

Automating Build and Deployment Using Jenkins and Tomcat

Project Overview

This document provides a detailed guide to set up a Jenkins CI/CD pipeline and deploy a Maven-based web application to a Tomcat server hosted on an EC2 instance.

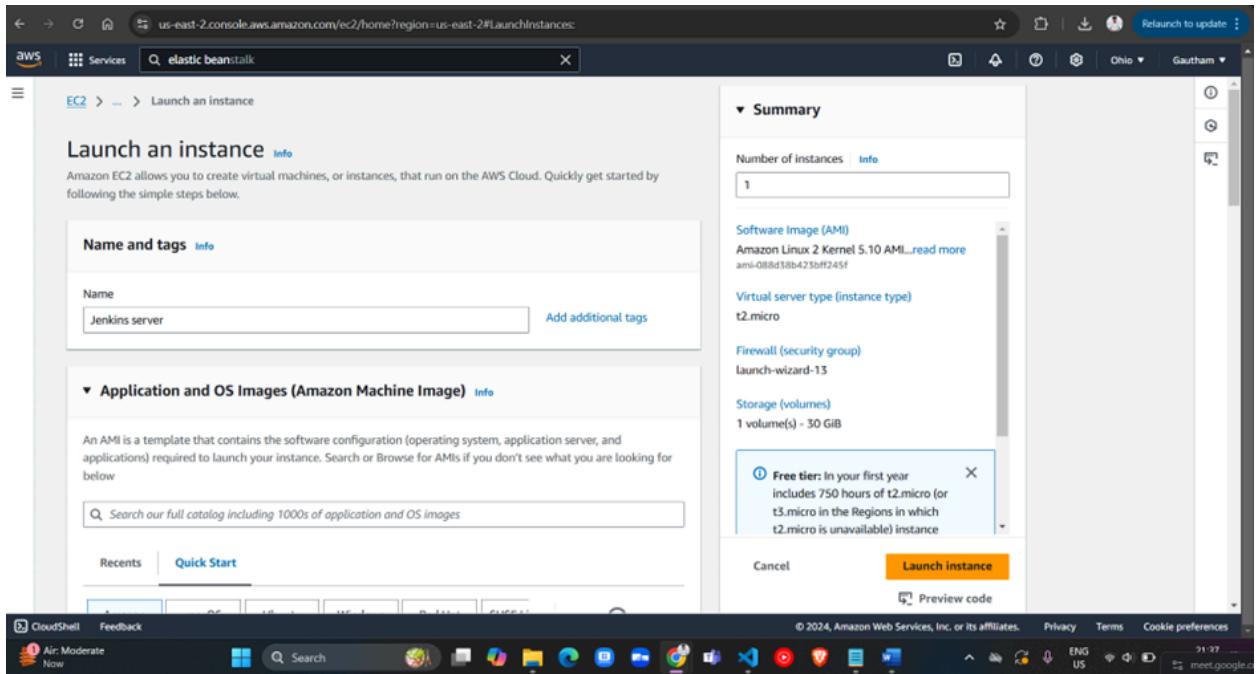
Prerequisites

- **AWS EC2 instances:** Ensure you have an AWS account and permissions to create EC2 instances.
- **Security Groups:** Security groups configured with All TCP protocol and open CIDR block.
- **AMI Selection:** Amazon Linux 2 or Ubuntu as the base AMI for EC2 instances.
- **Key Pair:** A valid key pair for instance connectivity.
- **Jenkins Installation:** Familiarity with installing Jenkins and required plugins.
- **Maven and Git:** Understanding of Maven for build automation and Git for version control..

Procedures

Step 1. Create an EC2 Instance for Jenkins

- Navigate to the EC2 Service page and launch an instance.
- Assign a name, select a suitable AMI, and configure the instance with a key pair and an appropriate security group.
- Add extra storage volume for package installations and launch the instance.
- Once the instance shows **2/2 checks passed**, connect via EC2 Instance Connect to access the console.



Step 2. Setup Jenkins

- Install Jenkins using the official repository.
- Resolve compatibility issues by installing `amazon-corretto java-17`.
- Start the Jenkins service and access the dashboard via `<Public_IP>:8080`.
- Retrieve and use the initial admin password to log in and complete the setup..

```
Amazon Linux 2
AL2 End of Life is 2025-06-30.
A newer version of Amazon Linux is available!
Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-172-31-11-182 ~]$ sudo su -
[root@ip-172-31-11-182 ~]#
```

i-06649d0bf07c7c984 (Jenkins server)
PublicIPs: 3.129.217.64 PrivateIPs: 172.31.11.182

```
Amazon Linux 2
AL2 End of Life is 2025-06-30.
A newer version of Amazon Linux is available!
Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-172-31-11-182 ~]$ sudo su -
[root@ip-172-31-11-182 ~]# sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
--2024-11-18 16:12:08-- https://pkg.jenkins.io/redhat-stable/jenkins.repo
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.70.133:2044:4e42:03::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|146.75.70.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 85
Saving to: '/etc/yum.repos.d/jenkins.repo'

100%[=====] 85          --.-K/s   in 0s

2024-11-18 16:12:08 (0.91 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]
[root@ip-172-31-11-182 ~]# sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
[root@ip-172-31-11-182 ~]#
```

i-06649d0bf07c7c984 (Jenkins server)
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```
[ec2-user@ip-172-31-11-182 ~]$ curl -L https://jenkins.io/war/Jenkins.war
[ec2-user@ip-172-31-11-182 ~]$ java -jar Jenkins.war
```

```
[root@ip-172-31-11-182 ~]# amazon-linux-extras install java-openjdk11 -y
Installing java-11-openjdk
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Cleaning repos: amzn2-core amzn2extra-docker amzn2extra-java-openjdk11 amzn2extra-kernel-5.10 jenkins
24 metadata files removed
10 sqlite files removed
0 metadata files removed
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
amzn2extra-docker
amzn2extra-java-openjdk11
amzn2extra-kernel-5.10
jenkins
(1/10): amzn2-core/2/x86_64/group_gz | 3.6 kB 00:00:00
(2/10): amzn2-core/2/x86_64/updateinfo | 2.9 kB 00:00:00
(3/10): amzn2extra-java-openjdk11/2/x86_64/primary_db | 3.0 kB 00:00:00
(4/10): amzn2extra-kernel-5.10/2/x86_64/updateinfo | 3.0 kB 00:00:00
(5/10): amzn2extra-docker/2/x86_64/updateinfo | 2.9 kB 00:00:00
(6/10): amzn2extra-java-openjdk11/2/x86_64/updateinfo | 1.0 MB 00:00:00
(7/10): amzn2extra-docker/2/x86_64/primary_db | 174 kB 00:00:00
(8/10): jenkins/primary_db | 93 kB 00:00:00
(9/10): amzn2extra-kernel-5.10/2/x86_64/primary_db | 20 kB 00:00:00
(10/10): amzn2-core/2/x86_64/primary_db | 8.0 kB 00:00:00
Package 1:java-11-openjdk-11.0.23.0.5-2.amzn2.0.1.x86_64 already installed and latest version
Nothing to do
2 httpd_modules           available   { =1.0  =stable }
3 memcached1.5             available   \
  { =1.5.1  =1.5.16 =1.5.17 }
```

i-06649d0bf07c7c984 (Jenkins server)
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```
CloudShell Feedback Search ENG US 21:45 18-11-2024 © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences
```

```
[root@ip-172-31-11-182 ~]# yum install jenkins -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
--> Package jenkins.noarch 0:2.479.1-1.1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

Transaction Summary
Install 1 Package

Total download size: 91 M
Installed size: 92 M
Downloading packages:
jenkins-2.479.1-1.1.noarch.rpm 15% [=====] 3.5 MB/s | 14 MB 00:00:22 ETA
```

i-06649d0bf07c7c984 (Jenkins server)
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AWS Services Search [Alt+S] Ohio Gautham

```
Installed:
  Jenkins.noarch 0:2.479.1-1.1

Complete!
[root@ip-172-31-11-182 ~]# systemctl enable jenkins
Created symlink from /etc/systemd/system/multi-user.target.wants/jenkins.service to /usr/lib/systemd/system/jenkins.service.
[root@ip-172-31-11-182 ~]# systemctl start jenkins
Failed to start jenkins.service: Unit not found.
[root@ip-172-31-11-182 ~]# systemctl start jenkins
Job for jenkins.service failed because the control process exited with error code. See "systemctl status jenkins.service" and "journalctl -xe" for details.
[root@ip-172-31-11-182 ~]# systemctl status jenkins
● Jenkins Continuous Integration Server
    Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; vendor preset: disabled)
      Active: failed (Result: start-limit; start= 2024-11-18 16:16:26 UTC; 11s ago
        Process: 5496 KexecStart-/usr/bin/jenkins (code=exited, status=1/FAILURE)
      Main PID: 5496 (code=exited, status=1/FAILURE)

Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: jenkins.service: main process exited, code=exited, status=1/FAILURE
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: Failed to start Jenkins Continuous Integration Server.
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: Unit jenkins.service entered failed state.
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: jenkins.service failed.
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: jenkins.service holdoff time over, scheduling restart.
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: Stopped Jenkins Continuous Integration Server.
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: start request repeated too quickly for jenkins.service
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: Failed to start Jenkins Continuous Integration Server.
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: Unit jenkins.service entered failed state.
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: jenkins.service failed
[root@ip-172-31-11-182 ~]#
```

i-06649d0bf07c7c984 (Jenkins server)

