

Initial setup for installing bioinformatics tools on the CRC for Introduction to Biocomputing

1. Use ssh to log into the CRC – `ssh netID@crcfe01.crc.nd.edu`
2. `cd` to Private
3. `mkdir Biocomputing2022`
4. Inside of Biocomputing2022, `mkdir downloads` and `mkdir tools`

Steps for installing Muscle on the CRC for Introduction to Biocomputing

1. Go to <https://www.drive5.com/muscle/> and click on the MUSCLE v3 link in the lower left
2. Right click on the “Linux Intel i86” 64 bit link (second down from top) and “Copy Link Address”
3. In a terminal window that is connected to the CRC, make sure you’re working directory is `~/Private/Biocomputing2022/downloads`
4. Run `wget` <paste the copied url from Muscle> to download the tar.gz file for Muscle
5. Unpack the Muscle tar.gz using:
 - a. `gzip -d muscle3.8.31_i86linux64.tar.gz`
 - b. `tar -xf muscle3.8.31_i86linux64.tar`
6. Move the unpacked binary file to your tools directory:
`mv muscle3.8.31_i86linux64 ../tools/muscle`

Steps for installing hmmer on the CRC for Introduction to Biocomputing

1. Go to <http://hmmer.org/download.html>
2. Right click on the link at the top “[hmmer-3.3.2.tar.gz]” and “Copy Link Address”
3. In a terminal window that is connected to the CRC, make sure you’re working directory is `~/Private/Biocomputing2022/downloads`
4. Run `wget` <paste the copied url from HMMer> to download the tar.gz file for HMMer
5. Unpack the HMMer tar.gz using:
 - a. `gzip -d hmmer-3.3.2.tar.gz`
 - b. `tar -xf hmmer-3.3.2.tar`
6. There should now be a hmmer-3.3.2 directory in downloads. `cd` into that
7. Now that you are in the hmmer-3.3.2 directory, run the following commands:
 - a. `./configure --prefix ~/Private/Biocomputing2022/tools`
 - b. `make`
 - c. `make install`
8. There should now be a bin and share directory in tools, `cd` to the tools/bin directory
9. Move two tools we need from bin to tools
 - a. `mv hmmbuild ..`
 - b. `mv hmmsearch ..`