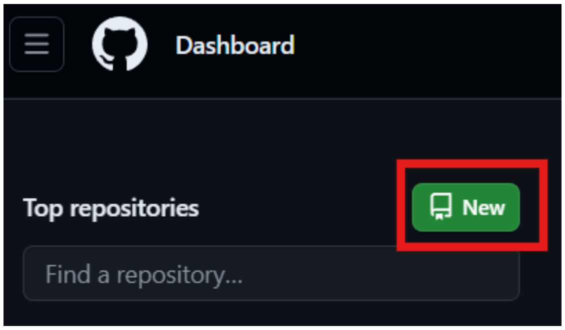
SETUP CONTINUES INTEGRATION

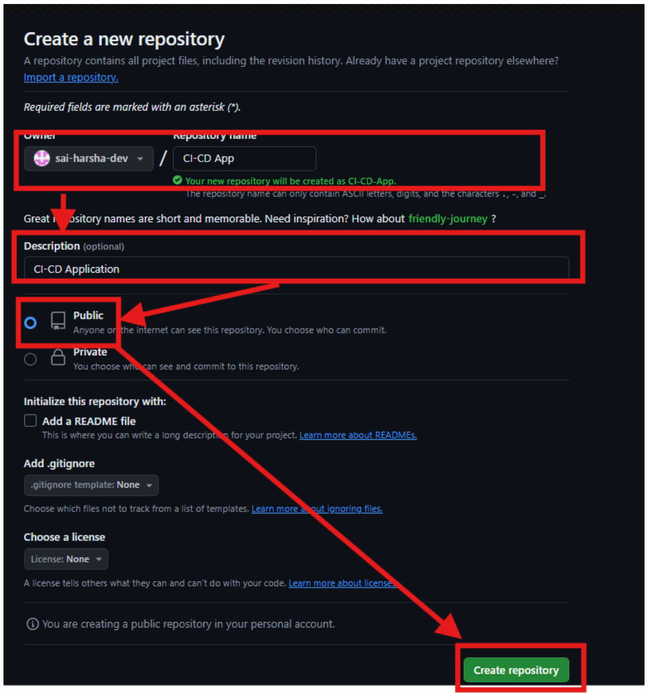
SETUP SOURCE REPOSITORY

✓ Create GITHUB repository (*for local files)

- Login to https://github.com/ and Sign in to your account.
- Add a new repository by clicking on **NEW ICON.**



- Give the repository a Name, Description and keep it as Public and Create the repository



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Required fields are marked with an asterisk (*).

Owner: sai-harsha-dev / Repository name: CI-CD App

✓ Your new repository will be created as CI-CD-App.

The repository name can only contain ASCII letters, digits, and the characters ., -, and _.

Great repository names are short and memorable. Need inspiration? How about friendly-journey ?

Description (optional)

CI-CD Application

● **Public**
Anyone on the internet can see this repository. You choose who can commit.

○ **Private**
You choose who can see and commit to this repository.

Initialize this repository with:

□ **Add a README file**
This is where you can write a long description for your project. Learn more about READMEs.

Add .gitignore

.gitignore template: **None**

Choose which files not to track from a list of templates. Learn more about ignoring files.

Choose a license

License: **None**

A license tells others what they can and can't do with your code. Learn more about licenses.

ⓘ You are creating a public repository in your personal account.

✓ Commit Source code files (*for local files)

- Initialize and add the source files using the following commands.

```
$ git init
$ git add .
$ git commit -m "<Commit message>"
```