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```
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: Unit jenkins.service entered failed state.  
Nov 18 16:16:26 ip-172-31-11-182.us-east-2.compute.internal systemd[1]: jenkins.service failed.  
[root@ip-172-31-11-182 ~]# cd /usr/lib/jvm  
[root@ip-172-31-11-182 jvm]# ll  
total 0  
lrwxr-xr-x 6 root root 68 Nov 18 16:14 java-11-openjdk-11.0.23.0.9-2.amzn2.0.1.x86_64  
lrwxrwxrwx 1 root root 21 Nov 18 16:14 jre -> /etc/alternatives/jre  
lrwxrwxrwx 1 root root 24 Nov 18 16:14 jre-11 -> /etc/alternatives/jre_11  
lrwxrwxrwx 1 root root 32 Nov 18 16:14 jre-11-openjdk -> /etc/alternatives/jre_11_openjdk  
lrwxrwxrwx 1 root root 46 Nov 18 16:14 jre-11-openjdk-11.0.23.0.9-2.amzn2.0.1.x86_64 -> java-11-openjdk-11.0.23.0.9-2.amzn2.0.1.x86_64  
lrwxrwxrwx 1 root root 29 Nov 18 16:14 jre-openjdk -> /etc/alternatives/jre_openjdk  
[root@ip-172-31-11-182 jvm]# cd java-11-openjdk-11.0.23.0.9-2.amzn2.0.1.x86_64  
[root@ip-172-31-11-182 java-11-openjdk-11.0.23.0.9-2.amzn2.0.1.x86_64]# cd lib/  
[root@ip-172-31-11-182 lib]# sudo yum install java-17-amazon-corretto -y  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
Resolving Dependencies  
--> Running transaction check  
--> Package java-17-amazon-corretto.x86_64 1:17.0.13+11-1.amzn2.1 will be installed  
--> Processing Dependency: java-17-amazon-corretto-headless(x86-64) = 1:17.0.13+11-1.amzn2.1 for package: 1:java-17-amazon-corretto-17.0.13+11-1.amzn2.1.x86_64  
--> Processing Dependency: libxiheimera for package: 1:java-17-amazon-corretto-17.0.13+11-1.amzn2.1.x86_64  
--> Processing Dependency: libxt for package: 1:java-17-amazon-corretto-17.0.13+11-1.amzn2.1.x86_64  
--> Processing Dependency: libxrandr for package: 1:java-17-amazon-corretto-17.0.13+11-1.amzn2.1.x86_64  
--> Running transaction check  
--> Package java-17-amazon-corretto-headless.x86_64 1:17.0.13+11-1.amzn2.1 will be installed  
--> Processing Dependency: dejavu-sans-fonts for package: 1:java-17-amazon-corretto-headless-17.0.13+11-1.amzn2.1.x86_64  
--> Processing Dependency: dejavu-sans-mono-fonts for package: 1:java-17-amazon-corretto-headless-17.0.13+11-1.amzn2.1.x86_64  
--> Package libXiheimera.x86_64 0:1.1.0-2.1.amzn2.0.2 will be installed  
--> Package libXrandr.x86_64 0:1.5.1-2.amzn2.0.3 will be installed
```

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Step 3. Setup Maven and Git

- Install Git using the command `sudo yum install git -y`.
 - Download and configure Maven by setting the `M2_HOME` environment variable.
 - Verify the Maven setup using `mvn -v..`

maven.apache.org/download.cgi

Maven Repository Centre > Maven Developer Centre > Maven yourself.

In order to guard against corrupted downloads/installations, it is highly recommended to verify the signature of the release bundles against the public KEYS used by the Apache Maven developers.

Link	Checksums	Signature
Binary tar.gz archive apache-maven-3.9.9-bin.tar.gz	apache-maven-3.9.9-bin.tar.gz.sha512	apache-maven-3.9.9-bin.tar.gz.asc
Binary zip archive apache-maven-3.9.9-bin.zip	apache-maven-3.9.9-bin.zip.sha512	apache-maven-3.9.9-bin.zip.asc
Source tar.gz archive apache-maven-3.9.9-src.tar.gz	apache-maven-3.9.9-src.tar.gz.sha512	apache-maven-3.9.9-src.tar.gz.asc
Source zip archive apache-maven-3.9.9-src.zip	apache-maven-3.9.9-src.zip.sha512	apache-maven-3.9.9-src.zip.asc

• 3.9.9 Release Notes and Release Reference Documentation
• latest source code from source repository
• Distributed under the Apache License, version 2.0
• other:
• All current release sources (plugins, shared libraries,...) available at <https://downloads.apache.org/maven/>

Other Releases

It is strongly recommended to use the latest release version of Apache Maven to take advantage of newest features and bug fixes.

If you still want to use an old version, you can find more information in the [Maven Releases History](#) and can download files from the [Maven 3 archives](#) for versions 3.0.4+ and [legacy archives](#) for earlier releases.

Previous Stable 3.8.x Release

Apache Maven 3.8.8 is the previous stable minor release for all users.

Java Development Kit (JDK) Maven 3.8+ requires JDK 1.7 or above to execute. It still allows you to build against 1.3 and other JDK versions by using toolchains.

Maven is distributed in several formats for your convenience. Simply pick a ready-made binary distribution archive and follow the [installation instructions](#). Use a source archive if you intend to build Maven yourself.

In order to guard against corrupted downloads/installations, it is highly recommended to verify the signature of the release bundles against the public KEYS used by the Apache Maven developers.

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Search

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us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-06649d0bf07c7c984&osUser=ec2-user&re...

Services Search [Alt+S]

GNU nano 2.9.8 .bash_profile

```
# .bash_profile

# Get the aliases and functions
if ! -f ~/.bashrc ; then
    . ~/.bashrc
fi

# User specific environment and startup programs

M2_HOME=/opt/maven/apache-maven-3.9.9
M2=$M2_HOME/bin
PATH=$PATH:$HOME/bin:$M2_HOME:$M2

export PATH
```

I Read 14 lines]

Get Help Write Out Where Is Cut Text Justify Cur Pos Undo Mark Text To Bracket Previous

Exit Read File Replace Uncut Text To Spell Go To Line Redo Copy Text WhereIs Next Next

i-06649d0bf07c7c984 (Jenkins server)

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ENG US 21:59 18-11-2024

```
Complete!
[root@ip-172-31-11-182 lib]# cd ~
[root@ip-172-31-11-182 ~]# cd opt/
-bash: cd: opt/: No such file or directory
[root@ip-172-31-11-182 ~]# cd /opt
[root@ip-172-31-11-182 opt]# mkdir maven
[root@ip-172-31-11-182 opt]# ll
total 0
drwxr-xr-x 4 root root 33 Nov 13 21:48 aws
drwxr-xr-x 2 root root 6 Nov 18 16:26 maven
drwxr-xr-x 2 root root 6 Aug 16 2018 rh
[root@ip-172-31-11-182 opt]# cd maven/
[root@ip-172-31-11-182 maven]# wget https://dlcdn.apache.org/maven/maven-3/3.9.9/binaries/apache-maven-3.9.9-bin.tar.gz
--2024-11-18 16:27:08-- https://dlcdn.apache.org/maven/maven-3/3.9.9/binaries/apache-maven-3.9.9-bin.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: 9102945 (8.7M) [application/x-gzip]
Saving to: 'apache-maven-3.9.9-bin.tar.gz'

100%[=====] 9,102,945 --.-K/s in 0.1s

2024-11-18 16:27:08 (88.5 MB/s) - 'apache-maven-3.9.9-bin.tar.gz' saved [9102945/9102945]

[root@ip-172-31-11-182 maven]# ll
total 8892
-rw-r--r-- 1 root root 9102945 Aug 17 18:44 apache-maven-3.9.9-bin.tar.gz
[root@ip-172-31-11-182 maven]# tar -xvzf apache-maven-3.9.9-bin.tar.gz
```

i-06649d0bf07c7c984 (Jenkins server)
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```
[root@ip-172-31-11-182 lib]# sudo cat /var/lib/jenkins/secrets/initialAdminPassword
731d68fb8e1445a891914c0a451d3c84
[root@ip-172-31-11-182 lib]# sudo yum install git -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
Resolving Dependencies
--> Running transaction check
--> Package git.x86_64 0:2.40.1-1.amzn2.0.3 will be installed
--> Processing Dependency: git-core = 2.40.1-1.amzn2.0.3 for package: git-2.40.1-1.amzn2.0.3.x86_64
--> Processing Dependency: git-core-doc = 2.40.1-1.amzn2.0.3 for package: git-2.40.1-1.amzn2.0.3.x86_64
--> Processing Dependency: perl-Git = 2.40.1-1.amzn2.0.3 for package: git-2.40.1-1.amzn2.0.3.x86_64
--> Processing Dependency: perl(Term::ReadKey) for package: git-2.40.1-1.amzn2.0.3.x86_64
--> Processing Dependency: perl(Term::ReadKey) for package: git-2.40.1-1.amzn2.0.3.x86_64
--> Running transaction check
--> Package git-core.x86_64 0:2.40.1-1.amzn2.0.3 will be installed
--> Package git-core-doc.noarch 0:2.40.1-1.amzn2.0.3 will be installed
--> Package perl-Git.noarch 0:2.40.1-1.amzn2.0.3 will be installed
--> Processing Dependency: perl(KRrror) for package: perl-Git-2.40.1-1.amzn2.0.3.noarch
--> Package perl-TermReadKey.x86_64 0:2.30-20.amzn2.0.2 will be installed
--> Running transaction check
--> Package perl-KRrror.noarch 1:0.17020-2.amzn2 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

Package           Arch      Version            Repository        Size
-----          -----      -----            -----        -----
i-06649d0bf07c7c984 (Jenkins server)
PublicIPs: 3.129.217.64 PrivateIPs: 172.31.11.182
```



us-east-2.console.aws.amazon.com/ec2-instance-connect/shell?addressFamily=ipv4&connType=standard&instanceId=i-06649d0bf07c7c984&osUser=ec2-user&re... Relaunch to update

aws Services Search [Alt+S]

