

Module 6: Automated and Continuous Deployment

Demo Document - 2

edureka!

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Demo: Deployment of Java app with Jenkins pipeline

Problem statement: Execute commands to do deployment of JAVA application using Jenkins pipeline project

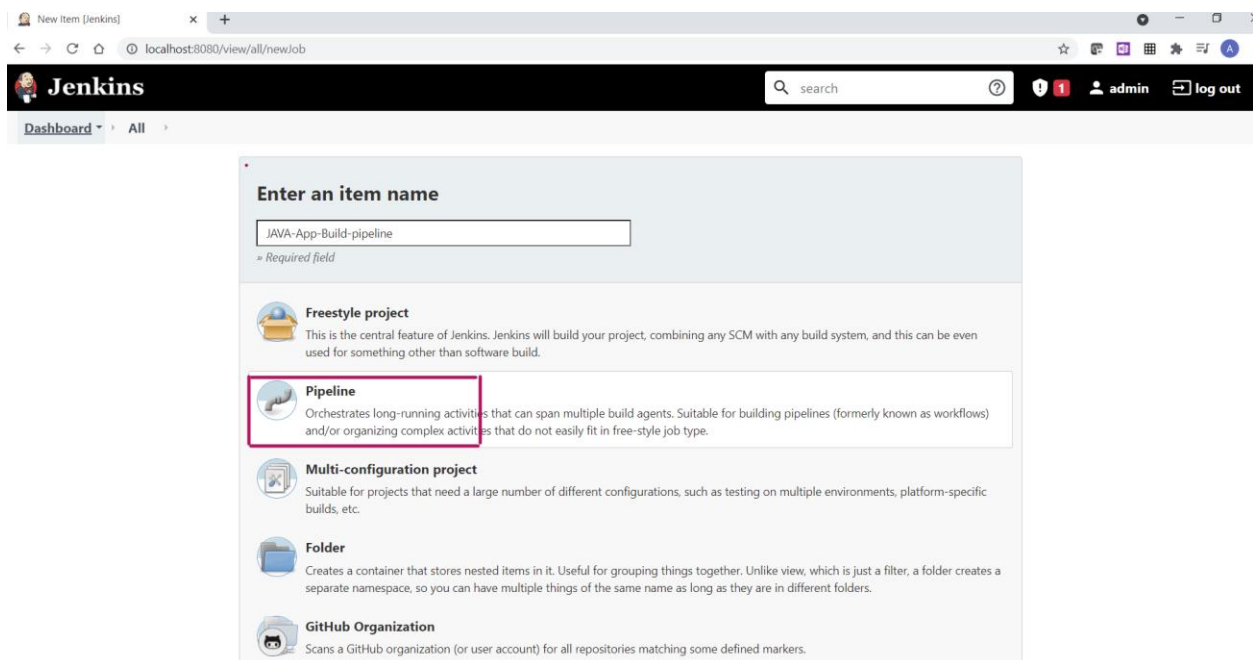
Solution:

Step 1: To run Jenkins, follow relevant instructions provided in Module 7/Lab 1. Let's assume Jenkins server is started.

Now we will create a Jenkins pipeline project.

