

Demo Project: Install Jenkins on DigitalOcean

This guide demonstrates how to set up a Jenkins server on DigitalOcean, run Jenkins as a Docker container, and initialize Jenkins.

Setup Jenkins server on DigitalOcean

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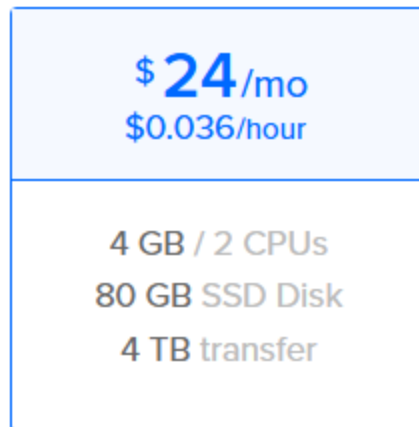
Setup Jenkins server on DigitalOcean

To create a Droplet on DigitalOcean, follow these steps:

1. Create a Droplet

- Visit DigitalOcean Console.

- Click **Create** → **Droplets**.
- Configure the following:
 - **Region:** Select a region closest to your location.
 - **Image:**
 - OS: Ubuntu
 - Version: 24.10 ×64
 - **Size:**
 - **Droplet Type:** Shared CPU (Basic).
 - **CPU:** Regular.
 - **Disk Type:** SSD.



2. Authentication

- Choose **SSH Key** as the authentication method for better security.

3. Post-Creation Setup

- Rename the droplet to `jenkins-server`.
- **Attach a Firewall:**
 - Go to **Networking** → **Firewalls** → **Create Firewall**.
 - Configure rules:

- **SSH (Port 22):** Restrict access to your IP address (find it at [WhatIsMyIP](#)).
- **Jenkins (Port 8080):** Allow public access.

Create Firewall

[Learn](#) 

Name

Name

jenkins-firewall

✓

Inbound Rules

Set the Firewall rules for incoming traffic. Only the specified ports will accept inbound connections. All other traffic will be dropped.

Type	Protocol	Port Range	Sources	
SSH	TCP	22	<div>Add a source</div>	Delete
Custom	TCP	Ports 8080	<div>All IPv4 All IPv6</div>	Delete
New rule				

4. Connect to the Droplet

- Use SSH to connect to the server:

```
ssh root@ <server's public IPv4>
```

Example: `ssh root@159.223.150.154`

Set up and run Jenkins as Docker container

1. Update the Package List

```
apt update
```

2. Install Docker

```
apt install docker.io -y
```

3. Run Jenkins as a Docker Container

```
docker run -p 8080:8080 -p 50000:50000 -d -v jenkins_home:/var/jenkins_home  
jenkins/jenkins:lts
```

Explanation of Parameters:

- `-p 8080:8080` : Maps Jenkins' web interface to port 8080.
- `-p 50000:50000` : Enables Jenkins agents to communicate with the Jenkins server.
- `-d` : Runs the container in the background, in "detached" mode.
- `-v jenkins_home:/var/jenkins_home` : Ensures Jenkins data persists across container restarts.
- `jenkins/jenkins:lts` : This specifies the Docker image (found here: <https://hub.docker.com/r/jenkins/jenkins>) to use for the container.

4. Verify the Container

```
docker ps
```

5. Access Jenkins in a Browser

- Navigate to `http://<server-public-IP>:8080` .
Example: `159.223.150.154:8080`
- You should see the Jenkins initial setup screen:

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

```
/var/jenkins_home/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

Administrator password

Continue

Initialize Jenkins

1. Retrieve the Initial Admin Password

- Enter the Jenkins container:

```
docker exec -it <container ID> bash
```

Example: `docker exec -it 8abe728fd30c bash`

- Retrieve the password:

```
cat /var/jenkins_home/secrets/initialAdminPassword
```

Alternative Method:

If the container mounts the volume on the host machine, retrieve the password directly from the server:

```
cat /var/lib/docker/volumes/jenkins_home/_data/secrets/initialAdminPassword
```

To inspect the volume:

```
cat /var/lib/docker/volumes/jenkins_home/_data/secrets/initialAdminPassword
```

Example output we see the **path of that volume on the server** within "Mountpoint":

```
[
  {
    "CreatedAt": "2024-12-14T23:46:11Z",
    "Driver": "local",
    "Labels": null,
    "Mountpoint": "/var/lib/docker/volumes/jenkins_home/_data",
    "Name": "jenkins_home",
    "Options": null,
    "Scope": "local"
  }
]
```

2. Unlock Jenkins

- Paste the copied password into the browser prompt:

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

```
/var/jenkins_home/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

Administrator password

Continue

3. Install Plugins

- Select **Install suggested plugins**. Plugins can be customized or added later.

4. Create Admin User

- Complete the form to set up the first admin user.

5. Start Using Jenkins

- Jenkins is now ready to use!

Troubleshooting

Common Issues:

1. Firewall Misconfiguration:

- Ensure ports `22` (SSH) and `8080` (Jenkins) are open and configured correctly in the DigitalOcean firewall.

2. Initial Jenkins Setup Not Loading:

- Verify the Jenkins container is running: `docker ps`
- Restart the container if needed:

```
docker restart <container-ID>
```
