

🌸 Documentation: Working with Remote Server in Jenkins (Ubuntu)

Overview

This guide explains how to configure Jenkins on an Ubuntu machine to connect and execute jobs on a remote server (for example, another Ubuntu VM).

This is commonly used for deployments, automation, and remote build execution.

🧱 1. Prerequisites

Before you begin, make sure:

- Jenkins is installed and running on the main (controller) machine.
- You have a remote Ubuntu server (agent node) accessible via SSH.
- Both systems can communicate over the network (ping or SSH reachable).
- You have sudo access on both systems.

⚙️ 2. Install Jenkins on Controller (if not installed)

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bash

📋 Copy code

```
sudo apt update
sudo apt install openjdk-17-jdk -y
wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo tee \
  /usr/share/keyrings/jenkins-keyring.asc > /dev/null
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 update
sudo apt install jenkins -y
sudo systemctl enable jenkins
sudo systemctl start jenkins
```

Check status:

bash

📋 Copy code

```
sudo systemctl status jenkins
```

Access Jenkins at:



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




🔑 3. Configure SSH Key-based Authentication

You will connect from the Jenkins server → remote server using SSH keys (passwordless).


Step 1: Generate SSH key on Jenkins server

bash

 Copy code


```
ssh-keygen -t rsa -b 4096
```

Press Enter for all prompts (no password).

 Ask ChatGPT

Step 2: Copy public key to remote server


bash

 Copy code

```
ssh-copy-id username@<remote_server_ip>
```

Example:


bash

 Copy code

```
ssh-copy-id ubuntu@192.168.1.50
```

Step 3: Verify SSH connection

bash

 Copy code

```
ssh username@<remote_server_ip>
```



You should log in without entering a password.

4. Configure Remote server in Jenkins

- Install **Publish Over ssh**

Enter:

- **Host:** <remote_server_ip>
- **Credentials:** click *Add* → *Jenkins* → *SSH Username with private key*
 - Username: ubuntu
 - Private Key: select *Enter directly* → paste content of /home/jenkins/.ssh/id_rsa

Publish over SSH

A configuration to use to connect to a SSH server

Jenkins SSH Key ?

Passphrase ?

Concealed

Change Password

Path to key ?

Key ?

```
-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXRkdjEAAAAAAAAABG5vbmUAAAAAEbm9uZQAAAAAAAAABAAABlwAAAAAdzc2gtcn
NIAAAAAAwEAAQAAAYEAir6ixdm8IUU615lp9psYvJ39h8lFoWwhEoNbcCMH/OjwCSoHUZHf
bHLT9T9TtSpVycDqeNEhIWRxkgqBSBQeYZ1NgUGeEK5wuzLcP5N6UK9/OQ5+GzKy+q
z+L3Lm2lWkXcUMxNAkUcNg/XdKt7sVqNc6d6sW5X6OOFVnNXdUJC27IU3BC13Jk6wh5f
Z3Rp3mWWzNYH5EesB/KQ+VYpggSlaidJeaUrNCIPygW5L+pf4q/xvaXyE/RohL/KHZuxY
c9cG5Xfg/EB78/3LQcYfWg0YQah4d2B6OIN5KXI+uGgpHTZaWF0TlgSUFWSd2oGmDSJTK
uuM6xGy+NbzDDgg0RmLEBONyDtOIZr+sylltDoktAQLuWUO18V3MAGkxuxPxCuCuUd
/Lw+YyVXKeuWYZID0WQME6jB8lgGqL0lkKY32HYOWWhjilePzM/T7elOTbvQHSDFLzbs
dXk3gwzUxCoBF9wffBi/u7YP128PwX75Qf7I4anAAAFIBXpTOMV6UzjAAAAAB3NzaC1yc2
EAAAAGBALq+osXZ5vJVF0teZafabGlyd/YfCBafslRKDWwjb/9l8AkqB1GR32xy0yPU4kbb
UqVcnA6njRISFVkcSoKgUgUHmGdTYFBnhCucMSWZXD+TelCvF9EOthsysvqs/9y5tifpF
3FDMTQJFHDP13Sre7FajXONerFuV+jjhVTZ13cbSQutuyFNwQpddyZPMleX2d0ad5llszW
B+RBLAfykPIX2KYIEmonSXmKzQpT8oFuS/qX+Kv8b2l8hP0aIS/yh2bsWHPXBUvXYPxA
```

