



# КАК СОЗДАТЬ ПОЛНУЮ КОМПОНОВКУ ПРОЦЕССА ДЛЯ ПРОЕКТА НА AEM

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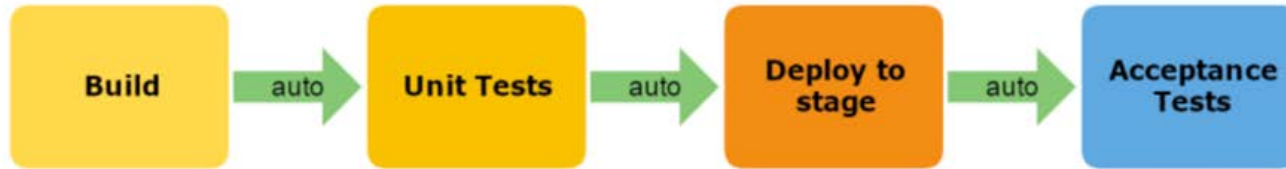
## Continuous Integration, Continuous Delivery & Continuous Deployment

▶ **Continuous Integration** — the practice that requires developers to integrate code into a shared repository several times a day. Each check-in is then verified by an automated build, allowing teams to detect problems early.

▶ **Continuous Delivery** — a software development discipline where you build software in such a way that the software can be released to production at any time.

▶ **Continuous Deployment** — releasing every good build to users.

## Continuous Integration



## Continuous Delivery



## Continuous Deployment



Let's configure!



# Configure Jenkins job to trigger build on branch change

## Jenkins - Global Tool Configuration

### Maven Configuration

Default settings provider

Use default maven settings

Default global settings provider

Use default maven global settings

### JDK

JDK installations

Add JDK



JDK

Name

JDK

JAVA\_HOME

C:\Program Files\Java\jdk1.8.0\_65



Install automatically

Add JDK

List of JDK installations on this system

### Git

Git installations



Git

Name

Git

Path to Git executable

C:\Program Files\Git\bin\git.exe



Install automatically

# Configure Jenkins job to trigger build on branch change

## Jenkins - Global Tool Configuration

### Maven

Maven installations

Add Maven

Maven

Name

maven

MAVEN\_HOME

D:\maven\apache-maven-3.5.2

☐ Install automatically

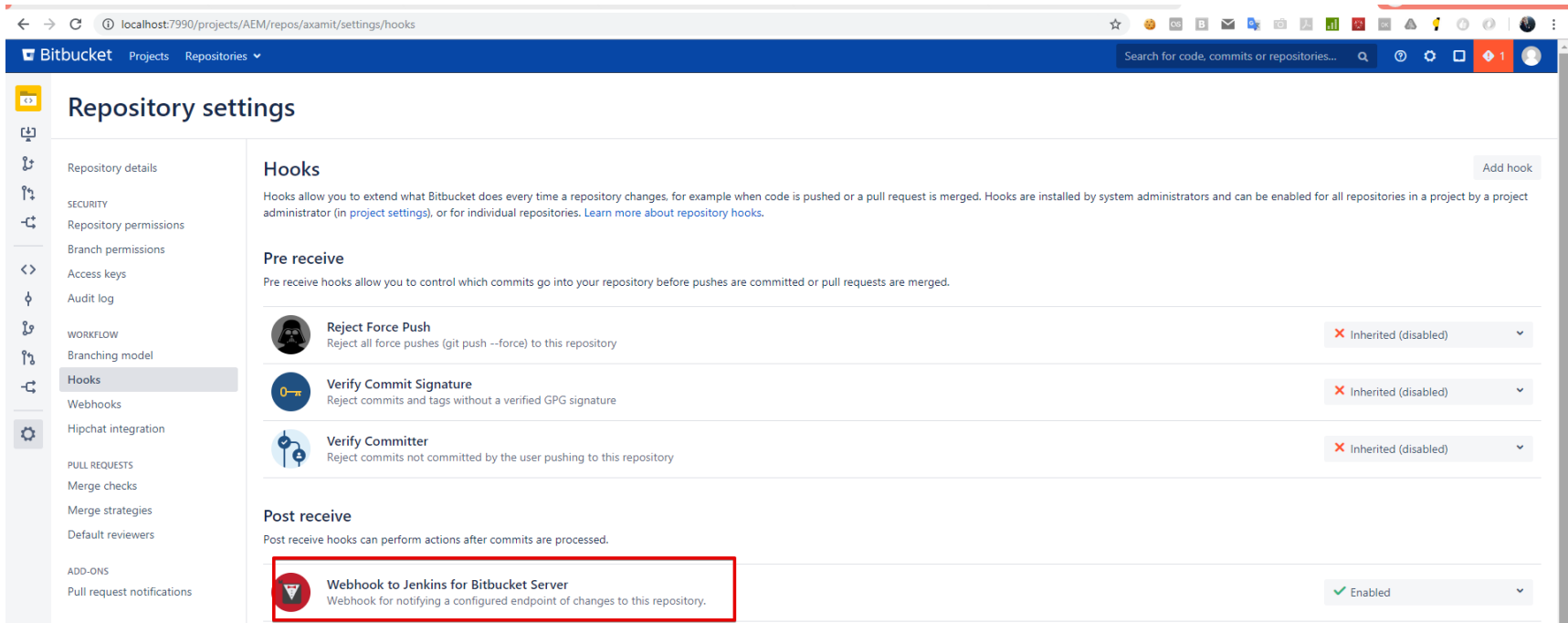
Add Maven

List of Maven installations on this system

# Configure Jenkins job to trigger build on branch change

## Install Bitbucket Plugin for Jenkins

<https://wiki.jenkins.io/display/JENKINS/BitBucket+Plugin>



The screenshot shows the Bitbucket 'Repository settings' page for a repository named 'axamit'. The left sidebar contains navigation links for Repository details, SECURITY, Repository permissions, Branch permissions, Access keys, Audit log, WORKFLOW, Branching model, Hooks (selected), Webhooks, Hipchat integration, PULL REQUESTS, Merge checks, Merge strategies, Default reviewers, ADD-ONS, and Pull request notifications. The main content area is titled 'Hooks' and includes an 'Add hook' button. It is divided into 'Pre receive' and 'Post receive' sections. Under 'Pre receive', there are three hooks: 'Reject Force Push' (Inherited (disabled)), 'Verify Commit Signature' (Inherited (disabled)), and 'Verify Committer' (Inherited (disabled)). Under 'Post receive', there is one hook: 'Webhook to Jenkins for Bitbucket Server' (Enabled), which is highlighted with a red rectangle. The hook description states: 'Webhook for notifying a configured endpoint of changes to this repository.'

Hook Name	Status
Reject Force Push	Inherited (disabled)
Verify Commit Signature	Inherited (disabled)
Verify Committer	Inherited (disabled)
Webhook to Jenkins for Bitbucket Server	Enabled

# Configure Jenkins job to trigger build on branch change

## Webhook to Jenkins for Bitbucket Server

### Jenkins instance(s)

Add another Jenkins instance

Jenkins URL\*  
  
URL to the Jenkins instance. Example: https://jenkins.example.com

Jenkins Endpoint  

Git Plugin

Select notification type for Jenkins instance. Git and Bitbucket Source plugins are supported.

Repo Clone URL  

HTTP

The URL Jenkins is using to clone this repository. Change to Custom and feel free to adjust as needed.

### General settings

☒ Skip SSL Certificate Validation

When connecting to Jenkins, allow all certificates to be accepted, including self-signed certs

☐ Omit SHA1 Hash Code

Do not send the commit's SHA1 hash code to Jenkins

☐ Omit Branch Name

Do not send the commit's branch name to Jenkins

☐ Omit the Trigger Build Button

Do not display the Trigger Build Button on the pull request overview page

Configuration check  

Trigger Jenkins

Test the configured connection with Jenkins.



# Configure Jenkins job to trigger build on branch change

## Jenkins – New Item – Freestyle Project

**Source Code Management**

☐ None  
☒ Git

**Repositories**

Repository URL

Credentials

**Branches to build**

Branch Specifier (blank for 'any')

## Build Triggers

- ☐ Bitbucket Pull Requests Builder
- ☐ Build after other projects are built
- ☐ Build periodically
- ☒ Build when a change is pushed to BitBucket
- ☐ GitHub hook trigger for GITScm polling
- ☐ Poll SCM



## Build Environment

- ☐ Delete workspace before build starts
- ☐ Use secret text(s) or file(s)
- ☐ Provide Configuration files
- ☐ Abort the build if it's stuck
- ☐ Add timestamps to the Console Output
- ☐ Run buildstep before SCM runs
- ☐ With Ant



## Build

### Invoke top-level Maven targets



Maven Version

(Default)

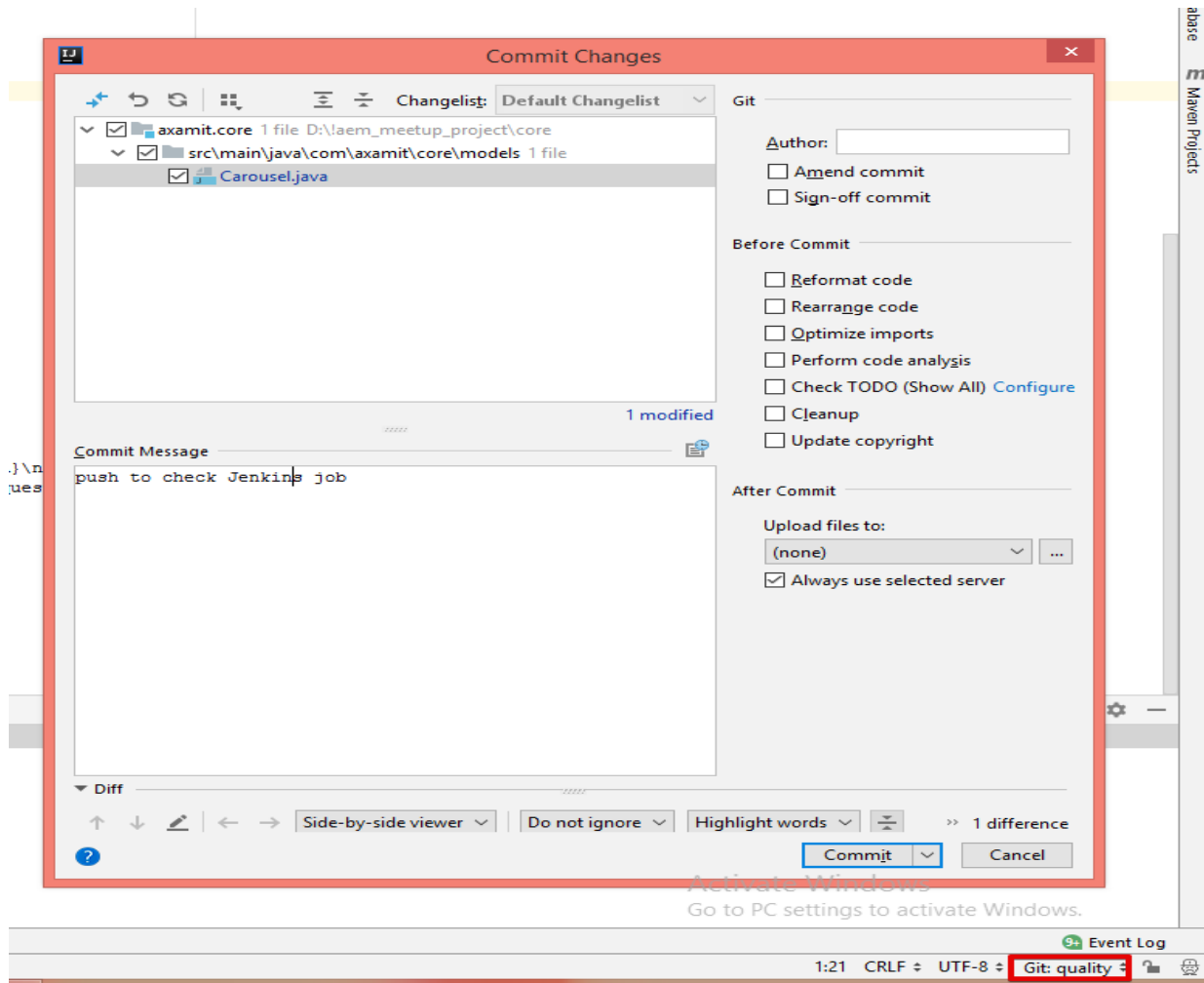



Goals

clean install -P !autoInstallPackagePublish



Advanced...



 [Back to Dashboard](#)

 [Status](#)

 [Changes](#)

 [Workspace](#)

 [Build Now](#)


 [Delete Project](#)


 [Configure](#)

 [BitBucket Hook Log](#)

 [Rename](#)


## Project Job Just To Build Quality branch on changes

 [Workspace](#)



 [Recent Changes](#)

### Permalinks

- [Last build \(#9\), 7 min 2 sec ago](#)
- [Last stable build \(#9\), 7 min 2 sec ago](#)
- [Last successful build \(#9\), 7 min 2 sec ago](#)
- [Last failed build \(#6\), 2 days 17 hr ago](#)
- [Last unsuccessful build \(#6\), 2 days 17 hr ago](#)
- [Last completed build \(#9\), 7 min 2 sec ago](#)


**Build History**
[trend](#)

X

 <b>#9</b>	Sep 25, 2018 4:31 PM
 <b>#8</b>	Sep 25, 2018 4:25 PM

# Configure Jenkins job to check PR's in Bitbucket

## Jenkins – New Item – Freestyle Project

**Source Code Management**

☐ None  
☒ Git

**Repositories**

Repository URL

Credentials  [Add](#)

[Advanced...](#)

[Add Repository](#)

**Branches to build**

Branch Specifier (blank for 'any')

[Add Branch](#)

**Repository browser**

(Auto)

**Additional Behaviours**

**Merge before build**

Name of repository

Branch to merge to

Merge strategy

Fast-forward mode

[Add](#)

## Configure Jenkins job to check PR's in Bitbucket

**Build Triggers**

- ☐ Bitbucket Pull Requests Builder
- ☐ Build after other projects are built
- ☐ Build periodically
- ☐ Build when a change is pushed to BitBucket
- ☐ GitHub hook trigger for GITScm polling
- ☒ Poll SCM

Schedule

**Build**

Invoke top-level Maven targets

Maven Version

Goals

Add build step ▾

**Post-build Actions**

Notify Stash Instance

Add post-build action ▾

# Configure Jenkins job to check PR's in Bitbucket

Configure Bitbucket

Install Pull Request Notifier for Bitbucket

<https://marketplace.atlassian.com/apps/1213177/pull-request-notifier-for-bitbucket>

# Configure Jenkins job to check PR's in Bitbucket

## Global settings

Some shared settings.

- Admin restriction
- ☐ System administrators
  - ☒ Administrators and system administrators
  - ☐ Everyone
  - ☒ Accept any certificate
- Will make the client invoking any URL accept any certificate.

Keystore path

Nikita

Optional filesystem path to a keystore to use.

Keystore password

.....

Optional password to use for custom keystore.

Keystore type

Type of specified custom keystore.

Save



# Configure Jenkins job to check PR's in Bitbucket

## Buttons

Buttons are added in the pull request view. Only buttons that will trigger at least one configured notification is shown.

Button

AEM axamit Build To Test ENV ▼

These are all configured buttons.

Project

AEM ▼

If project selected, this notification will only trigger for pull requests to that project.

Repository

axamit ▼

If repository selected, this notification will only trigger for pull requests to that repository.

Visibility

☐ System administrators

☐ Administrators and system administrators

☒ Everyone

Title

Build To Test ENV

The title of the button.

Confirmation

☒

Whether to show a confirmation dialog after notifications are triggered.

Confirmation message

Are you sure?

Optional. If not empty, a confirmation dialog will be shown with this message, before any notification is triggered.

Button Form

```
[]
```

Optional. If not empty, a form will be rendered from this JSON. This is documented [here](#).

Save

Delete

# Configure Jenkins job to check PR's in Bitbucket

## Notifications

A notification is triggered by an event and will result in a URL invocation. The variables above enables you to send whatever information you want as a parameter in that URL.

Notification

These are all configured notifications. Only the notifications for the repository is shown in repository view.

