



# Pre-workshop Linux Intro

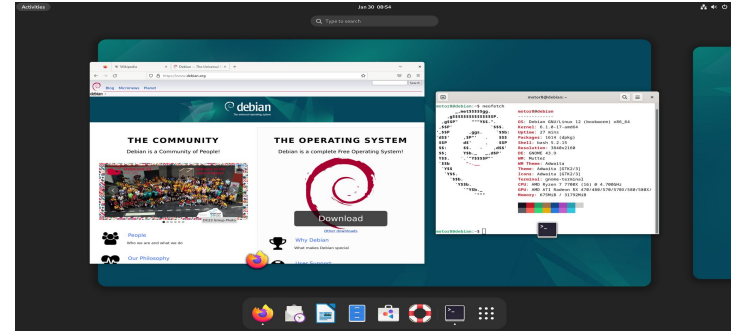
June 2nd 2025

# What is linux?



Linux is an operating system like Microsoft Windows or Mac OS BUT it's free and open-source!

Ubuntu and Debian are popular versions of Linux



But also runs most remote servers (like Alpine)

# Alpine Command Line

```
Host: login-ci1.rc.int.colorado.edu Themes: Cobalt2
Welcome to University of Colorado Boulder Research Computing!

Full documentation is available in our user guide at
https://www.rc.colorado.edu/support/user-guide. If you have a question
that's not answered there, contact us at rc-help@colorado.edu.

A number of directories have been created for you already:

* `/home/$USER`, your home directory
* `/projects/$USER`, your project directory

Run the command `module avail` to see a list of available software.

To prevent this README from being displayed at login, edit your
`.bash_profile` or `.login` files.
Welcome to CU-Boulder Research Computing.

* Website http://colorado.edu/rc
* Questions? rc-help@colorado.edu
* Subscribe to system announcements: https://curc.statuspage.io/
* Please type rc-help for the Acceptable Use Policy and a short help page.

You are using login node: login-ci1

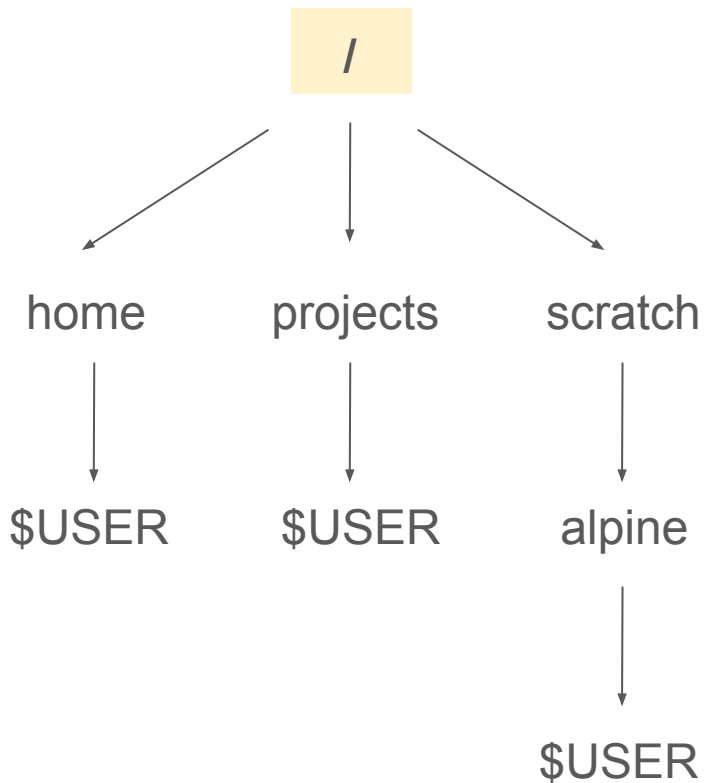
Reminder: CURC Planned Maintenance - Wednesday June 5
CU Research Computing will conduct regularly scheduled maintenance on Wednesday, June 5. Please anticipate that the system will be unavailable between 7:00a and 7:00p.

You can monitor system status and subscribe to updates at https://curc.statuspage.io.
Questions? Email rc-help@colorado.edu.
[vfn@colostate.edu@login-ci1 ~]$
```

