

STEPS TO SET-UP SSH ON GITHUB

Complete guide to setting up SSH authentication for GitHub

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Step 1: Check Git Installation

```
git --version
```

Check if Git is installed and see the version

Note: If Git is not installed, proceed to platform-specific installation steps.

Step 2: Install Git (If Needed)

For macOS

```
xcode-select --install
```

Install Xcode Command Line Tools

For Windows

Download from:
<https://git-scm.com/downloads/win>

Download and install Git Bash

Step 3: Check Existing SSH Keys

For macOS/Linux

```
ls -al ~/.ssh
```

List all files in the .ssh directory

For Windows (Git Bash)

```
ls ~/.ssh
```

List files in the .ssh directory

Note: Look for files like `id_ed25519` and `id_ed25519.pub`. If they exist, you can use them or create new ones.

Step 4: Generate a New SSH Key

```
ssh-keygen -t ed25519 -C "your_email@example.com"
```

Generate a new SSH key (replace with your email)

```
ssh-keygen -t rsa -b 4096 -C "your_email@example.com"
```

Alternative: Generate RSA key (if ed25519 not supported)

Note: Press Enter to accept the default file location (`~/.ssh/id_ed25519`)

Step 5: Add a Passphrase (Optional)

```
[Enter a passphrase when prompted]
```

Add an optional passphrase for extra security

Note: You can press Enter to skip adding a passphrase, but this is less secure.

Step 6: Start SSH Agent

For macOS/Linux

```
eval "$(ssh-agent -s)"
```

Start the SSH agent

For Windows (PowerShell)

```
Start-Service ssh-agent
```

Start the SSH agent service

Step 7: Add SSH Key to SSH Agent

```
ssh-add ~/.ssh/id_ed25519
```

Add your SSH private key to the agent

Note: If you used a different file name or path, adjust the command accordingly.

Step 8: Copy the Public Key

```
cat ~/.ssh/id_ed25519.pub
```

Display the public key content

Note: Select and copy the entire output, which starts with ssh-ed25519 (or ssh-rsa) and ends with your email.

Step 9: Add SSH Key to GitHub

1. Go to GitHub.com and log in to your account
2. Click on your profile picture → Settings
3. In the left sidebar, click **SSH and GPG keys**
4. Click **New SSH key** or **Add SSH key**

5. Give it a descriptive title (e.g., "My Laptop")
6. Paste your public key into the "Key" field
7. Click **Add SSH key**

Step 10: Test the Connection

```
ssh -T git@github.com
```

Test the SSH connection to GitHub

Note: You may see a warning about authenticity of host. Type "yes" to continue.

Expected Success Message: "Hi username! You've successfully authenticated, but GitHub does not provide shell access."

Step 11: Clone Using SSH

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

Clone a repository using SSH URL

Note: Replace "username" with your GitHub username and "repository" with the repository name.

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