Name

Name of this trigger. This has no other function than just letting the administrator make a note of what this notification does.

## Trigger

These are configuration options that determine if the notification should be triggered when an event happens.

Project

If project selected, this notification will only trigger for pull requests to that project.

Repository

If repository selected, this notification will only trigger for pull requests to that repository.

Filter string

A string where you can use the variables mentioned above.

Filter regexp

The notification will only trigger if this regular expression matches the resolved string above.

Merge condition ☐ trigger for any merge condition  
☐ trigger only when merge is conflicting  
☒ trigger only when merge is not conflicting

Ignore if ☐ Pull request is declined  
☐ Pull request is merged

Triggers ☐ APPROVED  
☐ COMMENTED  
☐ DECLINED  
☐ DELETED  
☐ MERGED  
☒ OPENED

☒ BUTTON\_TRIGGER, a button was pressed. Use filter and **`${BUTTON_TRIGGER_TITLE}`** to trigger for a specific button.

☒ REOPENED

☒ RESCOPED\_FROM, new commits on source branch.

☐ RESCOPED\_TO, new commits on target branch.

# Configure Jenkins job to check PR's in Bitbucket

## URL

The URL to invoke when notification is triggered. You may want to try [RequestBin](#) to fiddle with the plugin settings.

URL

The URL to invoke.

Method ☒ GET  
☐ POST  
☐ DELETE  
☐ PUT

HTTP Version ☐ HTTP 1.0  
☐ HTTP 1.1

Post content

This will be used if POST or PUT is selected above.

Post content variables encoding ☒ Don't encode  
☐ Encode as HTML

## Headers

Optional HTTP headers to send with URL.

Headers

Save

Delete

# Configure Jenkins job to check PR's in Bitbucket

← → ↺

localhost:7990/plugins/servlet/upm?source=side\_nav\_manage\_addons

BitbucketProjectsRepositories

Administration

Overview

ACCOUNTS

Users

Groups

Global permissions

Authentication

SAML Authentication

Avatars

User Directories

SETTINGS

Server settings

Database

Application Navigator

Application Links

Mail server

Licensing

Clustering

Mirrors

Analytics

ADD-ONS

Find new apps

Manage apps

Hipchat integration

Manage apps

You can install, update, enable, and disable apps here. [Find new apps.](#)

ⓘ A newer version of the Universal Plugin Manager is available. [Update Now](#)

Skip this versionRemind me later

Filter visible apps

User-installed

[⬆ Upload app](#) [+ Build a new app](#)

User-installed apps

> **Atlassian Universal Plugin Manager Plugin** UPDATE AVAILABLE Update


▼ **pull-request-notifier-for-bitbucket**

This is the Pull Request Notifier for Atlassian Bitbucket. See <https://github.com/tomasbjerre/pull-request-notifier-for-bitbucket> for documentation and source code.

Configure

Uninstall

Disable



Screenshots (5)

Version: 3.22

Vendor: Tomas Bjerre

App key: se.bjurr.prnfs.pull-request-notifier-for-stash

[Watch app](#)

[Marketplace listing](#)

[Documentation](#)

[Support and issues](#)

