



**NEXUS**

What is Artifactory  
What is Nexus  
Nexus Setup  
Integrating Nexus with Jenkins

nexus  
repository

**SWIPE LEFT**



An artifact in software development refers to a byproduct of the software development process. It can be any file, like binaries, executables, JAR/WAR files, scripts, or configuration files, that are produced during the development lifecycle.

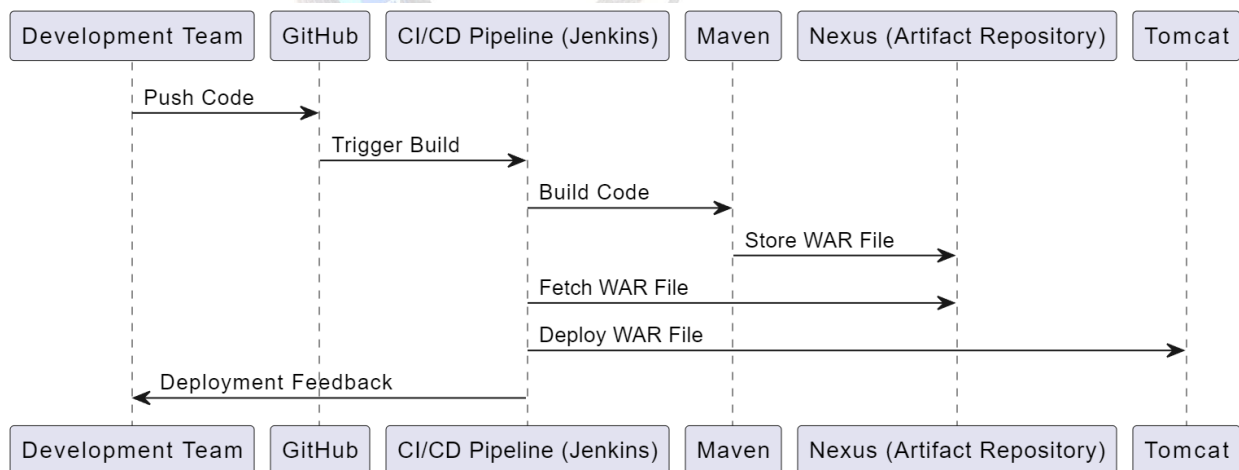
In the context of Maven (a build tool), an artifact typically refers to the files generated after a build process, such as:

- JAR (Java Archive)
- WAR (Web Archive)
- EAR (Enterprise Archive)

### Importance of Artifacts in DevOps:

As a **DevOps engineer**, understanding and managing artifacts is crucial for the following reasons:

1. **Continuous Integration/Continuous Deployment (CI/CD):** Artifacts are the output of your build process and managing them effectively ensures they are correctly deployed across different environments.
2. **Versioning & Traceability:** Artifacts are versioned, and proper management ensures traceability.
3. **Storage & Distribution:** DevOps tools (e.g., Artifactory, Nexus) are used to store and distribute artifacts across environments or teams.



Nexus is a repository manager used in software development for managing and storing software artifacts. It helps developers and DevOps teams by serving as a central hub for storing, retrieving, and managing dependencies, build artifacts, and releases.

### Why Nexus is Advantageous Over Other Artifact Repositories:

1. **Broad Format Support:** Nexus supports multiple artifact types (e.g., Maven, npm, Docker, etc.), whereas some alternatives (like Artifactory or Sonatype Nexus 2) might specialize more in certain formats.
2. **User-Friendly Interface:** Nexus has an intuitive web-based UI that makes managing repositories, artifacts, and permissions easy for users.
3. **Enterprise-Ready:** Nexus Repository Pro (the enterprise edition) provides robust features for enterprise needs, such as high availability, disaster recovery, and performance improvements.
4. **Integration with CI/CD Pipelines:** Nexus integrates seamlessly with CI/CD tools like Jenkins, GitLab, or Bamboo, making it ideal for automating the artifact management lifecycle, including building, storing, and deploying artifacts.
5. **Cost-Effectiveness:** Nexus has a free open-source version that includes many of the features needed by small to medium-sized teams. For larger enterprises, the paid version offers advanced capabilities at a competitive price compared to alternatives like JFrog Artifactory.



Jenkins



nexus  
repository

# Upload Artifact to Nexus using Jenkins

FOSSTechNix.com

# Nexus Setup and Integrated to Jenkins

**Step 1: Launch an Instance with the following configurations:**

**Storage:** 25 GiB

**Security Group:** Allow port 9000

**Instance Type:** t2.medium

Instances (1/1) Info								
Find Instance by attribute or tag (case-sensitive)			All states					
<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input checked="" type="checkbox"/>		i-024dc5cb6aa6eb39b	Running	t2.medium	Initializing	View alarms +	us-east-1a	ec2-34-203-14-

**Step-2: Install java 1.8.0**

```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec2-user&region=us-...

aws

Services Search [Alt+S] N. Virginia charan_7781

[root@nexus ~]# yum install java-1.8.0-openjdk -y
```

**Step-3: Change directory to /opt**

```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec2-user&region=us-...

aws

Services Search [Alt+S] N. Virginia charan_7781

[root@nexus ~]# cd /opt
[root@nexus opt]#
```

