successfully installed Tomcat. Congrats!



Recommended Reading:  
[Security Considerations How-To](#)  
[Manager Application How-To](#)  
[Clustering/Session Replication How-To](#)

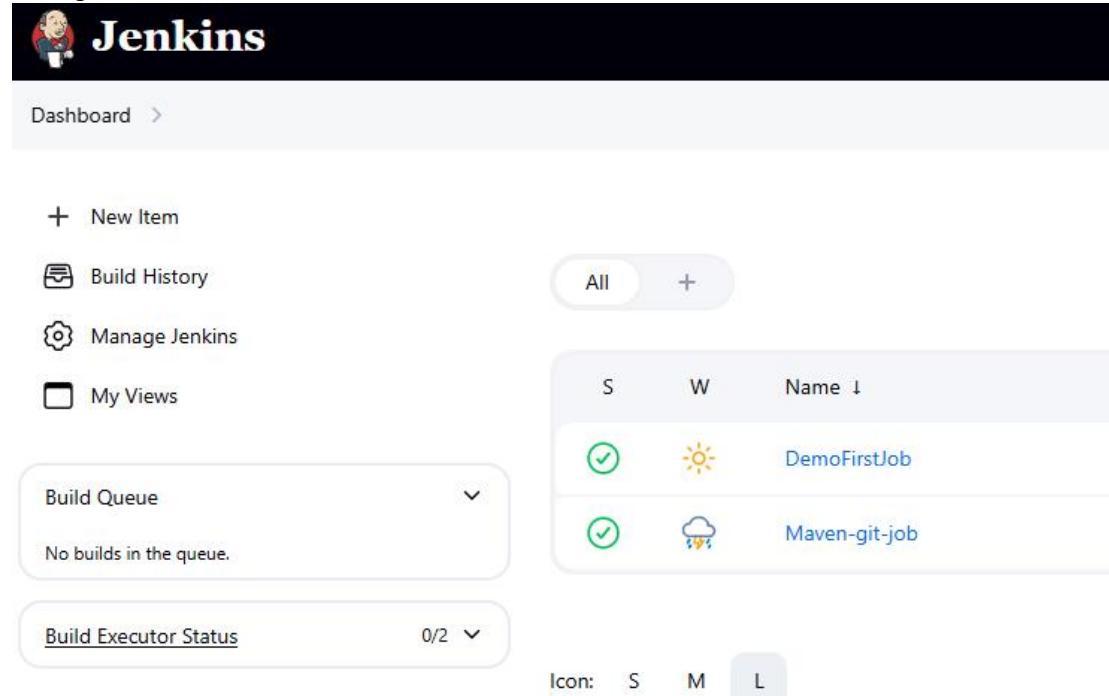
Developer Quick Start

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

Go back to Jenkins

<http://3.99.132.101:8080/login?from=%2Fjob%2FMaven-git-job%2F6%2F>

Manage Jenkins



Dashboard >

+ New Item

Build History All +

Manage Jenkins

My Views

Build Queue ▾  
No builds in the queue.

Build Executor Status 0/2 ▾  
Icon: S M L

S	W	Name ↓
✓	☀	DemoFirstJob
✓	☁	Maven-git-job

Click Plugins

Available Plugins --> Search “Deploy to container”

The screenshot shows the Jenkins interface for managing plugins. The top navigation bar includes the Jenkins logo and the text "Dashboard > Manage Jenkins > Plugins". Below this, the main title is "Plugins". On the left, there's a sidebar with links: "Updates", "Available plugins" (which is highlighted in blue), "Installed plugins", and "Advanced settings". A search bar at the top right contains the placeholder "deploy to container". The main content area is titled "Install" and shows a list of available plugins. One plugin, "Deploy to container 1.17", is selected, indicated by a checked checkbox. The description for this plugin states: "This plugin allows you to deploy a war to a container after a successful build. Glassfish 3.x remote deployment".