# Basic Linux Commands We'll Learn Today

1. Navigating around
2. Making new directories
3. Removing files and folders

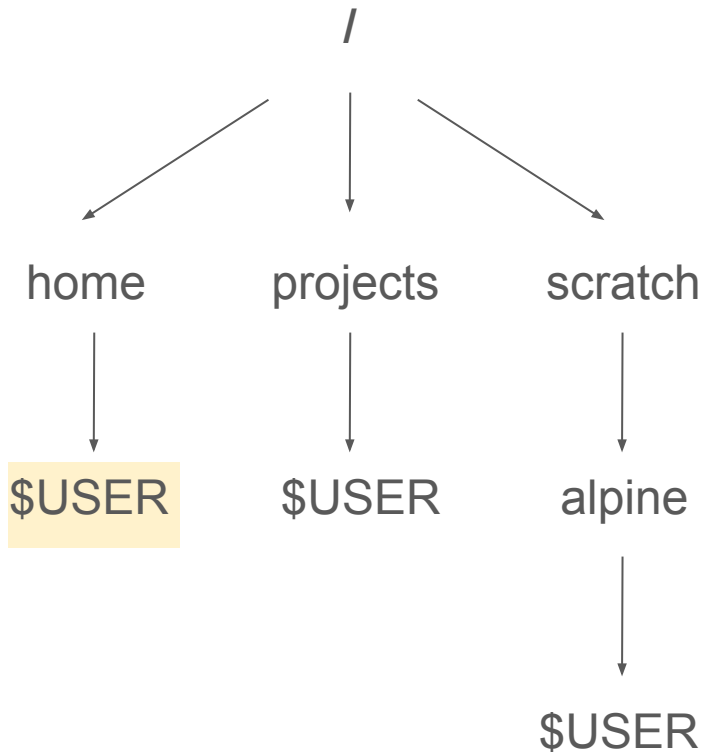
# But first! The Alpine File System



## Root directory

- Top of your file system
- ⚠ Danger zone ⚠

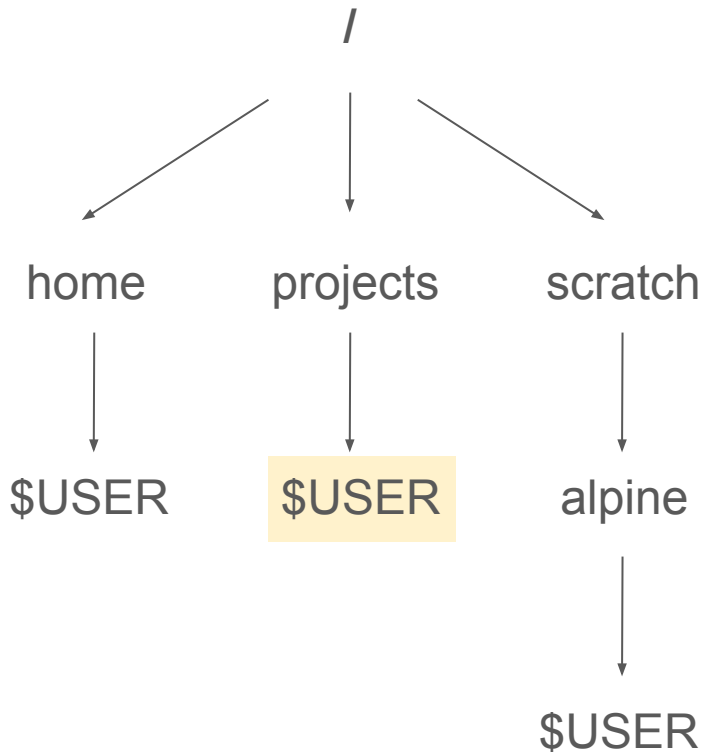
# But first! The Alpine File System



## Home directory

- `home/username@colostate.edu`
- Always where you “land”
- Software and system files stored here (ex. bash profile)
- Can also use “~”  
Ex- `~/work`

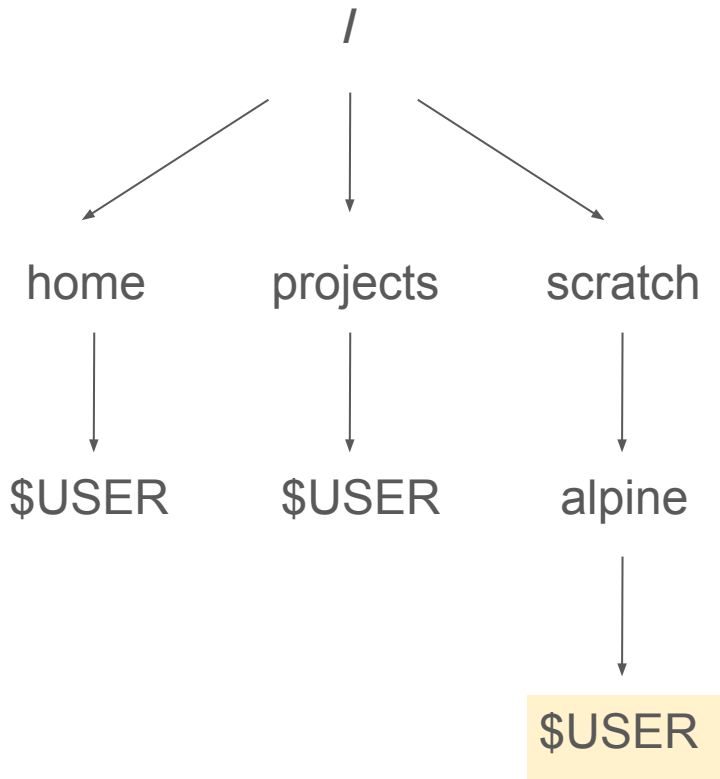
# But first! The Alpine File System



## Projects directory

- `projects/username@colostate.edu`
- Where you store files you want to keep
- 250 GB

