

## Declarative Pipeline:

- Create a new pipeline job and select Pipeline script from scm.  
Now for Declarative pipeline we have to create a jenkinsfile and commit it in github repository.

Script of jenkinsfile:

```
-----
pipeline {
  agent any

  environment {
    NEXUS_VERSION = "nexus3"
    NEXUS_PROTOCOL = "http"
    NEXUS_URL = "localhost:8081"
    NEXUS_REPOSITORY = "Declarative-pipeline"
    NEXUS_CREDENTIAL_ID = "nexus-pssw"
  }

  stages
  {

    stage('Sonar Analysis') {
      steps{

        bat 'mvn sonar:sonar -Dsonar.host.url=http://localhost:9000
-Dsonar.login=b90a3548447883f6aba5eda092c18ac2909ed4f1'
      }
    }

    stage('Compile') {
      steps {
        bat 'mvn compile'
      }
    }

    stage('Package') {
      steps {
        bat 'mvn package'
      }
    }
  }
}
```

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<https://github.com/IshaanSingh1301/CI-CD-Sample-Declarative-Pipeline>

```

stage('Install') {
  steps {
    bat 'mvn install'
  }
}

stage("Artifacts to Nexus Repository Manager") {
  steps {
    script {
      pom = readMavenPom file: "pom.xml";
      filesByGlob = findFiles(glob: "target/*.${pom.packaging}");
      echo "${filesByGlob[0].name} ${filesByGlob[0].path}
${filesByGlob[0].directory} ${filesByGlob[0].length} ${filesByGlob[0].lastModified}"
      artifactPath = filesByGlob[0].path;
      artifactExists = fileExists artifactPath;
      if(artifactExists) {
        echo "**** File: ${artifactPath}, group: ${pom.groupId}, packaging:
${pom.packaging}, version ${pom.version}";
        nexusArtifactUploader(
          nexusVersion: NEXUS_VERSION,
          protocol: NEXUS_PROTOCOL,
          nexusUrl: NEXUS_URL,
          groupId: pom.groupId,
          version: pom.version,
          repository: NEXUS_REPOSITORY,
          credentialsId: NEXUS_CREDENTIAL_ID,
          artifacts: [
            [artifactId: pom.artifactId,
            classifier: "",
            file: artifactPath,
            type: pom.packaging],
            [artifactId: pom.artifactId,
            classifier: "",
            file: "pom.xml",
            type: "pom"]
          ]
        );
      } else {
        error "**** File: ${artifactPath}, could not be found";
      }
    }
  }
}

```

```

    }
  }
}

stage('Deploy to Tomcat'){
    steps{

        sh "curl -v -u admin:admin -T
C:/Users/ishaa/.jenkins/workspace/pipe-test/target/temporary-0.0.1-SNAPSHOT.war
'http://localhost:9090/manager/text/deploy?path=/Declarative-pipeline&update=true'"
    }
}

}
}

```

---

## Screenshots:

The screenshot displays the GitHub interface for the repository `CI-CD-Sample-Declarative-Pipeline` by user `IshaanSingh1301`. The `Jenkinsfile` is selected, showing its content with line numbers. The pipeline is configured with an environment section for Nexus and a `Sonar Analysis` stage.

```

1 pipeline {
2   agent any
3
4   environment {
5     NEXUS_VERSION = "nexus3"
6     NEXUS_PROTOCOL = "http"
7     NEXUS_URL = "localhost:8081"
8     NEXUS_REPOSITORY = "Declarative-pipeline"
9     NEXUS_CREDENTIAL_ID = "nexus-ppsw"
10  }
11
12  stages
13  {
14
15    stage('Sonar Analysis') {
16      steps{
17
18        bat 'mvn sonar:sonar -Dsonar.host.url=http://localhost:9000 -Dsonar.login=b90a3548447883f6aba5eda092c18ac2909ed4f1'
19      }
20    }
21  }
22 }