**Step-4:** Download the nexus from their official <https://help.sonatype.com/en/download.html>

```
EC2 Instance Connect | us-east-1 | Launch an instance | EC2 | us-east-1 | Instance details | EC2 | us-east-1 | +  
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec2-user&region=us-east-1  
aws Services Search [Alt+S] N. Virginia charan_7781  
[root@nexus opt]# wget https://download.sonatype.com/nexus/3/nexus-3.65.0-02-unix.tar.gz
```

```
EC2 Instance Connect | us-east-1 | Launch an instance | EC2 | us-east-1 | Instance details | EC2 | us-east-1 | +  
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec2-user&region=us-east-1  
aws Services Search [Alt+S] N. Virginia charan_7781  
[root@nexus opt]# ls  
aws nexus-3.65.0-02-unix.tar.gz rh  
[root@nexus opt]#
```

**Step-5:** Extract the tar file

```
EC2 Instance Connect | us-east-1 | Launch an instance | EC2 | us-east-1 | Instance details | EC2 | us-east-1 | +  
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec2-user&region=us-east-1  
aws Services Search [Alt+S] N. Virginia charan_7781  
[root@nexus opt]# ls  
aws nexus-3.65.0-02-unix.tar.gz rh  
[root@nexus opt]# tar -zxvf nexus-3.65.0-02-unix.tar.gz
```

```
EC2 Instance Connect | us-east-1 | Launch an instance | EC2 | us-east-1 | Instance details | EC2 | us-east-1 | +  
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec2-user&region=us-east-1  
aws Services Search [Alt+S] N. Virginia charan_7781  
[root@nexus opt]#  
[root@nexus opt]# ll  
total 226428  
drwxr-xr-x 4 root root 33 Sep 3 22:46 aws  
drwxr-xr-x 10 root root 181 Sep 7 00:48 nexus-3.65.0-02  
-rw-r--r-- 1 root root 231860503 Feb 6 2024 nexus-3.65.0-02-unix.tar.gz  
drwxr-xr-x 2 root root 6 Aug 16 2018 rh  
drwxr-xr-x 3 root root 20 Sep 7 00:48 sonatype-work  
[root@nexus opt]#
```

## Step-6: Change name of nexus directory

```
aws [root@nexus opt]# ls
aws [root@nexus opt]# mv nexus-3.65.0-02 nexus
aws [root@nexus opt]# ls
aws [root@nexus opt]#
```

## Step-7: Add nexus user

adduser nexus

```
[root@nexus opt]# adduser nexus
[root@nexus opt]#
```

## Step-8: Change the ownership of the directory's nexus and Sonatype.

```
[root@nexus opt]# ll
total 226428
drwxr-xr-x 4 root root      33 Sep  3 22:46 aws
drwxr-xr-x 1 root root      181 Sep  7 00:48 nexus
-rw-r--r-- 1 root root 231860503 Feb  6 2024 nexus-3.65.0-02-unix.tar.gz
drwxr-xr-x 2 root root       6 Aug 16 2018 rh
drwxr-xr-x 3 root root      20 Sep  7 00:48 sonatype-work
[root@nexus opt]# chown -R nexus:nexus /opt/nexus
[root@nexus opt]# chown -R nexus:nexus /opt/sonatype-work
[root@nexus opt]# ll
total 226428
drwxr-xr-x 4 root root      33 Sep  3 22:46 aws
drwxr-xr-x 10 nexus nexus    181 Sep  7 00:48 nexus
-rw-r--r-- 1 root root 231860503 Feb  6 2024 nexus-3.65.0-02-unix.tar.gz
drwxr-xr-x 2 root root       6 Aug 16 2018 rh
drwxr-xr-x 3 nexus nexus     20 Sep  7 00:48 sonatype-work
[root@nexus opt]#
```

```
[root@nexus bin]# vi /etc/systemd/system/nexus.service
[root@nexus bin]#
```

**Paste the below script:**

[Unit]

Description=nexus service

After=network.target

[Service]

Type=forking

LimitNOFILE=65536

User=nexus

Group=nexus

ExecStart=/opt/nexus/bin/nexus start

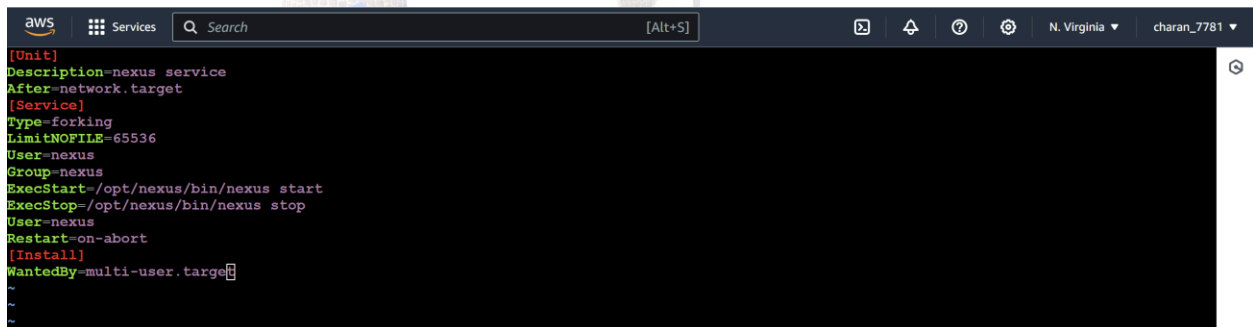
ExecStop=/opt/nexus/bin/nexus stop

User=nexus

Restart=on-abort

[Install]

