

Module 4:Continuous Integration Using Jenkins

Demo Document - 1

edureka!

edureka!

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Demo – 1: Create Pipeline view using DevCompile and QUnitTest

The screenshot displays the Jenkins web interface. At the top, the Jenkins logo is on the left, a red box with the number '3' is in the center, and a search bar is on the right. Below the header, a breadcrumb trail shows 'Jenkins > All >'. The main content area is titled 'Enter an item name' and features a text input field containing the word 'Compile'. Below the input field, a small text label reads '» Required field'. The page lists four project types with icons and descriptions:

- 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.
- Pipeline**: Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.
- Multi-configuration project**: Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.
- Folder**: Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

An 'OK' button is visible at the bottom left of the project type list. Below this, a large blue watermark 'adrol' is visible. The bottom section of the image shows the 'New Item' page for a project named 'DevCompile'. The breadcrumb trail is 'Jenkins > DevCompile >'. The 'General' tab is selected, showing fields for 'Project name' (filled with 'DevCompile') and 'Description'. Below these fields is a '[Plain text] Preview' link. A list of checkboxes includes 'Discard old builds', 'GitHub project', 'This project is parameterized', 'Throttle builds', and 'Disable this project'. At the bottom left, there are 'Save' and 'Apply' buttons. On the right side, there are five question mark icons. An 'Advanced' tab is visible at the bottom right.

Jenkins > DevCompile >

General **Source Code Management** Build Triggers Build Environment Build Post-build Actions

Source Code Management

☐ None
☒ Git

Repositories

Repository URL

Credentials [Add](#)

[Advanced...](#)
[Add Repository](#)

Branches to build

Branch Specifier (blank for 'any')

[Add Branch](#)

[Save](#) [Apply](#) (Auto)

General Source Code Management Build Triggers Build Environment **Build** Post-build Actions

Build

☒ Invoke top-level Maven targets

Goals

[Advanced...](#)

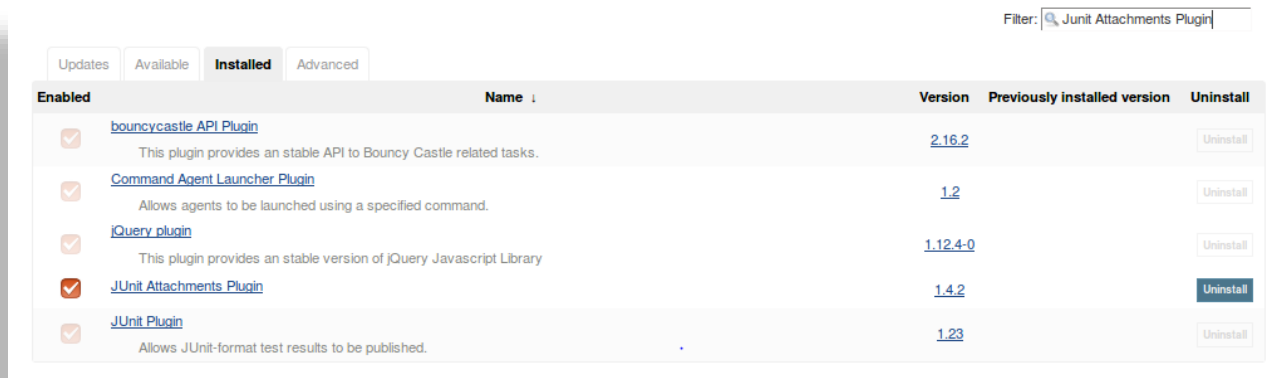
[Add build step](#)

Post-build Actions

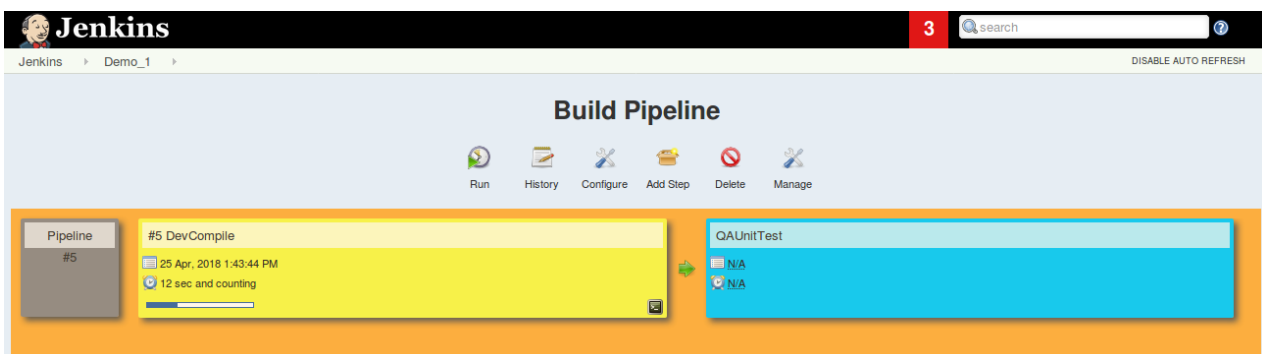
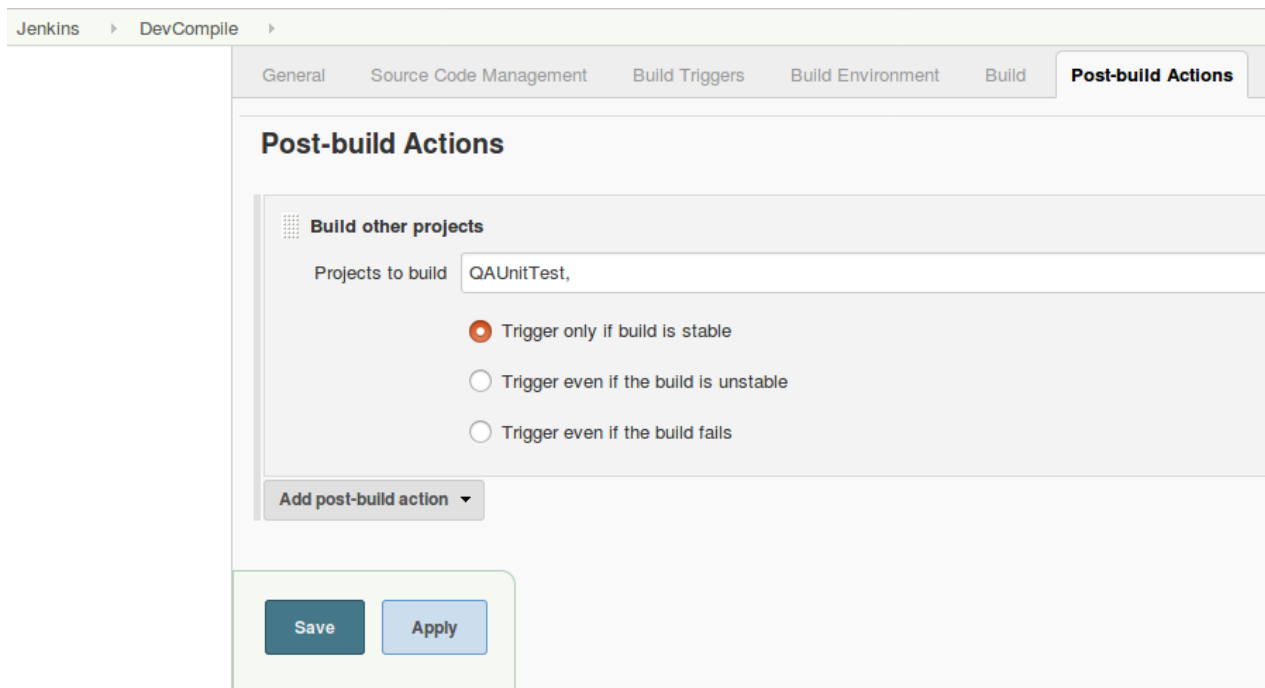
[Add post-build action](#)

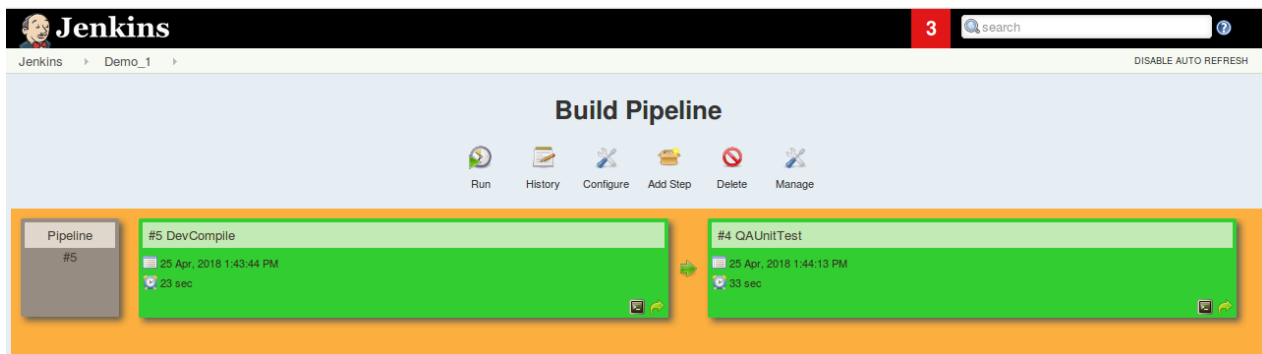
[Save](#) [Apply](#)

- Create QAunitTest project and provide the same SCM path and execute it after DevCompile Action by setting build.

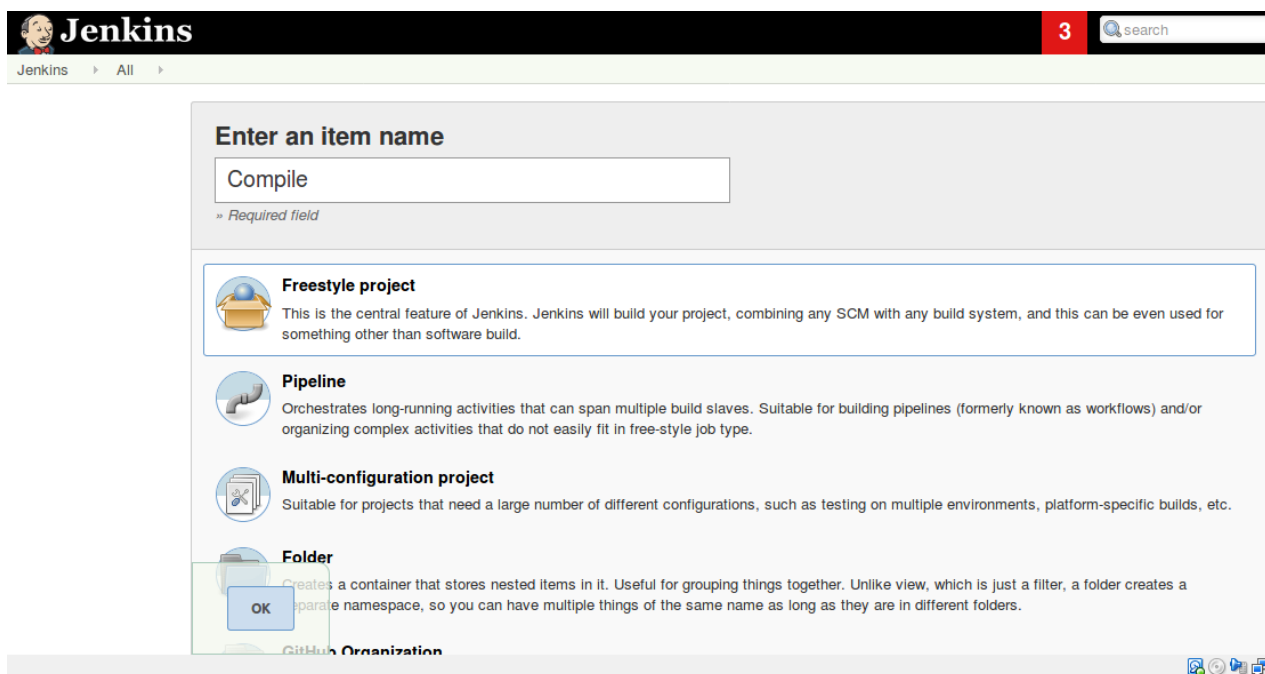


- Configure DevCompile project and set post build action as QAunitTest





Demo – 2 : Create The Whole Delivery Pipeline View



Module 4: Continuous Integration Using Jenkins

Jenkins > DevCompile >

GeneralSource Code ManagementBuild TriggersBuild EnvironmentBuildPost-build Actions

Project name

DevCompile

Description

[Plain text] Preview

☐ Discard old builds

☐ GitHub project

☐ This project is parameterized

☐ Throttle builds

☐ Disable this project

Save

Apply

ds if necessary

Advanced

Jenkins > DevCompile >

GeneralSource Code ManagementBuild TriggersBuild EnvironmentBuildPost-build Actions

Source Code Management

☐ None

☒ Git

Repositories

Repository URL

https://github.com/edureka-git/DevOpsClassCodes.git

Credentials

- none -

Add

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any')

