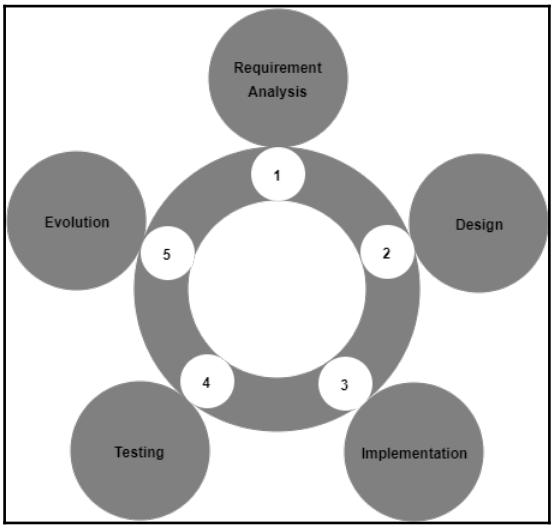
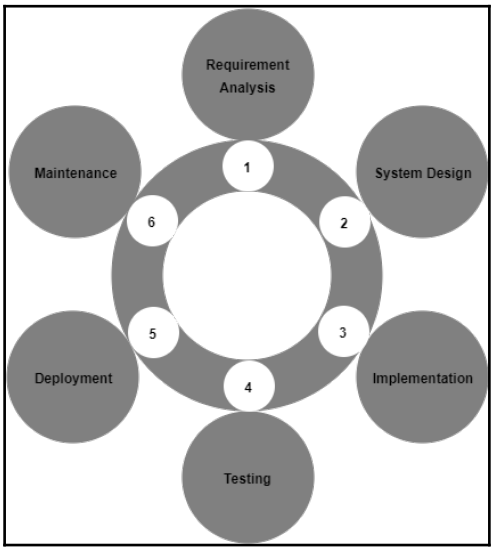
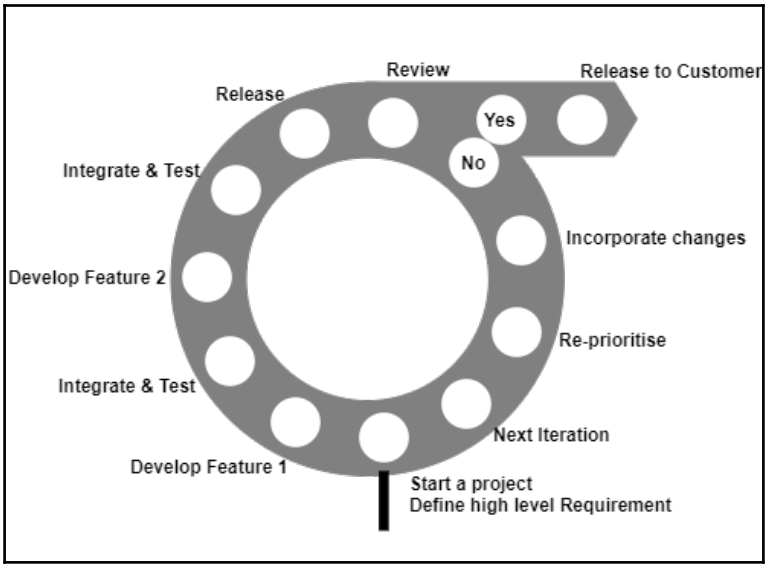
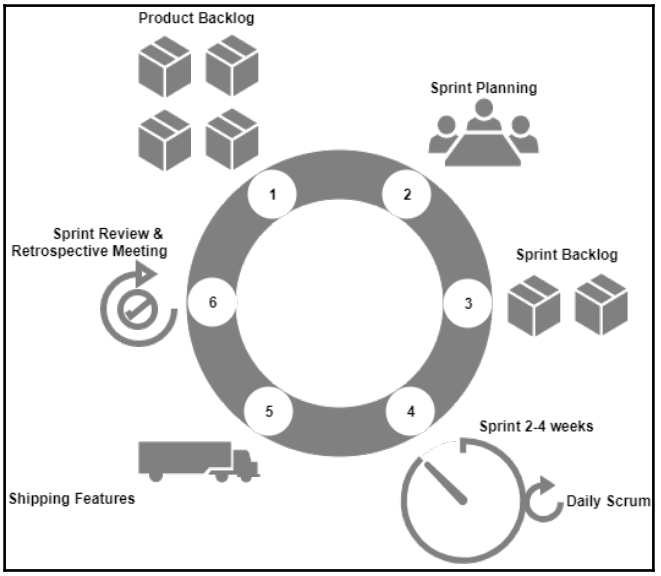
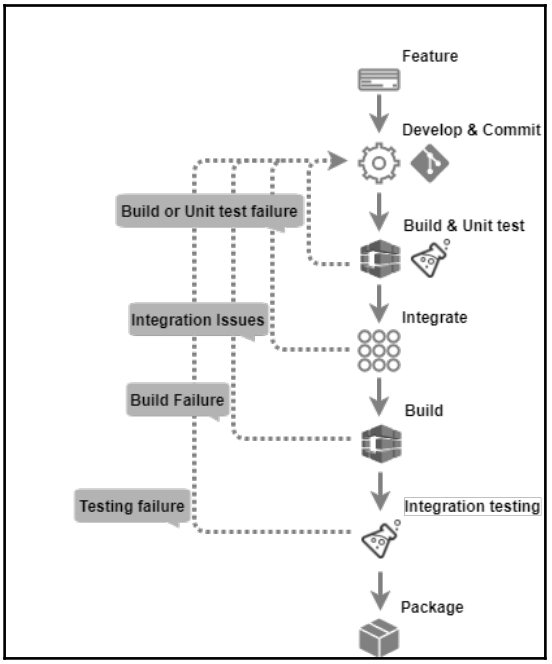
Chapter 1: Concepts of Continuous Integration

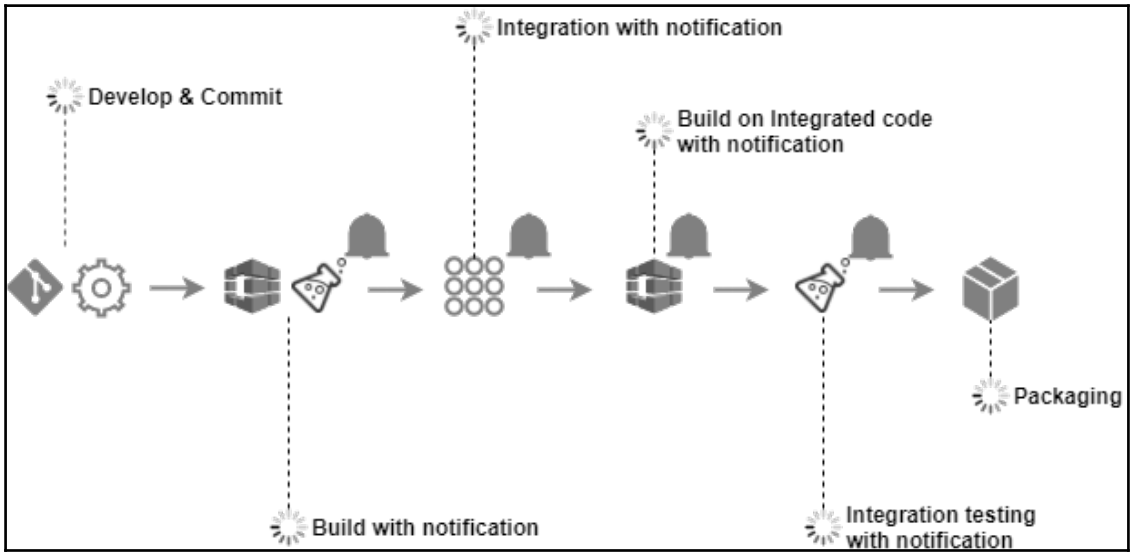


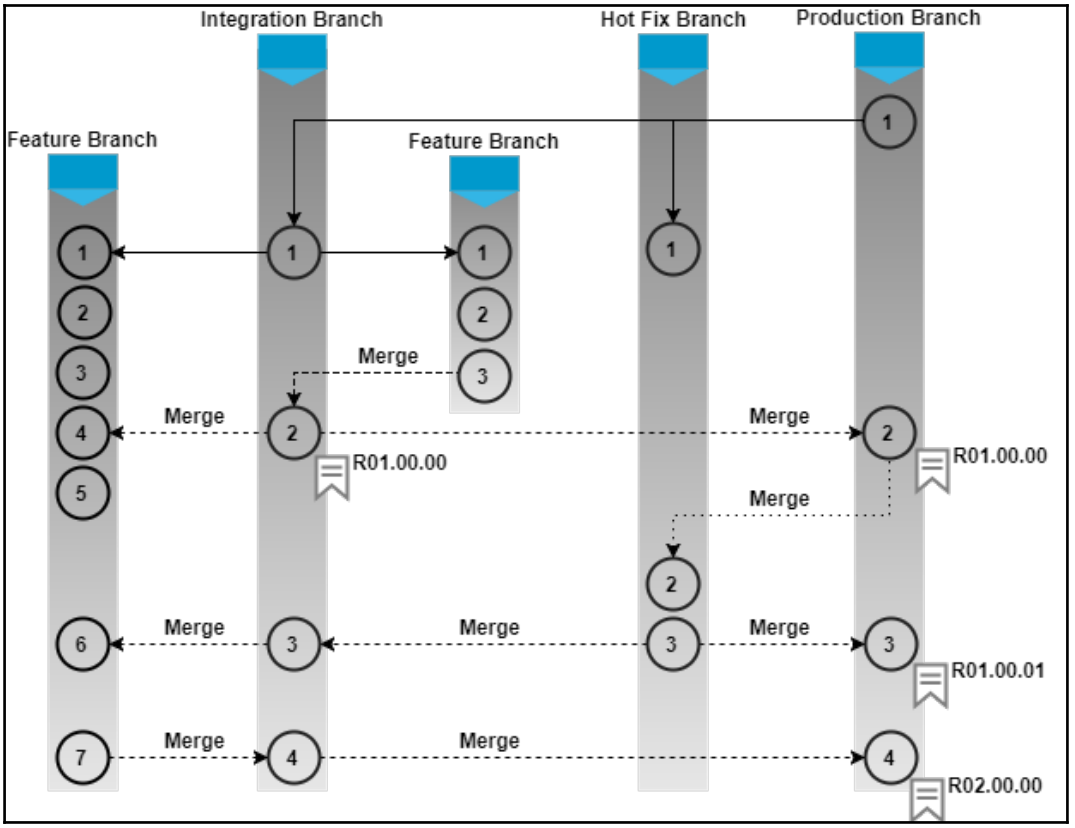


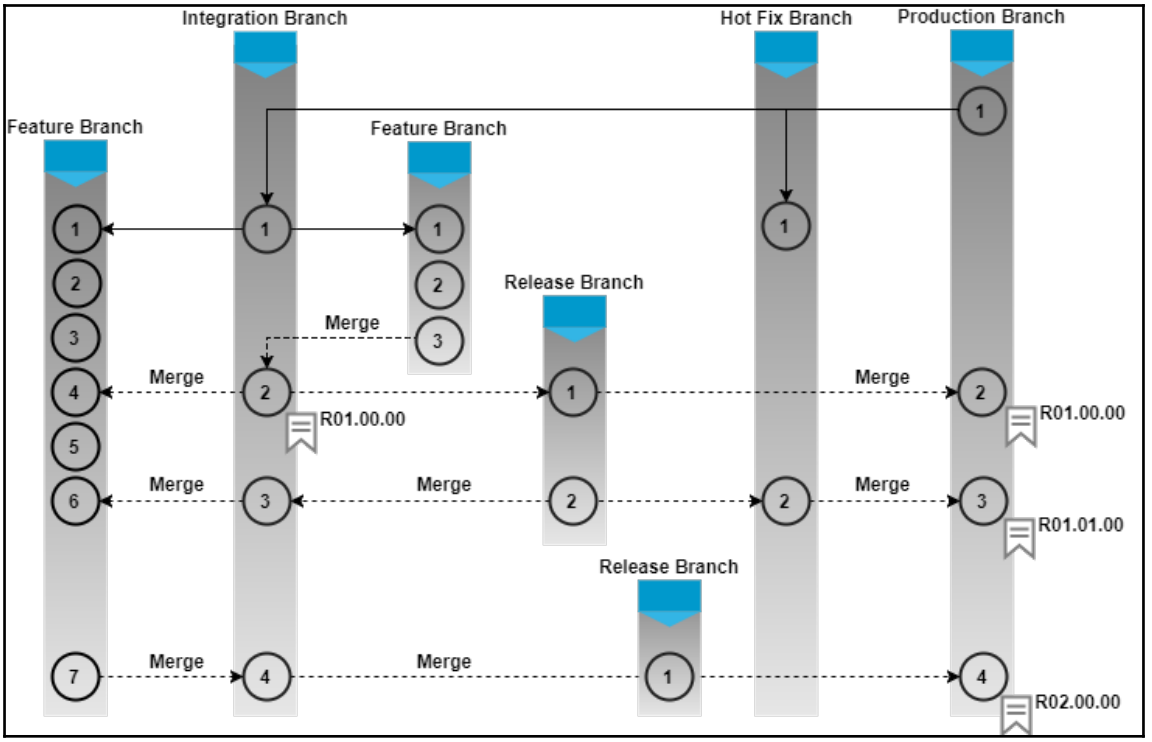

Review
Release to Customer
Release
Yes
No
Integrate & Test
Incorporate changes
Develop Feature 2
Re-prioritise
Integrate & Test
Next Iteration
Develop Feature 1
Start a project
Define high level Requirement

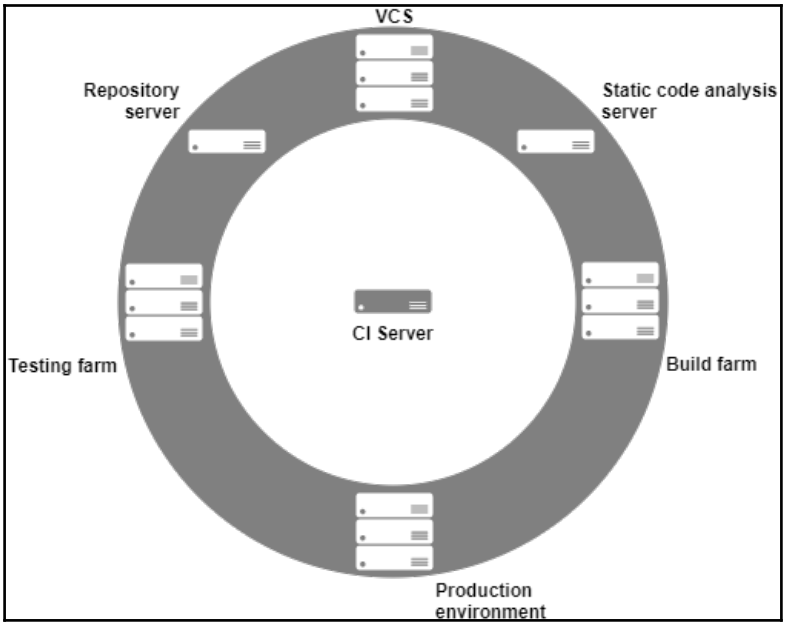

Product Backlog
Sprint Planning
1
2
Sprint Review &
Retrospective Meeting
Sprint Backlog
6
3
5
4
Sprint 2-4 weeks
Shipping Features
Daily Scrum

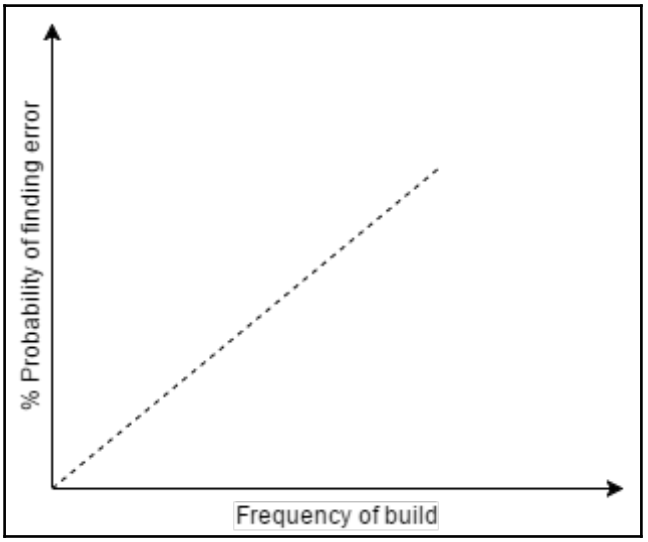

Feature
Develop & Commit
Build or Unit test failure
Build & Unit test
Integration Issues
Integrate
Build Failure
Build
Testing failure
Integration testing
Package

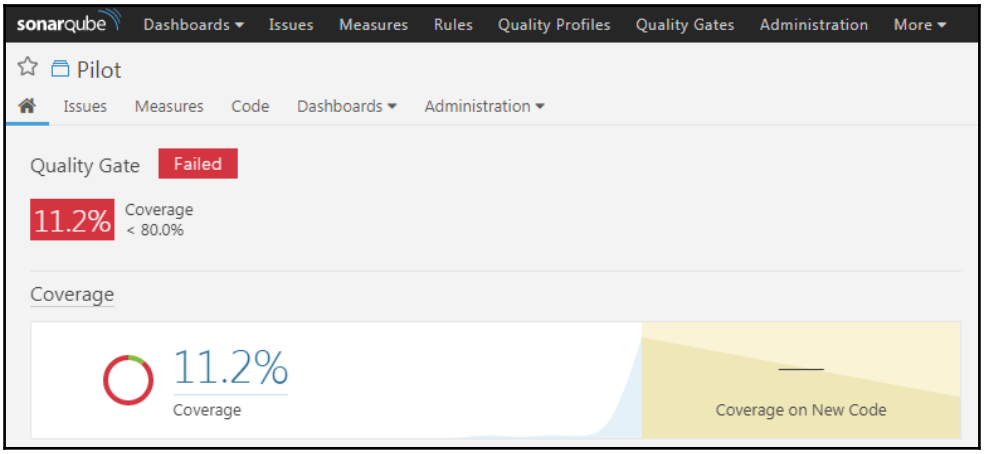

Integration with notification
Develop & Commit
Build on Integrated code with notification
Packaging
Build with notification
Integration testing with notification

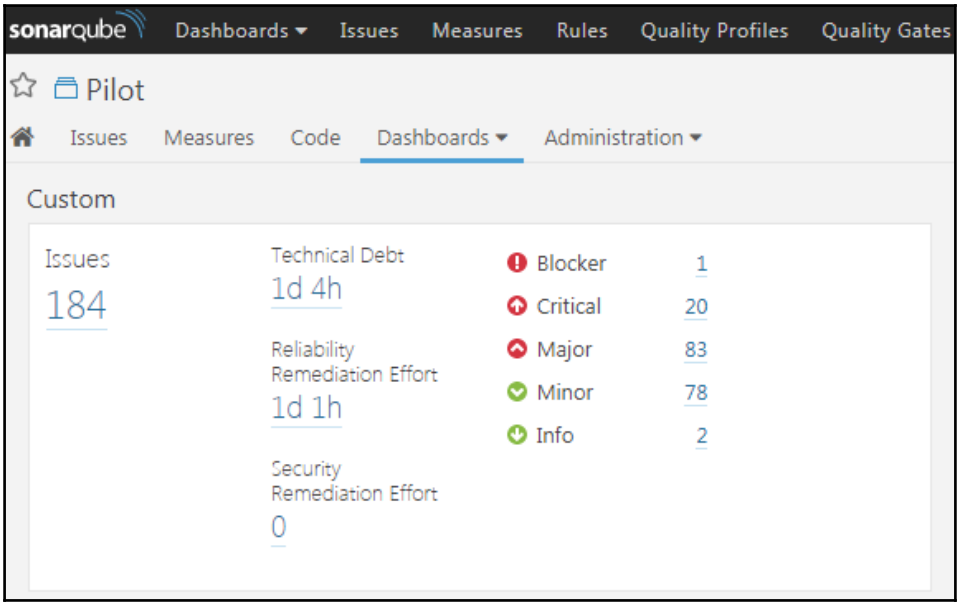

Integration Branch
Hot Fix Branch
Production Branch
Feature Branch
Feature Branch
Merge
Merge
Merge
R01.00.00
Merge
R01.00.00
Merge
Merge
Merge
Merge
R01.00.01
Merge
Merge
R02.00.00


Integration Branch
Hot Fix Branch
Production Branch
Feature Branch
Feature Branch
Release Branch
Merge
Merge
Merge
Merge
Merge
Merge
Merge
Merge
R01.00.00
R01.00.00
R01.01.00
Release Branch
R02.00.00


VCS
Repository server
Static code analysis server
CI Server
Testing farm
Build farm
Production environment


% Probability of finding error
Frequency of build


sonarqube
Dashboards
Issues
Measures
Rules
Quality Profiles
Quality Gates
Administration
More
Pilot
Issues
Measures
Code
Dashboards
Administration
Quality Gate
Failed
11.2%
Coverage
< 80.0%
Coverage
11.2%
Coverage
Coverage on New Code


sonarqube
Dashboards
Issues
Measures
Rules
Quality Profiles
Quality Gates
Pilot
Issues
Measures
Code
Dashboards
Administration
Custom
Issues
184
Technical Debt
1d 4h
Reliability Remediation Effort
1d 1h
Security Remediation Effort
0
Blocker 1
Critical 20
Major 83
Minor 78
Info 2

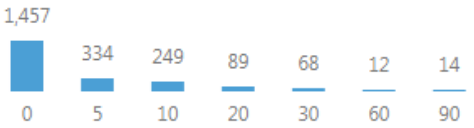
	May 16 2017 1.4	Jul 06 2017 1.24	Jul 11 2017 1.25
Lines of Code	1,131,082	117,555	117,555
Unit Tests			
Complexity	187,206	14,528	14,528

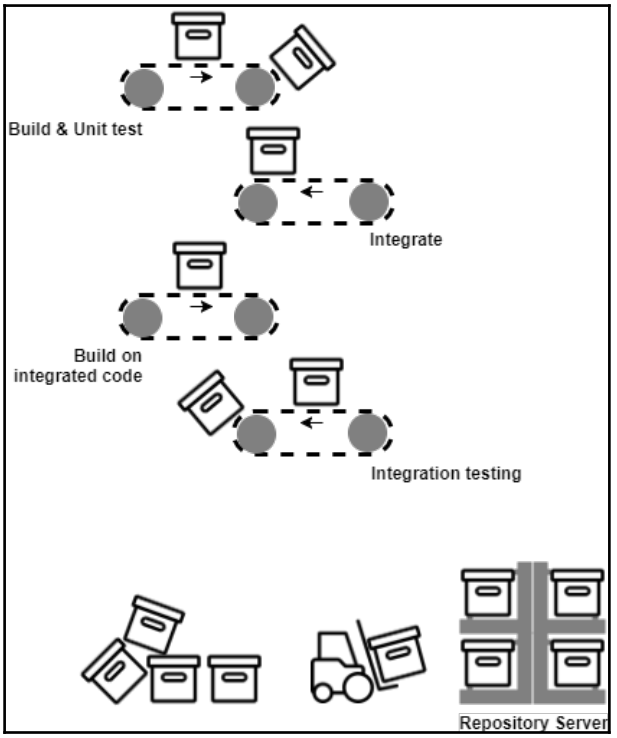
Complexity

14,528

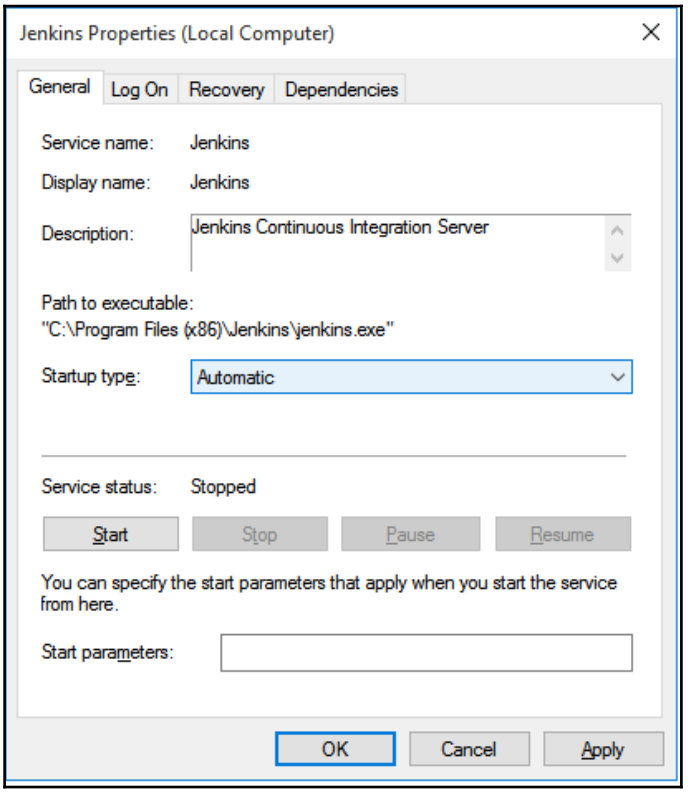
/Function	/Class	/File
1.8	7.8	6.5

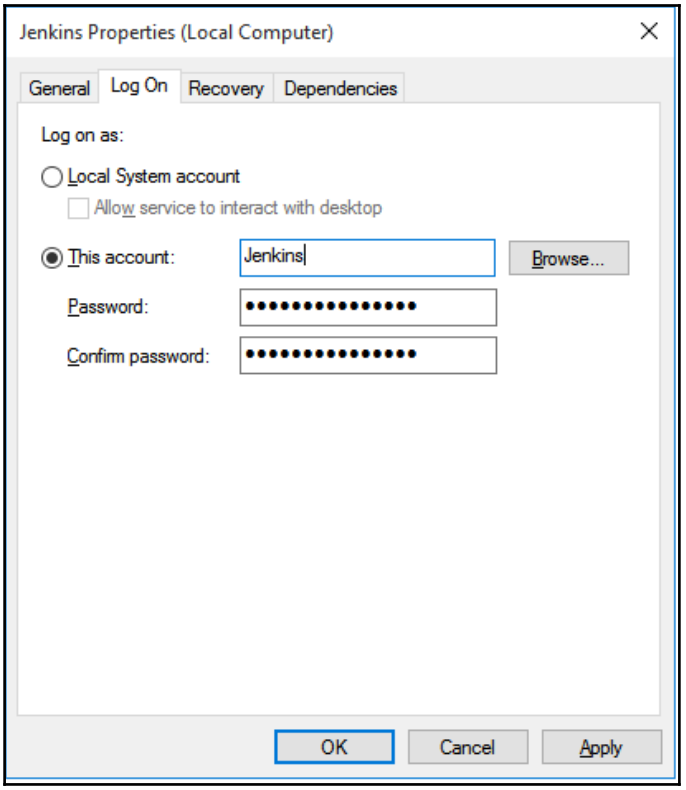
File Distribution / Complexity

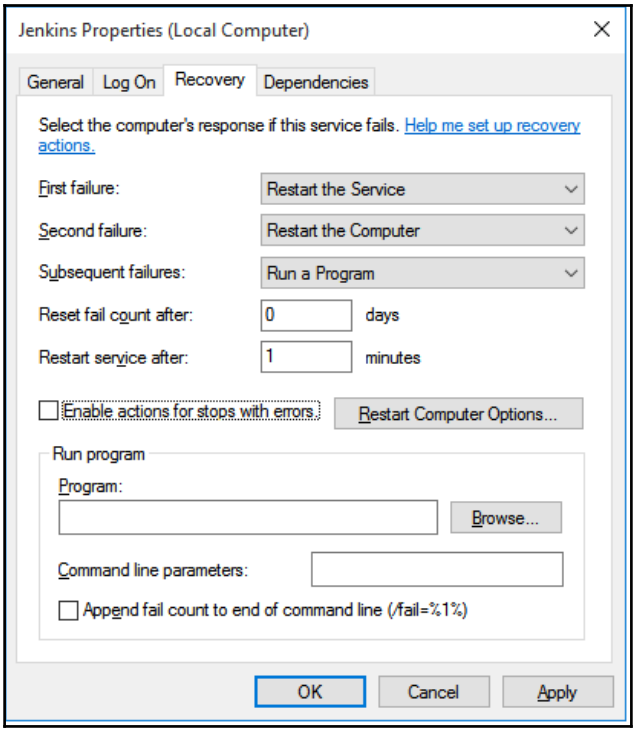


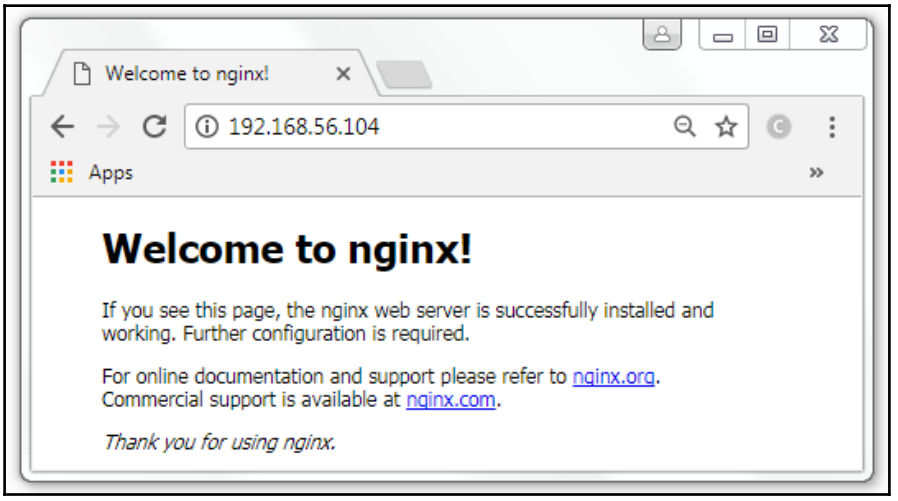


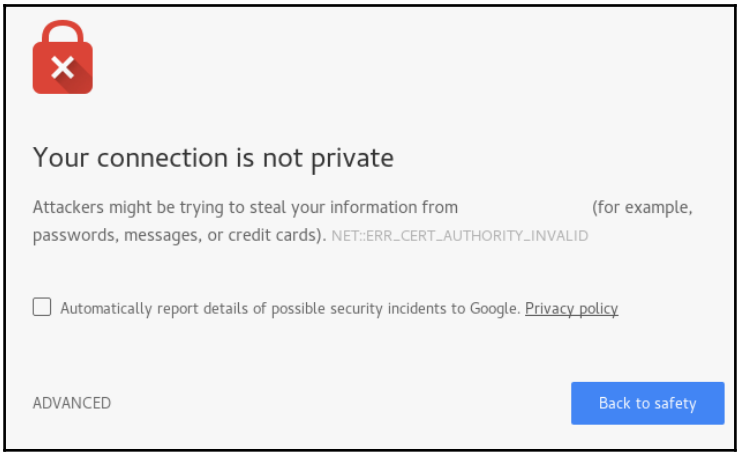
Chapter 2: Installing Jenkins

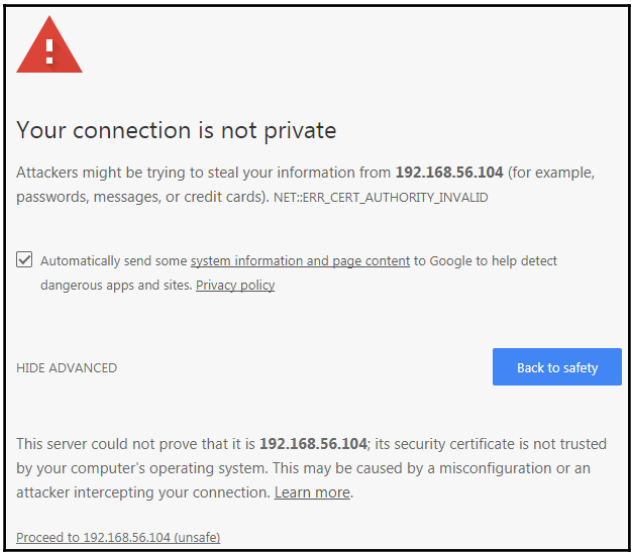



Jenkins Properties (Local Computer)
General
Log On
Recovery
Dependencies
Log on as:
Local System account
Allow service to interact with desktop
This account:
Jenkins
Browse...
Password:
Confirm password:
OK
Cancel
Apply

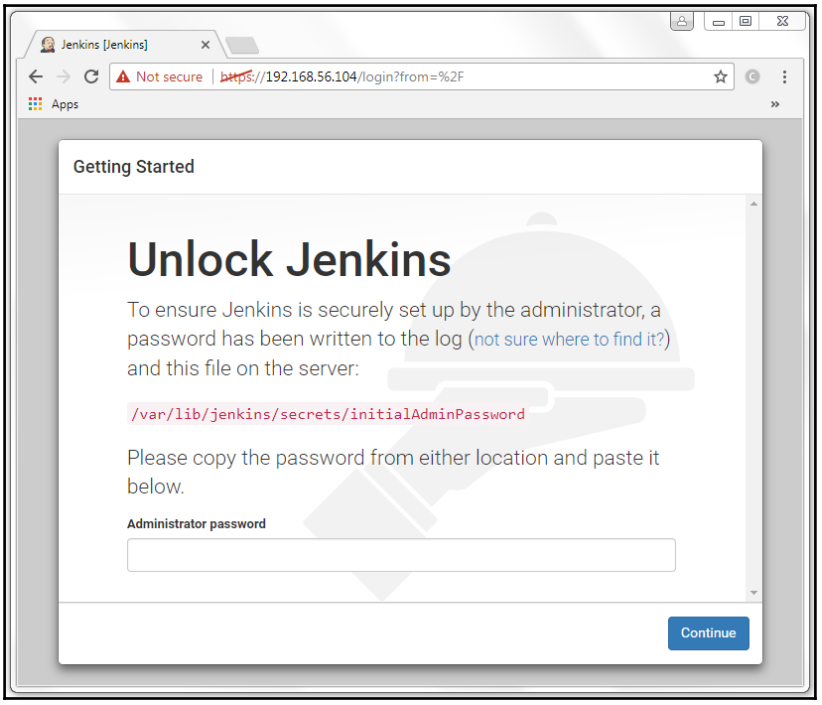

Jenkins Properties (Local Computer)
General
Log On
Recovery
Dependencies
Select the computer's response if this service fails. Help me set up recovery actions.
First failure:
Restart the Service
Second failure:
Restart the Computer
Subsequent failures:
Run a Program
Reset fail count after:
0
days
Restart service after:
1
minutes
Enable actions for stops with errors.
Restart Computer Options...
Run program
Program:
Browse...
Command line parameters:
Append fail count to end of command line (/fail=%1%)
OK
Cancel
Apply

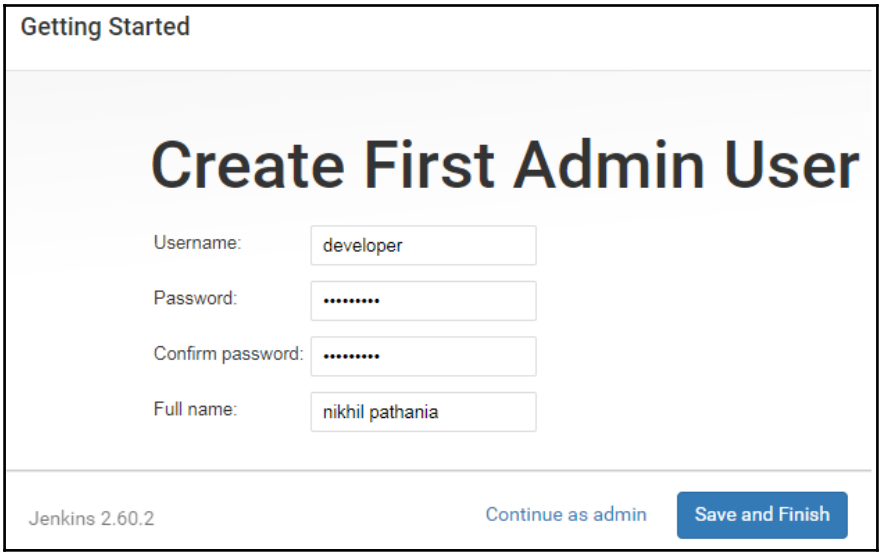

Welcome to nginx!
192.168.56.104
Apps
Welcome to nginx!
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.
For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.
Thank you for using nginx.