WantedBy=multi-user.target



```
aws Services Search [Alt+S]
[Unit]
Description=nexus service
After=network.target
[Service]
Type=forking
LimitNOFILE=65536
User=nexus
Group=nexus
ExecStart=/opt/nexus/bin/nexus start
ExecStop=/opt/nexus/bin/nexus stop
User=nexus
Restart=on-abort
[Install]
WantedBy=multi-user.target
~
~
~
```

**Step-11:** In -s /opt/nexus/bin/nexus /etc/init.d/nexus

**Step-12:** Add service to boot

chkconfig --add nexus

chkconfig --levels 345 nexus on



```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec...
[root@nexus bin]# ln -s /opt/nexus/bin/nexus /etc/init.d/nexus
[root@nexus bin]# chkconfig --add nexus
[root@nexus bin]# chkconfig --levels 345 nexus on
Note: Forwarding request to 'systemctl enable nexus.service'.
Created symlink from /etc/systemd/system/multi-user.target.wants/nexus.service to /etc/systemd/system/nexus.service.
[root@nexus bin]#
```

## Step-13: Start service

service nexus start

```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec...
[root@nexus bin]# service nexus start
Starting nexus
[root@nexus bin]#
```

Browser - Sonatype Nexus: x Download x nexus setup github post x Download x DevOps Online Training x +

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-024dc5cb6aa6eb39b&osUser=ec... ☆

aws Services Search [Alt+S] N. Virginia charan\_7781

```
[root@nexus bin]# service nexus start
Starting nexus
[root@nexus bin]#
```

Not secure 34.203.14.105:8081/#browse/browse

**Sonatype Nexus Repository**  
OSS 3.65.0-02

Search components

Sign In

**Browse** Browse assets and components

Filter

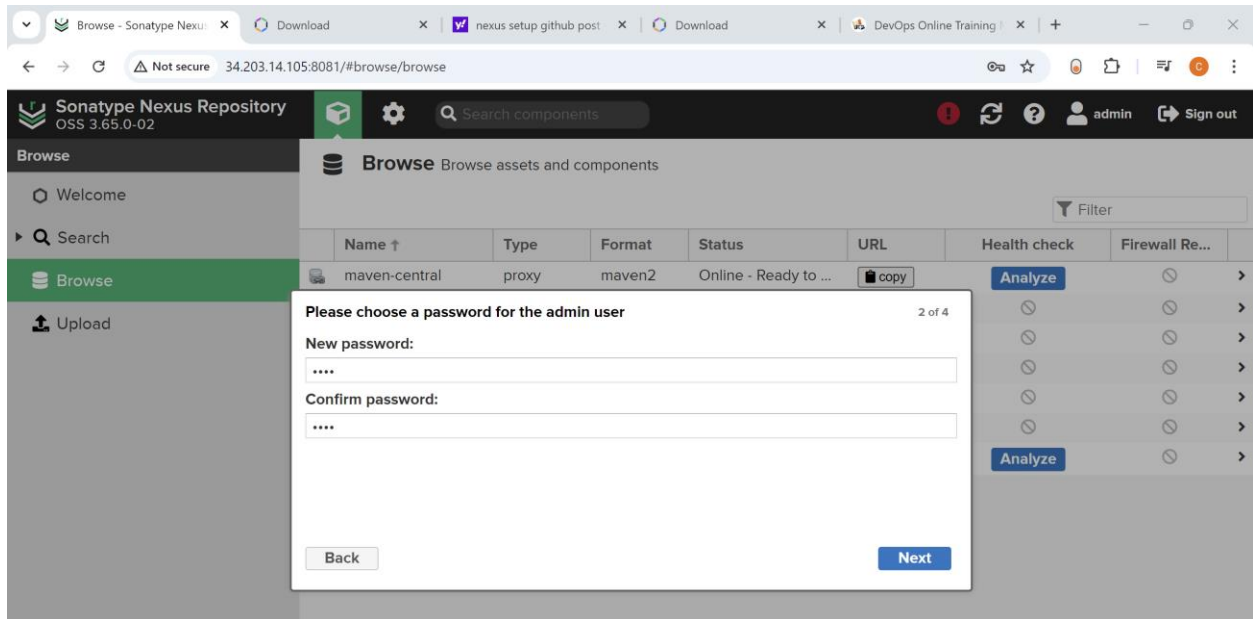
Name ↑	Type	Format	Status	URL	Health check
maven-central	proxy	maven2	Online - Ready to Connect	<a href="#">copy</a>	⊗ >
maven-public	group	maven2	Online	<a href="#">copy</a>	⊗ >
maven-releases	hosted	maven2	Online	<a href="#">copy</a>	⊗ >
maven-snapshots	hosted	maven2	Online	<a href="#">copy</a>	⊗ >
nuget-group	group	nuget	Online	<a href="#">copy</a>	⊗ >
nuget-hosted	hosted	nuget	Online	<a href="#">copy</a>	⊗ >
nuget.org-proxy	proxy	nuget	Online - Ready to Connect	<a href="#">copy</a>	⊗ >

