



Week 13 : SOFTWARE DEVELOPMENT TOOLS AND ENVIRONMENTS

LAB 01 : Run Jenkinfile using SCM From Github

In Jenkins, "SCM" stands for Source Code Management. SCM in Jenkins refers to the process of managing and integrating source code from version control systems into Jenkins projects.

Tuchsanai / DevTools

Code Issues Pull requests Actions Projects Security Insights Settings

main DevTools / 03_Jenkins / week13 / 01_Run_Jenkinfile_From_Github_WithSCM /

Tuchsanai d c89be10 · now History

Name	Last commit message	Last commit date
JENKINFILE	d	now
readme.md	ww	1 minute ago
status.py	ww	1 minute ago
readme.md		

Tuchsanai / DevTools

Type ⌘ to search

Code Issues Pull requests Actions Projects Security Insights Settings

dev DevTools / 03_Jenkins / week13 / 01_Run_Jenkinfile_From_Github / status.py

Tuchsanai s

Code Blame 14 lines (12 loc) · 286 Bytes

```
1 import os
2
3 def main():
4     # Displaying status
5     print("System Status:")
6     print("-----")
7     print("Operating System:", os.name)
8     print("\n")
9     print("Environment Variables:", os.environ)
10    print("\n")
11    print("finished.")
12
13 if __name__ == "__main__":
14     main()
```

main DevTools / 03_Jenkins / week13 / 01_Run_Jenkinfile_From_Github / JENKINFILE

Tuchsanai aa 65dd21b · 6 minutes ago History

29 lines (27 loc) · 814 Bytes

Code Blame Raw ⌂ ⌂ ⌂ ⌂ ⌂

```
1 pipeline {
2     agent any
3
4     stages {
5         stage('Check Python Installation') {
6             steps {
7                 script {
8                     // Check if Python is installed
9                     def pythonInstalled = sh(script: "which python3", returnStatus: true) == 0
10                    if (!pythonInstalled) {
11                        // Install Python if not installed
12                        sh 'sudo apt update'
13                        sh 'sudo apt install -y python3'
14                    }
15                }
16            }
17        }
18
19        stage('Run Python Script') {
20            steps {
21                script {
22                    // Run Python script with only os library
23                    sh 'python3 status.py'
24                    sh 'ls -l'
25                }
26            }
27        }
28    }
29 }
```

1

Jenkins

Dashboard >

+ New Item

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Create a job

Set up a distributed build

Set up an agent

Configure a cloud

Learn more about distributed builds

2

Jenkins

Search (⌘+K)

Tuchsanai Ploysuwan

Dashboard > All >

Enter an item name

jenkins_file

» Required field

3

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

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

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

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

Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.

OK

Build Triggers

Configure

General

- Build after other projects are built ?
- Build periodically ?
- GitHub hook trigger for GITScm polling ?
- Poll SCM ?
- Quiet period ?
- Trigger builds remotely (e.g., from scripts) ?

Advanced Project Options

Pipeline

Advanced Project Options

Advanced ▾

Pipeline

Definition

- Pipeline script
- Pipeline script from SCM

Script ?

1

try sample Pipeline... ▾

4

DevTools / 03_Jenkins / week13
/ 01_Run_Jenkinfile_From_Github_WithSCM
/ JENKINFILE

Tuchsanai d c89be10 · 1 minute ago History

30 lines (27 loc) · 894 Bytes

Code Blame

```
1 pipeline {  
2     agent any  
3  
4     stages {  
5         stage('Check Python Installation') {  
6             steps {  
7                 script {  
8                     // Check if Python is installed  
9                     def pythonInstalled = sh(script: "which python3", returnStatus: true) == 0  
10                    if (!pythonInstalled) {  
11                        // Install Python if not installed  
12                        sh 'sudo apt update'  
13                        sh 'sudo apt install -y python3'  
14                    }  
15                }  
16            }  
17        }  
18  
19        stage('Run Python Script') {  
20            steps {  
21                script {  
22                    // Run Python script with only os library  
23                    sh 'ls -l'  
24                    sh 'python3 ./03_Jenkins/week13/01_Run_Jenkinfile_From_Github_WithSCM/status.py'  
25                }  
26            }  
27        }  
28    }  
29}  
30}
```

Configure

General

Build Triggers

- Throttle builds
- Build after other projects are built
- Build periodically
- GitHub hook trigger for GITScm polling
- Poll SCM
- Quiet period
- Trigger builds remotely (e.g., from scripts)

Advanced Project Options

Copy path of Jenkinfile

Pipeline

Definition

Pipeline script from SCM

SCM

- None
- Git

Script Path

/03_Jenkins/week13/01_Run_Jenkinfile_From_Github_WithSCM/JENKINFILE

Lightweight checkout

Pipeline Syntax

Save Apply

7

Repository URL ?
`https://github.com/Tuchsanai/DevTools.git`

Credentials ?
tuchsanai/******** (github account)

+ Add ▾

Advanced ▾

Add Repository

Branches to build ?
Branch Specifier (blank for 'any') ?
*/dev

Add Branch

Repository browser ?
(Auto)

Additional Behaviours
Add ▾

Script Path ?
./03_Jenkins/week13/01_Run_Jenkinfile_From_Github_WithSCM/JENKINFILE

Save Apply

8 # If privated repo, you need credentials

9 # Selected dev branch

10

Jenkins

Dashboard > jenkins_file >

jenkins_file

- Status
- </> Changes
- Build Now
- Configure
- Delete Pipeline
- Full Stage View
- Rename
- Pipeline Syntax

Stage View

Declarative: Checkout SCM	Check Python Installation	Run Python Script
Average stage times: (Average full run time: ~3s) #3 n.w. 27 10:44 2 commits	1s 394ms 982ms	1s 394ms 982ms

Permalinks

- Last build (#3), 2 min 15 sec ago
- Last stable build (#3), 2 min 15 sec ago
- Last successful build (#3), 2 min 15 sec ago
- Last completed build (#3), 2 min 15 sec ago

Dashboard > jenkins_file > #3

Console Output

Started by user Tuchsanai Ploysuwan
Obtained ./.jenkins/week13/01_Run_Jenkinfile_From_Github/JENKINFILE from git https://github.com/Tuchsanai/DevTools.git
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/jenkins_file
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
The recommended git tool is: git
using credential id_github
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/jenkins_file/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Tuchsanai/DevTools.git # timeout=10
Fetching upstream changes from https://github.com/Tuchsanai/DevTools.git
> git --version # timeout=10
git version # git version 2.34.1
using GIT_ASKPASS to set credentials github account
> git fetch --tags --force --progress -- https://github.com/Tuchsanai/DevTools.git +refs/heads/*:refs/remotes/origin/* # timeout=10
[Pipeline] { (Check Python Installation)
[Pipeline] script
[Pipeline] {
[Pipeline] sh
+ which python3
/usr/bin/python3
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Run Python Script)
[Pipeline] script
[Pipeline] {
[Pipeline] sh
+ pwd
/var/lib/jenkins/workspace/jenkins_file
[Pipeline] sh
+ python3 ./03_Jenkins/week13/01_Run_Jenkinfile_From_Github/status.py
System Status:
Operating System: posix

