

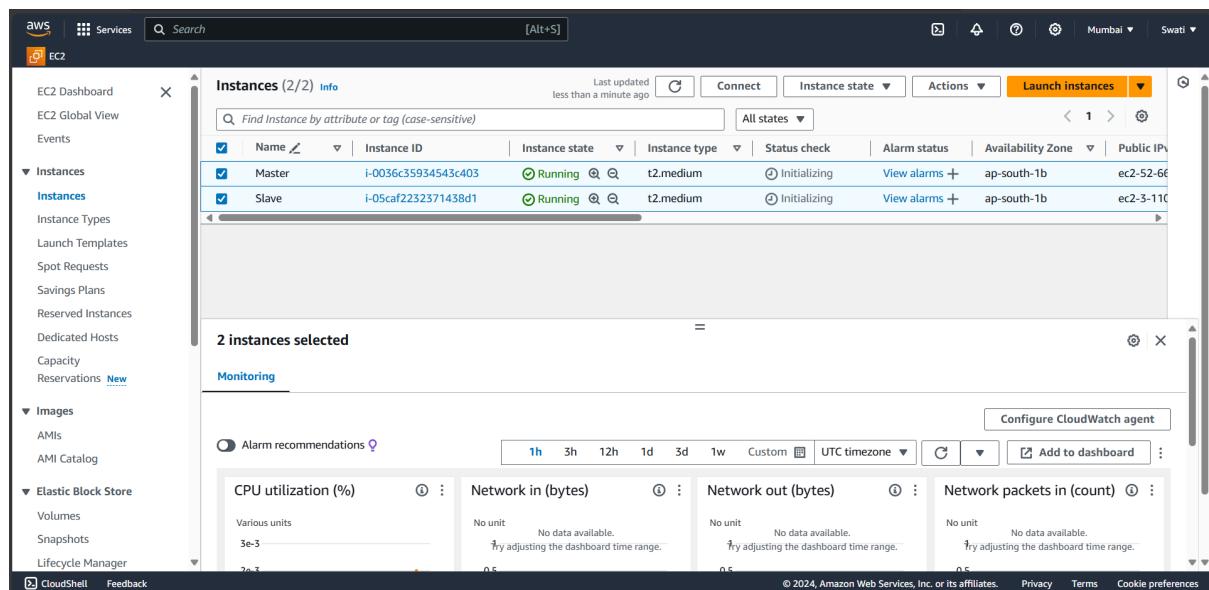
AppleBite Co. CI/CD Project

Project Description:

AppleBite Co. aims to enhance its software development and deployment process by implementing a Continuous Integration and Continuous Deployment (CI/CD) pipeline. This project leverages various tools to ensure high-quality, reliable, and efficient software delivery. The goal is to automate the deployment of a PHP application whenever developers push code to the GitHub master branch.

1. Set Up Virtual Machines (VMs)

- **Master VM:** This will host Jenkins and other tools.
- **Slave Node (Test Server):** This will be used for building and deploying applications.



2. Install Required Software

2.1 Master VM Setup

1. Install Java (required for Jenkins)
2. Install Jenkins
3. Install Git
4. Install Ansible
5. Install Docker

```
ubuntu@ip-172-31-0-4:~$ sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] " \
https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
--2024-09-04 09:14:57- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
resolving pkg.jenkins.io (pkg.jenkins.io) ... 151.101.154.133, 2a04:4e42:24::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|151.101.154.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3175 (3.1K) (application/pgp-keys)
Saving to: '/usr/share/keyrings/jenkins-keyring.asc'

/usr/share/keyrings/jenkins-keyring.asc 100%[=====] 3.10K --.-KB/s in 0s

2024-09-04 09:14:57 (48.1 MB/s) - '/usr/share/keyrings/jenkins-keyring.asc' saved [3175/3175]

Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:5 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Get:7 https://pkg.jenkins.io/debian-stable binary/ Packages [27,6 kB]
Hit:8 http://security.ubuntu.com/ubuntu jammy-security InRelease
Fetched 30.5 kB in 0s (62.5 kB/s)
Reading package lists... Done
Reading package lists... Done
```

i-0036c35934543c403 (Master)

PublicIPs: 52.66.248.213 PrivateIPs: 172.31.0.4

```
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-0-4:~$ sudo systemctl enable jenkins
Synchronizing state of jenkins.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable jenkins
ubuntu@ip-172-31-0-4:~$ sudo systemctl start jenkins
ubuntu@ip-172-31-0-4:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
     Active: active (running) since Wed 2024-09-04 09:15:30 UTC; 36s ago
       Main PID: 5331 (java)
          Tasks: 50 (limit: 4666)
        Memory: 585.0M
           CPU: 13.314s
          CGroup: /system.slice/jenkins.service
                  └─5331 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

sep 04 09:15:24 ip-172-31-0-4 jenkins[5331]: f8741461f1554a2c87175f171bc54ab0
sep 04 09:15:24 ip-172-31-0-4 jenkins[5331]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
sep 04 09:15:24 ip-172-31-0-4 jenkins[5331]: ****
sep 04 09:15:29 ip-172-31-0-4 jenkins[5331]: 2024-09-04 09:15:29.558+0000 (id=47)      INFO      h.m.DownloadService$Downloadable#load: Obtained the updated
sep 04 09:15:29 ip-172-31-0-4 jenkins[5331]: 2024-09-04 09:15:29.559+0000 (id=47)      INFO      hudson.util.Retrier#start: Performed the action check update
sep 04 09:15:30 ip-172-31-0-4 jenkins[5331]: 2024-09-04 09:15:30.059+0000 (id=29)      INFO      Jenkins.InitReactorRunner$1#onAttained: Completed initialization
sep 04 09:15:30 ip-172-31-0-4 jenkins[5331]: 2024-09-04 09:15:30.108+0000 (id=22)      INFO      hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and
sep 04 09:15:30 ip-172-31-0-4 systemd[1]: Started Jenkins Continuous Integration Server.
lines 1-20/20 (END)
```

i-0036c35934543c403 (Master)