## Step-14: Sign into nexus using credentials

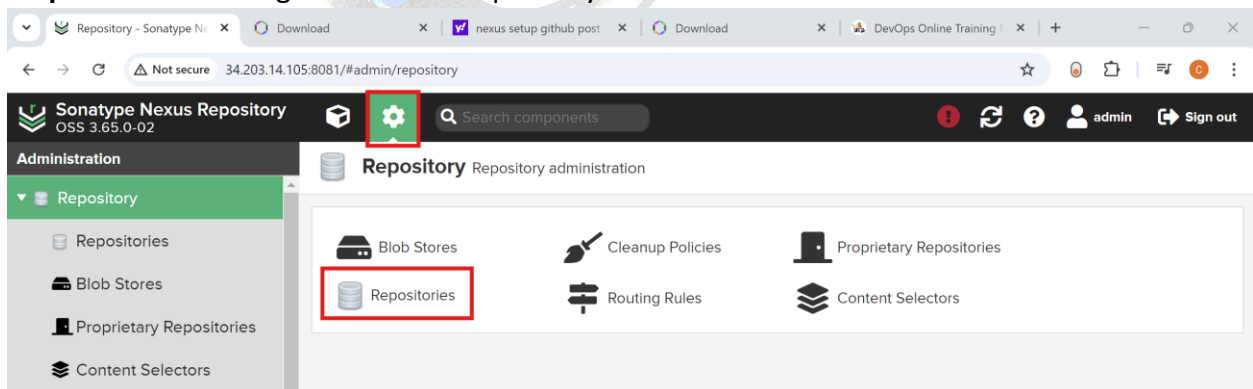
Username as **admin** and password you'll find in path (**/opt/sonatype-work/nexus3/admin.password**)

```
aws
Services
Search
[Alt+S]
N. Virginia
charan_7781
[root@nexus bin]# cat /opt/sonatype-work/nexus3/admin.password
952fcdc1-d7fa-4932-86a3-90891bc233b0 [root@nexus bin]#
```

