Quick Reference / Guide*

ACMS 21210 †

Abstract
A guide for quick reference in our scientific computing labs.

Remote Connectivity
Windows SSH clients:

- **Bitvise**: https://www.bitvise.com/ssh-client-download
- **PuTTY**: http://www.chiark.greenend.org.uk/šgtatham/putty/latest.html
- **WinSCP**: https://winscp.net/eng/download.php

Mac SSH client: use the operating system's **Terminal.app**

Establishing a Remote Connection
`ssh USERNAME@SERVER -p PORT`
where server = **server IP address** or **domain**. Default port is 22, so it can be omitted in some cases
e.g. `ssh johndoe@crcfe01.crc.nd.edu`
You will be required to enter your **password**.
The crcfeIB01 a.k.a the *infini-band* server is faster but you can only connect to it when on campus or using ND's VPN
e.g. `ssh johndoe@crcfeIB01.crc.nd.edu`

REMOTE FILE MANAGEMENT
Available for both Windows and Mac

1. Cyberduck client: https://cyberduck.io/
2. Filezilla client: https://filezilla-project.org/

Some Common Linux Commands
`whoami` *Displays who you are logged in as*

`ls` *Directory listing*

`ls -la` *Formatted listing (including hidden files)*

`pwd` *Show the current working directory*

`cd` *Go to home directory*

`cd PATH` *Go to the path e.g.* `cd Public/code`

`cd ..` *Go to the upper folder*

`touch FILENAME` *Create a file named FILENAME*

`mkdir DIRNAME` *Create a folder named DIRNAME*

`rm FILENAME` *Delete a file named FILENAME*

`rm -f DIRNAME` *Force delete a file named FILENAME*

`rm -r DIRNAME` *Delete a folder named DIRNAME*

`rm -fr DIRNAME` *Force delete a folder (extreme caution!)*

`cp FILE1 FILE2` *Copy FILE1 to FILE2*

`cp DIR1 DIR2` *Copy DIR1 to DIR2*

`cp -r DIR1 DIR2` *Copy DIR1 to DIR2, create if necessary*

`mv FILE1 FILE2` *Move FILE1 to FILE2 (also for renaming)*

`mv FILE1 DIR2` *Move FILE1 into existing folder DIR2*

`ln -s FILE LINK` *Create a symbolic LINK to a FILE*

`nano FILE` *Edit FILE using the nano text editor*

`head FILE` *Show first 10 lines of FILE*

`tail FILE` *Show last 10 lines of FILE*

`wget URL` *Download resource from a LINK*

Compiling your C++ code on the CRC
Supply the file name of the source code, version of the C++ standard, and (optional, defaults to `a.out`) the name of the output file.
`g++ SOURCE.cpp -std=c++11 -o RESULT.out`

Running your output file on the CRC
`./RESULT.out`

Modifying your profile on the CRC
(*An advanced, optional setup*)
`cd`
`nano .cshrc`
Add the lines to customize your environment, e.g.
`alias ls "ls --color=always"`
`alias scicomp "cd ~ /Public/code/21210"`
`bindkey -- kuphistory -- search -- backward`
`bindkey -- kdownhistory -- search -- forward`
Save and exit

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