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Generating SSH Keys

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SSH keys are a way to identify trusted computers, without involving passwords. The steps below will walk you through generating an SSH key and then adding the public key to your GitHub account.

Tip: We recommend that you regularly review your SSH keys list and revoke any that haven't been used in a while.

Step 1: Check for SSH keys

First, we need to check for existing SSH keys on your computer. Open up your Terminalyour Terminalyour Git Bashthe command line and type:

```
ls -al ~/.ssh
# Lists the files in your .ssh directory, if they exist
```

Check the directory listing to see if you have files named either `id_rsa.pub` or `id_dsa.pub`. If you don't have either of those files, go to **step 2**. Otherwise, skip to **step 3**.

Tip: If you have a new installation of Mac OSX, you will not have a `~/.ssh` directory. It will be created when you run the `ssh-keygen` command in **step 2** below.

Step 2: Generate a new SSH key

To generate a new SSH key, copy and paste the text below, making sure to substitute in your email address. The default settings are preferred, so when you're prompted to "Enter a file in which to save the key", just press **Enter** to continue.

```
ssh-keygen -t rsa -C "your_email@example.com"
# Creates a new ssh key, using the provided email as a label
# Generating public/private rsa key pair.
# Enter file in which to save the key (/Users/you/.ssh/id_rsa): [Press enter]
```

```
ssh-keygen -t rsa -C "your_email@example.com"
# Creates a new ssh key, using the provided email as a label
# Generating public/private rsa key pair.
# Enter file in which to save the key (/c/Users/you/.ssh/id_rsa): [Press enter]
```

```
ssh-keygen -t rsa -C "your_email@example.com"
# Creates a new ssh key, using the provided email as a label
# Generating public/private rsa key pair.
# Enter file in which to save the key (/home/you/.ssh/id_rsa):
```

```
ssh-keygen -t rsa -C "your_email@example.com"
# Creates a new ssh key using the provided email
# Generating public/private rsa key pair.
# Enter file in which to save the key (/your_home_path/.ssh/id_rsa):
```

Next, you'll be asked to enter a passphrase.

Tip: We strongly recommend a very good, secure passphrase. For more information, see Working with SSH key passphrases.

```
# Enter passphrase (empty for no passphrase): [Type a passphrase]
# Enter same passphrase again: [Type passphrase again]
```

Which should give you something like this:

```
# Your identification has been saved in /Users/you/.ssh/id_rsa.
# Your public key has been saved in /Users/you/.ssh/id_rsa.pub.
# The key fingerprint is:
# 01:0f:f4:3b:ca:85:d6:17:a1:7d:f0:68:9d:f0:a2:db your_email@example.com
```

```
# Your identification has been saved in /c/Users/you/.ssh/id_rsa.
# Your public key has been saved in /c/Users/you/.ssh/id_rsa.pub.
# The key fingerprint is:
# 01:0f:f4:3b:ca:85:d6:17:a1:7d:f0:68:9d:f0:a2:db your_email@example.com
```

```
# Your identification has been saved in /home/you/.ssh/id_rsa.
# Your public key has been saved in /home/you/.ssh/id_rsa.pub.
# The key fingerprint is:
# 01:0f:f4:3b:ca:85:d6:17:a1:7d:f0:68:9d:f0:a2:db your_email@example.com
```

```
# Your identification has been saved in /your_home_path/.ssh/id_rsa.
# Your public key has been saved in /your_home_path/.ssh/id_rsa.pub.
# The key fingerprint is:
# 01:0f:f4:3b:ca:85:d6:17:a1:7d:f0:68:9d:f0:a2:db your_email@example.com
```

Then add your new key to the ssh-agent:

```
# start the ssh-agent in the background
eval "$(ssh-agent -s)"
# Agent pid 59566
ssh-add ~/.ssh/id_rsa
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```

Step 3: Add your SSH key to GitHub

Run the following code to copy the key to your clipboard.