PublicIPs: 52.66.248.213 PrivateIPs: 172.31.0.4

```
ubuntu@ip-172-31-0-4:~$ sudo apt install git -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.11).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 50 not upgraded.
ubuntu@ip-172-31-0-4:~$ sudo apt install ansible -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ieeedata python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm-auth
  python3-packaging python3-pycryptodome python3-requests-kerberos python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson
  python3-winrm python3-xmldict
Suggested packages:
  cowsay sshpass python3-sniffio python3-trio python-lockfile-doc ipython3 python-netaddr-docs
The following NEW packages will be installed:
  ansible ieeedata python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm-auth
  python3-packaging python3-pycryptodome python3-requests-kerberos python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson
  python3-winrm python3-xmldict
0 upgraded, 19 newly installed, 0 to remove and 50 not upgraded.
Need to get 22.9 MB of archives.
After this operation, 243 MB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-packaging all 21.3-1 [30.7 kB]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-pycryptodome amd64 3.11.0+dfsg1-3ubuntu0.1 [1029 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-dnspython all 2.1.0-1ubuntu1 [123 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 ieeedata all 20210605.1 [1887 kB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-netaddr all 0.8.0-2 [309 kB]
```

i-0036c35934543c403 (Master)

PublicIPs: 52.66.248.213 PrivateIPs: 172.31.0.4

```
aws Services Search [Alt+S] Mumbai Swati
[?] EC2
ubuntu@ip-172-31-0-4:~$ sudo apt install ansible -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ieee-data python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm-auth
  python3-packaging python3-pycryptodome python3-requests-kerberos python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson
  python3-winrm python3-xmldict
Suggested packages:
  coway sshpass python3-sniffio python3-trio python-lockfile-doc ipython3 python-netaddr-docs
The following NEW packages will be installed:
  ansible ieee-data python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm-auth
  python3-packaging python3-pycryptodome python3-requests-kerberos python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson
  python3-winrm python3-xmldict
0 upgraded, 19 newly installed, 0 to remove and 50 not upgraded.
Need to get 22.9 MB of archives.
After this operation, 243 MB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-packaging all 21.3-1 [30.7 kB]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-pycryptodome amd64 3.11.0+dfsg1-3ubuntu0.1 [1029 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-dnspython all 2.1.0-1ubuntu1 [123 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 ieee-data all 20210605.1 [1887 kB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-netaddr all 0.8.0-2 [309 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ansible all 2.10.0-merged-basev2.10.8+dfsg-1 [17.5 MB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-argcomplete all 1.8.1-1.5 [27.2 kB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-jmespath all 1.0.0-1 [21.7 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-kerberos amd64 1.1.14-3.1build5 [23.0 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-lockfile all 1:0.12.2-2.2 [14.6 kB]
Get:11 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-simplejson amd64 3.17.6-1build1 [54.7 kB]
Get:12 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-libcloud all 3.2.0-2 [1554 kB]

i-0036c35934543c403 (Master)
PublicIPs: 52.66.248.213 PrivateIPs: 172.31.0.4
```

```
aws Services Search [Alt+S] Mumbai Swati
[?] EC2
ubuntu@ip-172-31-0-4:~$ sudo apt install docker.io -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroups-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 50 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-lubuntu3 [34.4 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2-22.04.1 [8405 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2-22.04.1 [37.8 MB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dns-root-data all 2023112702-ubuntu20.22.04.1 [5136 B]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.90-0ubuntu0.22.04.1 [374 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 docker.io amd64 24.0.7-0ubuntu2-22.04.1 [28.8 MB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 75.5 MB in 1s (71.1 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 106261 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.7-lubuntu3_amd64.deb ...

i-0036c35934543c403 (Master)
PublicIPs: 52.66.248.213 PrivateIPs: 172.31.0.4
```

2.2 Slave Node Setup

1. Install required packages
2. Install Docker

```

aws Services Search [Alt+S]
EC2

ubuntu@ip-172-31-15-245:~$ sudo apt install python3 git openssh-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.11).
git set to manually installed.
openssh-server is already the newest version (1:8.9p1-3ubuntu0.10).
Suggested packages:
  python3-doc python3-tk python3-venv
The following packages will be upgraded:
  libpython3.6-stdlib python3 python3-minimal
3 upgraded, 0 newly installed, 0 to remove and 47 not upgraded.
Need to get 53.9 kB of archives.
After this operation, 0 B of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive/ubuntu jammy-updates/main amd64 python3-minimal amd64 3.10.6-1-22.04.1 [24.3 kB]
Get:2 http://ap-south-1.ec2.archive/ubuntu jammy-updates/main amd64 python3 amd64 3.10.6-1-22.04.1 [22.8 kB]
Get:3 http://ap-south-1.ec2.archive/ubuntu jammy-updates/main amd64 libpython3-stdlib amd64 3.10.6-1-22.04.1 [6812 kB]
Fetched 53.9 kB in 0s (2202 kB/s)
(Reading database ... 65320 files and directories currently installed.)
Preparing to unpack .../python3-minimal_3.10.6-1-22.04.1_amd64.deb ...
Unpacking python3-minimal (3.10.6-1-22.04.1) over (3.10.6-1-22.04) ...
Setting up python3-minimal (3.10.6-1-22.04.1) ...
(Reading database ... 65320 files and directories currently installed.)
Preparing to unpack .../python3_3.10.6-1-22.04.1_amd64.deb ...
Unpacking python3 (3.10.6-1-22.04.1) ...
Preparing to unpack .../libpython3-stdlib_3.10.6-1-22.04.1_amd64.deb ...
Unpacking libpython3-stdlib:amd64 (3.10.6-1-22.04.1) over (3.10.6-1-22.04) ...
Setting up libpython3-stdlib:amd64 (3.10.6-1-22.04.1) ...

i-05caf2232371438d1 (Slave)
PublicIPs: 3.110.135.203 PrivateIPs: 172.31.15.245