URL to access: <http://localhost:8080/view/all/newJob>

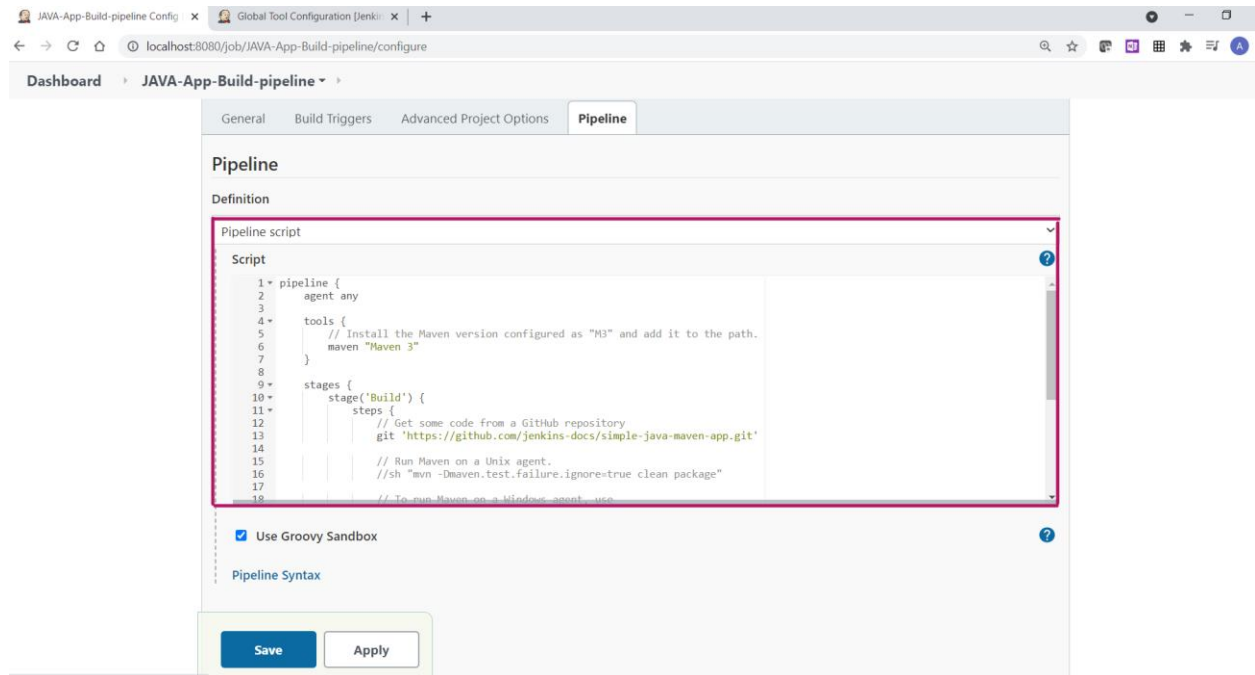
Please create a pipeline project named as 'JAVA-App-Build-pipeline'.



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Step 2: Now we can configure the pipeline project.

URL to access: <http://localhost:8080/job/JAVA-App-Build-pipeline/configure>



Please add below pipeline script in the Script section

Pipeline Script to be added:

```
pipeline {
```

```
  agent any
```

```
  tools {
```

```
    // Install the Maven version configured as "M3" and add it to the path.
```

```
    maven "Maven 3"
```

```
  }
```

```
  stages {
```

```
    stage('Build') {
```

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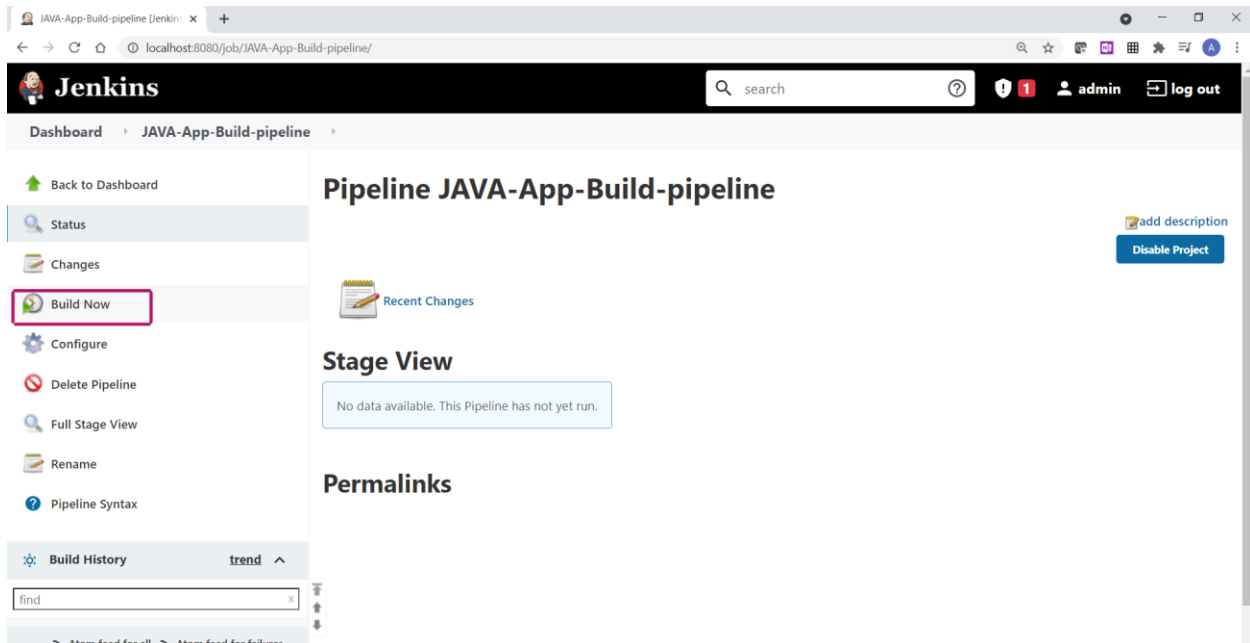
```
steps {  
    // Get some code from a GitHub repository  
    git 'https://github.com/jenkins-docs/simple-java-maven-app.git'  
  
    // Run Maven on a Unix agent.  
    //sh "mvn -Dmaven.test.failure.ignore=true clean package"  
  
    // To run Maven on a Windows agent, use  
    bat "mvn -Dmaven.test.failure.ignore=true clean package"  
}  
  
post {  
    // If Maven was able to run the tests, even if some of the test  
    // failed, record the test results and archive the jar file.  
    success {  
        junit '**/target/surefire-reports/TEST-*.xml'  
        archiveArtifacts 'target/*.jar'  
    }  
}  
}
```