Environment Variables: environ({'JENKINS_HOME': '/var/lib/jenkins', 'USER': 'jenkins', 'CI': 'true', 'RUN_CHANGES_DISPLAY_URL': 'http://54.251.188.144:8080/job/jenkins_file/3/display/redirect?page=changes', 'NODE_LABELS': 'built-in', 'HUDSON_URL': 'http://54.251.188.144:8080', 'GIT_COMMIT': 'ad4c6fcbe6618509afecc13d26c1406fd5dbf3', 'HUDSON_COOKIE': '49a06cf3-5d30-418d-b9f6-8226', 'HUDSON_SERVER_COOKIE': 'urable-d5f3f7cf430a25df33ccb3cf7f939bc2452d2ea1b2523a2a26025dc82651f', 'NOTIFY_SOCKET': '/run/systemd/notify', 'SYSTEM_EXEC_PID': '8226', 'WORKSPACE': '/var/lib/jenkins/workspace/jenkins_file', 'LOGNAME': 'jenkins', 'NODE_NAME': 'built-in', 'JOURNAL_STREAM': '8:46337', 'RUN_ARTIFACTS_DISPLAY_URL': 'http://54.251.188.144:8080/job/jenkins_file/3/display/redirect?page=artifacts', 'STAGE_NAME': 'Run Python Script', 'EXECUTOR_NUMBER': '0', 'GIT_BRANCH': 'origin/dev', 'RUN_TESTS_DISPLAY_URL': 'http://54.251.188.144:8080/job/jenkins_file/3/display/redirect?page=tests', 'BUILD_DISPLAY_NAME': '#3', 'HUDSON_HOME': '/var/lib/jenkins', 'JOB_BASENAME': 'jenkins_file', 'PATH': '/usr/local/bin:/usr/bin:/bin:/sbin:/bin:/snap/bin', 'INVOCATION_ID': '3dd1667cf5244899512e0c5f3a49e4', 'BUILD_ID': '3', 'BUILD_TAG': 'jenkins-jenkins_file-3', 'LANG': 'C.UTF-8', 'JENKINS_URL': 'http://54.251.188.144:8080', 'JOB_URL': 'http://54.251.188.144:8080/job/jenkins_file/', 'GIT_URL': 'https://github.com/Tuchsanai/DevTools.git', 'HUDSON_SERVER_COOKIE': '25d157583dcefe', 'JOB_DISPLAY_URL': 'http://54.251.188.144:8080/job/jenkins_file/3/display/redirect', 'HUDSON_COOKIE': '25d157583dcefe', 'JOB_NAME': 'jenkins_file', 'PWD': '/var/lib/jenkins/workspace/jenkins_file', 'GIT_PREVIOUS_COMMIT': '32de38e6ab198bf44721d9a241c74dc5f92a427', 'WORKSPACE_TMP': '/var/lib/jenkins/workspace/jenkins_file@tmp'})
finished.

LAB 02 : Run Jenkinfile without SCM From Github

Jenkins

Dashboard >

+ New Item 1

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Build Queue No builds in the queue.

Build Executor Status 1 Idle
2 Idle

Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Create a job +

Set up a distributed build

Set up an agent monitor icon

Configure a cloud cloud icon

Learn more about distributed builds ?

Enter an item name

No_SCM » Required field

Freestyle project
 Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

Pipeline 2
 Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

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

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

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

Organization Folder
 Creates a set of multibranch project subfolders by scanning for repositories.

OK

Configure**General** Advanced Project Options**Pipeline**

- Throttle builds ?
- Build Triggers**
- Build after other projects are built ?
- Build periodically ?
- GitHub hook trigger for GITScm polling ?
- Poll SCM ?
- Quiet period ?
- Trigger builds remotely (e.g., from scripts) ?

Advanced Project Options

Advanced ▾

Pipeline**Definition**

Pipeline script

```

1> pipeline {
2>   agent any
3>
4>   stages {
5>     5>       stage('copy repository') {
6>         steps {
7>           7>             // Copy the repository
8>           8>         }
9>       }
10>      stage('Check Python Installation') {
11>        steps {
12>          12>        }
13>      }
14>    }
15>  }
16>
```

Use Groovy Sandbox ?

Apply

Copy code

3

Jenkins file with GitHub**- detail in slides**

```

pipeline {
  agent any

  stages {
    stage('copy repository') {
      steps {
        checkout scmGit(branches: [[name: './dev']], extensions: [], userRemoteConfigs: [[credentialsId: 'g
      }
    }

    stage('Check Python Installation') {
      steps {
        script {
          // Check if Python is installed
          def (pythonInstalled = sh(script: "which python3", returnStatus: true)) == 0
          if (!pythonInstalled) {
            // Install Python if not installed
            sh 'sudo apt update'
            sh 'sudo apt install -y python3'
          }
        }
      }
    }

    stage('Run Python Script') {
      steps {
        script {
          // Run Python script with only os library
          sh 'pwd'
          sh 'python3 ./03_Jenkins/week13/02_Run_Jenkinfile_From_Github_withoutSCM/status.py'

          sh 'ls -l'
        }
      }
    }
  }
}
```

4

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

archiveArtifacts

Files to archive ?

Advanced ▾

Generate Pipeline Script

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.

Snippet Generator

- ① Declarative Directive Generator
- ② Declarative Online Documentation
- ③ Steps Reference
- ④ Global Variables Reference
- ⑤ Online Documentation
- ⑥ Examples Reference
- ⑦ IntelliJ IDEA GDSL

5

Back

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
bat: Windows Batch Script
build: Build a job
catchError: Catch error and set build result to failure
checkout: Check out from version control
cleanWs: Delete workspace when build is done
configFileProvider: Provide Configuration files
deleteDir: Recursively delete the current directory from the workspace
dir: Change current directory
echo: Print Message
emailExt: Extended Email
emailExtRecipients: Extended Email Recipients
error: Error signal
fileExists: Verify if file exists in workspace
findBuildScans: Find published build scans
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: Archive JUnit-formatted test results
library: Load a library on the fly

6

Back**Snippet Generator**

- ① Declarative Directive Generator
- ② Declarative Online Documentation
- ③ Steps Reference
- ④ Global Variables Reference
- ⑤ Online Documentation
- ⑥ Examples Reference
- ⑦ IntelliJ IDEA GDSL

checkout ?

SCM

Git

Repositories ?

Repository URL ?
https://github.com/Tuchsanai/DevTools.git

Credentials ?
tuchsanai/*****

+ Add -

Advanced ▾

Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ?
*/dev

Add Branch

Repository browser ?
(Auto)

Additional Behaviours

Add ▾

Include in polling? ?

Include in changelog? ?

Generate Pipeline Script

Push button

7

If privated repo, you need credentials

8

9

checkout ?

SCM

Git

Repositories ?

Repository URL ?
https://github.com/Tuchsanai/DevTools.git

Credentials ?
tuchsanai/*****

+ Add -

Advanced ▾

Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ?
*/dev

Add Branch

Repository browser ?
(Auto)

Additional Behaviours

Add ▾

Include in polling? ?

Include in changelog? ?

Generate Pipeline Script

COPY

10

```
checkout scmGit(branches: [[name: '**/dev']], extensions: [], userRemoteConfigs: [[credentialsId: 'github', url: 'https://github.com/Tuchsanai/DevTools.git']])
```

Configure

Preserve stashes from completed builds [?](#)

This project is parameterized [?](#)

General

Advanced Project Options

Pipeline

Build Triggers

- Build after other projects are built [?](#)
- Build periodically [?](#)
- GitHub hook trigger for GITScm polling [?](#)
- Poll SCM [?](#)
- Quiet period [?](#)
- Trigger builds remotely (e.g., from scripts) [?](#)

Advanced Project Options

Advanced [▼](#)

Pipeline

Definition

Pipeline script

```
1v pipeline {  
2v   agent any  
3v  
4v   stages {  
5v     stage('copy repository') {  
6v       steps {  
7v         checkout scmGit(branches: [[name: '*dev']], extensions: [], userRemoteConfigs: [])  
8v       }  
9v     }  
10v    // Copy the repository  
11v    checkout scmGit(branches: [[name: '*dev']], extensions: [], userRemoteConfigs: [])  
12v  }  
13v}  
14v  
15v
```



Use Groovy Sandbox [?](#)