```

```

aws Services Search [Alt+S]
EC2

Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 47 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://ap-south-1.ec2.archive/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://ap-south-1.ec2.archive/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2-22.04.1 [8405 kB]
Get:4 http://ap-south-1.ec2.archive/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2-22.04.1 [37.8 kB]
Get:5 http://ap-south-1.ec2.archive/ubuntu jammy-updates/main amd64 dns-root-data all 2023112702-ubuntu0.22.04.1 [5136 kB]
Get:6 http://ap-south-1.ec2.archive/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.90-0ubuntu0.22.04.1 [374 kB]
Get:7 http://ap-south-1.ec2.archive/ubuntu jammy-updates/universe amd64 docker.io amd64 24.0.7-0ubuntu2-22.04.1 [28.8 MB]
Get:8 http://ap-south-1.ec2.archive/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 75.5 MB in 0s (71.6 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 65320 files and directories currently installed.)
Preparing to unpack .../pigz_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../bridge-utils_1.7-1ubuntu3_amd64.deb ...
Unpacking bridge-utils (1.7-1ubuntu3) ...

i-05caf2232371438d1 (Slave)
PublicIPs: 3.110.135.203 PrivateIPs: 172.31.15.245

```

3. Prepare Your PHP Application

1. Clone the Sample PHP Application
2. Navigate to the Project Directory

```

ubuntu@ip-172-31-0-4:~$ sudo systemctl enable docker
ubuntu@ip-172-31-0-4:~$ git clone https://github.com/edureka-devops/projCert.git
Cloning into 'projCert'...
remote: Enumerating objects: 112, done.
remote: Total 112 (delta 0), reused 0 (delta 0), pack-reused 112 (from 1)
Receiving objects: 100% (112/112), 9.17 MiB | 14.98 MiB/s, done.
Resolving deltas: 100% (55/55), done.
ubuntu@ip-172-31-0-4:~$ cd projCert
ubuntu@ip-172-31-0-4:~/projCert$ ls
website
ubuntu@ip-172-31-0-4:~/projCert$ 

i-0036c35934543c403 (Master)
PublicIPs: 52.66.248.213 PrivateIPs: 172.31.0.4

```

4. Create a Dockerfile

```
ubuntu@ip-172-31-0-4:~/projCert$ vi Dockerfile
ubuntu@ip-172-31-0-4:~/projCert$ cat Dockerfile
FROM php:7.4-apache
COPY . /var/www/html/
ubuntu@ip-172-31-0-4:~/projCert$ █
```

i-0036c35934543c403 (Master)