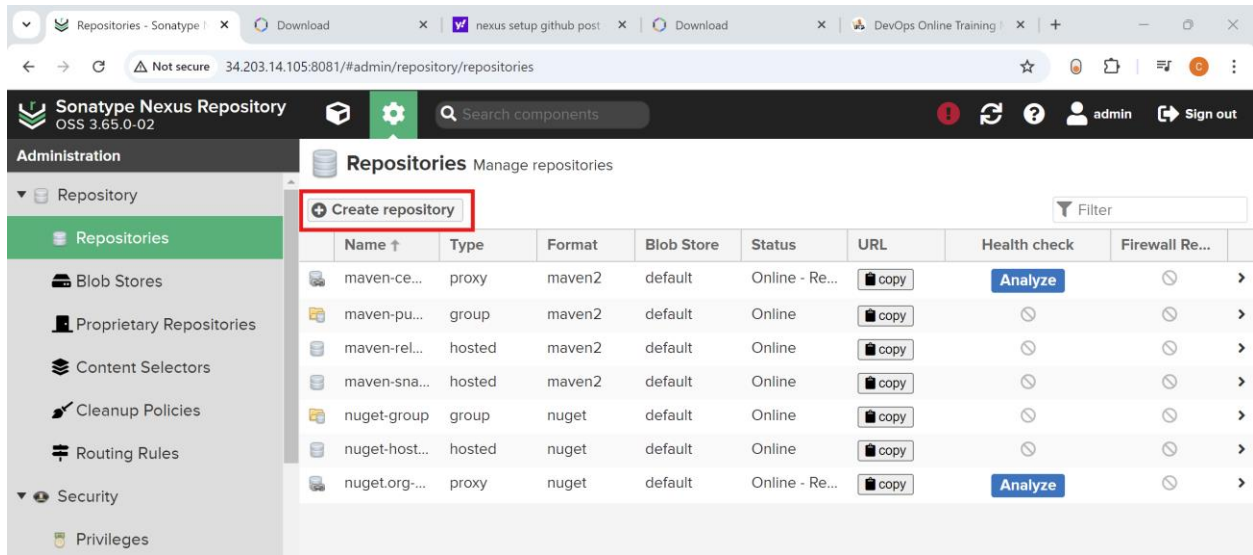
## Step-15: Create a new password



## Step-16: Go to setting and create a repository.

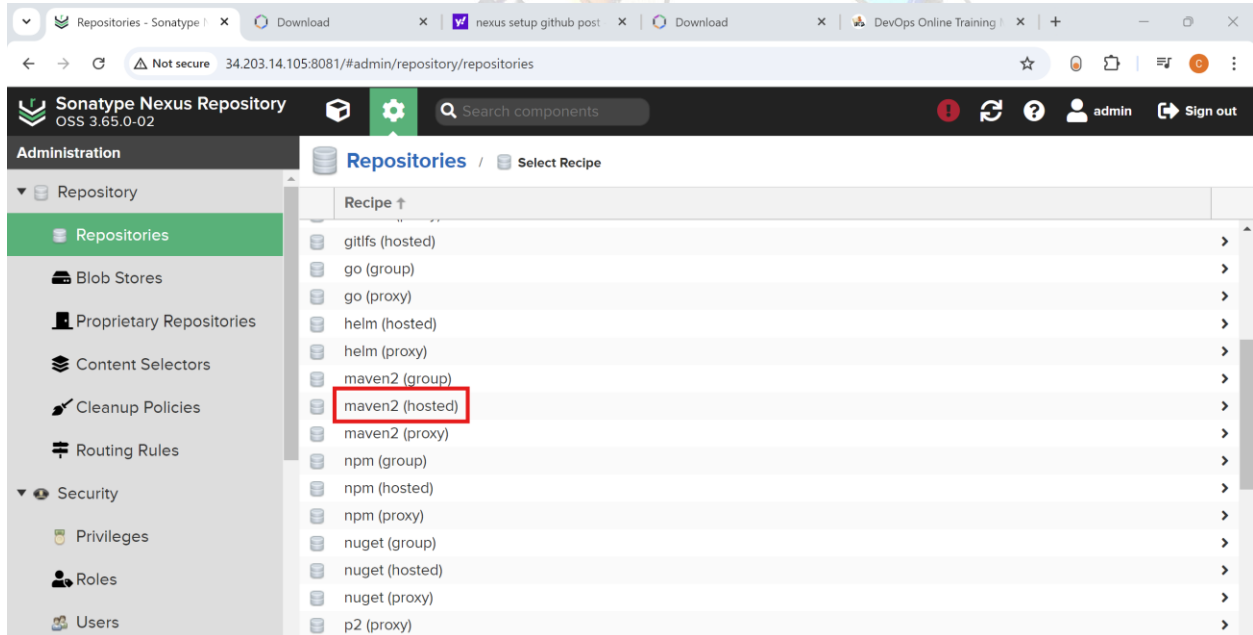


## Step-17: Create a repo



The screenshot shows the Sonatype Nexus Repository OSS 3.65.0-02 interface. The left sidebar contains the 'Administration' menu with 'Repository' expanded. The main content area is titled 'Repositories Manage repositories'. A red box highlights the '+ Create repository' button. Below this is a table of existing repositories.

Name ↑	Type	Format	Blob Store	Status	URL	Health check	Firewall Re...
maven-ce...	proxy	maven2	default	Online - Re...		Analyze	
maven-pu...	group	maven2	default	Online			
maven-rel...	hosted	maven2	default	Online			
maven-sna...	hosted	maven2	default	Online			
nuget-group	group	nuget	default	Online			
nuget-host...	hosted	nuget	default	Online			
nuget.org-...	proxy	nuget	default	Online - Re...		Analyze	



The screenshot shows the Sonatype Nexus Repository OSS 3.65.0-02 interface. The left sidebar contains the 'Administration' menu with 'Repository' expanded. The main content area is titled 'Repositories / Select Recipe'. A red box highlights the 'maven2 (hosted)' option in the list of recipes.

Recipe ↑
gitlfs (hosted)
go (group)
go (proxy)
helm (hosted)
helm (proxy)
maven2 (group)
<b>maven2 (hosted)</b>
maven2 (proxy)
npm (group)
npm (hosted)
npm (proxy)
nuget (group)
nuget (hosted)
nuget (proxy)
p2 (proxy)

## Step-18: Create a repository name

Sonatype Nexus Repository OSS 3.65.0-02

Administration

- Repository
- Repositories**
- Blob Stores
- Proprietary Repositories
- Content Selectors
- Cleanup Policies
- Routing Rules
- Security
  - Privileges
  - Roles

Repositories / Select Recipe / Create Repository: maven2 (hosted)

**Name:** A unique identifier for this repository  
application-releases

**Online:** ☒ If checked, the repository accepts incoming requests

**Maven 2**

**Version policy:**  
What type of artifacts does this repository store?  
Release

**Layout policy:**  
Validate that all paths are maven artifact or metadata paths  
Strict

**Content Disposition:**  
Add Content-Disposition header as 'Attachment' to disable some content from being inline in a browser.  
Inline

Under repositories you'll find **application-releases**

Sonatype Nexus Repository OSS 3.65.0-02

Administration

- Repository
- Repositories**
- Blob Stores
- Proprietary Repositories
- Content Selectors
- Cleanup Policies
- Routing Rules
- Security
  - Privileges

Repositories Manage repositories

+ Create repository Filter

Name ↑	Type	Format	Blob Store	Status	URL	Health check	Firewall Re...
application...	hosted	maven2	default	Online	copy		
maven-ce...	proxy	maven2	default	Online - Re...	copy	Analyze	
maven-pu...	group	maven2	default	Online	copy		
maven-rel...	hosted	maven2	default	Online	copy		
maven-sna...	hosted	maven2	default	Online	copy		
nuget-group	group	nuget	default	Online	copy		
nuget-host...	hosted	nuget	default	Online	copy		
nuget.org-...	proxy	nuget	default	Online - Re...	copy	Analyze	

