

Day 5: Jenkins

Demo Document - I

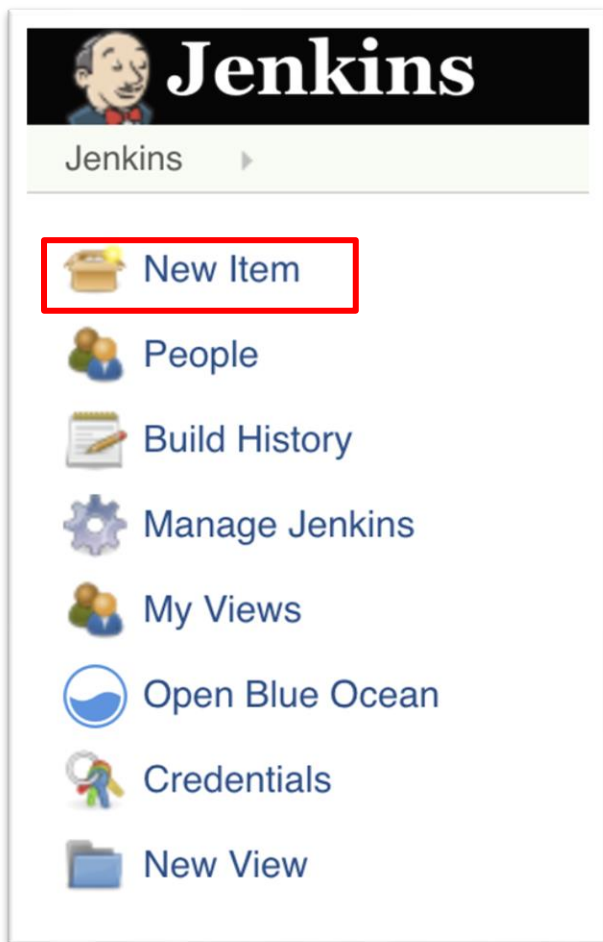
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Demo I: Build a Pipeline project using Groovy Script.

Step1: Create a Pipeline Project by navigating to Jenkins -> New Item





Step-2 Create a Pipeline project " Pipeline_Demo" for your job. Select pipeline while creating.


Jenkins > All >


Enter an item name


» Required field

**Freestyle project**
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

**Maven project**
Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.

**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.

**External Job**
This type of job allows you to record the execution of a process run outside Jenkins, even on a remote machine. This is designed so that you can use Jenkins as a dashboard of your existing automation system.

**Multi-configuration project**
Builds projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Step-3: Go to your project and start configuring it.

Step-4: Go to the Advanced Project option and write your code within the Pipeline definition. The code is mentioned below if you want to copy and paste the code to generate the pipeline. Replace the “some email id” in the 2nd last line with the email_id you want to send email to if the build fails.

Pipeline_Demo >

General Build Triggers **Advanced Project Options** Pipeline

Advanced Project Options

Advanced...

Pipeline

Definition Pipeline script

Script

```
1 #!/usr/bin/env groovy
2
3 import hudson.model.*
4 import hudson.EnvVars
5 import groovy.json.JsonSlurperClassic
6 import groovy.json.JsonBuilder
7 import groovy.json.JsonOutput
8 import java.net.URL
9
10 try {
11
12 node{
13
14     stage('Checkout') {
15         git 'https://github.com/edureka-github/DevOpsClassCodes'
16
17     }
18 }
```

try sample Pipeline...

☒ Use Groovy Sandbox

```
#!/usr/bin/env groovy
```

```
import hudson.model.*
```

```
import hudson.EnvVars
```

```
import groovy.json.JsonSlurperClassic
```

```
import groovy.json.JsonBuilder
```

```
import groovy.json.JsonOutput
import java.net.URL

try {

node{

    stage('Checkout') {
        git 'https://github.com/edureka-git/DevOpsClassCodes'

    }

    stage('Build') {
        dir('') {
            sh 'mvn -B -V -U -e clean package'
        }
    }

    stage ('Email') {
        emailext attachLog: true, body: 'The status of the build can be obtained
from the build log attached', subject: 'The build update is ', to: 'some
email id'
    }

    stage('Deployment') {
        // Deployment
        script {
            echo "deployment"

            sh 'cp
/var/lib/jenkins/workspace/Pipeline_Demo/target/addressbook.war
/usr/share/tomcat/webapps'
        }
    }
}
```

```
stage('publish html report') {  
    echo "publishing the html report"  
    publishHTML([allowMissing: false, alwaysLinkToLastBuild:  
false, keepAll: false, reportDir: '', reportFiles: 'index.html', reportName:  
'HTML Report', reportTitles: ''])  
}  
stage('clean up') {  
    echo "cleaning up the workspace"  
    cleanWs()  
}  
}  
} // node  
} // try end  
finally {  
  
(currentBuild.result != "ABORTED") && node("master") {  
    // Send e-mail notifications for failed or unstable builds.  
    // currentBuild.result must be non-null for this step to work.  
    step([$class: 'Mailer',  
        notifyEveryUnstableBuild: true,  
        recipients: 'some email id',  
        sendToIndividuals: true])  
}  
}
```