Public IPs: 52.66.248.213 Private IPs: 172.31.0.4

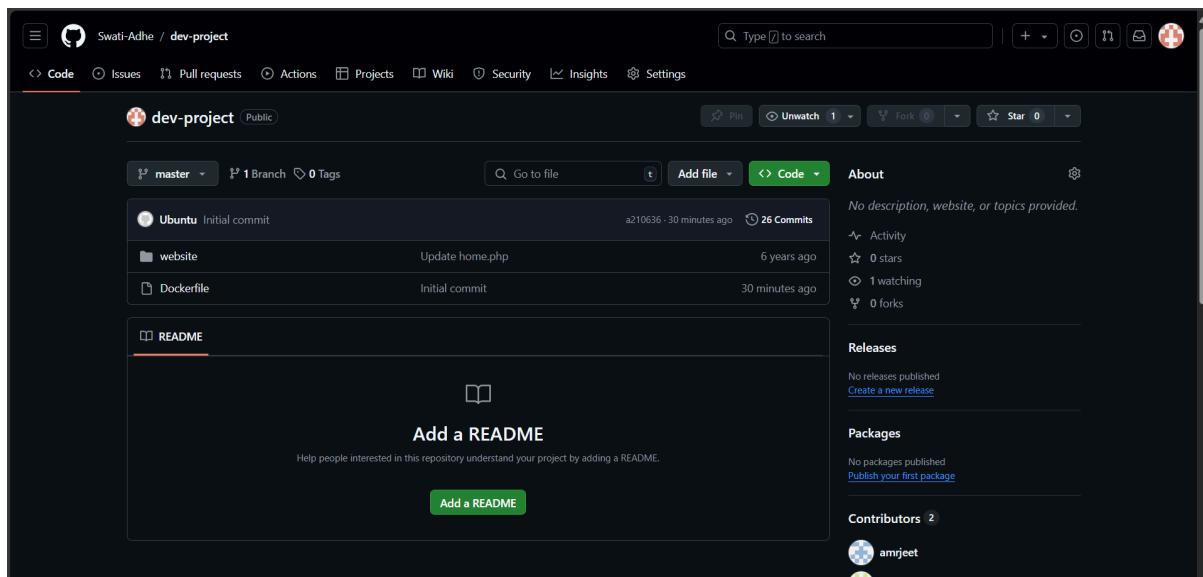
5. Push Your Application to GitHub

1. Create a new GitHub repository.
 2. Push your code

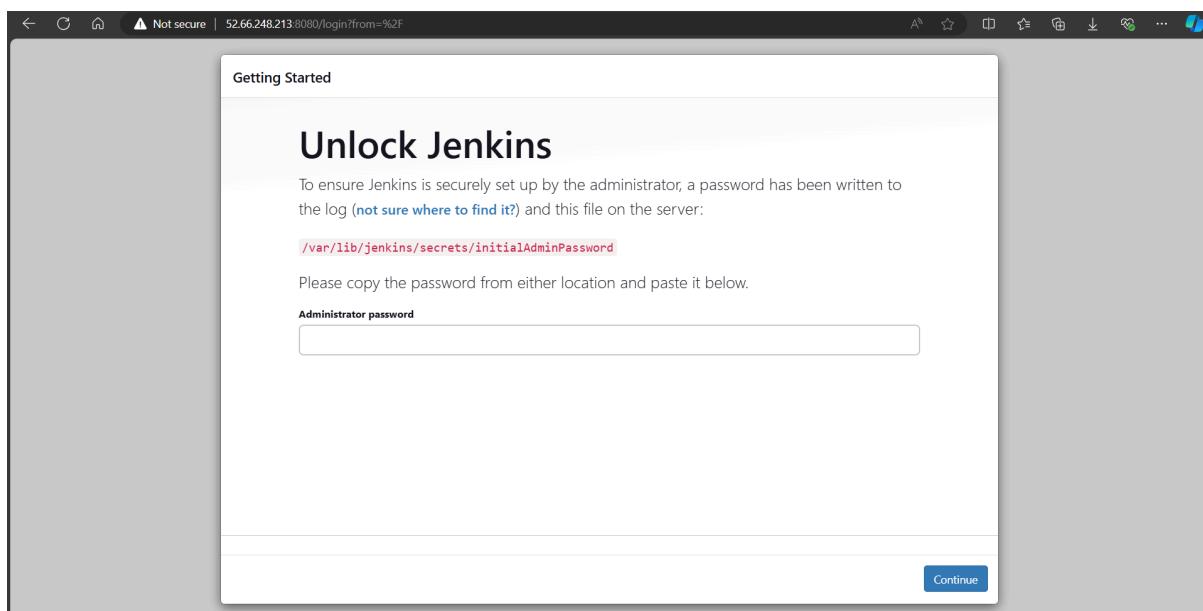
```
aws | Services | Search [Alt+S] | Mumbai | Swati | Q

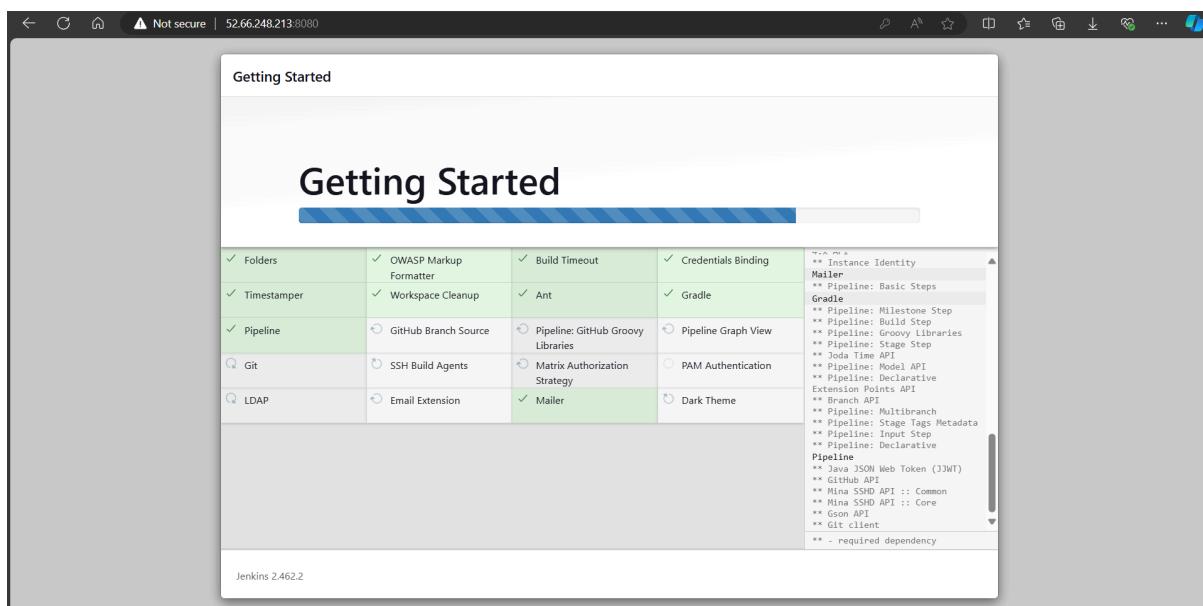
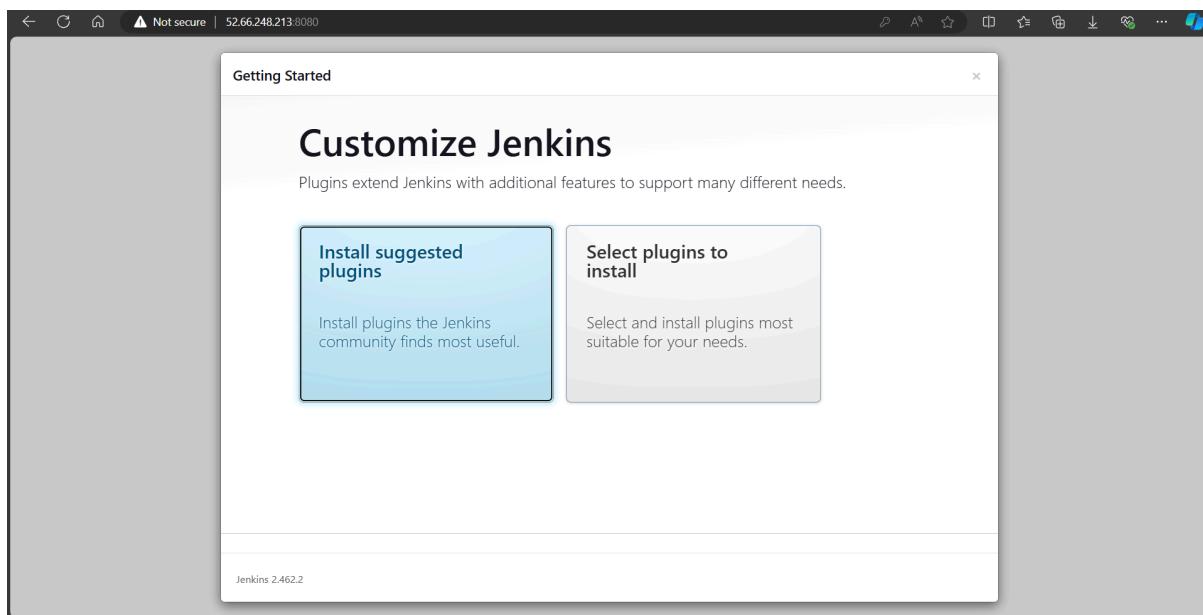
ubuntu@ip-172-31-0-4:~/projCert$ ls
Dockerfile website
ubuntu@ip-172-31-0-4:~/projCert$ git init
Reinitialized existing Git repository in /home/ubuntu/projCert/.git/
ubuntu@ip-172-31-0-4:~/projCert$ git add .
ubuntu@ip-172-31-0-4:~/projCert$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
ubuntu@ip-172-31-0-4:~/projCert$ git remote add origin https://github.com/Swati-Adhe/dev-project.git
error: remote origin already exists.
ubuntu@ip-172-31-0-4:~/projCert$ git remote remove origin
ubuntu@ip-172-31-0-4:~/projCert$ git remote add origin https://github.com/Swati-Adhe/dev-project.git
ubuntu@ip-172-31-0-4:~/projCert$ git push -u origin master
Username for 'https://github.com': swatiaidhe175@gmail.com
Password for 'https://swatiaidhe175@gmail.com@github.com':
Enumerating objects: 115, done.
Counting objects: 100% (115/115), done.
Delta compression using up to 2 threads
Compressing objects: 100% (54/54), done.
Writing objects: 100% (115/115), 9.17 MiB | 6.65 MiB/s, done.
Total 115 (delta 55), reused 112 (delta 55), pack-reused 0
remote: Resolving deltas: 100% (55/55), done.
To https://github.com/Swati-Adhe/dev-project.git
 * [new branch]      master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
ubuntu@ip-172-31-0-4:~/projCert$
```



