

## Jenkins Project

Installed Jenkins (and Java) on Ubuntu EC2 Instance using the following documentation:

<https://www.jenkins.io/doc/book/installing/linux/#debianubuntu>

```
The following additional packages will be installed:
  net-tools
The following NEW packages will be installed:
  jenkins net-tools
0 upgraded, 2 newly installed, 0 to remove and 53 not upgraded.
Need to get 89.2 MB of archives.
After this operation, 90.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 net-tools amd64 1.60+git20181103.0eebece-lubuntu5 [204 kB]
Get:2 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.426.1 [89.0 MB]
Fetched 89.2 MB in 8s (11.2 MB/s)
Selecting previously unselected package net-tools.
(Reading database ... 80296 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-lubuntu5_amd64.deb ...
Unpacking net-tools (1.60+git20181103.0eebece-lubuntu5) ...
Selecting previously unselected package jenkins.
Preparing to unpack .../jenkins_2.426.1_all.deb ...
Unpacking jenkins (2.426.1) ...
Setting up net-tools (1.60+git20181103.0eebece-lubuntu5) ...
Setting up jenkins (2.426.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /lib/systemd/system/jenkins.service.
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-192-0-0-49:~$
```

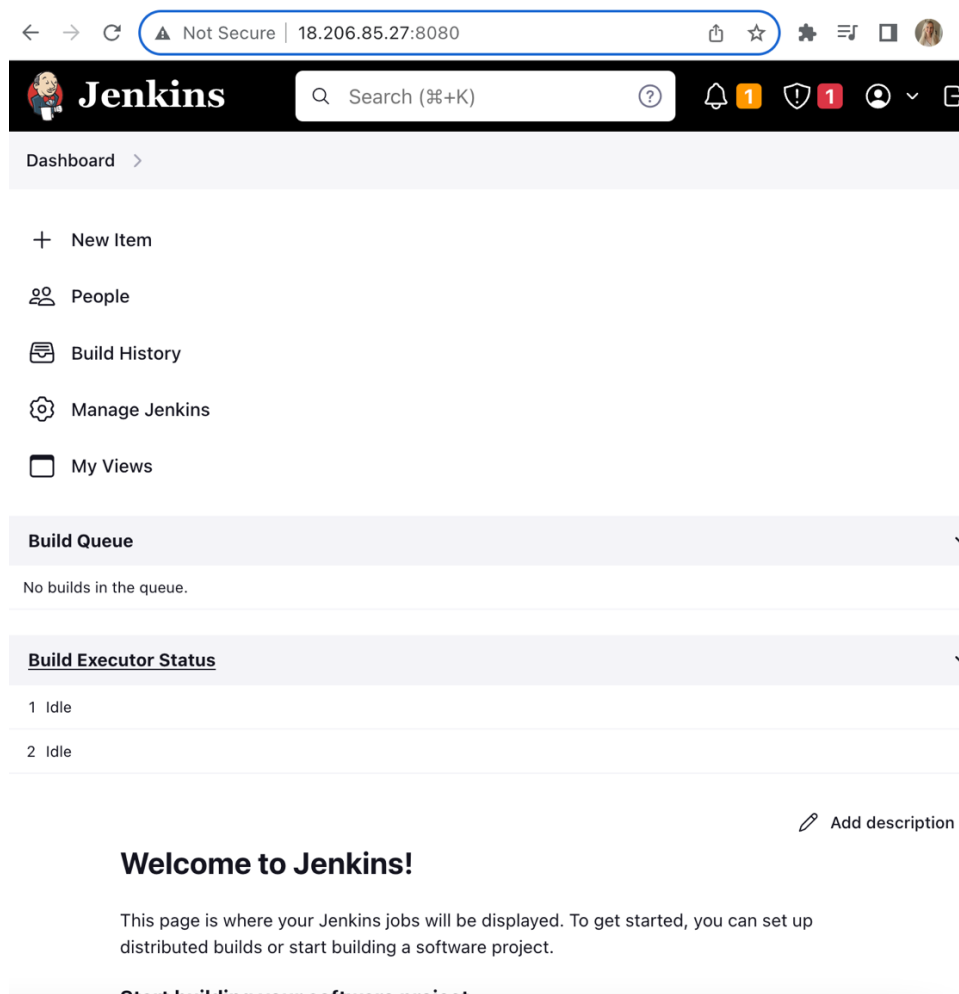
**sudo systemctl status Jenkins (you can see the admin password when you run this command)**

```
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2023-11-15 21:22:05 UTC; 1min 54s ago
     Main PID: 5085 (java)
        Tasks: 39 (limit: 1121)
      Memory: 299.3M
         CPU: 38.335s
    CGroup: /system.slice/jenkins.service
            └─5085 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=>
```