Your connection is not private
Attackers might be trying to steal your information from (for example, passwords, messages, or credit cards). NET::ERR_CERT_AUTHORITY_INVALID
Automatically report details of possible security incidents to Google. Privacy policy
ADVANCED
Back to safety

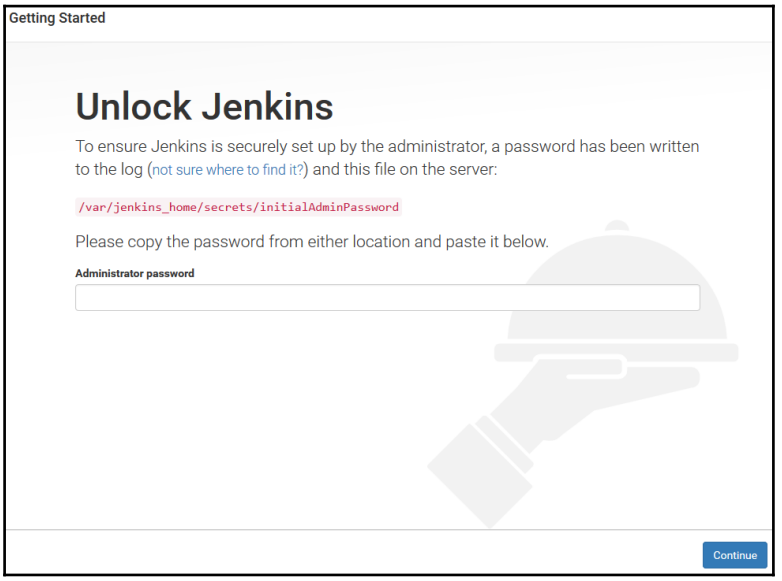

Your connection is not private
Attackers might be trying to steal your information from 192.168.56.104 (for example, passwords, messages, or credit cards). NET::ERR_CERT_AUTHORITY_INVALID
Automatically send some system information and page content to Google to help detect dangerous apps and sites. Privacy policy
HIDE ADVANCED
Back to safety
This server could not prove that it is 192.168.56.104; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection. Learn more.
Proceed to 192.168.56.104 (unsafe)

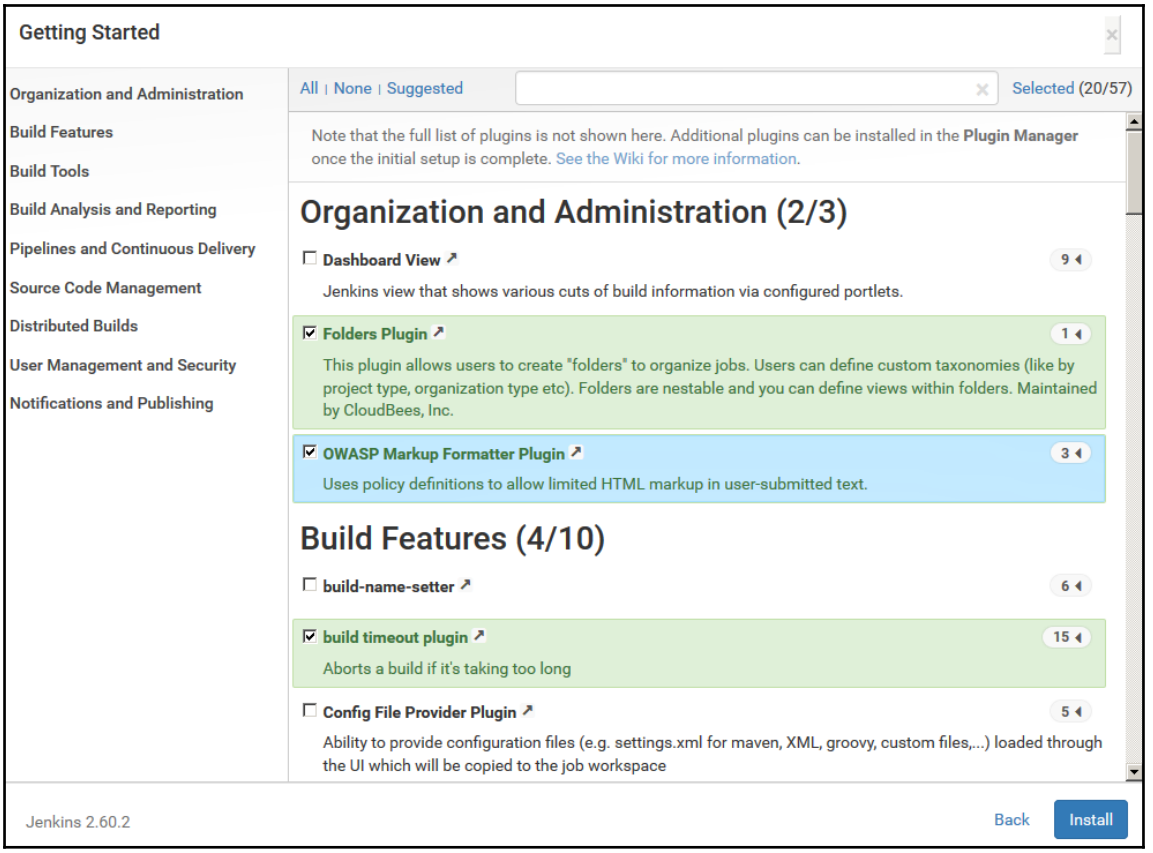
Welcome to nginx!
Not secure
https://192.168.56.104
Apps
Welcome to nginx!
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.
For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.
Thank you for using nginx.

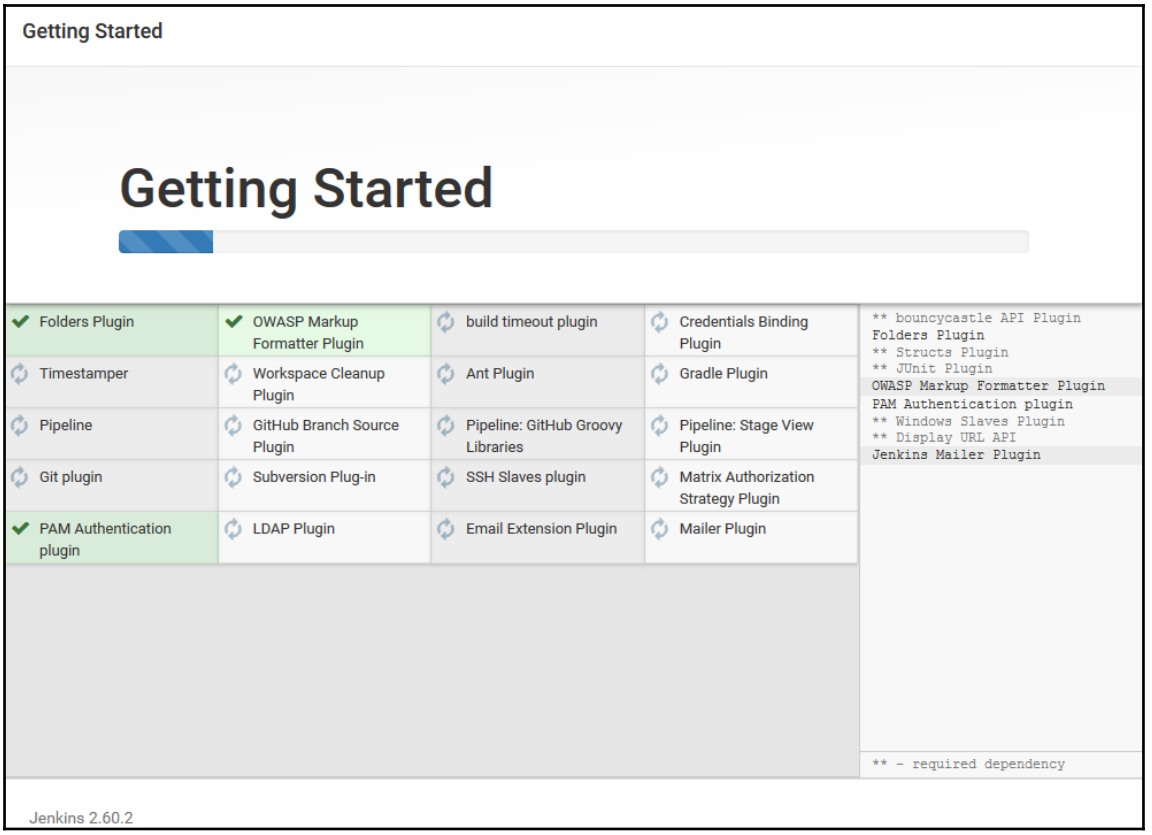

Jenkins [Jenkins]
Not secure
https://192.168.56.104/login?from=%2F
Apps
Getting Started
Unlock Jenkins
To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:
/var/lib/jenkins/secrets/initialAdminPassword
Please copy the password from either location and paste it below.
Administrator password
Continue

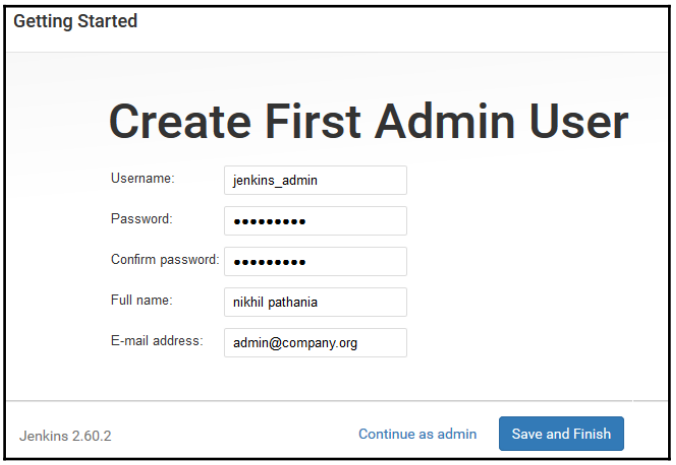

Getting Started
Create First Admin User
Username:
developer
Password:
Confirm password:
Full name:
nikhil pathania
Jenkins 2.60.2
Continue as admin
Save and Finish

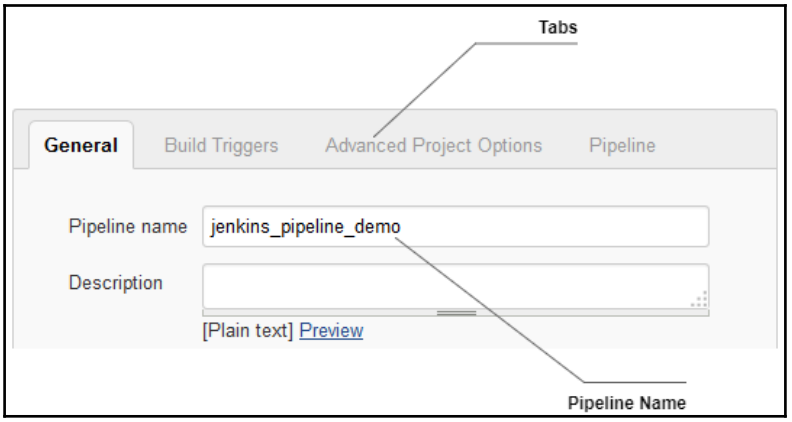
Chapter 3: The New Jenkins

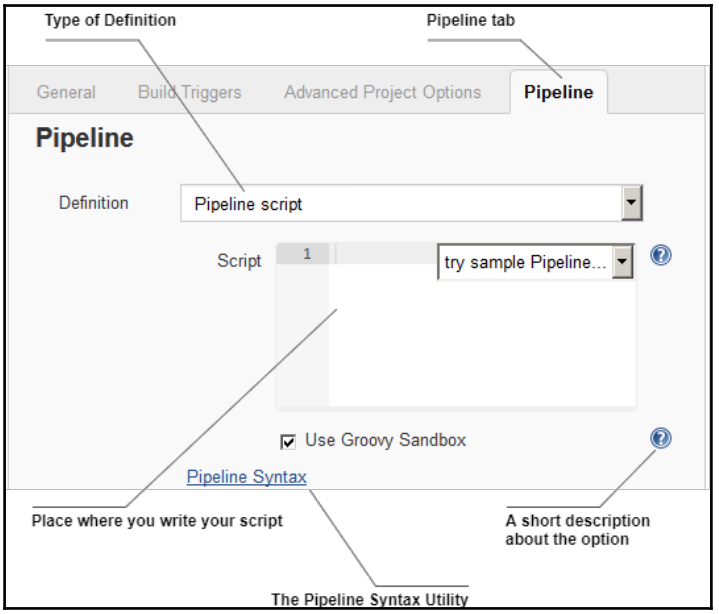


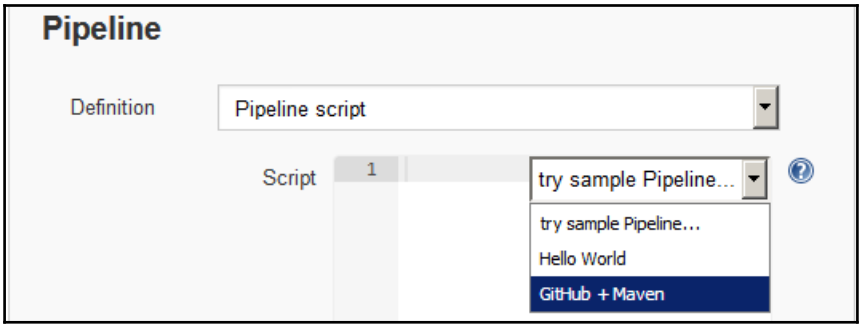

Getting Started
Organization and Administration
Build Features
Build Tools
Build Analysis and Reporting
Pipelines and Continuous Delivery
Source Code Management
Distributed Builds
User Management and Security
Notifications and Publishing
All | None | Suggested
Selected (20/57)
Note that the full list of plugins is not shown here. Additional plugins can be installed in the Plugin Manager once the initial setup is complete. See the Wiki for more information.
Organization and Administration (2/3)
Dashboard View
9
Jenkins view that shows various cuts of build information via configured portlets.
Folders Plugin
1
This plugin allows users to create "folders" to organize jobs. Users can define custom taxonomies (like by project type, organization type etc). Folders are nestable and you can define views within folders. Maintained by CloudBees, Inc.
OWASP Markup Formatter Plugin
3
Uses policy definitions to allow limited HTML markup in user-submitted text.
Build Features (4/10)
build-name-setter
6
build timeout plugin
15
Aborts a build if it's taking too long
Config File Provider Plugin
5
Ability to provide configuration files (e.g. settings.xml for maven, XML, groovy, custom files,...) loaded through the UI which will be copied to the job workspace
Jenkins 2.60.2
Back
Install

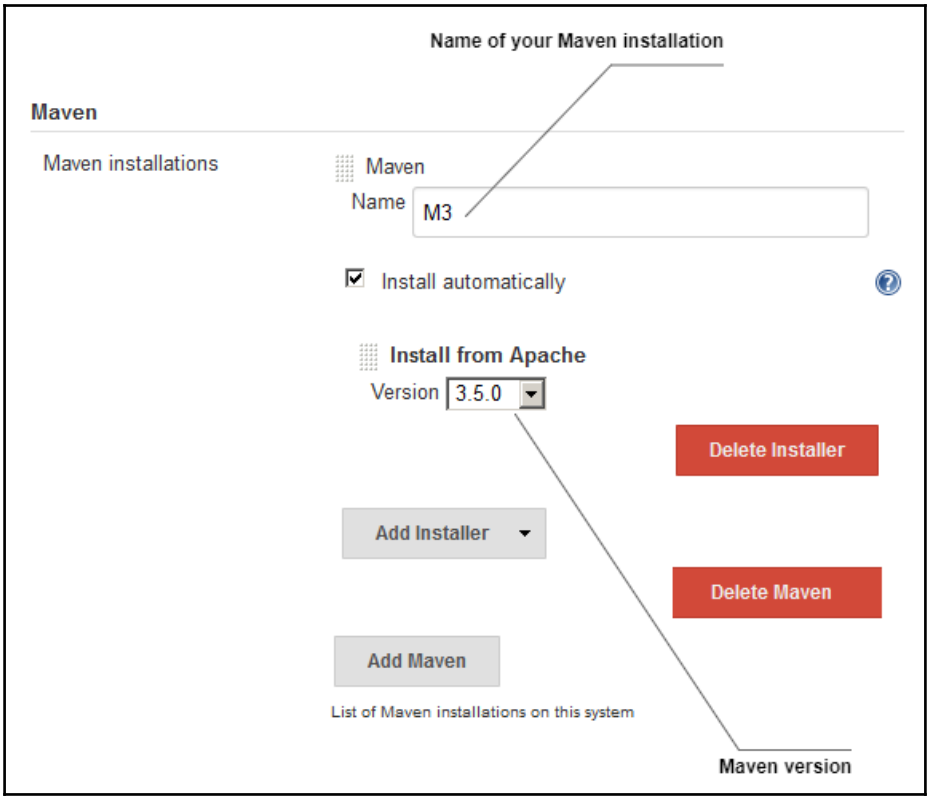

Getting Started
Getting Started
Folders Plugin
OWASP Markup Formatter Plugin
build timeout plugin
Credentials Binding Plugin
Timestamper
Workspace Cleanup Plugin
Ant Plugin
Gradle Plugin
Pipeline
GitHub Branch Source Plugin
Pipeline: GitHub Groovy Libraries
Pipeline: Stage View Plugin
Git plugin
Subversion Plug-in
SSH Slaves plugin
Matrix Authorization Strategy Plugin
PAM Authentication plugin
LDAP Plugin
Email Extension Plugin
Mailer Plugin
** bouncycastle API Plugin
Folders Plugin
** Structs Plugin
** JUnit Plugin
OWASP Markup Formatter Plugin
PAM Authentication plugin
** Windows Slaves Plugin
** Display URL API
Jenkins Mailer Plugin
** - required dependency
Jenkins 2.60.2


Getting Started
Create First Admin User
Username:
jenkins_admin
Password:
Confirm password:
Full name:
nikhil pathania
E-mail address:
admin@company.org
Jenkins 2.60.2
Continue as admin
Save and Finish

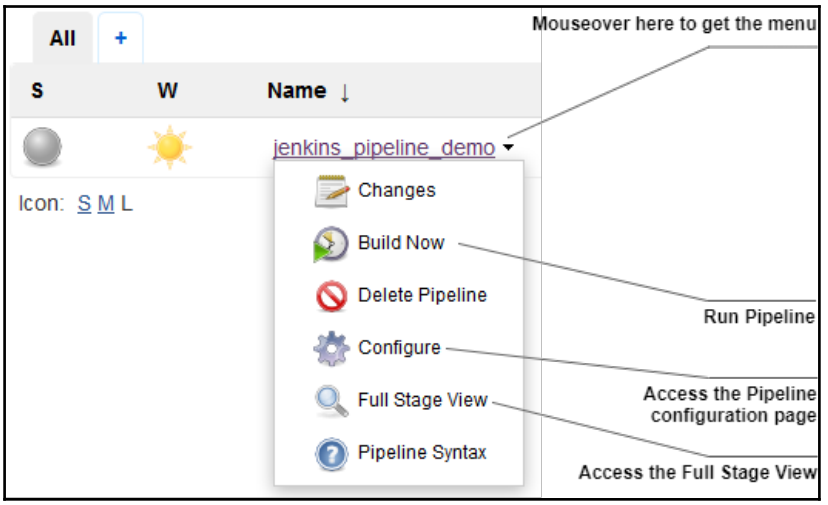

Tabs
General
Build Triggers
Advanced Project Options
Pipeline
Pipeline name
jenkins_pipeline_demo
Description
[Plain text] Preview
Pipeline Name

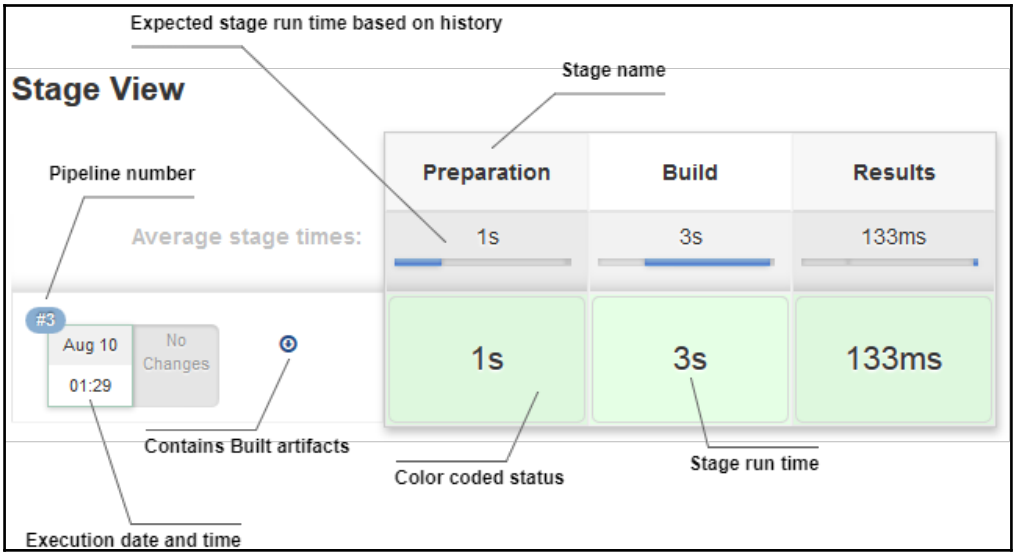

Type of Definition
Pipeline tab
General
Build Triggers
Advanced Project Options
Pipeline
Pipeline
Definition
Pipeline script
Script
1
try sample Pipeline...
Use Groovy Sandbox
Pipeline Syntax
Place where you write your script
A short description about the option
The Pipeline Syntax Utility


Pipeline
Definition
Pipeline script
Script
1
try sample Pipeline...
try sample Pipeline...
Hello World
GitHub + Maven


Name of your Maven installation
Maven
Maven installations
Maven
Name
M3
Install automatically
Install from Apache
Version
3.5.0
Delete Installer
Add Installer
Delete Maven
Add Maven
List of Maven installations on this system
Maven version

Run Pipeline
All
+
S
W
Name ↓
Last Success
Last Failure
Last Duration
jenkins_pipeline_demo
N/A
N/A
N/A
Pipeline name


All
+
Mouseover here to get the menu
S
W
Name ↓
jenkins_pipeline_demo
Icon: S M L
Changes
Build Now
Delete Pipeline
Configure
Full Stage View
Pipeline Syntax
Run Pipeline
Access the Pipeline configuration page
Access the Full Stage View

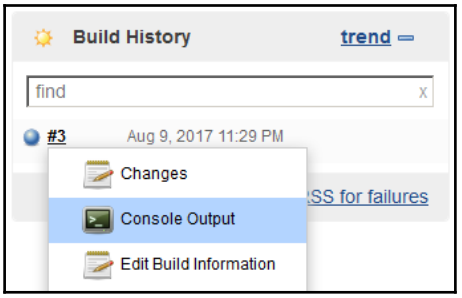


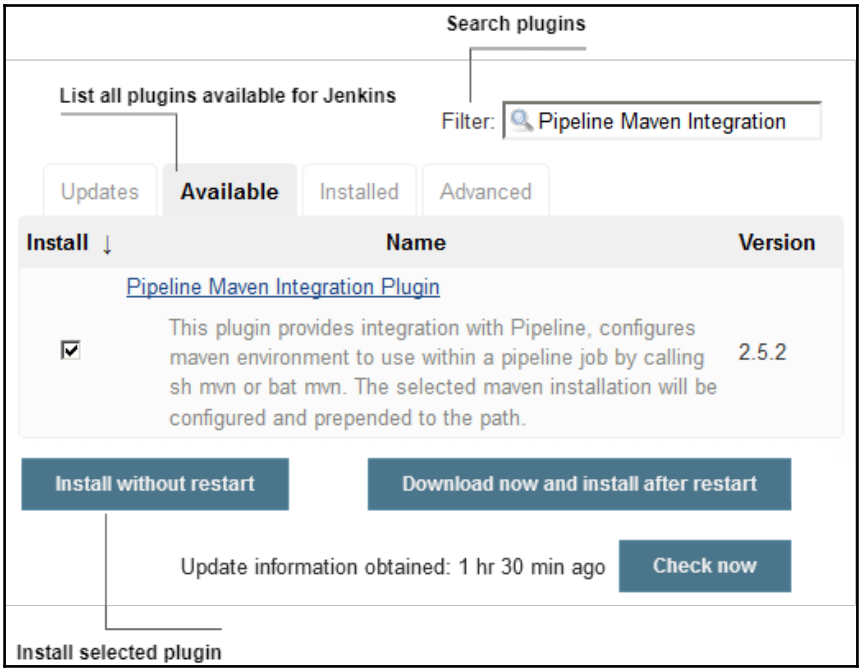
Stage Logs (Build)

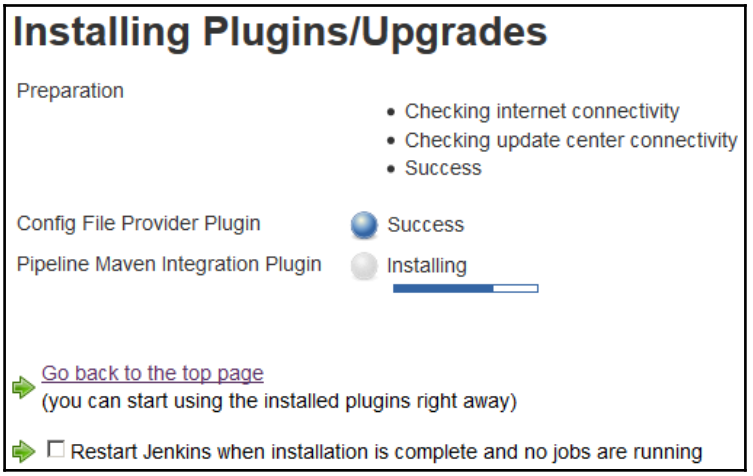
Checks if running on a Unix-like node (self time 1ms)

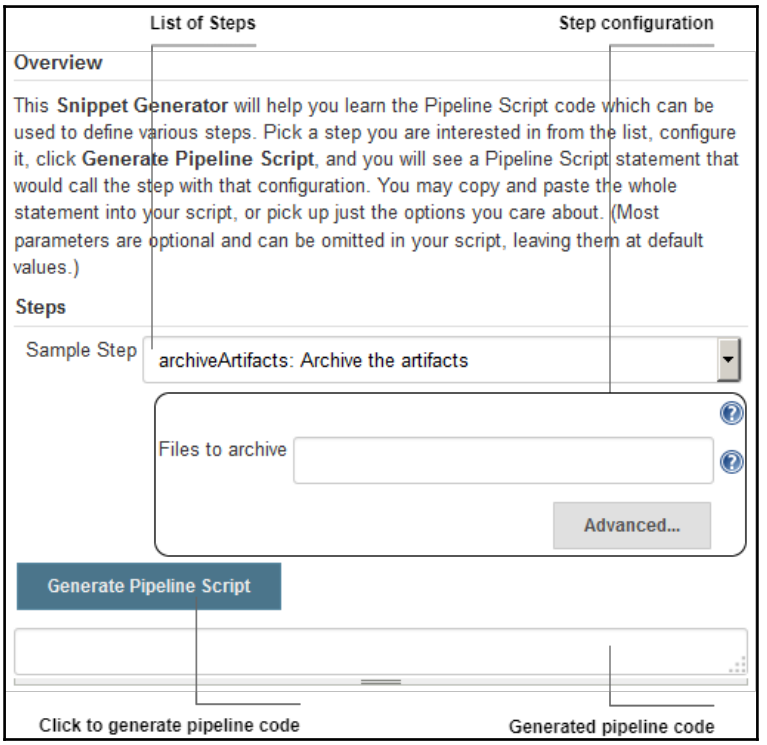
Shell Script -- '/var/jenkins_home/tools/hudson.tasks.Maven_MavenInstallation/M3/bin/mvn' -Dmaven.test.failure.ignore clean package -- (self time 3s)

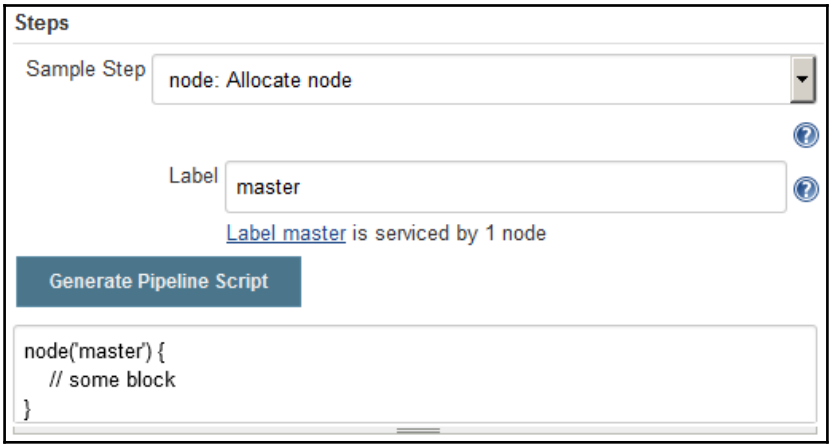
```
[INFO] ------------------------------------------------------------------------
[INFO] Building simple-maven-project-with-tests 1.0-SNAPSHOT
[INFO] ------------------------------------------------------------------------
[INFO]
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ simple-maven-project-with-tests ---
[INFO] Deleting /var/jenkins_home/workspace/jenkins_pipeline_demo/target
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ simple-maven-project-with-tests ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /var/jenkins_home/workspace/jenkins_pipeline_demo/src/main/reso
urces
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ simple-maven-project-with-tests ---
[INFO] No sources to compile
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ simple-maven-project-with-te
sts ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /var/jenkins_home/workspace/jenkins_pipeline_demo/src/test/reso
urces
```

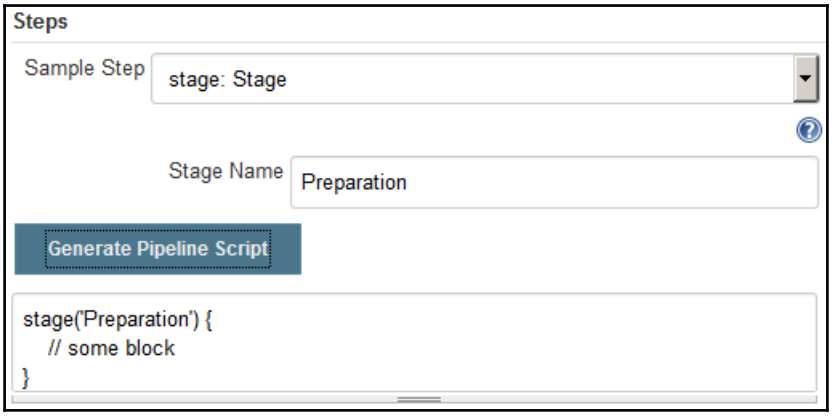

Build History
trend
find
#3
Aug 9, 2017 11:29 PM
Changes
Console Output
Edit Build Information
SS for failures

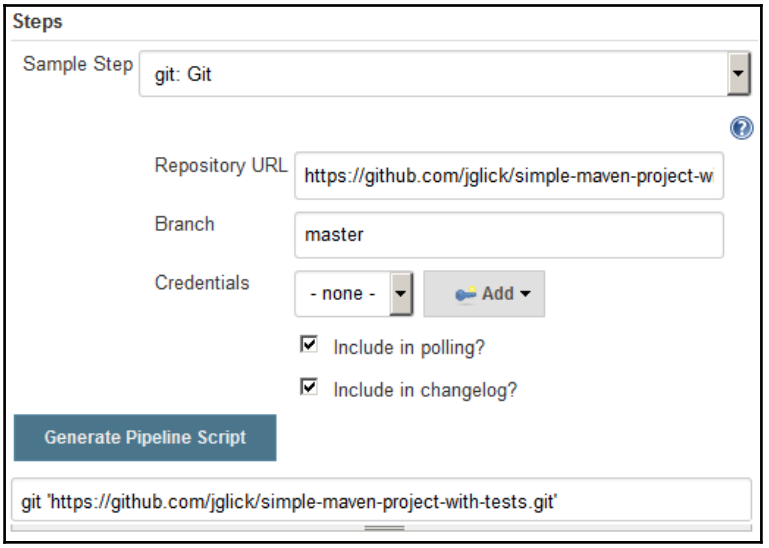

Search plugins
List all plugins available for Jenkins
Filter:
Pipeline Maven Integration
Updates
Available
Installed
Advanced
Install
Name
Version
Pipeline Maven Integration Plugin
This plugin provides integration with Pipeline, configures maven environment to use within a pipeline job by calling sh mvn or bat mvn. The selected maven installation will be configured and prepended to the path.
2.5.2
Install without restart
Download now and install after restart
Update information obtained: 1 hr 30 min ago
Check now
Install selected plugin

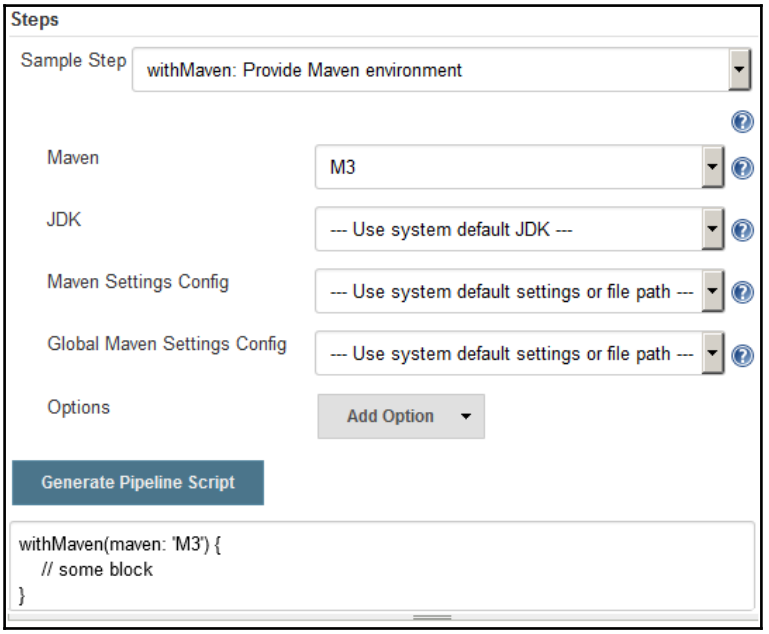

Installing Plugins/Upgrades
Preparation
Checking internet connectivity
Checking update center connectivity
Success
Config File Provider Plugin
Success
Pipeline Maven Integration Plugin
Installing
Go back to the top page
(you can start using the installed plugins right away)
Restart Jenkins when installation is complete and no jobs are running

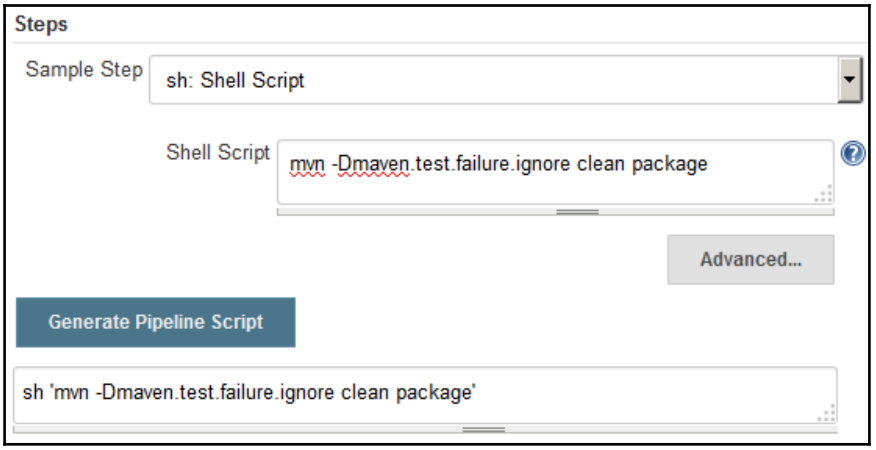

List of Steps
Step configuration
Overview
This Snippet Generator will help you learn the Pipeline Script code which can be used to define various steps. Pick a step you are interested in from the list, configure it, click Generate Pipeline Script, and you will see a Pipeline Script statement that would call the step with that configuration. You may copy and paste the whole statement into your script, or pick up just the options you care about. (Most parameters are optional and can be omitted in your script, leaving them at default values.)
Steps
Sample Step
archiveArtifacts: Archive the artifacts
Files to archive
Advanced...
Generate Pipeline Script
Click to generate pipeline code
Generated pipeline code