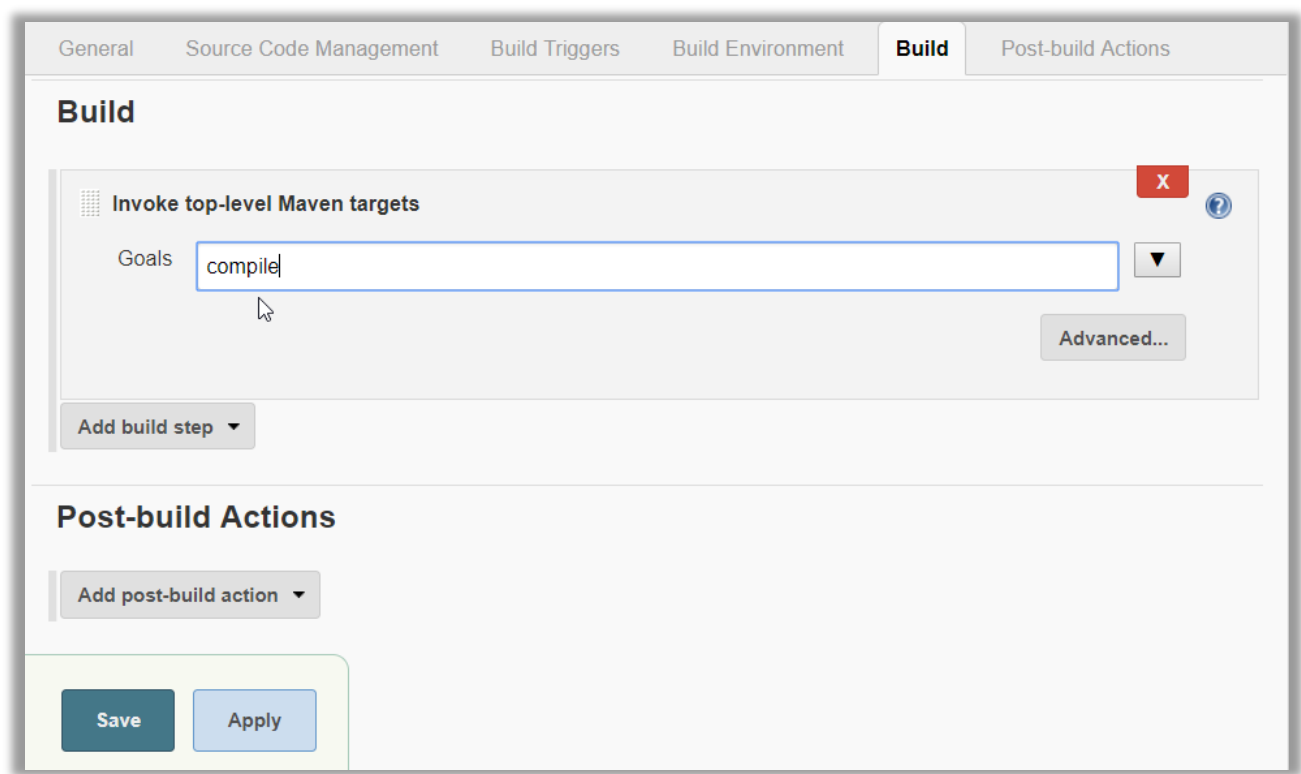
*/master

Add Branch

Save

Apply

(Auto)



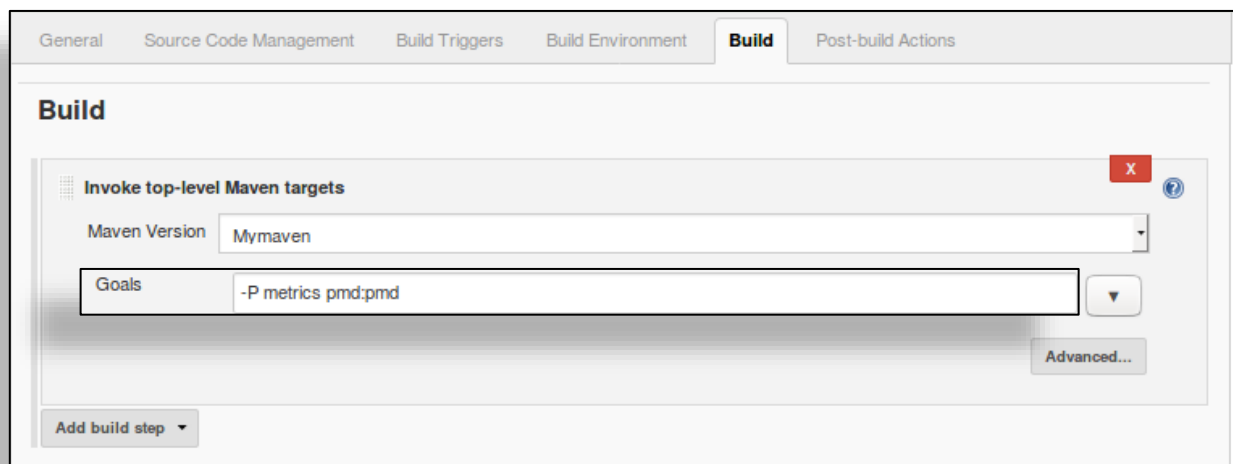
edureka!

