In this Section, we are going to take a look at...

- Creating built-in delivery pipelines

- Creating a pipeline for compiling and executing test units

- Using the build pipeline plugin

- Integrating the deployment operation

In this Video, we are going to take a look at...

- Generating a new pipeline

- Executing the demo pipeline and verify the console

- Adding an input for the pipeline in the script box

Dashboard [Jenkins] – Mozilla Firefox

Connecting... ✕ ✚

localhost:8080   ✓ ✕ | Google   🔍 ☆ ▤ ⬇ ⌂ ☰

Jenkins | 1 | 🔍 search ⑦   **Video Packt** | log out

Jenkins ▸   DISABLE AUTO REFRESH

🏭 New Item   📝 add description

👤 People | All | PetClinic-First | + |

📋 Build History

S	W	Name ↓	Last Success	Last Failure	Last Duration
🔵	☀	PetClinic	20 hr - #3	N/A	1 min 19 sec	🔄

⚙ Manage Jenkins

👤 My Views   Icon: S M L

🔑 Credentials   Legend 📶 RSS for all 📶 RSS for failures 📶 RSS for just latest builds

Build Queue   —

No builds in the queue.

Build Executor Status   —

🖥 **master**

1 Idle

2 Idle

🖥 **TestServer**   (offline)

localhost:8080/view/All/newJob

Packt>

New Item [Jenkins] – Mozilla Firefox

New Item [Jenkins]   ✕   ✛

localhost:8080/view/All/newJob   Google

Jenkins   1   search   ?   Video Packt | log out

Jenkins   ▸   All   ▸

Enter an item name

PetClinic-Pipeline

» Required field

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

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

Pipeline
Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

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

OK

New Item [Jenkins]   ✕   ➕

localhost:8080/view/All/newJob   ∨ ⟳   🔍∨ Google   ⭐ 🗐 ⬇ ⌂ ☰

Jenkins   1   🔍 search   ❓   Video Packt | log out

Jenkins ▸ All ▸

Enter an item name

PetClinic-Pipeline

» Required field

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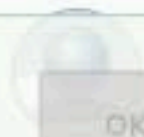
Maven project
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OK

Packt>

New Item [Jenkins] – Mozilla Firefox

New Item [Jenkins]   ✕   ✚

localhost:8080/view/All/newJob   ∨ C   ⑧∨ Google

Enter an item name

PetClinic-Pipeline

» Required field

Freestyle project

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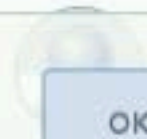
Maven project