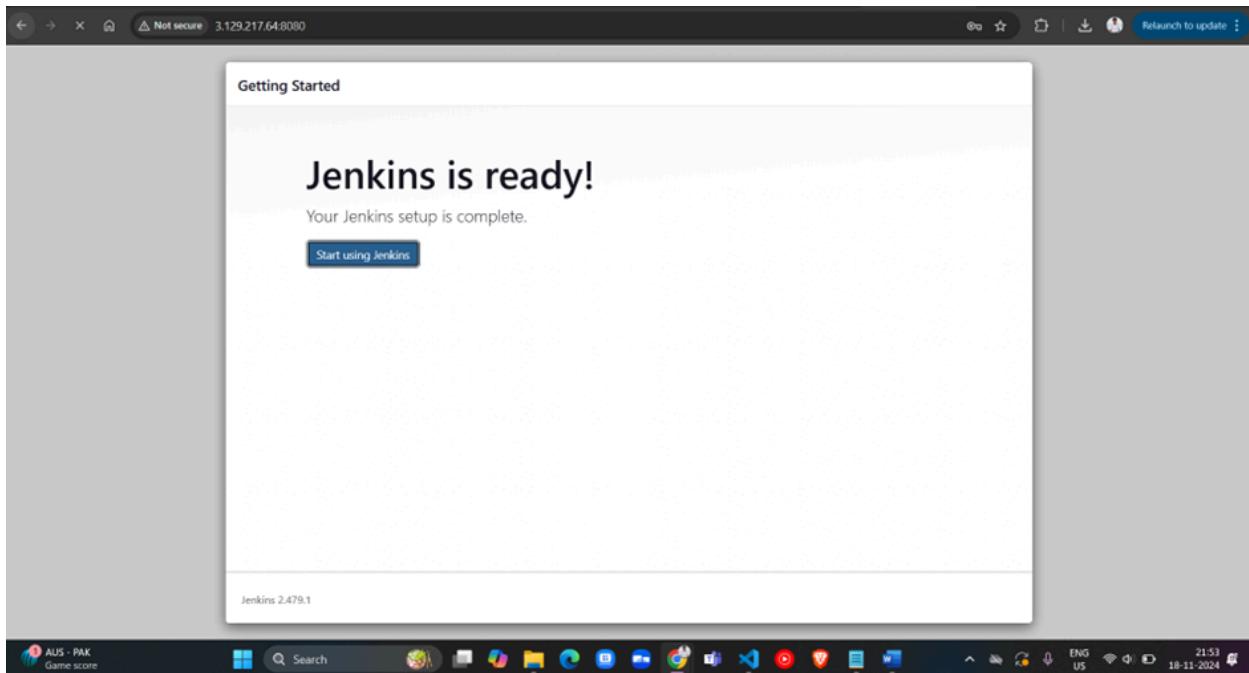
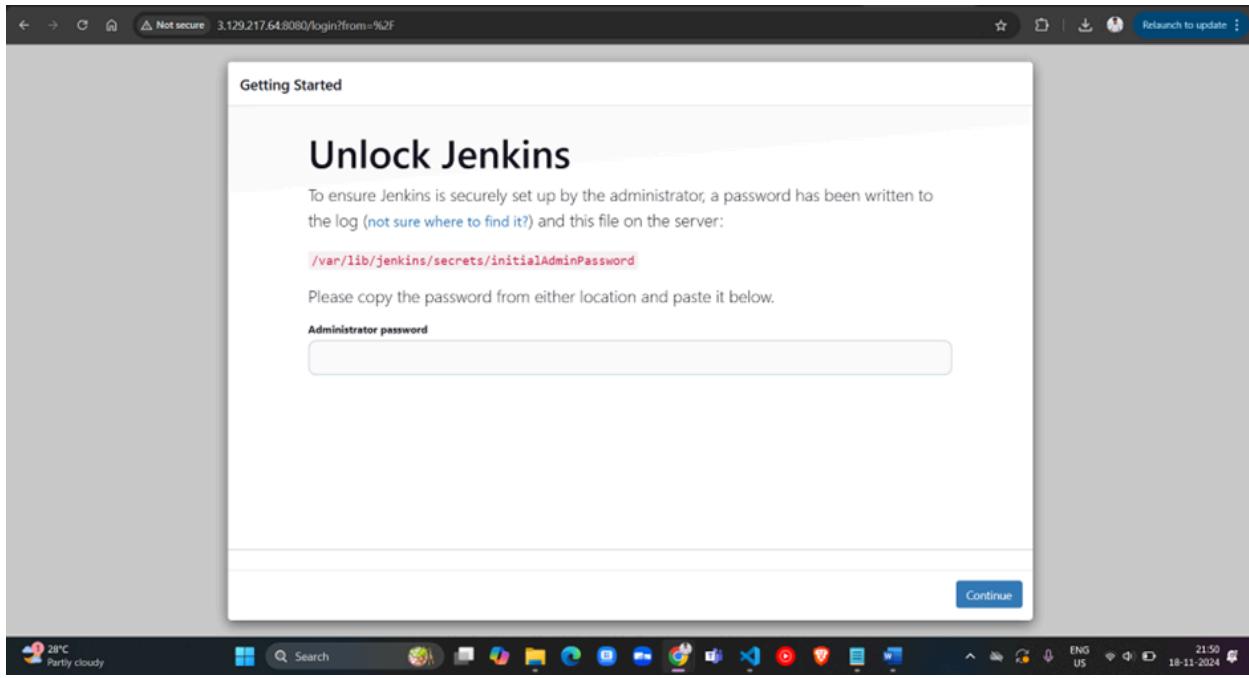
```
apache-maven-3.9.9/lib/plexus-xml-3.0.1.jar
apache-maven-3.9.9/lib/maven-resolver-spi-1.9.22.jar
apache-maven-3.9.9/lib/maven-compat-3.9.9.jar
apache-maven-3.9.9/lib/guice-5.1.0.jar
apache-maven-3.9.9/lib/commons-codec-1.17.1.jar
apache-maven-3.9.9/lib/javax.inject-1.jar
apache-maven-3.9.9/lib/org.eclipse.sisu.plexus-0.9.0.M3.jar
apache-maven-3.9.9/lib/jansi-2.4.1.jar
apache-maven-3.9.9/lib/maven-resolver-named-locks-1.9.22.jar
apache-maven-3.9.9/lib/maven-plugin-api-3.9.9.jar
apache-maven-3.9.9/lib/WagonHttp-shared-3.9.3.jar
apache-maven-3.9.9/lib/httpclient-4.5.14.jar
apache-maven-3.9.9/lib/maven-resolver-transport-file-1.9.22.jar
apache-maven-3.9.9/lib/plexus-component-annotations-2.1.0.jar
apache-maven-3.9.9/lib/maven-resolver-connector-basic-1.9.22.jar
apache-maven-3.9.9/lib/plexus-utils-3.5.1.jar
[root@ip-172-31-11-182 ~]# cd ~
[root@ip-172-31-11-182 ~]# nano .bash_profile
[root@ip-172-31-11-182 ~]# nano .bash_profile
[root@ip-172-31-11-182 ~]# sudo su -
Last login: Mon Nov 18 16:14:56 UTC 2024 on pts/0
[root@ip-172-31-11-182 ~]# mvn -v
Apache Maven 3.9.9 (8e8579a9e76f7d015ee5ec7bfcdc97d260186937)
Maven home: /opt/maven/apache-maven-3.9.9
Java version: 17.0.13, vendor: Amazon.com Inc., runtime: /usr/lib/jvm/java-17-amazon-corretto.x86_64
Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "5.10.228-219.884.amzn2.x86_64", arch: "amd64", family: "unix"
[root@ip-172-31-11-182 ~]#
```

i-06649d0bf07c7c984 (Jenkins server)

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Step 4. Install Necessary Plugins

- Install the Maven and GitHub plugins from the Jenkins dashboard.
- Configure Maven and JDK paths in Jenkins under the [Manage Jenkins](#) section.

Not secure 3.129.217.64:8080/manage/pluginManager/updates/

Jenkins

Dashboard > Manage Jenkins > Plugins

Plugins

- Updates
- Available plugins
- Installed plugins
- Advanced settings
- Download progress

Download progress

Preparation

- Checking internet connectivity
- Checking update center connectivity
- Success

Plugin	Status
Ionicons API	Success
Folders	Success
OWASP Markup Formatter	Success
ASM API	Success
JSON Path API	Success
Structs	Success
Pipeline: Step API	Success
Token Macro	Success
Build Timeout	Success
bouncycastle API	Success
Credentials	Success
Plain Credentials	Success
Variant	Success
SSH Credentials	Success
Credentials Binding	Success
SCM API	Success

3.129.217.64:8080/manage/pluginManager/

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Not secure 3.129.217.64:8080/manage/pluginManager/updates/

Jenkins

Dashboard > Manage Jenkins > Plugins

Plugins

- Updates
- Available plugins
- Installed plugins
- Advanced settings
- Download progress

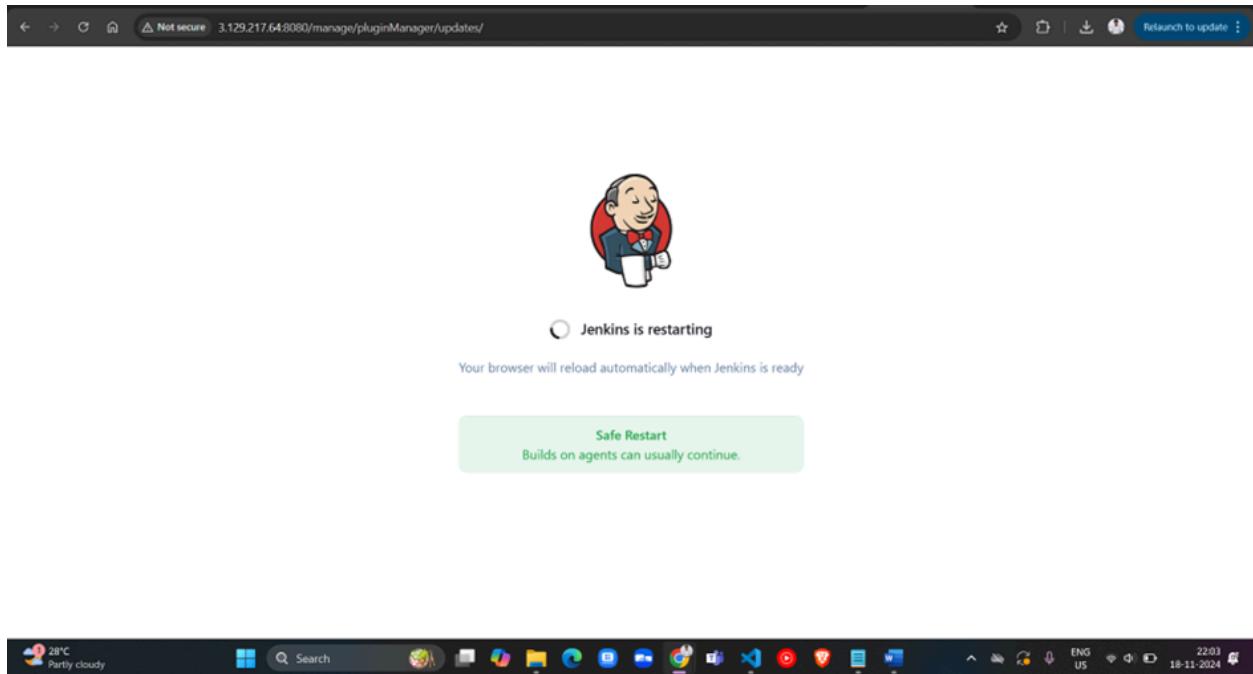
Plugin	Status
Git	Success
SSH Build Agents	Success
Matrix Authorization Strategy	Success
PAM Authentication	Success
LDAP	Success
Email Extension	Success
Mailer	Success
Dark Theme	Success
Loading plugin extensions	Success
Javadoc	Success
JSch dependency	Success
Maven Integration	Success
JavaMail API	Success
SSH server	Success
Deploy to container	Success
Loading plugin extensions	Success

→ Go back to the top page
(you can start using the installed plugins right away)

→ Restart Jenkins when installation is complete and no jobs are running

REST API Jenkins 2.479.1

28°C Partly cloudy Search ENG US 22:03 18-11-2024



Step 5. Create and Check a Maven Build

- Create a new Maven project in Jenkins and configure Git as the source repository.
- Provide build goals such as `clean install` and initiate the build.
- Verify the successful build by checking the Jenkins workspace directory.

