4a. Software Installation Guide - SSH Keys

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OVERVIEW

While QB adheres to a philosophy of openness and collaboration, it is also important for institutions and individuals to protect their data and computing enviroments. One of many ways to achieve this type of security is to use **SSH keys**. SSH stands for secure shell. To use SSH, one generates a pair of keys: one public and one private. To date, in QB, you have been using **Hyper Text Transfer Protocol Secure (HTTPS)** for cloning and pushing files from and to GitHub. And as a result, you are frequently asked to supply your username and passphrase, whic can get annoying after a while. In this short document, we show you how to add SSH keys to your local computers so that you can use GitHub and do reproducible with a little less hassle. Note: you will need to do complete the following for each computer for which you want to use SSH keys (e.g., lab computer, personal computer, etc.).

1) GENERATE AN SSH KEY

Using Rstudio

You can generate an SSH key in RStudio by going to Preferences and choosing the Git/SVN tab (with box-looking icon). Make sure box is checked for `Enable version control interface for RStudio projects`. In the Git executable box, it may say `/usr/bin/git` and SVN executable box may say `usr/bin/svn`. In the `SSH RSA Key` box, you should type `~/.ssh/id_rsa/`. You can then hit the button that says `Create RSA Key...` You can now view the public key. Copy this, as we are now going to put it into GitHub.

2 Using Terminal

Generate a key by typing the following in at the command prompt:

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

You will be asked to enter and re-enter a passphrase. After that, you need to add the new key to the SSH-agent using the following commands, which will generate an agent pid (process identifier).

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

```
ssh-add ~/.ssh/id_rsa
```

To obtain the SSH key you just generated, type the following command at the Terminal. (Note: your key may be named one of the following instead of id_rsa.pub: id_dsa.pub, id_ecdsa.pub or id_ed25519.pub)

```
pbcopy < ~/.ssh/id_rsa.pub
```

2) PUTTING SSH KEY INTO GITHUB

Log in to your GitHub site at www.github.com. In the upper right hand corner, click on your profile and go choose `Settings`. Now, on the left hand side under `Personal Settings`, click on `SSH and GPG keys`. (Alternatively, type https://github.com/settings/keys) In the upper right, click on the green button that says `New SSH Key`. On the new page, add a descriptive title (e.g., Jay's MacBook). Now paste the SSH key into the key window and hit the green `Add SSH Key` button. You may be asked to supply your GitHub password.

3) ADD KEY TO LOCAL COMPUTER KEY CHAIN

On Mac: Open the terminal and type the following. This will add your ssh key to Apple's keychain (K)

```
ssh-add -K ~/.ssh/id_rsa
ssh-add
~/.ssh/id_rsa
```

On PC: