



Continuous Delivery

Lab 1

Tennis Smith

Version 1.1, 2019-07-12

Table of Contents

Prerequisites	1
Lab 1	2

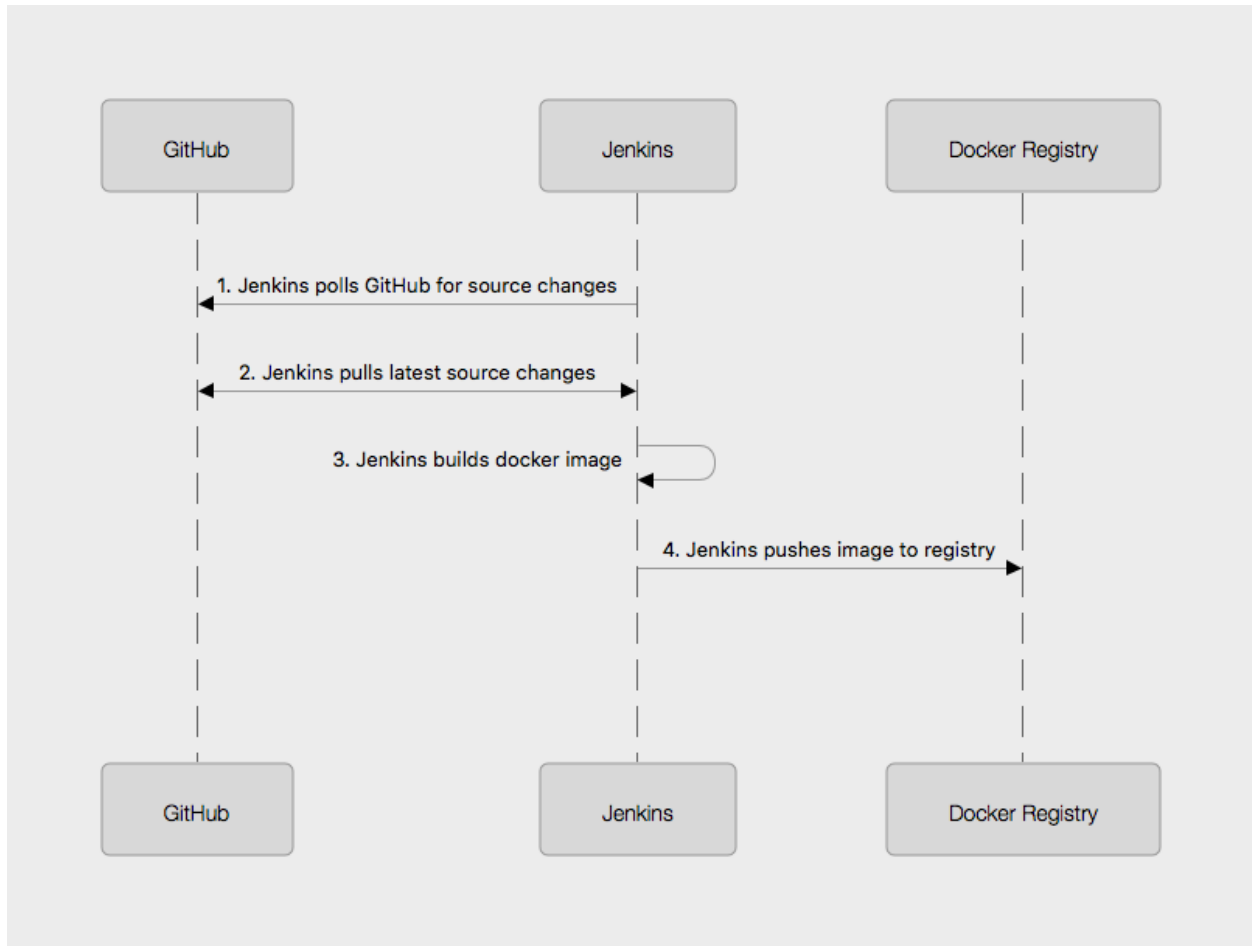
Prerequisites

Students will need a computer with:

- An Amazon Workspaces login (see your instructor for details)

Lab 1

Lab 1 will cause a new docker image to be built. Jenkins will poll GitHub (1 below). If there has been a source update (or if someone manually builds the pipeline), then Jenkins will pull the latest source (2 below) and build the image (3 below). Once built, the image is then pushed to the docker registry (4 below).



Step 1: Login to GitHub

- In your workspaces session, open a web browser and login to github: <http://github.com>



If you don't have a GitHub account, go to <http://github.com> and create a free account

Step 2: Fork the lab1 repo

- Go to this url: https://github.com/RoundTower-io/cd_workshop_lab1
- Fork the repo by clicking on the "Fork" button in the upper right of the screen.
- This will create a copy of the lab1 repo under your own GitHub id

Step 3: Clone a copy of the lab1 repo

- In your workspace session, open a new terminal window by clicking on the Powershell icon.