A screenshot of a web browser showing the Jenkins 'New Item' creation page. The URL is '3.129.217.64:8080/view/all/newJob'. The page has a header 'Dashboard > All > New Item' and a title 'New Item'. It asks for an item name ('maven') and lists several job types:

- Freestyle project**: Described as a classic general-purpose job type.
- Maven project**: Described as building a Maven project using POM files.
- Pipeline**: Described as orchestrating long-running activities for pipelines.
- Multi-configuration project**: Described as suitable for projects with many configurations.
- Folder**: Described as creating a container for nested items.

A blue 'OK' button is at the bottom. The status bar at the bottom shows '28°C Partly cloudy' and a Windows taskbar with various icons.

Not secure 3.129.217.64:8080/manage/configureTools/

Dashboard > Manage Jenkins > Tools

Default global settings provider

Use default maven global settings

JDK installations

Add JDK

JDK

Name: java-17

JAVA_HOME: /usr/lib/jvm/java-17-amazon-corretto.x86_64

Info: /usr/lib/jvm/java-17-amazon-corretto.x86_64 doesn't look like a JDK directory

Install automatically

Add new Save Apply

28°C Partly cloudy Search

ENGLISH US 18-11-2024 22:13

Not secure 3.129.217.64:8080/manage/configureTools/

Dashboard > Manage Jenkins > Tools

Maven installations

Add Maven

Maven

Name: maven

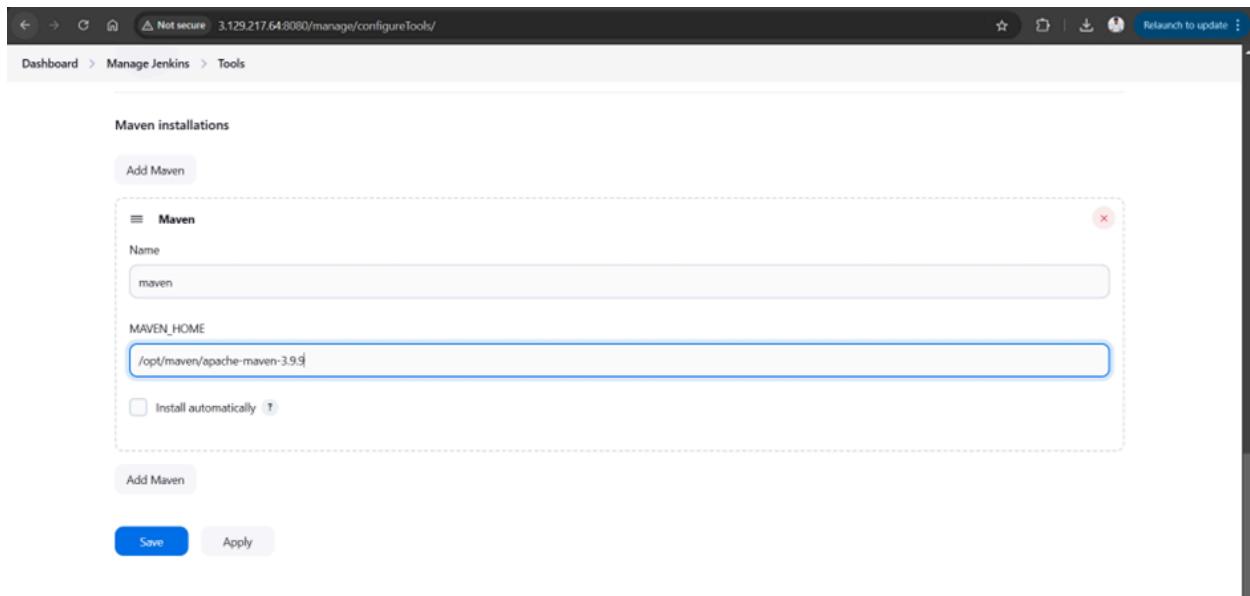
MAVEN_HOME: /opt/maven/apache-maven-3.9.9

Install automatically ?

Add Maven

Save **Apply**

Jenkins 2.479.1



Not secure 3.129.217.64:8080/job/maven/configure

Dashboard > maven > Configuration

Configure

None

Git

Repositories

Repository URL: https://github.com/Romeshdg/hello-world.git

Credentials: - none -

+ Add

Advanced

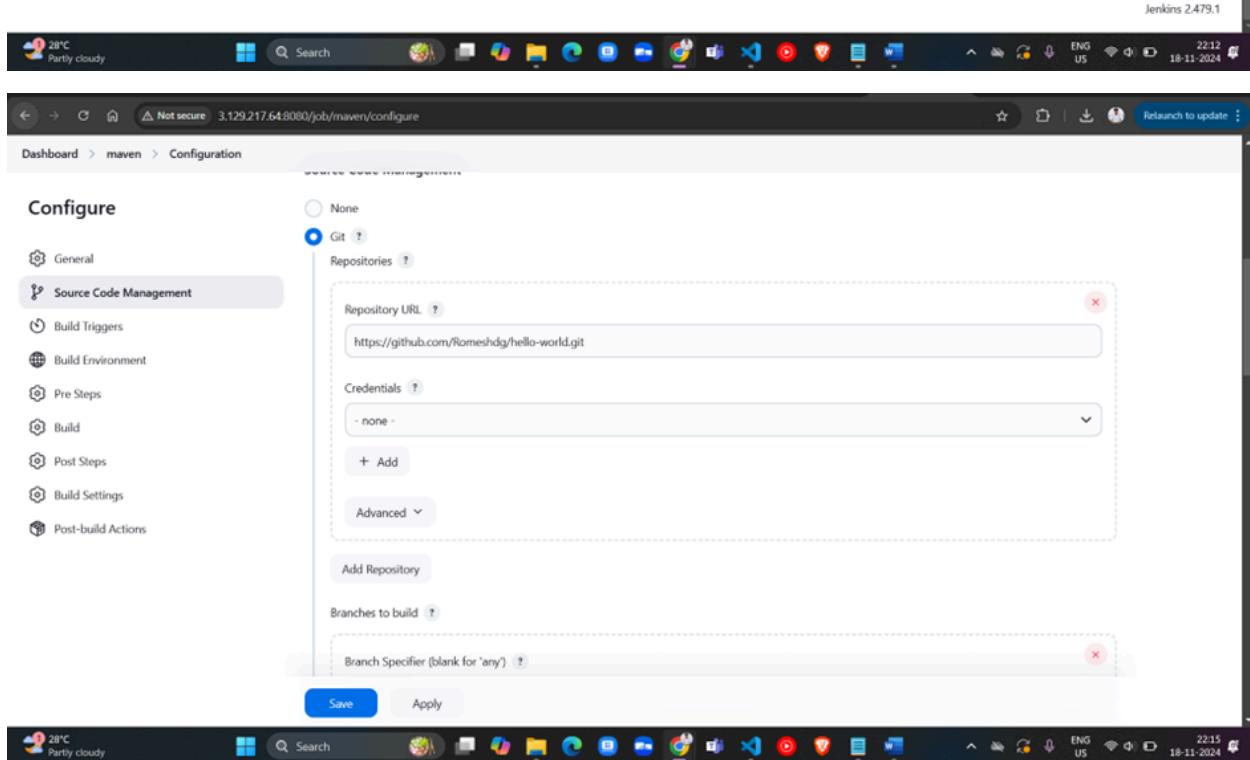
Add Repository

Branches to build

Branch Specifier (blank for 'any')

Save **Apply**

28°C Partly cloudy 22:15 ENG US 18-11-2024



This branch is up to date with [yankils/hello-world:master](#).

Code

Local Codespaces

Clone

HTTPS SSH GitHub CLI

<https://github.com/Romeshdg>Hello-world.git>

Clone using the web URL

Open with GitHub Desktop

Download ZIP

About

No description, website, or topics provided.

Readme Activity 0 stars 0 watching 0 forks Report repository

Releases

No releases published

Packages

No packages published

Languages

Status

Changes

Console Output

Edit Build Information

Delete build #2*

Timings

Git Build Data

Redeploy Artifacts

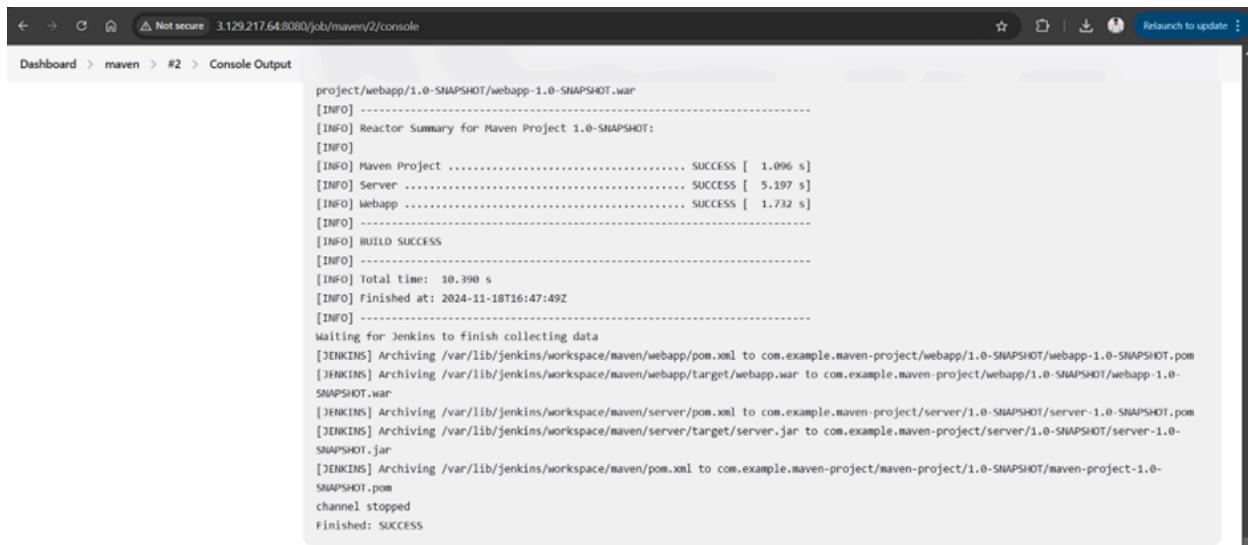
Test Result

See Fingerprints

Previous Build

Console Output

Started by user [Gautham Srinivasan](#)
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/maven
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/maven/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url <https://github.com/Romeshdg>Hello-world.git> # timeout=10
Fetching upstream changes from <https://github.com/Romeshdg>Hello-world.git>
> git --version # timeout=10
> git --version # 'git version 2.40.1'
> git fetch -t --force --progress -- <https://github.com/Romeshdg>Hello-world.git> +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision [aacc9fa39ba3cabf46cf00019f35ce4511287375](#) (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f aacc9fa39ba3cabf46cf00019f35ce4511287375 # timeout=10
Commit message: "updated pom.xml file"
> git rev-list --no-walk aacc9fa39ba3cabf46cf00019f35ce4511287375 # timeout=10
Parsing POMs
Established TCP socket on 38587

