**SSH Keys and the AWS super computer**

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**What is a super computer?**

Super computers have much more memory and processing power than your local computer, which is required for most bioinformatics analysis. For your actual analysis, you’ll either use a super computer run by your campus or a cloud-based computing system like Amazon Web Services (AWS). For this class, our computing is set up through AWS.

This worksheet will take you through the security process of logging onto our class AWS instance.

**Key-based security**

We have set up the AWS to allow access through GitHub usernames. A secure way of connecting your computer to the AWS is through an SSH private/public key pair.

To generate one, first open a terminal application on your computer. On Mac or Linux this is just called Terminal. On Windows, you should have installed Bash for Windows, accessed through the Ubuntu application.

Once you have a terminal window open, follow instructions from these two links, according to your operating system, **but also follow the notes on the next page of the worksheet.**

Generating keys on your computer: <https://docs.github.com/en/authentication/connecting-to-github-with-ssh/generating-a-new-ssh-key-and-adding-it-to-the-ssh-agent>

A screenshot of a computer

Description automatically generated

Operating system 🡪

Adding the public key to your GitHub account (must be already logged into GitHub on your browser): <https://docs.github.com/en/authentication/connecting-to-github-with-ssh/adding-a-new-ssh-key-to-your-github-account>

Once you’ve completed these two walkthroughs, you may have to wait a few minutes for the login info to update on the backend. Then login to the AWS by navigating back to your terminal and typing the following:

ssh <github\_username>@<aws\_ip>

Where <github\_username> = YOUR username and <aws\_ip> = the IP address written on the board.

The first time you log on, it’ll ask if you want to authenticate. Type yes, hit enter, and you’re good to go!

If you get a credentials error AND you’ve waited at least five minutes, more troubleshooting might be required.

**Additional instructions for GitHub walkthroughs**

**All users:**

* In this case, you can skip making a password. When you’re prompted to enter a passphrase for your key, just press enter, then hit enter again when you’re prompted to repeat it.
* If you get an error that says permissions are too open, type the following:

chmod 700 ~/.ssh/id\_\*

**Mac users only:**

As part of the posted instructions, you need to create or modify a config file. By the end of today, you’ll know how to do this, but for now follow these commands:

vim ~/.ssh/config

This will open a file. Hit the i key to begin editing and type or copy/paste the following, as shown in the walkthrough, without the UseKeychain line (unless you did password-protect your key):

Host github.com

AddKeysToAgent yes

IdentityFile ~/.ssh/id\_ed25519

When you’re done typing, hit Esc, then type :wq (starting with the colon)