Step 5. If you are getting any error on deployment stage, make sure you are copying the war file to webapps folder correctly i.e., provide the war file location and tomcat directory path correctly.

In my case, it is "sh 'cp /var/lib/jenkins/workspace/Pipeline_Demo/target/addressbook.war /usr/share/tomcat/webapps'"

The destination path is as below

```
[centos@ip-172-31-20-57 tomcat]$ cd webapps/
[centos@ip-172-31-20-57 webapps]$ ls
docs  examples  host-manager  manager  ROOT  sample  webapp  webapp.war
[centos@ip-172-31-20-57 webapps]$ pwd
/usr/share/tomcat/webapps
```

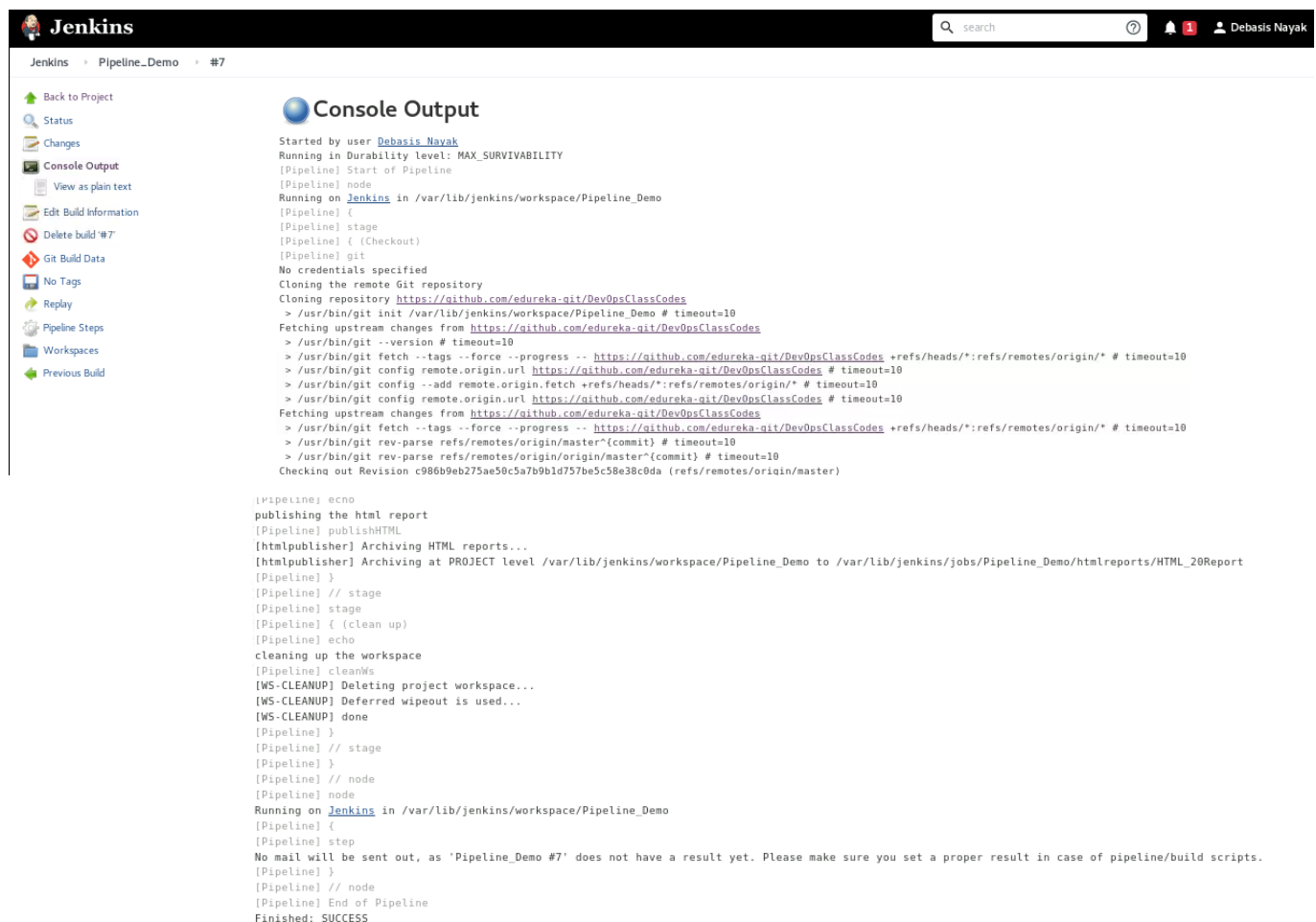
Source path of the war file is as below.