```
pbcopy < ~/.ssh/id_rsa.pub
# Copies the contents of the id_rsa.pub file to your clipboard
```

Alternatively, using your favorite text editor, you can open the *~/.ssh/id_rsa.pub* file and copy the contents of the file manually

Warning: it's important to copy the key exactly without adding newlines or whitespace.

Run the following code to copy the key to your clipboard.

```
clip < ~/.ssh/id_rsa.pub
# Copies the contents of the id_rsa.pub file to your clipboard
```

Alternatively, using your favorite text editor, you can open the *~/.ssh/id_rsa.pub* file and copy the contents of the file manually

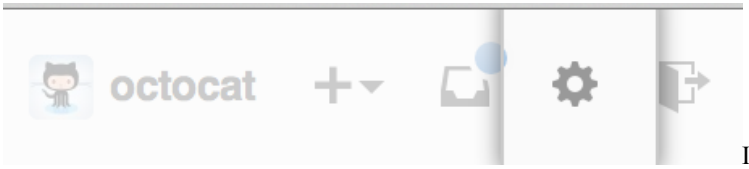
Run the following code to copy the key to your clipboard.

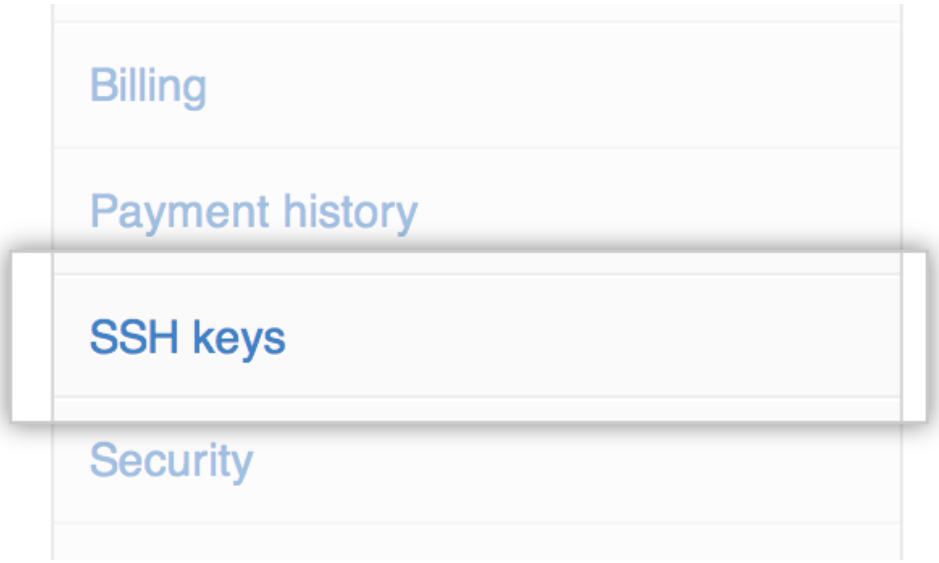
```
sudo apt-get install xclip
# Downloads and installs xclip. If you don't have `apt-get`, you might need to use another installer (like `yum`)