6. Set Up Jenkins





Getting Started

Create First Admin User

Username

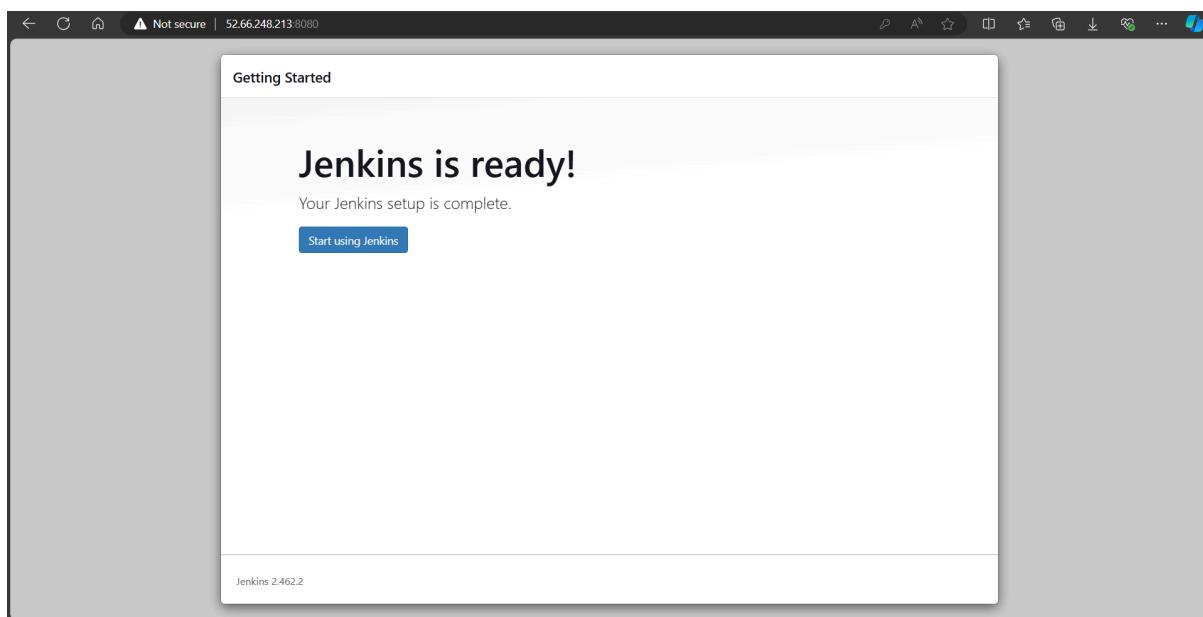
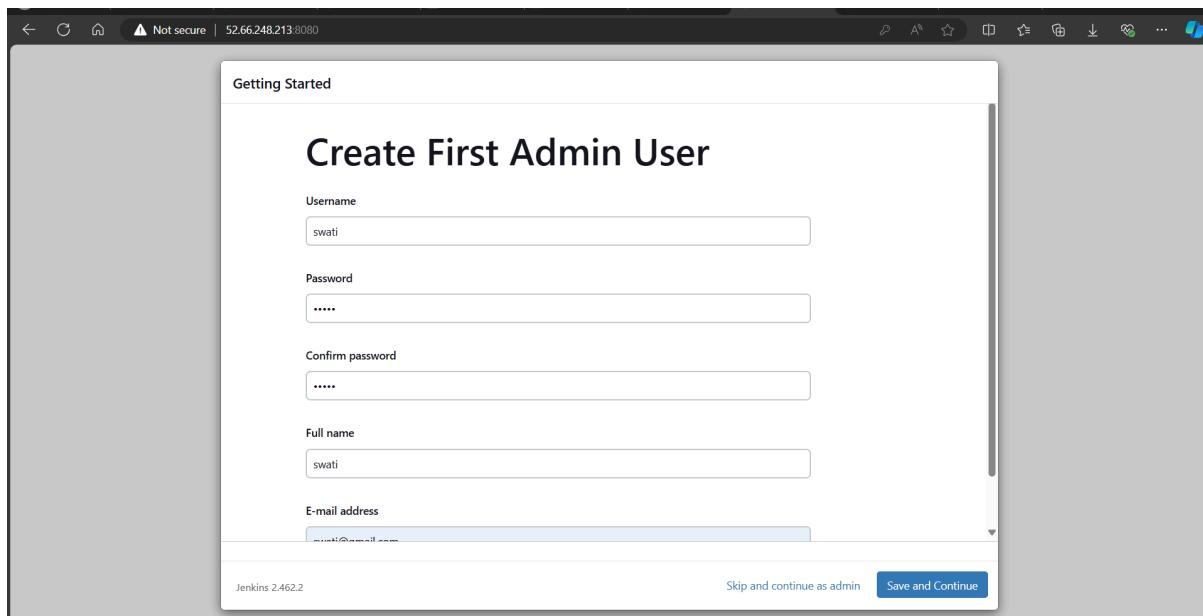
Password