Pipeline Syntax

Save

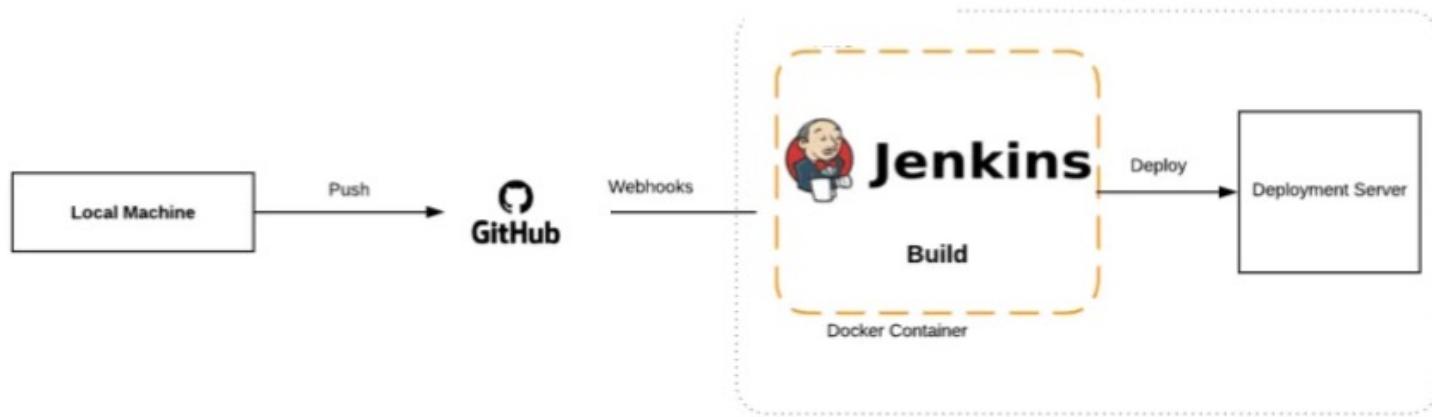
Apply

Console Output

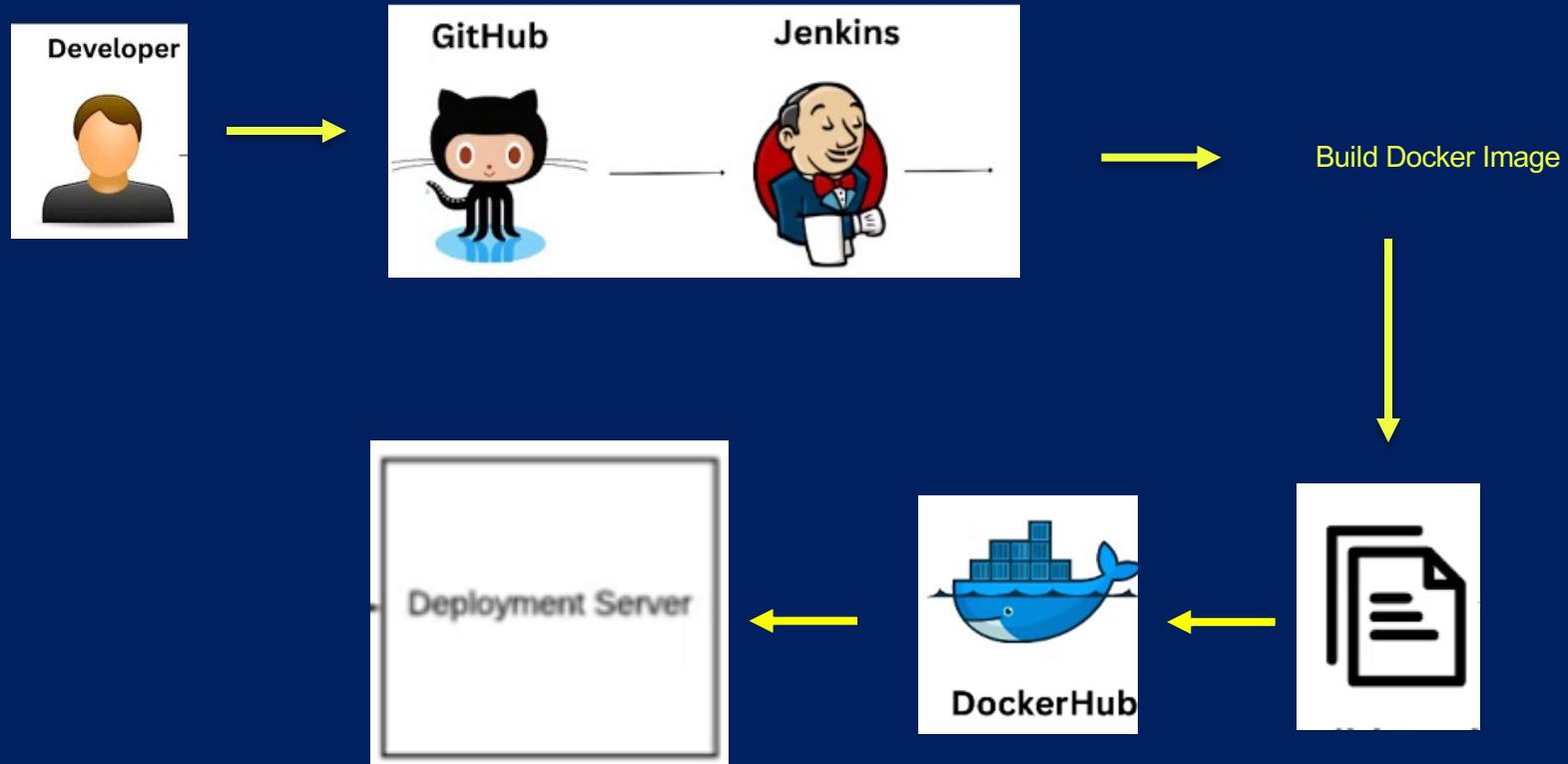
```
Started by user tp  
[Pipeline] Start of Pipeline  
[Pipeline] node  
Running on Jenkins in /var/lib/jenkins/workspace/No_SCM  
[Pipeline] stage  
[Pipeline] { (copy repository)  
[Pipeline] checkout  
The recommended git tool is: NONE  
using credential github  
> git rev-parse --resolve-dir /var/lib/jenkins/workspace/No_SCM.git # timeout=10  
Fetching changes from the remote Git repository  
> git config remote.origin.url https://github.com/Tuchsnaai/DevTools.git # timeout=10  
Fetching upstream changes from https://github.com/Tuchsnaai/DevTools.git  
> git fetch --tags --force --progress -- https://github.com/Tuchsnaai/DevTools.git +refs/heads/*:refs/remotes/origin/* # timeout=10  
Checking out Revision 777695d8493e3e2f982eb6cede9ab80461af605 (refs/remotes/origin/dev)  
> git checkout -f 777695d8493e3e2f982eb6cede9ab80461af605 # timeout=10  
Commit message: "delete files"  
First time build. Skipping changelog.  
[Pipeline] // stage  
[Pipeline] { (Check Python Installation)  
[Pipeline] script  
[Pipeline] sh  
+ which python3  
/usr/bin/python3  
[Pipeline] // stage  
[Pipeline] { (Run Python Script)  
[Pipeline] script  
[Pipeline] sh  
+ which python3  
/var/lib/jenkins/workspace/No_SCM  
[Pipeline] sh  
+ python3 /03_Jenkins/week13/02_Run_Jenkinsfile_From_Github_withoutSCM/status.py  
System Status:  
-----  
Operating System: posix  
  
Environment Variables: environ({'JENKINS_HOME': '/var/lib/jenkins', 'USER': 'jenkins', 'CI': 'true', 'RUN_CHANGES_DISPLAY_URL': 'http://175.41.181.239:8080/job/No\_SCM/2/display/redirect?page=changes', 'NODE_LABELS': 'built-in', 'HUDSON_URL': 'http://175.41.181.239:8080/', 'HOME': '/var/lib/jenkins', 'BUILD_URL': 'http://175.41.181.239:8080/job/No\_SCM/2/', 'HUDSON_COOKIE': 'a7b58642-e0f8-4b73-9815-31ababfe139f', 'JENKINS_SERVER_COOKIE': 'duration=586d74ee4c1e7d4ccf88cf3ed72fb78e91ca847f638989c02a53e38619', 'NOTIFY_SOCKET': '/run/systemd/notify', 'SYSTEMD_EXEC_PID': '7568', 'WORKSPACE': '/var/lib/jenkins/workspace/No_SCM', 'LOGNAME': 'jenkins', 'NODE_NAME': 'built-in', 'JOURNAL_STREAM': '8:44809', 'RUN_ARTIFACTS_DISPLAY_URL': 'http://175.41.181.239:8080/job/No\_SCM/2/display/redirect?page=artifacts', 'STAGE_NAME': 'Run Python Script', 'EXECUTOR_NUMBER': '1', 'RUN_DISPLAY_URL': 'http://175.41.181.239:8080/job/No\_SCM/2/display/redirect?page=tests', 'BUILD_DISPLAY_NAME': '#2', 'HUDSON_HOME': '/var/lib/jenkins', 'JOB_BASE_NAME': 'No_SCM', 'PATH': '/usr/local/bin:/usr/local/sbin:/usr/bin:/sbin:/usr/nssm/bin', 'INVOCATION_ID': 'aca235982c43aa08d8f67ec08ae', 'BUILD_URL': 'http://175.41.181.239:8080/job/No\_SCM/', 'BUILD_NUMBER': '2', 'JENKINS_NODE_COOKIE': '3b108ed5-a913-4708-9984-2549fe7ea95', 'SHELL': '/bin/sh', 'JOBSERVER': 'jenkins', 'JOBSERVER_DNSNAME': 'http://175.41.181.239:8080/job/No\_SCM/2/display/redirect', 'HUDSON_SERVER_COOKIE': 'a7b58642-e0f8-4b73-9815-31ababfe139f', 'JOB_DISPLAY_URL': 'http://175.41.181.239:8080/job/No\_SCM/2/display/redirect', 'JOB_NAME': 'No_SCM', 'PWD': '/var/lib/jenkins/workspace/No_SCM', 'WORKSPACE_TMP': '/var/lib/jenkins/workspace/No_SCM/tmp'})
```

