

Step-by-step guide to creating a Freestyle Job in Jenkins to install Nginx on a local Ubuntu VM

Prerequisites for Setting Up a Freestyle Job to Install Nginx in Jenkins

Before creating the **Freestyle Job**, ensure that the following prerequisites are met:

Install Jenkins on Ubuntu (If Not Installed)

If Jenkins is not installed on your Ubuntu VM, follow these steps:

```
# Update package lists
sudo apt update -y
```

```
# Install Java (Required for Jenkins)
sudo apt install -y openjdk-17-jdk
```

```
#verify java version
java -version
```

```
# Add the Jenkins repository key
wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -
```

Error: apt-key add is depreciated

apt-key add is deprecated in newer Ubuntu versions (20.04 and later). Here's the updated method to add the Jenkins repository correctly.

Correct Way to Add Jenkins Repository (Without apt-key)

Add Jenkins GPG Key

Instead of using apt-key add, store the key in /usr/share/keyrings/:

```
wget -q -O- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key | sudo tee /usr/share/keyrings/jenkins-keyring.asc > /dev/null
```

Add the Jenkins Repository

Now, add the Jenkins repository using the new method:

```
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
```

```
# Install Jenkins
sudo apt update -y
sudo apt install -y jenkins
```

```
# Start and enable Jenkins service
sudo systemctl start jenkins
```

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```
sudo systemctl enable jenkins
```

```
# Check Jenkins status
```

```
sudo systemctl status jenkins
```

Jenkins will be available at `http://<VM_IP>:8080`

To get the **Jenkins Server URL**, follow these steps:

Method 1: Check the Default URL

By default, Jenkins runs on **port 8080**. Try opening this in your browser:

```
http://<your-server-ip>:8080
```

If you're on the same machine as Jenkins, use:

```
http://localhost:8080
```

Method 2: Get Server IP Address

If you're unsure of the server IP, run:

```
hostname -I
```

or

```
ip a | grep inet
```

Look for an IP like **192.168.x.x** or **10.x.x.x** and access:

```
http://<your-ip>:8080
```

Method 3: Check Jenkins Logs

If Jenkins is running but you can't access it, check logs

```
sudo journalctl -u jenkins --no-pager --lines=50
```

Look for lines mentioning **"Jenkins is fully up and running"** and the URL.

Access Jenkins

1. Open a browser and go to `http://<JENKINS_SERVER_IP>:8080`
2. Login to Jenkins pipeline by skipping the register information page (by default username is `admin`)
3. Choose **"Install Suggested Plugins"** (recommended) or manually select plugins.

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Ensure Sudo Access for Jenkins User in terminal

By default, Jenkins runs as a system user (jenkins). If your script requires sudo, you must allow the Jenkins user to run commands without a password:

```
sudo visudo
```

Add the following line at the end:

```
jenkins ALL=(ALL) NOPASSWD: ALL
```

Save and exit.

Retrieve Jenkins Admin Password

After installation, Jenkins requires an initial admin password:

```
sudo cat /var/lib/jenkins/secrets/initialAdminPassword
```

Copy this password and paste it when logging in to Jenkins for the first time.

Restart Jenkins server, provide username as `admin` and password displayed in above step

```
sudo systemctl start jenkins  
sudo systemctl enable jenkins
```

Create a New Freestyle Job

1. Click on “**New Item**” from the Jenkins Dashboard.
2. Enter a name for the job, e.g., “**Install-Nginx**”.
3. Select “**Freestyle project**”.
4. Click **OK**.

Configure the Job

1. Add Build Step

1. Scroll down to **Build** → Click “**Add build step**” → Select “**Execute shell**”.
2. Paste the following script in the command box:

```
#!/bin/  
echo "Updating package lists..."  
sudo apt update -y
```

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```
echo "Installing Nginx..."  
sudo apt install -y nginx
```

```
echo "Starting Nginx service..."  
sudo systemctl start nginx
```

```
echo "Enabling Nginx to start on boot..."  
sudo systemctl enable nginx
```

```
echo "Nginx Installation Completed!"
```

Save and Run the Job

1. Click "**Save**".
2. Click "**Build Now**".
3. Check the **Console Output** to verify the installation.

Verify the Installation

1. Run the following command on your Ubuntu VM:

```
systemctl status nginx
```

If running, you should see output like "**active (running)**".

2. Open a browser and go to `http://<VM_IP>`; you should see the default Nginx page.