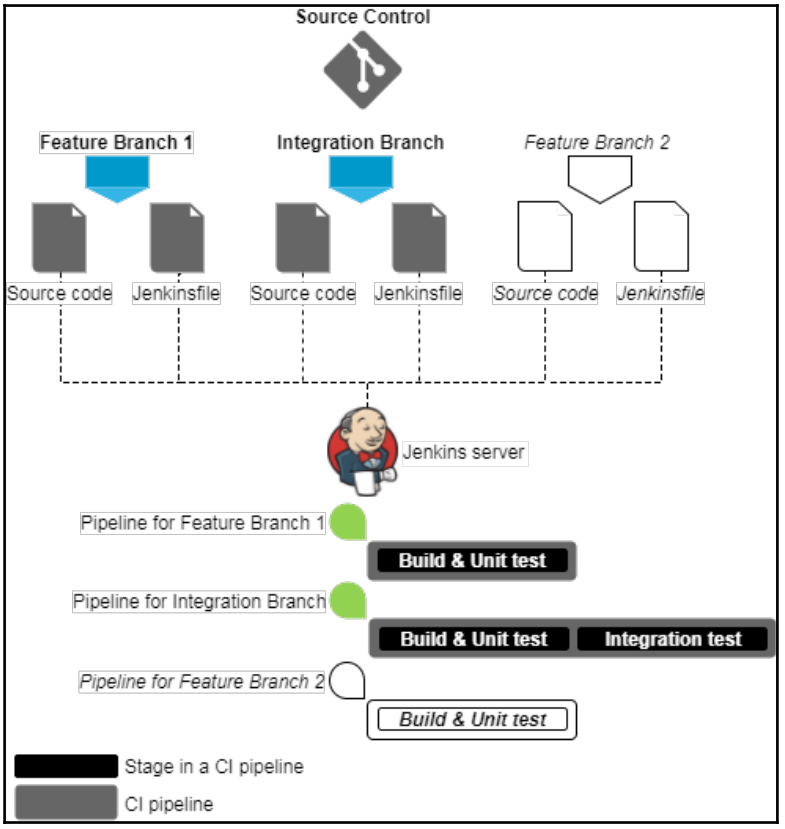

Steps
Sample Step
node: Allocate node
Label
master
Label master is serviced by 1 node
Generate Pipeline Script
node('master') {
// some block
}

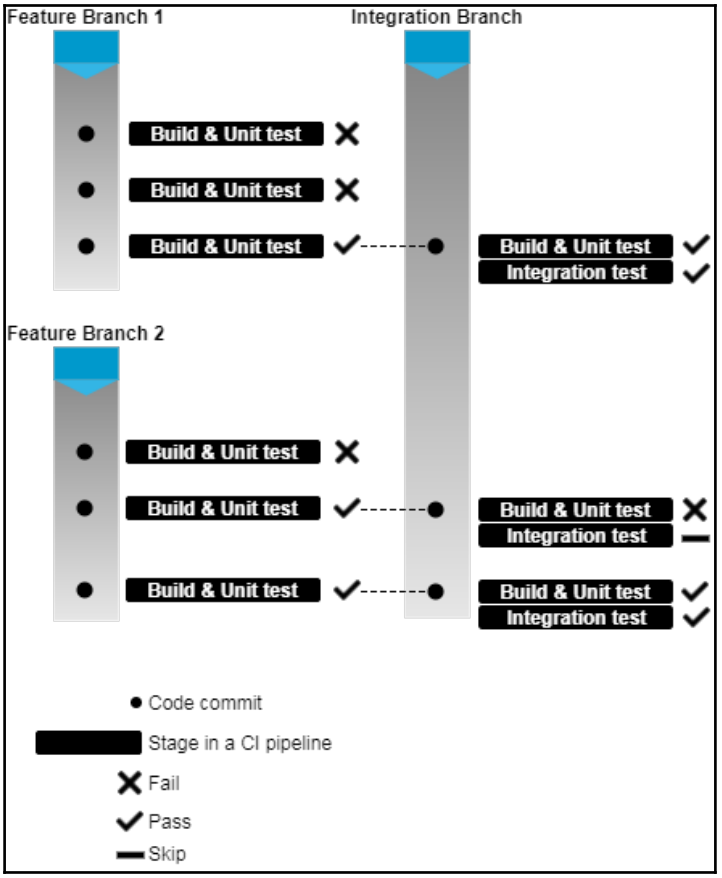

Steps
Sample Step
stage: Stage
Stage Name
Preparation
Generate Pipeline Script
stage('Preparation') {
// some block
}

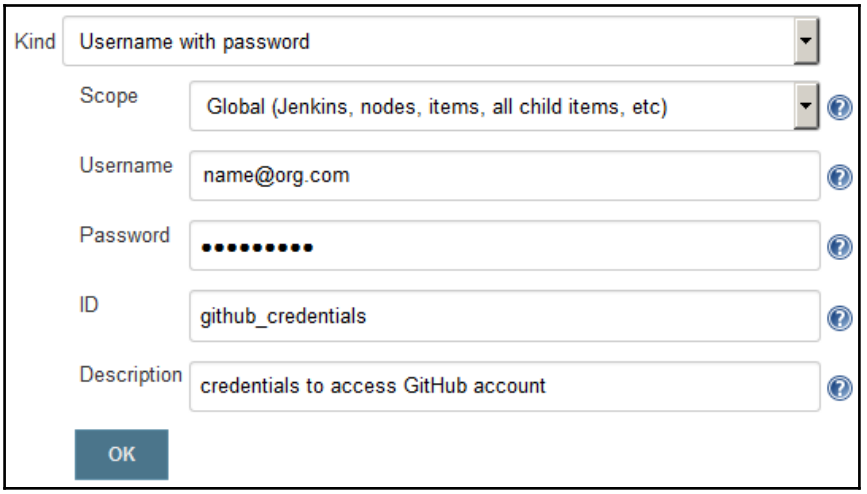

Steps
Sample Step
git: Git
Repository URL
https://github.com/jglick/simple-maven-project-w
Branch
master
Credentials
- none -
Add
Include in polling?
Include in changelog?
Generate Pipeline Script
git 'https://github.com/jglick/simple-maven-project-with-tests.git'


Steps
Sample Step
withMaven: Provide Maven environment
Maven
M3
JDK
--- Use system default JDK ---
Maven Settings Config
--- Use system default settings or file path ---
Global Maven Settings Config
--- Use system default settings or file path ---
Options
Add Option
Generate Pipeline Script
withMaven(maven: 'M3') {
// some block
}

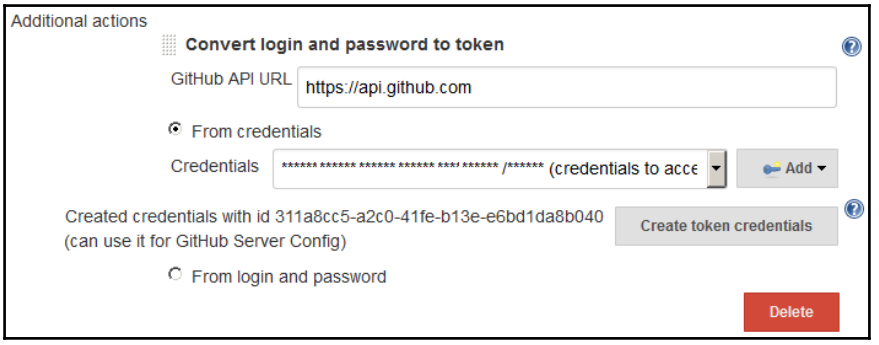

Steps
Sample Step
sh: Shell Script
Shell Script
mvn -Dmaven.test.failure.ignore clean package
Advanced...
Generate Pipeline Script
sh 'mvn -Dmaven.test.failure.ignore clean package'


Source Control
Feature Branch 1
Integration Branch
Feature Branch 2
Source code
Jenkinsfile
Source code
Jenkinsfile
Source code
Jenkinsfile
Jenkins server
Pipeline for Feature Branch 1
Build & Unit test
Pipeline for Integration Branch
Build & Unit test
Integration test
Pipeline for Feature Branch 2
Build & Unit test
Stage in a CI pipeline
CI pipeline

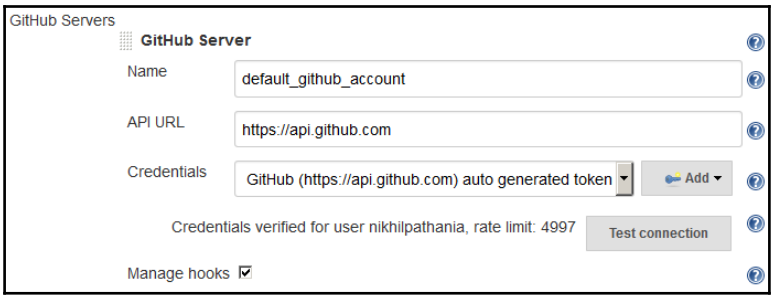

Feature Branch 1
Integration Branch
Build & Unit test
Build & Unit test
Build & Unit test
Build & Unit test
Integration test
Feature Branch 2
Build & Unit test
Build & Unit test
Build & Unit test
Build & Unit test
Integration test
Build & Unit test
Integration test
Code commit
Stage in a CI pipeline
Fail
Pass
Skip

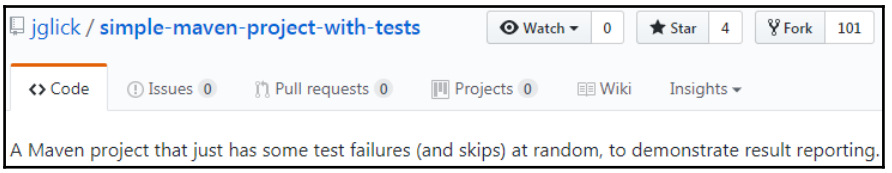

Kind
Username with password
Scope
Global (Jenkins, nodes, items, all child items, etc)
Username
name@org.com
Password
ID
github_credentials
Description
credentials to access GitHub account
OK

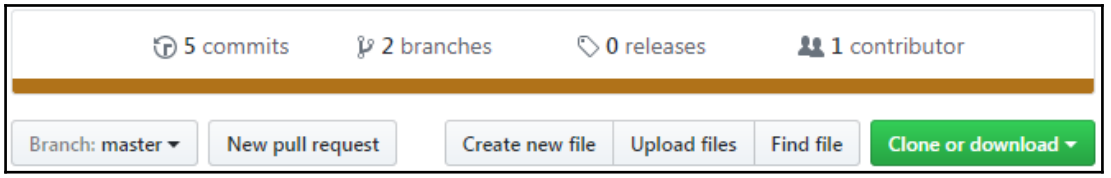
GitHub Servers
GitHub Server
Name
default_github_account
API URL
https://api.github.com
Credentials
- none -
Add
Test connection
Manage hooks

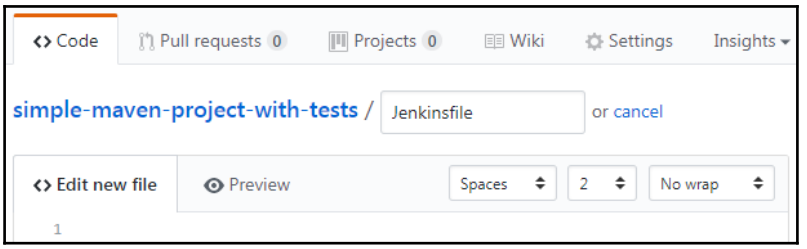

Additional actions
Convert login and password to token
GitHub API URL
https://api.github.com
From credentials
Credentials
Add
Created credentials with id 311a8cc5-a2c0-41fe-b13e-e6bd1da8b040
(can use it for GitHub Server Config)
Create token credentials
From login and password
Delete

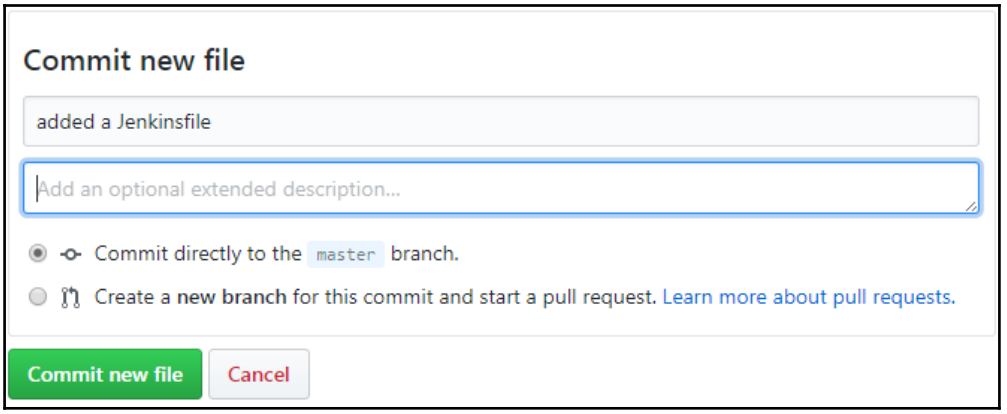
Personal access tokens
Generate new token
Revoke all
Tokens you have generated that can be used to access the GitHub API.
Jenkins GitHub Plugin token (http:// **********/) — admin:repo_hook, repo, Never used
Edit
Delete
repo:status

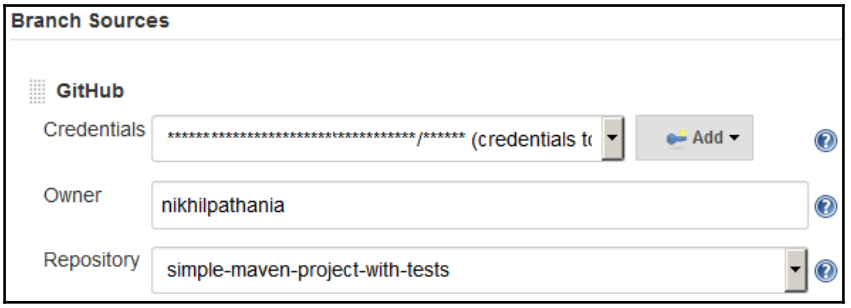

GitHub Servers
GitHub Server
Name
default_github_account
API URL
https://api.github.com
Credentials
GitHub (https://api.github.com) auto generated token
Add
Credentials verified for user nikhilpathania, rate limit: 4997
Test connection
Manage hooks

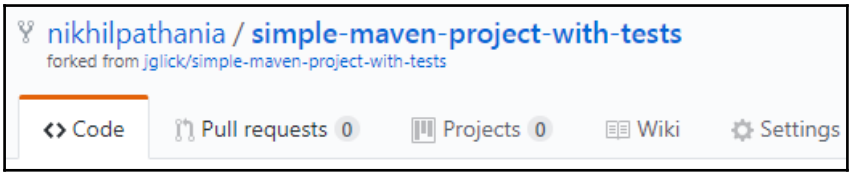

jglick / simple-maven-project-with-tests
Watch 0
Star 4
Fork 101
Code
Issues 0
Pull requests 0
Projects 0
Wiki
Insights
A Maven project that just has some test failures (and skips) at random, to demonstrate result reporting.

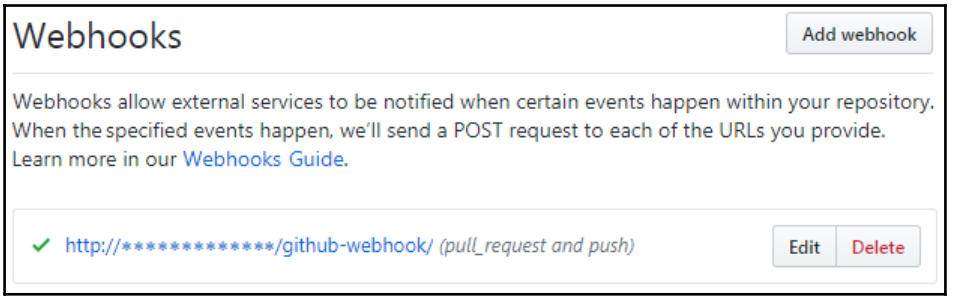

5 commits
2 branches
0 releases
1 contributor
Branch: master
New pull request
Create new file
Upload files
Find file
Clone or download


Code
Pull requests 0
Projects 0
Wiki
Settings
Insights
simple-maven-project-with-tests /
Jenkinsfile
or cancel
Edit new file
Preview
Spaces
2
No wrap
1

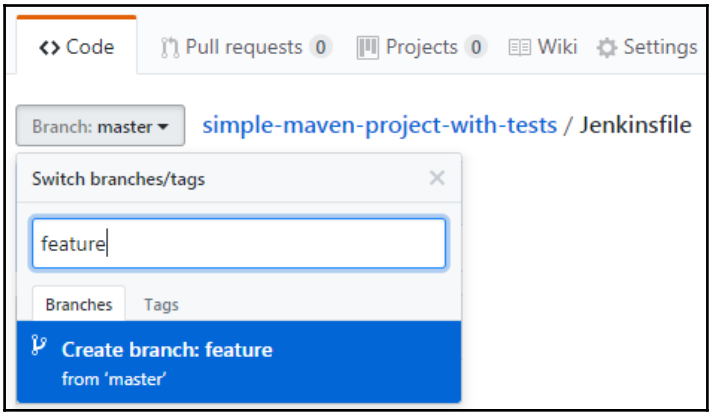

Commit new file
added a Jenkinsfile
Add an optional extended description...
Commit directly to the master branch.
Create a new branch for this commit and start a pull request. Learn more about pull requests.
Commit new file
Cancel

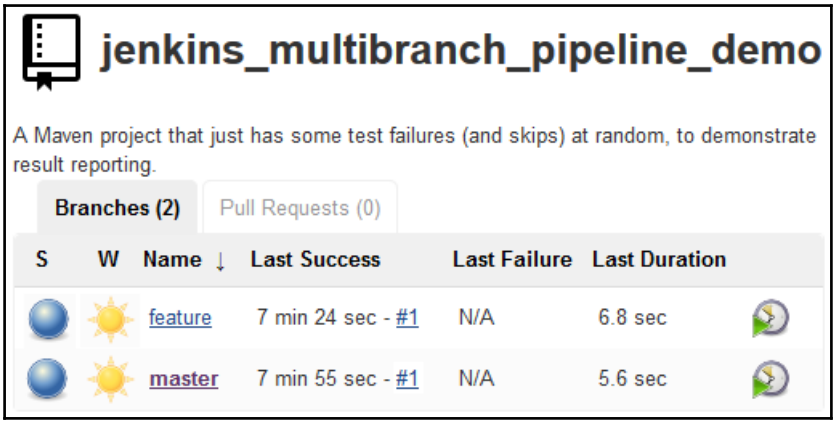

Branch Sources
GitHub
Credentials
(credentials t
Add
Owner
nikhilpathania
Repository
simple-maven-project-with-tests

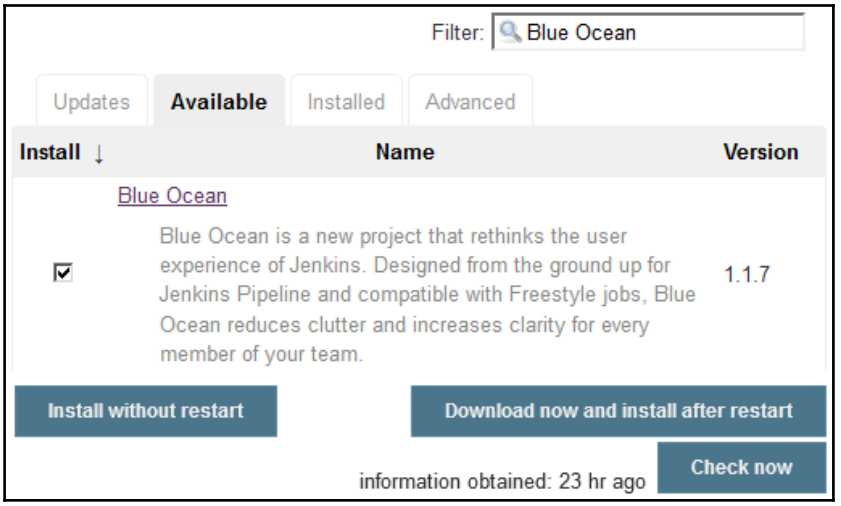

nikhilpathania / simple-maven-project-with-tests
forked from jglick/simple-maven-project-with-tests
Code
Pull requests 0
Projects 0
Wiki
Settings

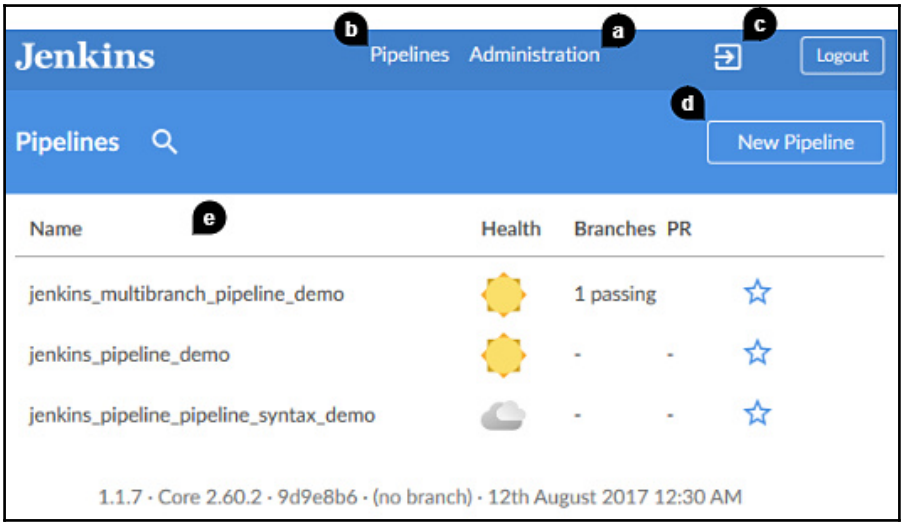

Webhooks
Add webhook
Webhooks allow external services to be notified when certain events happen within your repository. When the specified events happen, we'll send a POST request to each of the URLs you provide.
Learn more in our Webhooks Guide.
http://**********/github-webhook/ (pull_request and push)
Edit
Delete

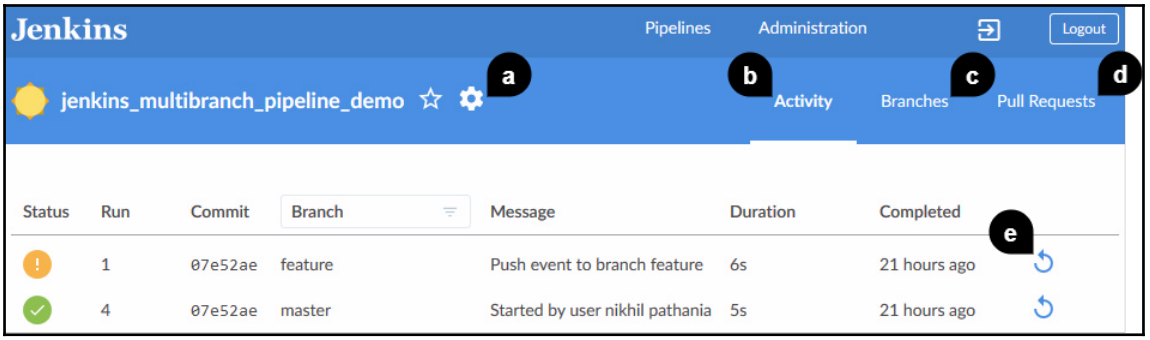
jenkins_multibranch_pipeline_demo
A Maven project that just has some test failures (and skips) at random, to demonstrate result reporting.
Branches (1)
Pull Requests (0)
S
W
Name ↓
Last Success
Last Failure
Last Duration
master
17 sec - #1
N/A
6.4 sec

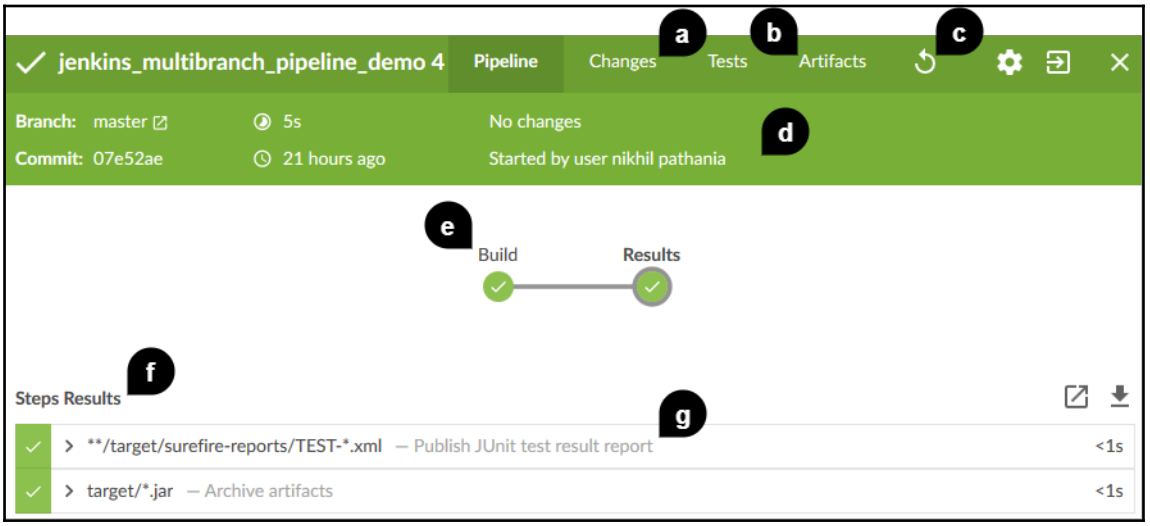

Code
Pull requests 0
Projects 0
Wiki
Settings
Branch: master
simple-maven-project-with-tests / Jenkinsfile
Switch branches/tags
feature
Branches
Tags
Create branch: feature
from 'master'

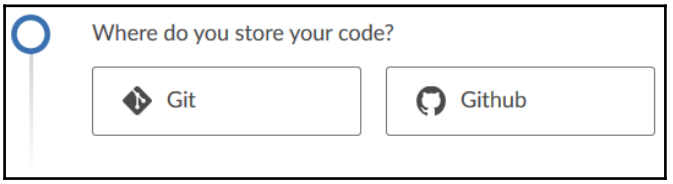

jenkins_multibranch_pipeline_demo
A Maven project that just has some test failures (and skips) at random, to demonstrate result reporting.
Branches (2)
Pull Requests (0)
S
W
Name ↓
Last Success
Last Failure
Last Duration
feature
7 min 24 sec - #1
N/A
6.8 sec
master
7 min 55 sec - #1
N/A
5.6 sec

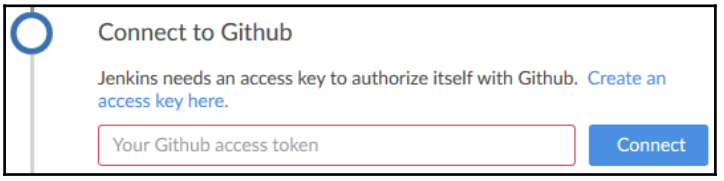

Filter: Blue Ocean
Updates
Available
Installed
Advanced
Install
Name
Version
Blue Ocean
Blue Ocean is a new project that rethinks the user experience of Jenkins. Designed from the ground up for Jenkins Pipeline and compatible with Freestyle jobs, Blue Ocean reduces clutter and increases clarity for every member of your team.
1.1.7
Install without restart
Download now and install after restart
information obtained: 23 hr ago
Check now

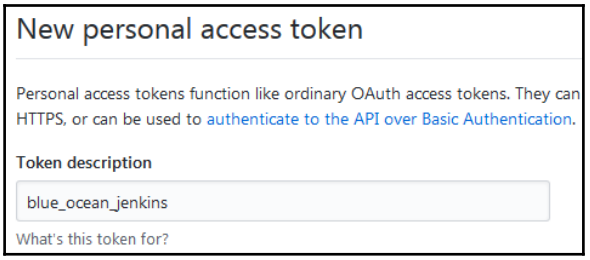

Jenkins
b
Pipelines
Administration
a
c
Logout
d
Pipelines
New Pipeline
Name
e
Health
Branches
PR
jenkins_multibranch_pipeline_demo
1 passing
jenkins_pipeline_demo
jenkins_pipeline_pipeline_syntax_demo
1.1.7 · Core 2.60.2 · 9d9e8b6 · (no branch) · 12th August 2017 12:30 AM

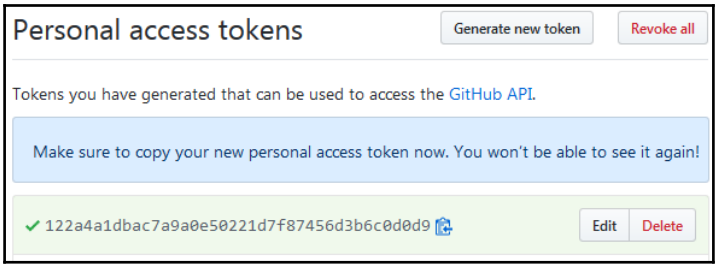

Jenkins
Pipelines
Administration
Logout
jenkins_multibranch_pipeline_demo
a
b
Activity
c
Branches
Pull Requests
d
Status
Run
Commit
Branch
Message
Duration
Completed
e
1
07e52ae
feature
Push event to branch feature
6s
21 hours ago
4
07e52ae
master
Started by user nikhil pathania
5s
21 hours ago

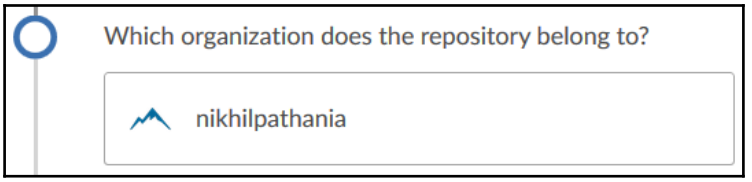

jenkins_multibranch_pipeline_demo 4
Pipeline
Changes
a
Tests
b
Artifacts
c
Branch: master
5s
No changes
Commit: 07e52ae
21 hours ago
Started by user nikhil pathania
d
e
Build
Results
Steps Results
f
g
**/target/surefire-reports/TEST-*.xml — Publish JUnit test result report
<1s
target/*.jar — Archive artifacts
<1s

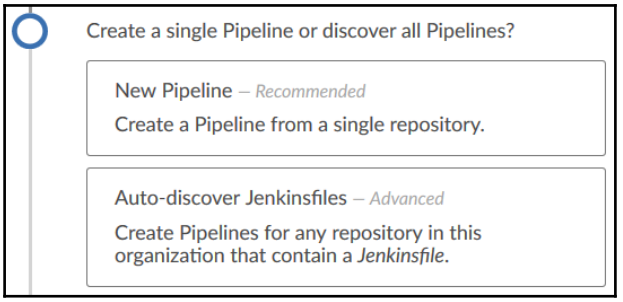

Where do you store your code?
Git
Github

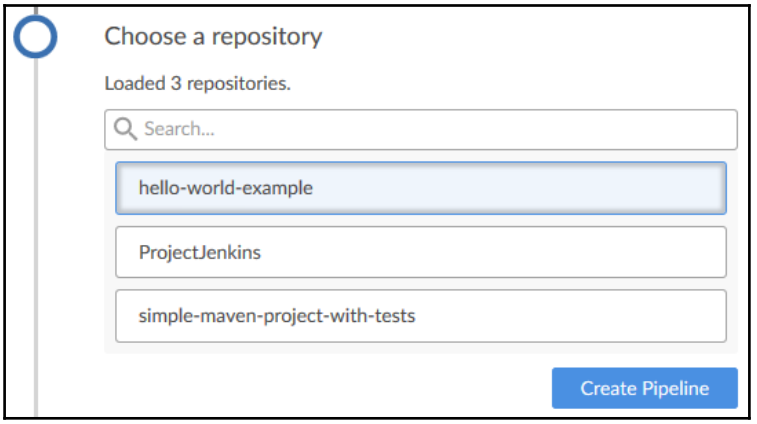

Connect to Github
Jenkins needs an access key to authorize itself with Github. Create an access key here.
Your Github access token
Connect


New personal access token
Personal access tokens function like ordinary OAuth access tokens. They can
HTTPS, or can be used to authenticate to the API over Basic Authentication.
Token description
blue_ocean_jenkins
What's this token for?

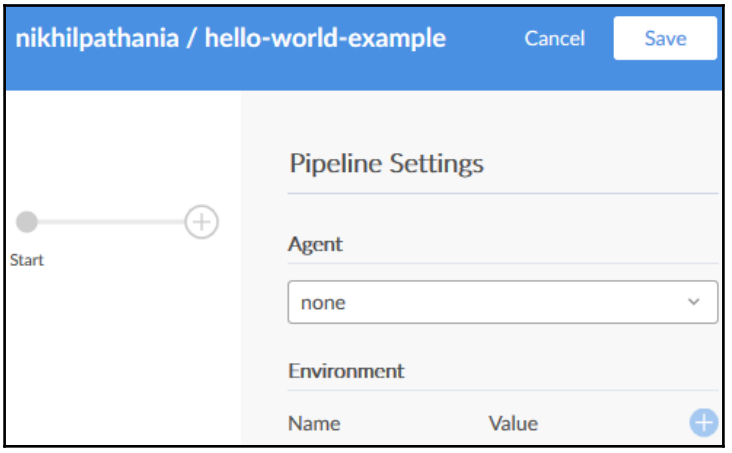

Personal access tokens
Generate new token
Revoke all
Tokens you have generated that can be used to access the GitHub API.
Make sure to copy your new personal access token now. You won't be able to see it again!
122a4a1dbac7a9a0e50221d7f87456d3b6c0d0d9
Edit
Delete

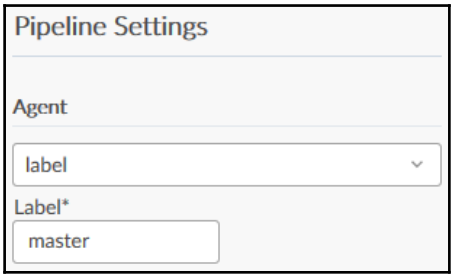

Which organization does the repository belong to?
nikhilpathania

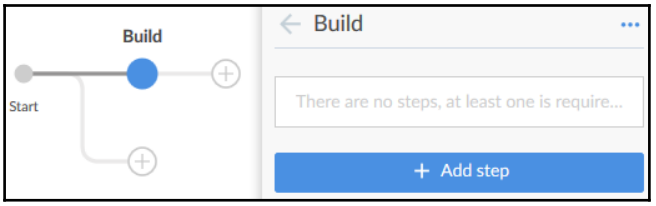

Create a single Pipeline or discover all Pipelines?
New Pipeline – Recommended
Create a Pipeline from a single repository.
Auto-discover Jenkinsfiles – Advanced
Create Pipelines for any repository in this organization that contain a Jenkinsfile.