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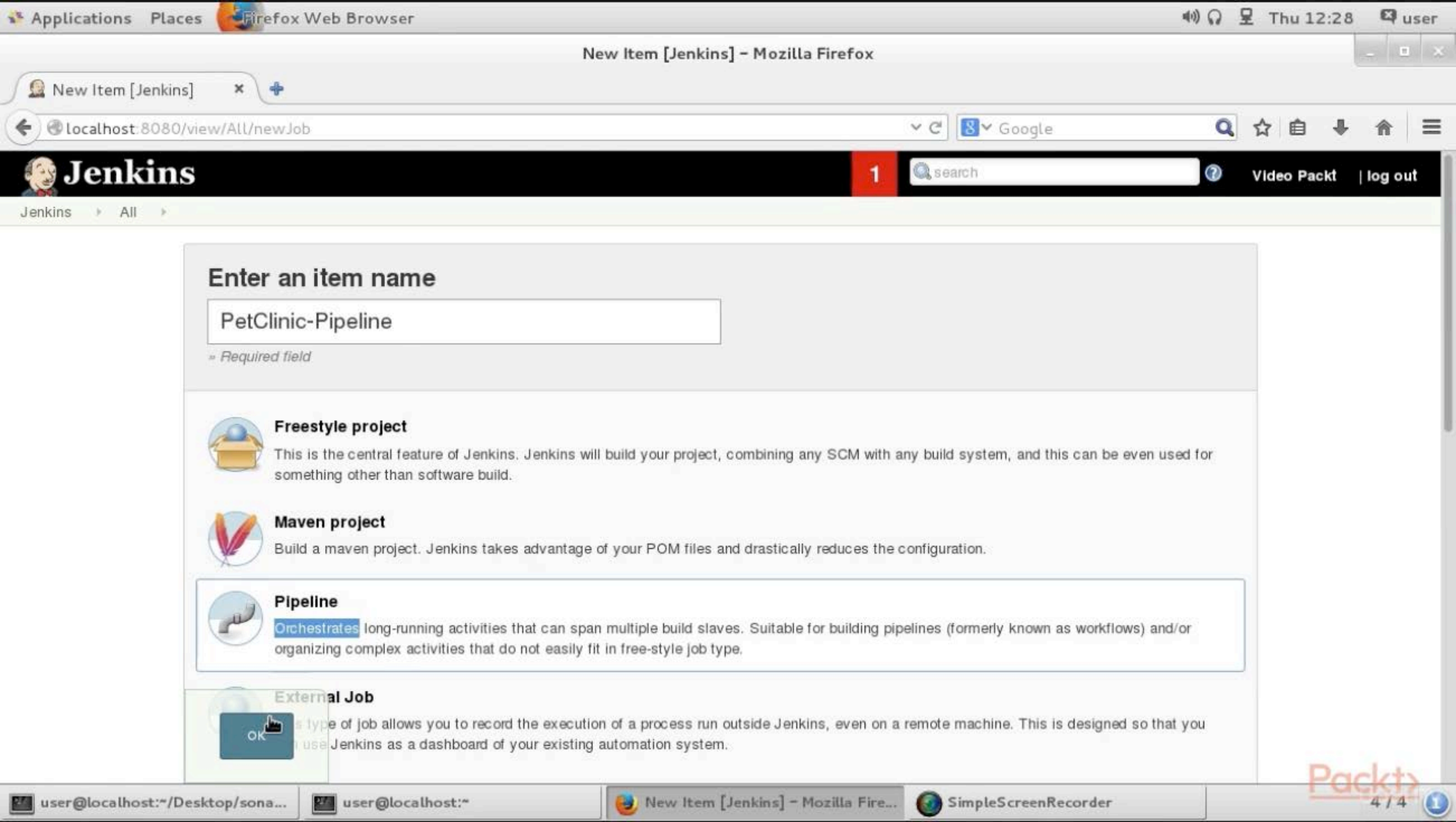
Pipeline

Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

External Job

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

Packt>

PetClinic-Pipeline Config [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co... ✕   ✚

🌐 localhost:8080/job/PetClinic-Pipeline/configure   ⌄ C   🔍 ✕ Google   🔍

Jenkins ▸ PetClinic-Pipeline ▸

| General | Build Triggers | **Advanced Project Options** | Pipeline |

Advanced Project Options

Advanced...

Pipeline

Definition   Pipeline script   ▾

Script   ┌─1─┬──┐ try sample Pipeline... ▾   ❓
           │   │   │
           │   │   │
           │   │   │
           │   │   │
           │   │   I   │
           │   │   │
           │   │   │
           │   │   │
    ┌──────┴───┴──────────────────────────┐   │
    │ Save   │ Apply   │   │
    └──────────┴───────────────────────────┘──────────────────┘
                          ☑ Use Groovy Sandbox   ❓

PetClinic-Pipeline Config [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co... ✕   ✚

🔒 localhost:8080/job/PetClinic-Pipeline/configure   ⌄ C   🔍 ▾ Google   🔍   ★ ▤ ⬇ ⌂ ☰

Jenkins   ▸   PetClinic-Pipeline   ▸

| General | Build Triggers | **Advanced Project Options** | Pipeline |

Advanced Project Options

Advanced...

Pipeline

Definition   Pipeline script   ▾

```
Script          1   echo 'Hello from PipelineDemo'
```
try sample Pipeline... ▾   ?

Save   Apply

☑ Use Groovy Sandbox   ?

PetClinic-Pipeline [Jenkins] – Mozilla Firefox

PetClinic-Pipeline [Je... ✕   ✚

localhost:8080/job/PetClinic-Pipeline/   ∨ C   🔍∨ Google

Jenkins   1   🔍 search   ❔   Video Packt | log out

Jenkins   ▸   PetClinic-Pipeline   ▸   DISABLE AUTO REFRESH

🔼 Back to Dashboard

🔍 Status

📝 Changes

▶ Build Now

🚫 De   Build scheduled

⚙ Configure

🔧 Move

🔍 Full Stage View

❔ Pipeline Syntax

Pipeline PetClinic-Pipeline

📝add description

📝 Recent Changes

Stage View

No data available. This Pipeline has not yet run.

Permalinks

⚙ **Build History**   trend ═

[find   x]

📡 RSS for all 📡 RSS for failures

user@localhost:~/Desktop/sona...   user@localhost:~   PetClinic-Pipeline [Jenkins] – Mo...   SimpleScreenRecorder   4 / 4

PetClinic-Pipeline [Je... ✕

localhost:8080/job/PetClinic-Pipeline/   ⌄ ✕   Google

Jenkins   ▸   PetClinic-Pipeline   ▸   DISABLE AUTO REFRESH

Back to Dashboard

Status

Changes

Build Now

Delete Pipeline

Configure

Move

Full Stage View

Pipeline Syntax

Pipeline PetClinic-Pipeline

✏ add description

Recent Changes

Stage View

This Pipeline has run successfully, but does not define any stages. Please use the `stage` step to define some stages in this Pipeline.

Permalinks

- Last build (#1), 2.7 sec ago
- Last stable build (#1), 2.7 sec ago
- Last successful build (#1), 2.7 sec ago
- Last completed build (#1), 2.7 sec ago

Build History   trend ▬

find   ✕

● #1   Nov 10, 2016 12:29 PM

🔊 RSS for all 🔊 RSS for failures

PetClinic-Pipeline #1 Console [Jenkins] – Mozilla Firefox

PetClinic-Pipeline #1... ✕   ✚

localhost:8080/job/PetClinic-Pipeline/1/console

Jenkins   1   🔍search   Video Packt | log out

Jenkins ▸ PetClinic-Pipeline ▸ #1

🔼 Back to Project

🔍 Status

📝 Changes

🖥 **Console Output**

📄 View as plain text

📝 Edit Build Information

🚫 Delete Build

↩ Replay

⚙ Pipeline Steps

🔵 **Console Output**

```
Started by user Video Packt
[Pipeline] echo
Hello from PipelineDemo
[Pipeline] End of Pipeline
Finished: SUCCESS
```

Page generated: Nov 10, 2016 12:29:37 PM IST   REST API   Jenkins ver. 2.30

PetClinic-Pipeline [Je... ✕

localhost:8080/job/PetClinic-Pipeline/   Google

Jenkins   1   search   Video Packt | log out

Jenkins   ▸   PetClinic-Pipeline   ▸   DISABLE AUTO REFRESH

Back to Dashboard

Status

Changes

Build Now

Delete Pipeline

Configure

Move

Full Stage View

Pipeline Syntax

Build History   trend ≡

| find | x |

🌐 #1   Nov 10, 2016 12:29 PM

RSS for all   RSS for failures

Pipeline PetClinic-Pipeline

add description

Recent Changes

Stage View

This Pipeline has run successfully, but does not define any stages. Please use the `stage` step to define some stages in this Pipeline.

Permalinks

- Last build (#1), 1 min 41 sec ago
- Last stable build (#1), 1 min 41 sec ago
- Last successful build (#1), 1 min 41 sec ago
- Last completed build (#1), 1 min 41 sec ago

localhost:8080/job/PetClinic-Pipeline/#

PetClinic-Pipeline Config [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co... ✕   ✚

localhost:8080/job/PetClinic-Pipeline/configure   ✕   Google

Jenkins

search   Video Packt | log out

Jenkins   ▸   PetClinic-Pipeline   ▸

Pipeline name   PetClinic-Pipeline

Description

[Plain text] Preview Hide preview

LOADING

PetClinic-Pipeline Config [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co...   ✕   ✚

localhost:8080/job/PetClinic-Pipeline/configure   Google

Jenkins   ▸   PetClinic-Pipeline   ▸

| General | Build Triggers | **Advanced Project Options** | Pipeline |

Advanced Project Options

Advanced...

