

RECAPPING LAST CLASS

- Learned how to:
 - remote access other machines
 - avoid password with ssh keys
- Commands covered:
 - `ssh` -> remote accessing other machines
 - `ssh-keygen` -> generating public/private key pairs
 - `ssh-copy-id` -> moving public key to another machine
 - `ls` -> listing files in the current directory

RECAPPING LAST CLASS (CONT.)

- Other commands shown
 - `cat` -> showing file
 - `cd` -> change current directory
 - `echo` -> write arguments to standard output

TAKING A STEP BACK: BIGGER PICTURE

- Who cares?
 - Why is this important?
 - When will I need to use the shell?
- Answers:
 - Efficiency
 - Necessity
 - Only have shell access
 - Tools only available from command line

TAKING A STEP BACK: LINUX FILESYSTEM (CH04)

- Hierarchical filesystem
- root directory /
- other directories branch off from root (home, tmp, etc, ...)
- home directory for each user ~
- absolute paths from / or expanded by ~
- relative from current directory

NAVIGATING THE FILESYSTEM (CH03)

- `mkdir` - make a directory
- `cd` - change into a different directory
- `ls` - list files
- `rm` - remove
- `cp` - copy - careful
- `mv` - move/rename - careful
- `pwd` - print working directory

VIEWING FILES (CH03)

- `cat` - print out file
- `less` and `more`
- `head` - show beginning lines of file (default 10)
- `tail` - show last lines of file (default 10)
- `uniq` - displays file with duplicate lines removed
- `sort` - displays file with lines sorted

SCP (CH17)

- ssh allowed us to securely access a shell on remote devices
- what about moving files? -> scp
- Command format:

```
scp [[user@]src_host:]srcpath  
[[user@]dest_host:]destpath
```

- **Example: transfer file to remote machine**

```
scp pathtofile
```

```
username@hostname:~/some/remote/direct
```

- Moving the other way? -> swap order

HOW IN THE WORLD AM I SUPPOSED TO REMEMBER ALL OF THIS?

- Practice
- Access manpages using `man` for details on each call
 - Example `man man`
 - Example `man ls`
 - Pay attention to manpage section (example: `printf`)
- `apropos` for searching manpages
 - Example `apropos "remove file"`
 - Example `apropos "remote"`

Mini-lab (We'll get to this in lec03)

1. Use `ssh` to access one of the eos machines
2. Make a directory for this mini-lab (you can call it whatever you want)
3. Use `cd` to change into that directory

Mini-lab(cont.)

4. Run `wget`

```
https://raw.githubusercontent.com/  
fivethirtyeight/data/master/  
avengers/avengers.csv and
```

```
wget
```

```
https://raw.githubusercontent.com/  
fivethirtyeight/data/master/  
college-majors/recent-grads.csv
```

Mini-lab (cont.)

5. Use `ls` to verify that you have 2 data files in this directory
6. Use `exit` to disconnect (now you'll be back on your local machine)
7. Use `scp` to transfer the directory from eos to your local machine Hint: we used `scp` in lecture to transfer a file, where might you look to see how you can transfer a directory?
8. Rename the files or directory
9. Use `scp` to transfer the renamed files back to eos