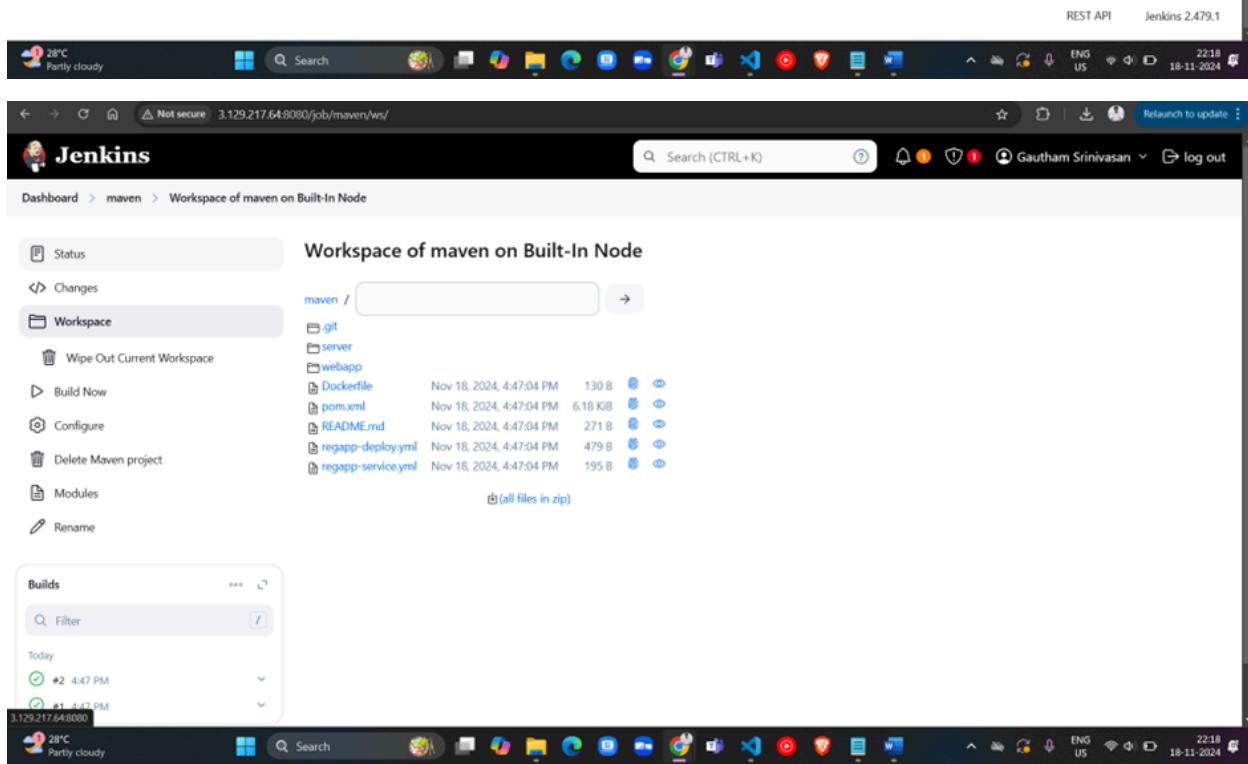


The screenshot shows the Jenkins job console output for a Maven project. The log indicates a successful build with a total time of 10.390 seconds, completed at 2024-11-18T16:47:49Z. It also shows the archiving of various files and artifacts.

```

project/webapp/1.0-SNAPSHOT/webapp-1.0-SNAPSHOT.war
[INFO] -----
[INFO] Reactor Summary for Maven Project 1.0-SNAPSHOT:
[INFO]
[INFO] Maven Project ..... SUCCESS [ 1.096 s]
[INFO] Server ..... SUCCESS [ 5.197 s]
[INFO] webapp ..... SUCCESS [ 1.732 s]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 10.390 s
[INFO] Finished at: 2024-11-18T16:47:49Z
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving /var/lib/jenkins/workspace/maven/webapp/pom.xml to com.example.maven-project/webapp-1.0-SNAPSHOT/webapp-1.0-SNAPSHOT.war
[JENKINS] Archiving /var/lib/jenkins/workspace/maven/webapp/target/webapp.war to com.example.maven-project/webapp-1.0-SNAPSHOT/webapp-1.0-SNAPSHOT.war
[JENKINS] Archiving /var/lib/jenkins/workspace/maven/server/pom.xml to com.example.maven-project/server-1.0-SNAPSHOT/server-1.0-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/maven/server/target/server.jar to com.example.maven-project/server-1.0-SNAPSHOT/server-1.0-SNAPSHOT.jar
[JENKINS] Archiving /var/lib/jenkins/workspace/maven/pom.xml to com.example.maven-project/maven-project-1.0-SNAPSHOT.pom
channel stopped
Finished: SUCCESS

```



The screenshot shows the Jenkins workspace interface for the 'maven' project. The workspace contains a 'maven' directory which includes '.git', 'server', and 'webapp' sub-directories. Inside 'webapp', there are 'Dockerfile', 'pom.xml', 'README.md', 'regapp-deploy.yml', and 'regapp-service.yml' files. A 'Builds' section at the bottom shows two recent builds: '#2 4:47 PM' and '#1 4:47 PM'. The Jenkins logo and a weather icon are visible in the top left corner.

Step 6. Create an EC2 Instance for Tomcat

- Launch another EC2 instance for Tomcat with the required configurations, similar to the Jenkins setup.
- Connect to the Tomcat instance using EC2 Instance Connect.

Amazon Linux 2023

<https://aws.amazon.com/linux/amazon-linux-2023>

```
[ec2-user@ip-172-31-1-119 ~]$ sudo su -
[root@ip-172-31-1-119 ~]# sudo yum install java-17-amazon-corretto -y
Last metadata expiration check: 0:03:55 ago on Mon Nov 18 16:50:18 2024.
Dependencies resolved.
```

Package	Architecture	Version	Repository	Size
Installing:				
<code>java-17-amazon-corretto</code>	x86_64	1:17.0.13+11-1.amzn2023.1	amazonlinux	213 k
Installing dependencies:				
<code>alsa-lib</code>	x86_64	1.2.7.2-1.amzn2023.0.2	amazonlinux	504 k
<code>cairo</code>	x86_64	1.17.6-2.amzn2023.0.1	amazonlinux	684 k
<code>dejavu-sans-fonts</code>	noarch	2.37-16.amzn2023.0.2	amazonlinux	1.3 M
<code>dejavu-sans-mono-fonts</code>	noarch	2.37-16.amzn2023.0.2	amazonlinux	467 k
<code>dejavu-serif-fonts</code>	noarch	2.37-16.amzn2023.0.2	amazonlinux	1.0 M
<code>fontconfig</code>	x86_64	2.13.94-2.amzn2023.0.2	amazonlinux	273 k
<code>fonts-filesystem</code>	noarch	1:2.0.5-12.amzn2023.0.2	amazonlinux	9.5 k
<code>freetype</code>	x86_64	2.13.2-5.amzn2023.0.1	amazonlinux	423 k

i-07cb8679b1f01bee2 (tomcat server)

PublicIPs: 18.216.73.75 PrivateIPs: 172.31.1.119

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Not secure 18.216.73.75:8080 Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/9.0.97

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](#)

Developer Quick Start

Tomcat Setup
First Web Application Realms & AAA
JDBC Data Sources Examples Servlet Specifications
Tomcat Versions

Managing Tomcat
For security, access to the [manager webapp](#) is restricted. Users are defined in: `$CATALINA_HOME/conf/tomcat-users.xml`. In Tomcat 9.0 access to the manager application is split between different users. [Read more...](#)

Release Notes
Changelog
Migration Guide
Security Notices

Documentation
[Tomcat 9.0 Documentation](#)
[Tomcat 9.0 Configuration](#)
[Tomcat Wiki](#)

Find additional important configuration information in: `$CATALINA_HOME/RUNNING.txt`. Developers may be interested in:
[Tomcat 9.0 Bug Database](#)
[Tomcat 9.0 JavaDocs](#)
[Tomcat 9.0 Git Repository at GitHub](#)

Getting Help
FAQ and Mailing Lists
The following mailing lists are available:
[tomcat-announce](#)
Important announcements, releases, security vulnerability notifications. (Low volume).
[tomcat-users](#)
User support and discussion.
[taglibs-user](#)
User support and discussion for Apache Taglibs.
[tomcat-dev](#)
Development mailing list, including commit messages.

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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, you'll need to edit the Manager's `context.xml` file.

If you have already configured the Manager application to allow access and you have used your browser's back button, used a saved bookmark or similar then you may have triggered the cross-site request forgery (CSRF) protection that has been enabled for the HTML interface of the Manager application. You will need to reset this protection by returning 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 continue to see this access denied message, check that you have the necessary permissions to access this application.

If you have not changed any configuration files, please examine the file `conf/tomcat-users.xml` in your installation. That file must contain the credentials to let you use this webapp.

For example, to add the `manager-gui` role to a user named `tomcat` with a password of `s3cret`, add the following to the config file listed above.