Click Install

The screenshot shows the Jenkins interface for managing plugins, specifically the "Download progress" section. The top navigation bar and sidebar are identical to the previous screenshot. The main title is "Download progress". The sidebar now has a link "Download progress" highlighted in blue. The main content area is titled "Preparation" and lists three items: "Checking internet connectivity", "Checking update center connectivity", and "Success". Below this, under "Deploy to container", it says "Pending". Another item, "Loading plugin extensions", also shows a "Pending" status. At the bottom, there are two buttons: "Go back to the top page" and "Restart Jenkins when installation is complete and no jobs are running".

The screenshot shows the Jenkins interface for managing plugins, specifically the "Download progress" section. The top navigation bar and sidebar are identical to the previous screenshots. The main title is "Download progress". The sidebar has a link "Download progress" highlighted in blue. The main content area is titled "Preparation" and lists three items: "Checking internet connectivity", "Checking update center connectivity", and "Success". Below this, under "Deploy to container", it says "Success". Another item, "Loading plugin extensions", also shows a "Success" status. At the bottom, there are two buttons: "Go back to the top page" and "Restart Jenkins when installation is complete and no jobs are running".

Installed Plugin

[Available plugins](#)

[Installed plugins](#) **Installed plugins**

[Advanced settings](#)

[Download progress](#)

---

[report an issue with this plugin](#)

**Credentials Binding Plugin** 687.v619cb\_15e923f  
Allows credentials to be bound to environment variables for use from miscellaneous build steps.  
[Report an issue with this plugin](#)

---

**Credentials Plugin** 1415.v831096eb\_5534  
This plugin allows you to store credentials in Jenkins.  
[Report an issue with this plugin](#)

---

**Dark Theme** 524.vd675b\_22b\_30cb\_  
Adds a dark theme to Jenkins, respecting browser and OS themes if configured.  
[Report an issue with this plugin](#)

---

**Deploy to container Plugin** 1.17  
This plugin allows you to deploy a war to a container after a successful build.  
Glassfish 3.x remote deployment  
[Report an issue with this plugin](#)

---

**Display URL API** 2.209.v582ed814ff2f  
Provides the DisplayURLProvider extension point to provide alternate URLs for use in notifications.  
[Report an issue with this plugin](#)

Dashboard --> New Item

## New Item

Enter an item name

maven-git-tomcat-job

Select an item type



### Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, e  
steps like archiving artifacts and sending email notifications.



### Pipeline

Orchestrates long-running activities that can span multiple build agents.  
workflows) and/or organizing complex activities that do not easily fit in f



### Multi-configuration project

Suitable for projects that need a large number of different configuration:  
platform-specific builds, etc.



### Folder

Creates a container that stores nested items in it. Useful for grouping thi  
folder creates a separate namespace, so you can have multiple things of  
folders.



### Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one



### Organization Folder

Creates a set of multibranch project subfolders by scanning for repositor

OK

## General

### Description

Maven git tomcat job

Plain text [Preview](#)

Discard old builds [?](#)

GitHub project

Project url [?](#)

`https://github.com/Haider7214/SpringApp.git`

[Advanced](#) ▾

This project is parameterized [?](#)

Throttle builds [?](#)

Execute concurrent builds if necessary [?](#)

[Advanced](#) ▾

## Source Code Management

Connect and manage your code repository to automatically pull the latest code for your builds.

None

Git [?](#)

[Repositories](#) [?](#)

Repository URL [?](#)

`https://github.com/Haider7214/SpringApp.git`

Credentials [?](#)

- none -

+ Add

Advanced ▾

Add Repository

Branches to build [?](#)

Branch Specifier (blank for 'any') [?](#)

`*/main`

Add Branch

**Save**

Apply

## Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

### ☰ Invoke top-level Maven targets ?

Maven Version

Maven

Goals

clean compile test package

Advanced ▾

Add build step ▾

## Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.

Add post-build action ▾

Save

Apply

Deploy war to a container

### ≡ Invoke top-level Maven targets ?

#### Maven Version

Filter

- Aggregate downstream test results
- Archive the artifacts
- Build other projects
- Publish JUnit test result report
- Record fingerprints of files to track usage
- Git Publisher
- Deploy war/ear to a container
- E-mail Notification
- Editable Email Notification
- Set GitHub commit status (universal)
- Set build status on GitHub commit [deprecated]
- Delete workspace when build is done

Add post-build action ^

sending notifications, archiving artifacts, or

Save

Apply

No we are not doing Deploy war to container

### ≡ Invoke top-level Maven targets ?

Maven Version

Maven

Goals

clean compile test package

Advanced ▾

Add build step ▾

### Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or

Add post-build action ▾

Save

Apply



# Jenkins

Dashboard >

+ New Item

Build History All +

Manage Jenkins

My Views

Build Queue  
No builds in the queue.