- Setup the remote URL

```
$ git remote add <remote-name> <remote-url>
```

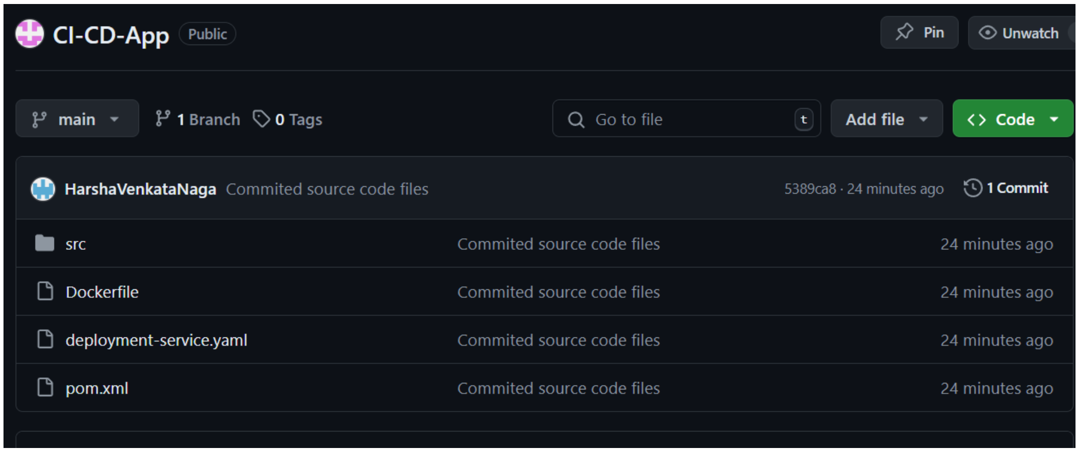
- Update branch name as per GITHUB conventions

```
git branch -M main
```

- Setup up upstream and push.

```
$ git push -u <remote-name> main
```

- Check if the files are reflected in the GITHUB repo.

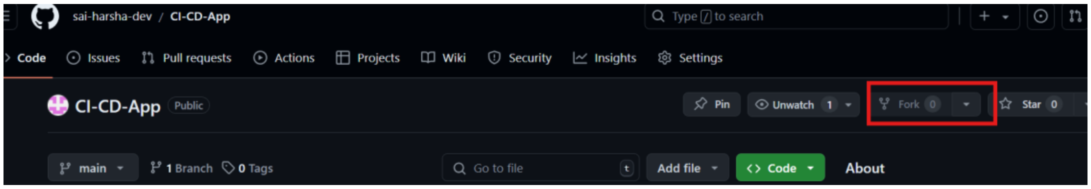


HarshaVenkataNaga Commited source code files 5389ca8 · 24 minutes ago 1 Commit

src	Commited source code files	24 minutes ago
Dockerfile	Commited source code files	24 minutes ago
deployment-service.yaml	Commited source code files	24 minutes ago
pom.xml	Commited source code files	24 minutes ago

✓ Fork the existing repository (*for using existing repo)

- Login to https://github.com/ and Sign in to your account.
- Search for the repository CICD-APP
- Fork the repository, by clicking on the **fork icon.**



CREATE PIPELINE SCRIPT

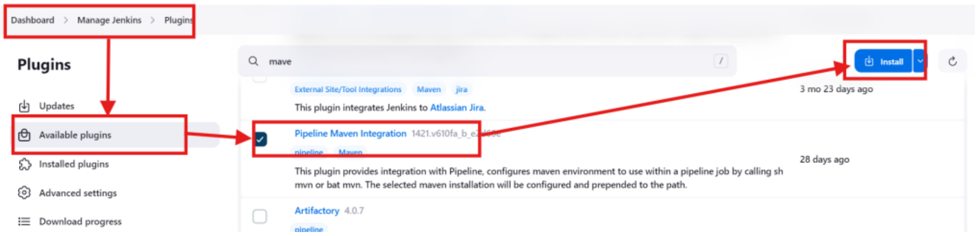
✓ Checkout Repository

- The first stage involves checking out source code files from GITHUB repo.
- Include the following pipeline code in Jenkinsfile.

```
stage ("GITHUB CHECKOUT"){
            steps{
                git branch: '<branch-name>', url: '<git-url>'
            }
        }
```

✓ Run source code compilation

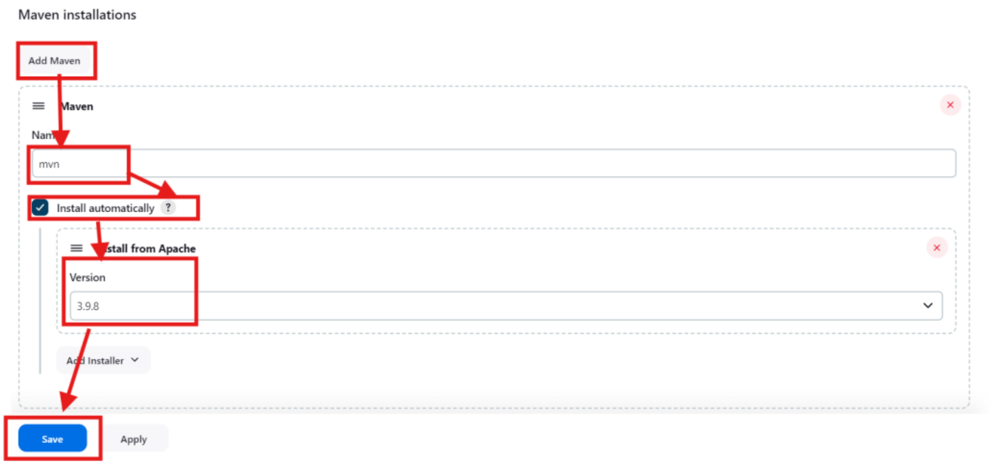
- Install the Maven plugin.
  - Login to Jenkins
  - Move **Mange Jenkins > Plugins > Available Plugins.**
  - Search for **Pipeline Maven Integration > Select it > Install.**
  - **Restart Jenkins** if needed.