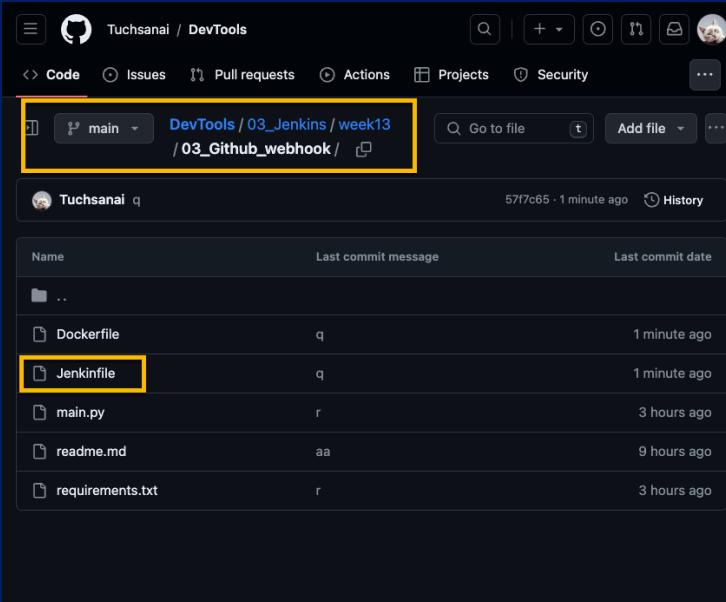
```
finished.  
[Pipeline] sh  
+ ls -l  
total 28  
drwxr-xr-x 6 jenkins jenkins 4096 Feb 28 08:53 @_GIT  
drwxr-xr-x 3 jenkins jenkins 4096 Feb 28 08:53 @_Google Cloud  
drwxr-xr-x 4 jenkins jenkins 4096 Feb 28 08:53 @_Docker  
drwxr-xr-x 3 jenkins jenkins 4096 Feb 28 08:53 @_Artifactory  
drwxr-xr-x 2 jenkins jenkins 4096 Feb 28 08:53 @_Jenkins Project  
-rw-r--r-- 1 jenkins jenkins 1695 Feb 28 08:53 README.md
```

LAB 03 : Github Webhook with Jenkinfile , Docker and Docker-Hub using SCM



Delivery (CD).





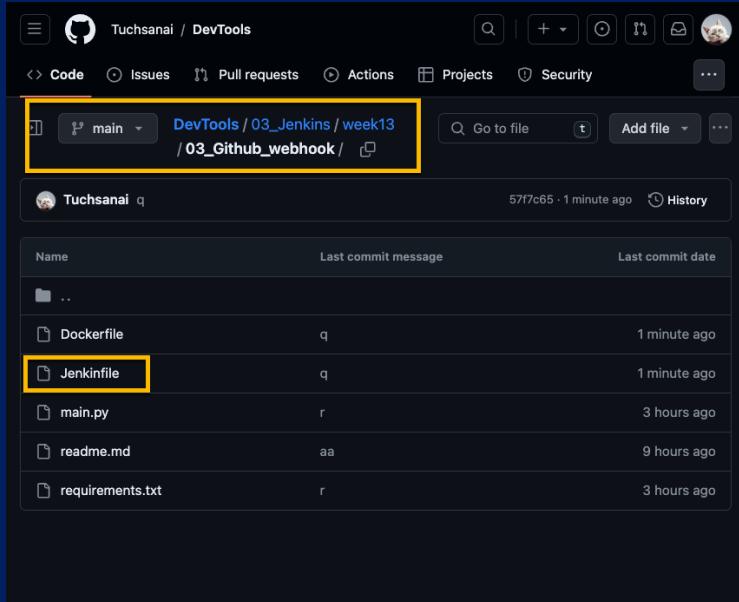
```
pipeline {
    agent any

    environment {
        // Define variables
        DOCKER_IMAGE      = 'tuchsanai/fastapi-webhook:latest'
        DOCKER_CREDENTIALS = credentials('dockerhub')
    }

    stages {
        stage('Start Jenkins') {
            steps {
                // Checkout your source code from version control
                sh 'echo Start Jenkins.....'
                sh 'echo docker : user = $DOCKER_CREDENTIALS_USR : password = $DOCKER_CREDENTIALS_PSW'
            }
        }

        stage('Build Docker Image') {
            steps {
                // Build the Docker image
                dir('./03_Jenkins/week13/03_Github_webhook') {
                    sh 'echo "Running in $(pwd)"'
                    sh 'echo start build the Docker image = $DOCKER_IMAGE'
                    sh 'docker build -t $DOCKER_IMAGE .'
                }
            }
        }

        stage('Push to Docker Hub') {
            steps {
                script {
                    // Login to Docker Hub
                    sh '$DOCKER_CREDENTIALS_PSW | docker login --username $DOCKER_CREDENTIALS_USR --password-stdin'
                    // Push the image
                    sh 'docker push $DOCKER_IMAGE'
                }
            }
        }
    }
}
```



```
stage('Clear Docker Components') {
    steps {
        script {
            // Remove Docker images and containers
            sh 'docker system prune -af'
        }
    }
}

stage('Deploy') {
    steps {
        script {
            // Pull the Docker image from Docker Hub
            sh 'docker pull $DOCKER_IMAGE'
            // Run the Docker container
            sh 'docker run -d --name fastapi-webhook -p 8085:80 $DOCKER_IMAGE'
        }
    }
}

post {
    always {
        // Logout from Docker Hub
        sh 'docker logout'
    }
}
```

Configure with github

A screenshot of a GitHub repository page for 'Tuchsanai / DevTools'. The top navigation bar shows tabs for Code, Issues, Pull requests, Actions, Projects, Security, Insights, and Settings. The Settings tab is highlighted with a red circle and has a large red number '1' above it. Below the navigation bar, there's a header for the repository 'DevTools' (Public) with options to Unpin, Unwatch, Fork, Star, and Watch. The main content area shows a list of commits from the 'main' branch, including entries for '00_GIT', '01_Google Cloud', '02_Docker', '03_Jenkins', '04_kubernetes', 'Mini_Project', '.gitignore', and 'README.md'. To the right of the commit list is an 'About' section with the following details: 'No description, website, or topics provided.', 'Readme', 'Activity', '20 stars', '1 watching', '4 forks', 'Releases' (No releases published), 'Packages' (No packages published), and 'Languages'.