24 of 24 modules enabled

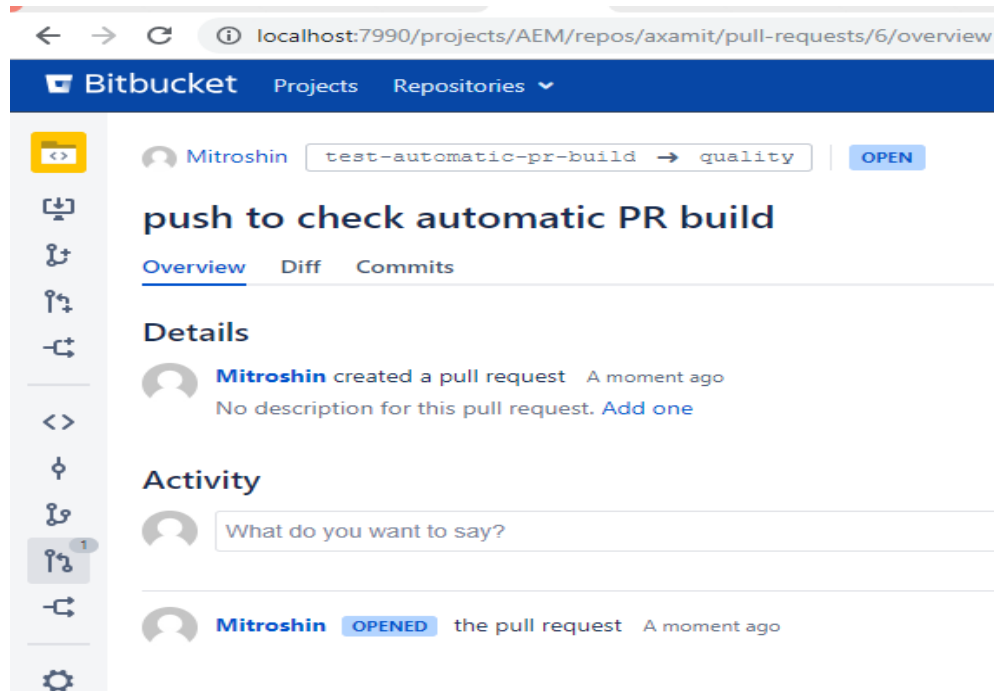
Rate and review

20

AXAMIT


# Configure Jenkins job to check PR's in Bitbucket

## Create PR



# Configure Jenkins job to check PR's in Bitbucket

## Check Jenkins

 [Back to Dashboard](#)

 [Status](#)

 [Changes](#)

 [Workspace](#)

 [Build Now](#)

 [Delete Project](#)

 [Configure](#)

 [Git Polling Log](#)

 [Rename](#)

## Project Bitbucket PR Checker





[Workspace](#)





[Recent Changes](#)

### Permalinks

- [Last build \(#14\), 1 min 2 sec ago](#)
- [Last stable build \(#14\), 1 min 2 sec ago](#)
- [Last successful build \(#14\), 1 min 2 sec ago](#)
- [Last failed build \(#13\), 12 min ago](#)
- [Last unsuccessful build \(#13\), 12 min ago](#)
- [Last completed build \(#14\), 1 min 2 sec ago](#)


 **Build History** [trend](#) 



 **#14** Sep 25, 2018 2:00 PM

# Configure Jenkins job to check PR's in Bitbucket


## Check PR page

 Mitroshin test-automatic-pr-build → quality [OPEN](#)


### push to check automatic PR build

[Overview](#) [Diff](#) [Commits](#)


#### Details


 **Mitroshin** created a pull request 12 mins ago  
No description for this pull request. [Add one](#)

 1 build 

 [Learn more](#)

#### Activity

 What do you want to say?

 **Mitroshin** [OPENED](#) the pull request 12 mins ago

## Build Pipeline

While standard Jenkins “freestyle” jobs support simple continuous integration by allowing you to define sequential tasks in an application lifecycle, they do not create a persistent record of execution, enable one script to address all the steps in a complex workflow, or confer the other advantages of pipelines.

In contrast to freestyle jobs, pipelines enable you to define the whole application lifecycle. Pipeline functionality helps Jenkins to support continuous delivery (CD). The Pipeline plugin was built with requirements for a flexible, extensible, and script-based CD workflow capability in mind.