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

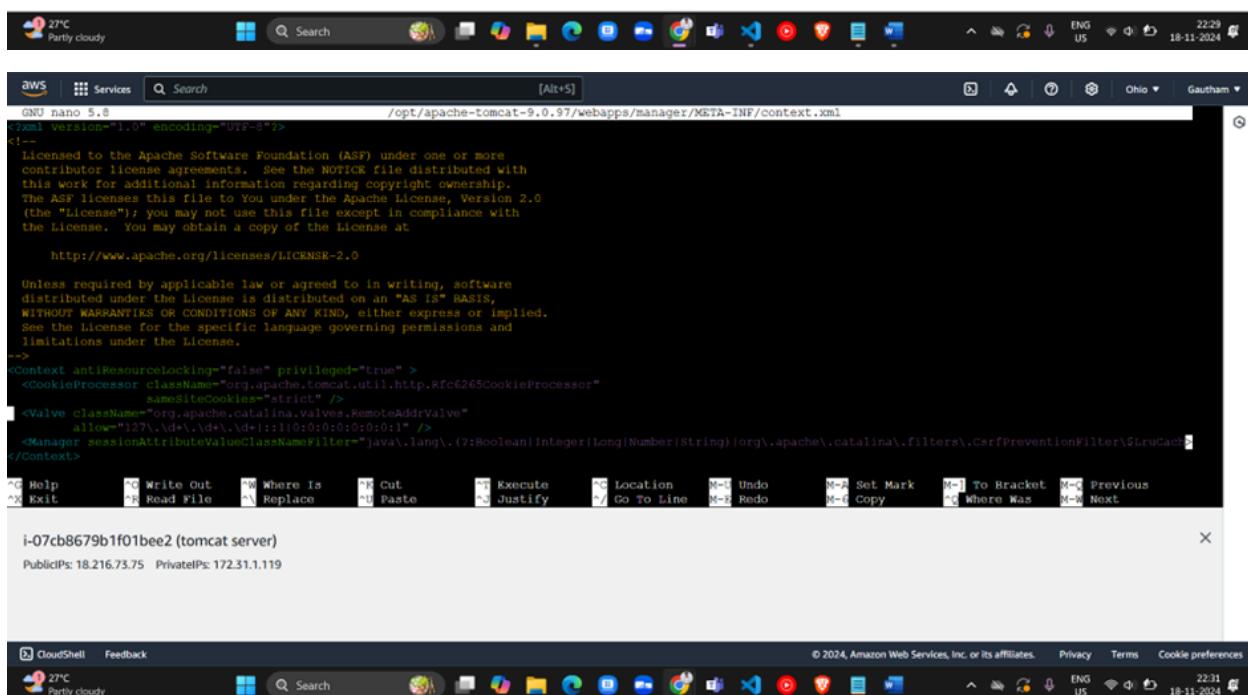
Note that for Tomcat 7 onwards, the roles required to use the manager application were changed from the single `manager` role to the following four roles. You will need to assign the role(s) required for the functionality you wish to access.

- `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) then the browser must be closed afterwards to terminate the session.

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

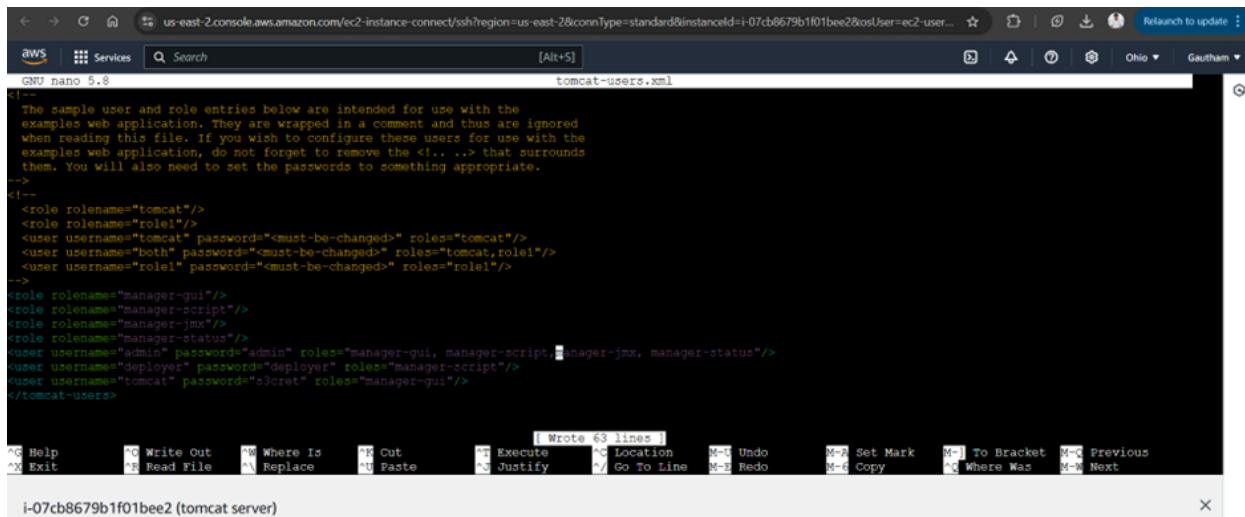


```
us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-07cb8679b1f01bee2&osUser=ec2-user... Relaunch to update
AWS Services Search [Alt+S] Modified: Ohio Gautham
GNU nano 5.8 /opt/apache-tomcat-9.0.97/webapps/manager/META-INF/context.xml
<!--
Licensed to the Apache Software Foundation (ASF) under one or more
contributor license agreements. See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
the License. You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
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">
<cookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
<!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow="127\.\d+\.\d+\.\d+|0\.:0\:0\:0\:0\:1" /> -->
<Manager sessionAttributeValueClassNameFilter="java.lang.Integer|java.lang.Long|java.lang.String" />
</Context>
^G Help ^C Write Out ^W Where Is ^K Cut ^E Kexecute ^L Location M-1 Undo M-A Set Mark M-1 To Bracket M-C Previous
^X Exit ^R Read File ^F Replace ^U Paste ^J Justify ^Y Go To Line M-2 Redo M-B Copy M-2 Where Was M-W Next
i-07cb8679b1f01bee2 (tomcat server)
PublicIPs: 18.216.73.75 PrivateIPs: 172.31.1.19
```

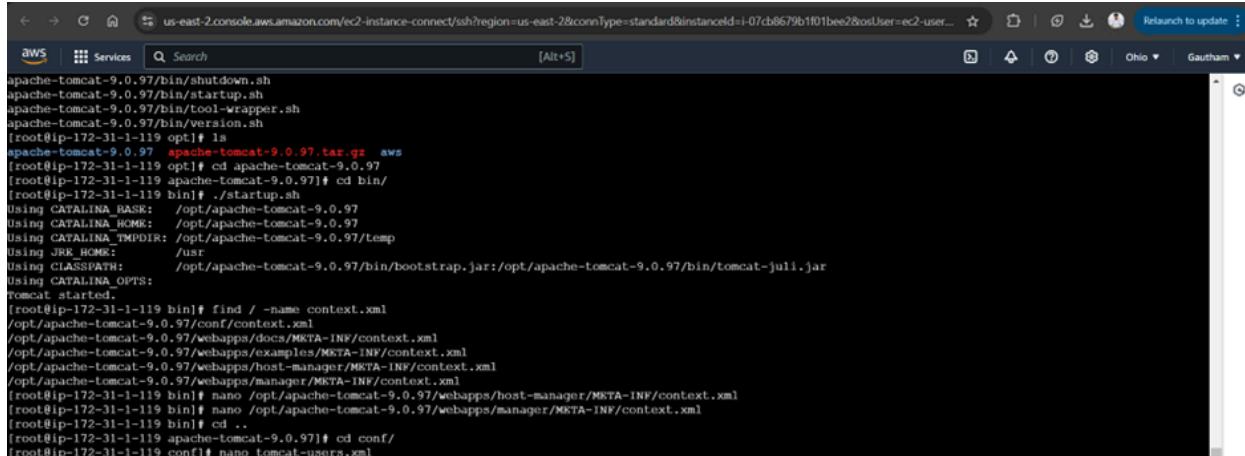
```
CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences
27°C Partly cloudy Search ENG US 22:32 18-11-2024
us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-07cb8679b1f01bee2&osUser=ec2-user... Relaunch to update
AWS Services Search [Alt+S]
apache-tomcat-9.0.97/bin/digest.sh
apache-tomcat-9.0.97/bin/makebase.sh
apache-tomcat-9.0.97/bin/setclasspath.sh
apache-tomcat-9.0.97/bin/shutdown.sh
apache-tomcat-9.0.97/bin/startup.sh
apache-tomcat-9.0.97/bin/tool-wrapper.sh
apache-tomcat-9.0.97/bin/version.sh
[root@ip-172-31-1-119 ~]# ls
apache-tomcat-9.0.97 apache-tomcat-9.0.97.tar.gz aws
[root@ip-172-31-1-119 ~]# cd apache-tomcat-9.0.97
[root@ip-172-31-1-119 apache-tomcat-9.0.97]# cd bin/
[root@ip-172-31-1-119 bin]# ./startup.sh
Using CATALINA_BASE: /opt/apache-tomcat-9.0.97
Using CATALINA_HOME: /opt/apache-tomcat-9.0.97
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.97/temp
Using JRE_HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.97/bin/bootstrap.jar:/opt/apache-tomcat-9.0.97/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
[root@ip-172-31-1-119 bin]# find / -name context.xml
/opt/apache-tomcat-9.0.97/conf/context.xml
/opt/apache-tomcat-9.0.97/webapps/docs/META-INF/context.xml
/opt/apache-tomcat-9.0.97/webapps/examples/META-INF/context.xml
/opt/apache-tomcat-9.0.97/webapps/host-manager/META-INF/context.xml
/opt/apache-tomcat-9.0.97/webapps/manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# nano /opt/apache-tomcat-9.0.97/webapps/host-manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# nano /opt/apache-tomcat-9.0.97/webapps/manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]#
```

```
i-07cb8679b1f01bee2 (tomcat server)
PublicIPs: 18.216.73.75 PrivateIPs: 172.31.1.119
```



```
<!--
The sample user and role entries below are intended for use with the
examples web application. They are wrapped in a comment and thus are ignored
when reading this file. If you wish to configure these users for use with the
examples web application, do not forget to remove the <... ...> that surrounds
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="manager-jmx"/>
<role rolename="manager-status"/>
<user username="admin" password="admin" roles="manager-gui, manager-script, manager-jmx, manager-status"/>
<user username="deployer" password="deployer" roles="manager-script"/>
<user username="tomcat" password="s3cret" roles="manager-gui"/>
</tomcat-users>
```