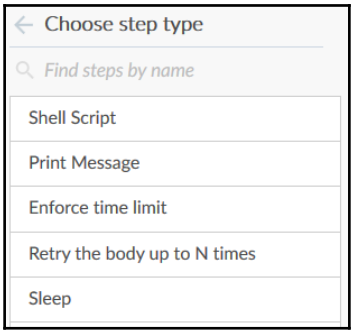

Choose a repository
Loaded 3 repositories.
Search...
hello-world-example
ProjectJenkins
simple-maven-project-with-tests
Create Pipeline

There are no Jenkinsfiles in hello-world-example
Create Pipeline

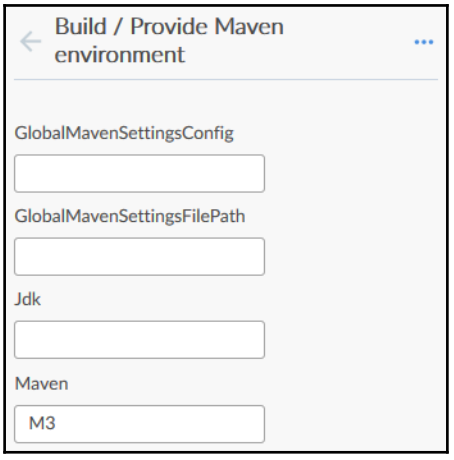

nikhilpathania / hello-world-example
Cancel
Save
Start
Pipeline Settings
Agent
none
Environment
Name
Value

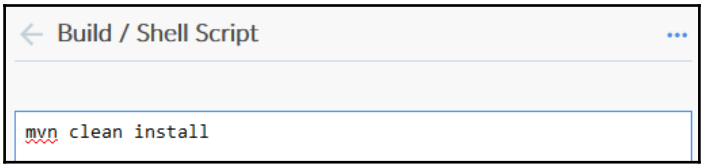

Pipeline Settings
Agent
label
Label*
master

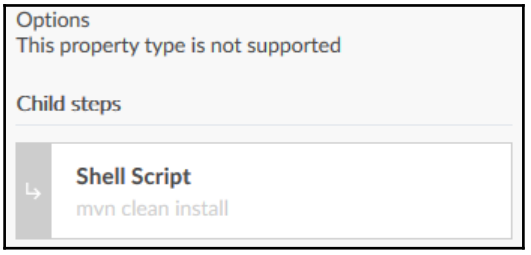

Build
Start
Build
There are no steps, at least one is require...
+ Add step

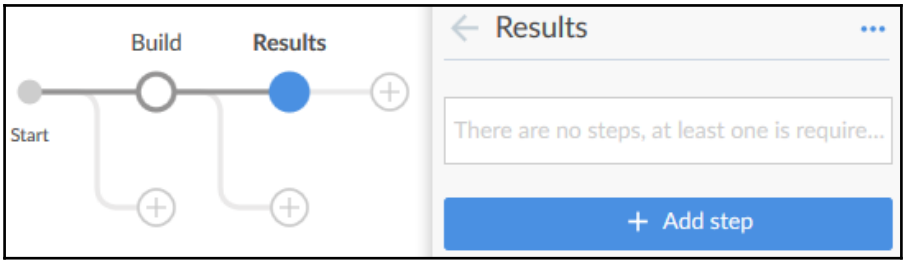

Choose step type
Find steps by name
Shell Script
Print Message
Enforce time limit
Retry the body up to N times
Sleep

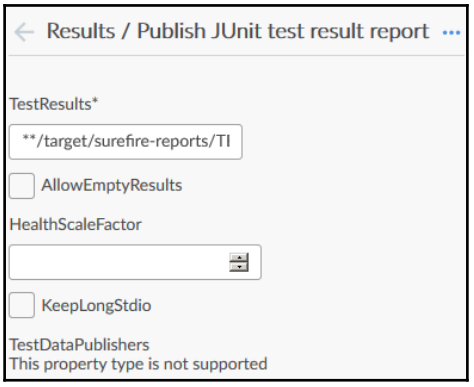
Choose step type
provide
Provide Maven environment

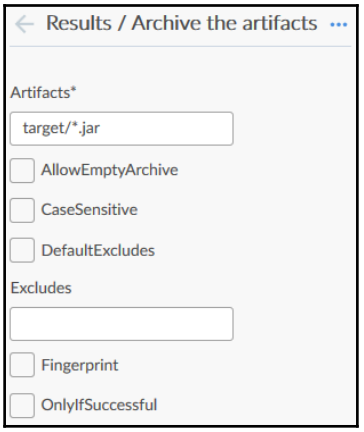

Build / Provide Maven environment
GlobalMavenSettingsConfig
GlobalMavenSettingsFilePath
Jdk
Maven
M3

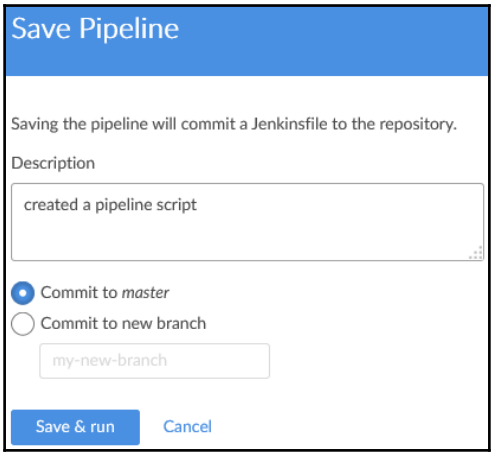

Build / Shell Script
mvn clean install

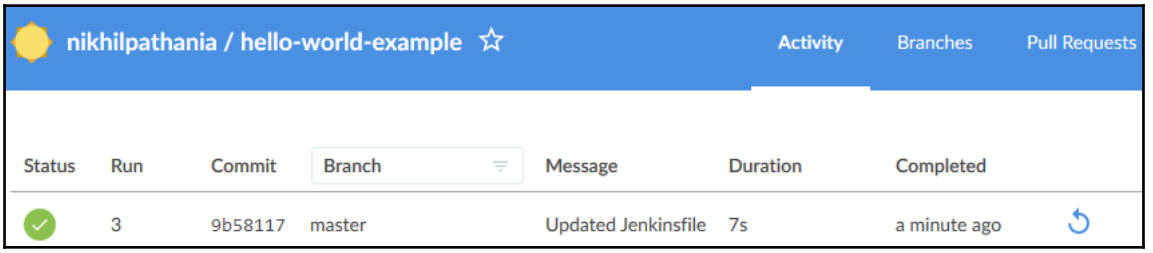

Options
This property type is not supported
Child steps
Shell Script
mvn clean install

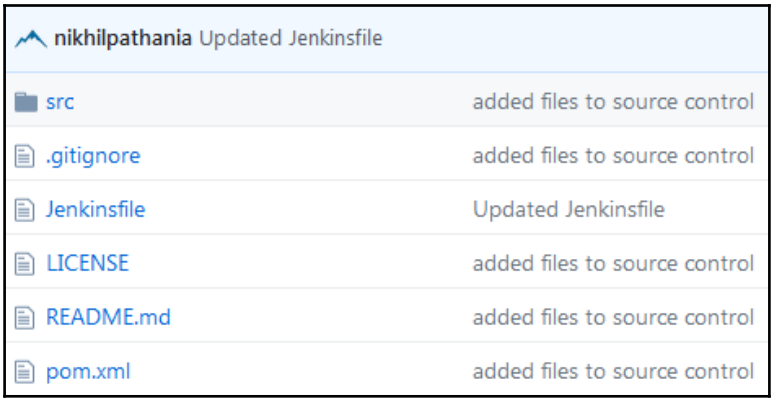

Build
Results
Start
Results
There are no steps, at least one is require...
Add step


Results / Publish JUnit test result report
TestResults*
**/target/surefire-reports/TI
AllowEmptyResults
HealthScaleFactor
KeepLongStdio
TestDataPublishers
This property type is not supported

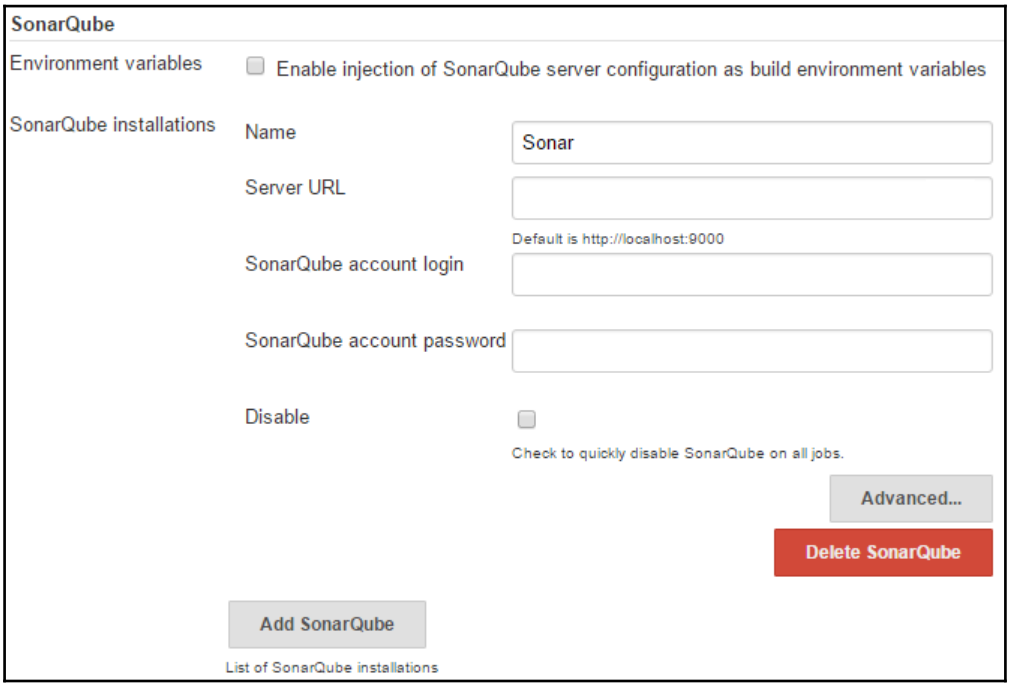

Results / Archive the artifacts
Artifacts*
target/*.jar
AllowEmptyArchive
CaseSensitive
DefaultExcludes
Excludes
Fingerprint
OnlyIfSuccessful

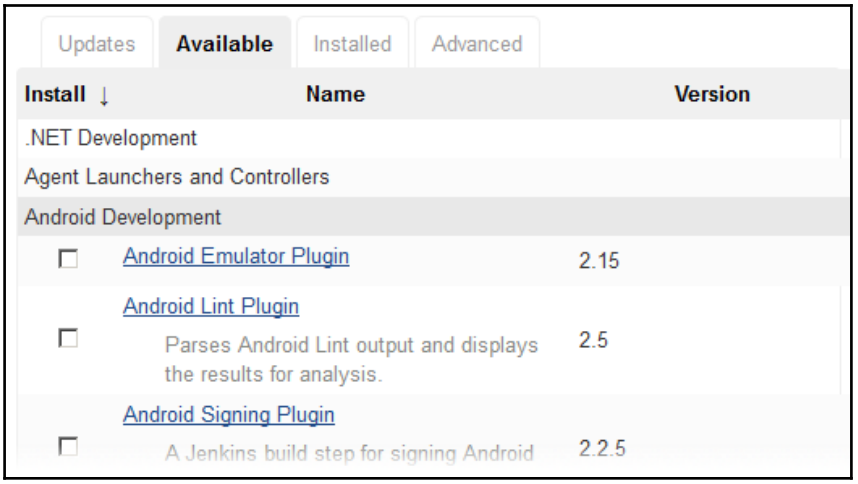

Save Pipeline
Saving the pipeline will commit a Jenkinsfile to the repository.
Description
created a pipeline script
Commit to master
Commit to new branch
my-new-branch
Save & run
Cancel

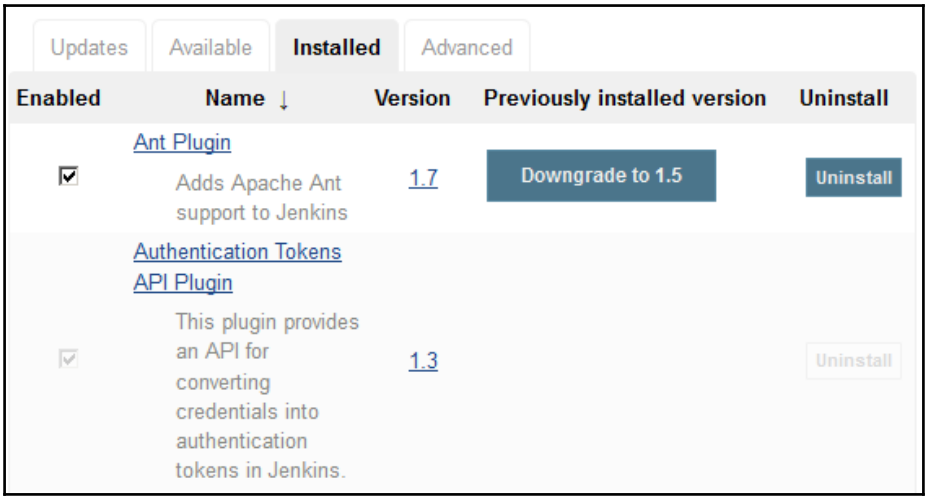

nikhilpathania / hello-world-example
Activity
Branches
Pull Requests
Status
Run
Commit
Branch
Message
Duration
Completed
3
9b58117
master
Updated Jenkinsfile
7s
a minute ago

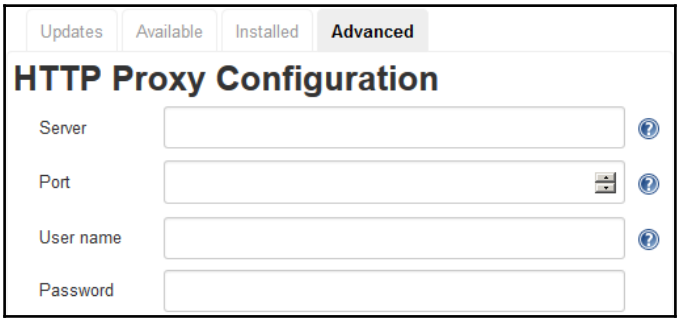

nikhilpathania Updated Jenkinsfile
src
added files to source control
.gitignore
added files to source control
Jenkinsfile
Updated Jenkinsfile
LICENSE
added files to source control
README.md
added files to source control
pom.xml
added files to source control

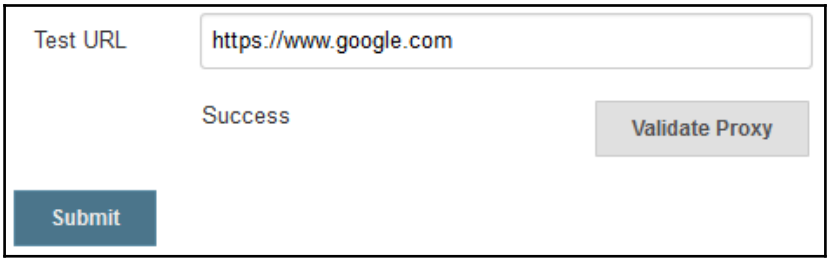
Chapter 4: Configuring Jenkins

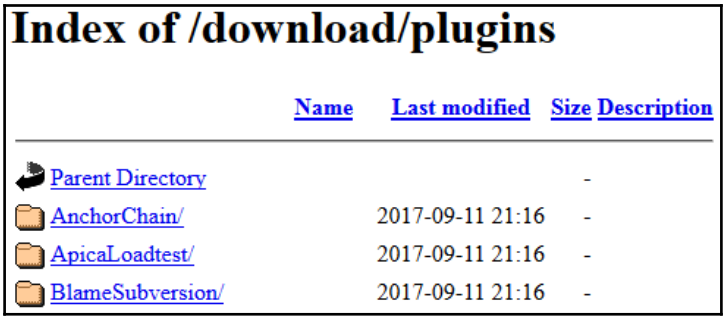


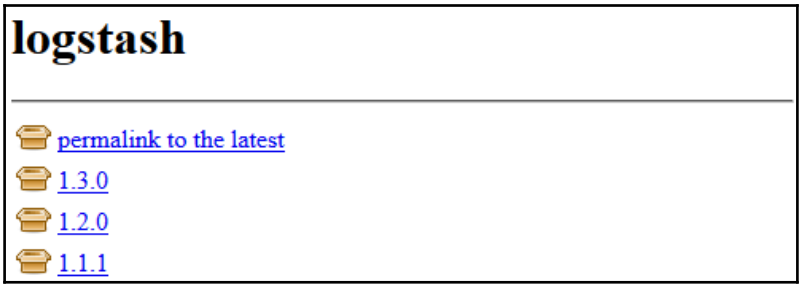

Updates
Available
Installed
Advanced
Install ↓
Name
Version
.NET Development
Agent Launchers and Controllers
Android Development
Android Emulator Plugin
2.15
Android Lint Plugin
Parses Android Lint output and displays the results for analysis.
2.5
Android Signing Plugin
A Jenkins build step for signing Android
2.2.5

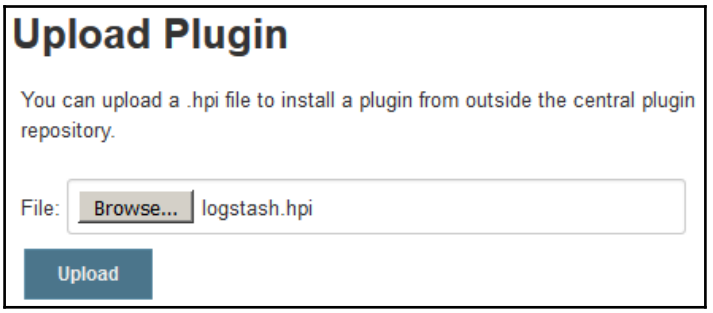

Updates
Available
Installed
Advanced
Enabled
Name ↓
Version
Previously installed version
Uninstall
Ant Plugin
Adds Apache Ant support to Jenkins
1.7
Downgrade to 1.5
Uninstall
Authentication Tokens API Plugin
This plugin provides an API for converting credentials into authentication tokens in Jenkins.
1.3
Uninstall

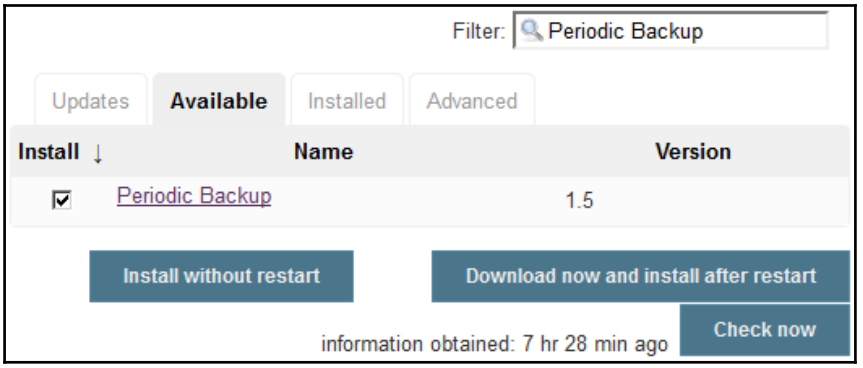

Updates
Available
Installed
Advanced
HTTP Proxy Configuration
Server
Port
User name
Password

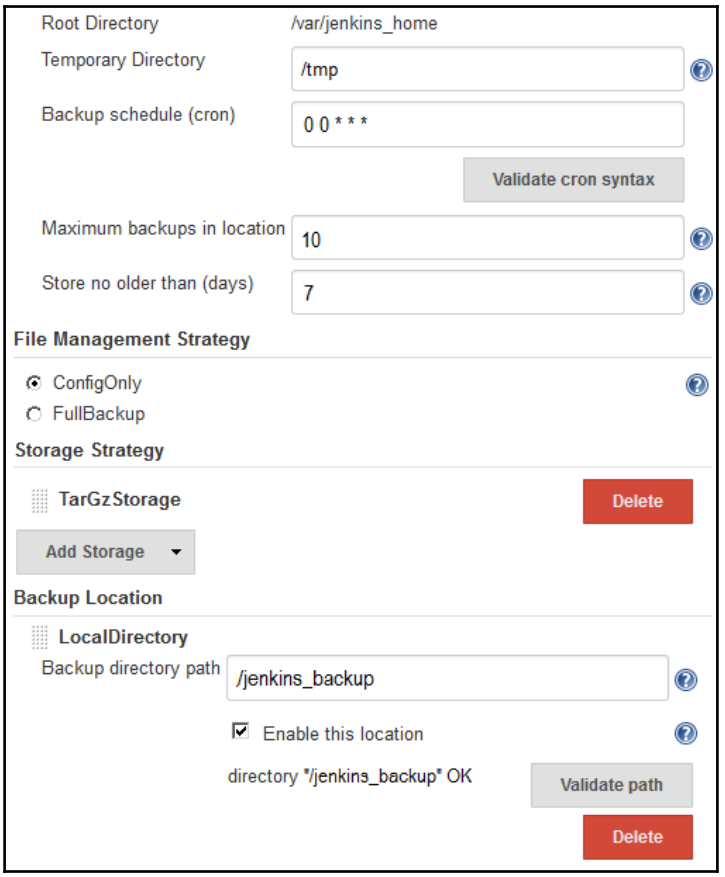

Test URL
https://www.google.com
Success
Validate Proxy
Submit


Index of /download/plugins
Name
Last modified
Size
Description
Parent Directory
-
AnchorChain/
2017-09-11 21:16
-
ApicaLoadtest/
2017-09-11 21:16
-
BlameSubversion/
2017-09-11 21:16
-

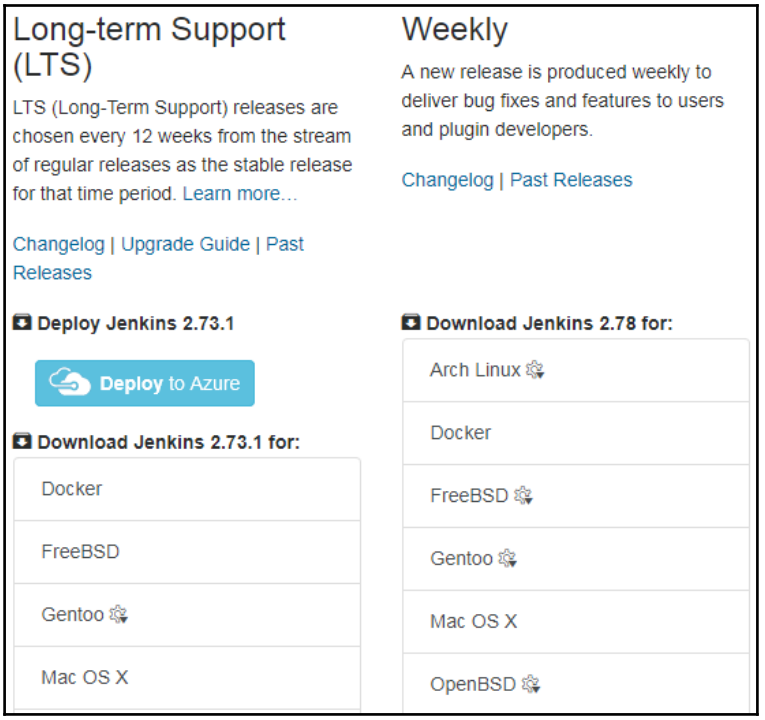

logstash
permalink to the latest
1.3.0
1.2.0
1.1.1

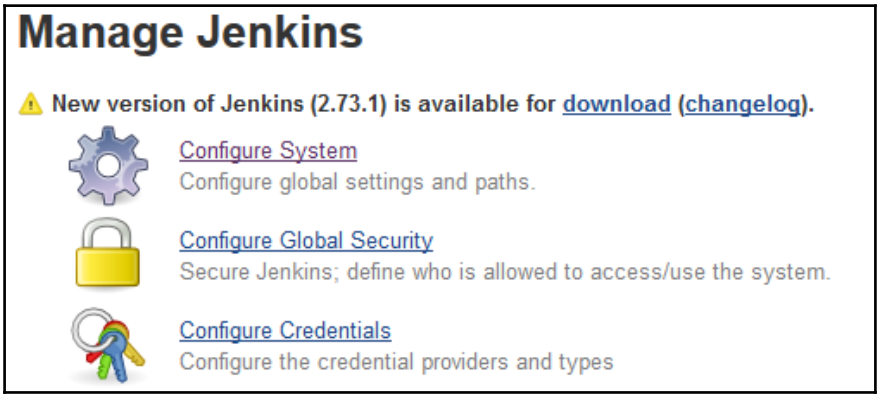

Upload Plugin
You can upload a .hpi file to install a plugin from outside the central plugin repository.
File:
Browse...
logstash.hpi
Upload

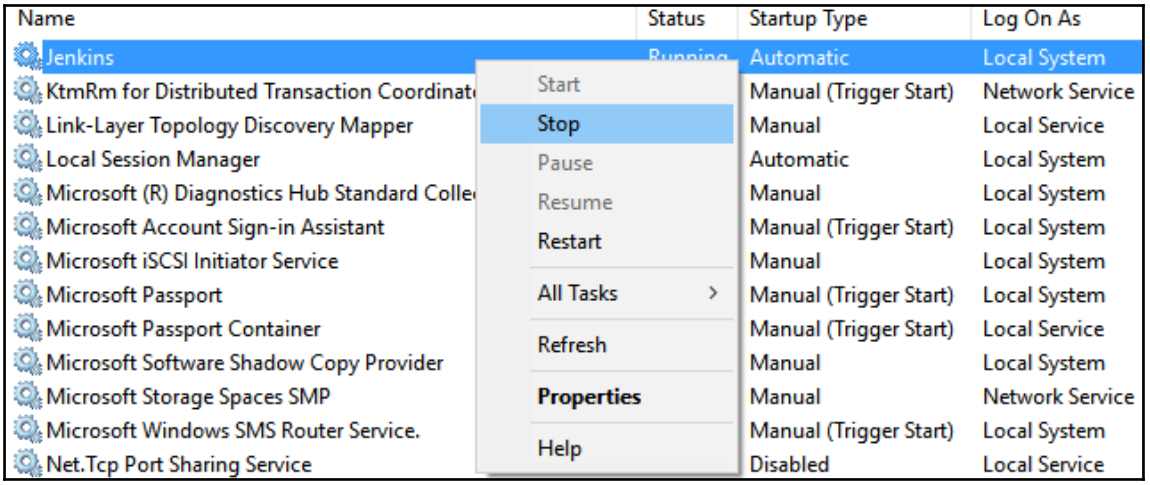

Filter: Periodic Backup
Updates
Available
Installed
Advanced
Install
Name
Version
Periodic Backup
1.5
Install without restart
Download now and install after restart
information obtained: 7 hr 28 min ago
Check now

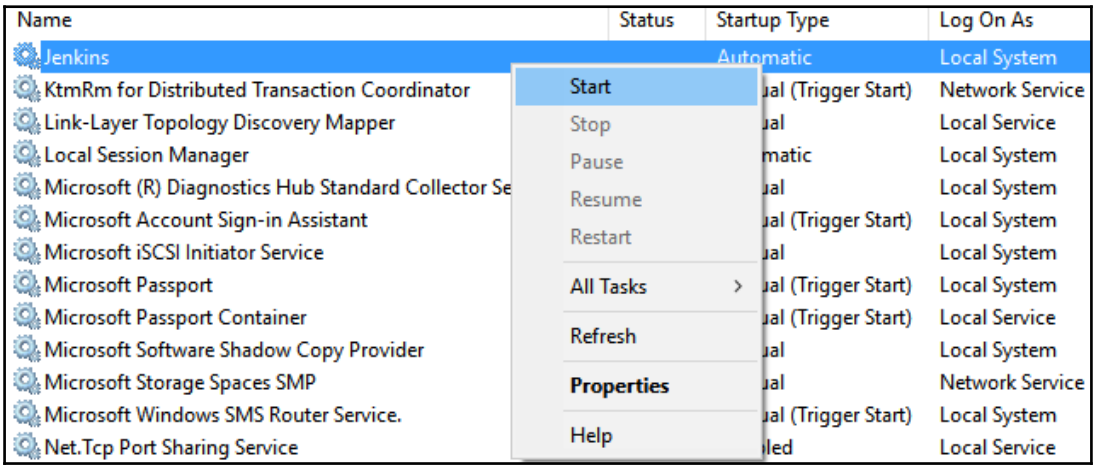

Root Directory
/var/jenkins_home
Temporary Directory
/tmp
Backup schedule (cron)
0 0 * * *
Validate cron syntax
Maximum backups in location
10
Store no older than (days)
7
File Management Strategy
ConfigOnly
FullBackup
Storage Strategy
TarGzStorage
Delete
Add Storage
Backup Location
LocalDirectory
Backup directory path
/jenkins_backup
Enable this location
directory "/jenkins_backup" OK
Validate path
Delete

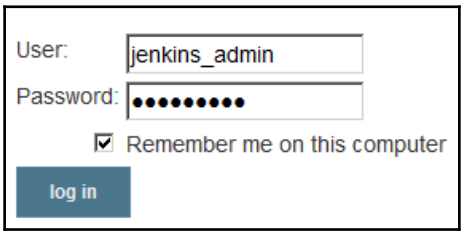
```
Sep 16, 2017 11:15:36 PM INFO hudson.model.AsyncPeriodicWork$1 run
Started PeriodicBackup
Sep 16, 2017 11:15:36 PM INFO org.jenkinsci.plugins.periodicbackup.LocalDirectory
storeBackupInLocation
backup_2017_09_16_23_15_36_131.tar.gz copied to
/jenkins_backup/backup_2017_09_16_23_15_36_131.tar.gz
Sep 16, 2017 11:15:36 PM INFO org.jenkinsci.plugins.periodicbackup.LocalDirectory
storeBackupInLocation
backup_2017_09_16_23_15_36_131.pbobj copied to /jenkins_backup
/backup_2017_09_16_23_15_36_131.pbobj
Sep 16, 2017 11:15:36 PM INFO org.jenkinsci.plugins.periodicbackup.BackupExecutor backup
Deleting the temporary file
/tmp/backup_2017_09_16_23_15_36_131.pbobj
Sep 16, 2017 11:15:36 PM INFO org.jenkinsci.plugins.periodicbackup.BackupExecutor backup
Checking for redundant and old backups in the location.
Sep 16, 2017 11:15:36 PM INFO org.jenkinsci.plugins.periodicbackup.BackupExecutor backup
Deleting temporary file
/tmp/backup_2017_09_16_23_15_36_131.tar.gz
Sep 16, 2017 11:15:36 PM INFO org.jenkinsci.plugins.periodicbackup.BackupExecutor backup
Backup finished successfully after 18 ms
Sep 16, 2017 11:15:36 PM INFO hudson.model.AsyncPeriodicWork$1 run
Finished PeriodicBackup. 19 ms
Sep 16, 2017 11:16:06 PM WARNING org.jenkinsci.plugins.periodicbackup.RestoreExecutor run
The final result directory /tmp/finalResult is not empty,
deleting...
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.RestoreExecutor run
/tmp/finalResult does not exist, making new directory
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.LocalDirectory
retrieveBackupFromLocation
Copying /jenkins_backup/backup_2017_09_16_23_11_31_835.tar.gz
to /tmp/backup_2017_09_16_23_11_31_835.tar.gz
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.LocalDirectory
retrieveBackupFromLocation
Archive /jenkins_backup/backup_2017_09_16_23_11_31_835.tar.gz
copied to /tmp/backup_2017_09_16_23_11_31_835.tar.gz
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.TarGzStorage unarchiveFiles
Extracting files from
/tmp/backup_2017_09_16_23_11_31_835.tar.gz to /tmp/finalResult
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.TarGzStorage unarchiveFiles
Deleting /tmp/backup_2017_09_16_23_11_31_835.tar.gz
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.OverwriteRestorePolicy restore
Restoring of files finished
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.RestoreExecutor run
Reloading configuration...
Sep 16, 2017 11:16:07 PM INFO org.jenkinsci.plugins.periodicbackup.RestoreExecutor run
Restoration finished after 592 ms
```

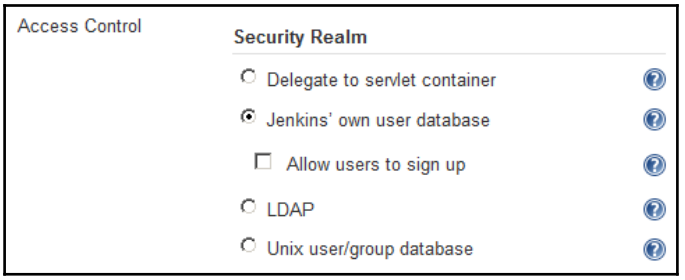

Long-term Support (LTS)
LTS (Long-Term Support) releases are chosen every 12 weeks from the stream of regular releases as the stable release for that time period. Learn more...
Changelog | Upgrade Guide | Past Releases
Deploy Jenkins 2.73.1
Deploy to Azure
Download Jenkins 2.73.1 for:
Docker
FreeBSD
Gentoo
Mac OS X
Weekly
A new release is produced weekly to deliver bug fixes and features to users and plugin developers.
Changelog | Past Releases
Download Jenkins 2.78 for:
Arch Linux
Docker
FreeBSD
Gentoo
Mac OS X
OpenBSD

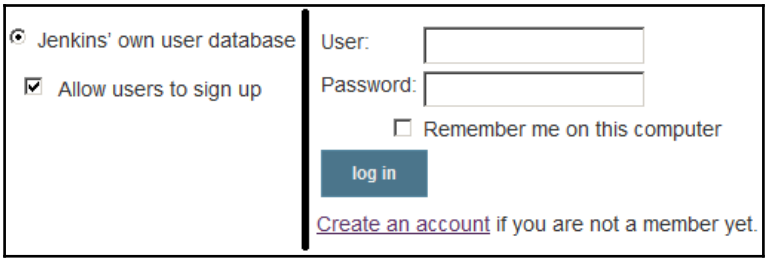

Manage Jenkins
New version of Jenkins (2.73.1) is available for download (changelog).
Configure System
Configure global settings and paths.
Configure Global Security
Secure Jenkins; define who is allowed to access/use the system.
Configure Credentials
Configure the credential providers and types

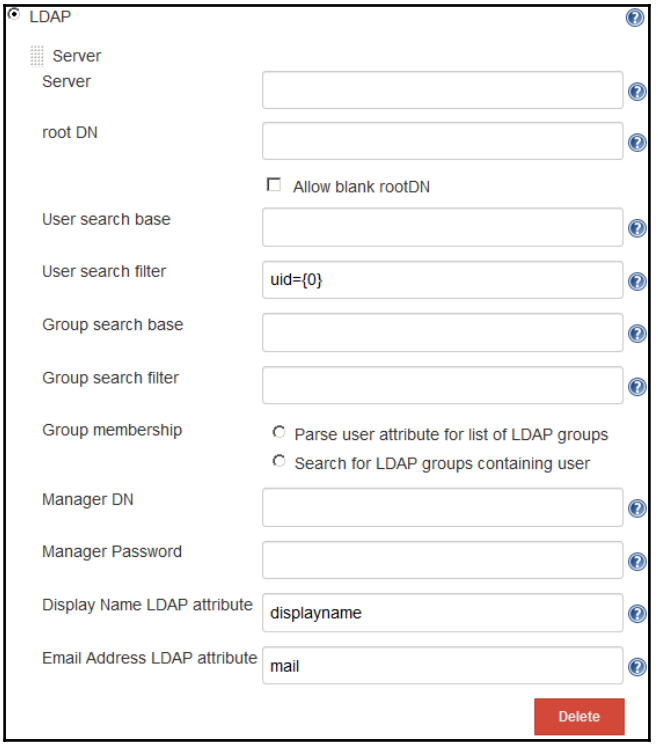

Name
Status
Startup Type
Log On As
Jenkins
Automatic
Local System
KtmRm for Distributed Transaction Coordinat
Manual (Trigger Start)
Network Service
Link-Layer Topology Discovery Mapper
Manual
Local Service
Local Session Manager
Automatic
Local System
Microsoft (R) Diagnostics Hub Standard Colle
Manual
Local System
Microsoft Account Sign-in Assistant
Manual (Trigger Start)
Local System
Microsoft iSCSI Initiator Service
Manual
Local System
Microsoft Passport
Manual (Trigger Start)
Local System
Microsoft Passport Container
Manual (Trigger Start)
Local Service
Microsoft Software Shadow Copy Provider
Manual
Local System
Microsoft Storage Spaces SMP
Manual
Network Service
Microsoft Windows SMS Router Service.
Manual (Trigger Start)
Local System
Net.Tcp Port Sharing Service
Disabled
Local Service
Start
Stop
Pause
Resume
Restart
All Tasks
Refresh
Properties
Help

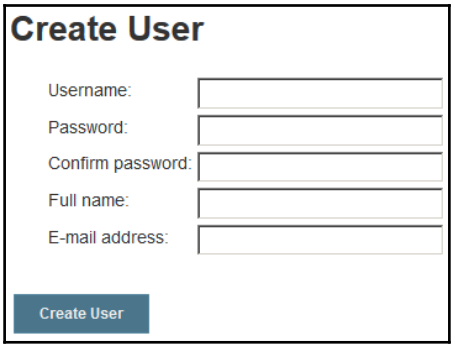

Name
Status
Startup Type
Log On As
Jenkins
Automatic
Local System
KtmRm for Distributed Transaction Coordinator
Network Service
Link-Layer Topology Discovery Mapper
Local Service
Local Session Manager
Local System
Microsoft (R) Diagnostics Hub Standard Collector Se
Local System
Microsoft Account Sign-in Assistant
Local System
Microsoft iSCSI Initiator Service
Local System
Microsoft Passport
Local System
Microsoft Passport Container
Local Service
Microsoft Software Shadow Copy Provider
Local System
Microsoft Storage Spaces SMP
Network Service
Microsoft Windows SMS Router Service.
Local System
Net.Tcp Port Sharing Service
Local Service
Start
Stop
Pause
Resume
Restart
All Tasks
Refresh
Properties
Help


User:
jenkins_admin
Password:
Remember me on this computer
log in


Access Control
Security Realm
Delegate to servlet container
Jenkins' own user database
Allow users to sign up
LDAP
Unix user/group database


Jenkins' own user database
Allow users to sign up
User:
Password:
Remember me on this computer
log in
Create an account if you are not a member yet.