Console Output

```

Started by user admin
Building in workspace /var/lib/jenkins/workspace/DevCompile
> git rev-parse --is-inside-work-tree # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git # timeout=10
Fetching upstream changes from https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git
> git --version # timeout=10
> git fetch --tags --progress https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git +refs/heads/*:refs/remotes/origin/*
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
> git rev-parse refs/remotes/origin/origin/master^{commit} # timeout=10
Checking out Revision c986b9eb275ae50c5a7b9b1d757be5c58e38c0da (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f c986b9eb275ae50c5a7b9b1d757be5c58e38c0da
Commit message: "initial commit"
> git rev-list --no-walk c986b9eb275ae50c5a7b9b1d757be5c58e38c0da # timeout=10
[DevCompile] $ /var/lib/jenkins/tools/hudson.tasks.Maven_MavenInstallation/Mymaven/bin/mvn compile
[INFO] Scanning for projects...
[WARNING]
[WARNING] Some problems were encountered while building the effective model for com.edurekademo.tutorial:addressbook:war:2.0
[WARNING] Reporting configuration should be done in <reporting> section, not in maven-site-plugin <configuration> as reportPlugins
parameter. @ line 298, column 40
[WARNING]
[WARNING] It is highly recommended to fix these problems because they threaten the stability of your build.
[WARNING]
[WARNING] For this reason, future Maven versions might no longer support building such malformed projects.
[WARNING]
[INFO] Building Vaadin Addressbook example 2.0
[INFO] -----
[INFO]
[INFO] --- maven-enforcer-plugin:1.0:enforce (enforce-versions) @ addressbook ---
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ addressbook ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /var/lib/jenkins/workspace/DevCompile/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.2:compile (default-compile) @ addressbook ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 6.520 s
[INFO] Finished at: 2018-02-01T03:59:58+05:30
[INFO] Final Memory: 10M/60M
[INFO]
[INFO]
Triggering a new build of DeveCodeReview
Triggering a new build of DeveCodeReview
Finished: SUCCESS
  
```

- Provide the same Source Code Management Path DevCodereview



Module 4: Continuous Integration Using Jenkins

Filter:

Updates	Available	Installed	Advanced	
Enabled	Name	Version	Previously installed version	Uninstall
<input checked="" type="checkbox"/>	bouncycastle API Plugin This plugin provides an stable API to Bouncy Castle related tasks.	2.16.2		Uninstall
<input checked="" type="checkbox"/>	Command Agent Launcher Plugin Allows agents to be launched using a specified command.	1.2		Uninstall
<input checked="" type="checkbox"/>	Matrix Project Plugin Multi-configuration (matrix) project type.	1.12		Uninstall
<input checked="" type="checkbox"/>	Maven Integration plugin This plug-in provides, for better and for worse, a deep integration of Jenkins and Maven: Automatic triggers between projects depending on SNAPSHOTS, automated configuration of various Jenkins publishers (JUnit, ...).	3.1		Uninstall
<input checked="" type="checkbox"/>	PMD Plug-in This plug-in collects the PMD analysis results of the project modules and visualizes the found warnings.	3.50		Uninstall
<input checked="" type="checkbox"/>	Static Analysis Utilities This plug-in provides utilities for the static code analysis plug-ins.	1.94		Uninstall
<input checked="" type="checkbox"/>	Token Macro Plugin This plug-in adds reusable macro expansion capability for other plug-ins to use.	2.3		Uninstall

[Back to Project](#)
[Status](#)
[Changes](#)
[Console Output](#)
[View as plain text](#)
[Edit Build Information](#)