Declarative pipeline is recently added to Jenkins pipeline project. It provides an opinionated syntax for creating the script. This approach also follow same rules as groovy's syntax.

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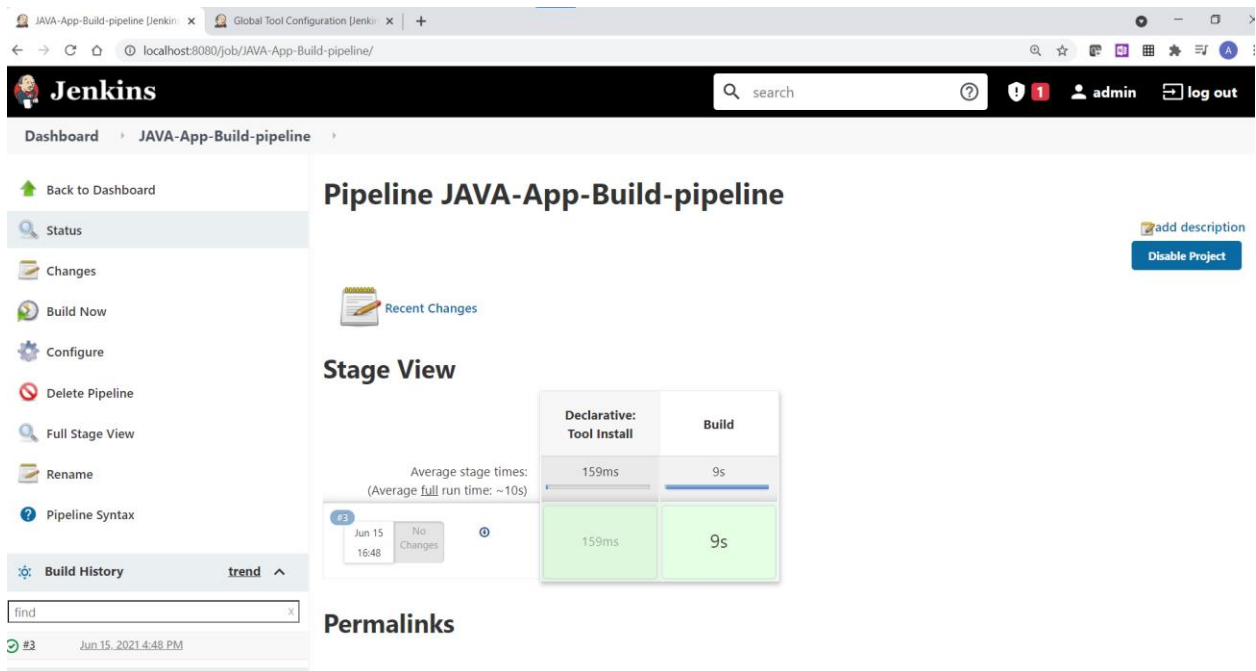
Step 3: You can now build the project. This is a similar option as provided in freestyle project.

URL to access: <http://localhost:8080/job/JAVA-App-Build-pipeline/>



Step 4: You can also view whether build is successful or failed

URL to access: <http://localhost:8080/job/JAVA-App-Build-pipeline/>



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Step 5: View logs generated for the build.