## Step-19: Integrating Nexus with Jenkins.

### Install Nexus antifactory uploader

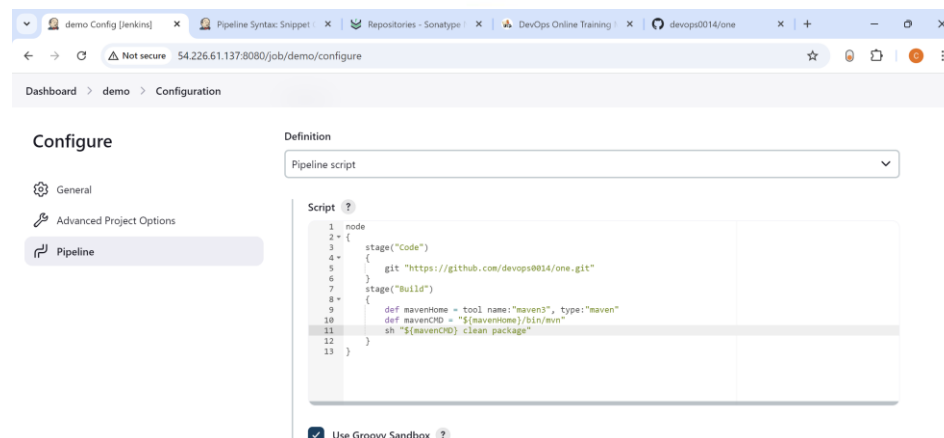
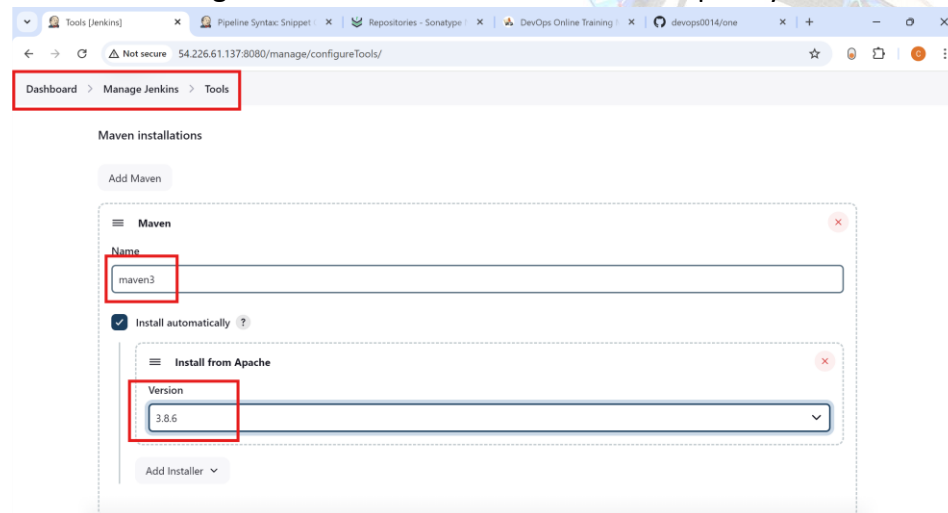
**Step 20:** To get the code in the artifact repository, you need to fetch the code from GitHub, build it into a packaged format, and then store it in the artifact repository (such as Nexus).

Write a pipeline for this:

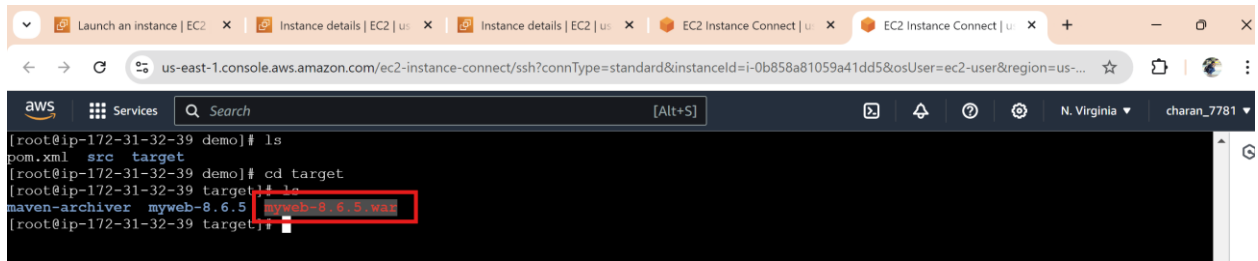
You should git and maven on Jenkins server, instead you can simply go to

### Manage Jenkins > global tool configuration>> maven installation

Installing Maven on a Jenkins server can result in two different Java versions: one for Jenkins and another for Maven. If not managed properly, these versions could override each other, leading to potential conflicts during builds. To avoid issues, ensure both tools use the same Java version or configure Maven to use the correct one explicitly.



Once build is finished, you'll get war file.



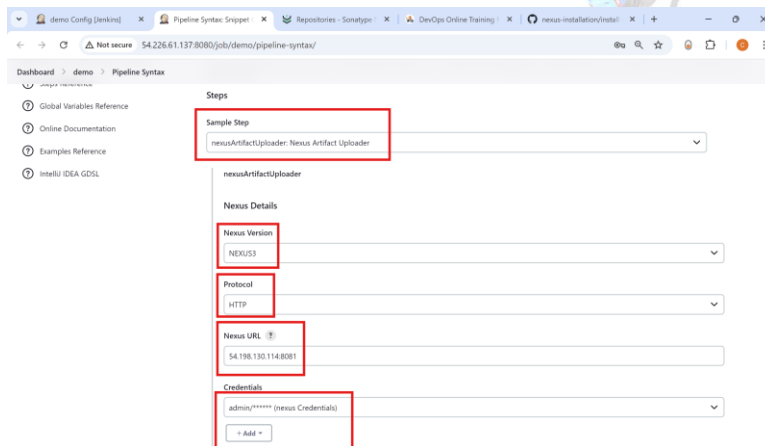
```
[root@ip-172-31-32-39 demo]# ls
pom.xml  src  target
[root@ip-172-31-32-39 demo]# cd target
[root@ip-172-31-32-39 target]# ls
maven-archiver  myweb-8.6.5  myweb-8.6.5.war
[root@ip-172-31-32-39 target]#
```

Here you should generate syntax for artifact stage

Select **nexusArtifactUploader: Nexus Artifact Uploader**

Enter Nexus version as **Nexus3**

Protocol as **HTTP** and give **Nexus URL**.