```

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//https://github.com/IshaanSingh1301/CI-CD-Sample-Declarative-Pipeline

```

11     }
12
13     stages
14     {
15
16         stage('Sonar Analysis') {
17             steps{
18
19                 bat 'mvn sonar:sonar -Dsonar.host.url=http://localhost:9000 -Dsonar.login=b90a3548447883f6aba5eda092c18ac2909ed44f1'
20             }
21         }
22         stage('Compile') {
23             steps {
24                 bat 'mvn compile'
25             }
26         }
27         stage('Package') {
28             steps {
29                 bat 'mvn package'
30             }
31         }
32         stage('Install') {
33             steps {
34                 bat 'mvn install'
35             }
36         }
37         stage("Artifacts to Nexus Repository Manager") {
38             steps {
39                 script {
40                     pom = readMavenPom file: "pom.xml";
41                     filesByGlob = findFiles(glob: "target/*.${pom.packaging}");
42                     echo "${filesByGlob[0].name} ${filesByGlob[0].path} ${filesByGlob[0].directory} ${filesByGlob[0].length} ${filesByGlob[0].lastModified}"
43                     artifactPath = filesByGlob[0].path;
44                     artifactExists = fileExists artifactPath;
45                     if(artifactExists) {
46                         echo "**** File: ${artifactPath}, group: ${pom.groupId}, packaging: ${pom.packaging}, version ${pom.version}";
47                         nexusArtifactUploader(
48                             nexusVersion: NEXUS_VERSION,

```

Stage View:

## Pipeline Declarative-pipeline

 add description

[Disable Project](#)

 Recent Changes

### Stage View

	Declarative: Checkout SCM	Sonar Analysis	Compile	Package	Install	Artifacts to Nexus Repository Manager	Deploy to Tomcat
Average stage times: (Average full run time: ~1min 0s)	4s	24s	5s	5s	5s	3s	1s
#3 Jun 28 21:47 1 commit	3s	16s	5s	5s	6s	3s	939ms
#2 Jun 28 21:42 1 commit	3s	19s	4s	6s	5s	1s	1s
#1 Jun 28 21:29 No Changes	6s	36s	5s	5s	5s	3s	1s

Output:

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## Sonar Analysis:

Jenkins > Declarative-pipeline > #3

```
[INFO] Analysis report generated in 772ms, dir size=72 KB
[INFO] Analysis reports compressed in 35ms, zip size=13 KB
[INFO] Analysis report uploaded in 35ms
[INFO] ANALYSIS SUCCESSFUL, you can browse http://localhost:9000/dashboard?id=Declarative-pipeline%3AArtifact-01
[INFO] Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
[INFO] More about the report processing at http://localhost:9000/api/ce/task?id=AXI7uIGH3eJxaCxe1ICy
[INFO] Task total time: 9.204 s
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 13.992 s
[INFO] Finished at: 2020-06-28T21:47:56+05:30
[INFO] -----
[Pipeline] }
```

Artifact-01 master Last analysis had 1 warnings June 28, 2020, 9:43 PM Version 0.0.1