This plugin integrates Jenkins to Atlassian Jira.

This plugin provides integration with Pipeline, configures maven environment to use within a pipeline job by calling sh mvn or bat mvn. The selected maven installation will be configured and prepended to the path.

- Setup the Maven.
  - Head over to **Manage Jenkins > Tools > Maven Installations.**
  - **Select Install Automatically > Select version** (*not mandatory)
  - **Save** changes.



Maven installations

Maven

Name: mvn

☑ Install automatically

Install from Apache

Version: 3.9.8

- ➢ Include the following pipeline code in Jenkinsfile.

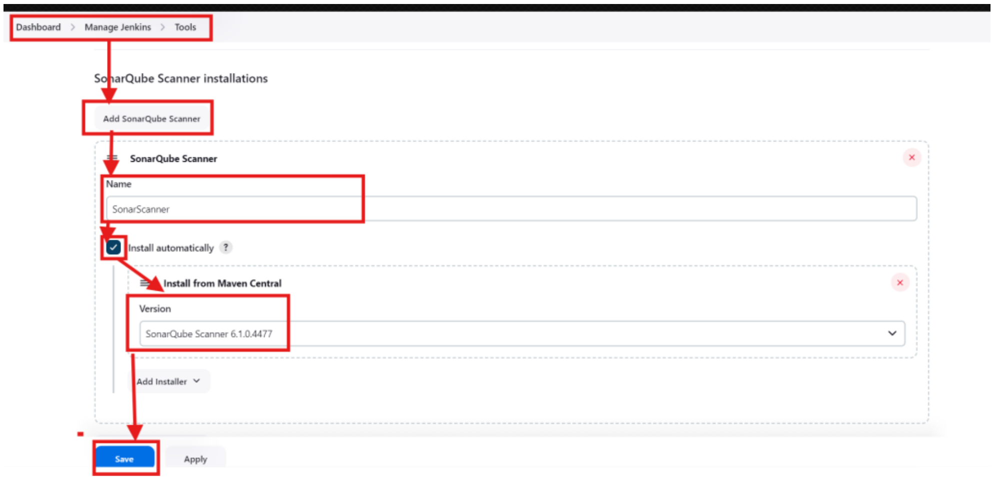
```
tools{

        maven 'mvn'
    }

stage ("COMPILE SOURCE CODE"){
            steps{
                sh "mvn compile"
            }
        }
```

✓ Run Code Quality Check

- ➢ Setup the SonarScanner. (*Make sure **Sonar Server is setup in Manage Jenkins > System,** refer DAY-1 document)
  - Head over to **Manage Jenkins > Tools > SonarScanner.**
  - **Select Install Automatically > Select version** (*not mandatory)
  - **Apply** changes.


Dashboard > Manage Jenkins > Tools
SonarQube Scanner installations
Add SonarQube Scanner
SonarQube Scanner
Install automatically ?
Install from Maven Central
Add Installer
Save
Apply

Name: SonarScanner

☑ Install automatically

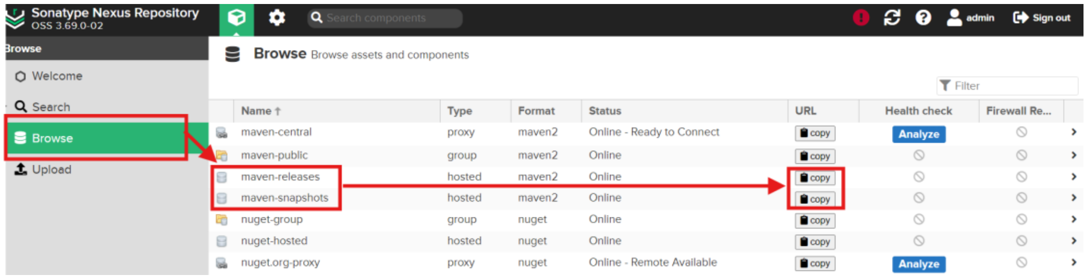
Version: SonarQube Scanner 6.1.0.4477

- ➢ Include the following pipeline code in Jenkinsfile.

```
stage ("CODE QUALITY CHECK"){
            steps{
                withSonarQubeEnv('SonarQube') {
                sh "mvn sonar:sonar"
                }
            }
       }
```