Console Output

Progress:

```
Started by user admin
Building in workspace /var/lib/jenkins/workspace/DeveCodeReview
Cloning the remote Git repository
Cloning repository https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git
> git init /var/lib/jenkins/workspace/DeveCodeReview # timeout=10
Fetching upstream changes from https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git
> git --version # timeout=10
> git fetch --tags --progress https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git +refs/heads/*:refs/remotes/origin/*
> git config remote.origin.url https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git # timeout=10
Fetching upstream changes from https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git
> git fetch --tags --progress https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git +refs/heads/*:refs/remotes/origin/*
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision c986b9eb275ae50c5a7b9b1d757be5c58e38c0da (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f c986b9eb275ae50c5a7b9b1d757be5c58e38c0da
Commit message: "initial commit"
First time build. Skipping changelog.
[DeveCodeReview] $ /var/lib/jenkins/tools/hudson.tasks.Maven_MavenInstallation/Mymaven/bin/mvn -P metrics pmd:pmd
[INFO] Scanning for projects...
Downloading: https://repo.maven.apache.org/maven2/org/eclipse/jetty/jetty-maven-plugin/9.2.3.v20140905/jetty-maven-plugin-9.2.3.v20140905.pom
Progress (1): 2.1/5.4 kB
```

```

Progress (1): 290/358 kB
Progress (1): 294/358 kB
Progress (1): 298/358 kB
Progress (1): 302/358 kB
Progress (1): 307/358 kB
Progress (1): 311/358 kB
Progress (1): 315/358 kB
Progress (1): 319/358 kB
Progress (1): 323/358 kB
Progress (1): 327/358 kB
Progress (1): 331/358 kB
Progress (1): 335/358 kB
Progress (1): 339/358 kB
Progress (1): 343/358 kB
Progress (1): 348/358 kB
Progress (1): 352/358 kB
Progress (1): 356/358 kB
Progress (1): 358 kB

Downloaded: https://repo.maven.apache.org/maven2/log4j/log4j/1.2.12/log4j-1.2.12.jar (358 kB at 115 kB/s)
[INFO] No sources to compile
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 05:59 min
[INFO] Finished at: 2018-01-31T21:25:09+05:30
[INFO] Final Memory: 13M/60M
[INFO] -----
Finished: SUCCESS
    
```

The screenshot shows the Jenkins configuration interface for a build job. The 'Build' tab is active, and a dropdown menu for 'Add post-build action' is open, displaying a list of available actions. The 'With Ant' checkbox is unchecked. The background shows the 'Build' section with a red 'X' icon and an 'Advanced...' button.

Build

- ☐ With Ant

Add post-build action

- Publish PMD analysis results
- Aggregate downstream test results
- Archive the artifacts
- Build other projects
- Publish JUnit test result report
- Publish Javadoc
- Record fingerprints of files to track usage
- Git Publisher
- E-mail Notification
- Editable Email Notification
- Set GitHub commit status (universal)
- Set build status on GitHub commit [deprecated]
- Delete workspace when build is done

Buttons: Save, Apply



Create a New project QAAUnitTest

Filter:

Updates	Available	Installed	Advanced	
Enabled	Name	Version	Previously installed version	Uninstall
<input checked="" type="checkbox"/>	bouncycastle API Plugin This plugin provides an stable API to Bouncy Castle related tasks.	2.16.2		Uninstall
<input checked="" type="checkbox"/>	Command Agent Launcher Plugin Allows agents to be launched using a specified command.	1.2		Uninstall
<input checked="" type="checkbox"/>	jQuery plugin This plugin provides an stable version of jQuery Javascript Library	1.12.4-0		Uninstall
<input checked="" type="checkbox"/>	JUnit Attachments Plugin	1.4.2		Uninstall
<input checked="" type="checkbox"/>	JUnit Plugin Allows JUnit-format test results to be published.	1.23		Uninstall

Build

Invoke top-level Maven targets

Maven Version

Mymaven

Goals

test

Advanced...

Add build step

Post-build Actions

Add post-build action

Save

Apply



Console Output

```

Started by upstream project "QAMetricCheck" build number 14
originally caused by:
  Started by user admin
Started by upstream project "QAMetricCheck" build number 14
originally caused by:
  Started by user admin
Building in workspace /var/lib/jenkins/workspace/QAPackage
> git rev-parse --is-inside-work-tree # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git # timeout=10
Fetching upstream changes from https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git
> git --version # timeout=10
> git fetch --tags --progress https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git +refs/heads/*:refs/remotes/origin/*
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
> git rev-parse refs/remotes/origin/origin/master^{commit} # timeout=10
Checking out Revision c986b9eb275ae50c5a7b9b1d757be5c58e38c0da (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f c986b9eb275ae50c5a7b9b1d757be5c58e38c0da
Commit message: "initial commit"
> git rev-list --no-walk c986b9eb275ae50c5a7b9b1d757be5c58e38c0da # timeout=10
[QAPackage] $ /var/lib/jenkins/tools/hudson.tasks.Maven_MavenInstallation/Mymaven/bin/mvn package
[INFO] Scanning for projects...
[WARNING]
[WARNING] Some problems were encountered while building the effective model for com.edurekademo.tutorial:addressbook:war:2.0
[WARNING] Reporting configuration should be done in <reporting> section, not in maven-site-plugin <configuration> as reportPlugins
parameter. @ line 298, column 40