URL to access: <http://localhost:8080/job/JAVA-App-Build-pipeline/>

The screenshot shows the Jenkins web interface for the pipeline 'JAVA-App-Build-pipeline'. The left sidebar contains navigation links: Back to Dashboard, Status, Changes, Build Now, Configure, Delete Pipeline, Full Stage View, Rename, and Pipeline Syntax. Below these is the 'Build History' section with a search bar and a table of builds. The main content area is titled 'Pipeline JAVA-App-Build-pipeline' and includes a 'Recent Changes' section, a 'Stage View' diagram, and a 'Permalinks' section. The 'Stage View' diagram shows a pipeline with two stages: 'Declarative: Tool Install' (159ms) and 'Success: id' (9s). The '9s' stage is highlighted with a red box. The 'Build History' table shows a single build with the status 'No Changes'.

Build	Status	Time
#3	No Changes	Jun 15, 2021 4:48 PM

This build will have access to the artifact generated, test reports and useful information about the build execution in the form of logs.

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Step 6: Now your build is successful. Let's access Test reports, workspaces and artifacts for a specific build

URL to access: <http://localhost:8080/job/JAVA-App-Build-pipeline/1/> [1 is the build number]

The screenshot shows the Jenkins dashboard for the 'JAVA-App-Build-pipeline' job. The left sidebar contains navigation links: Build Now, Configure, Delete Pipeline, Full Stage View, Rename, Pipeline Syntax, Build History (selected), and trend. The main content area displays 'Last Successful Artifacts' (my-app-1.0-SNAPSHOT.jar, 2.66 KB), 'Recent Changes', and a 'Stage View' table. The 'Stage View' table shows the 'Declarative: Tool Install' stage taking 159ms and the 'Build' stage taking 9s. A 'Test Result Trend' graph shows a single data point for build #3. The 'Build History' table shows build #3 as successful on Jun 15, 2021 at 4:48 PM. The 'Latest Test Result' section shows 'no failures'. The 'Permalinks' section lists links for the last build, last stable build, last successful build, and last completed build, all for build #3.

Stage	Declarative: Tool Install	Build
Average stage times:	159ms	9s
(Average full run time: ~10s)		

Build #	Date	Status	Time
#3	Jun 15, 2021 4:48 PM	Success	16:48

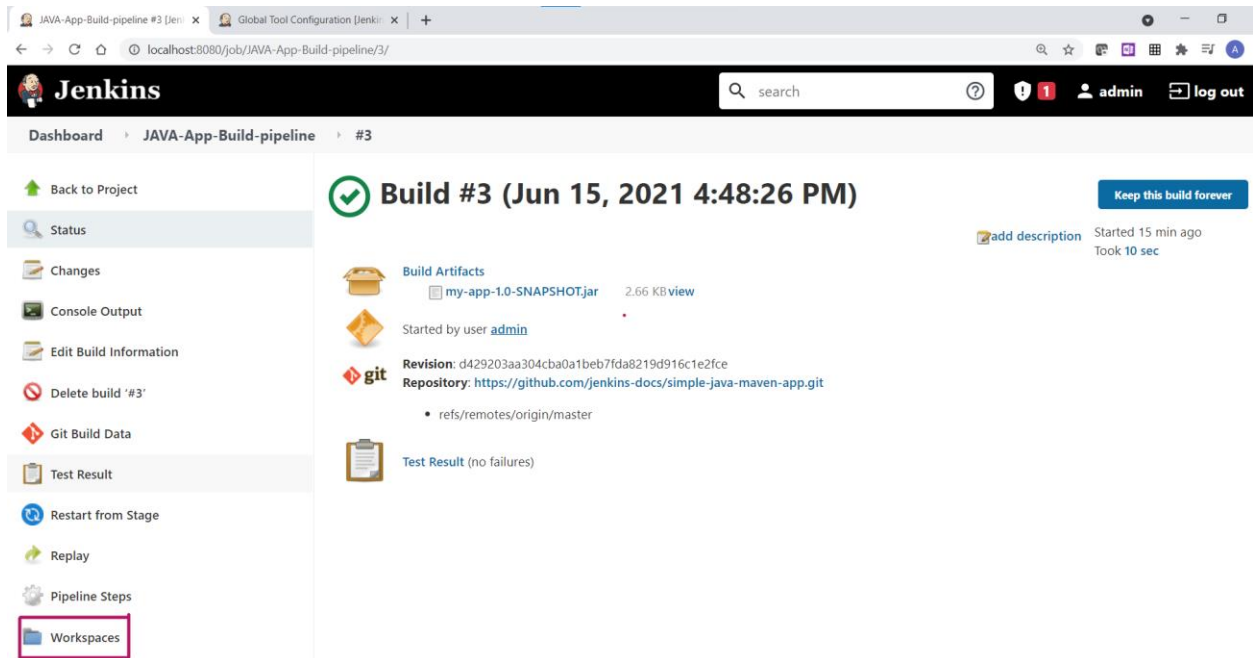
Click on 'Test Result' to observe how many test cases passed.