**Opening port 8080 and SSH port 22 on the instance firewall:**

```
ubuntu@ip-192-0-0-49:~$ sudo ufw enable
Firewall is active and enabled on system startup
ubuntu@ip-192-0-0-49:~$ sudo ufw status
Status: active
ubuntu@ip-192-0-0-49:~$ sudo ufw allow 8080
Rule added
Rule added (v6)
ubuntu@ip-192-0-0-49:~$ sudo ufw allow openSSH
Rule added
Rule added (v6)
ubuntu@ip-192-0-0-49:~$
```

Accessed Jenkins in the browser through port 8080 and following set up instructions:



Creating a pipeline to build and publish a docker image to DockerHub:

## Configure

### General

Enabled 

#### General

#### Source Code Management

#### Build Triggers

#### Build Environment

#### Build Steps

#### Post-build Actions

#### Description

This pipeline will automatically build and publish a docker image.

Plain text [Preview](#)

☐ Discard old builds ?

☐ GitHub project

☒ This project is parameterized ?

☐ Throttle builds ?

☐ Execute concurrent builds if necessary ?

Advanced 

Save

Apply

## Configure

### Source Code Management

#### General

#### Source Code Management

#### Build Triggers

#### Build Environment

#### Build Steps

#### Post-build Actions

☐ None

☒ Git ?

#### Repositories ?

##### Repository URL ?

https://github.com/omyro/my-docker-repo.git

##### Credentials ?

my github credentials

+ Add 

Advanced 

Add Repository

#### Branches to build ?

Save

Apply

## Configure

- General
- Source Code Management
- Build Triggers**
- Build Environment
- Build Steps
- Post-build Actions

### Branches to build ?

Branch Specifier (blank for 'any') ?

\*/main

Add Branch

### Repository browser ?

(Auto)

### Additional Behaviours

Add

## Build Triggers

- ☐ Trigger builds remotely (e.g., from scripts) ?
- ☐ Build after other projects are built ?
- ☐ Build periodically ?

Dashboard > docker-image-build > #1 > Console Output

Status

Changes

**Console Output**

View as plain text

Edit Build Information

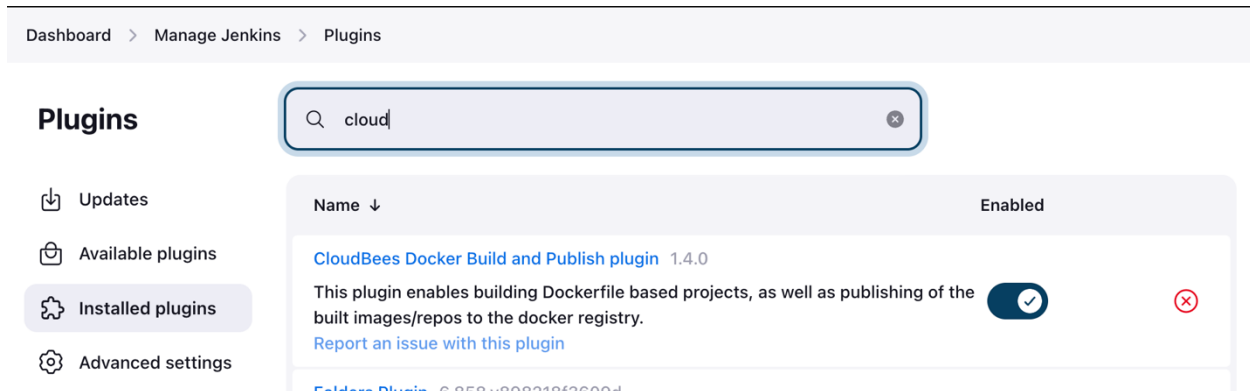
Delete build '#1'