Build Executor Status 0/2

S	W	Name ↓
✓	☀	DemoFirstJob
✓	☁	Maven-git-job
...	☀	maven-git-tomcat-job

Icon: S M L

# Jenkins

Dashboard > maven-git-tomcat-job >

Status Changes Workspace Build Now Configure Delete Project GitHub Rename

## maven-git-tomcat-job

Maven git tomcat job

Permalinks

Builds ...

No builds

Today #1 7:36 PM

 Jenkins

Dashboard > maven-git-tomcat-job > #1 > Console Output

 Status

 Changes

 Console Output

 Edit Build Information

 Delete build '#1'

 Timings

 Git Build Data

## Console Output

Started by user demo

Running as SYSTEM

Building in workspace /var/lib/jenkins/workspace,

The recommended git tool is: NONE

No credentials specified

Cloning the remote Git repository

Cloning repository <https://github.com/Haider7214>,

> git init /var/lib/jenkins/workspace/maven-git-

Fetching upstream changes from <https://github.com/Haider7214>

> git --version # timeout=10

> git --version # 'git version 2.43.0'

> git fetch --tags --force --progress -- <https://github.com/Haider7214>

> git config remote.origin.url <https://github.com/Haider7214>

> git config --add remote.origin.fetch +refs/heads/\*:refs/remotes/origin/\*

```
[INFO] Copying newly-p resources [var/lib/jenkins/workspace/maven-git-tomcat-job/target/repo]
[INFO] Building war: /var/lib/jenkins/workspace/maven-git-tomcat-job/target/FirstSpringWebApp-0.0.1-SNAPSHOT.war
[INFO]
[INFO] --- spring-boot:3.3.5:repackage (repackage) @ FirstSpringWebApp ---
[INFO] Replacing main artifact /var/lib/jenkins/workspace/maven-git-tomcat-job/target/FirstSpringWebApp-0.0.1-SNAPSHOT.war with repackaged archive, adding nested jar
[INFO] The original artifact has been renamed to /var/lib/jenkins/workspace/maven-git-tomcat-job/target/FirstSpringWebApp-0.0.1-SNAPSHOT.war.original
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.696 s
[INFO] Finished at: 2025-06-22T19:36:48Z
[INFO] -----
Finished: SUCCESS
```

```
[INFO] The original artifact has been renamed to /var/lib/jenkins/workspace/maven-git-tomcat-
job/target/FirstSpringWebApp-0.0.1-SNAPSHOT.war.original
```

```
ubuntu@ip-172-31-11-116:~/apache-tomcat-11.0.8/bin$ cd /var/lib/jenkins/workspace/maven-git-
tomcat-job/target/
ubuntu@ip-172-31-11-116:/var/lib/jenkins/workspace/maven-git-tomcat-job/target$
```

```
ubuntu@ip-172-31-11-116:/var/lib/jenkins/workspace/maven-git-tomcat-job/target$ ls -l
total 51916
drwxr-xr-x 5 jenkins jenkins 4096 Jun 22 19:36 FirstSpringWebApp-0.0.1-SNAPSHOT
-rw-r--r-- 1 jenkins jenkins 28070167 Jun 22 19:36 FirstSpringWebApp-0.0.1-SNAPSHOT.war
-rw-r--r-- 1 jenkins jenkins 25051845 Jun 22 19:36 FirstSpringWebApp-0.0.1-SNAPSHOT.war.original
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 19:36 classes
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 19:36 generated-sources
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 19:36 generated-test-sources
drwxr-xr-x 2 jenkins jenkins 4096 Jun 22 19:36 maven-archiver
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 19:36 maven-status
drwxr-xr-x 2 jenkins jenkins 4096 Jun 22 19:36 surefire-reports
drwxr-xr-x 3 jenkins jenkins 4096 Jun 22 19:36 test-classes
ubuntu@ip-172-31-11-116:/var/lib/jenkins/workspace/maven-git-tomcat-job/target$
```

Go back to the Job on Jenkins

Configure

With Ant ?