The screenshot shows the Jenkins build details page for 'Build #3 (Jun 15, 2021 4:48:26 PM)'. The left sidebar contains navigation links: Back to Project, Status (selected), Changes, Console Output, Edit Build Information, Delete build '#3', Git Build Data, Test Result (highlighted with a red box), Restart from Stage, Replay, Pipeline Steps, and Workspaces. The main content area displays the build status as successful, with a 'Keep this build forever' button. It shows 'Build Artifacts' (my-app-1.0-SNAPSHOT.jar, 2.66 KB), 'Started by user admin', 'Revision: d429203aa304c0a1beb7fda8219d916c1e2fce', and 'Repository: https://github.com/jenkins-docs/simple-java-maven-app.git'. The 'Test Result' section shows 'Test Result (no failures)'.

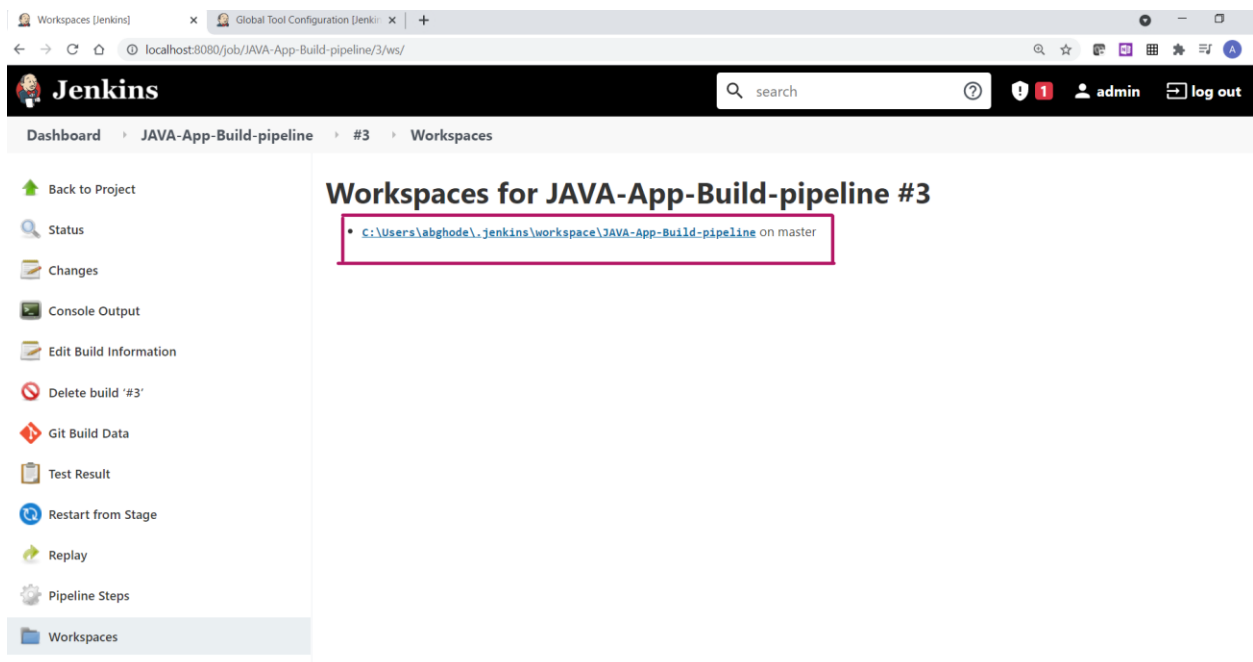
Build #	Date	Status	Time
#3	Jun 15, 2021 4:48:26 PM	Success	16:48

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Click on 'Workspaces' to access the project contents available on Jenkins server. You would be able to access artifacts generated by the successful build.

