

GITHUB AUTO DEPLOY

On your **local machine** (or VPS if you want the deploy key from there)

1. `ssh-keygen -t rsa -b 4096 -f ./github_deploy_key -C "GitHub Actions Deploy Key"`

You'll get two files:

- `github_deploy_key` (private key — DO NOT SHARE)
- `github_deploy_key.pub` (public key — you'll add this to the VPS)

On your VPS (inside `/root/.ssh/authorized_keys`):

2. `cat github_deploy_key.pub >> ~/.ssh/authorized_keys`

3. In your **GitHub repository**:

- Go to Settings > Secrets and Variables > Actions > New Repository Secret
- Name it: `SSH_PRIVATE_KEY`
- Paste the **contents of `github_deploy_key`** (the private key)

4. Create this file in your repo:

`.github/workflows/deploy.yml`

```
name: Deploy to VPS

on:
  push:
    branches:
      - main # Adjust if you use a different branch

jobs:
  deploy:
    runs-on: ubuntu-latest

    steps:
      - name: SSH into VPS and deploy
        uses: appleboy/ssh-action@master
        with:
          host: #### Your VPS IP
          username: root
          key: ${ secrets.SSH_PRIVATE_KEY }
          script: |
```

```
cd ~/ #### Adjust to your project path on the VPS
git pull origin main
npm install
pm2 restart all
```

5. Add, commit, and push:

```
git add .github/workflows/deploy.yml
git commit -m "Add auto deploy workflow"
git push origin main
```

6. SSH into the VPS

7. Generate new key for vps

```
ssh-keygen -t rsa -b 4096 -f ~/.ssh/vps_github_pull_key -C "VPS to GitHub Deploy Key"
```

8. Create or edit .ssh/config:

```
Host github.com
  HostName github.com
  User git
  IdentityFile ~/.ssh/vps_github_deploy_key
```

This tells your VPS: "Whenever you connect to `github.com`, use this specific key."

9. Make Sure VPS Has the SSH Key

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

10. Add the Public Key to GitHub (Repo Settings)

```
GitHub Repo > Settings > Deploy Keys > Add Key (on github.com)

cat ~/.ssh/vps_github_pull_key.pub (on vps)
```

Check "Allow write access"

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

Step 11 — Update Remote URL (If Needed)

If your repo remote is still using `https://`, switch to `git@github.com`:

```
cd ~/repo
git remote set-url origin git@github.com:your-github-username/repo.git
```

Two Different Workflows Happening

1. GitHub Actions needs SSH to connect to your VPS (to deploy)

- GitHub Actions needs a **private key** so it can SSH into your VPS.
- This is why you added **the private key into GitHub Actions > Secrets**.
- This allows Actions to **SSH into your VPS and run commands like `git pull` and `pm2 restart`**.

This private key only exists on GitHub, not on the VPS.

2. Your VPS needs SSH to pull from GitHub repo (to get code)

- Your VPS (running `git pull`) needs **its own private key** to access your GitHub repo.
- This is why you need a **deploy key (public key added to GitHub repo, private key stored on VPS)**.
- This allows the VPS itself to authenticate with GitHub when pulling code.

This private key only exists on the VPS, not on GitHub.