Git Build Data

## Console Output

```
Started by user admin
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/docker-image-build
The recommended git tool is: NONE
using credential github-creds
Cloning the remote Git repository
Cloning repository https://github.com/omyro/my-docker-repo.git
> git init /var/lib/jenkins/workspace/docker-image-build # timeout=10
Fetching upstream changes from https://github.com/omyro/my-docker-repo.git
> git --version # timeout=10
> git --version # 'git version 2.34.1'
using GIT_ASKPASS to set credentials my github credentials
> git fetch --tags --force --progress -- https://github.com/omyro/my-docker-repo.git
+refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/omyro/my-docker-repo.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision 693cd22a51f9e7c4d09efbd8c30f323f72e3c6a8 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 693cd22a51f9e7c4d09efbd8c30f323f72e3c6a8 # timeout=10
Commit message: "new change"
First time build. Skipping changelog.
Finished: SUCCESS
```

## Installed the Docker Build and Publish plugin on Jenkins:



## Installed docker on the Jenkins server using the following documentation:

<https://docs.docker.com/engine/install/ubuntu/>

```
ubuntu@ip-192-0-0-49:~$ docker --version
Docker version 24.0.7, build afdd53b
```

Used the `sudo usermod -a -G docker ubuntu` command and the `sudo usermod -a -G docker jenkins` command to give permissions to these users. Exit to logout and then log back in. Now docker info works without the sudo in front.

```
$ sudo su - ubuntu
ubuntu@ip-192-0-0-49:~$ docker info
Client: Docker Engine - Community
Version:      24.0.7
Context:      default
Debug Mode:  false
Plugins:
  buildx: Docker Buildx (Docker Inc.)
    Version:  v0.11.2
    Path:      /usr/libexec/docker/cli-plugins/docker-buildx
  compose: Docker Compose (Docker Inc.)
    Version:  v2.21.0
    Path:      /usr/libexec/docker/cli-plugins/docker-compose

Server:
Containers: 0
  Running: 0
  Paused: 0
  Stopped: 0
Images: 0
Server Version: 24.0.7
Storage Driver: overlay2
```

Need to restart Jenkins for the jenkins user permission to take effect:

```
ubuntu@ip-192-0-0-49:~$ sudo systemctl restart jenkins
```

Need to log into docker on server for the build to work properly:

```
ubuntu@ip-192-0-0-49:~$ sudo su - jenkins
jenkins@ip-192-0-0-49:~$ docker login
Log in with your Docker ID or email address to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.com/ to create one.
You can log in with your password or a Personal Access Token (PAT). Using a limited-scope PAT grants better security and is required for organizations using SSO. Learn more at https://docs.docker.com/go/access-tokens/

Username: omyro
Password:
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
jenkins@ip-192-0-0-49:~$
```

Dashboard > docker-image-build > Configuration

### Configure

- General
- Source Code Management
- Build Triggers
- Build Environment**
- Build Steps
- Post-build Actions

☐ Delete workspace before build starts

☐ Use secret text(s) or file(s) ?

☐ Add timestamps to the Console Output

☐ Inspect build log for published build scans

☐ Terminate a build if it's stuck

☐ With Ant ?