xclip -sel clip < ~/.ssh/id_rsa.pub
# Copies the contents of the id_rsa.pub file to your clipboard
```

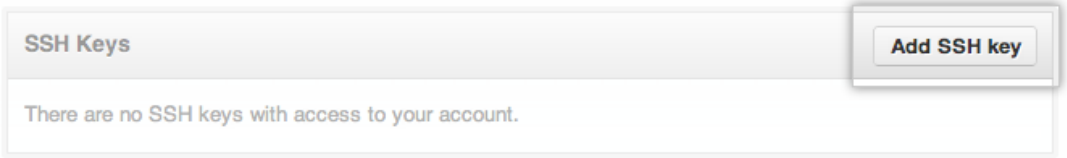
Alternatively, using your favorite text editor, you can open the *~/.ssh/id_rsa.pub* file and copy the contents of the file manually

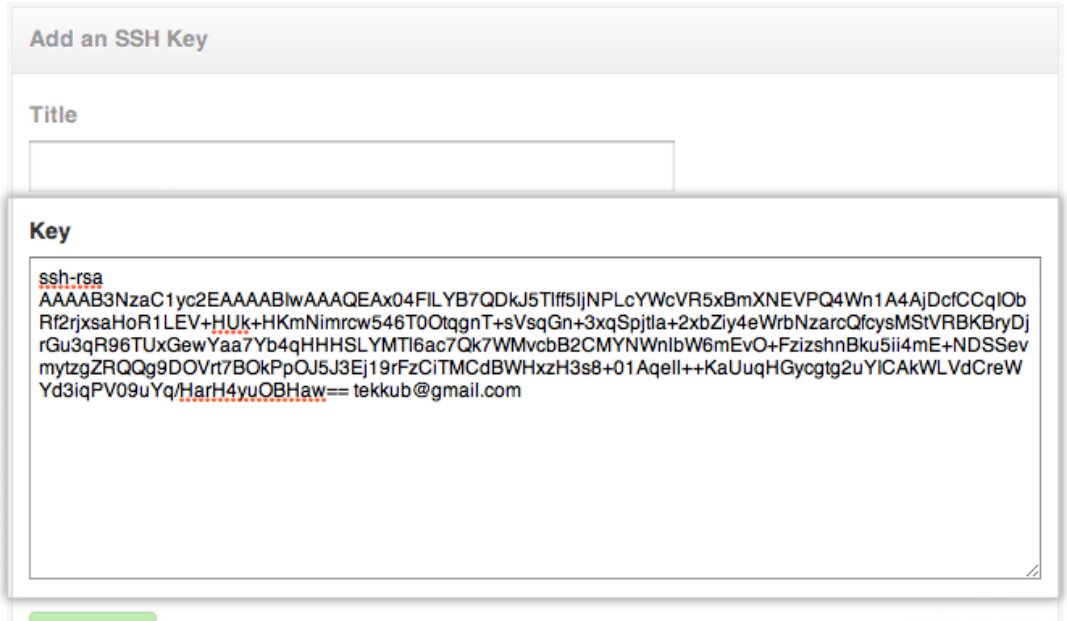
Open the *~/.ssh/id_rsa.pub* file with a text editor. This is your SSH key. Select all and copy to your clipboard.

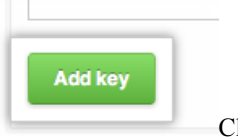
Now that you have the key copied, it's time to add it into GitHub:

1. 

In the user bar in the top-right corner of any page, click .
2. 

Click **SSH Keys** in the left sidebar.
3. 

Click **Add SSH key**.
4. In the Title field, add a descriptive label for the new key. For example, if you're using a personal Mac, you might call this key "Personal MacBook Air".
5. 

Paste your key into the "Key" field.
6. 

Click **Add key**.
7. Confirm the action by entering your GitHub password.

Step 4: Test everything out

To make sure everything is working, you'll now try SSHing to GitHub. When you do this, you will be asked to authenticate this action using your password, which was the passphrase you created earlier.

Open up your Terminalyour Terminalyour Git Bashthe command line and type:

```
ssh -T git@github.com
# Attempts to ssh to github
```

It's possible that you'll see this error message:

```
...
Agent admitted failure to sign using the key.
debug1: No more authentication methods to try.
Permission denied (publickey).
```

This is a known problem with certain Linux distributions. For a possible resolution, see our help article.

You may see this warning:

```
# The authenticity of host 'github.com (207.97.227.239)' can't be established.
# RSA key fingerprint is 16:27:ac:a5:76:28:2d:36:63:1b:56:4d:eb:df:a6:48.
# Are you sure you want to continue connecting (yes/no)?
```

Don't worry! This is supposed to happen. Verify that the fingerprint in your terminal matches the one we've provided up above, and then type "yes."

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

If that username is yours, you've successfully set up your SSH key! Don't worry about the "shell access" thing, you don't want that anyway.

If you receive a message about "access denied," you can read these instructions for diagnosing the issue.

If you're switching from HTTPS to SSH, you'll now need to update your remote repository URLs. For more information, see Changing a remote's URL.