Overview Issues Security Reports Measures Code Activity Administration

Quality Gate Passed

Bugs 1 Vulnerabilities 0

Code Smells 30min 4

Coverage 0.0%

Duplications 0.0%

About This Project

No tags

35 Lines of Code XML Java

Project Activity

June 28, 2020

0.0.1-SNAPSHOT

Show More

Quality Gate

(Default) Sonar way

Quality Profiles

(Java) Sonar way (XML) Sonar way

Project Key

Declarative-pipeline:Artifact-01

Get project badges

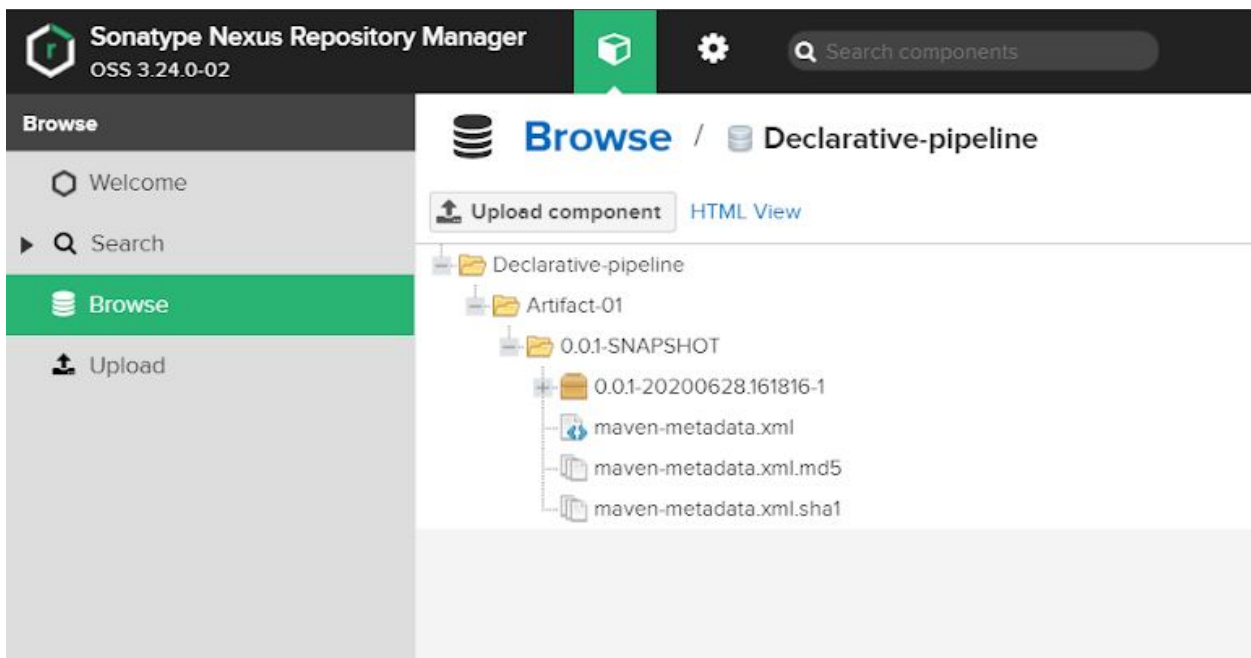
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## Artifacts to Nexus Repository:

```
Jenkins > Declarative-pipeline > #3

File: pom.xml
Repository:Declarative-pipeline
Downloading: http://localhost:8081/repository/Declarative-pipeline/Declarative-pipeline/Artifact-01/0.0.1-SNAPSHOT/maven-metadata.xml
Uploading: http://localhost:8081/repository/Declarative-pipeline/Declarative-pipeline/Artifact-01/0.0.1-SNAPSHOT/Artifact-01-0.0.1-20200628.161816-1.war
100 % completed (3.7 kB / 3.7 kB).
Uploading: http://localhost:8081/repository/Declarative-pipeline/Declarative-pipeline/Artifact-01/0.0.1-SNAPSHOT/Artifact-01-0.0.1-20200628.161816-1.war (3.7 kB
4.4 kB/s)
Uploading: http://localhost:8081/repository/Declarative-pipeline/Declarative-pipeline/Artifact-01/0.0.1-SNAPSHOT/Artifact-01-0.0.1-20200628.161816-1.pom
Uploading: http://localhost:8081/repository/Declarative-pipeline/Declarative-pipeline/Artifact-01/0.0.1-SNAPSHOT/Artifact-01-0.0.1-20200628.161816-1.pom (852 B
2.0 kB/s)
Uploading: http://localhost:8081/repository/Declarative-pipeline/Declarative-pipeline/Artifact-01/0.0.1-SNAPSHOT/maven-metadata.xml
Uploading: http://localhost:8081/repository/Declarative-pipeline/Declarative-pipeline/Artifact-01/0.0.1-SNAPSHOT/maven-metadata.xml (781 B at 1.5 kB/s)
Uploading artifact Artifact-01-0.0.1-SNAPSHOT.war completed.
Uploading artifact pom.xml completed.
```



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## Deploy to Tomcat:

Jenkins > Declarative-pipeline > #3

```
< Server: Apache-Coyote/1.1
< Cache-Control: private
< Expires: Thu, 01 Jan 1970 00:00:00 GMT
< X-Content-Type-Options: nosniff
< Content-Type: text/plain;charset=utf-8
< Transfer-Encoding: chunked
< Date: Sun, 28 Jun 2020 16:18:19 GMT
<
{ [73 bytes data]
100 3677 0 67 100 3610 67 3610 0:00:01 --:--:-- 0:00:01 21377
* Connection #0 to host localhost left intact
OK - Deployed application at context path [/Declarative-pipeline]
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```



## Tomcat Web Application Manager

Message:

OK

Manager

List Applications

HTML Manager Help

Manager Help

Applications

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	<div>StartStop</div> <div>Expire session</div>
/Declarative-pipeline	None specified		true	0	<div>StartStop</div> <div>Expire session</div>
/MeetDevOps	None specified		true	0	<div>StartStop</div> <div>Expire session</div>
/docs	None specified	Tomcat Documentation	true	0	<div>StartStop</div> <div>Expire session</div>

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