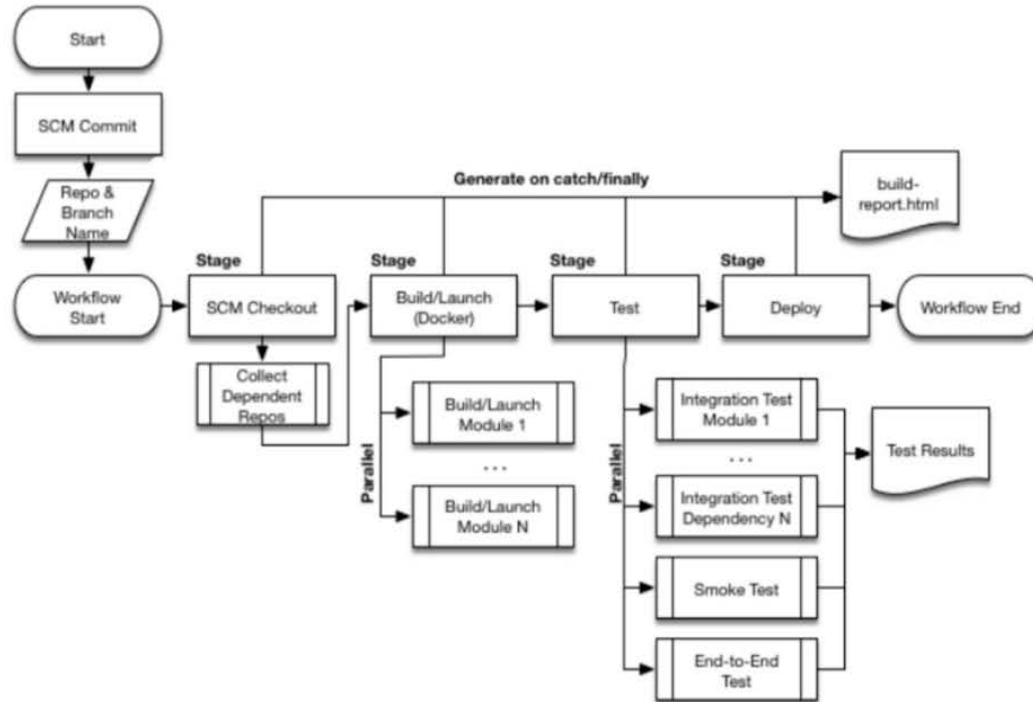


## Pipeline Benefits

Accordingly, pipeline functionality is:

- **Durable:** Pipelines can survive both planned and unplanned restarts of your Jenkins master;
- **Pausable:** Pipelines can optionally stop and wait for human input or approval before completing the jobs for which they were built;
- **Versatile:** Pipelines support complex real-world CD requirements, including the ability to fork or join, loop, and work in parallel with each other;
- **Efficient:** Pipelines can restart from any of several saved checkpoints;
- **Extensible:** The Pipeline plugin supports custom extensions to its DSL (domain scripting language) and multiple options for integration with other plugins.

# Jenkins Workflow



## Pipeline Benefits

The main feature of the Pipeline is that it's code.

It's written in specific file – Jenkinsfile, which is placed in project root and contains scripts that use a Pipeline DSL (domain-specific language) based on the Groovy programming language.