Confirm password

Full name

E-mail address

Jenkins 2.462.2 [Skip and continue as admin](#) [Save and Continue](#)



The screenshot shows the Jenkins dashboard at the URL <http://52.66.248.213:8080>. The title bar indicates "Not secure". The main content area features a "Welcome to Jenkins!" message. On the left, there are two collapsed sections: "Build Queue" (No builds in the queue) and "Build Executor Status" (1 Idle, 2 Idle). On the right, there are three main sections: "Start building your software project" (Create a job, Set up a distributed build), "Set up a distributed build" (Set up an agent, Configure a cloud), and "Learn more about distributed builds". The bottom right corner shows "REST API" and "Jenkins 2.462.2".

The screenshot shows the "New Item" creation dialog at the URL <http://52.66.248.213:8080/view/all/newJob>. The title bar indicates "Not secure". The main form has "Dashboard > All > New Item" in the breadcrumb. The "New Item" title is displayed. A text input field contains "PHP_Deployment_Pipeline". Below it, a section titled "Select an item type" lists four options: "Freestyle project" (selected), "Maven project", "Pipeline", and "Multi-configuration project". Each option has a brief description. At the bottom is a blue "OK" button.

Dashboard > PHP_Deployment_Pipeline > Configuration

Configure

- This project is parameterized ?
- Throttle builds ?

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

```
graph TD
    pipeline[pipeline] --> stage1[stage('Clone Repository')]
    stage1 --> stage2[stage('Build Docker Image')]
    stage2 --> stage3[stage('Run Docker Container')]
    stage3 --> post[post]
    post -- failure --> echo[echo 'Build failed!']

    subgraph stage1 [stage('Clone Repository')]
        git[git 'https://github.com/Swati-Adhe/dev-project.git']
    end

    subgraph stage2 [stage('Build Docker Image')]
        dockerBuild[sh 'sudo docker build -t my-php-app .']
    end

    subgraph stage3 [stage('Run Docker Container')]
        dockerRun[sh 'sudo docker run -d -p 80:80 my-php-app']
    end
```

Save Apply

Dashboard > PHP_Deployment_Pipeline > Configuration

Configure

Pipeline

Definition

Pipeline script

```
graph TD
    pipeline[pipeline] --> stage1[stage('Clone Repository')]
    stage1 --> stage2[stage('Build Docker Image')]
    stage2 --> stage3[stage('Run Docker Container')]
    stage3 --> post[post]
    post -- failure --> echo[echo 'Build failed!']

    subgraph stage1 [stage('Clone Repository')]
        git[git 'https://github.com/Swati-Adhe/dev-project.git']
    end

    subgraph stage2 [stage('Build Docker Image')]
        dockerBuild[sh 'sudo docker build -t my-php-app .']
    end

    subgraph stage3 [stage('Run Docker Container')]
        dockerRun[sh 'sudo docker run -d -p 80:80 my-php-app']
    end
```

Save Apply

Swati-Adhe / dev-project

Type [] to search

- Code
- Issues
- Full requests
- Actions
- Projects
- Wiki
- Security
- Insights
- Settings

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

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 *

Content type *

Secret

SSL verification

By default, we verify SSL certificates when delivering payloads.

Enable SSL verification Disable (not recommended)

Which events would you like to trigger this webhook?

Just the push event. Send me everything.

The screenshot shows the GitHub 'Webhooks' settings page for a repository named 'dev-project'. On the left, there's a sidebar with various settings categories like General, Access, Collaborators, and Webhooks (which is currently selected). The main area displays a single webhook entry with a green checkmark icon, the URL 'http://52.66.248.213:8080/github-w... (all events)', and a timestamp 'Last delivery was successful.' Below the entry are 'Edit' and 'Delete' buttons. A note at the top states: '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](#)'.

The screenshot shows the Jenkins Pipeline Console for a job named 'PHP_Deployment_Pipeline' (Build #4). The left sidebar contains navigation links such as Status, Changes, Console Output (which is selected), Edit Build Information, Delete build '#4', Timings, Git Build Data, Pipeline Overview, Pipeline Console, Restart from Stage, Replay, Pipeline Steps, Workspaces, and Previous Build. The main content area is titled 'Console Output' and displays the build log. The log starts with 'Started by user swati' and continues with several git commands for cloning and fetching code from a GitHub repository. The log ends with a successful checkout command: 'git checkout -b master a210636ffdf3dec99e79578b2da8e35a13120e1 # timeout=10'.

