✳️ 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

```bash
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

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

Press **Enter** for all prompts (no password).

99 Ask ChatGPT

Step 2: Copy public key to remote server

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

Example:

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

Step 3: Verify SSH connection

```bash
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

Jenkins   /   Manage Jenkins   ⌄   /   System   ⌄

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-----
b3BlbnNzaC1rZXktdjEAAAAABG5vbmUAAAAEbm9uZQAAAAAAAAABlwAAAAdzc2gtcn
NhAAAAAwEAAQAAAYEAir6ixdnm8lUU615lp9psYvJ39h8lFoWwhEoNbCMH/0jwCSoHUZHf
bHLTI9TiRttSpVycDqeNEhIVWRxKgqBSBQeYZ1NgUGeEK5wxJZlcP5N6UK9/0Q5+GzKy+q
z+L3Lm2IWkXcUMxNAkUcNg/XdKt7sVqNc6d6sW5X6OOFVNnXdxtJC27IU3BCl13Jk8wh5f
Z3Rp3mWWzNYH5EEsB/KQ+VfYpggSiaidJeaUrNClPygW5L+pf4q/xvaXyE/RohL/KHZuxY
c9cG5XFg/EB78/3LQcYfWg0YQah4d2B6OlN5KXl+uGgpHTZaWF0TlgSUFWSd2oGmDSJ1Tk
uuM6xXGy+NBzDDqg0RmLEBONYDtOlZrR+syIttDbktAQLuWUO18Vl3MAGklxuPxuCuCUuD
/Lw+YyVXKeuWYZiD0WQMKE6jB8lgGqL0lkKY32HYOWhjjlePzM/l7elTOTbvQH5DWFLzbs
dXk3gwzUXxCoBF9wfFbi/u7YP128PwX75Qf7I4anAAAFiBXpTOMV6UzjAAAAB3NzaC1yc2
EAAAGBAlq+osXZ5vJVFOteZafabGLyd/YfCBaFsIRKDWwjB/9I8AkqB1GR32xy0yPU4kbb
UqVcnA6njRISFVkcSoKgUgUHmGdTYFBnhCucMSWZXD+TelCvf9EOfhsysvqs/i9y5tiFpF
3FDMTQJFHDYP13Sre7FajXOnerFuV+jjhVTZ13cbSQtuyFNwQpddyZPMIeX2d0ad5IIszW
B+RBLAfykPlX2KYIEomonSXmlKzQpT8oFuS/qX+Kv8b2l8hP0aIS/yh2bsWHPXBuVxYPxA

Save   Apply

Jenkins   /   Manage Jenkins   ⌄   /   System   ⌄

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**

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.

Console Output

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```
Started by user Ayush Pandey
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/remote_job
SSH: Connecting from host [vm01]
SSH: Connecting with configuration [ubuntu] ...
SSH: EXEC: completed after 201 ms
SSH: Disconnecting configuration [ubuntu] ...
SSH: Transferred 1 file(s)
Build step 'Send files or execute commands over SSH' changed build result to SUCCESS
Finished: SUCCESS
```

Status
Changes
Console Output
Edit Build Information
Delete build '#4'
Timings
Previous Build

REST API   Jenkins 2.528.1