Pipeline

Definition   Pipeline script   ▾

Script   1   echo 'Hello from PipelineDemo'

Save   Apply

☐ Use Groovy Sandbox

PetClinic-Pipeline Config [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co...   ✕

localhost:8080/job/PetClinic-Pipeline/configure   Google

Jenkins   ›   PetClinic-Pipeline   ›

General   **Build Triggers**   Advanced Project Options   Pipeline

☐ Build after other projects are built

☐ Build periodically

☐ Build when a change is pushed to GitHub

☐ Poll SCM

☐ Quiet period

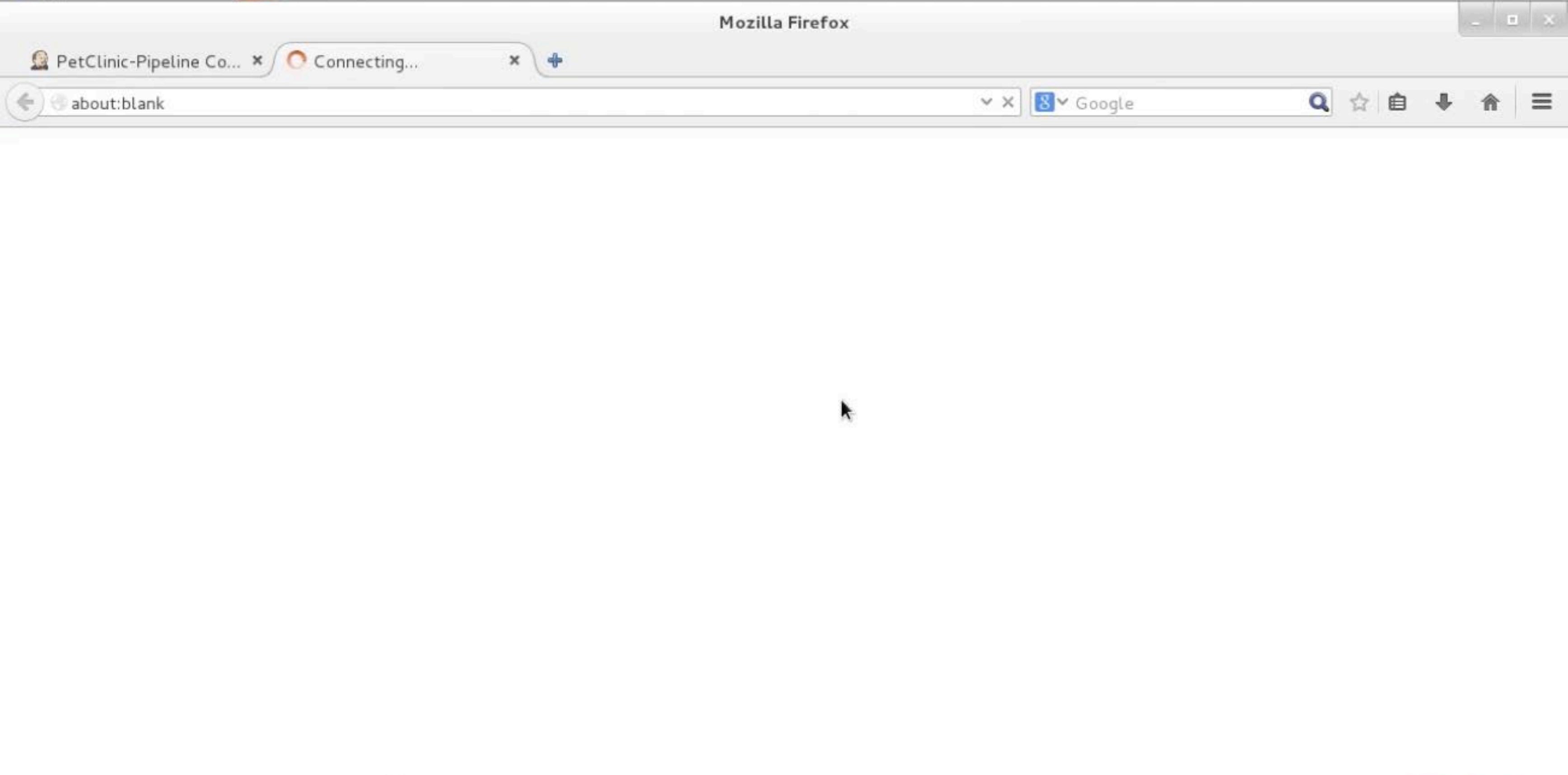☐ Trigger builds remotely (e.g., from scripts)

Advanced Project Options

Display Name

Pipeline

Definition   Pipeline script

```
1   echo 'Hello from PipelineDemo'
```

Save   Apply

Mozilla Firefox

PetClinic-Pipeline Co...   Connecting...

about:blank   Google

Waiting for localhost...