```

Results :

Tests run: 23, Failures: 0, Errors: 0, Skipped: 0

```

[INFO]
[INFO] --- maven-war-plugin:2.2:war (default-war) @ addressbook ---
[INFO] Packaging webapp
[INFO] Assembling webapp [addressbook] in [/var/lib/jenkins/workspace/QAPackage/target/addressbook]
[INFO] Processing war project
[INFO] Webapp assembled in [806 msecs]
[INFO] Building war: /var/lib/jenkins/workspace/QAPackage/target/addressbook.war
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 21.879 s
[INFO] Finished at: 2018-02-01T05:15:54+05:30
[INFO] Final Memory: 13M/60M
[INFO] -----
Finished: SUCCESS

```

- Back to Project
- Status
- Changes
- Console Output
- Edit Build Information
- History
- Git Build Data
- No Tags
- Test Result
- Previous Build

Test Result

0 failures

23 tests
Took 0.38 sec.
[add description](#)

All Tests

Package	Duration	Fail (d#)	Skip (d#)	Pass (d#)	Total (d#)
com.edurekademo.utilities	0.38 sec	0	0	23 +23	23 +23

Build

Invoke top-level Maven targets

Maven Version

Mymaven

Goals

cobertura:cobertura

Advanced...

Add build step

UpdatesAvailableInstalledAdvanced

Enabled	Name	Version	Previously installed version	Uninstall
<input checked="" type="checkbox"/>	bouncycastle API Plugin This plugin provides an stable API to Bouncy Castle related tasks.	2.16.2		Uninstall
<input checked="" type="checkbox"/>	Cobertura Plugin This plugin integrates Cobertura coverage reports to Jenkins.	1.12		Uninstall
<input checked="" type="checkbox"/>	Command Agent Launcher Plugin Allows agents to be launched using a specified command.	1.2		Uninstall
<input checked="" type="checkbox"/>	Structs Plugin Library plugin for DSL plugins that need names for Jenkins objects.	1.10		Uninstall

GeneralSource Code ManagementBuild TriggersBuild EnvironmentBuildPost-build Actions

Project name

QAPackage

Description

[Plain text] [Preview](#)

☐ Enable project-based security

☐ Discard old builds

☐ GitHub project

☐ This project is parameterized

☐ Throttle builds

☐ Disable this project

☐ Execute concurrent builds if necessary

Save

Apply

Advanced...

Build

Invoke top-level Maven targets

X

?

Maven Version

Mymaven

Goals

package

Advanced...

Add build step

Post-build Actions

Add post-build action

Save

Apply

Console Output

```
Started by upstream project "QAMetricCheck" build number 14
originally caused by:
  Started by user admin
Started by upstream project "QAMetricCheck" build number 14
originally caused by:
  Started by user admin
Building in workspace /var/lib/jenkins/workspace/QAPackage
> git rev-parse --is-inside-work-tree # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git # timeout=10
Fetching upstream changes from https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git
> git --version # timeout=10
> git fetch --tags --progress https://github.com/pkannoioo/https-github.com-edureka-git-DevOpsClassCodes.git +refs/heads/*:refs/remotes/origin/*
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
> git rev-parse refs/remotes/origin/origin/master^{commit} # timeout=10
Checking out Revision c986b9eb275ae50c5a7b9b1d757be5c58e38c0da (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f c986b9eb275ae50c5a7b9b1d757be5c58e38c0da
Commit message: "initial commit"
> git rev-list --no-walk c986b9eb275ae50c5a7b9b1d757be5c58e38c0da # timeout=10
[QAPackage] $ /var/lib/jenkins/tools/hudson.tasks.Maven_MavenInstallation/Mymaven/bin/mvn package
[INFO] Scanning for projects...
[WARNING]
[WARNING] Some problems were encountered while building the effective model for com.edurekademo.tutorial:addressbook:war:2.0
[WARNING] Reporting configuration should be done in <reporting> section, not in maven-site-plugin <configuration> as reportPlugins
parameter. @ line 298, column 40
```

```
Results :

Tests run: 23, Failures: 0, Errors: 0, Skipped: 0

[INFO]
[INFO] --- maven-war-plugin:2.2:war (default-war) @ addressbook ---
[INFO] Packaging webapp
[INFO] Assembling webapp [addressbook] in [/var/lib/jenkins/workspace/QAPackage/target/addressbook]
[INFO] Processing war project
[INFO] Webapp assembled in [806 msecs]
[INFO] Building war: /var/lib/jenkins/workspace/QAPackage/target/addressbook.war
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 21.879 s
[INFO] Finished at: 2018-02-01T05:15:54+05:30
[INFO] Final Memory: 13M/60M
[INFO] -----
Finished: SUCCESS
```

```
shubham@shubham-VirtualBox:/var/lib/jenkins/workspace/QAPackage/target$ ls
addressbook      classes          generated-test-sources  maven-status      test-classes
addressbook.war  generated-sources  maven-archiver         surefire-reports
shubham@shubham-VirtualBox:/var/lib/jenkins/workspace/QAPackage/target$
```