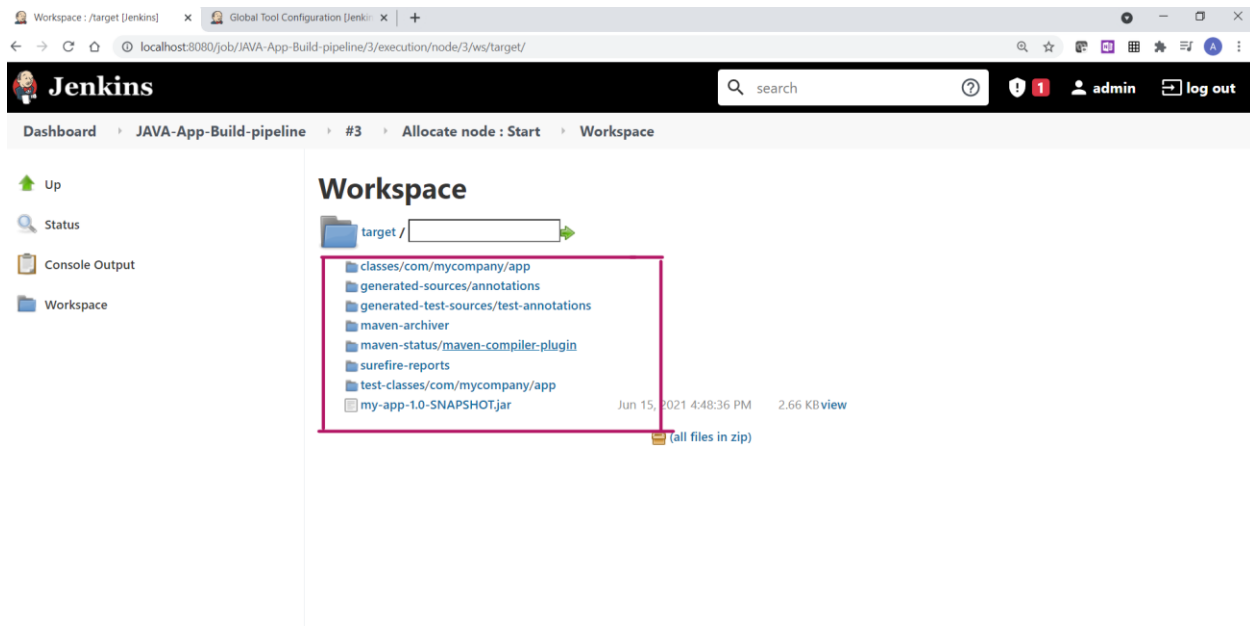


This screenshot shows the Jenkins interface for Build #3 of the 'JAVA-App-Build-pipeline' job. The left sidebar contains a list of actions: 'Back to Project', 'Status', 'Changes', 'Console Output', 'Edit Build Information', 'Delete build '#3'', 'Git Build Data', 'Test Result', 'Restart from Stage', 'Replay', 'Pipeline Steps', and 'Workspaces'. The 'Workspaces' item is highlighted with a red rectangle. The main content area displays the build status as 'Build #3 (Jun 15, 2021 4:48:26 PM)' with a green checkmark icon. Below this, it shows 'Build Artifacts' with a file 'my-app-1.0-SNAPSHOT.jar' (2.66 KB) and a 'Started by user admin' message. The 'Revision' is 'd429203aa304c8a0a1beb7fda8219d916c1e2fce' from the repository 'https://github.com/jenkins-docs/simple-java-maven-app.git'. A 'Test Result' section indicates 'no failures'. A 'Keep this build forever' button is visible in the top right corner.



This screenshot shows the Jenkins 'Workspaces' page for Build #3. The left sidebar is identical to the previous screenshot, with 'Workspaces' highlighted by a red rectangle. The main content area is titled 'Workspaces for JAVA-App-Build-pipeline #3' and displays a single workspace entry: 'C:\Users\abghode\.jenkins\workspace\JAVA-App-Build-pipeline on master'. This entry is enclosed in a red rectangle.

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Step 7: You can also have an access to build artifacts, git repository and test results on a single view.

URL to access: <http://localhost:8080/job/JAVA-App-Build-pipeline/3/>