Pipeline Syntax: Snippet Generator [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co... ✕   Pipeline Syntax: Snip... ✕   ➕

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   Google

Jenkins

search   Video Packt | log out

Jenkins ▸ PetClinic-Pipeline ▸ Pipeline Syntax

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❓ Online Documentation

📋 IntelliJ IDEA GDSL

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 | build: Build a job   ▾ |

Project to Build   [I   ]   ❓

☑ Wait for completion   ❓

☑ Propagate errors   ❓

Quiet period   [▲▼]   ❓

Parameters

PetClinic-Pipeline Co... ✕   Pipeline Syntax: Snip... ✕   +

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   Google

Jenkins   1   search   Video Packt | log out

Jenkins   ▶   PetClinic-Pipeline   ▶   Pipeline Syntax

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Steps

Sample Step   build: Build a job   ▾

Project to Build   PetClinic-Compile   ❓

☑ Wait for completion   ❓

☑ Propagate errors   ❓

Quiet period   ❓

Parameters

Pipeline Syntax: Snippet Generator [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co... ✕ | Pipeline Syntax: Snip... ✕ | Pipeline Syntax: Snip... ✕ | +

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   ⌄ C   🔍⌄ Google   🔍   ☆ 📋 ⬇ 🏠 ≡

Jenkins

1   🔍 search   ❓   **Video Packt** | **log out**

Jenkins ▸ PetClinic-Pipeline ▸ Pipeline Syntax

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Steps

Sample Step | archiveArtifacts: Archive the artifacts

error: Error signal
fileExists: Verify if file exists in workspace
fingerprint: Record fingerprints of files to track usage
git: Git
input: Wait for interactive input
isUnix: Checks if running on a Unix-like node
junit: Publish JUnit test result report
libraryResource: Load a resource file from a shared library
load: Evaluate a Groovy source file into the Pipeline script
mail: Mail
milestone: The milestone step forces all builds to go through in order
node: Allocate node
parallel: Execute in parallel
properties: Set job properties
pwd: Determine current directory
readFile: Read file from workspace
readTrusted: Read trusted file from SCM
retry: Retry the body up to N times
sh: Shell Script

Generate

Packt

PetClinic-Pipeline Co...   ✕   Pipeline Syntax: Snip...   ✕   Pipeline Syntax: Snip...   ✕   ✚

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   Google

Jenkins

1   search   Video Packt | log out

Jenkins   ▶   PetClinic-Pipeline   ▶   Pipeline Syntax

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Steps

Sample Step | step: General Build Step   ▾ |

Build Step | Set build status to "pending" on GitHub commit   ▾ |

Advanced...

Generate Pipeline Script

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   ∨ C   🔍∨ Google   🔍 ★ 📋 ⬇ 🏠 ≡

Jenkins   ▸   PetClinic-Pipeline   ▸   Pipeline Syntax

❓ Online Documentation

📦 IntelliJ IDEA GDSL

Steps

Sample Step | step: General Build Step   ▾ |

Build Step | Publish JUnit test result report   ▾ |

Test report XMLs | ⌶ |

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

☐ Retain long standard output/error   ❓

Health report amplification factor | 1   ▲▾ | ❓

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

Allow empty results   ☐ Do not fail the build on empty test results   ❓

[Generate Pipeline Script]

Packt>

Pipeline Syntax: Snippet Generator [Jenkins] – Mozilla Firefox

🗑 PetClinic-Pipeline Co... ✕ 🗑 Pipeline Syntax: Snip... ✕ 🗑 Pipeline Syntax: Snip... ✕ ➕

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Jenkins ▸ PetClinic-Pipeline ▸ Pipeline Syntax

❓ Online Documentation

🗄 IntelliJ IDEA GDSL

Steps

Sample Step | step: General Build Step   ▾ |

                                                                          ❓
Build Step | Publish JUnit test result report   ▾ |

Test report XMLs | **/target   I |

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

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Generate Pipeline Script

Packt>

PetClinic-Pipeline Co... ✕   Pipeline Syntax: Snip... ✕   Pipeline Syntax: Snip... ✕   ✚