There are 2 styles of writing the Jenkins file -

Declarative & Imperative

<https://gist.github.com/abtris/e3e403d9b8cea31c66ccb67ae4c7f3f5>

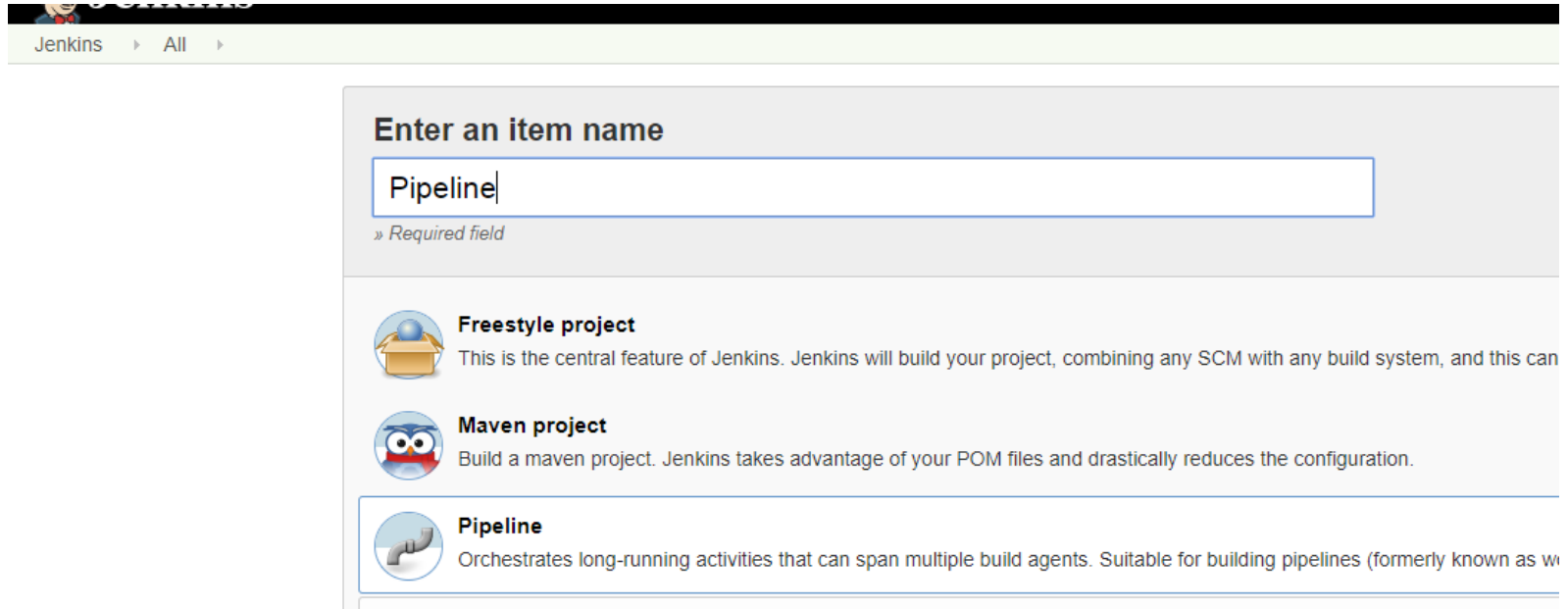
<https://habr.com/post/324688/>

Our Jenkinsfile:

<https://gist.github.com/NikitaMitroshin/26f45425e2a134d49a16a20499c6cbe3>

# Configure Build Pipeline

## Jenkins – New Item – Pipeline





Jenkins > All >


**Enter an item name**

Pipeline

» 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

 **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 w

# Configure Build Pipeline

## Pipeline configuration

**Pipeline**

Definition Pipeline script from SCM

SCM Git

Repositories

Repository URL http://localhost:7990/scm/aem/axamit.git

Credentials Nikita/\*\*\*\*\* Ad\*

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any') \*/quality

Add Branch

Repository browser (Auto)

Additional Behaviours Add

Script Path Jenkinsfile

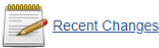
Lightweight checkout ☒

[Pipeline Syntax](#)

- Back to Dashboard
- Status
- Changes
- Build Now
- Delete Pipeline
- Configure
- Full Stage View
- Rename
- Pipeline Syntax

Build History		<a href="#">trend</a>
find	x	
#47	Sep 25, 2018 4:38 PM	
#46	Sep 25, 2018 3:26 PM	
#45	Sep 25, 2018 3:21 PM	
#44	Sep 25, 2018 3:17 PM	
#43	Sep 25, 2018 3:11 PM	
#42	Sep 25, 2018 9:31 AM	
#41	Sep 25, 2018 12:36 AM	
#40	Sep 25, 2018 12:29 AM	
#39	Sep 25, 2018 12:03 AM	
#38	Sep 24, 2018 11:51 PM	
#37	Sep 24, 2018 11:48 PM	
#36	Sep 24, 2018 11:44 PM	

# Pipeline First Pipeline



## Stage View

		Declarative: Checkout SCM	Compile & Test Stage	Deployment To QA	Create Jira ticket	Continue Deployment?	Merge Quality To Master	Deployment To PROD	Declarative: Post Actions
Average stage times: (Average full run time: ~6min 12s)		4s	23s	24s	1s	410ms	6s	15s	1s
#47	Sep 25 16:38 No Changes	5s	30s	35s	1s	483ms (paused for 23s)	10s	26s	2s
#46	Sep 25 15:26 No Changes	4s	20s	21s	1s	383ms (paused for 8min 19s)	10s	35s	1s
#45	Sep 25 15:21 No Changes	3s	20s	20s	1s	413ms (paused for 1min 11s)	2s failed	131ms failed	1s
#44	Sep 25 15:17 1 commit	5s	21s	20s	1s	364ms (paused for 43s)	2s failed	137ms failed	1s

Downlinks

**That's it!**

**Thank you**