## Configure

[General](#)[Source Code Management](#)[Triggers](#)[Environment](#)[Build Steps](#)[Post-build Actions](#)

### Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

#### Invoke top-level Maven targets ?

Maven Version

Maven

Goals

clean compile test package

Advanced ▾

Add build step ▾

### Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.

Add post-build action ▾

### Copy war filename name from Console log

```
[INFO] Replacing main artifact /var/lib/jenkins/workspace/maven-git-tomcat-job/target/FirstSpringWebApp-0.0.1-SNAPSHOT.war
```

FirstSpringWebApp-0.0.1-SNAPSHOT.war

## Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.

### ≡ Deploy war/ear to a container

WAR/EAR files ?

target/FirstSpringWebApp-0.0.1-SNAPSHOT.war

Context path ?

FirstSpringWebApp-0.0.1-SNAPSHOT.war

Containers

Add Container ▾

Deploy on failure

Add post-build action ▾

Save

Apply

### Add Container

We have installed Tomcat 11 in the other VM but only tomcat 9.x is available here

## Containers

### Tomcat 9.x Remote

#### Credentials

- none -

+ Add

Tomcat URL ?

Advanced ▾

Add Container ▾

Deploy on failure

Add post-build action ▾

Save

Apply

Jenkins Credentials Provider: Jenkins

### Add Credentials

Domain

Global credentials (unrestricted)

Kind

Username with password

Scope ?

Global (Jenkins, nodes, items, all child items, etc)

Username ?

Treat username as secret ?

Password ?

ID ?

Description ?

Jenkins Credentials Provider: Jenkins

Kind

Username with password

Scope ?

Global (Jenkins, nodes, items, all child items, etc)

Username ?

Treat username as secret ?

Password ?

ID ?

Description ?

Click Add

Copy Tomcat URL from the other VM  
<http://3.98.128.146:8080/>

FirstSpringWebApp-0.0.1-SNAPSHOT.war

Containers

Tomcat 9.x Remote

Credentials

admin/\*\*\*\*\*

+ Add

Tomcat URL ?

http://3.98.128.146:8080/

Advanced ▾

Add Container ▾

Deploy on failure

Add post-build action ▾

Save Apply

Click Apply then Save

Click Build Now

It built successfully

 Status

 Changes

 Workspace

 Build Now

 Configure

 Delete Project

 GitHub

 Rename



## maven-git-tomcat-job

Maven git tomcat job

### Permalinks

- [Last build \(#1\), 20 min ago](#)
- [Last stable build \(#1\), 20 min ago](#)
- [Last successful build \(#1\), 20 min ago](#)
- [Last completed build \(#1\), 20 min ago](#)

Builds

...



 Filter



Today

 #2 7:57 PM



 #1 7:36 PM



Go back to Tomcat IP

Click on Manager App

For some reasons it is not opening

Not secure 3.98.128.146:8080/manager/html

New Tab Move or copy cells... Email Finder hunter.io Heroicons loghmanb/daily-co...

## 403 Access Denied

You are not authorized to view this page.

By default the Manager is only accessible from a browser running on the same machine as Tomcat. If you wish to modify this restriction,

If you have already configured the Manager application to allow access and you have used your browsers back button, used a saved bookmark to the [main Manager page](#). Once you return to this page, you will be able to continue using the Manager application's HTML interface normally.

If you have not changed any configuration files, please examine the file `conf/tomcat-users.xml` in your installation. That file must contain:

```
<role rolename="manager-gui"/>
<user username="tomcat" password="s3cret" roles="manager-gui"/>
```

Note that for Tomcat 7 onwards, the roles required to use the manager application were changed from the single `manager` role to the following:

- `manager-gui` - allows access to the HTML GUI and the status pages
- `manager-script` - allows access to the text interface and the status pages
- `manager-jmx` - allows access to the JMX proxy and the status pages
- `manager-status` - allows access to the status pages only

The HTML interface is protected against CSRF but the text and JMX interfaces are not. To maintain the CSRF protection:

- Users with the `manager-gui` role should not be granted either the `manager-script` or `manager-jmx` roles.
- If the text or jmx interfaces are accessed through a browser (e.g. for testing) since these interfaces are intended for tools not humans.