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   ∨ C   Google

Jenkins   ▸   PetClinic-Pipeline   ▸   Pipeline Syntax

Build Step | Publish JUnit test result report   ▾

Test report XMLs | **/target/surefire-reports/TEST-*.xml

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

☐ Retain long standard output/error

Health report amplification factor | 1

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

Allow empty results | ☐ Do not fail the build on empty test results

Generate Pipeline Script

Pipeline Syntax: Snippet Generator [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co... ✕ | Pipeline Syntax: Snip... ✕ | Pipeline Syntax: Snip... ✕ | ✚

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   ✓ ℃ | Google | ☆ 📂 ⬇ 🏠 ☰

Jenkins

1   🔍 search   ⑦   Video Packt | log out

Jenkins   ▸   PetClinic-Pipeline   ▸   Pipeline Syntax

🔺 **Back**

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Steps

Sample Step | step: General Build Step   ▾

| parallel: Execute in parallel |
| **properties: Set job properties** |
| pwd: Determine current directory |
| readFile: Read file from workspace |
| readTrusted: Read trusted file from SCM |
| retry: Retry the body up to N times |
| sh: Shell Script |
| sleep: Sleep |
| stage: Stage |
| stash: Stash some files to be used later in the build |
| step: General Build Step |
| svn: Subversion |
| timeout: Enforce time limit |
| timestamps: Timestamps |
| tool: Use a tool from a predefined Tool Installation |
| unstash: Restore files previously stashed |
| waitUntil: Wait for condition |
| withCredentials: Bind credentials to variables |
| withEnv: Set environment variables |

Packt

Pipeline Syntax: Snippet Generator [Jenkins] – Mozilla Firefox

PetClinic-Pipeline Co... ✕   Pipeline Syntax: Snip... ✕   Pipeline Syntax: Snip... ✕   ➕

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   Google

Jenkins

1   🔍 search   **Video Packt** | log out

Jenkins ▸ PetClinic-Pipeline ▸ Pipeline Syntax

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Steps

Sample Step | archiveArtifacts: Archive the artifacts   ▾ |

Files to archive   [   ]

                                                    Advanced...

Generate Pipeline Script

junit '**/target/surefire-reports/TEST-*.xml'

PetClinic-Pipeline Co... ✕ | Pipeline Syntax: Snip... ✕ | Pipeline Syntax: Snip... ✕ | ➕

◀ ▶   🌐 localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   ∨ C | 🔍▾ Google   🔍 | ☆ | 📋 | 📥 | 🏠 | ☰

Jenkins   ▸   PetClinic-Pipeline   ▸   Pipeline Syntax

IntelliJ IDEA GDSL

Files to archive   **/target/*.war

Excludes

☐ Do not fail build if archiving returns nothing

☐ Archive artifacts only if build is successful

☐ Fingerprint all archived artifacts

☑ Use default excludes

☑ Treat include and exclude patterns as case sensitive

Generate Pipeline Script

archiveArtifacts '**/target/*.war'

Packt▷

PetClinic-Pipeline Co... ✕   Pipeline Syntax: Snip... ✕   Pipeline Syntax: Snip... ✕   ✚

◀ ⊕ localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   ∨ C⟳   🔍∨ Google   ⌕   ★ ⊟ ⬇ ⌂ ☰

Jenkins   ▸   PetClinic-Pipeline   ▸   Pipeline Syntax

Online Documentation

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Steps

Sample Step | node: Allocate node   ▾ |

Label | CentOS |

Label CentOS is serviced by 1 node

| Generate Pipeline Script |

```
node('CentOS') {
    // some block
}
```

Global Variables

There are many features of the Pipeline that are not steps. These are often exposed via global variables, which are not supported by the snippet generator. See the Global Variables Reference for details.

PetClinic-Pipeline Co...   ✕   Pipeline Syntax: Snip...   ✕   Pipeline Syntax: Snip...   ✕   ➕

localhost:8080/job/PetClinic-Pipeline/pipeline-syntax/   ⌄ C   🔍 Google

Jenkins   ▸   PetClinic-Pipeline   ▸   Pipeline Syntax

❓ Step Reference

❓ Global Variables Reference

❓ Online Documentation

🥧 IntelliJ IDEA GDSL

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   stage: Stage   ▾

Stage Name   compile

        Generate Pipeline Script

```
stage('compile') {
    // some block
}
```

Global Variables

There are many features of the Pipeline that are not steps. These are often exposed via global variables, which are not supported by the snippet