LDAP
Server
Server
root DN
Allow blank rootDN
User search base
User search filter
uid={0}
Group search base
Group search filter
Group membership
Parse user attribute for list of LDAP groups
Search for LDAP groups containing user
Manager DN
Manager Password
Display Name LDAP attribute
displayname
Email Address LDAP attribute
mail
Delete

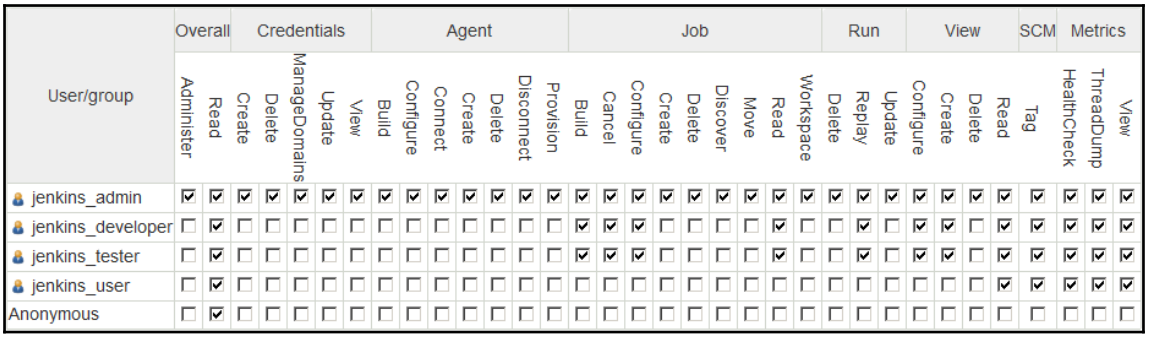


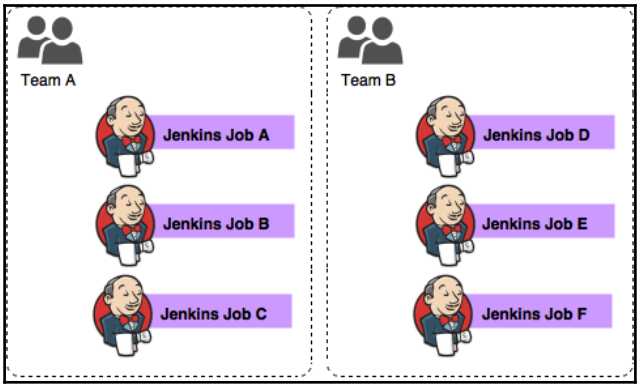
	User Id	Name	Last Commit Activity ↑	On
	nikhilpathania	nikhilpathania	1 mo 1 day	nikhilpathania » hello-world-example » temp
	jenkins_admin	nikhil pathania	N/A	

Stores scoped to User: nikhil pathania
P
Store ↓
Domains
User: nikhil pathania
(global)
blueocean-git-domain
blueocean-github-domain
Stores from parent
P
Store ↓
Domains
Jenkins
(global)
api.github.com

User/group
Overall
Credentials
Agent
Job
Run
View
SCM
Metrics
Administer
Read
Create
Delete
ManageDomains
Update
View
Build
Configure
Connect
Create
Delete
Disconnect
Provision
Build
Cancel
Configure
Create
Delete
Discover
Move
Read
Workspace
Delete
Replay
Update
Configure
Create
Delete
Read
Tag
HealthCheck
ThreadDump
View
Anonymous
User/group to add:
Add

User/group
Overall
Credentials
Agent
Job
Run
View
SCM
Metrics
Anonymous
jenkins_admin
jenkins_developer
jenkins_tester
jenkins_user

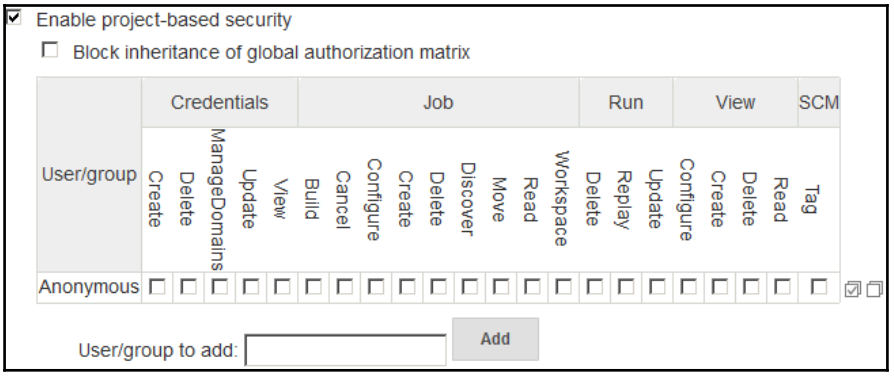

User/group
Overall
Credentials
Agent
Job
Run
View
SCM
Metrics
jenkins_admin
jenkins_developer
jenkins_tester
jenkins_user
Anonymous



User/group	Overall	Credentials					Agent							Job										Run			View				SCM	Metrics		
	Administer	Read	Create	Delete	ManageDomains	Update	View	Build	Configure	Connect	Create	Delete	Disconnect	Provision	Build	Cancel	Configure	Create	Delete	Discover	Move	Read	Workspace	Delete	Replay	Update	Configure	Create	Delete	Read	Tag	HealthCheck	ThreadDump	View
Anonymous	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

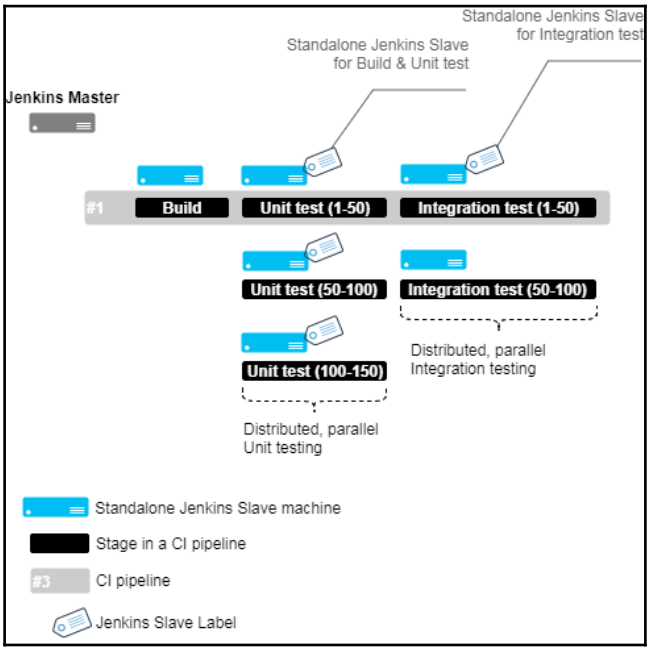
User/group to add: Add

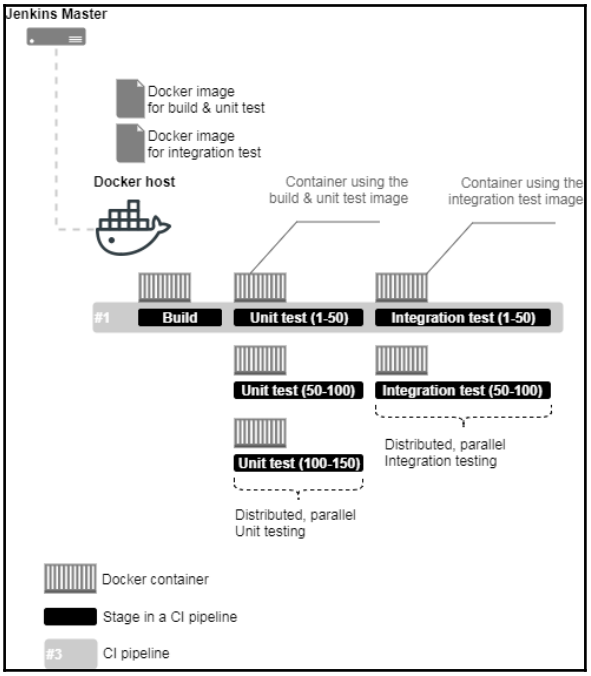
User/group	Overall	Credentials					Agent							Job										Run			View				SCM	Metrics		
	Administer	Read	Create	Delete	ManageDomains	Update	View	Build	Configure	Connect	Create	Delete	Disconnect	Provision	Build	Cancel	Configure	Create	Delete	Discover	Move	Read	Workspace	Delete	Replay	Update	Configure	Create	Delete	Read	Tag	HealthCheck	ThreadDump	View
Anonymous	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
jenkins_admin	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

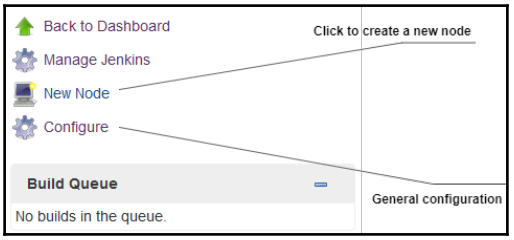


User/group	Credentials					Job									Run			View				SCM
	Create	Delete	ManageDomains	Update	View	Build	Cancel	Configure	Create	Delete	Discover	Move	Read	Workspace	Delete	Replay	Update	Configure	Create	Delete	Read	Tag
Anonymous	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
jenkins_developer	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☑	☑	☑	☑	☑

Chapter 5: Distributed Builds

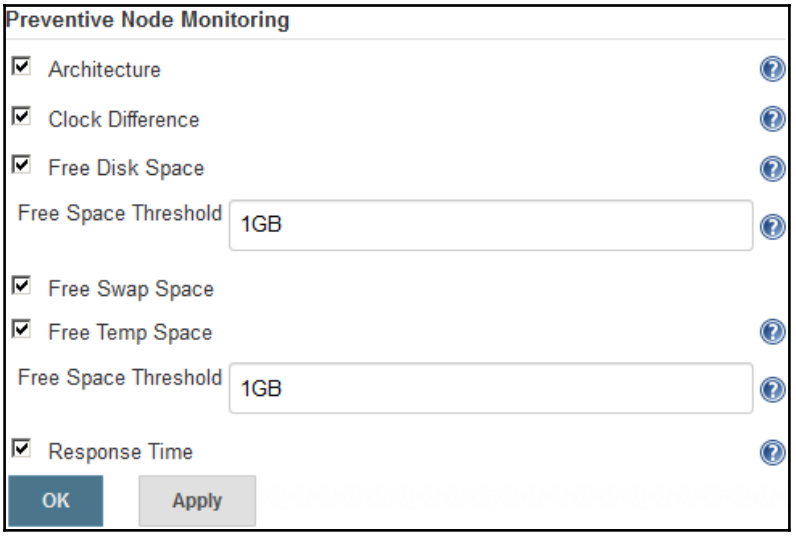


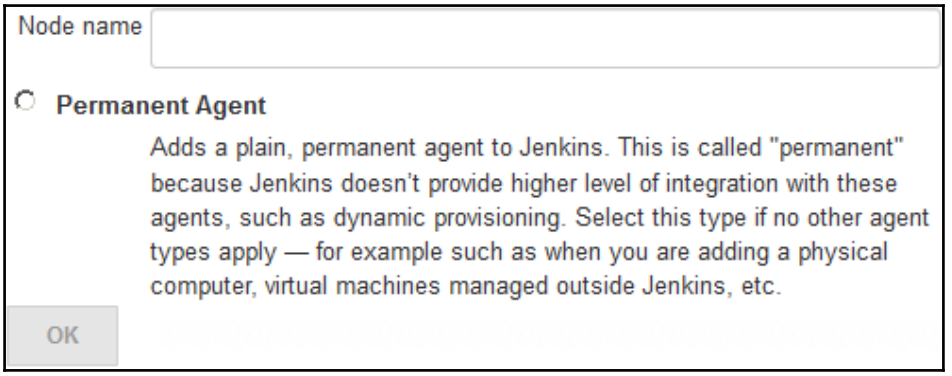


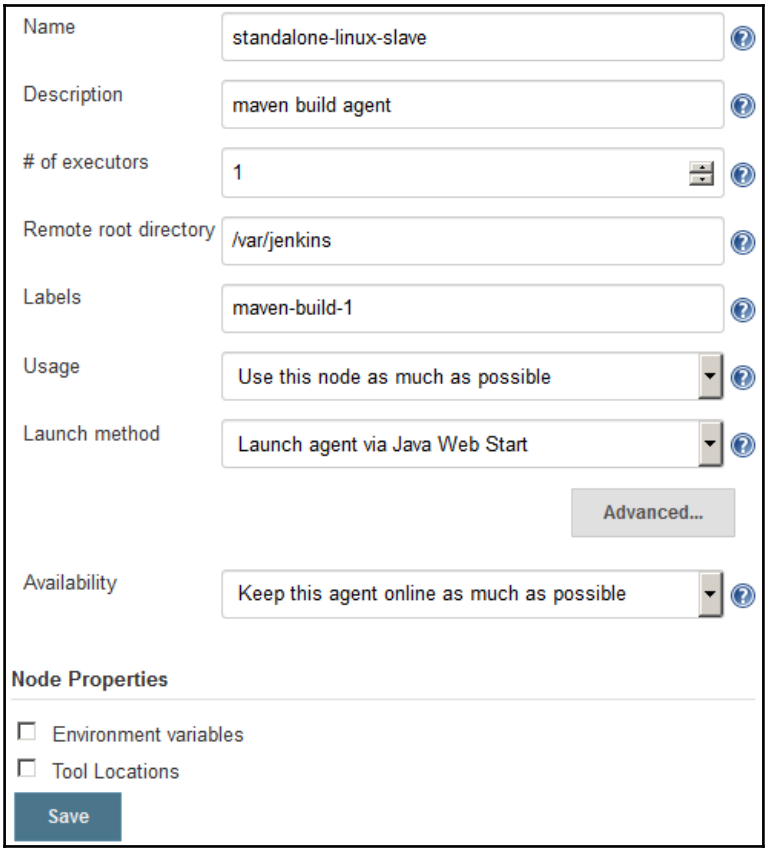


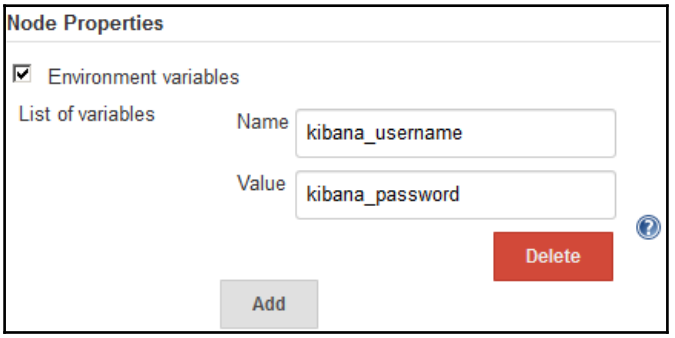
S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	master	Linux (amd64)	In sync	5.19 GB	0 B	5.19 GB	0ms
Data obtained		15 min	15 min	15 min	15 min	15 min	15 min

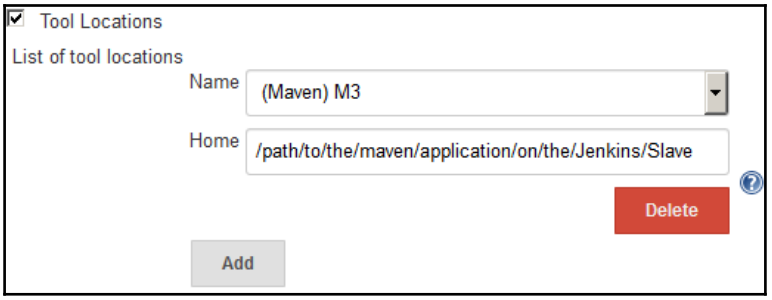
Refresh status

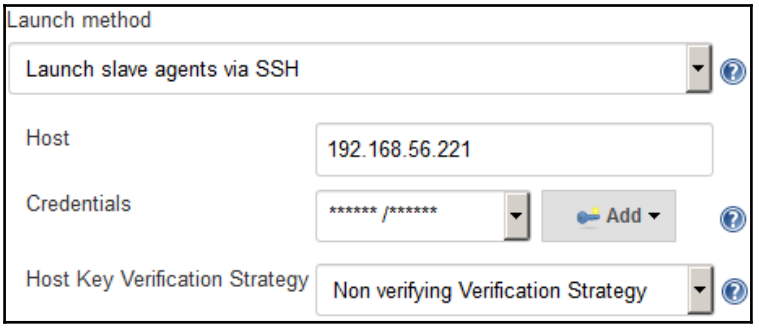

Preventive Node Monitoring
Architecture
Clock Difference
Free Disk Space
Free Space Threshold
1GB
Free Swap Space
Free Temp Space
Free Space Threshold
1GB
Response Time
OK
Apply

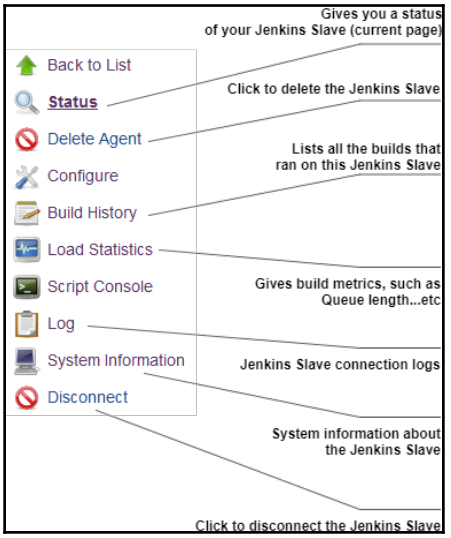

Node name
Permanent Agent
Adds a plain, permanent agent to Jenkins. This is called "permanent" because Jenkins doesn't provide higher level of integration with these agents, such as dynamic provisioning. Select this type if no other agent types apply — for example such as when you are adding a physical computer, virtual machines managed outside Jenkins, etc.
OK


Name
standalone-linux-slave
Description
maven build agent
# of executors
1
Remote root directory
/var/jenkins
Labels
maven-build-1
Usage
Use this node as much as possible
Launch method
Launch agent via Java Web Start
Advanced...
Availability
Keep this agent online as much as possible
Node Properties
Environment variables
Tool Locations
Save


Node Properties
Environment variables
List of variables
Name
kibana_username
Value
kibana_password
Delete
Add


Tool Locations
List of tool locations
Name
(Maven) M3
Home
/path/to/the/maven/application/on/the/Jenkins/Slave
Delete
Add


Launch method
Launch slave agents via SSH
Host
192.168.56.221
Credentials
****** /******
Add
Host Key Verification Strategy
Non verifying Verification Strategy


Back to List
Status
Delete Agent
Configure
Build History
Load Statistics
Script Console
Log
System Information
Disconnect
Gives you a status of your Jenkins Slave (current page)
Click to delete the Jenkins Slave
Lists all the builds that ran on this Jenkins Slave
Gives build metrics, such as Queue length...etc
Jenkins Slave connection logs
System information about the Jenkins Slave
Click to disconnect the Jenkins Slave

```
[SSH] Starting slave process: cd "/var/jenkins" && java  -jar slave.jar
<===[JENKINS REMOTING CAPACITY]===>channel started
Slave.jar version: 3.7
This is a Unix agent
Evacuated stdout
Agent successfully connected and online
```

System Properties

Name ↓	Value
awt.toolkit	sun.awt.X11.XToolkit
file.encoding	UTF-8
file.encoding.pkg	sun.io
file.separator	/
java.awt.graphicsenv	sun.awt.X11GraphicsEnvironment

Environment Variables

Name ↓	Value
_	/usr/bin/java
HOME	/home/nikhil
LANG	en_US.UTF-8
LOGNAME	nikhil

Agent standalone-linux-slave (maven build agent)

Mark this node temporarily offline

Labels

maven-build-1

Projects tied to standalone-linux-slave

None

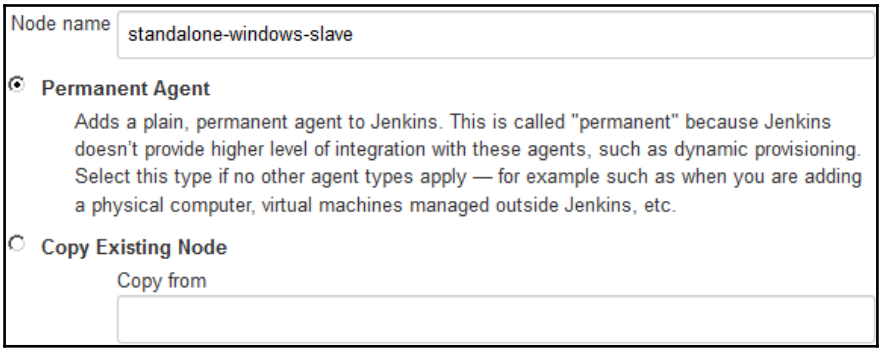
Taking standalone-linux-slave Offline

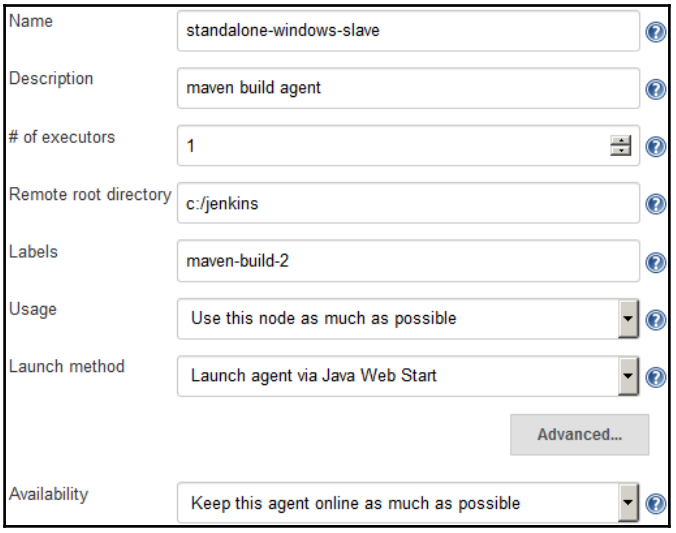
You can optionally explain why you are taking this node offline, so that others can see why:

maintenance activity

Mark this node temporarily offline

Agent standalone-linux-slave (maven build agent)
Bring this node back online
Update offline reason
Oct 15, 2017 11:57:00 PM
Disconnected by jenkins_admin : maintenance activity

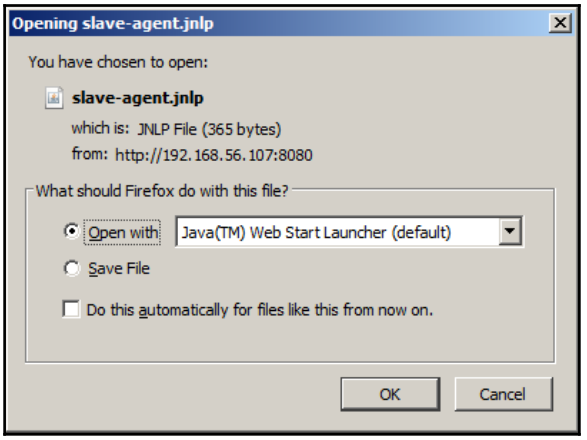

Node name
standalone-windows-slave
Permanent Agent
Adds a plain, permanent agent to Jenkins. This is called "permanent" because Jenkins doesn't provide higher level of integration with these agents, such as dynamic provisioning. Select this type if no other agent types apply — for example such as when you are adding a physical computer, virtual machines managed outside Jenkins, etc.
Copy Existing Node
Copy from

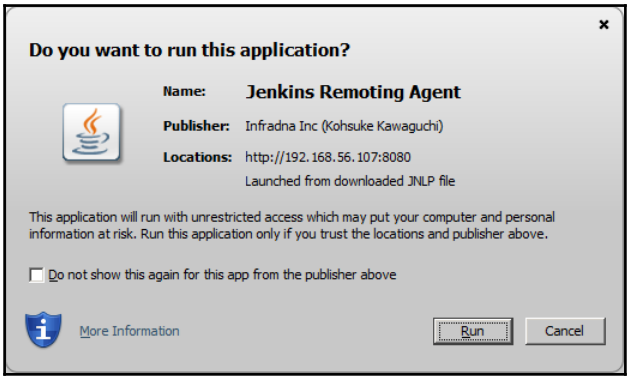

Name
standalone-windows-slave
Description
maven build agent
# of executors
1
Remote root directory
c:/jenkins
Labels
maven-build-2
Usage
Use this node as much as possible
Launch method
Launch agent via Java Web Start
Advanced...
Availability
Keep this agent online as much as possible

Connect agent to Jenkins one of these ways:

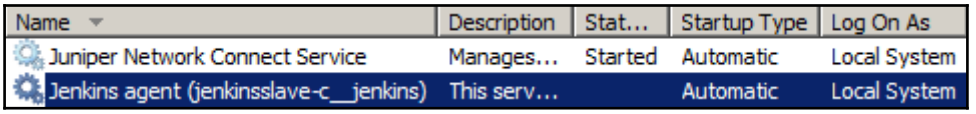
- Launch Launch agent from browser
- Run from agent command line:

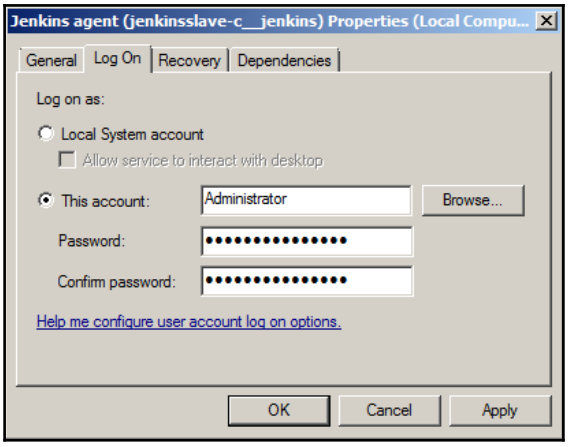
```
java -jar slave.jar -jnlpUrl http://192.168.56.107:8080
/computer/standalone-windows-slave/slave-agent.jnlp -secret
26dc2653a211e735b1d3ca7612c967f6335cb6d78149e4e2600707baa9c
82e93
```

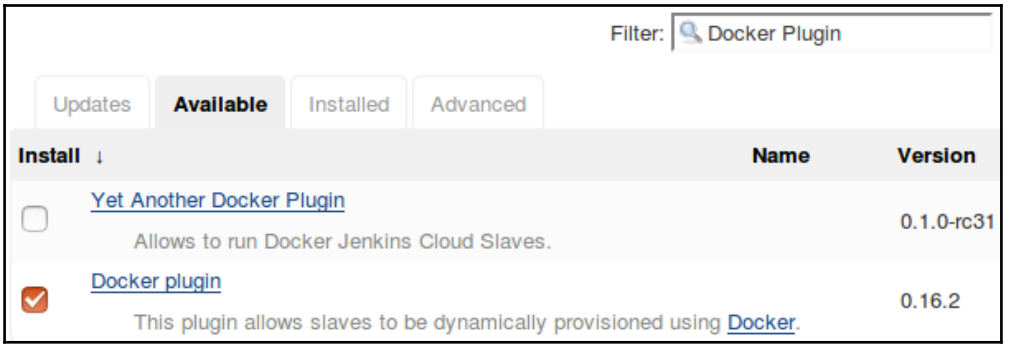


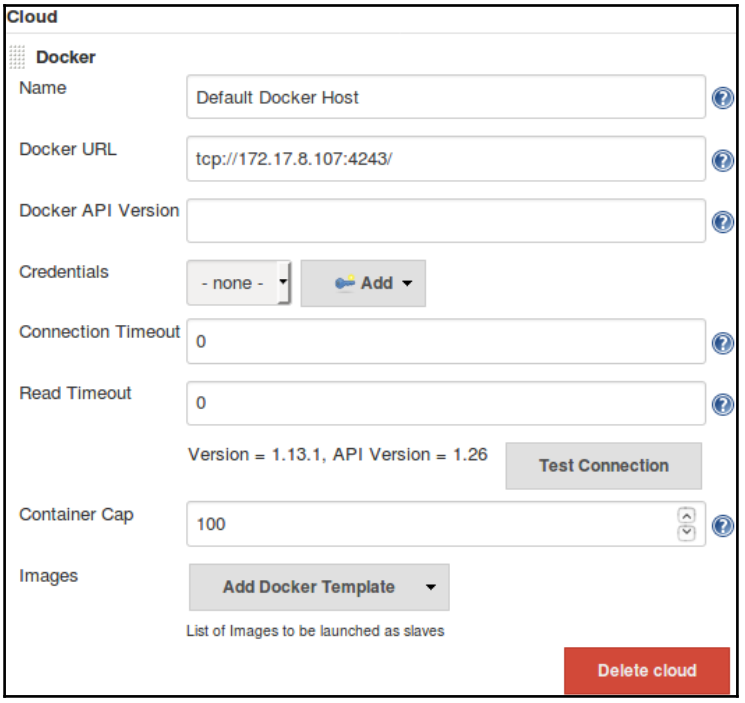


Jenkins slave agent
File
Connected


Name
Description
Stat...
Startup Type
Log On As
Juniper Network Connect Service
Manages...
Started
Automatic
Local System
Jenkins agent (jenkinsslave-c__jenkins)
This serv...
Automatic
Local System


Jenkins agent (jenkinsslave-c__jenkins) Properties (Local Compu...
General
Log On
Recovery
Dependencies
Log on as:
Local System account
Allow service to interact with desktop
This account:
Administrator
Browse...
Password:
Confirm password:
Help me configure user account log on options.
OK
Cancel
Apply


Filter:
Docker Plugin
Updates
Available
Installed
Advanced
Install
Name
Version
Yet Another Docker Plugin
Allows to run Docker Jenkins Cloud Slaves.
0.1.0-rc31
Docker plugin
This plugin allows slaves to be dynamically provisioned using Docker.
0.16.2

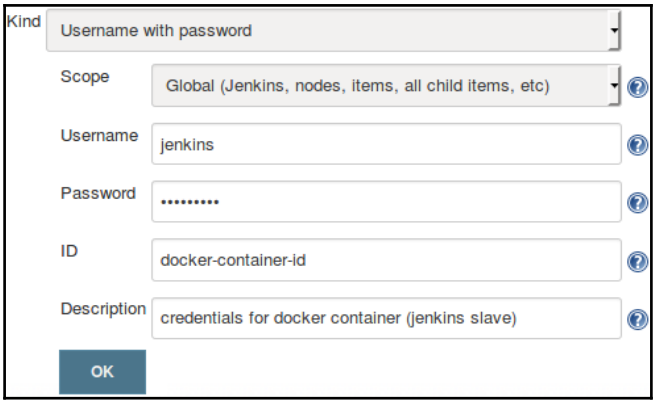


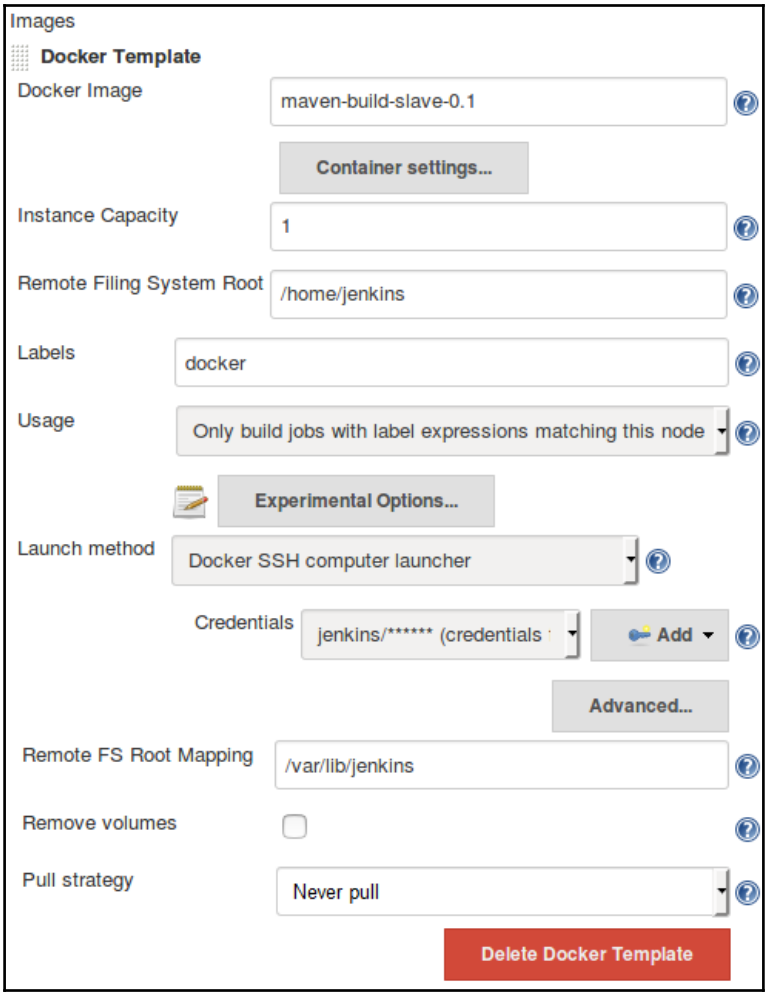

```
ubuntu@node4:~$ sudo docker images
REPOSITORY    TAG       IMAGE ID        CREATED       SIZE
ubuntu        latest    f49eec89601e    3 weeks ago   129 MB
hello-world   latest    48b5124b2768    4 weeks ago   1.84 kB
ubuntu@node4:~$
```

```
ubuntu@node4:~$ sudo docker run -i -t ubuntu /bin/bash
root@81a5d12f6c4a:/# adduser jenkins
Adding user `jenkins' ...
Adding new group `jenkins' (1000) ...
Adding new user `jenkins' (1000) with group `jenkins' ...
Creating home directory `/home/jenkins' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for jenkins
Enter the new value, or press ENTER for the default
        Full Name []: Nikhil Pathania
        Room Number []: 208
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
root@81a5d12f6c4a:/#
```

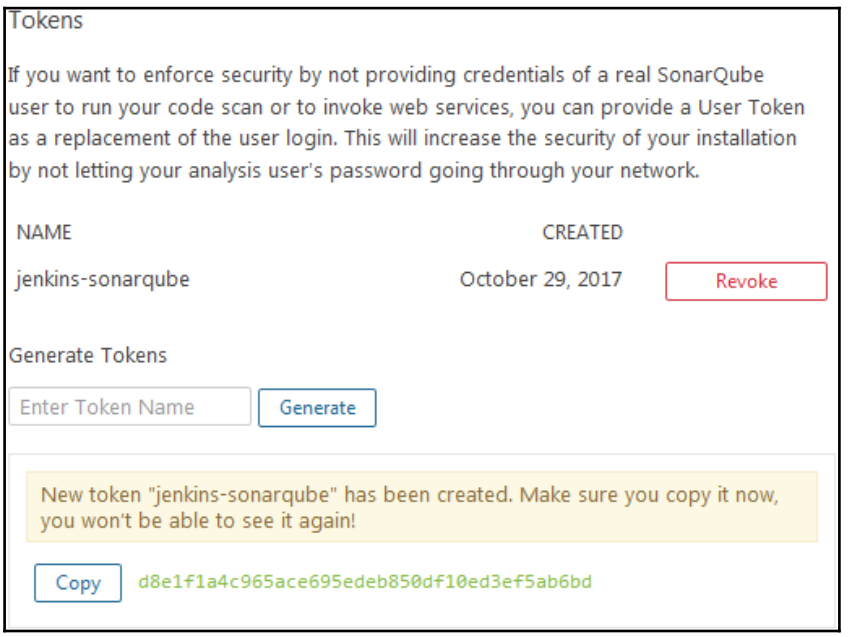
```
ubuntu@node4:~$ sudo docker commit 81a5d12f6c4a maven-build-slave-0.1
sha256:317fb6ec990f235fc2f2f42beab6f73e44fb4bd2d0bba0479858386c569a7c7d
ubuntu@node4:~$
```

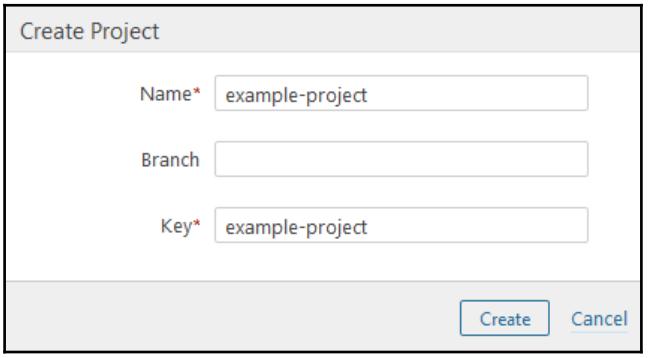
```
ubuntu@node4:~$ sudo docker images
REPOSITORY            TAG     IMAGE ID      CREATED             SIZE
maven-build-slave-0.1 latest  317fb6ec990f  About a minute ago  298 MB
ubuntu                latest  f49eec89601e  3 weeks ago         129 MB
hello-world           latest  48b5124b2768  4 weeks ago         1.84 kB
ubuntu@node4:~$
```