A screenshot of the GitHub repository settings page for 'Tuchsanai / DevTools'. The top navigation bar shows tabs for Code, Issues, Pull requests, Actions, Projects, Security, Insights, and Settings. The Settings tab is highlighted with a red circle and has a large red number '2' above it. The main content area is titled 'General' and contains sections for Access, Collaborators, Moderation options, Code and automation, Branches, Tags, Rules, Actions, and Webhooks. The 'Webhooks' section is highlighted with a red circle. Below the General tab, there are sections for 'Default branch' (set to 'main') and 'Social preview'. A URL 'https://github.com/Tuchsanai/DevTools/settings/hooks' is visible at the bottom of the page.

Tuchsanai / DevTools

Code Issues Pull requests Actions Projects Security Insights Settings

Webhooks

3

Add webhook

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our [Webhooks Guide](#).

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Rules

Actions

Webhooks

Environments

Codespaces

Pages

Code Issues Pull requests Actions Projects Security Insights Settings

Webhooks / Add webhook

We'll send a POST request to the URL below with details of any subscribed events. You can also specify which data format you'd like to receive (JSON, x-www-form-urlencoded, etc). More information can be found in [our developer documentation](#).

Payload URL *

http://175.41.181.239:8080/github-webhook/

Content type

application/json

Secret

Which events would you like to trigger this webhook?

Just the push event.

Send me everything.

Let me select individual events.

Active

We will deliver event details when this hook is triggered.

Add webhook

4

http://yourJenkinsIP:8080/github-webhook/

<> Code ⏪ Issues ⏪ Pull requests ⏪ Actions ⏪ Projects ⏪ Security ⏪ Insights ⏪ Settings

Okay, that hook was successfully created. We sent a ping payload to test it out! Read more about it at <https://docs.github.com/webhooks/#ping-event>.

Webhooks

Add webhook

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Rules

Actions

Webhooks

Environments

Codespaces

Pages

Security

Code security and analysis

Deploy keys

Secrets and variables

Integrations

GitHub Apps

Email notifications

Webhooks allow external services to be notified when certain events happen. 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://175.41.181.239:8080/github...> (push)

Edit Delete

5

Configure with Jenkins

Not Secure 175.41.181.239:8080/view/all/newJob

Jenkins

Dashboard > All >

Enter an item name

webhook
» Required field

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

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

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

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

Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.

OK

Configure

General

- Do not allow concurrent builds
- Do not allow the pipeline to resume if the controller restarts
- GitHub project
- Pipeline speed/durability override ?
- Preserve stashes from completed builds ?
- This project is parameterized ?
- Throttle builds ?

Build Triggers

- Build after other projects are built ?
- Build periodically ?
- GitHub hook trigger for GITScm polling ?
- Poll SCM ?
- Quiet period ?
- Trigger builds remotely (e.g., from scripts) ?

9

Advanced Project Options

Advanced ▼

Pipeline

Definition

 Pipeline script Pipeline script from SCM

Script

1

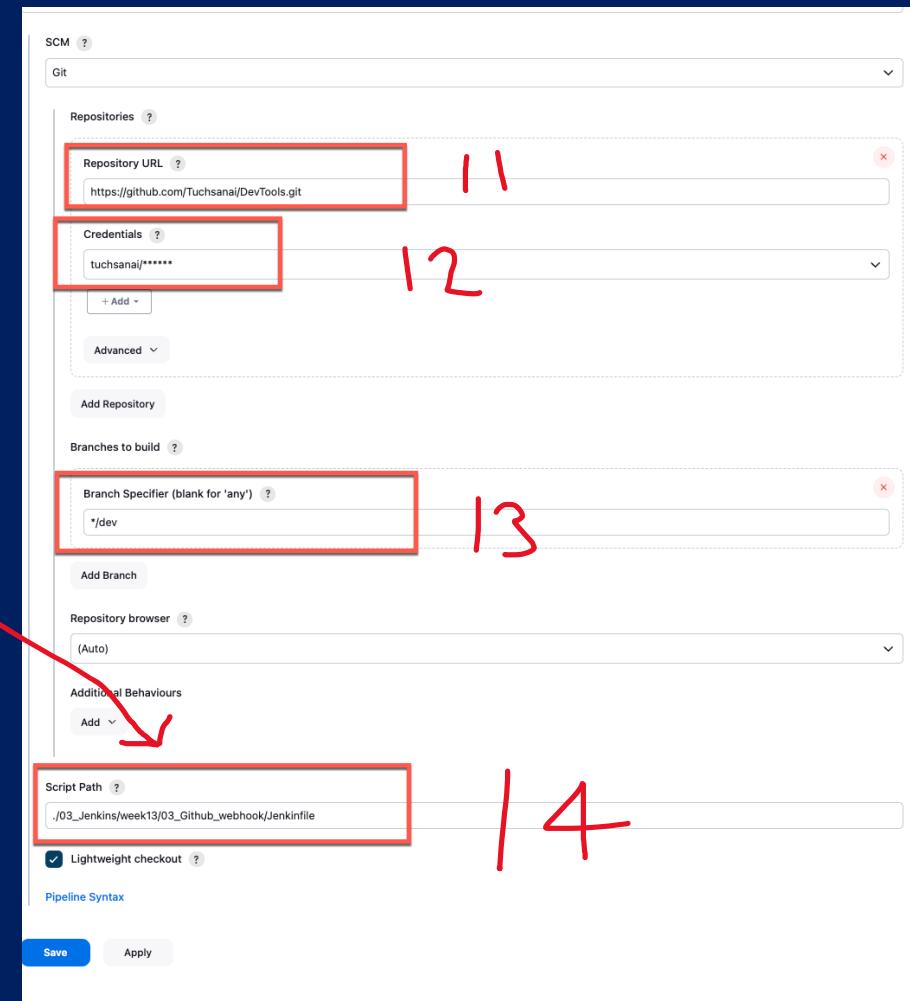
try sample Pipeline... ▼

10

Screenshot of a GitHub repository page for 'Tuchsanai / DevTools'. The repository path is highlighted with a yellow box: 'DevTools / 03_Jenkins / week13 / 03_Github_webhook /'. A red arrow points from this path to the Jenkins configuration screen on the right.

The repository contains the following files:

Name	Last commit message	Last commit date
..		
Dockerfile	q	1 minute ago
Jenkinsfile	q	1 minute ago
main.py	r	3 hours ago
readme.md	aa	9 hours ago
requirements.txt	r	3 hours ago



*** Run Jenkins by apply git push to repository for test github web-hook
** Do not run with Build Now button in Jenkins

15

Jenkins

Dashboard > webhook >

Status webhook

</> Changes

▷ Build Now

⚙ Configure

Delete Pipeline

🔍 Full Stage View

✍ Rename

Pipeline Syntax

GitHub Hook Log

Build History trend ▾

Filter... /

#2 4 月, 2024 14:58 No Changes 21:58

Atom feed for all Atom feed for failures

Stage View

Average stage times:
(Average full run time: ~1min 6s)

Declarative: Checkout SCM	Start Jenkins	Build Docker Image	Push to Docker Hub	Clear Docker Components	Deploy	Declarative: Post Actions
1s	611ms	12s	20s	2s	27s	323ms

Permalinks

-  Status
-  Changes
-  **Console Output**
-  View as plain text
-  Edit Build Information
-  Delete build '#2'
-  Polling Log
-  Git Build Data
-  Restart from Stage
-  Replay
-  Pipeline Steps
-  Workspaces