Save Apply

SSH Servers

SSH Server

Name ?

ubuntu

Hostname ?

74.225.192.62

Username ?

admin077

Remote Directory ?

☐ Avoid sending files that have not changed ?

Advanced

Test Configuration

Save Apply

5. Create and Run a Job on Remote Server

- Go to Jenkins Dashboard → New Item
- Enter a name → choose Freestyle project → click OK
- In the General tab, check *Restrict where this project can be run*
- Enter the label: remote-server

- In Build section → click *Add build step* → *Execute shell*
- Save and click **Build Now**

The screenshot shows the Jenkins configuration page for a job named 'remote_job'. The left sidebar contains a 'Configure' menu with options: General, Source Code Management, Triggers, Environment, Build Steps (selected), and Post-build Actions. The main area is titled 'Build Steps' and includes a description: 'Automate your build process with ordered tasks like code compilation, testing, and deployment.' Below this is a dashed box containing an 'SSH Server' configuration. The 'Name' dropdown is set to 'ubuntu'. There is an 'Advanced' dropdown button. Below the SSH configuration is a 'Transfers' section, which is currently empty. At the bottom of the dashed box are 'Save' and 'Apply' buttons.

This screenshot shows the same Jenkins configuration page, but now the 'Transfer Set' is configured. The 'Source files' field contains 'files/ex.sh'. The 'Remove prefix' field is empty. The 'Remote directory' field is empty. The 'Exec command' field contains 'bash /home/admin077/files/ex.sh'. Below these fields is a note: 'All of the transfer fields (except for Exec timeout) support substitution of Jenkins environment variables'. There is an 'Advanced' dropdown button. The 'Save' and 'Apply' buttons remain at the bottom.

You will see the job executed on the remote server, not on the Jenkins controller.

✓ 8. Summary

By following these steps, Jenkins is configured to:

- Connect securely to a remote Ubuntu server using SSH keys.
- Execute build or deployment jobs remotely.
- Scale Jenkins pipelines with distributed build agents.

The screenshot shows the Jenkins web interface in a browser. The address bar indicates the URL is `4.213.98.50:8080/job/remote_job/`. The page title is "Jenkins / remote_job". On the left sidebar, there are links for Status, Changes, Workspace, Build Now, Configure, Delete Project, Rename, and Credentials. The main content area shows the job name "remote_job" with a green checkmark icon. Below it, there is a "Permalinks" section with a list of links for the last build, last stable build, last successful build, last unstable build, last unsuccessful build, and last completed build. On the bottom left, there is a "Builds" section with a filter input and a list of builds. The builds list shows four builds: #4 (15:23), #3 (15:04), #2 (14:59), and #1 (14:54). The bottom right corner of the page shows "REST API" and "Jenkins 2.528.1".

remote_job

Permalinks

- [Last build \(#4\), 1 min 4 sec ago](#)
- [Last stable build \(#4\), 1 min 4 sec ago](#)
- [Last successful build \(#4\), 1 min 4 sec ago](#)
- [Last unstable build \(#1\), 30 min ago](#)
- [Last unsuccessful build \(#1\), 30 min ago](#)
- [Last completed build \(#4\), 1 min 4 sec ago](#)

Builds

Filter

Today

- ✓ #4 15:23
- ✓ #3 15:04
- ✓ #2 14:59
- ⚠ #1 14:54

REST API Jenkins 2.528.1