For more information - please see the [Manager App How-To](#).

```
[ec2-user@ip-172-31-13-80 ~]$ cd apache-tomcat-11.0.8/
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$/cd conf
[ec2-user@ip-172-31-13-80 conf]$ ls -l
total 212
drwxr-x---. 3 ec2-user ec2-user 23 Jun 22 18:50 Catalina
-rw-----. 1 ec2-user ec2-user 6636 Jun 5 17:49 catalina.properties
-rw-----. 1 ec2-user ec2-user 1411 Jun 5 17:49 context.xml
-rw-----. 1 ec2-user ec2-user 1149 Jun 5 17:49 jaspic-providers.xml
-rw-----. 1 ec2-user ec2-user 2313 Jun 5 17:49 jaspic-providers.xsd
-rw-----. 1 ec2-user ec2-user 4003 Jun 5 17:49 logging.properties
-rw-----. 1 ec2-user ec2-user 6905 Jun 5 17:49 server.xml
-rw-----. 1 ec2-user ec2-user 3003 Jun 22 18:44 tomcat-users.xml
-rw-----. 1 ec2-user ec2-user 2558 Jun 5 17:49 tomcat-users.xsd
-rw-----. 1 ec2-user ec2-user 172995 Jun 5 17:49 web.xml
[ec2-user@ip-172-31-13-80 conf]$
```

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Checking:

```
<role rolename="role1"/>
<user username="tomcat" password="" roles="tomcat"/>
<user username="both" password="" roles="tomcat,role1"/>
<user username="role1" password="" roles="role1"/>
-->

<role rolename="manager-gui"/>
<role rolename="manager-script"/>
<role rolename="admin-gui"/>

<user username="tomcat" password="tomcat" roles="manager-gui"/>
<user username="admin" password="admin" roles="manager-script, admin-gui"/>

</tomcat-users>
"tomcat-users.xml" 64L, 3003B
```

```
[ec2-user@ip-172-31-13-80 conf]$ ls -l
total 216
-rw-r--r--. 1 ec2-user ec2-user 3003 Jun 22 20:10 21
drwxr-x---. 3 ec2-user ec2-user 23 Jun 22 18:50 Catalina
-rw-----. 1 ec2-user ec2-user 6636 Jun 5 17:49 catalina.properties
-rw-----. 1 ec2-user ec2-user 1411 Jun 22 20:17 context.xml
-rw-----. 1 ec2-user ec2-user 1149 Jun 5 17:49 jaspic-providers.xml
-rw-----. 1 ec2-user ec2-user 2313 Jun 5 17:49 jaspic-providers.xsd
-rw-----. 1 ec2-user ec2-user 4003 Jun 5 17:49 logging.properties
-rw-----. 1 ec2-user ec2-user 6905 Jun 5 17:49 server.xml
-rw-----. 1 ec2-user ec2-user 3003 Jun 22 20:10 tomcat-users.xml
-rw-----. 1 ec2-user ec2-user 2558 Jun 5 17:49 tomcat-users.xsd
-rw-----. 1 ec2-user ec2-user 172995 Jun 5 17:49 web.xml
[ec2-user@ip-172-31-13-80 conf]$ vi tomcat-users.xml
```

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```
<user username="root" password=<must be changed> roles="root"/>
-->

<role rolename="manager-gui"/>
<role rolename="manager-script"/>
<role rolename="admin-gui"/>

<user username="tomcat" password="tomcat" roles="manager-gui"/>
<user username="admin" password="admin" roles="manager-script, admin-gui, manager-gui"/>

