Setup Instructions

Please complete these steps before the lessons start at 9:00 a.m.:

https://hcc.unl.edu/kickstart-setup

And make sure you can log into **Crane**. OS-specific login directions here:
Windows: https://go.unl.edu/hcc_win

Mac/Linux: https://go.unl.edu/hcc_mac

*(If you don't have an HCC account, find a helper to give you a **demo account**.)*

If you need help with the setup, please put a **blue** sticky note at the top of your laptop.

When you are done with the setup, please put a **yellow** sticky note at the top of your laptop.

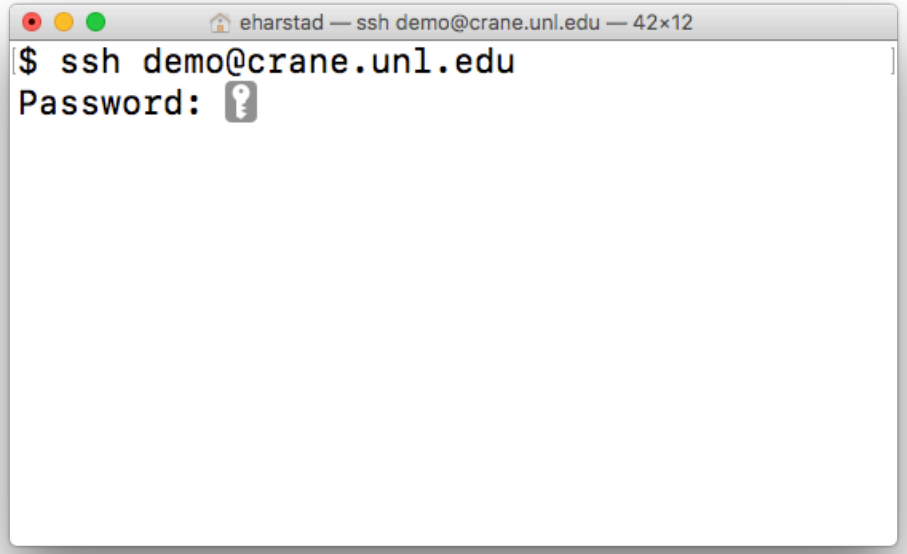
How to connect

Mac OS / Linux

- Open Terminal
- Type in the following command and press Enter:

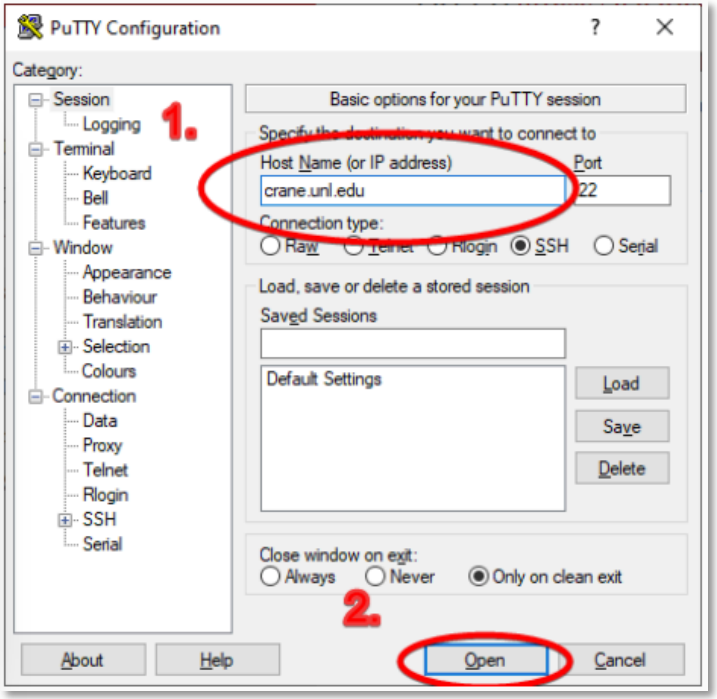
  `ssh <user_name>@crane.unl.edu`

  (Replace <user_name> with your HCC login)



Windows

- Open PuTTY
- Type **`crane.unl.edu`** for Host Name and click Open



- On the second screen, click Yes

Once you connect, you will be prompted for your password.
Nothing will appear on your screen as you type your password. This is normal.

HCC Kickstart

University of Nebraska – Lincoln
Holland Computing Center

Sept 3-4,2019

Carrie Brown, Emelie Fuchs, Jingchao Zhang, Adam Caprez,
Caughlin Bohn, Huijun Zhu, Derek Weitzel, Tom Harvill, Hengle Jiang

Who Are We?

Holland Computing Center

2 locations: Schorr Center at UNL, and PKI at UNO

Provide **Research Computing Resources** to researchers in the University of Nebraska system** (UNL, UNO, UNK, UNMC)

- Supercomputing clusters (Crane, Rhino)
- Cloud computing (Anvil)
- Long-term data storage (Attic) – subsidized pricing
- Research Facilitation Services: troubleshooting, consultations, outreach/ education/training, customized solutions or code, software installation

**Basic Services/Access is free, and priority access is available at a subsidized price.

HCC Kickstart

https://hcc.unl.edu/hcc-kickstart-2019

Sept 3rd:

Unix/Bash: learn basic shell commands and programming*
Git/GitHub: using version control for projects*

Sept 4th:

All about HCC:

Overview
Introduction, log in, run software, submit jobs, manage data, transfer files
Globus (data management and file transfer)
Anvil (HCC's cloud resource)
Jupyter Notebook
Introduction to OSG (Open Science Grid)
HCC Facility Tour / One-on-One Consultations

*Using Software Carpentry Lessons https://software-carpentry.org

Logistics

- **Location:** Unity Room - Jackie Gaughan Multicultural Center - UNL City Campus
- **Name tags, sign-in sheet**
- Sticky notes: **Blue = need help**, **Yellow = all good**
- **Lunch/coffee** is provided (thanks to Dell & Lenovo)
- Link to **attendee portal** (with command history): http://hcc.unl.edu/swc-history/index.html
- Link to **schedule and lessons/slides**: http://hcc.unl.edu/hcc-kickstart-2019

Unix Shell

- What is the Command Shell?
  - Interact using CLI instead of GUI
  - A program
  - Interprets commands, orders computer to execute, and prints out result
- We will be using the Bash shell (most popular)
- Shell commands can look cryptic at first
- Only need to learn about 10-15 basic commands

Unix Shell

- Why use the Unix Shell?
  - Powerful toolset - automate repetitive tasks quickly
  - Easiest way to interact with remote machines
  - Unix-based operating systems are used on most High Performance Computing (HPC)

- We will be logging into Crane (an HCC cluster) and using the shell on the login node.
  - You can also use the Unix shell on your laptop (MAC terminal or Windows GitBash)

Bash Commands Review:

cd	change directory
ls	list
pwd	print working directory
mv	move or rename
rm	remove
cp	copy
nano	text editor
touch	create empty file
wc	word count
sort	sort lines in file
echo	print to screen
cat	print contents of file(s) to screen
..	Parent directory
.	Current directory
>	Redirect output to file (overwrite)
>>	Redirect output to file (append)

for <item> in <list> For loops

do … done

Git

- Software version control tool
- Manage files in a project (create repo.)
- Save all old revisions
- Track changes (who/what/when)
- Compare versions
- Difficult to overwrite
- Collaborate (GitHub: web-hosted repo.)