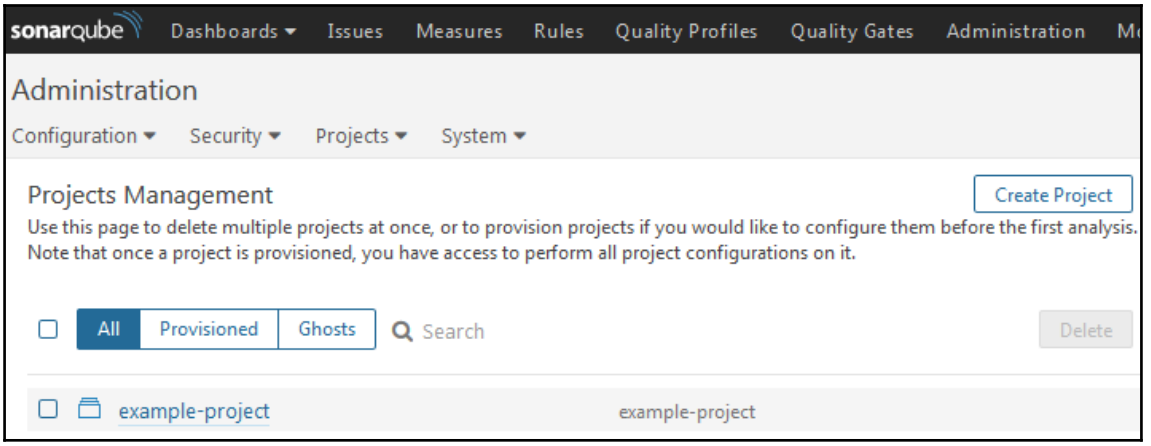


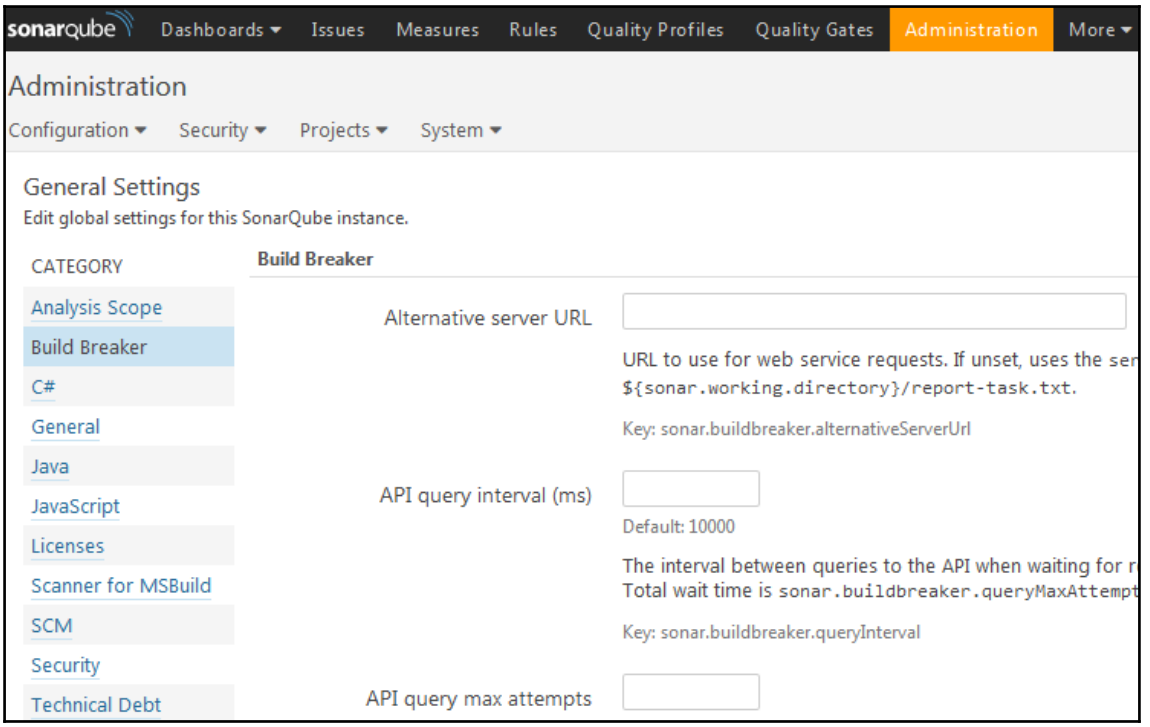

Images
Docker Template
Docker Image
maven-build-slave-0.1
Container settings...
Instance Capacity
1
Remote Filing System Root
/home/jenkins
Labels
docker
Usage
Only build jobs with label expressions matching this node
Experimental Options...
Launch method
Docker SSH computer launcher
Credentials
jenkins/****** (credentials
Add
Advanced...
Remote FS Root Mapping
/var/lib/jenkins
Remove volumes
Pull strategy
Never pull
Delete Docker Template

Chapter 6: Installing SonarQube and Artifactory

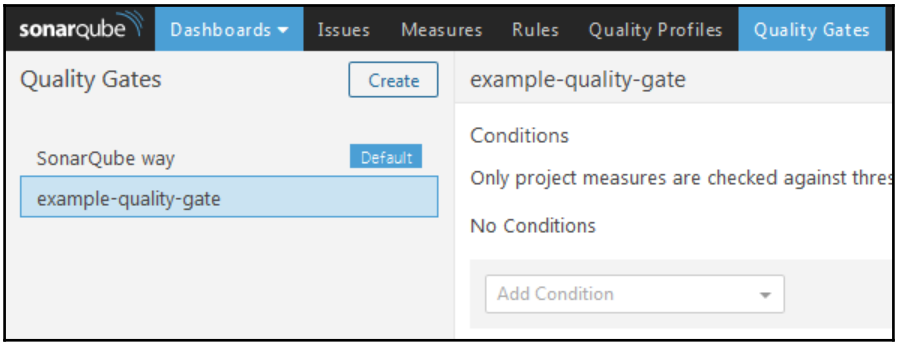


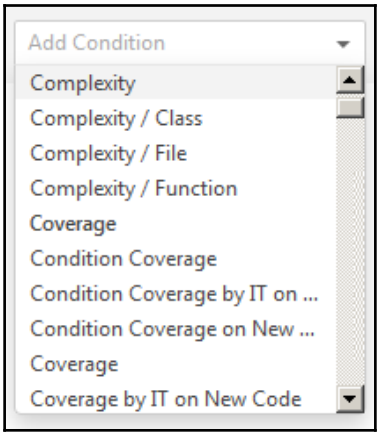


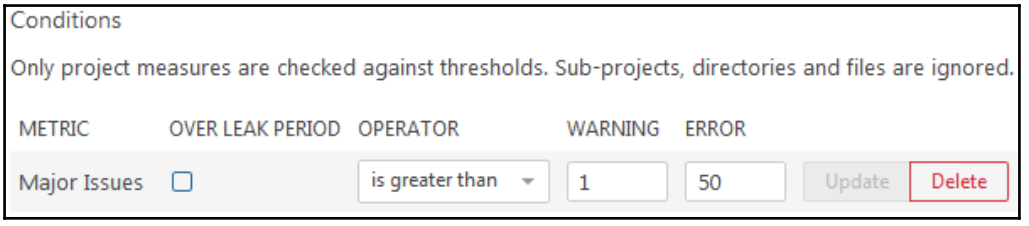

sonarqube
Dashboards
Issues
Measures
Rules
Quality Profiles
Quality Gates
Administration
Administration
Configuration
Security
Projects
System
Projects Management
Create Project
Use this page to delete multiple projects at once, or to provision projects if you would like to configure them before the first analysis.
Note that once a project is provisioned, you have access to perform all project configurations on it.
All
Provisioned
Ghosts
Search
Delete
example-project
example-project

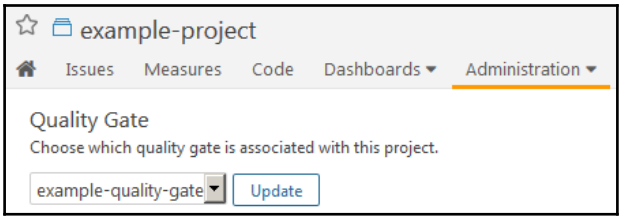

sonarqube
Dashboards
Issues
Measures
Rules
Quality Profiles
Quality Gates
Administration
More
Administration
Configuration
Security
Projects
System
General Settings
Edit global settings for this SonarQube instance.
CATEGORY
Analysis Scope
Build Breaker
C#
General
Java
JavaScript
Licenses
Scanner for MSBuild
SCM
Security
Technical Debt
Build Breaker
Alternative server URL
URL to use for web service requests. If unset, uses the ser
${sonar.working.directory}/report-task.txt.
Key: sonar.buildbreaker.alternativeServerUrl
API query interval (ms)
Default: 10000
The interval between queries to the API when waiting for r
Total wait time is sonar.buildbreaker.queryMaxAttempt
Key: sonar.buildbreaker.queryInterval
API query max attempts

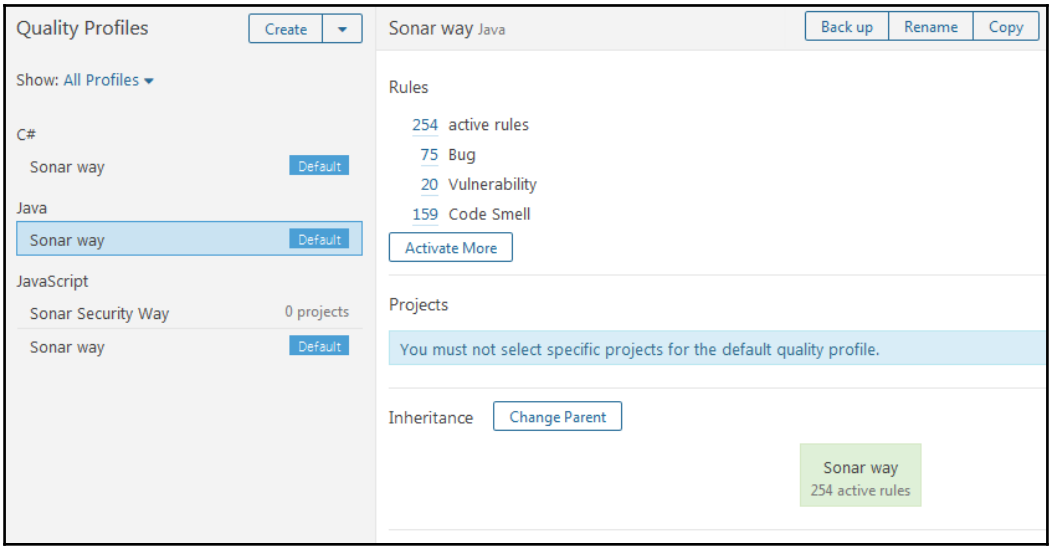
Create Quality Gate
Name *
example-quality-gate
Create
Cancel

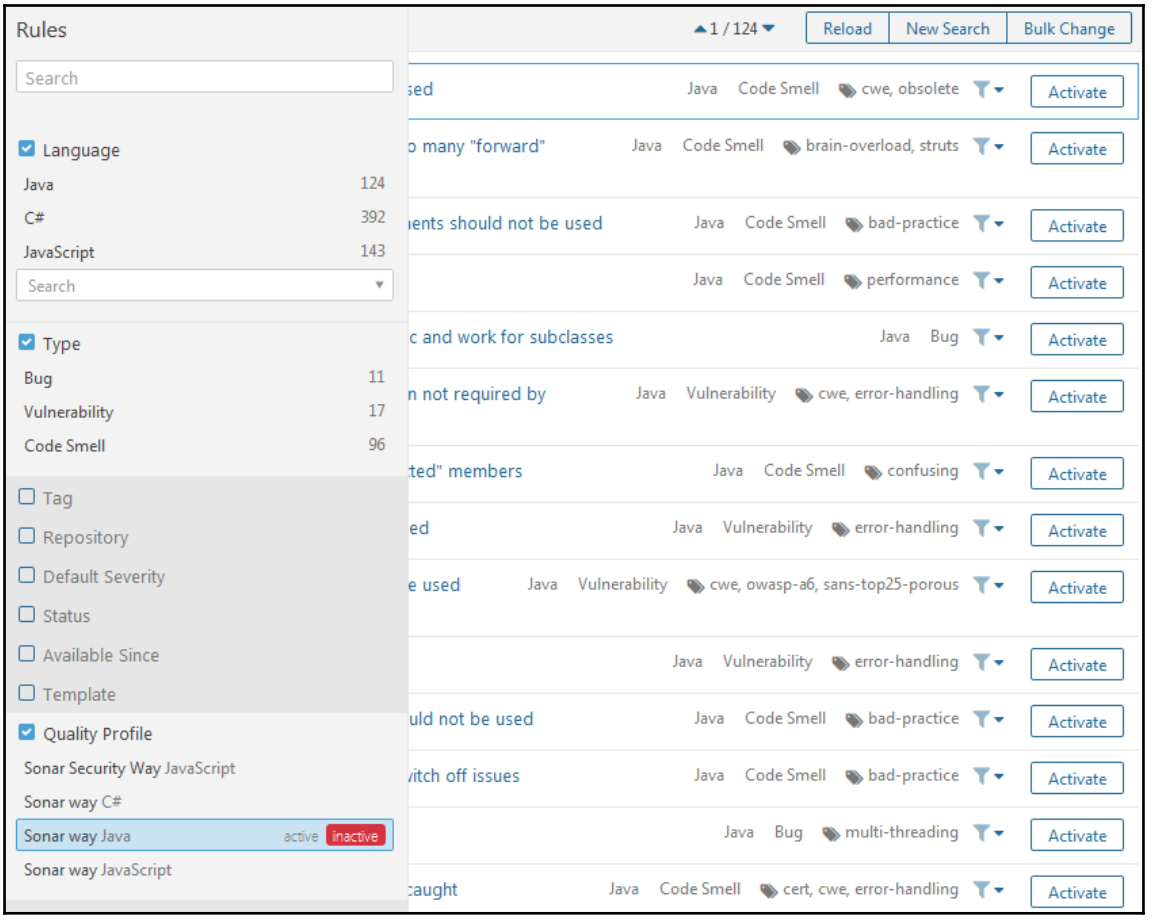

sonarqube
Dashboards
Issues
Measures
Rules
Quality Profiles
Quality Gates
Quality Gates
Create
SonarQube way
Default
example-quality-gate
example-quality-gate
Conditions
Only project measures are checked against thres
No Conditions
Add Condition

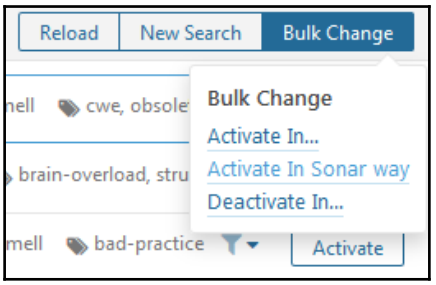

Add Condition
Complexity
Complexity / Class
Complexity / File
Complexity / Function
Coverage
Condition Coverage
Condition Coverage by IT on ...
Condition Coverage on New ...
Coverage
Coverage by IT on New Code

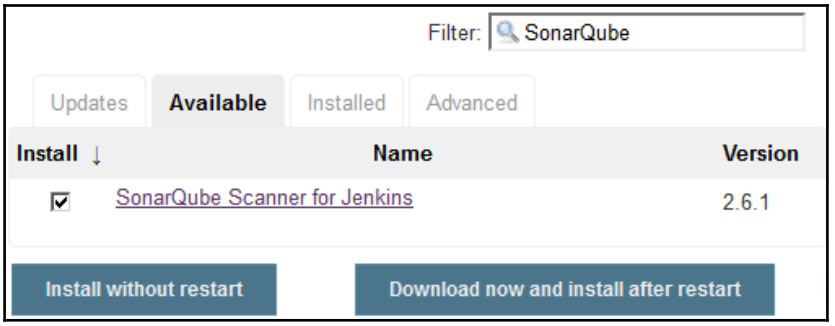

Conditions
Only project measures are checked against thresholds. Sub-projects, directories and files are ignored.
METRIC
OVER LEAK PERIOD
OPERATOR
WARNING
ERROR
Major Issues
is greater than
1
50
Update
Delete

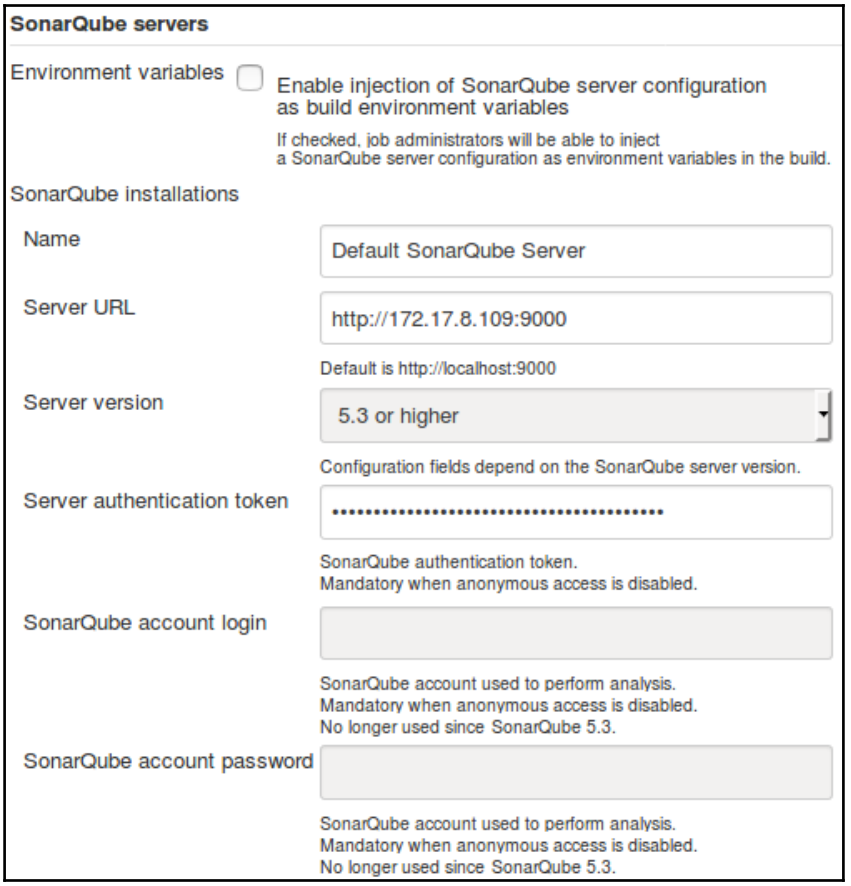

example-project
Issues
Measures
Code
Dashboards
Administration
Quality Gate
Choose which quality gate is associated with this project.
example-quality-gate
Update

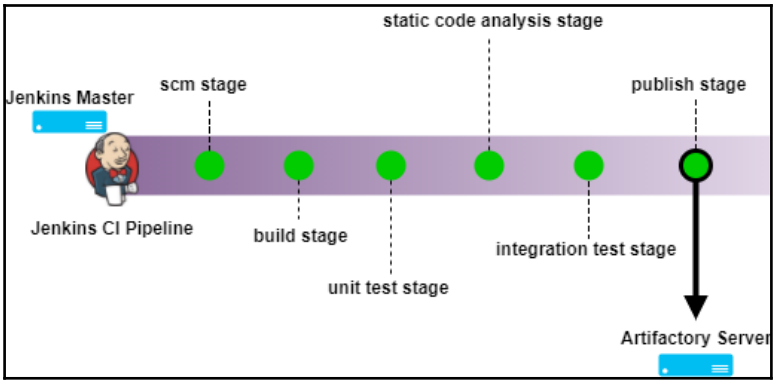

Quality Profiles
Create
Show: All Profiles
C#
Sonar way
Default
Java
Sonar way
Default
JavaScript
Sonar Security Way
0 projects
Sonar way
Default
Sonar way Java
Back up
Rename
Copy
Rules
254 active rules
75 Bug
20 Vulnerability
159 Code Smell
Activate More
Projects
You must not select specific projects for the default quality profile.
Inheritance
Change Parent
Sonar way
254 active rules

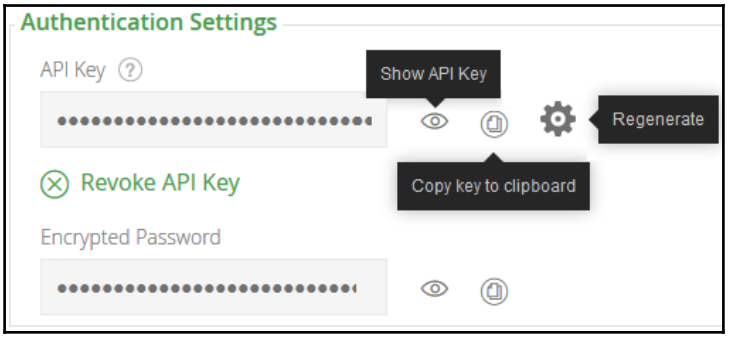

Rules
Search
Language
Java 124
C# 392
JavaScript 143
Search
Type
Bug 11
Vulnerability 17
Code Smell 96
Tag
Repository
Default Severity
Status
Available Since
Template
Quality Profile
Sonar Security Way JavaScript
Sonar way C#
Sonar way Java active inactive
Sonar way JavaScript
1 / 124
Reload
New Search
Bulk Change
Activate

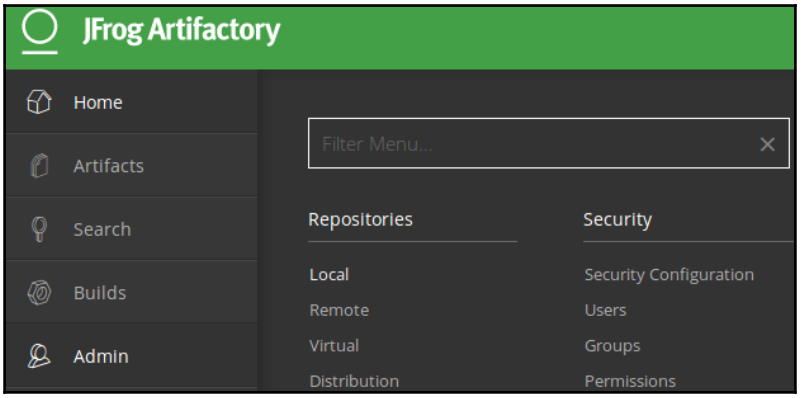

Reload
New Search
Bulk Change
Bulk Change
Activate In...
Activate In Sonar way
Deactivate In...
bad-practice
Activate

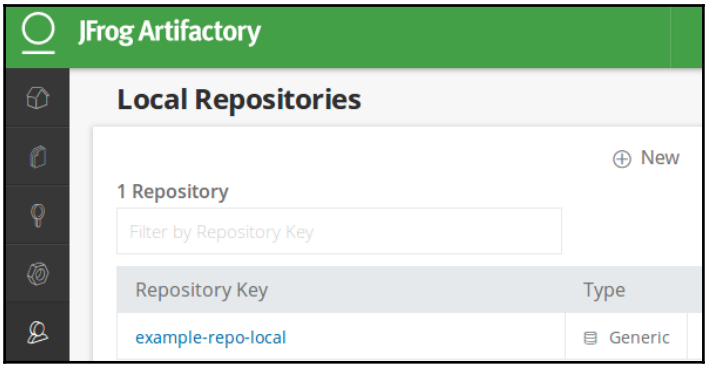

Filter: SonarQube
Updates
Available
Installed
Advanced
Install
Name
Version
SonarQube Scanner for Jenkins
2.6.1
Install without restart
Download now and install after restart

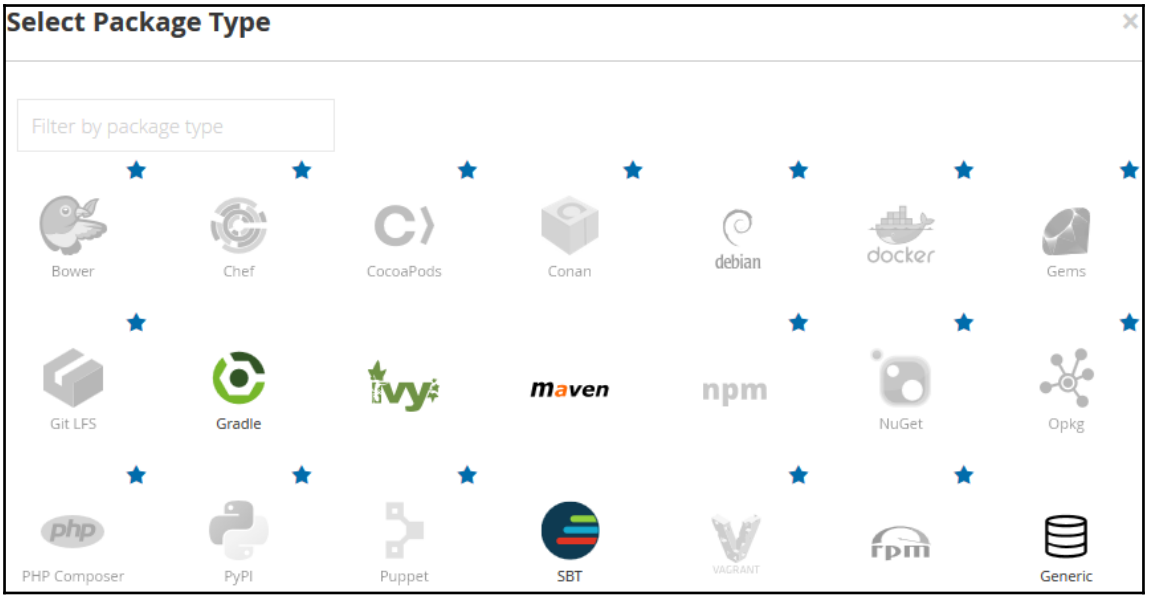

SonarQube servers
Environment variables
Enable injection of SonarQube server configuration as build environment variables
If checked, job administrators will be able to inject a SonarQube server configuration as environment variables in the build.
SonarQube installations
Name
Default SonarQube Server
Server URL
http://172.17.8.109:9000
Default is http://localhost:9000
Server version
5.3 or higher
Configuration fields depend on the SonarQube server version.
Server authentication token
SonarQube authentication token.
Mandatory when anonymous access is disabled.
SonarQube account login
SonarQube account used to perform analysis.
Mandatory when anonymous access is disabled.
No longer used since SonarQube 5.3.
SonarQube account password
SonarQube account used to perform analysis.
Mandatory when anonymous access is disabled.
No longer used since SonarQube 5.3.

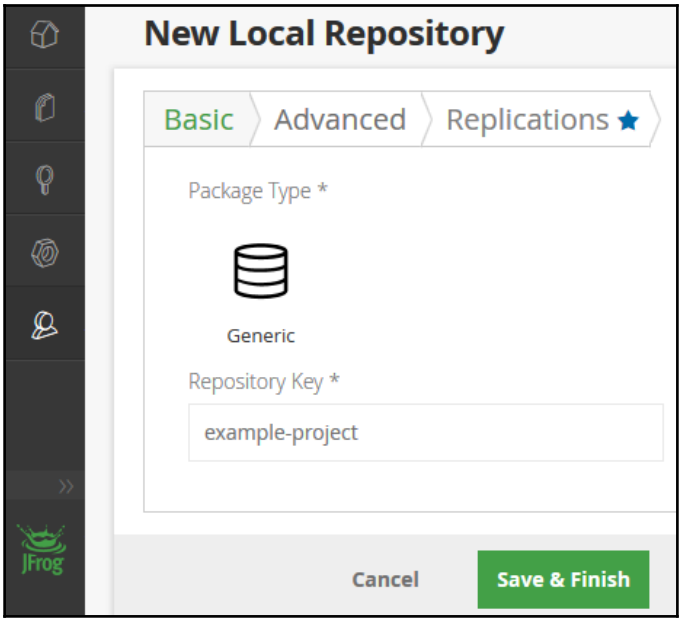

static code analysis stage
Jenkins Master
scm stage
publish stage
Jenkins CI Pipeline
build stage
integration test stage
unit test stage
Artifactory Server

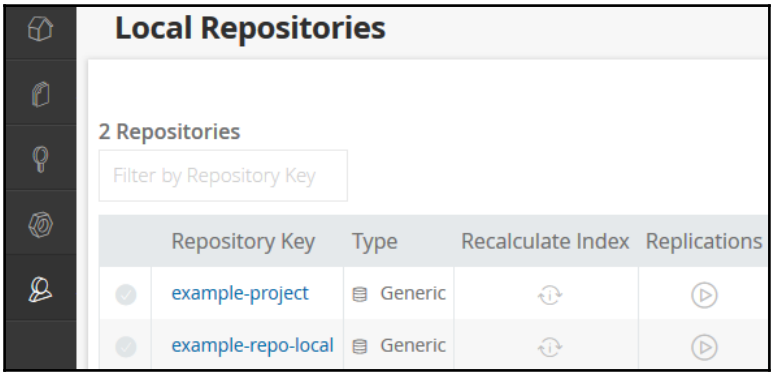

Authentication Settings
API Key
Show API Key
Regenerate
Revoke API Key
Copy key to clipboard
Encrypted Password

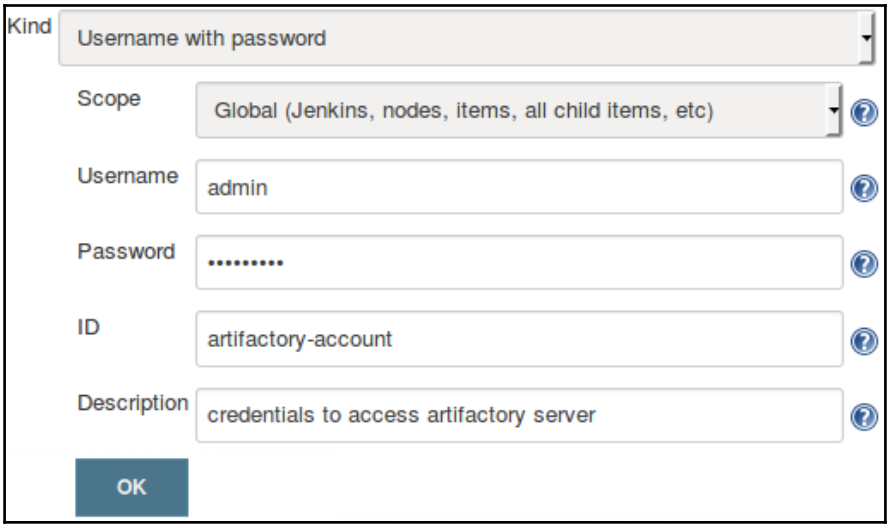

JFrog Artifactory
Home
Artifacts
Search
Builds
Admin
Filter Menu...
Repositories
Local
Remote
Virtual
Distribution
Security
Security Configuration
Users
Groups
Permissions

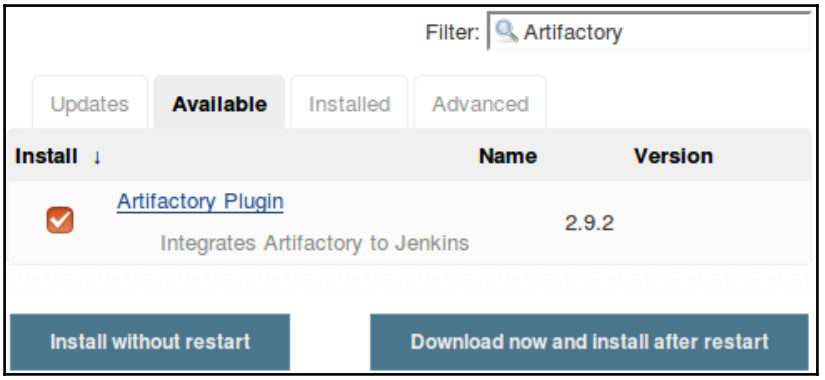

JFrog Artifactory
Local Repositories
New
1 Repository
Filter by Repository Key
Repository Key
Type
example-repo-local
Generic

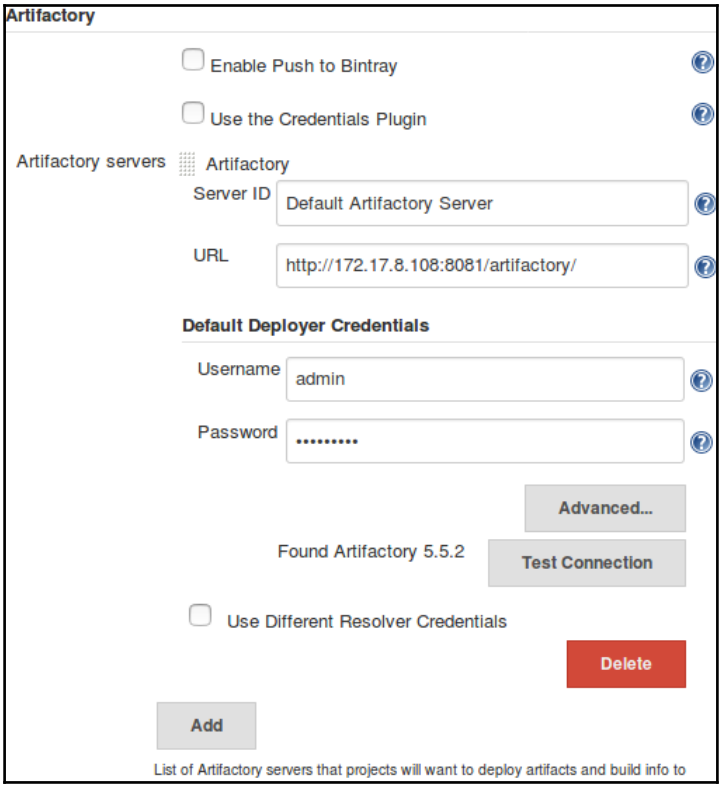

Select Package Type
Filter by package type
Bower
Chef
CocoaPods
Conan
debian
docker
Gems
Git LFS
Gradle
ivy
maven
npm
NuGet
Opkg
PHP Composer
PyPI
Puppet
SBT
VAGRANT
rpm
Generic


New Local Repository
Basic
Advanced
Replications
Package Type *
Generic
Repository Key *
example-project
Cancel
Save & Finish
JFrog

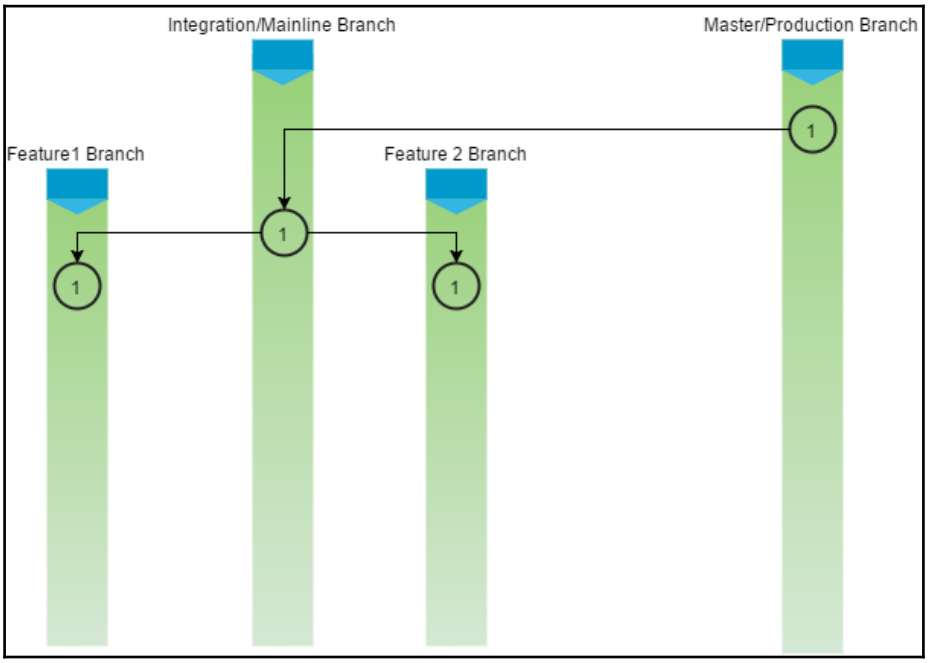

Local Repositories
2 Repositories
Filter by Repository Key
Repository Key
Type
Recalculate Index
Replications
example-project
Generic
example-repo-local
Generic

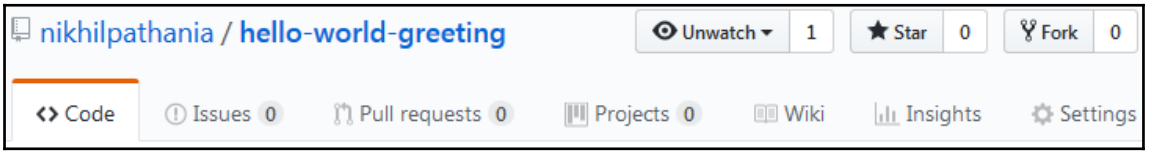

Kind
Username with password
Scope
Global (Jenkins, nodes, items, all child items, etc)
Username
admin
Password
••••••••••
ID
artifactory-account
Description
credentials to access artifactory server
OK

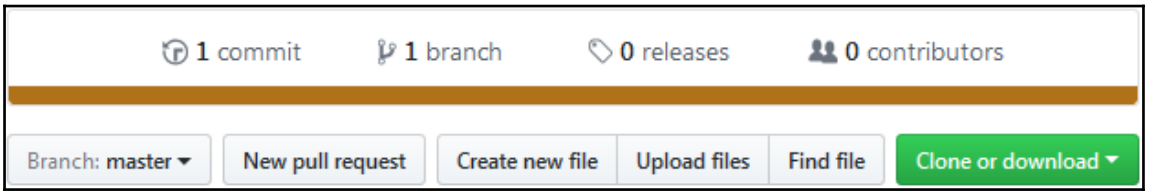

Filter:
Artifactory
Updates
Available
Installed
Advanced
Install
Name
Version
Artifactory Plugin
Integrates Artifactory to Jenkins
2.9.2
Install without restart
Download now and install after restart