✓ Generate and Store Artifacts

- ➢ Add the repository links in **pom.xml** file, in the respective section.
- ➢ Login to **Nexus server > Select Browse > Click Copy besides the respective URL > Copy the URL**.



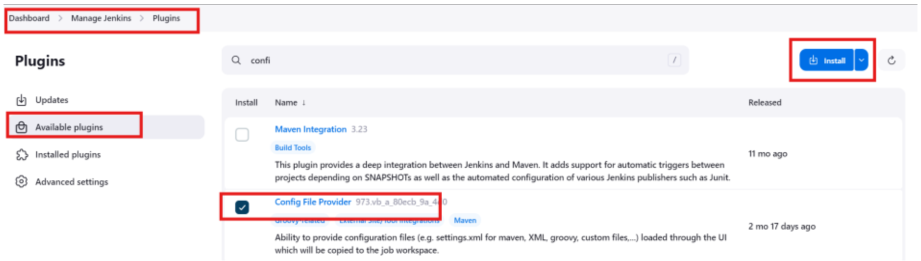
Name ↑	Type	Format	Status	URL	Health check	Firewall Re...
maven-central	proxy	maven2	Online - Ready to Connect	copy	Analyze	⃠
maven-public	group	maven2	Online	copy	⃠	⃠
maven-releases	hosted	maven2	Online	copy	⃠	⃠
maven-snapshots	hosted	maven2	Online	copy	⃠	⃠
nuget-group	group	nuget	Online	copy	⃠	⃠
nuget-hosted	hosted	nuget	Online	copy	⃠	⃠
nuget.org-proxy	proxy	nuget	Online - Remote Available	copy	Analyze	⃠

- ➢ Repeat the same for both **maven-releases, maven snapshots** and add them to **pom.xml file**

```
<distributionManagement>
        <repository>
            <id>maven-releases</id>
            <url><maven-releases repo url></url>
        </repository>
        <snapshotRepository>
            <id>maven-snapshots</id>
            <url><maven-snapshots repo url></url>
        </snapshotRepository>
</distributionManagement>
```

➢ Install the Config File Provider plugin.

- Login to Jenkins
- Move **Mange Jenkins > Plugins > Available Plugins.**
- Search for **Config File Provider > Select it > Install.**
- **Restart Jenkins** if needed.



□ Maven Integration 3.23 — Build Tools — 11 mo ago

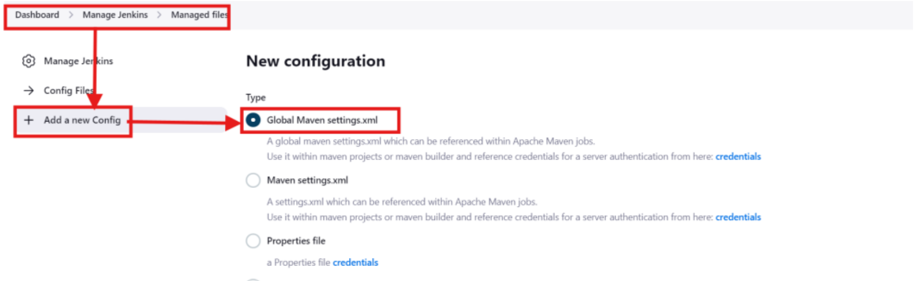
This plugin provides a deep integration between Jenkins and Maven. It adds support for automatic triggers between projects depending on SNAPSHOTs as well as the automated configuration of various Jenkins publishers such as Junit.

☑ Config File Provider 973.vb_a_80ecb_9a_4d0 — Maven — 2 mo 17 days ago

Ability to provide configuration files (e.g. settings.xml for maven, XML, groovy, custom files,...) loaded through the UI which will be copied to the job workspace.

➢ Configure the credentials for Nexus in **setting.xml** file.