</tomcat-users>
-- INSERT --
```

```
sh: startup.sh: No such file or directory
[ec2-user@ip-172-31-13-80 apache-tomcat-11.0.8]$ cd bin/
[ec2-user@ip-172-31-13-80 bin]$ sh startup.sh
Using CATALINA_BASE:      /home/ec2-user/apache-tomcat-11.0.8
Using CATALINA_HOME:      /home/ec2-user/apache-tomcat-11.0.8
Using CATALINA_TMPDIR:    /home/ec2-user/apache-tomcat-11.0.8/temp
Using JRE_HOME:           /usr
Using CLASSPATH:          /home/ec2-user/apache-tomcat-11.0.8/bin/bootstrap.jar
Using CATALINA_OPTS:
Tomcat started.
[ec2-user@ip-172-31-13-80 bin]$
```

Click on Manager App

[Find Help](#)



ed Tomcat. Congratulations!

[Server Status](#)

[Manager App](#)

[Host Manager](#)

[Servlet Specifications](#)

[Tomcat Versions](#)

The screenshot shows the Tomcat Web Application Manager. At the top, there's a header bar with various icons and links. Below it is a cartoon cat logo. The main area has a title "Tomcat Web Application Manager". A message box says "Message: OK". Under "Manager", there's a "List Applications" link and "HTML Manager Help" and "Manager Help" buttons. The "Applications" section has a table with one row. The row contains a path column with a single entry, a version column with "None specified", a display name column with "Welcome to Tomcat", a running column with "true", a sessions column with "0", and a commands column with "Start", "Stop", "Reloa", "Expire sessions", and "will".

First Web Application is deployed

This screenshot shows the same Tomcat Web Application Manager interface as above, but with more content in the applications table. The table now lists four entries under the "Path" column: "/", "/FirstSpringWebApp-0.0.1-SNAPSHOT.war", "/docs", and "/examples".

See our application is deployed

The screenshot shows a Jenkins job configuration page. On the left, there's a sidebar with options: General, Source Code Management, Triggers (which is selected), Environment, Build Steps, and Post-build Actions. The main area has a heading "Configure" and an "Add" button. Under "Triggers", it says "Set up automated actions that start your build based on specific events, like code changes or scheduled times." There are three checkboxes: "Trigger builds remotely (e.g., from scripts)" (unchecked), "Build after other projects are built" (unchecked), and "Build periodically" (checked). A "Schedule" field contains "\*\*\*\*\*" and a warning message: "You appear to be missing whitespace between \* and \*.". Below this are two more checkboxes: "GitHub hook trigger for GITScm polling" (unchecked) and "Poll SCM" (unchecked). At the bottom, there's an "Environment" section.

Triggers 5 stars means every 1 minute this job will be triggered

```

# Every fifteen minutes (perhaps at :07, :22, :37, :52):
H/15 * * * *

# Every ten minutes in the first half of every hour (three times, perhaps at :04, :14, :24):
H(0-29)/10 * * * *

# Once every two hours at 45 minutes past the hour starting at 9:45 AM and finishing at 3:45 PM every weekday:
45 9-16/2 * * 1-5

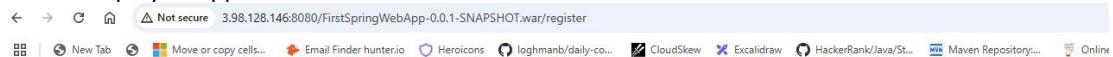
# Once in every two hour slot between 8 AM and 4 PM every weekday (perhaps at 9:38 AM, 11:38 AM, 1:38 PM, 3:38 PM):
H H(8-15)/2 * * 1-5

# Once a day on the 1st and 15th of every month except December:
H H 1,15 1-11 *

```

<http://3.98.128.146:8080/FirstSpringWebApp-0.0.1-SNAPSHOT.war/register>

See the deployed App



### Registration Application

Employee ID	<input type="text"/>
Employee Name	<input type="text"/>
Employee City	<input type="text" value="Bengaluru"/>
Employee Salary	<input type="text"/>
<input type="button" value="Register"/>	

In Triggers, Poll SCM will start only if there is a new re-build

Source Code Management

Triggers

- Build periodically ?
- GitHub hook trigger for GITScm polling ?
- Poll SCM ?

Schedule ?

No schedules so will only run due to SCM changes if triggered by a post-commit

Ignore post-commit hooks ?