- Make a local copy of the repo by cloning it with the following command

```
git clone https://github.com/<your user name>/cd_workshop_lab1.git lab1
```

Step 4: Update the Jenkinsfile

- Go to the home directory of your new repo

```
cd lab1
```

- Now edit the file Jenkinsfile

```
atom Jenkinsfile
```

- Change every occurrence of training99 to your training ID (assigned by the instructor).
- Save and exit the file

Step 5: Commit Changes and Push to Central Repository

- First, change the working directory.

```
cd ~/lab1
```

- Next, add all altered files to the change set.

```
git add .
```

- Next, commit the changes.

```
git commit -m "Updated Jenkinsfile"
```

- Last, push the change to GitHub.

```
git push
```

Step 6: Setup a Jenkins pipeline

- Login to Jenkins at <http://jenkins.roundtower.io>
- Login using your assigned training id (get it from your instructor).
- Click on the "New Item" option on the main menu



 People

 Build History

 Manage Jenkins

 My Views

 Credentials

 New View

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

- Name your new pipeline <your training id>_lab1 and select pipeline as the type. Then click ok to save it.

Enter an item name

training1_lab1

» 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.

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 span multiple build slaves.

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 for monitoring the execution of a process.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have as many items as you like as long as they are in different folders.

GitHub Organization
Scans a GitHub organization (or user account) for all repositories matching some defined markers.

Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.

OK

- Next, click on the **Poll SCM** option (about halfway down the page) and enter 5 asterisks (with 1 space between each) in the field. This will cause Jenkins to look at GitHub once per minute for changes. If changes are found, then the pipeline will run.

Build Triggers

☐ Build after other projects are built

☐ Build periodically

☐ GitHub hook trigger for GITScm polling

☒ Poll SCM

Schedule

- At the bottom of the page, set the Definition field to Pipeline script from SCM, then set the SCM field to Git. Put your lab1 url in the Repository URL field. Finally, click on Save to save all your work.

The screenshot shows the Jenkins Pipeline configuration interface. The 'Definition' field is set to 'Pipeline script from SCM'. The 'SCM' field is set to 'Git'. The 'Repository URL' field contains the URL 'https://github.com/gamename/cd_workshop_lab1.git'. The 'Branches to build' section shows a 'Branch Specifier (blank for 'any')' set to '*/master'. The 'Repository browser' is set to '(Auto)'. The 'Additional Behaviours' section has an 'Add' button. The 'Script Path' is set to 'Jenkinsfile'. The 'Lightweight checkout' checkbox is checked. A link for 'Pipeline Syntax' is visible. At the bottom, the 'Save' button is highlighted with a red circle, along with an 'Apply' button.

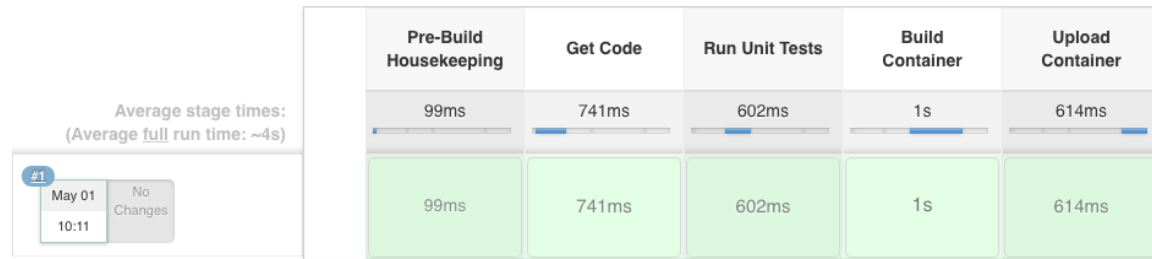
- At this point, you should see your pipeline run automatically. If not, click on Build Now on the upper left of the screen.
- After the build, click on your trainingX_lab1 link on the dashboard. You should see output something like this:

Pipeline training1_lab1



[Recent Changes](#)

Stage View



Step 7: Verify your docker image uploaded to the registry

- Create a new pipeline by clicking on New Item on the Dashboard

TIP | You can always get to the Dashboard by clicking on the word Jenkins in the upper left of the web page

- Name your new pipeline trainingX_lab1_check (where 'X' is your training ID number)
- Select Pipeline option.
- Click OK
- Scroll to the bottom of the next screen until you get to the Pipeline section
- Leave the Definition field set to Pipeline script
- Paste (or write) the following in the Script field

```
node {  
  sh 'curl  
http://registry.roundtower.io:5000/v2/training99/lab1/tags/list'  
}
```

- Be sure to change training99 to your training ID

Pipeline

Definition Pipeline script

Script

```
1 node {  
2   sh 'curl http://registry.roundtower.io:5000/v2/training99/lab1/tags/list'  
3 }
```

☒ Use Groovy Sandbox

[Pipeline Syntax](#)

Save Apply

- Click the Save button to exit
- Click on the Build Now button on the left.
- Once the build completes, click on the build number in the Build History on the lower

left of the screen.

- Click on the Console Output on the left of the screen

- You should see in the output provided something like the following with your training ID in it.

```
Started by user admin
Running in Durability level: MAX_SURVIVABILITY
[Pipeline] node
Running on Jenkins in
/opt/bitnami/apps/jenkins/jenkins_home/workspace/training99_lab1_check
[Pipeline] sh
[training99_lab1_check] Running shell script
...
{"name":"training99/lab1","tags":["1"]}
...
Finished: SUCCESS
```

- The line `{"name":"training99/lab1","tags":["1"]}` means that version 1 of training99/lab1 is in the registry. This verifies your docker image uploaded properly.