Steps

Sample Step: **nexusArtifactUploader: Nexus Artifact Uploader**

nexusArtifactUploader

Nexus Details

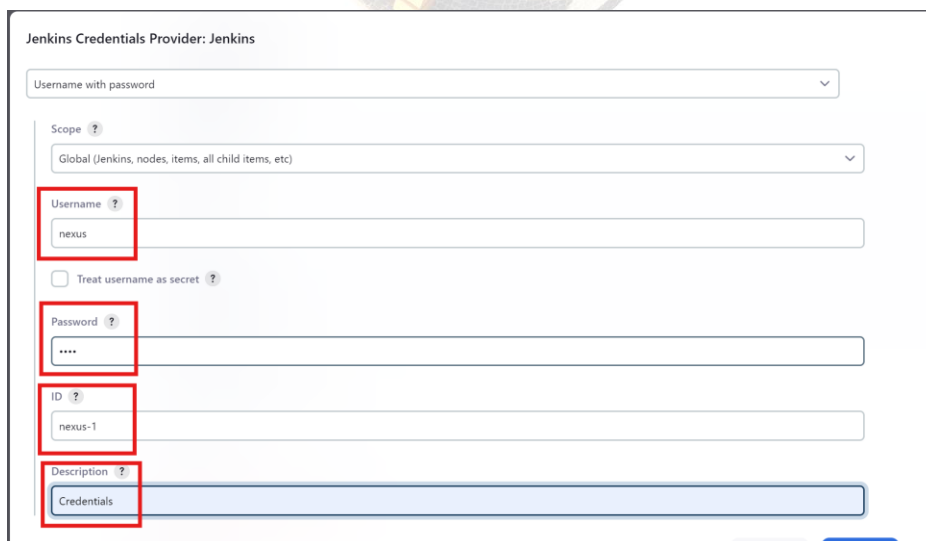
Nexus Version: **NEXUS3**

Protocol: **HTTP**

Nexus URL: **54.196.130.114:8081**

Credentials: **admin/\*\*\*\*\* (nexus Credentials)**

In the credentials section add username (nexus), nexus\_password and give id and description.



Jenkins Credentials Provider: Jenkins

Username with password

Scope: **Global (Jenkins, nodes, items, all child items, etc)**

Username: **nexus**

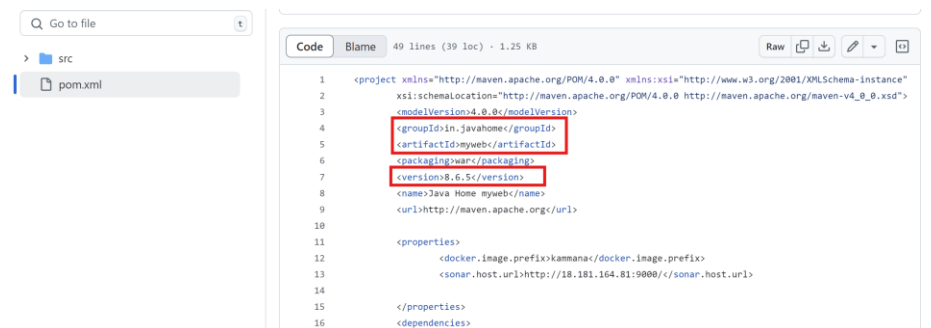
☐ Treat username as secret

Password: **\*\*\*\***

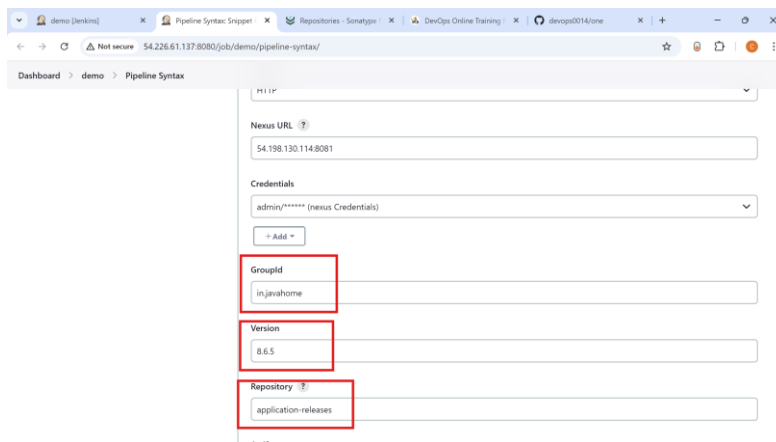
ID: **nexus-1**

Description: **Credentials**

From.xml file enter the details



```
<?xml version='1.0' encoding='UTF-8'>
<project xmlns='http://maven.apache.org/POM/4.0.0' xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd'>
<modelVersion>4.0.0</modelVersion>
<groupId>in.javahome</groupId>
<artifactId>myweb</artifactId>
<packaging>war</packaging>
<version>8.6.5</version>
<name>Java Home myweb</name>
<url>http://maven.apache.org</url>
<properties>
<docker.image.prefix>kammanac</docker.image.prefix>
<sonar.host.url>http://18.181.164.81:9808</sonar.host.url>
</properties>
</project>
```



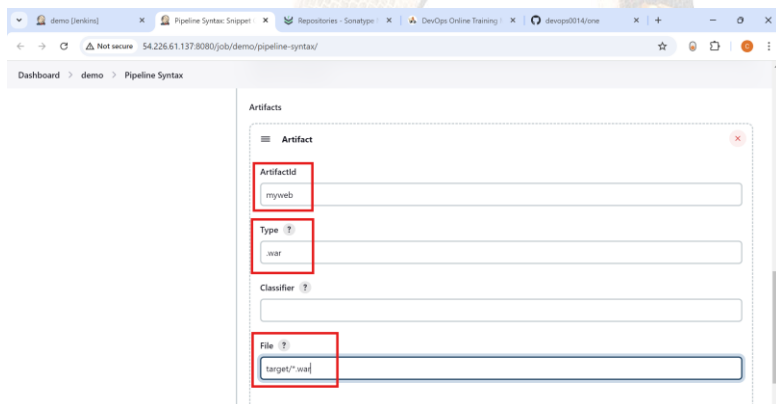
Nexus URL: 54.198.130.114.8081

Credentials: admin/\*\*\*\*\* (Nexus Credentials)