Artifactory
Enable Push to Bintray
Use the Credentials Plugin
Artifactory servers
Artifactory
Server ID
Default Artifactory Server
URL
http://172.17.8.108:8081/artifactory/
Default Deployer Credentials
Username
admin
Password
Advanced...
Found Artifactory 5.5.2
Test Connection
Use Different Resolver Credentials
Delete
Add
List of Artifactory servers that projects will want to deploy artifacts and build info to

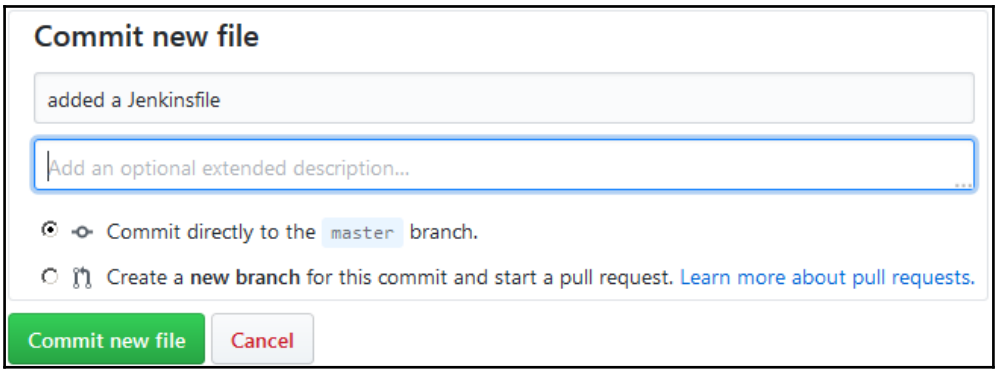
Chapter 7: Continuous Integration Using Jenkins

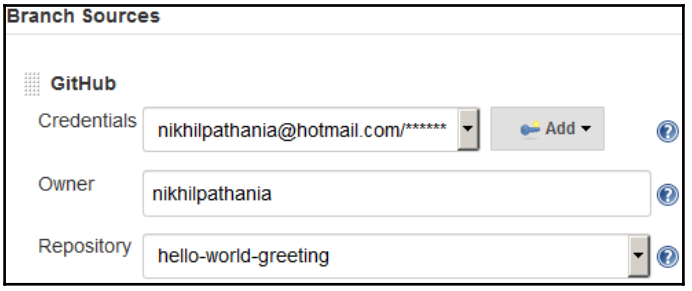




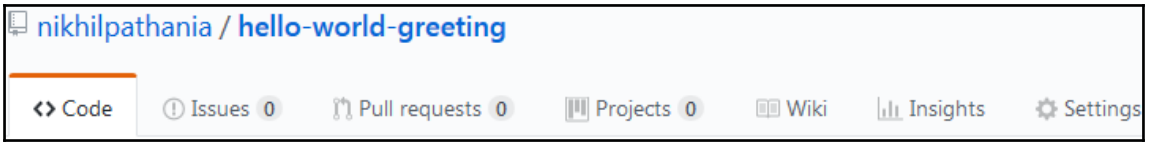


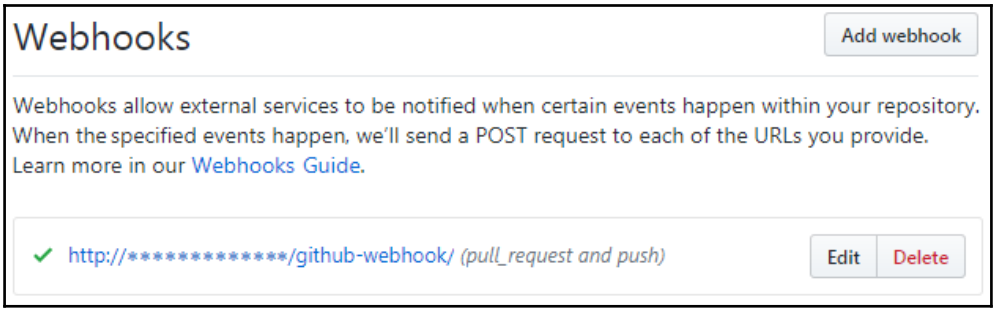
Code
Issues 0
Pull requests 0
Projects 0
hello-world-greeting /
Jenkinsfile
or cancel

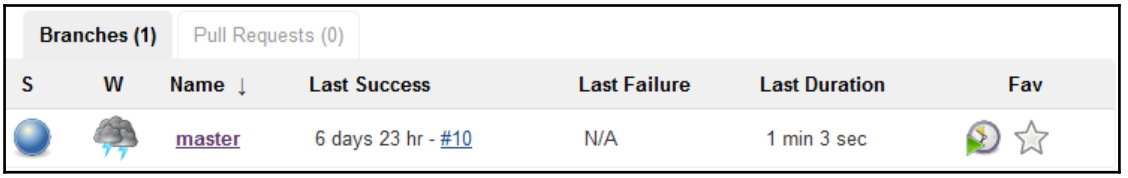

Commit new file
added a Jenkinsfile
Add an optional extended description...
Commit directly to the master branch.
Create a new branch for this commit and start a pull request. Learn more about pull requests.
Commit new file
Cancel

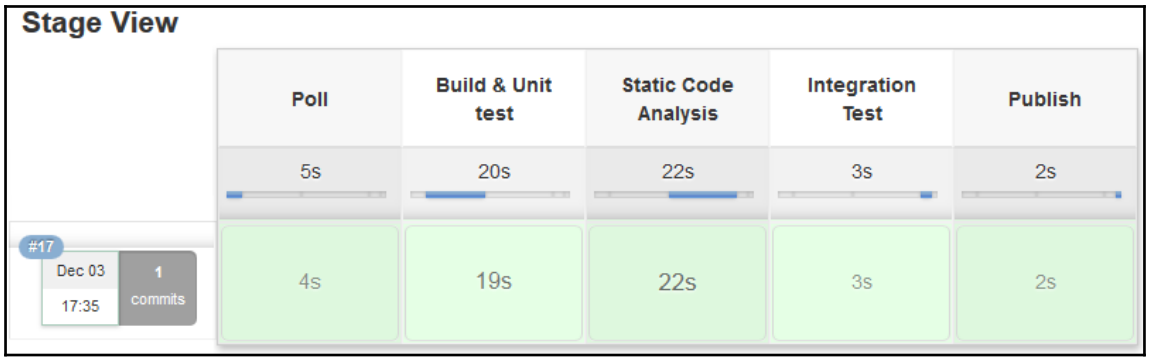

Branch Sources
GitHub
Credentials
nikhilpathania@hotmail.com/******
Add
Owner
nikhilpathania
Repository
hello-world-greeting

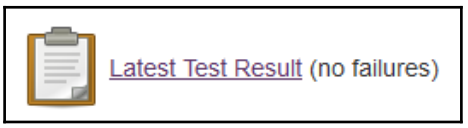
Build Configuration
Mode
by Jenkinsfile
Script Path
Jenkinsfile


nikhilpathania / hello-world-greeting
Code
Issues 0
Pull requests 0
Projects 0
Wiki
Insights
Settings


Webhooks
Add webhook
Webhooks allow external services to be notified when certain events happen within your repository. When the specified events happen, we'll send a POST request to each of the URLs you provide.
Learn more in our Webhooks Guide.
http://**********/github-webhook/ (pull_request and push)
Edit
Delete


Branches (1)
Pull Requests (0)
S
W
Name ↓
Last Success
Last Failure
Last Duration
Fav
master
6 days 23 hr - #10
N/A
1 min 3 sec


Stage View
Poll
Build & Unit test
Static Code Analysis
Integration Test
Publish
5s
20s
22s
3s
2s
#17
Dec 03
17:35
1 commits
4s
19s
22s
3s
2s


Latest Test Result (no failures)

Test Result : hello

0 failures (±0)

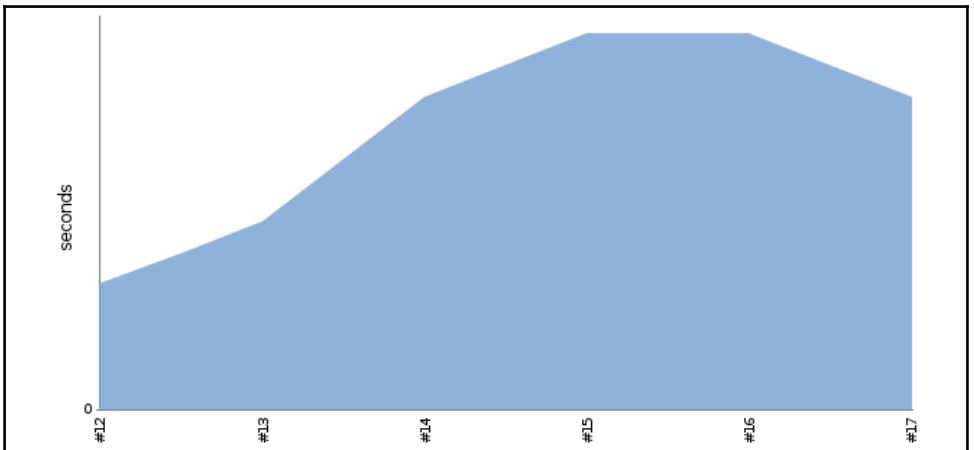
3 tests (±0)

Took 5 ms.

add description

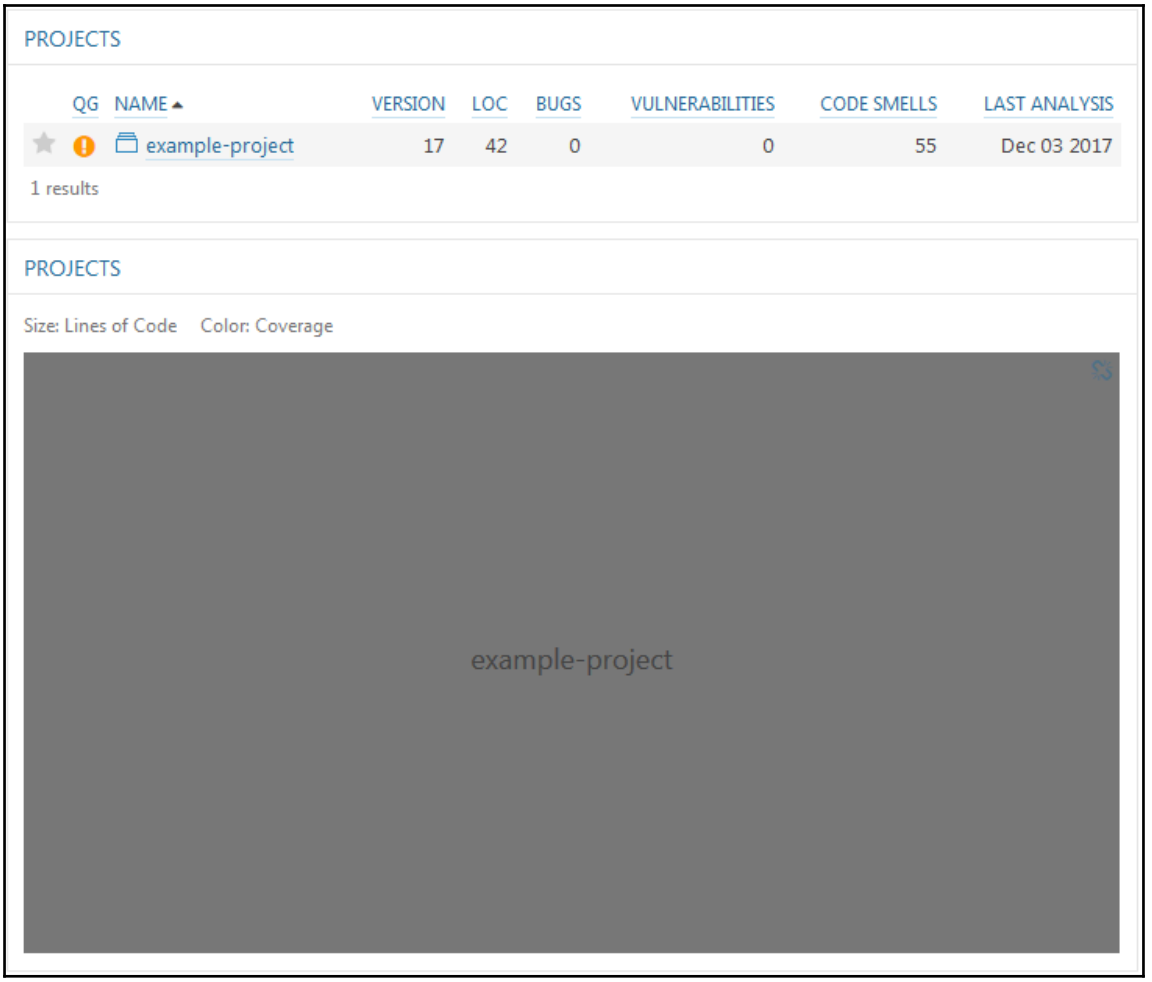
All Tests

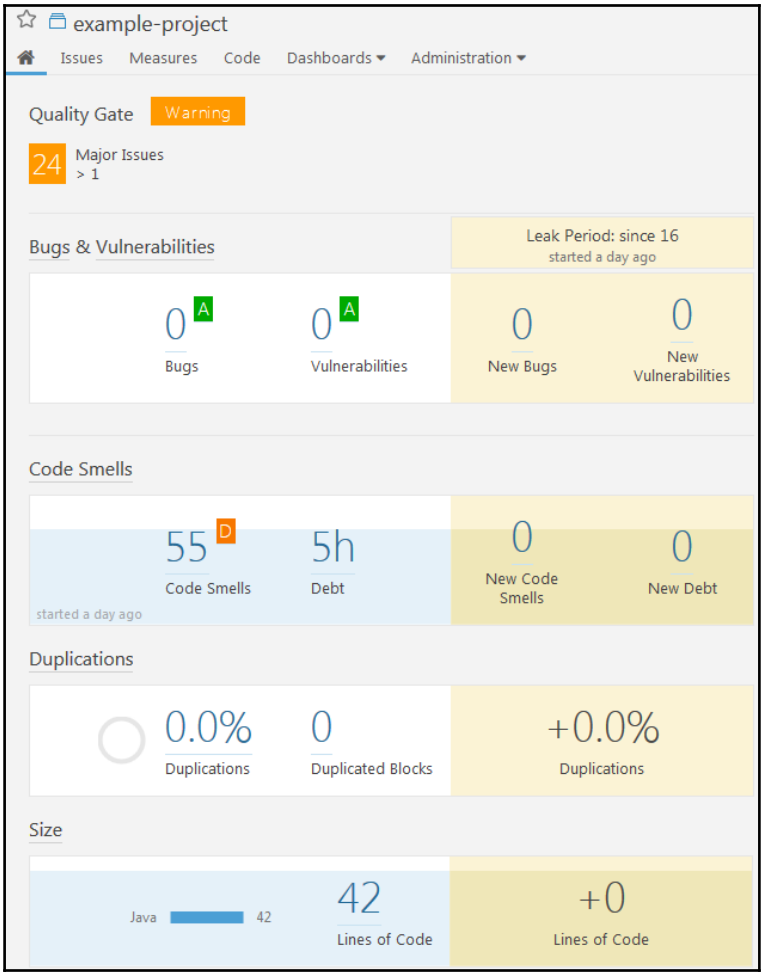
Class	Duration	Fail (diff)	Skip (diff)	Pass (diff)	Total (diff)
DateTimeTest	0 ms	0	0	1	1
GreetingMessageIT	11 ms	0	0	1	1
MessageTest	6 ms	0	0	1	1

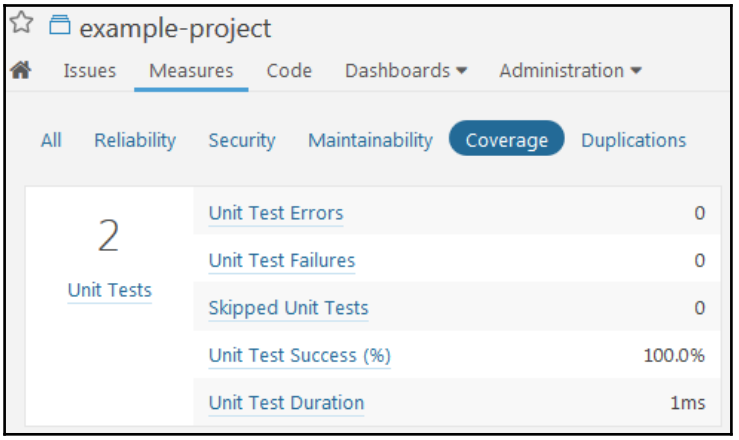


show count

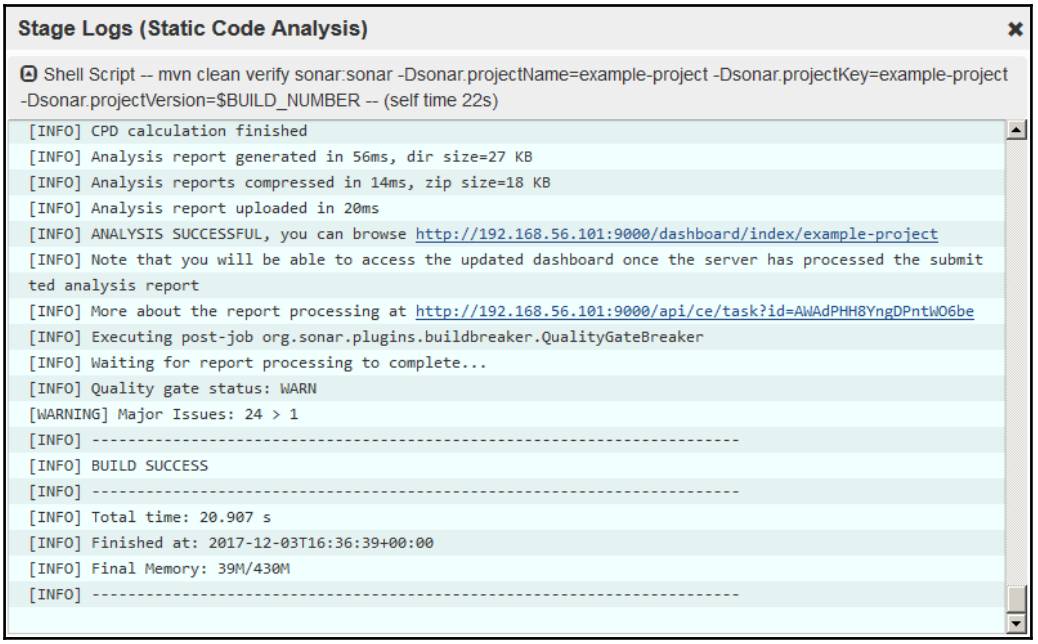
Build	Description	Duration	Fail	Skip	Total
jenkins_multibranch_pipeline_demo » master #17		5 ms	0	0	3
jenkins_multibranch_pipeline_demo » master #16		6 ms	0	0	3
jenkins_multibranch_pipeline_demo » master #15		6 ms	0	0	2
jenkins_multibranch_pipeline_demo » master #14		5 ms	0	0	3
jenkins_multibranch_pipeline_demo » master #13		3 ms	0	0	3
jenkins_multibranch_pipeline_demo » master #12		2 ms	0	0	2

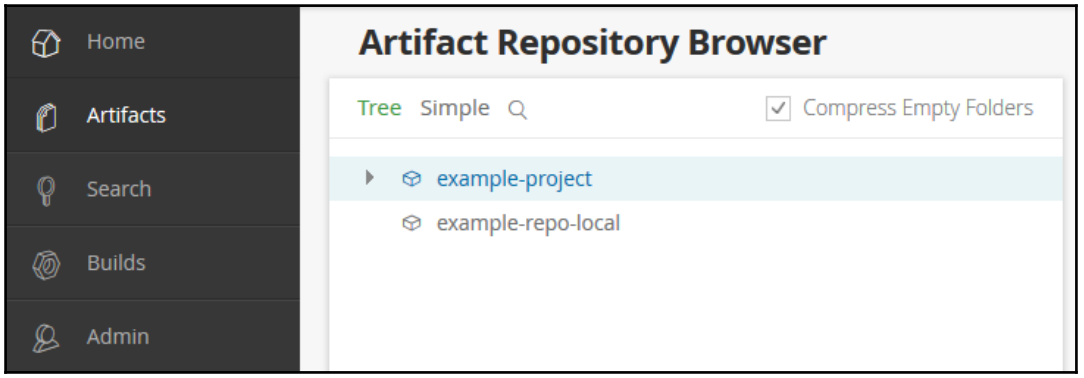

PROJECTS
QG
NAME
VERSION
LOC
BUGS
VULNERABILITIES
CODE SMELLS
LAST ANALYSIS
example-project
17
42
0
0
55
Dec 03 2017
1 results
PROJECTS
Size: Lines of Code
Color: Coverage
example-project

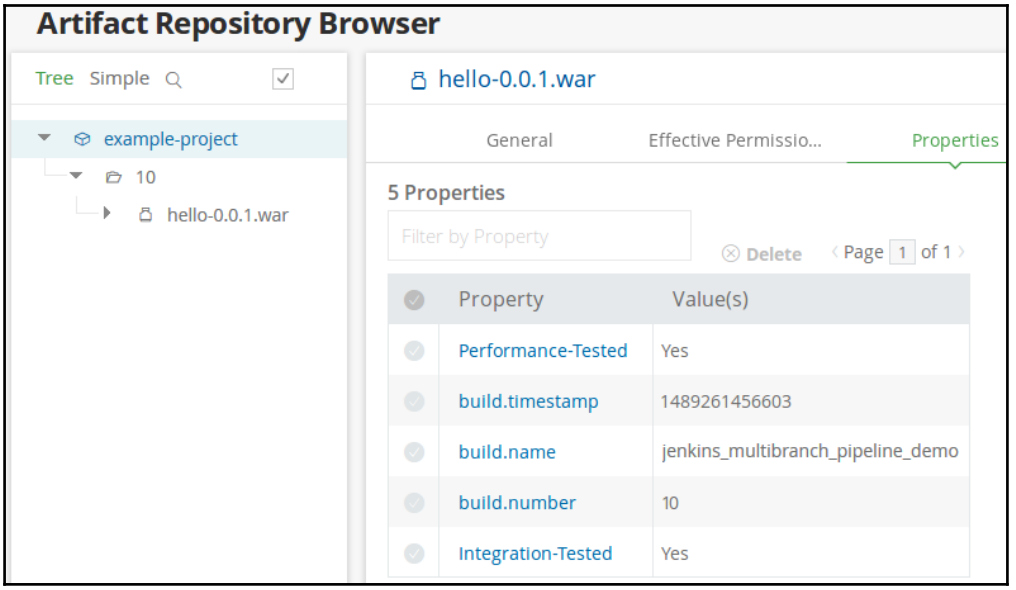

example-project
Issues
Measures
Code
Dashboards
Administration
Quality Gate
Warning
24
Major Issues
> 1
Bugs & Vulnerabilities
Leak Period: since 16
started a day ago
0
A
Bugs
0
A
Vulnerabilities
0
New Bugs
0
New Vulnerabilities
Code Smells
55
D
Code Smells
5h
Debt
started a day ago
0
New Code Smells
0
New Debt
Duplications
0.0%
Duplications
0
Duplicated Blocks
+0.0%
Duplications
Size
Java
42
42
Lines of Code
+0
Lines of Code

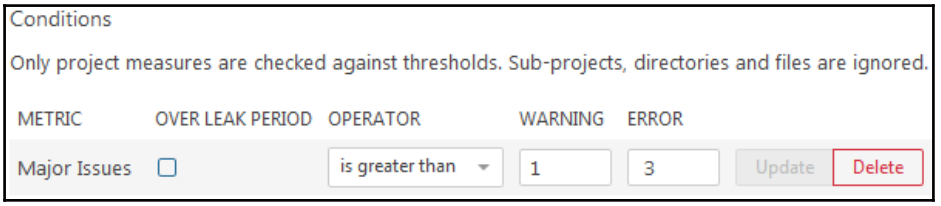

example-project
Issues
Measures
Code
Dashboards
Administration
All
Reliability
Security
Maintainability
Coverage
Duplications
2
Unit Tests
Unit Test Errors
0
Unit Test Failures
0
Skipped Unit Tests
0
Unit Test Success (%)
100.0%
Unit Test Duration
1ms

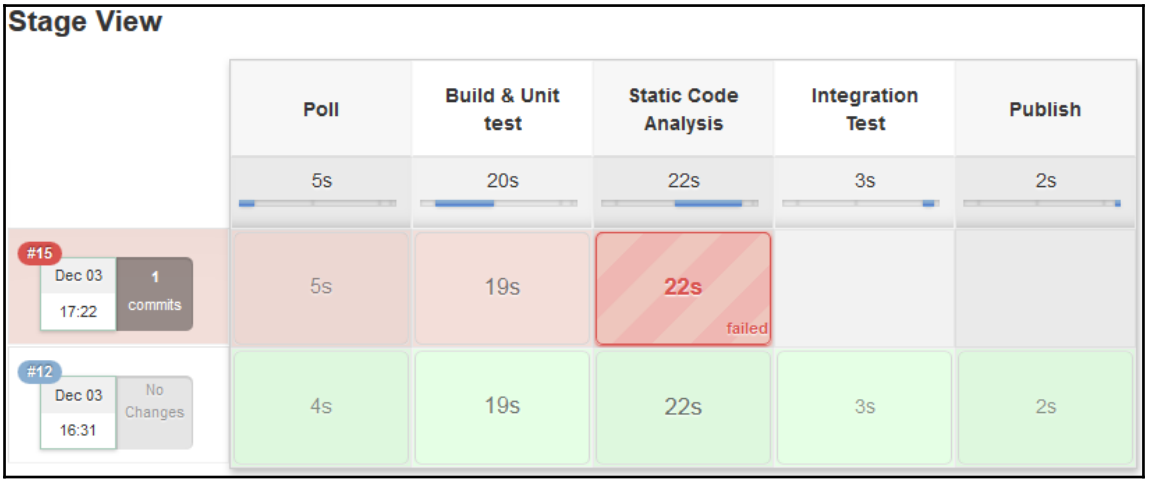
Poll
Build & Unit test
Success
Static Code Analysis
Logs
Integration Test
Publish
4s
20s
3s
2s
4s
20s
22s
3s
2s

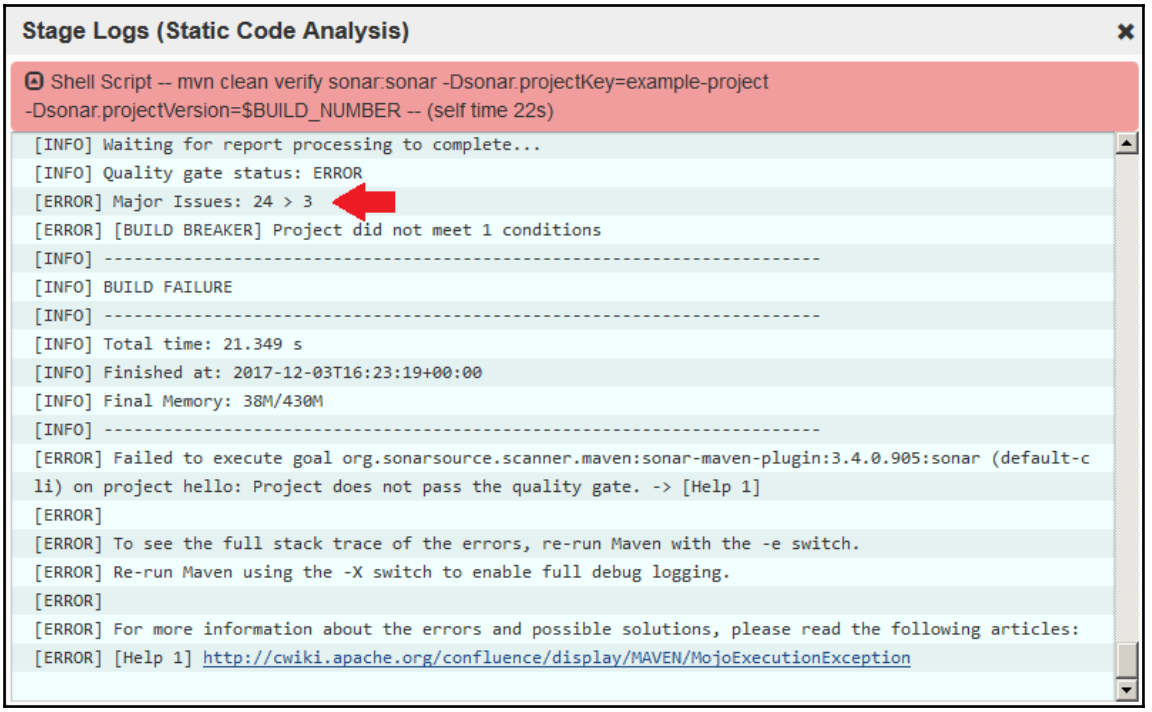

Stage Logs (Static Code Analysis)
Shell Script -- mvn clean verify sonar:sonar -Dsonar.projectName=example-project -Dsonar.projectKey=example-project -Dsonar.projectVersion=$BUILD_NUMBER -- (self time 22s)
[INFO] CPD calculation finished
[INFO] Analysis report generated in 56ms, dir size=27 KB
[INFO] Analysis reports compressed in 14ms, zip size=18 KB
[INFO] Analysis report uploaded in 20ms
[INFO] ANALYSIS SUCCESSFUL, you can browse http://192.168.56.101:9000/dashboard/index/example-project
[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://192.168.56.101:9000/api/ce/task?id=AWAdPHH8YngDPntWO6be
[INFO] Executing post-job org.sonar.plugins.buildbreaker.QualityGateBreaker
[INFO] Waiting for report processing to complete...
[INFO] Quality gate status: WARN
[WARNING] Major Issues: 24 > 1
[INFO] --
[INFO] BUILD SUCCESS
[INFO] --
[INFO] Total time: 20.907 s
[INFO] Finished at: 2017-12-03T16:36:39+00:00
[INFO] Final Memory: 39M/430M
[INFO] --


Home
Artifacts
Search
Builds
Admin
Artifact Repository Browser
Tree
Simple
Compress Empty Folders
example-project
example-repo-local

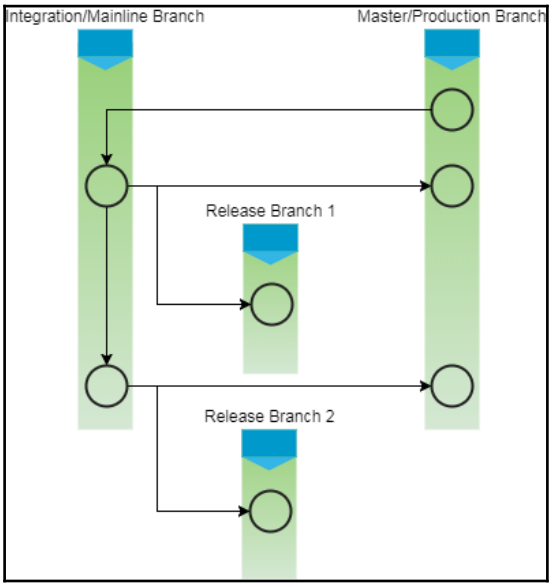

Artifact Repository Browser
Tree
Simple
example-project
10
hello-0.0.1.war
hello-0.0.1.war
General
Effective Permissio...
Properties
5 Properties
Filter by Property
Delete
Page 1 of 1
Property
Value(s)
Performance-Tested
Yes
build.timestamp
1489261456603
build.name
jenkins_multibranch_pipeline_demo
build.number
10
Integration-Tested
Yes


Conditions
Only project measures are checked against thresholds. Sub-projects, directories and files are ignored.
METRIC
OVER LEAK PERIOD
OPERATOR
WARNING
ERROR
Major Issues
is greater than
1
3
Update
Delete


Stage View
Poll
Build & Unit test
Static Code Analysis
Integration Test
Publish
5s
20s
22s
3s
2s
#15
Dec 03
17:22
1
commits
5s
19s
22s
failed
#12
Dec 03
16:31
No Changes
4s
19s
22s
3s
2s


Stage Logs (Static Code Analysis)
Shell Script -- mvn clean verify sonar:sonar -Dsonar.projectKey=example-project -Dsonar.projectVersion=$BUILD_NUMBER -- (self time 22s)
[INFO] Waiting for report processing to complete...
[INFO] Quality gate status: ERROR
[ERROR] Major Issues: 24 > 3
[ERROR] [BUILD BREAKER] Project did not meet 1 conditions
[INFO] --
[INFO] BUILD FAILURE
[INFO] --
[INFO] Total time: 21.349 s
[INFO] Finished at: 2017-12-03T16:23:19+00:00
[INFO] Final Memory: 38M/430M
[INFO] --
[ERROR] Failed to execute goal org.sonarsource.scanner.maven:sonar-maven-plugin:3.4.0.905:sonar (default-cli) on project hello: Project does not pass the quality gate. -> [Help 1]
[ERROR]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR]
[ERROR] For more information about the errors and possible solutions, please read the following articles:
[ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoExecutionException

Chapter 8: Continuous Delivery Using Jenkins



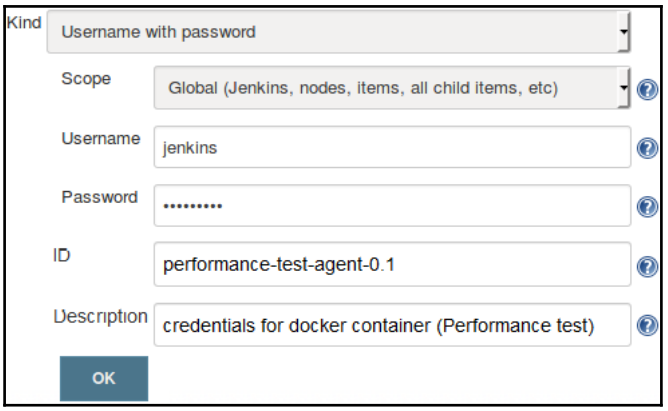

```
ubuntu@node4:~$ sudo docker images
REPOSITORY            TAG     IMAGE ID      CREATED             SIZE
maven-build-slave-0.1 latest  317fb6ec990f  About a minute ago  298 MB
ubuntu                latest  f49eec89601e  3 weeks ago         129 MB
hello-world           latest  48b5124b2768  4 weeks ago         1.84 kB
ubuntu@node4:~$
```

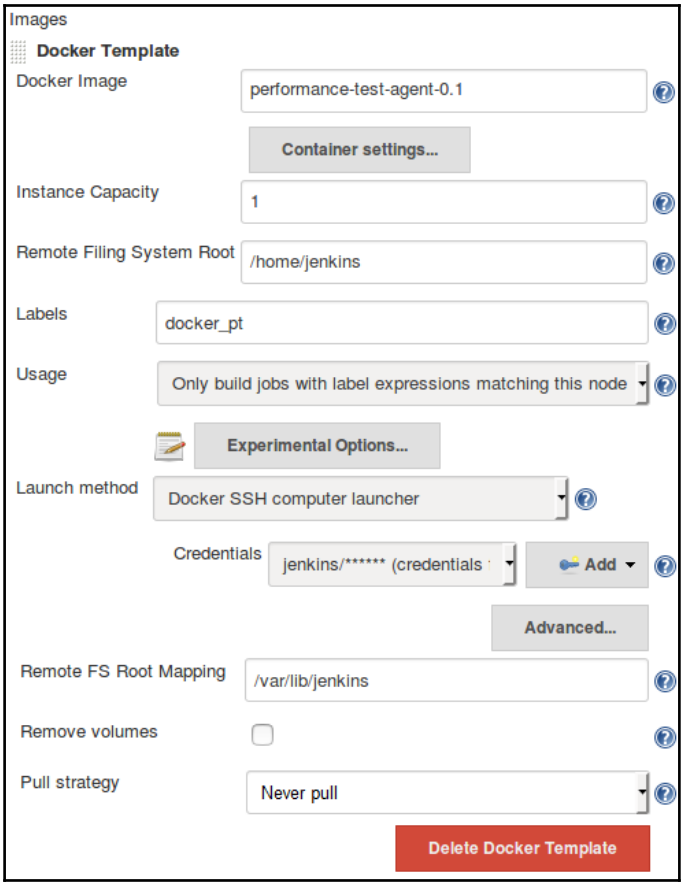
```
ubuntu@node4:~$ sudo docker run -i -t ubuntu /bin/bash
root@81a5d12f6c4a:/# adduser jenkins
Adding user `jenkins' ...
Adding new group `jenkins' (1000) ...
Adding new user `jenkins' (1000) with group `jenkins' ...
Creating home directory `/home/jenkins' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for jenkins
Enter the new value, or press ENTER for the default
        Full Name []: Nikhil Pathania
        Room Number []: 208
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
root@81a5d12f6c4a:/#
```

