**Configuring Git on Raspberry Pi via Linux**

**Installing and Setting Up Git**

**Using Command Line (Recommended for All Raspberry Pi OS Versions)**

1. Boot your Raspberry Pi and log into the terminal (physical or SSH).
2. Update the package list and upgrade existing packages:

sudo apt update && sudo apt upgrade -y

1. Install Git:

sudo apt install git -y

1. Verify Git installation:

git --version

You should see output similar to **git version 2.x.x**.

**Configuring Git Identity**

1. Set your username (this appears in commit history):

git config --global user.name "Your Name"

1. Set your email address (must match your GitHub account):

git config --global user.email "youremail@example.com"

1. Confirm your configuration:

git config --list

**Generating and Adding SSH Keys for GitHub**

**Step 1: Generate SSH Key Pair**

1. Run the following command:

ssh-keygen -t ed25519 -C "youremail@example.com"

1. Press **Enter** to accept the default file location *(/home/pi/.ssh/id\_ed25519* or your username path).
2. Optionally enter a passphrase for added security.

**Step 2: Start SSH Agent and Add the Key**

1. Start the SSH agent:

eval "$(ssh-agent -s)"

1. Add your private key to the agent:

ssh-add ~/.ssh/id\_ed25519

**Step 3: Retrieve the Public Key**

1. Display your public key:

cat ~/.ssh/id\_ed25519.pub

1. Copy the entire output (starts with ssh-ed25519 and ends with your email).

**Adding SSH Key to GitHub**

1. Log in to your [GitHub account](https://github.com).
2. Go to **Settings → SSH and GPG Keys → New SSH key**.
3. Give the key a title (e.g., “Raspberry Pi”).
4. Paste your copied key into the Key field.
5. Click **Add SSH Key** to save.

**Testing the SSH Connection**

1. Test your connection with GitHub:

ssh -T git@github.com

1. If successful, you’ll see:

Hi <username>! You've successfully authenticated, but GitHub does not provide shell access.

**Cloning and Using Git Repositories**

1. Navigate to your desired directory:

cd ~/projects

1. Clone your GitHub repository using SSH:

git clone git@github.com:username/repository.git

1. To make changes and push updates:

cd repository

git add .

git commit -m "Your commit message"

git push origin main

**Optional: Auto-Start SSH Agent on Boot**

For convenience, you can make the SSH agent start automatically:

1. Edit your .bashrc file:

nano ~/.bashrc

1. Add the following lines at the bottom:

eval "$(ssh-agent -s)" > /dev/null

ssh-add ~/.ssh/id\_ed25519 2>/dev/null

1. Save and exit (Ctrl + O, Enter, Ctrl + X).

**SOURCES:**

* [Git Official Documentation](https://git-scm.com/book/en/v2/Getting-Started-Installing-Git)
* GitHub Docs – Connecting to GitHub with SSH
* [Raspberry Pi Documentation](https://www.raspberrypi.com/documentation/computers/getting-started.html)
* DigitalOcean – How to Set Up Git