`/var/lib/jenkins/workspace/Pipeline_Demo/target/addressbook.war`

Step 6. Then save the code and click on build now to build the project.

Step 7. If you're getting some error related to html report then go to manage jenkins->manage plugins->available and install html publisher plugin.

Step 8. Go to the console output and check the build of your project.



Jenkins Pipeline_Demo #7

Console Output

Started by user [Debasis Nayak](#)
Running in Durability level: MAX_SURVIVABILITY
[Pipeline] Start of Pipeline
[Pipeline] node
Running on [Jenkins](#) in /var/lib/jenkins/workspace/Pipeline_Demo
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Checkout)
[Pipeline] git
No credentials specified
Cloning the remote Git repository
Cloning repository <https://github.com/edureka-git/DevOpsClassCodes>
> /usr/bin/git init /var/lib/jenkins/workspace/Pipeline_Demo # timeout=10
Fetching upstream changes from <https://github.com/edureka-git/DevOpsClassCodes>
> /usr/bin/git --version # timeout=10
> /usr/bin/git fetch --tags --force --progress -- <https://github.com/edureka-git/DevOpsClassCodes> +refs/heads/*:refs/remotes/origin/* # timeout=10
> /usr/bin/git config remote.origin.url <https://github.com/edureka-git/DevOpsClassCodes> # timeout=10
> /usr/bin/git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
> /usr/bin/git config remote.origin.url <https://github.com/edureka-git/DevOpsClassCodes> # timeout=10
Fetching upstream changes from <https://github.com/edureka-git/DevOpsClassCodes>
> /usr/bin/git fetch --tags --force --progress -- <https://github.com/edureka-git/DevOpsClassCodes> +refs/heads/*:refs/remotes/origin/* # timeout=10
> /usr/bin/git rev-parse refs/remotes/origin/master^{commit} # timeout=10
> /usr/bin/git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision c986b9eb275ae50c5a7b9b1d757be5c58e38c0da (refs/remotes/origin/master)
[Pipeline] echo
publishing the html report
[Pipeline] publishHTML
[htmlpublisher] Archiving HTML reports...
[htmlpublisher] Archiving at PROJECT level /var/lib/jenkins/workspace/Pipeline_Demo to /var/lib/jenkins/jobs/Pipeline_Demo/htmlreports/HTML_20Report
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (clean up)
[Pipeline] echo
cleaning up the workspace
[Pipeline] cleanWs
[WS-CLEANUP] Deleting project workspace...
[WS-CLEANUP] Deferred wipeout is used...
[WS-CLEANUP] done
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] node
Running on [Jenkins](#) in /var/lib/jenkins/workspace/Pipeline_Demo
[Pipeline] {
[Pipeline] step
No mail will be sent out, as 'Pipeline_Demo #7' does not have a result yet. Please make sure you set a proper result in case of pipeline/build scripts.
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS

Step-9: Go back to your project and check the pipeline flow.

The screenshot shows the Jenkins web interface for a pipeline named 'Pipeline Pipeline_Demo'. The left sidebar contains navigation links: Back to Dashboard, Status, Changes, Build Now, Delete Pipeline, Configure, Full Stage View, HTML Report, Rename, and Pipeline Syntax. The main area displays the 'Stage View' for the pipeline. It includes a 'Recent Changes' section and a table showing stage times for two builds.

Stage View

Average stage times:
(Average full run time: ~10s)

| | Checkout | Build | Email | Deployment | publish html report | clean up |
|----------------------------|----------|-------|-------|------------|---------------------|----------|
| #1 Jul 15 13:39 No Changes | 1s | 8s | 206ms | 348ms | 159ms | 126ms |
| #2 Jul 15 13:39 No Changes | 2s | 7s | 130ms | 314ms | 157ms | 47ms |
| #3 Jul 15 13:32 No Changes | 992ms | 7s | 132ms | 323ms | 161ms | 205ms |

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