i-07cb8679b1f01bee2 (tomcat server)
PublicIPs: 18.216.73.75 PrivateIPs: 172.31.1.119



```
apache-tomcat-9.0.97/bin/shutdown.sh
apache-tomcat-9.0.97/bin/startup.sh
apache-tomcat-9.0.97/bin/tool-wrapper.sh
apache-tomcat-9.0.97/bin/version.sh
[root@ip-172-31-1-119 opt]# ls
apache-tomcat-9.0.97 apache-tomcat-9.0.97.tar.gz  aws
[root@ip-172-31-1-119 opt]# cd apache-tomcat-9.0.97
[root@ip-172-31-1-119 apache-tomcat-9.0.97]# cd bin/
[root@ip-172-31-1-119 bin]# ./startup.sh
Using CATALINA_BASE:  /opt/apache-tomcat-9.0.97
Using CATALINA_HOME:   /opt/apache-tomcat-9.0.97
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.97/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/apache-tomcat-9.0.97/bin/bootstrap.jar:/opt/apache-tomcat-9.0.97/bin/tomcat-juli.jar
Using CATALINA_OPTS:
tomcat started.
[root@ip-172-31-1-119 bin]# find / -name context.xml
/opt/apache-tomcat-9.0.97/conf/context.xml
/opt/apache-tomcat-9.0.97/webapps/docs/META-INF/context.xml
/opt/apache-tomcat-9.0.97/webapps/examples/META-INF/context.xml
/opt/apache-tomcat-9.0.97/webapps/host-manager/META-INF/context.xml
/opt/apache-tomcat-9.0.97/webapps/manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# nano /opt/apache-tomcat-9.0.97/webapps/host-manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# nano /opt/apache-tomcat-9.0.97/webapps/manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# cd ..
[root@ip-172-31-1-119 apache-tomcat-9.0.97]# cd conf/
[root@ip-172-31-1-119 conf]# nano tomcat-users.xml
[root@ip-172-31-1-119 conf]#
```

i-07cb8679b1f01bee2 (tomcat server)
PublicIPs: 18.216.73.75 PrivateIPs: 172.31.1.119



```
us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-07cb8679b1f01bee2&osUser=ec2-user... Relaunch to update [Alt+S] Services Search [Alt+S]
/opt/apache-tomcat-9.0.97/webapps/manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# nano /opt/apache-tomcat-9.0.97/webapps/host-manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# nano /opt/apache-tomcat-9.0.97/webapps/manager/META-INF/context.xml
[root@ip-172-31-1-119 bin]# cd ..
[root@ip-172-31-1-119 apache-tomcat-9.0.97]# cd conf/
[root@ip-172-31-1-119 conf]# nano tomcat-users.xml
[root@ip-172-31-1-119 conf]# cd ..
[root@ip-172-31-1-119 ..]# command not found
[root@ip-172-31-1-119 conf]# cd ..
[root@ip-172-31-1-119 apache-tomcat-9.0.97]# cd bin/
[root@ip-172-31-1-119 bin]# ./shutdown.sh
Using CATALINA_BASE: /opt/apache-tomcat-9.0.97
Using CATALINA_HOME: /opt/apache-tomcat-9.0.97
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.97/temp
Using JK_HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.97/bin/bootstrap.jar:/opt/apache-tomcat-9.0.97/bin/tomcat-juli.jar
Using CATALINA_OPTS:
NOTE: Picked up JDK JAVA_OPTIONS: --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED
--add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.rmi=sun.rmi.transport=ALL-UNNAMED
[root@ip-172-31-1-119 bin]# ./startup.sh
Using CATALINA_BASE: /opt/apache-tomcat-9.0.97
Using CATALINA_HOME: /opt/apache-tomcat-9.0.97
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.97/temp
Using JK_HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.97/bin/bootstrap.jar:/opt/apache-tomcat-9.0.97/bin/tomcat-juli.jar
Using CATALINA_OPTS:
tomcat started.
[root@ip-172-31-1-119 bin]#
```

i-07cb8679b1f01bee2 (tomcat server)

PublicIPs: 18.216.73.75 PrivateIPs: 172.31.1.119



The screenshot shows a browser window with the URL `http://18.216.73.75:8080/manager/html`. A 'Sign in' dialog box is displayed in the foreground, prompting for 'Username' and 'Password'. The background shows the Apache Tomcat Web Application Manager interface. The interface includes a navigation bar with 'Manager', 'List Applications', 'HTML Manager Help', 'Manager Help', and 'Server Status'. Below this is a table titled 'Applications' listing several applications: 'Welcome to Tomcat', 'Tomcat Documentation', 'Servlet and JSP Examples', 'Tomcat Host Manager Application', and 'Tomcat Manager Application'. Each application row has columns for 'Path', 'Version', 'Display Name', 'Running', 'Sessions', and 'Commands'. The 'Commands' column contains buttons for 'Start', 'Stop', 'Reload', 'Undeploy', and session expiration settings ('Expire sessions with idle ≥ 30 minutes'). The background also features the Apache logo and a cartoon cat icon.

Step 7. Setup Java and Tomcat on EC2

- Install `amazon-corretto java-17`.
- Download and extract Tomcat to `/opt/tomcat`.
- Modify configuration files (`context.xml` and `tomcat-users.xml`) for manager and user roles.
- Restart Tomcat and access the manager app via `<Public_IP>:8080`.

```
aws Services Search [Alt+S] Relaunch to update...
2024-11-18 16:55:53 (111 MB/s) - 'apache-tomcat-9.0.97.tar.gz' saved [12749071/12749071]

[root@ip-172-31-1-119 opt]# ll
total 12452
-rw-r--r--. 1 root root 12749071 Nov 6 20:11 apache-tomcat-9.0.97.tar.gz
drwxr-xr-x. 4 root root 33 Nov 13 18:26 aws
[root@ip-172-31-1-119 opt]# tar -xvf apache-tomcat-9.0.97.tar.gz
apache-tomcat-9.0.97/conf/
apache-tomcat-9.0.97/conf/catalina.policy
apache-tomcat-9.0.97/conf/catalina.properties
apache-tomcat-9.0.97/conf/context.xml
apache-tomcat-9.0.97/conf/iaspic-providers.xml
apache-tomcat-9.0.97/conf/iaspic-providers.xsd
apache-tomcat-9.0.97/conf/logging.properties
apache-tomcat-9.0.97/conf/server.xml
apache-tomcat-9.0.97/conf/tomcat-users.xml
apache-tomcat-9.0.97/conf/tomcat-users.xsd
apache-tomcat-9.0.97/conf/web.xml
apache-tomcat-9.0.97/bin/
apache-tomcat-9.0.97/lib/
apache-tomcat-9.0.97/logs/
apache-tomcat-9.0.97/temp/
apache-tomcat-9.0.97/webapps/
apache-tomcat-9.0.97/webapps/ROOT/
apache-tomcat-9.0.97/webapps/ROOT/WEB-INF/
apache-tomcat-9.0.97/webapps/docs/
apache-tomcat-9.0.97/webapps/docs/META-INF/
apache-tomcat-9.0.97/webapps/docs/WEB-INF/
```

i-07cb8679b1f01bee2 (tomcat server)

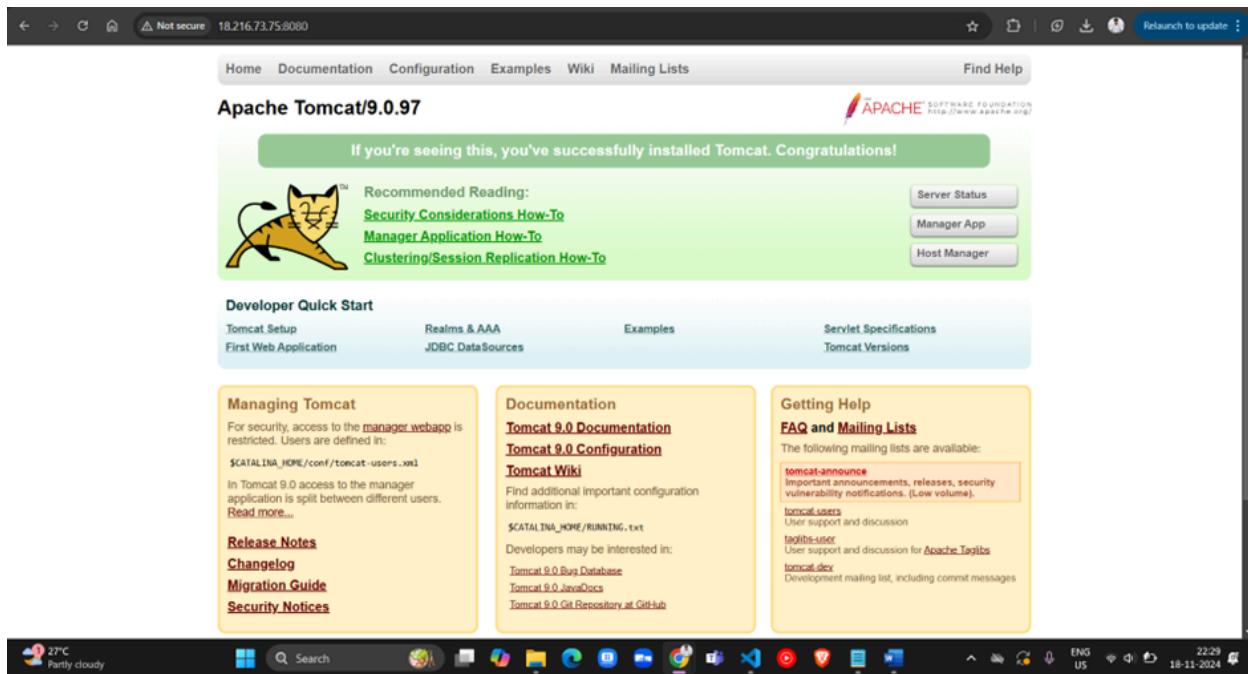
Public IPs: 18.216.73.75 Private IPs: 172.31.1.119



i-07cb8679b1f01bee2 (tomcat server)