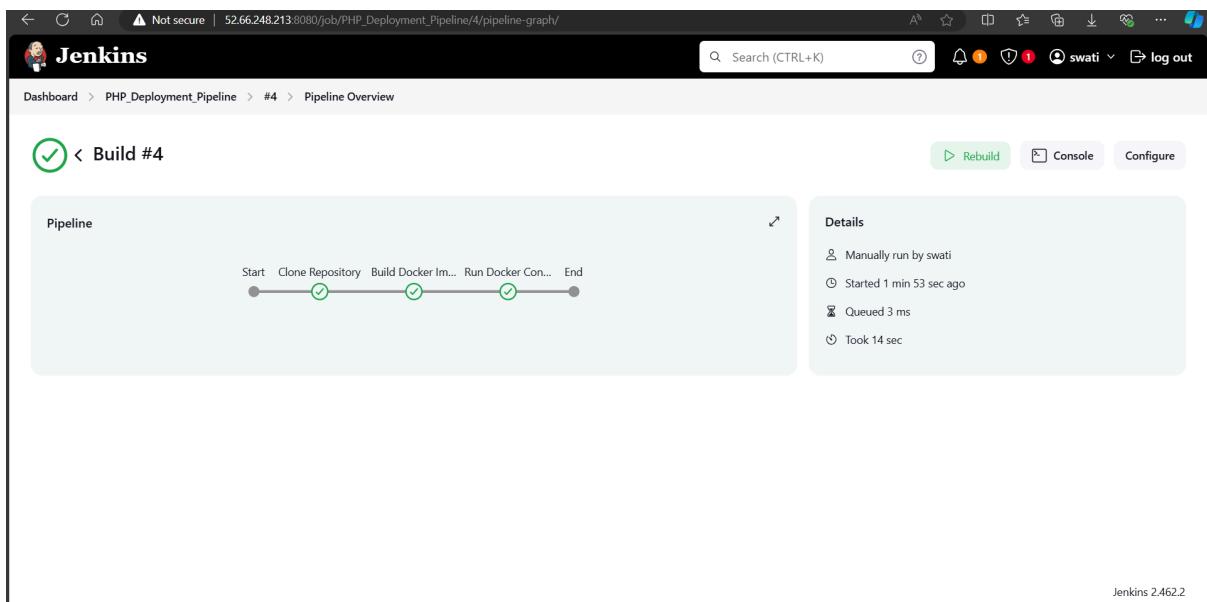
```
Started by user swati
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/PHP_Deployment_Pipeline
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Clone Repository)
[Pipeline] git
The recommended git tool is: git
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/PHP_Deployment_Pipeline/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Swati-Adhe/dev-project.git # timeout=10
Fetching upstream changes from https://github.com/Swati-Adhe/dev-project.git
> git -version # timeout=10
> git -version # 'git version 2.34.1'
> git fetch --tags --force --progress -- https://github.com/Swati-Adhe/dev-project.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^(commit) # timeout=10
Checking out Revision a210636ffdf3dec99e79578b2da8e35a13120e1 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f a210636ffdf3dec99e79578b2da8e35a13120e1 # timeout=10
> git branch -a -v --no-abbrev # timeout=10
> git branch -D master # timeout=10
> git checkout -b master a210636ffdf3dec99e79578b2da8e35a13120e1 # timeout=10
```

Dashboard > PHP_Deployment_Pipeline > #4

```
[Pipeline] {  
[Pipeline] sh  
+ sudo docker build -t my-php-app .  
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.  
  Install the buildx component to build images with BuildKit:  
    https://docs.docker.com/go/buildx/  
  
Sending build context to Docker daemon 9.7MB  
  
Step 1/2 : FROM php:7.4-apache  
7.4-apache: Pulling from library/php  
a603fa5e3b41: Pulling fs layer  
c428f1a09423: Pulling fs layer  
156740b0b7ef8: Pulling fs layer  
fb5a4c8af82f: Pulling fs layer  
25f85d498fd5: Pulling fs layer  
9b233e420a0c7: Pulling fs layer  
fe42347c4ecf: Pulling fs layer  
d14eb2ed1e17: Pulling fs layer  
66d98f73ac6b: Pulling fs layer  
d2c43c5efbc8: Pulling fs layer  
ab590d48ea47: Pulling fs layer  
80e92aae2d067: Pulling fs layer  
05e465aa99a: Pulling fs layer  
fb5a4c8af82f: Waiting  
25f85d498fd5: Waiting  
9b233e420a0c7: Waiting  
fe42347c4ecf: Waiting  
d14eb2ed1e17: Waiting  
66d98f73ac6b: Waiting  
d2c43c5efbc8: Waiting  
-b600a40a47: Waiting
```

Dashboard > PHP_Deployment_Pipeline > #4

```
d2c43c5efbc8: Pull complete  
ab590d48ea47: Pull complete  
80e92aae2d067: Pull complete  
05e465aa99a: Pull complete  
Digest: sha256:c9d7e608f73832673479770d66aac8100011ec751d1905ff63fae3fe2e0ca6d  
Status: Downloaded newer image for php:7.4-apache  
--> 20a3732f4226  
Step 2/2 : COPY . /var/www/html/  
--> 97ddae1c07c6  
Successfully built 97ddae1c07c6  
Successfully tagged my-php-app:latest  
[Pipeline] {  
[Pipeline] // script  
[Pipeline] }  
[Pipeline] // stage  
[Pipeline] { (Run Docker Container)  
[Pipeline] script  
[Pipeline] {  
[Pipeline] sh  
+ sudo docker run -d -p 80:80 my-php-app  
b00fefb7cd4c4247dc6d3d84e47b6b5bb74d65cda708daf4462cc9abaef94d  
[Pipeline] }  
[Pipeline] // script  
[Pipeline] }  
[Pipeline] // stage  
[Pipeline] }  
[Pipeline] // node  
[Pipeline] End of Pipeline  
Finished: SUCCESS
```



```
AWS | Services | Search [Alt+S] | EC2
ubuntu@ip-172-31-0-4:~$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
b00fefb7cd4c my-php-app "docker-php-entrypoi..." 5 minutes ago Up 5 minutes 0.0.0.0:80->80/tcp, :::80->80/tcp hardcore_gauss
ubuntu@ip-172-31-0-4:~$
```