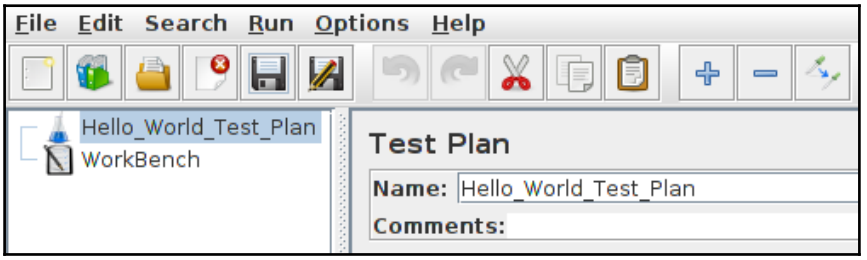
```
ubuntu@node4:~$ sudo docker ps -a
CONTAINER ID   IMAGE    COMMAND       CREATED          STATUS
f8b14a252e77   ubuntu   "/bin/bash"   30 minutes ago   Exited (0) About a minute ago
81a5d12f6c4a   ubuntu   "/bin/bash"   2 weeks ago      Exited (0) 2 weeks ago
ubuntu@node4:~$
```

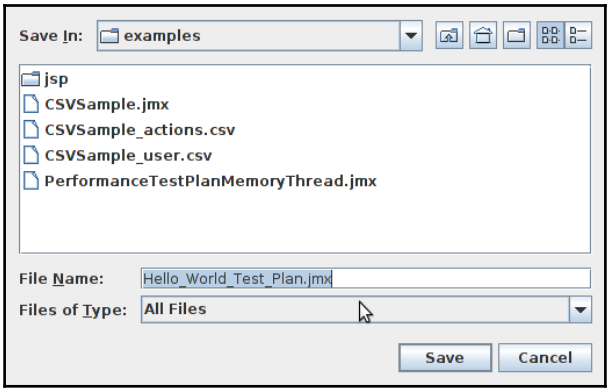
```
ubuntu@node4:~$ sudo docker commit f8b14a252e77 performance-test-agent-0.1
sha256:5218edfb90a9d3391393e5b11a2188f6fe8e1f85fd7e92a12d9bac558cc33e41
ubuntu@node4:~$
```

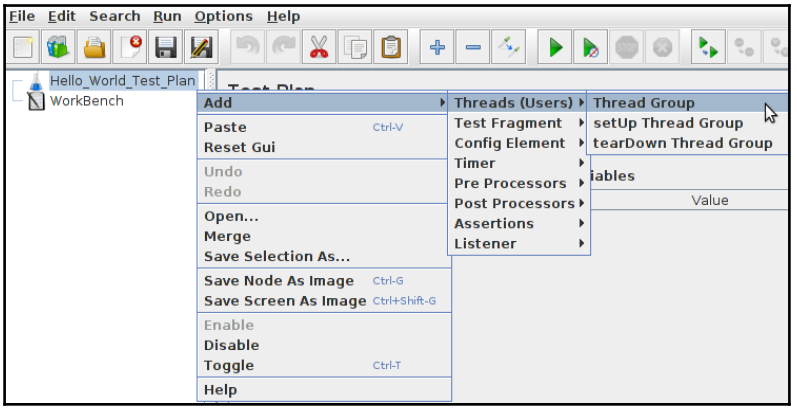
```
ubuntu@node4:~$ sudo docker images
REPOSITORY                   TAG      IMAGE ID       CREATED        SIZE
performance-test-agent-0.1   latest   5218edfb90a9   23 hours ago   720 MB
maven-build-slave-0.1        latest   317fb6ec990f   2 weeks ago    298 MB
ubuntu                       latest   f49eec89601e   6 weeks ago    129 MB
hello-world                  latest   48b5124b2768   7 weeks ago    1.84 kB
ubuntu@node4:~$
```

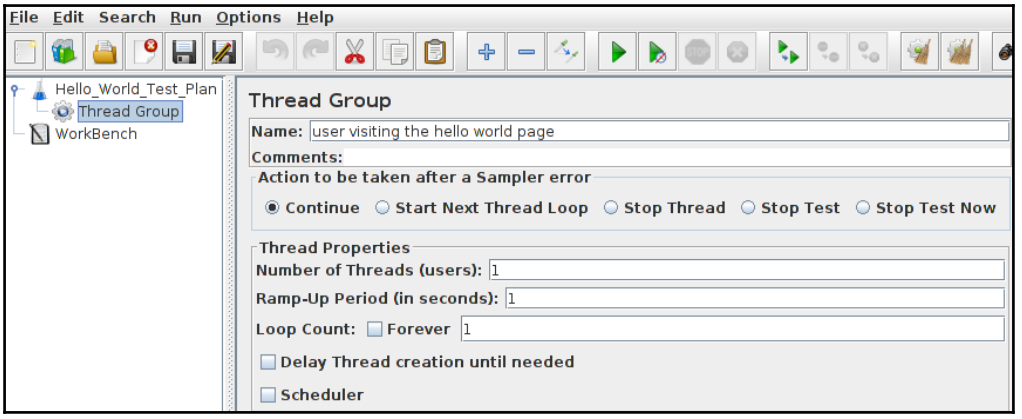


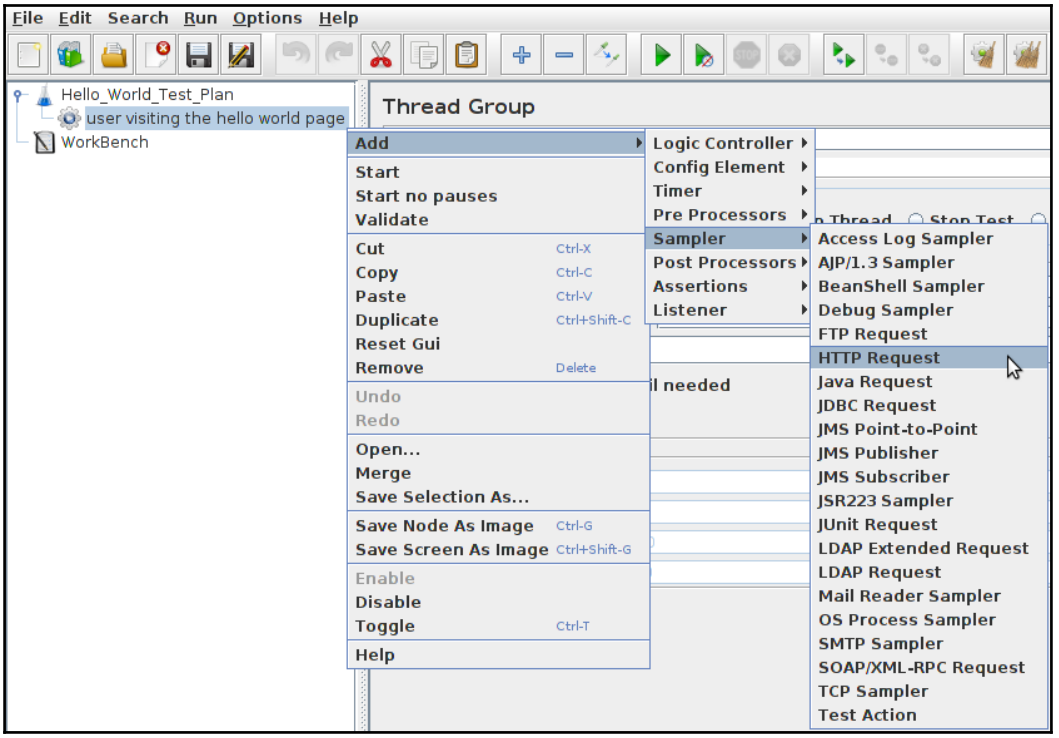

Images
Docker Template
Docker Image
performance-test-agent-0.1
Container settings...
Instance Capacity
1
Remote Filing System Root
/home/jenkins
Labels
docker_pt
Usage
Only build jobs with label expressions matching this node
Experimental Options...
Launch method
Docker SSH computer launcher
Credentials
jenkins/****** (credentials
Add
Advanced...
Remote FS Root Mapping
/var/lib/jenkins
Remove volumes
Pull strategy
Never pull
Delete Docker Template

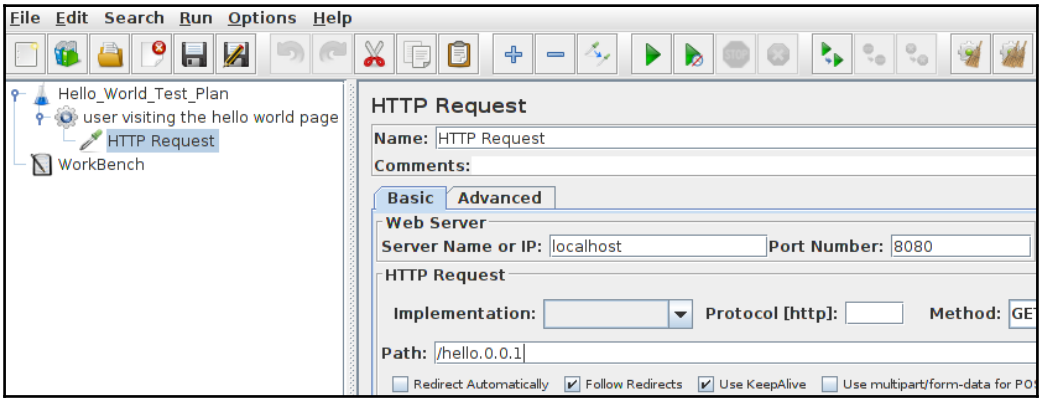

File Edit Search Run Options Help
Hello_World_Test_Plan
WorkBench
Test Plan
Name: Hello_World_Test_Plan
Comments:

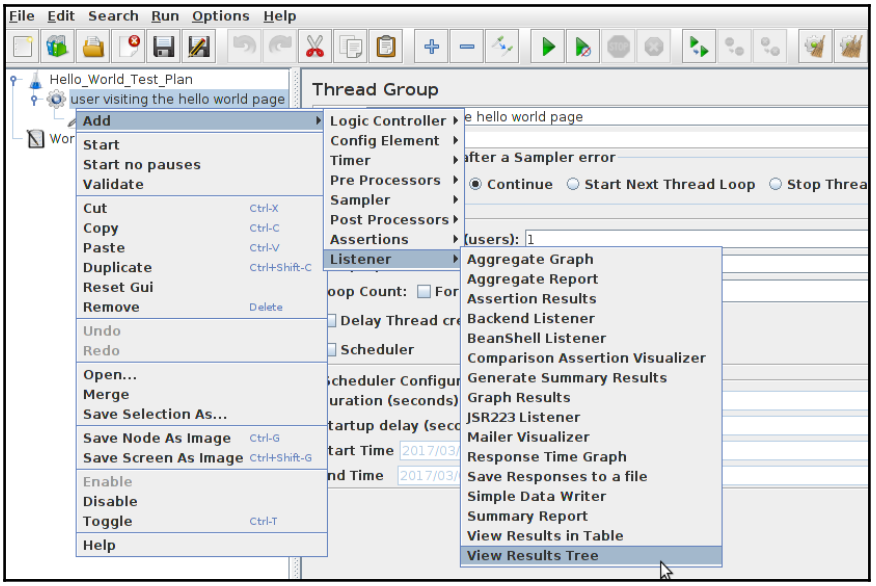

Save In:
examples
jsp
CSVSample.jmx
CSVSample_actions.csv
CSVSample_user.csv
PerformanceTestPlanMemoryThread.jmx
File Name:
Hello_World_Test_Plan.jmx
Files of Type:
All Files
Save
Cancel


File Edit Search Run Options Help
Hello_World_Test_Plan
WorkBench
Add
Paste Ctrl-V
Reset Gui
Undo
Redo
Open...
Merge
Save Selection As...
Save Node As Image Ctrl-G
Save Screen As Image Ctrl+Shift-G
Enable
Disable
Toggle Ctrl-T
Help
Threads (Users)
Test Fragment
Config Element
Timer
Pre Processors
Post Processors
Assertions
Listener
Thread Group
setUp Thread Group
tearDown Thread Group
Value

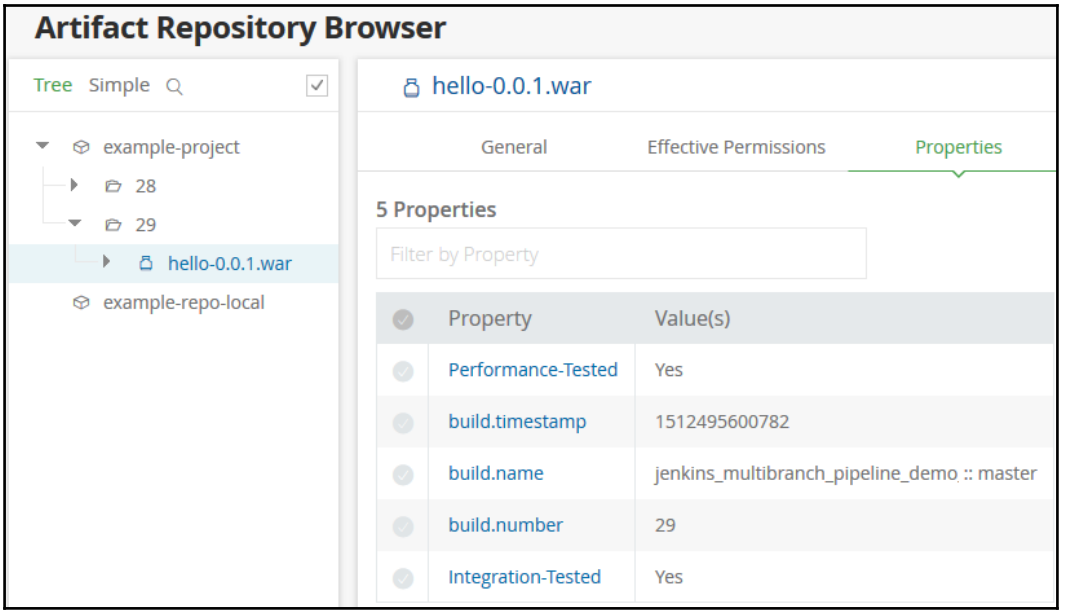

File Edit Search Run Options Help
Hello_World_Test_Plan
Thread Group
WorkBench
Thread Group
Name: user visiting the hello world page
Comments:
Action to be taken after a Sampler error
Continue
Start Next Thread Loop
Stop Thread
Stop Test
Stop Test Now
Thread Properties
Number of Threads (users): 1
Ramp-Up Period (in seconds): 1
Loop Count: Forever 1
Delay Thread creation until needed
Scheduler

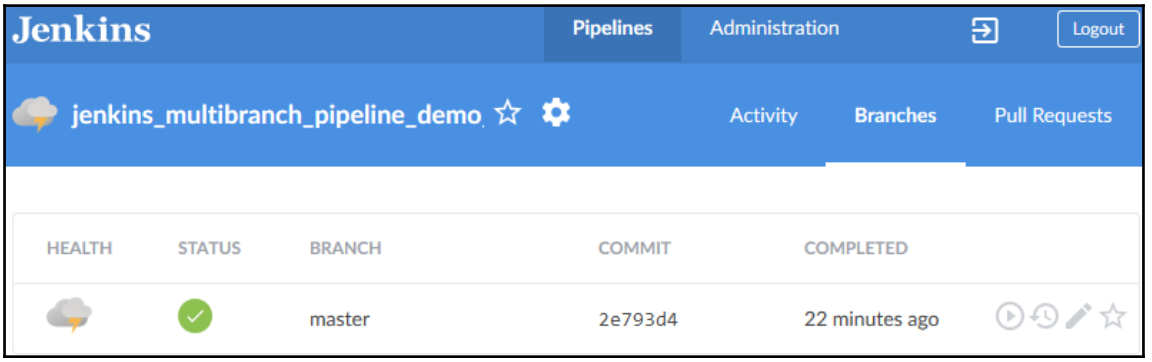

File Edit Search Run Options Help
Hello_World_Test_Plan
user visiting the hello world page
WorkBench
Thread Group
Add
Start
Start no pauses
Validate
Cut Ctrl-X
Copy Ctrl-C
Paste Ctrl-V
Duplicate Ctrl+Shift-C
Reset Gui
Remove Delete
Undo
Redo
Open...
Merge
Save Selection As...
Save Node As Image Ctrl-G
Save Screen As Image Ctrl+Shift-G
Enable
Disable
Toggle Ctrl-T
Help
Logic Controller
Config Element
Timer
Pre Processors
Sampler
Post Processors
Assertions
Listener
Access Log Sampler
AJP/1.3 Sampler
BeanShell Sampler
Debug Sampler
FTP Request
HTTP Request
Java Request
JDBC Request
JMS Point-to-Point
JMS Publisher
JMS Subscriber
JSR223 Sampler
JUnit Request
LDAP Extended Request
LDAP Request
Mail Reader Sampler
OS Process Sampler
SMTP Sampler
SOAP/XML-RPC Request
TCP Sampler
Test Action

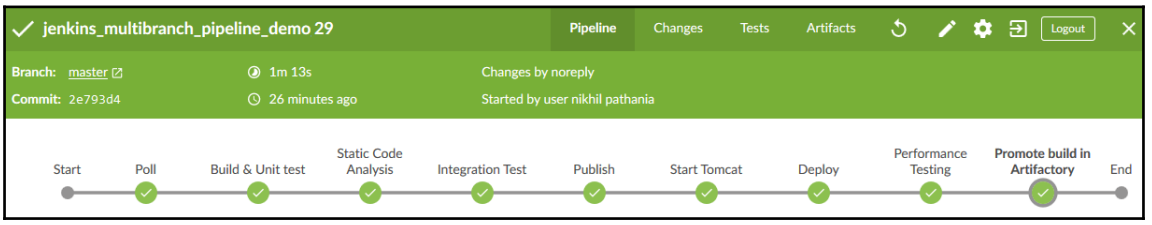

File Edit Search Run Options Help
Hello_World_Test_Plan
user visiting the hello world page
HTTP Request
WorkBench
HTTP Request
Name: HTTP Request
Comments:
Basic Advanced
Web Server
Server Name or IP: localhost
Port Number: 8080
HTTP Request
Implementation:
Protocol [http]:
Method: GE
Path: /hello.0.0.1
Redirect Automatically
Follow Redirects
Use KeepAlive
Use multipart/form-data for PO



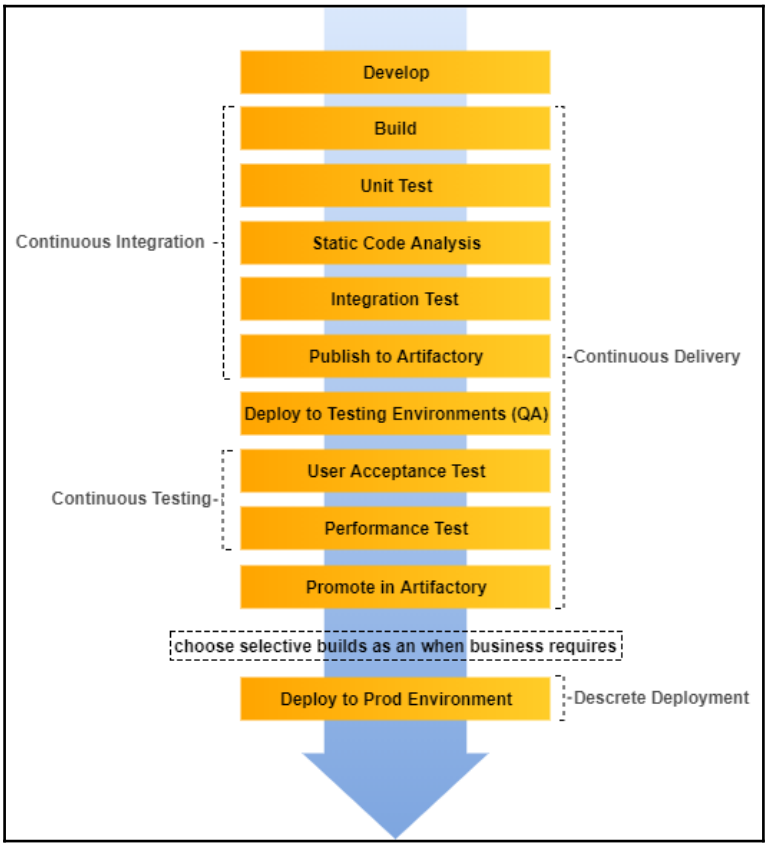
Poll	Build & Unit test	Static Code Analysis	Integration Test	Publish	Start Tomcat	Deploy	Performance Testing	Promote build in Artifactory
6s	19s	22s	3s	3s	1s	413ms	1s	1s
4s	20s	22s	4s	1s	1s	413ms	1s	356ms


Artifact Repository Browser
Tree
Simple
example-project
28
29
hello-0.0.1.war
example-repo-local
hello-0.0.1.war
General
Effective Permissions
Properties
5 Properties
Filter by Property
Property
Value(s)
Performance-Tested
Yes
build.timestamp
1512495600782
build.name
jenkins_multibranch_pipeline_demo :: master
build.number
29
Integration-Tested
Yes

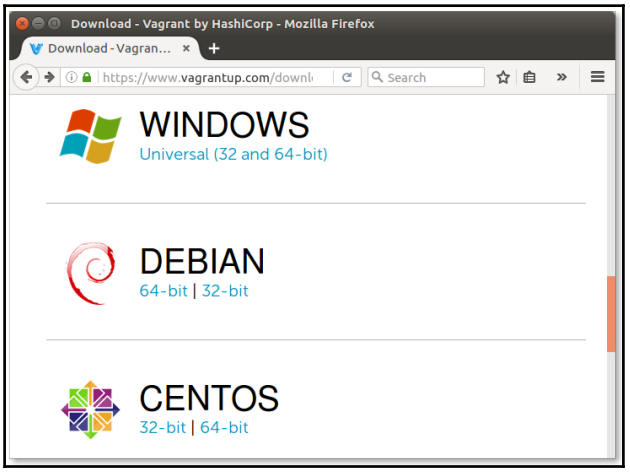

Jenkins
Pipelines
Administration
Logout
jenkins_multibranch_pipeline_demo
Activity
Branches
Pull Requests
HEALTH
STATUS
BRANCH
COMMIT
COMPLETED
master
2e793d4
22 minutes ago

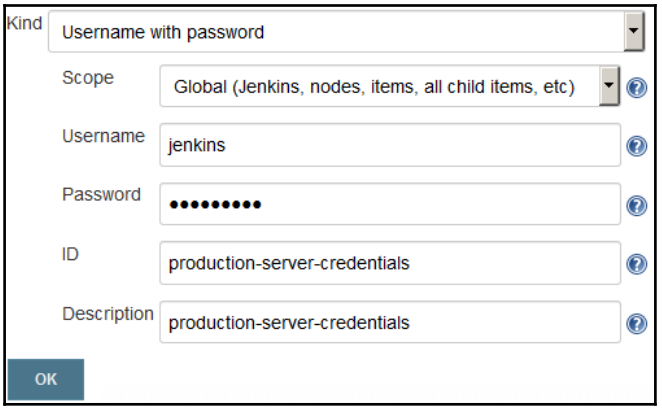

jenkins_multibranch_pipeline_demo 29
Pipeline
Changes
Tests
Artifacts
Logout
Branch: master
Commit: 2e793d4
1m 13s
26 minutes ago
Changes by noreply
Started by user nikhil pathania
Start
Poll
Build & Unit test
Static Code Analysis
Integration Test
Publish
Start Tomcat
Deploy
Performance Testing
Promote build in Artifactory
End

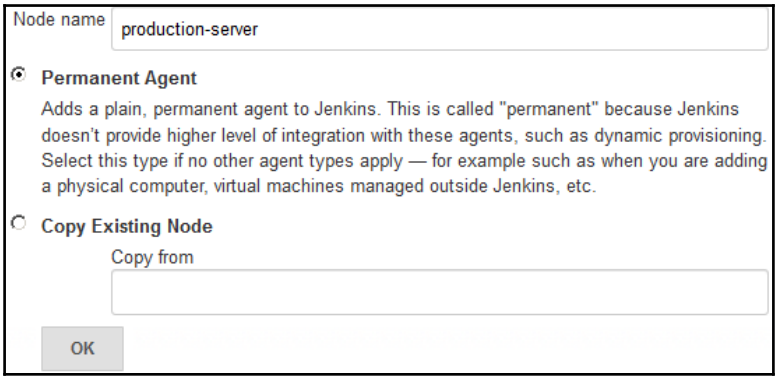
Chapter 9: Continuous Deployment Using Jenkins

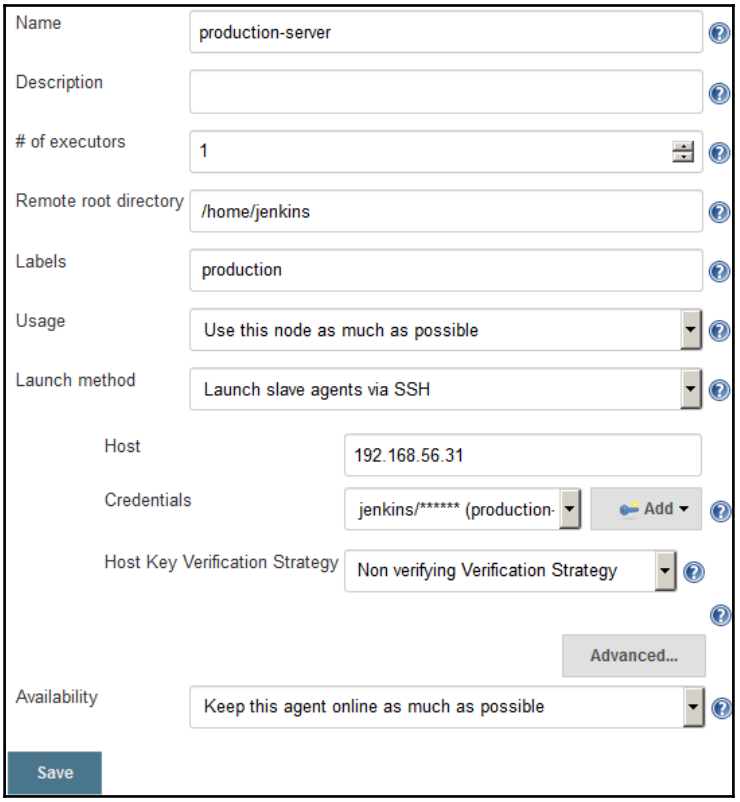


Develop
Build
Unit Test
Static Code Analysis
Integration Test
Publish to Artifactory
Deploy to Testing Environments (QA)
User Acceptance Test
Performance Test
Promote in Artifactory
Deploy to Prod Environment
Continuous Integration
Continuous Testing
Continuous Deployment


Download - Vagrant by HashiCorp - Mozilla Firefox
Download - Vagran...
https://www.vagrantup.com/downl
Search
WINDOWS
Universal (32 and 64-bit)
DEBIAN
64-bit | 32-bit
CENTOS
32-bit | 64-bit

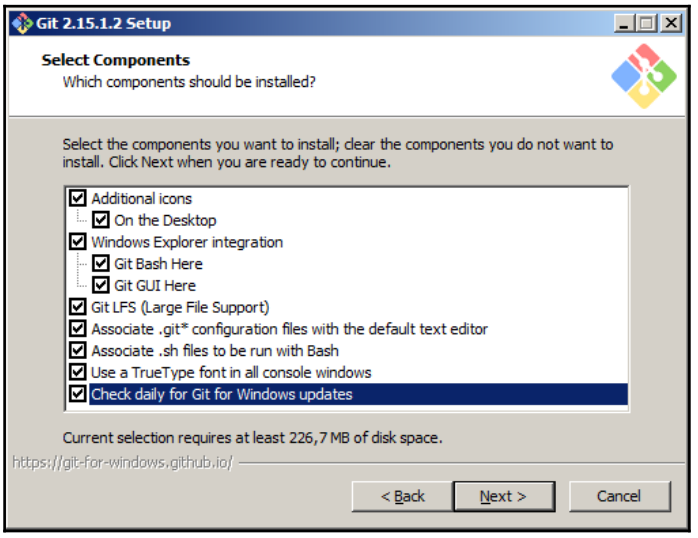

Kind
Username with password
Scope
Global (Jenkins, nodes, items, all child items, etc)
Username
jenkins
Password
••••••••••
ID
production-server-credentials
Description
production-server-credentials
OK

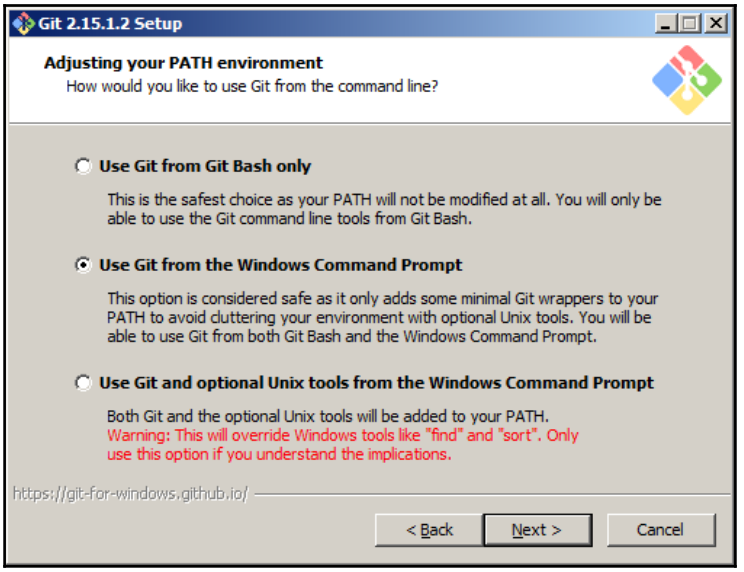

Node name
production-server
Permanent Agent
Adds a plain, permanent agent to Jenkins. This is called "permanent" because Jenkins doesn't provide higher level of integration with these agents, such as dynamic provisioning. Select this type if no other agent types apply — for example such as when you are adding a physical computer, virtual machines managed outside Jenkins, etc.
Copy Existing Node
Copy from
OK

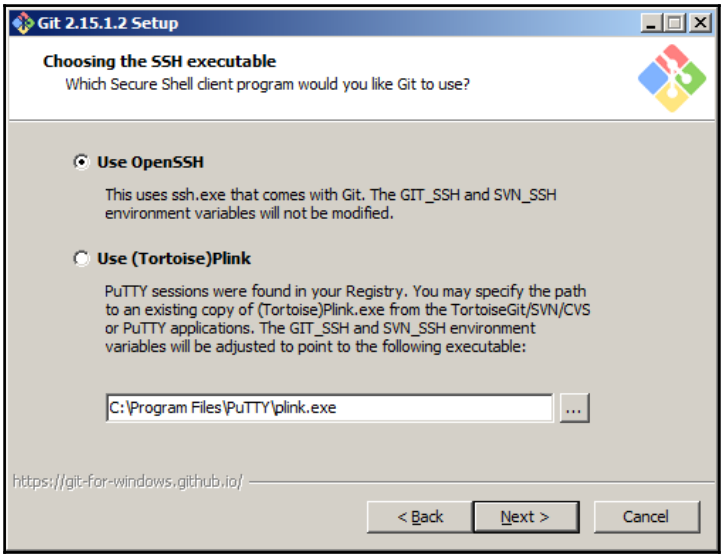


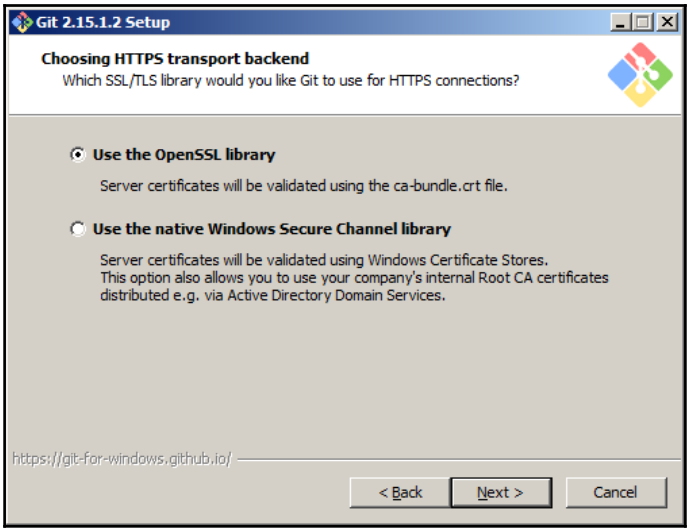
Poll	Build & Unit test	Static Code Analysis	Integration Test	Publish	Start Tomcat	Deploy	Performance Testing	Promote build in Artifactory	Deploy to Prod
6s	19s	22s	3s	3s	1s	413ms	1s	1s	1s
4s	20s	22s	4s	1s	1s	413ms	1s	356ms	1s

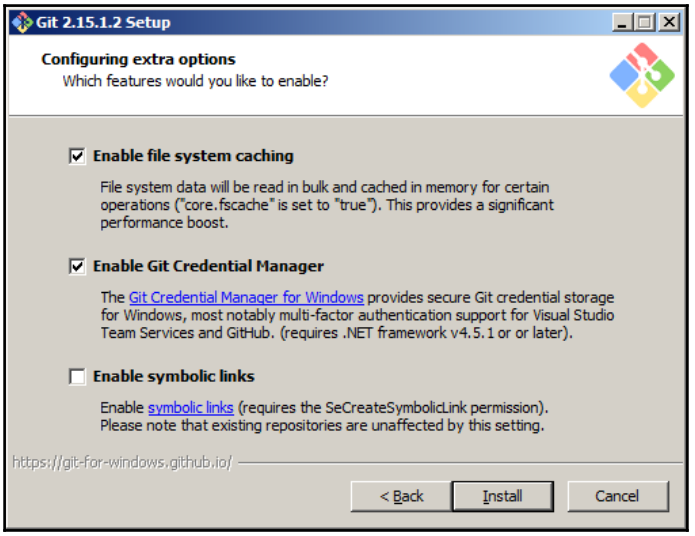
Appendix: Supporting Tools and Installation Guide




Git 2.15.1.2 Setup
Adjusting your PATH environment
How would you like to use Git from the command line?
Use Git from Git Bash only
This is the safest choice as your PATH will not be modified at all. You will only be able to use the Git command line tools from Git Bash.
Use Git from the Windows Command Prompt
This option is considered safe as it only adds some minimal Git wrappers to your PATH to avoid cluttering your environment with optional Unix tools. You will be able to use Git from both Git Bash and the Windows Command Prompt.
Use Git and optional Unix tools from the Windows Command Prompt
Both Git and the optional Unix tools will be added to your PATH.
Warning: This will override Windows tools like "find" and "sort". Only use this option if you understand the implications.
https://git-for-windows.github.io/
< Back
Next >
Cancel


Git 2.15.1.2 Setup
Choosing the SSH executable
Which Secure Shell client program would you like Git to use?
Use OpenSSH
This uses ssh.exe that comes with Git. The GIT_SSH and SVN_SSH environment variables will not be modified.
Use (Tortoise)Plink
PuTTY sessions were found in your Registry. You may specify the path to an existing copy of (Tortoise)Plink.exe from the TortoiseGit/SVN/CVS or PuTTY applications. The GIT_SSH and SVN_SSH environment variables will be adjusted to point to the following executable:
C:\Program Files\PuTTY\plink.exe
...
https://git-for-windows.github.io/
< Back
Next >
Cancel


Git 2.15.1.2 Setup
Choosing HTTPS transport backend
Which SSL/TLS library would you like Git to use for HTTPS connections?
Use the OpenSSL library
Server certificates will be validated using the ca-bundle.crt file.
Use the native Windows Secure Channel library
Server certificates will be validated using Windows Certificate Stores.
This option also allows you to use your company's internal Root CA certificates
distributed e.g. via Active Directory Domain Services.
https://git-for-windows.github.io/
< Back
Next >
Cancel


Git 2.15.1.2 Setup
Configuring extra options
Which features would you like to enable?
Enable file system caching
File system data will be read in bulk and cached in memory for certain
operations ("core.fscache" is set to "true"). This provides a significant
performance boost.
Enable Git Credential Manager
The Git Credential Manager for Windows provides secure Git credential storage
for Windows, most notably multi-factor authentication support for Visual Studio
Team Services and GitHub. (requires .NET framework v4.5.1 or or later).
Enable symbolic links
Enable symbolic links (requires the SeCreateSymbolicLink permission).
Please note that existing repositories are unaffected by this setting.
https://git-for-windows.github.io/
< Back
Install
Cancel