**📘 Jenkins Installation Guide (Ubuntu Server)**

✅ This guide covers Jenkins installation on **Ubuntu 20.04/22.04**. It can be adapted for other Linux distros with small changes.

**🛠️ Prerequisites**

* Ubuntu server with internet access
* sudo privileges or root user
* Port 8080 open (or any port you plan to run Jenkins on)
* Java 11 or newer

**🔹 Step 1: Update System Packages**

sudo apt update

sudo apt upgrade -y

**🔹 Step 2: Install Java (Jenkins requirement)**

sudo apt install openjdk-11-jdk -y

Check Java version:

java -version

Expected output:

openjdk version "11.x.x"

**🔹 Step 3: Add Jenkins Repository**

curl -fsSL 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

**🔹 Step 4: Install Jenkins**

sudo apt update

sudo apt install jenkins -y

**🔹 Step 5: Start & Enable Jenkins**

sudo systemctl start jenkins

sudo systemctl enable jenkins

Check status:

sudo systemctl status jenkins

**🔹 Step 6: Allow Firewall Port (Optional)**

sudo ufw allow 8080

sudo ufw status

**🔹 Step 7: Access Jenkins Web UI**

Open in browser:

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

**🔹 Step 8: Unlock Jenkins**

Get the initial password:

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

Copy and paste it into the browser.

**🔹 Step 9: Install Plugins**

* Choose **"Install suggested plugins"**
* Or select only what you need:
  + Git
  + Pipeline
  + SSH Agent
  + Blue Ocean (optional)

**🔹 Step 10: Create Admin User**

Set up your admin username, password, and email.

**🧪 Test Jenkins**

Create a sample **Freestyle job**:

* Go to **New Item > Freestyle project**
* Add a **Build Step > Execute Shell**

bash

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echo "Hello, Jenkins!"

* Click **Build Now**

**📂 Jenkins Important Paths**

| **Item** | **Path** |
| --- | --- |
| Jenkins home | /var/lib/jenkins |
| Config files | /etc/default/jenkins |
| Logs | /var/log/jenkins/jenkins.log |
| Port config | /etc/default/jenkins (HTTP\_PORT=8080) |

**🔐 Secure Jenkins (Best Practices)**

* Change port if needed
* Configure HTTPS (using Nginx/Apache reverse proxy)
* Add user authentication + RBAC
* Regularly update Jenkins and plugins
* Backup /var/lib/jenkins

**📤 Optional: Install Jenkins with Docker**

docker run -d \

-p 8080:8080 -p 50000:50000 \

--name jenkins \

-v jenkins\_home:/var/jenkins\_home \

jenkins/jenkins:lts

Let me know if you'd like this turned into a Markdown file, PDF, or if you need the same guide for **Red Hat/CentOS, Windows, or Kubernetes-based Jenkins deployment**.