

Exercise 5: Pipeline Job - Deploy a Flask Application with Gunicorn

1. Objective: Automate the deployment of a Flask application with Gunicorn on Windows.
2. Steps:
 - a. Create a Pipeline Job.
 - b. Write a Jenkinsfile to:
 - Clone a Flask application from GitHub.
 - Set up a Python virtual environment.
 - Install required packages using `pip install -r requirements.txt`.
 - Configure and start the Gunicorn server:
`gunicorn -b 127.0.0.1:8000 app:app`
 - Verify the deployment using a curl command in the pipeline.
 - c. Add stages for:
 - Unit tests using pytest.
 - Post-deployment endpoint checks.
2. Task: Trigger the pipeline and ensure the Flask app is accessible on localhost

Configurations

Pipeline :

Pipeline

Definition

Pipeline script from SCM

SCM ?

Git

Repositories ?

Repository URL ?

https://github.com/AdityaSharma2003/devopsPracticeNexturn.git

Credentials ?

aditya/*****

+ Add

Advanced

Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ?

*/master

Add Branch

Repository browser ?

(Auto)

Additional Behaviours

Add

Script Path ?

jenkinsFile

Console Output :

Dashboard > JE-5 > #1

Status

</> Changes

Console Output

Edit Build Information

Delete build '#1'

Timings

Git Build Data

See Fingerprints

Test Report

Pipeline Overview

Pipeline Console

Replay

Pipeline Steps

Workspaces

✓ Console Output

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Started by user [aditya sharma](#)
Obtained jenkinsFile from git <https://github.com/AdityaSharma2003/devopsPracticeNexturn.git>

```
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in C:\AdityaPersonal\nexTurn\new_jenkins\workspace\JE-5
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
The recommended git tool is: git.exe
using credential aditya-github-credentials
Cloning the remote Git repository
Cloning repository https://github.com/AdityaSharma2003/devopsPracticeNexturn.git
> git.exe init C:\AdityaPersonal\nexTurn\new_jenkins\workspace\JE-5 # timeout=10
Fetching upstream changes from https://github.com/AdityaSharma2003/devopsPracticeNexturn.git
> git.exe --version # timeout=10
> git --version # 'git version 2.41.0.windows.3'
using GIT_ASKPASS to set credentials
> git.exe fetch --tags --force --progress -- https://github.com/AdityaSharma2003/devopsPracticeNexturn.git
+refs/heads/*:refs/remotes/origin/* # timeout=10
> git.exe config remote.origin.url https://github.com/AdityaSharma2003/devopsPracticeNexturn.git # timeout=10
> git.exe config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10
Checking out Revision deaba2d9dd7341e5e6d6141c252e0917c2ccf553 (refs/remotes/origin/master)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f deaba2d9dd7341e5e6d6141c252e0917c2ccf553 # timeout=10
Commit message: "added jenkins file 1"
First time build. skipping changelog.
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Prepare Environment)
[Pipeline] script
[Pipeline] {
[Pipeline] echo
Creating Virtual Environment and Installing Dependencies..
[Pipeline] bat

C:\AdityaPersonal\nexTurn\new_jenkins\workspace\JE-5>python -m venv venv
[Pipeline] bat

C:\AdityaPersonal\nexTurn\new_jenkins\workspace\JE-5>venv\Scripts\activate && pip install -r requirements.txt
Requirement already satisfied: pytest in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from -r requirements.txt (line 1)) (8.3.4)
Requirement already satisfied: pytest-html in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from -r requirements.txt (line 2)) (4.1.1)
Requirement already satisfied: colorama in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from pytest->-r requirements.txt (line 1))
```

```

Requirement already satisfied: colorama in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from pytest->r requirements.txt (line 1)) (0.4.6)
Requirement already satisfied: iniconfig in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from pytest->r requirements.txt (line 1)) (2.0.0)
Requirement already satisfied: packaging in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from pytest->r requirements.txt (line 1)) (24.2)
Requirement already satisfied: pluggy<2,>=1.5 in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from pytest->r requirements.txt (line 1)) (1.5.0)
Requirement already satisfied: Jinja2>=3.0.0 in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from pytest-html->r requirements.txt (line 2)) (3.1.5)
Requirement already satisfied: pytest-metadata>=2.0.0 in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from pytest-html->r requirements.txt (line 2)) (3.1.1)
Requirement already satisfied: MarkupSafe>=2.0 in c:\adityapersonal\nexturn\devops\venv\lib\site-packages (from Jinja2>=3.0.0->pytest-html->r requirements.txt (line 2)) (3.0.2)

[notice] A new release of pip is available: 23.2.1 -> 24.3.1
[notice] To update, run: C:\AdityaPersonal\nexturn\devops\venv\Scripts\python.exe -m pip install --upgrade pip
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Run Tests)
[Pipeline] script
[Pipeline] {
[Pipeline] echo
Running tests and Generating Reports..
[Pipeline] bat

C:\AdityaPersonal\nexturn\new_jenkins\workspace\JE-5\venv\Scripts\activate && pytest --junitxml=reports/results.xml --html=reports/report.html
===== test session starts =====
platform win32 -- Python 3.11.5, pytest-8.3.4, pluggy-1.5.0
rootdir: C:\AdityaPersonal\nexturn\new_jenkins\workspace\JE-5
plugins: html-4.1.1, metadata-3.1.1
collected 2 items

tests\test_example.py .. [100%]

- generated xml file: C:\AdityaPersonal\nexturn\new_jenkins\workspace\JE-5\reports\results.xml -
- Generated html report: file:///C:/AdityaPersonal/nexTurn/new_jenkins/workspace/JE-5/reports/report.html -
===== 2 passed in 0.04s =====
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
Archiving Reports
[Pipeline] archiveArtifacts
Archiving artifacts
Recording fingerprints
[Pipeline] publishHTML
[htmlpublisher] Archiving HTML reports...
[htmlpublisher] Archiving at BUILD level C:\AdityaPersonal\nexturn\new_jenkins\workspace\JE-5\reports to
C:\AdityaPersonal\nexturn\new_jenkins\builds\JE-5\builds\1\htmlreports\Test_20Report
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
Archiving Reports
[Pipeline] archiveArtifacts
Archiving artifacts
Recording fingerprints
[Pipeline] publishHTML
[htmlpublisher] Archiving HTML reports...
[htmlpublisher] Archiving at BUILD level C:\AdityaPersonal\nexturn\new_jenkins\workspace\JE-5\reports to
C:\AdityaPersonal\nexturn\new_jenkins\jobs\JE-5\builds\1\htmlreports\Test_20Report
[htmlpublisher] Copying recursive using current thread
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS

```

Reports.html :

report.html

Report generated on 18-Jan-2025 at 12:21:52 by [pytest-html](#) v4.1.1

Environment

Summary

2 tests took 1 ms.

(Un)check the boxes to filter the results.

There are still tests running.

Reload this page to get the latest results!

☐ 0 Failed, ☒ 2 Passed, ☐ 0 Skipped, ☐ 0 Expected failures, ☐ 0 Unexpected passes, ☐ 0 Errors, ☐ 0 Reruns

/

Result Test Duration Links

Results.xml :

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<testsuite>
<testsuite name="pytest" errors="0" failures="0" skipped="0" tests="2" time="0.064" timestamp="2025-01-18T12:21:51.980973+05:30" hostname="LAPTOP-BNJSV3UA">
<testcase classname="tests.test_example" name="test_add_numbers" time="0.001"/>
<testcase classname="tests.test_example" name="test_subtract_numbers" time="0.000"/>
...
</testsuite>
...
</testsuites>
```