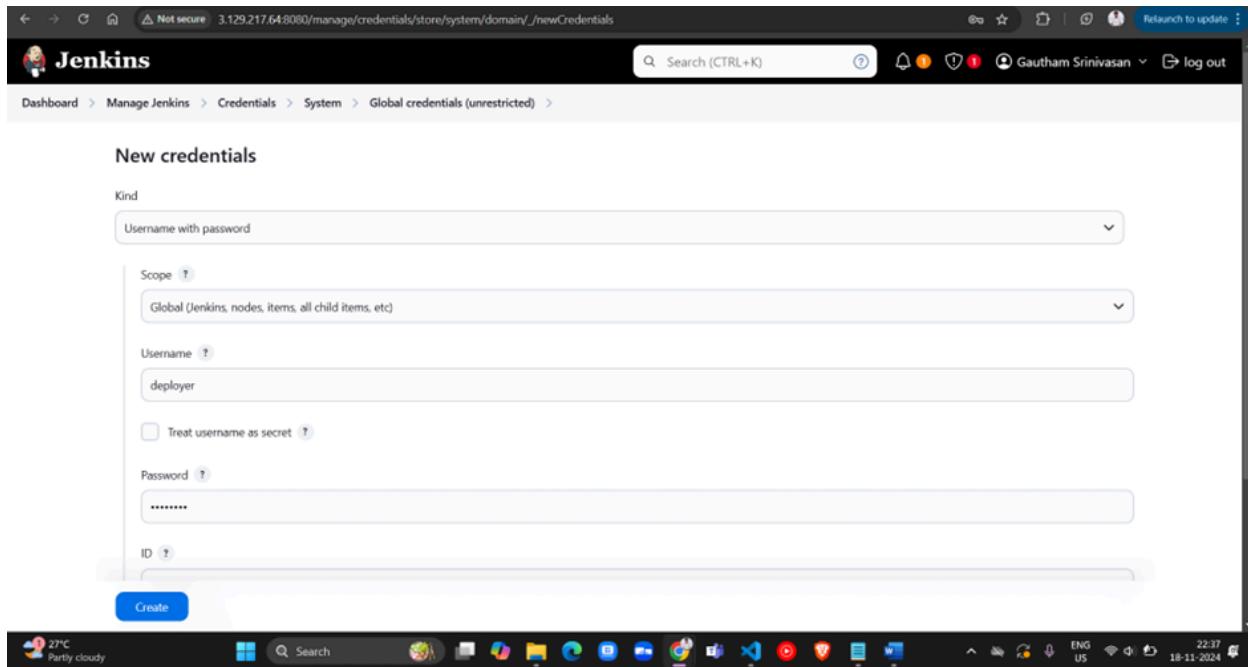
Public IPs: 18.216.73.75 Private IPs: 172.31.1.119





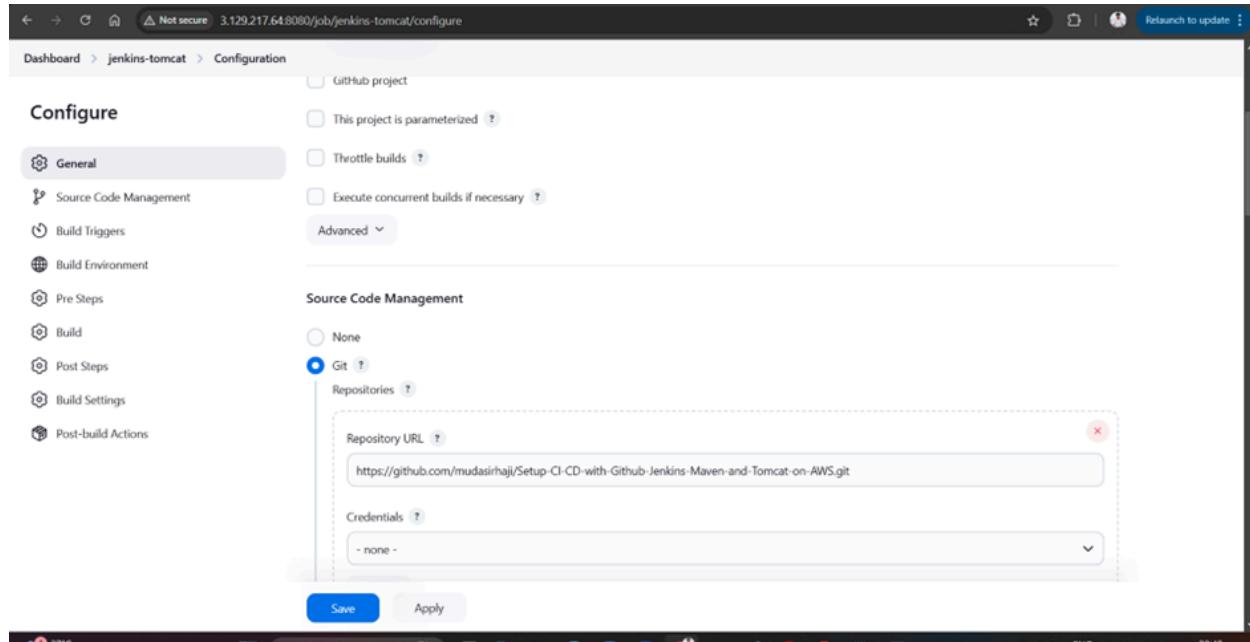
Step 8. Install Tomcat Plugin in Jenkins

- Install the [Deploy to Container](#) plugin in Jenkins.
- Add Tomcat manager credentials under [Manage Jenkins > Credentials](#)



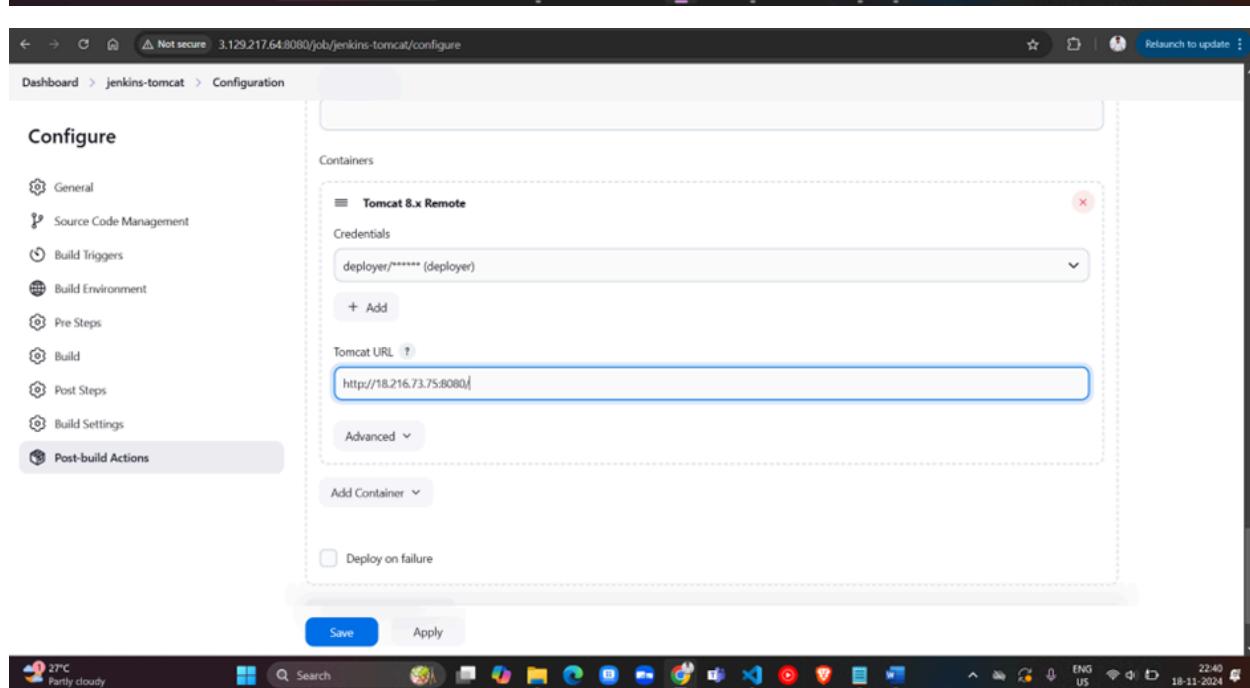
Step 9. Deploy a Sample Web App

- Create a new Maven project in Jenkins and use a public Git repository URL as the source.
- Configure post-build actions to deploy a **.war** file to the Tomcat server.
- Verify the successful deployment by accessing the web app on the Tomcat manager page.



The screenshot shows the Jenkins configuration page for a job named "jenkins-tomcat". Under the "Source Code Management" section, "Git" is selected as the provider, and the "Repository URL" is set to "https://github.com/mudasirhaji/Setup-CI-CD-with-Github-Jenkins-Maven-and-Tomcat-on-AWS.git".

Post-build Actions



The screenshot shows the Jenkins configuration page for a job named "jenkins-tomcat". Under the "Post-build Actions" section, a "Tomcat 8.x Remote" container is configured with a "Tomcat URL" of "http://18.216.73.75:8080".

Containers

Tomcat 8.x Remote

Credentials: deployer/******** (deployer)

Tomcat URL: http://18.216.73.75:8080

Advanced

Add Container

Deploy on failure

The screenshot shows the Jenkins interface with the 'Console Output' tab selected. The build was started by user 'Gautham Srinivasan' and is running as SYSTEM. It details the cloning of a Git repository from https://github.com/mudasirhaji/Setup-CI-CD-with-Github-Jenkins-Maven-and-Tomcat-on-AWS.git, fetching upstream changes, and setting up remote origins. It also mentions avoiding a second fetch and committing changes to index.jsp. The logs conclude with a note about skipping the changelog.

```

Started by user Gautham Srinivasan
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/jenkins-tomcat
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/mudasirhaji/Setup-CI-CD-with-Github-Jenkins-Maven-and-Tomcat-on-AWS.git
> git init /var/lib/jenkins/workspace/jenkins-tomcat # timeout=10
Fetching upstream changes from https://github.com/mudasirhaji/Setup-CI-CD-with-Github-Jenkins-Maven-and-Tomcat-on-AWS.git
> git --version # timeout=10
> git --version # 'git version 2.40.1'
> git fetch --tags --force --progress -- https://github.com/mudasirhaji/Setup-CI-CD-with-Github-Jenkins-Maven-and-Tomcat-on-AWS.git
+refs/heads/*+refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/mudasirhaji/Setup-CI-CD-with-Github-Jenkins-Maven-and-Tomcat-on-AWS.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*+refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision 3cbeeb2bc19c46482f750846a93d058c955c5de7 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f 3cbeeb2bc19c46482f750846a93d058c955c5de7 # timeout=10
Commit message: "Update index.jsp"
First time build. Skipping changelog.
Parsing POMs

```

The screenshot shows the Tomcat Web Application Manager interface. It lists several applications deployed to the Tomcat server:

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

Step 10. Verification of Output

- Access the deployed web app through the Tomcat manager page and verify its functionality.



Deploy Ansible Playbook using Jenkins to automate the whole process!



Step 11. Termination of Resources

- Terminate the Jenkins and Tomcat EC2 instances from the AWS EC2 dashboard.

Conclusion

By implementing this project, you gain hands-on experience in setting up a CI/CD pipeline with Jenkins, configuring Maven builds, and deploying applications to a Tomcat server. This approach minimizes manual intervention, enhances deployment efficiency, and ensures scalability by leveraging AWS EC2.