7. Test the Setup

1. Push a Change to GitHub:
 - Make any change to your PHP application and push it to the master branch.
2. Check Jenkins:
 - Go to Jenkins and watch your pipeline execute.
 - Ensure that each stage completes successfully.

```
AWS | Services | Search [Alt+S] | EC2
ubuntu@ip-172-31-0-4:~/projCert$ ls
Dockerfile website
ubuntu@ip-172-31-0-4:~/projCert$ cd website/
ubuntu@ip-172-31-0-4:~/projCert/website$ cd content/
ubuntu@ip-172-31-0-4:~/projCert/website/content$ ls
404.php about-us.php contact.php home.php products.php
ubuntu@ip-172-31-0-4:~/projCert/website/content$ vi home.php
ubuntu@ip-172-31-0-4:~/projCert/website/content$ git add .
ubuntu@ip-172-31-0-4:~/projCert/website/content$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   home.php

ubuntu@ip-172-31-0-4:~/projCert/website/content$ git commit -m "Updated the PHP file"
[master f627ee6] Updated the PHP file
 1 files changed, 1 insertions(+), 0 deletions(-)
 Committer: Ubuntu <ubuntu@ip-172-31-0-4.ap-south-1.compute.internal>
 Your name and email address were configured automatically based
 on your username and hostname. Please check that they are accurate.
 You can suppress this message by setting them explicitly. Run the
 following command and follow the instructions in your editor to edit
 your configuration file:

  git config --global --edit

After doing this, you may fix the identity used for this commit with:
```

i-0036c35934543c403 (Master)
PublicIP: 52.66.248.213 PrivateIP: 172.31.0.4

```

After doing this, you may fix the identity used for this commit with:
git commit --amend --reset-author

1 file changed, 1 insertion(+), 1 deletion(-)
ubuntu@ip-172-31-0-4:~/project/website/content$ git push origin master
Username for 'https://github.com': swatiadhe175@gmail.com
Password for 'https://swatiadhe175@gmail.com@github.com':
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 2 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 456 bytes | 456.00 KiB/s, done.
Total 5 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
To https://github.com/Swati-Adhe/dev-project.git
   f53e8d3..f627e6   master -> master

i-0036c35934543c403 (Master)
PublicIPs: 52.66.248.213 PrivateIPs: 172.31.0.4

```

Jenkins

Dashboard > PHP_Deployment_Pipeline > #10

Console Output

Status Changes Console Output Edit Build Information Delete build '#10' Polling Log Timings Git Build Data Pipeline Overview Pipeline Console Restart from Stage Replay Pipeline Steps Workspaces Previous Build

```

Started by GitHub push by Swati-Adhe
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/PHP_Deployment_Pipeline
[Pipeline] {
[Pipeline] stage
[Pipeline] {
[Pipeline] {
[Pipeline] git
The recommended git tool is: git
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/PHP_Deployment_Pipeline/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Swati-Adhe/dev-project.git # timeout=10
Fetching upstream changes from https://github.com/Swati-Adhe/dev-project.git
> git -version # timeout=10
> git --version # git version 2.34.1'
> git fetch --tags --force --progress -- https://github.com/Swati-Adhe/dev-project.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision f123d3cb0276c5a1835ae50a9c277ec058313b64 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f f123d3cb0276c5a1835ae50a9c277ec058313b64 # timeout=10
> git branch -a -v --no-abbrev # timeout=10
> git branch -D master # timeout=10
> git checkout -b master f123d3cb0276c5a1835ae50a9c277ec058313b64 # timeout=10

```

Jenkins

Dashboard > PHP_Deployment_Pipeline > #10 > Pipeline Overview

Build #10

Pipeline Details

Start Clone Repository Build Docker Im... Run Docker Con... End

Started 8 min 32 sec ago
Queued 7.4 sec
Took 2.5 sec

Jenkins 2.462.2

Not secure | 52.66.248.213:8080/job/PHP_Deployment_Pipeline/GitHubPollLog/

Jenkins

Dashboard > PHP_Deployment_Pipeline > GitHub Hook Log

Last GitHub Push

```
Started on Sep 4, 2024, 11:12:34 AM
Started by event from 140.82.115.175 => http://52.66.248.213:8080/github-webhook/ on Wed Sep 04 11:12:34 UTC 2024
Using strategy: Default
[poll] Last Built Revision: Revision a236ccce7787469247702cff0400b5648aac0c53 (refs/remotes/origin/master)
The recommended git tool is: git
No credentials specified
> git -version # timeout=10
> git -version # 'git version 2.34.1'
> git ls-remote -h -- https://github.com/Swati-Adhe/dev-project.git # timeout=10
Found 1 remote heads on https://github.com/Swati-Adhe/dev-project.git
[poll] Latest remote head revision on refs/heads/master is: f123d3cb0276c5a1835ae50a9c277ec058313b64
Done. Took 0.5 sec
Changes found
```

Build History trend ▾

Filter...

#10 | Sep 4, 2024, 11:12 AM

#9