Build Triggers

☐ Trigger builds remotely (e.g., from scripts) 

☒ Build after other projects are built 

Projects to watch:

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

☐ Build periodically 

☐ GitHub hook trigger for GITScm polling 

☐ Poll SCM 

Build Triggers

☐ Trigger builds remotely (e.g., from scripts)

☒ Build after other projects are built

Projects to watch:

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

☐ Build periodically

☐ GitHub hook trigger for GITScm polling

☐ Poll SCM

Post-build Actions

Build other projects

Projects to build:

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

Publish JUnit test result report

Test report XMLs:

Fileset 'includes' setting that specifies the generated raw XML report files, such as 'myproject/target/test-reports/*.xml'. Basedir of the fileset is [the workspace root](#).

☐ Retain long standard output/error

Health report amplification factor:

1% failing tests scores as 99% health. 5% failing tests scores as 95% health

Additional test report features:

☒ Do not fail the build on empty test results

Build Triggers

☐ Trigger builds remotely (e.g., from scripts) [?](#)

☒ Build after other projects are built [?](#)

Projects to watch

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

☐ Build periodically [?](#)

☐ GitHub hook trigger for GITScm polling [?](#)

☐ Poll SCM [?](#)

Build Triggers

☐ Trigger builds remotely (e.g., from scripts) [?](#)

☒ Build after other projects are built [?](#)

Projects to watch

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

☐ Build periodically [?](#)

☐ GitHub hook trigger for GITScm polling [?](#)

☐ Poll SCM [?](#)

Post-build Actions

Build other projects

Projects to build

QAPackage

Trigger only if build is stable

Trigger even if the build is unstable

Trigger even if the build fails

Add post-build action

Save

Apply

■ Install Build Pipeline Plugin

Filter: Build Pipeline Plugin

Updates

Available

Installed

Advanced

Enabled	Name	Version	Previously installed version	Uninstall
<input checked="" type="checkbox"/>	bouncycastle API Plugin This plugin provides an stable API to Bouncy Castle related tasks.	2.16.2		<div>Uninstall</div>
<input checked="" type="checkbox"/>	Build Pipeline Plugin This plugin renders upstream and downstream connected jobs that typically form a build pipeline. In addition, it offers the ability to define manual triggers for jobs that require intervention prior to execution, e.g. an approval process outside of Jenkins.	1.5.8		<div>Uninstall</div>
<input checked="" type="checkbox"/>	jQuery plugin This plugin provides an stable version of jQuery Javascript Library	1.12.4-0		<div>Uninstall</div>
<input checked="" type="checkbox"/>	Parameterized Trigger plugin	2.35.2		<div>Uninstall</div>
<input checked="" type="checkbox"/>	Pipeline: Supporting APIs Common utility implementations to build Pipeline Plugin	2.17		<div>Uninstall</div>

■ Create a Pipeline View

All DevOps +						add descr...
S	W	Name ↓	Last Success	Last Failure	Last Duration	
		DevCompile	9 hr 46 min - #18	19 hr - #5	27 sec	
		DeveCodeReview	9 hr 45 min - #13	N/A	30 sec	
		job1	2 days 17 hr - #1	N/A	0.45 sec	
		job2	2 days 16 hr - #1	N/A	0.12 sec	
		job3	N/A	N/A	N/A	
		job4	22 hr - #5	1 day 0 hr - #3	9.4 sec	
		QAMetricCheck	8 hr 31 min - #14	13 hr - #2	49 sec	
		QAPackage	47 min - #14	N/A	27 sec	
		QAUnitTest	9 hr 45 min - #14	13 hr - #3	27 sec	

Icon: [S](#) [M](#) [L](#)

[Legend](#) [RSS for all](#) [RSS for failures](#) [RSS for just latest builds](#)