Groupid: in.javahome

Version: 8.6.5

Repository: application-releases



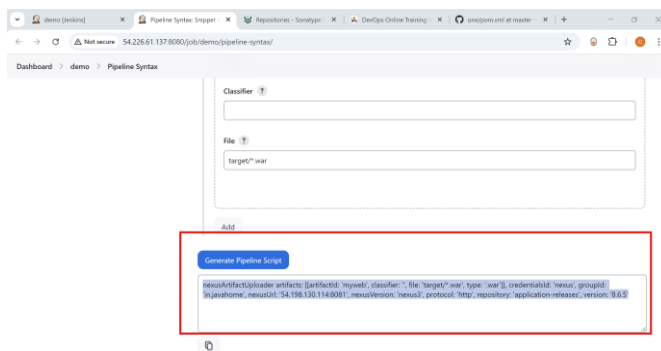
ArtifactId: myweb

Type: war

Classifier:

File: target/\*.war

Then generate syntax



Classifier:

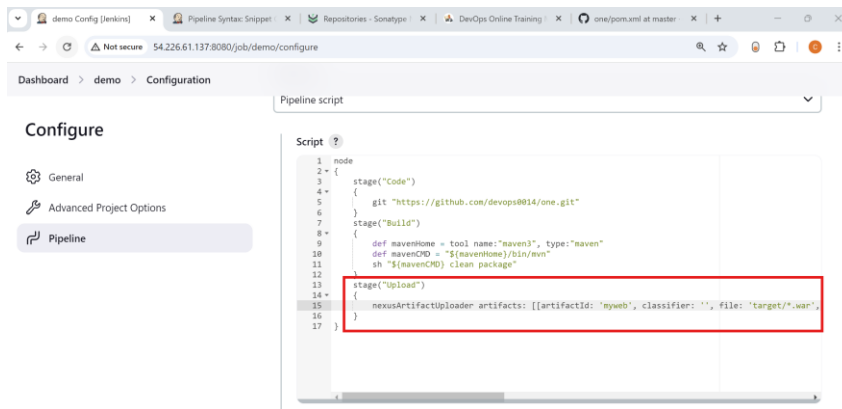
File: target/\*.war

Add

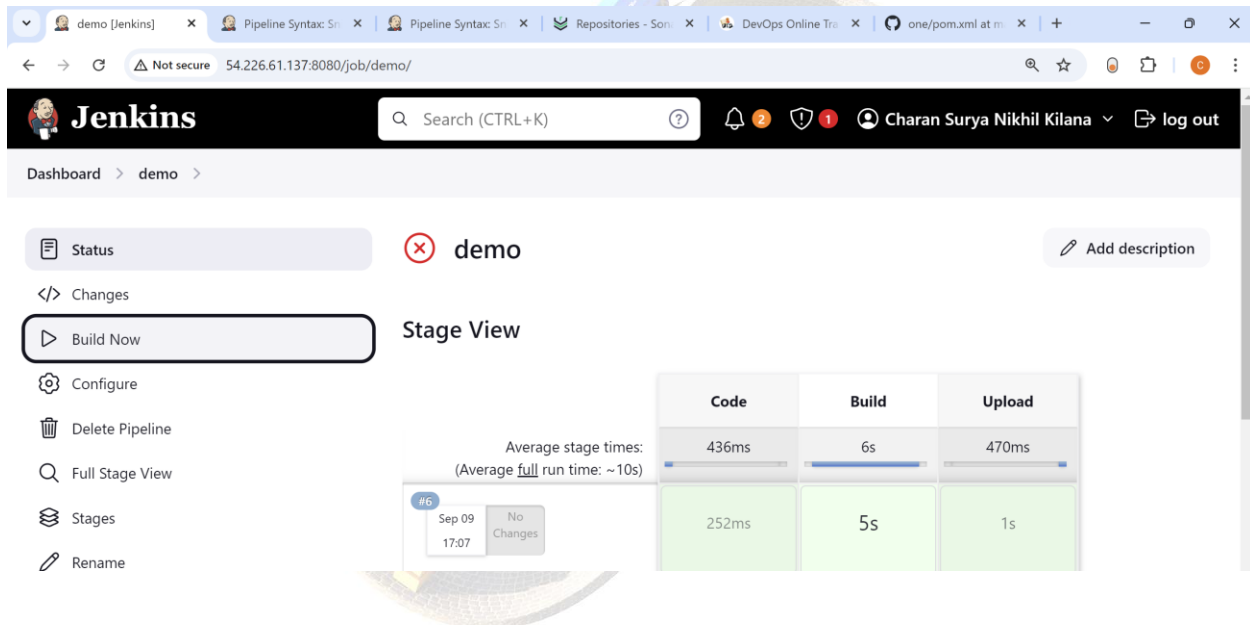
Generate Pipeline Script

newArtifactId: myweb, classifier: , file: target/\*.war, type: war, credentialsId: nexus, groupId: in.javahome, nexusUrl: 54.198.130.114.8081, nexusVersion: nexus, protocol: http, repository: application-releases, version: 8.6.5

## Step-20: Enter the syntax in artifact block



After build:



Once Build is done, you'll get the war file in Artifact.