Useful details: ssh and sftp

IMPORTANT NOTE:

You either must be **on the campus network**, or **off-campus be logged in via the campus GlobalProtect VPN**, to be able to use ssh and sftp with nrs-projects.

You can find useful links for setting up the campus GlobalProtect VPN from your personal device in the CS 328 "Connecting to nrs-projects and sqlplus" handout.

ssh - secure shell - how to connect to nrs-projects

ssh (secure shell) is used to connect to computers across a network. It allows you to log onto a remote Linux computer and use it from wherever you are on the Internet.

While there are graphical clients for ssh, Mac OS X and Linux (and perhaps Windows 11 systems running bash?) typically include a command-line version. Humboldt's campus Windows labs (including vlab.humboldt.edu) include a Terminal application, that, while it is a Windows terminal, also seem to support the ssh command based on experience in recent semesters.

- So, step one is to open a Terminal window.
  - (You can search for the Terminal application in a campus Windows lab,
  - or, on a Mac, look under **Applications -> Utilities** for its Terminal application.
  - If you use Linux, you probably already know how to open a terminal window under whatever version you are running.)
- Once you have a Terminal window open, type:

  ssh *your_humboldt_username*@nrs-projects**-ssh**.humboldt.edu

  ...substituting your Humboldt username where indicated.
  - Answer **y** for yes to agree IF it asks you if it's really okay to proceed
  - Type in your Humboldt campus password when indicated. (NOTE: your password will **not** show on the screen when you type it, for security reasons! It IS still being read in.)
- Once you see the prompt:

  [*your_humboldt_username*@nrs-projects ~]$

  ...you are now logged into nrs-projects, and can type Linux commands at this prompt.
  - (Type the enter key to end a Linux command, and note that Linux is case-sensitive.)
- It is good practice to logout (type the command logout or type the ctrl and d keys at the same time) when you are done.

sftp - secure file transfer program - how to transfer files to and from nrs-projects

sftp (secure file transfer program) is used to transfer files between computers across a network. It allows you to connect to a remote computer and transfer files between it and the computer you connect to from wherever you are on the Internet.

You can use this transfer files to your own computer, either for backup purposes or (if needed) to help you submit assignment files from nrs-projects to Canvas.

And -- if you prefer to type code in an editor on your own computer -- you can use this to transfer those files to nrs-projects so they can be executed there.

...from WinSCP or FileZilla

WinSCP, installed in Humboldt campus labs and vlab.humboldt.edu, is a "graphical" implementations of sftp.

And, there is an open source version, FileZilla, which has versions for Windows and Mac OS X, available from:

https://filezilla-project.org/

For any of these choices of software, use nrs-projects**-ssh**.humboldt.edu as the host, and use your campus username, and your campus password. If WinSCP or FileZilla require a port number, enter a port number of 22.

Once you have connected, you can drag files from the left side to the right side to move files from your computer to nrs-projects, and from the right side to the left side to move files from nrs-projects to your computer.

...from a command line

As is the case for ssh, command-line versions of sftp are commonly already installed on Mac OS X, Linux, and Windows bash shells. (And the Terminal application in Humboldt's campus Windows labs and vlab.humboldt.edu also seems to support the sftp command based on experience in recent semesters.)

- So, step one is to open a Terminal window.
  - (You can search for the Terminal application in a campus Windows lab,
  - or, on a Mac, look under **Applications -> Utilities** for its Terminal application.
  - If you use Linux, you probably already know how to open a terminal window under whatever version you are running.)
- Once you have a Terminal window open, life is easier if you change to the directory (using the **cd** command) where the files are that you want to transfer.
- Type:

`sftp` *your_humboldt_username*`@nrs-projects-ssh.humboldt.edu`

...substituting your Humboldt username where indicated.

- Answer **`y`** for yes to agree IF it asks you if it's really okay to proceed
- Type in your Humboldt campus password when indicated. (NOTE: your password will **not** show on the screen when you type it, for security reasons! It IS still being read in.)

- Once you see the prompt:

  `sftp>`

  ...you are now logged into an `sftp` session on nrs-projects, and can type `sftp` commands at this prompt.

  - (Type the enter key to end an `sftp` command, and note that `sftp` commands are case-sensitive.)

- Here are a few very useful `sftp` commands:

`cd` *directory_name*	change to directory *directory_name* **on nrs-projects**
`lcd` *directory_name*	(local `cd`) change to directory *directory_name* **on your (local) computer**
`pwd`	see the name of the current directory **on nrs-projects**
`lpwd`	(local `pwd`) see the name of the current directory **on your (local) computer**
`ls`	list the files in the current directory **on nrs-projects**
`lls`	(local `ls`) list the files in the current directory **on your (local) computer**
`put` *file_name*	transfer a copy of the file *file_name* from **your** computer **to** nrs-projects
`get` *file_name*	transfer a copy of the file *file_name* **from** nrs-projects to **your** computer
`?`	gives a list of sftp commands, each with a 1-line description
`quit`	exit `sftp`

- It is good practice to quit (type the command `quit` or type the ctrl and d keys at the same time) when you are done.