Console Output

```
Started by GitHub push by Tuchsanai
Originated -/03_Jenkins/week13/03_Github_webhook/Jenkinsfile from git https://github.com/Tuchsanai/DevTools.git
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/webhook
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
The recommended git tool is: git
using credential github
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/webhook/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Tuchsanai/DevTools.git # timeout=10
Fetching upstream changes from https://github.com/Tuchsanai/DevTools.git
> git --version # timeout=10
> git --version # git version 2.34.1'
using GIT_ASKPASS to set credentials
> git fetch --tags --force --progress -- https://github.com/Tuchsanai/DevTools.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/dev^{commit} # timeout=10
Checking out Revision 55836241f6ff5dc482624a7763957bff763446dc (refs/remotes/origin/dev)
> git config core.sparsecheckout # timeout=10
> git checkout -f 55836241f6ff5dc482624a7763957bff763446dc # timeout=10
Commit message: "delete files"
First time build. Skipping changelog.
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] withCredentials
Masking supported pattern matches of $DOCKER_CREDENTIALS or $DOCKER_CREDENTIALS_PSW
[Pipeline] {
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Start Jenkins)
[Pipeline] sh
+ echo Start Jenkins.....
Start Jenkins.....
[Pipeline] sh
+ echo docker : user = tuchsanai : password = ****
docker : user = tuchsanai : password = ****
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Build Docker Image)
[Pipeline] dir
Running in /var/lib/jenkins/workspace/webhook/03_Jenkins/week13/03_Github_webhook
[Pipeline] {
[Pipeline] sh
+ pwd
+ echo Running in /var/lib/jenkins/workspace/webhook/03_Jenkins/week13/03_Github_webhook
Running in /var/lib/jenkins/workspace/webhook/03_Jenkins/week13/03_Github_webhook
[Pipeline] sh
+ echo start build the Docker image = tuchsanai/fastapi-webhook:latest
start build the Docker image = tuchsanai/fastapi-webhook:latest
[Pipeline] sh
+ docker build -t tuchsanai/fastapi-webhook:latest .
#0 building with "default" instance using docker driver
```

```
[Pipeline] sh
+ docker build -t tuchsanai/fastapi-webhook:latest .
#0 building with "default" instance using docker driver

#1 [internal] load build definition from Dockerfile
#1 transferring dockerfile: 472B done
#1 DONE 0.0s

#2 [internal] load metadata for docker.io/library/python:3.9
#2 DONE 2.5s

#3 [internal] load .dockerrigignore
#3 transferring context: 2B done
#3 DONE 0.0s

#4 [internal] load build context
#4 transferring context: 477B done
#4 DONE 0.0s

#5 [1/5] FROM docker.io/library/python:3.9@sha256:383d027c4b840507f25453cf10969aa1e1d13e47731f294a88890e53f834bd
#5  resolver docker.io/library/python:3.9@sha256:383d072c4b840507f25453cf10969aa1e1d13e47731f294a88890e53f834bdf 0.0s done
#5  sha256:5304b4737b7c8797ce2d011a0187edca5d7218fc06fe644708d4aa5e9bc5c9 2.01kB / 2.01kB done
#5  sha256:c301b6ca47814a933dd480240cfbe9980c5363a43d3e864453d547ffcc1f6a7a5 7.33kB / 7.33kB done
#5  sha256:383d027c4b840507f25453cf10969aa1e1d13e47731f294a88890e53f834bd 1.86kB / 1.86kB done
#5 DONE 0.2s

#6 [2/5] WORKDIR /code
#6 DONE 0.0s

#7 [3/5] COPY requirements.txt .
#7 DONE 0.0s

#8 [4/5] COPY main.py .
#8 DONE 0.0s

#9 [5/5] RUN pip install --no-cache-dir -r requirements.txt
#9 2.384 Collecting fastapi
#9 2.444   Downloading fastapi-0.110.0-py3-none-any.whl (92 kB)
#9 2.463   ━━━━━━━━━━━━━━━━━━━━ 92.1/92.1 kB 5.3 MB/s eta 0:00:00
#9 2.526 Collecting uvicorn[standard]
#9 2.538   Downloading uvicorn-0.27.1-py3-none-any.whl (60 kB)
#9 2.534   ━━━━━━━━━━━━━━━━ 60.8/60.8 kB 59.3 MB/s eta 0:00:00
#9 2.937 Collecting pydantic!=1.8,...!=1.8.1,...!=2.0.0,...!=2.0.1,...!=1.1.0,...<3.0.0,...>1.7.4
#9 2.943   Downloading pydantic-2.6.3-py3-none-any.whl (395 kB)
#9 2.956   ━━━━━━━━━━━━━━ 395.2/395.2 kB 44.3 MB/s eta 0:00:00
#9 3.021 Collecting starlette<0.37.0,>=0.36.3
#9 3.026   Downloading starlette-0.36.3-py3-none-any.whl (71 kB)
#9 3.030   ━━━━━━━━━━━━━━ 71.5/71.5 kB 126.1 MB/s eta 0:00:00
#9 3.067 Collecting typing-extensions>=4.8.0
#9 3.071   Downloading typing_extensions-4.10.0-py3-none-any.whl (33 kB)
#9 3.122 Collecting h11<0.8
#9 3.126   Downloading h11-0.14.0-py3-none-any.whl (58 kB)
#9 3.130   ━━━━━━━━━━━━ 58.3/58.3 kB 115.5 MB/s eta 0:00:00
#9 3.175 Collecting click=>7.0
#9 3.179   Downloading click-8.1.1.7-py3-none-any.whl (97 kB)
#9 3.183   ━━━━━━━━━━━━ 97.9/97.9 kB 142.9 MB/s eta 0:00:00
#9 3.228 Collecting python-dotenv>=0.13
#9 3.225   Downloading python_dotenv-1.0.1-py3-none-any.whl (19 kB)
#9 3.294 Collecting httptools=>0.5.0
#9 3.300   Downloading httptools-0.6.1-cp39-cp39-manylinux_2_5_x86_64_manylinux1_x86_64_manylinux_2_17_x86_64_manylinux2014_x86_64.whl (345 kB)
#9 3.306   ━━━━━━━━━━━━ 345.2/345.2 kB 153.9 MB/s eta 0:00:00
#9 3.419 Collecting watchfiles>=0.13
#9 3.431   Downloading watchfiles-0.21.0-cp39-cp39-manylinux_2_17_x86_64_manylinux2014_x86_64.whl (1.3 MB)
#9 3.443   ━━━━━━━━━━━━ 1.3/1.3 kB 160.1 MB/s eta 0:00:00
#9 3.553 Collecting pyyaml=>5.1
```

```

#9 3.294 Collecting httptools==0.5.0
#9 3.300  Downloading httptools-0.6.1-cp39-cp39-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_17_x86_64.manylinux2014_x86_64.whl (345 kB)
#9 3.306          345.2/345.2 kB 153.9 MB/s eta 0:00:00
#9 3.419 Collecting watchfiles==0.13
#9 3.420  Downloading watchfiles-0.21.0-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.3 MB)
#9 3.443          1.3/1.3 MB 160.1 MB/s eta 0:00:00
#9 3.553 Collecting pyyaml>=5.1
#9 3.560  Downloading PyYAML-6.0.1-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (738 kB)
#9 3.568          738.9/738.9 kB 151.7 MB/s eta 0:00:00
#9 3.687 Collecting uvloop!=0.15.0,!=0.15.1,>=0.14.0
#9 3.694  Downloading uvloop-0.19.0-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.5 MB)
#9 3.721          3.5/3.5 MB 149.1 MB/s eta 0:00:00
#9 3.955 Collecting websockets==10.4
#9 3.962  Downloading websockets-12.0-cp39-cp39-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_17_x86_64.manylinux2014_x86_64.whl (130 kB)
#9 3.966          130.8/130.8 kB 138.9 MB/s eta 0:00:00
#9 4.036 Collecting annotated-types==0.4.0
#9 4.040  Downloading annotated_types-0.6.0-py3-none-any.whl (12 kB)
#9 5.791 Collecting pydantic-core==2.16.3
#9 5.808  Downloading pydantic_core-2.16.3-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.2 MB)
#9 5.820          2.2/2.2 MB 124.8 MB/s eta 0:00:00
#9 5.982 Collecting anyio<5,>=3.4.0
#9 5.984  Downloading anyio-4.3.0-py3-none-any.whl (85 kB)
#9 5.912          85.6/85.6 kB 134.6 MB/s eta 0:00:00
#9 6.059 Collecting idna>=2.8
#9 6.063  Downloading idna-3.6-py3-none-any.whl (61 kB)
#9 6.067          61.6/61.6 kB 126.5 MB/s eta 0:00:00
#9 6.099 Collecting exceptiongroup==1.0.2
#9 6.104  Downloading exceptiongroup-1.2.0-py3-none-any.whl (16 kB)
#9 6.122 Collecting sniffio==1.1
#9 6.126  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
#9 6.286 Installing collected packages: websockets, uvloop, typing-extensions, sniffio, pyyaml, python-dotenv, idna, httptools, h11, exceptiongroup, click, annotated-type, pydantic-core, anyio, watchfiles, starlette, pydantic, fastapi
#9 7.738 Successfully installed annotated-types-0.6.0 anyio-4.3.0 click-8.1.7 exceptiongroup-1.2.0 fastapi-0.110.0 h11-0.14.0 httptools-0.6.1 idna-3.6 pydantic-2.6.3 py-2.16.3 python-dotenv-1.0.1 pyyaml-6.0.1 sniffio-1.3.1 starlette-0.36.3 typing-extensions-4.10.0 uvicorn-0.27.1 uvloop-0.19.0 watchfiles-0.21.0 websockets-12.0
#9 7.738 WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a environment instead: https://pip.pya.io/warnings/env
#9 7.888
#9 7.888 [notice] A new release of pip is available: 23.0.1 -> 24.0
#9 7.888 [notice] To update, run: pip install --upgrade pip
#9 DONE 8.2s

#10 exporting to image
#10 exporting layers
#10 exporting layers 0.4s done
#10 writing image sha256:987dbd998de666db7541c9a2a5296362d32a67ec50a872163de1e85429f7c done
#10 naming to docker.io/tuchsanai/fastapi-webhook:latest done
#10 DONE 8.4s
[Pipeline]
[Pipeline] // dir
[Pipeline]
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { Push to Docker Hub
[Pipeline] script
[Pipeline]
[Pipeline] sh
+ echo ****
+ docker login --username tuchsanai --password-stdin
WARNING! Your password will be stored unencrypted in /var/lib/jenkins/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

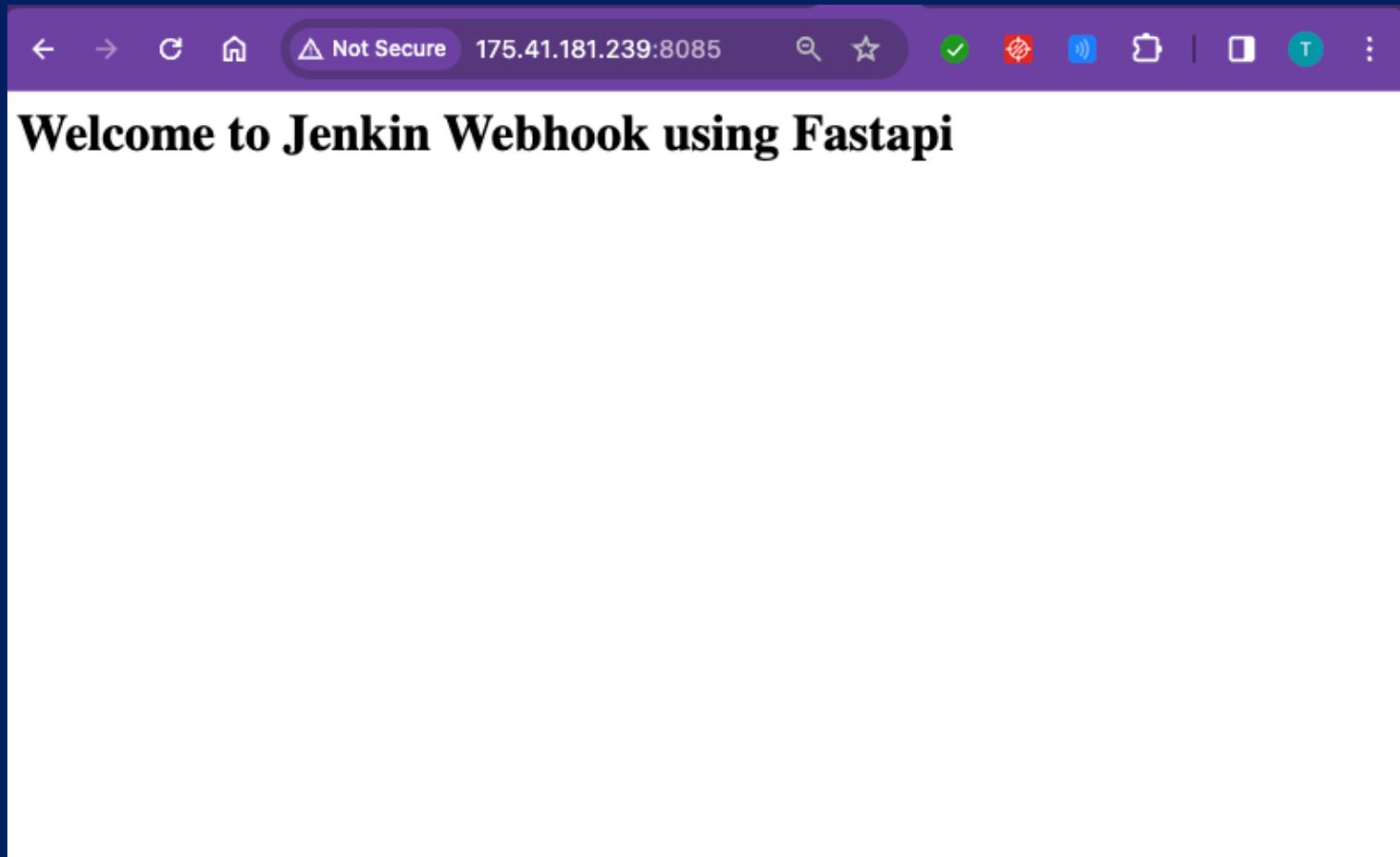
Login Succeeded
[Pipeline] sh
+ docker push tuchsanai/fastapi-webhook:latest
The push refers to repository [docker.io/tuchsanai/fastapi-webhook]
b5231aa32421: Preparing
74f1795c57c: Preparing
b308376ade3b: Renaming

```

```

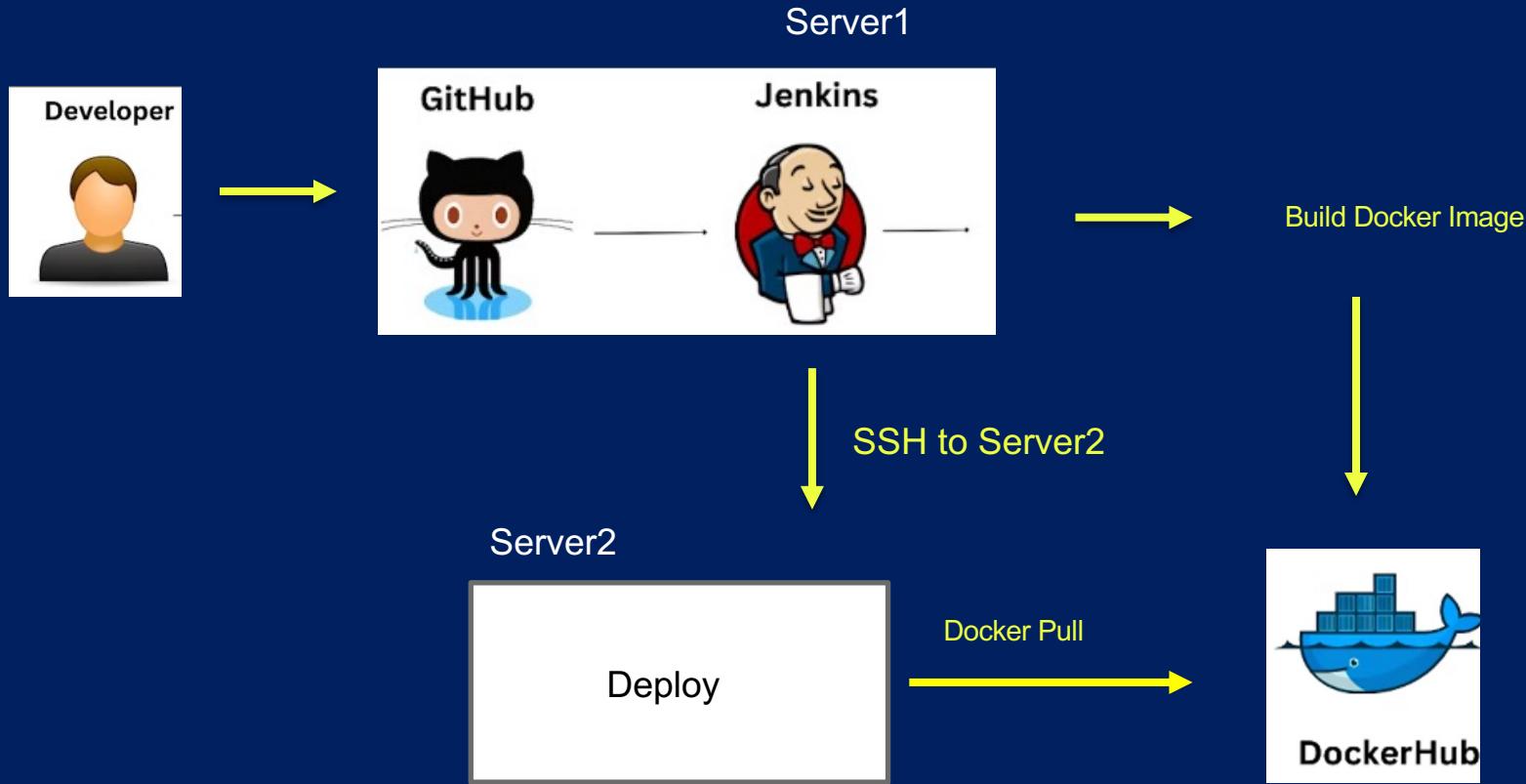
45e6f427b000: Waiting
c558fa597f8: Waiting
2a1e76f73903: Waiting
bf68602430fa: Waiting
ed607b6561ac: Waiting
11402150a57e: Waiting
d662c27d7e57: Waiting
2b9b41aaa3c5: Verifying Checksum
2b9b41aaa3c5: Download complete
7hb465c29149: Verifying Checksum
7hb465c29149: Download complete
49b40be4436e: Verifying Checksum
49b40be4436e: Download complete
11402150a57e: Download complete
d662c27d7e57: Download complete
26ff257bcfc1: Verifying Checksum
26ff257bcfc1: Download complete
5a8f6cc6cb0d2: Verifying Checksum
5a8f6cc6cb0d2: Download complete
c558fa597f8: Verifying Checksum
c558fa597f8: Download complete
45e6f427b000: Download complete
7hb465c29149: Pull complete
2a1e76f73903: Verifying Checksum
2a1e76f73903: Download complete
bf68602430fa: Verifying Checksum
bf68602430fa: Download complete
2b9b41aaa3c5: Pull complete
ed607b6561ac: Verifying Checksum
ed607b6561ac: Download complete
49b40be4436e: Pull complete
c558fa597f8: Pull complete
11402150a57e: Pull complete
d662c27d7e57: Pull complete
26ff257bcfc1: Pull complete
5a8f6cc6cb0d2: Pull complete
45e6f427b000: Pull complete
2a1e76f73903: Pull complete
bf68602430fa: Pull complete
ed607b6561ac: Pull complete
Digest: sha256:94abaf415762976e58224f3fc78d3005b376ed734489e5c0d96af1f595d602601
Status: Downloaded newer image for tuchsanai/fastapi-webhook:latest
docker.io/tuchsanai/fastapi-webhook:latest
[Pipeline] sh
+ docker run -d --name fastapi-webhook -p 8085:80 tuchsanai/fastapi-webhook:latest
a0dc065337fc0b0c84b7fd9418c8359f4a92f97bb3e4fa2a3cf1380160ede5
[Pipeline]
[Pipeline] // script
[Pipeline]
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] sh
+ docker logout
Removing login credentials for https://index.docker.io/v1/
[Pipeline]
[Pipeline] // stage
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // withCredentials
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS

```



LAB 04 : Github_webhook_Remote_SSH

!!!!!!Challenge!!!!!!



Configure with Jenkins

Jenkins Global credentials (unrestricted) page. The table shows:

ID	Name	Kind	Description
github	tuchsanai/*****	Username with password	
dockerhub	tuchsanai/*****	Username with password	
ssh_prod_instance	tuchsanai	SSH Username with private key	

The entry "ssh_prod_instance" is highlighted with a red box.

Google Cloud Compute Engine Instances page. The table shows:

Status	Name	Zone	Recommendations	In use by	Internal IP
<input type="checkbox"/>	instance-20240304-155449	asia-southeast1-b			10.148.0.27 (nic0)

The "External IP" column shows 34.124.197.62 (nic0). A red box highlights the "Copied" button next to the IP address, indicating it has been copied to the clipboard.

IP Server2

Noted that Jenkins server_1 and Deploy server_2 are diffrence IP address with 2 computers

main DevTools / 03_Jenkins / week13 / 04_Github_webhook_Remote_SSH / Jenkinsfile

Tuchsanai d

Code Blame 36 lines (33 loc) · 1.95 KB

```
1 pipeline {
2     agent any
3
4     environment {
5         // It's good practice to keep sensitive or specific data like Docker images, remote hosts, and credentials out of the script for security and flexibility.
6         DOCKER_IMAGE = 'tuchsanai/fastapi-webhook:latest' // Ensure this Docker image name is correct and accessible.
7         REMOTE_HOST = 'tuchsanai@34.124.197.62' // Replace with your actual username and remote IP.
8         SSH_CREDENTIALS = 'ssh_prod_instance' // Use the ID of the Jenkins stored SSH credentials.
9     }
10
11     stages {
12         stage('Login to Docker Hub') {
13             steps {
14                 // This step logs into Docker Hub using credentials stored in Jenkins.
15                 withCredentials([usernamePassword(credentialsId: 'dockerhub', passwordVariable: 'DOCKERHUB_PASSWORD', usernameVariable: 'DOCKERHUB_USER')]) {
16                     sh 'echo $DOCKERHUB_PASSWORD | docker login --username $DOCKERHUB_USER --password-stdin'
17                 }
18             }
19         }
20
21         stage('Run Docker on Remote Server') {
22             steps {
23                 // Uses the SSH Agent plugin to setup SSH credentials.
24                 sshagent([SSH_CREDENTIALS]) {
25                     // These commands manage Docker containers on the remote server.
26                     // It stops and removes all containers, then removes all images, before running a new container.
27                     sh "ssh -o StrictHostKeyChecking=no $REMOTE_HOST 'docker stop \$\{docker ps -a -q\} || true'"
28                     sh "ssh -o StrictHostKeyChecking=no $REMOTE_HOST 'docker rm \$\{docker ps -a -q\} || true'"
29                     sh "ssh -o StrictHostKeyChecking=no $REMOTE_HOST 'docker rmi \$\{docker images -q\} || true'"
30                     sh "ssh -o StrictHostKeyChecking=no $REMOTE_HOST 'docker run -d --name fastapi-webhook -p 8085:80 $DOCKER_IMAGE'"
31                     sh "ssh -o StrictHostKeyChecking=no $REMOTE_HOST 'docker ps -a'"
32                 }
33             }
34         }
35     }
36 }
```