---

### Build Steps

Add build step ^

Filter

Docker Build and Publish

Execute Windows batch command

Execute shell

Invoke Ant

Invoke Gradle script

Invoke top-level Maven targets

Run with timeout

Set build status to "pending" on GitHub commit

REST API Jenkins 2.426.1

## Creating v2 of the olga\_apache docker image using the Jenkins pipeline:

Dashboard > docker-image-build > Configuration

### Configure

- General
- Source Code Management
- Build Triggers
- Build Environment
- Build Steps**
- Post-build Actions

#### Docker Build and Publish ?

Repository Name ?  
omyro/olga\_apache

Tag  
v2

Docker Host URI ?

Server credentials  
- none -  
+ Add ▾

Docker registry URL ?

Registry credentials  
my dockerhub credentials ▾

Save Apply

**Jenkins** Search (⌘+K) admin

Dashboard > docker-image-build >

Status

Changes

Workspace

Build Now

Configure

Delete Project

Rename

**docker-image-build**

This pipeline will automatically build and publish a docker image.

Edit description Disable Pipeline

**Permalinks**

- Last build (#1), 30 min ago
- Last stable build (#1), 30 min ago
- Last successful build (#1), 30 min ago
- Last completed build (#1), 30 min ago

**Build History** trend ▾

Filter builds...



#2 omyro/olga\_apache:v2 omyro/olga\_apache:latest  
Nov 15, 2023, 11:01 PM

#1  
Nov 15, 2023, 10:31 PM

```
← → ↺ ⚠ Not Secure | 18.206.85.27:8080/job/docker-image-build/2/console ⏏ ☆ ⚙ ⌵ 🗑
Dashboard > docker-image-build > #2 omyro/olga_apache:v2 omyro/olga_apache:latest > Console Output


#9 exporting to image
#9 exporting layers done
#9 writing image sha256:20d2e66f74673ee23ba7290e2d64120d25095fa228bcea3e3bfa454818f4e3a2
done
#9 naming to docker.io/omyro/olga_apache:latest done
#9 DONE 0.0s
[docker-image-build] $ docker push omyro/olga_apache:v2
The push refers to repository [docker.io/omyro/olga_apache]
609db0ec4a9a: Preparing
2c22a99d4b4d: Preparing
b8576f769cb0: Preparing
174f56854903: Preparing
174f56854903: Layer already exists
609db0ec4a9a: Pushed
2c22a99d4b4d: Pushed
b8576f769cb0: Pushed
v2: digest: sha256:5e0d086c730f05881f4c36f41dfcf9c69e23682aac5f1144abc008bc5356fb72 size:
1161
[docker-image-build] $ docker push omyro/olga_apache:latest
The push refers to repository [docker.io/omyro/olga_apache]
609db0ec4a9a: Preparing
2c22a99d4b4d: Preparing
b8576f769cb0: Preparing
174f56854903: Preparing
609db0ec4a9a: Layer already exists
2c22a99d4b4d: Layer already exists
b8576f769cb0: Layer already exists
174f56854903: Layer already exists
latest: digest: sha256:5e0d086c730f05881f4c36f41dfcf9c69e23682aac5f1144abc008bc5356fb72
size: 1161
Finished: SUCCESS
```


**Shows SUCCESS – Published version 2 of the olga\_apache docker image to DockerHub using the Jenkins pipeline!!!**


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The short description is used to index your content on Docker Hub and in search engines. It's visible to users in search results.

 **omyro / olga\_apache**







**Description**  
This repository does not have a description 


 Last pushed: 2 minutes ago

**Docker commands** [Public View](#)  
To push a new tag to this repository:  

```
docker push omyro/olga_apache:tagname
```

**Tags**  
This repository contains 3 tag(s).

Tag	OS	Type	Pulled	Pushed
 latest		Image	---	2 minutes ago
 v2		Image	---	2 minutes ago
 v1		Image	5 hours ago	5 hours ago

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