- Under **Manage Jenkins > Managed Files > Select Add new Config > Global Maven setting.xml.**



● Global Maven settings.xml

A global maven settings.xml which can be referenced within Apache Maven jobs.
Use it within maven projects or maven builder and reference credentials for a server authentication from here: credentials

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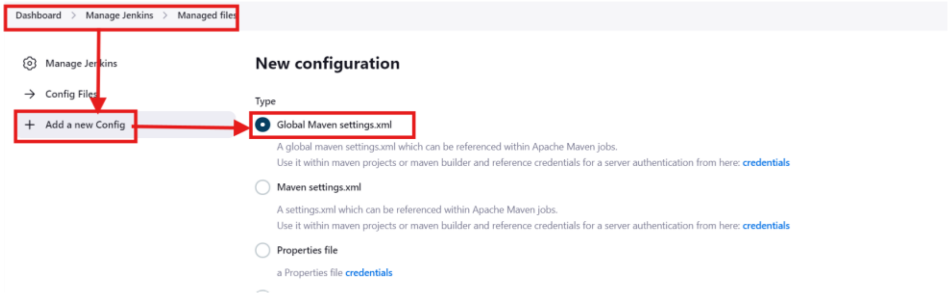
○ Properties file

a Properties file credentials

- Select **Add new Config > Global Maven setting.xml > Give an ID > Next**



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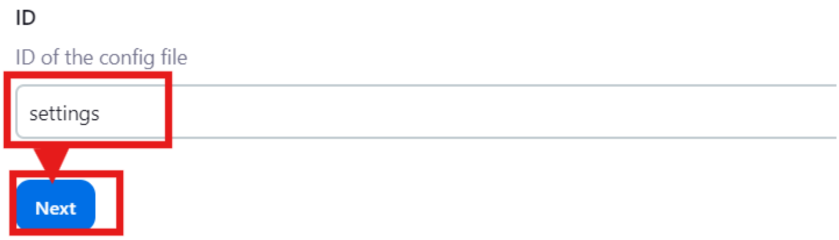
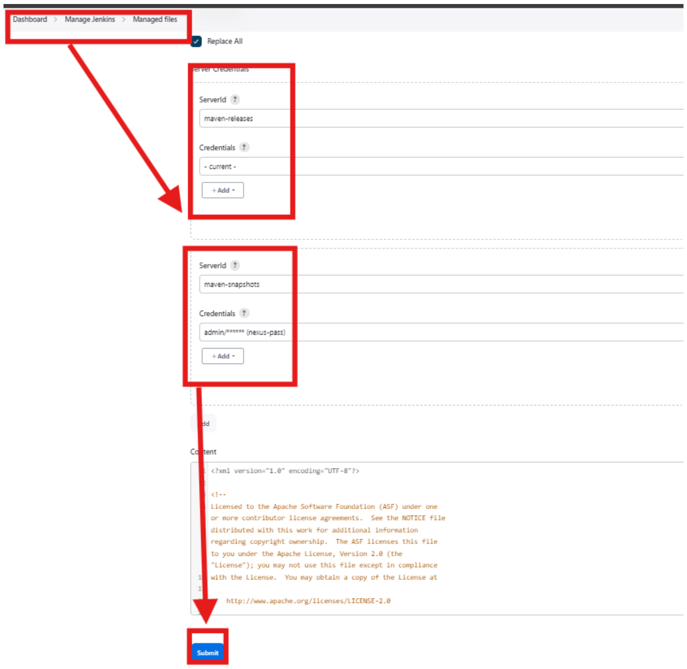
a Properties file credentials


ID

ID of the config file

settings

- **Add Server Credentials > Give ID (maven-releases) > Add > Global Credentials > User Name and Password** add user name and password
- Repeat the same for Maven snapshots
- Submit



erver Credentials

ServerId: maven-releases

Credentials: - current -

ServerId: maven-snapshots

Credentials: admin/****** (nexus-pass)

Co tent

```
<?xml version="1.0" encoding="UTF-8"?>

<!--
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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
```

➢ Include the following pipeline code in Jenkinsfile.

```
stage("DEPLOY ARTIFACTS TO NEXUS"){
    steps{
       withMaven(globalMavenSettingsConfig: 'settings', jdk: '',
maven: '', mavenSettingsConfig: '', traceability: true) {
                    sh "mvn package && mvn deploy"
                }
            }
        }
```