# But first! The Alpine File System

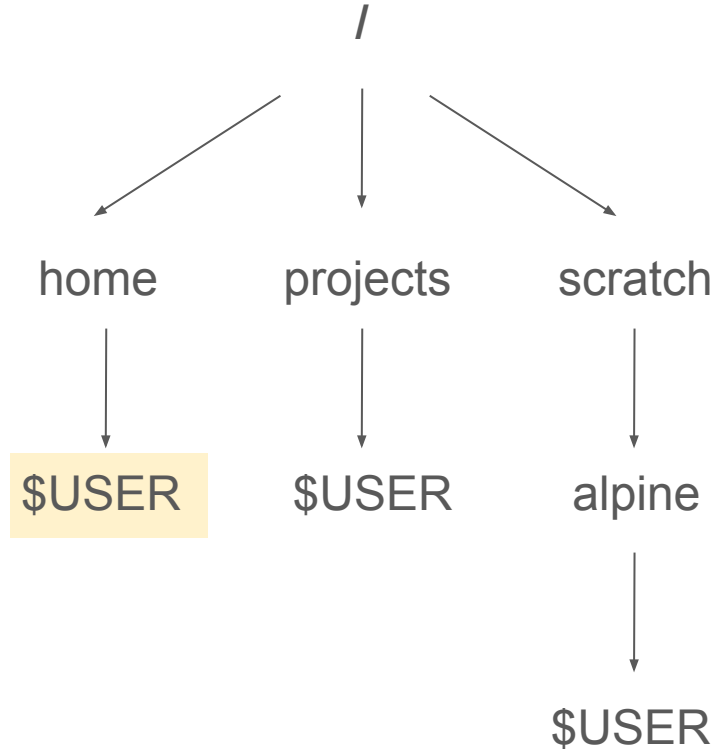


## Scratch directory

- `scratch/alpine/username@colostate.edu`
- Where you store files you're working on
- Files deleted after 90 days
- 1 TB



# Absolute vs Relative File paths

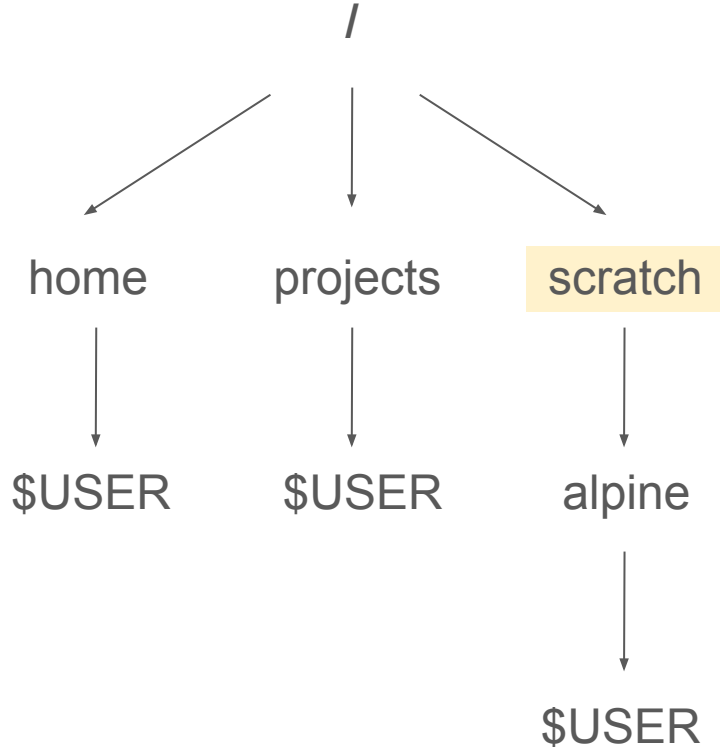


An absolute file path starts with the root directory. Ex:

`/scratch/alpine/username@colostate.edu`

Doesn't matter where you are - works from anywhere in your file system

# Absolute vs Relative File paths



A relative file path starts with where you are in your file system. Ex:

`alpine/username@colostate.edu`

Matters where you are - only works on folders “below” you

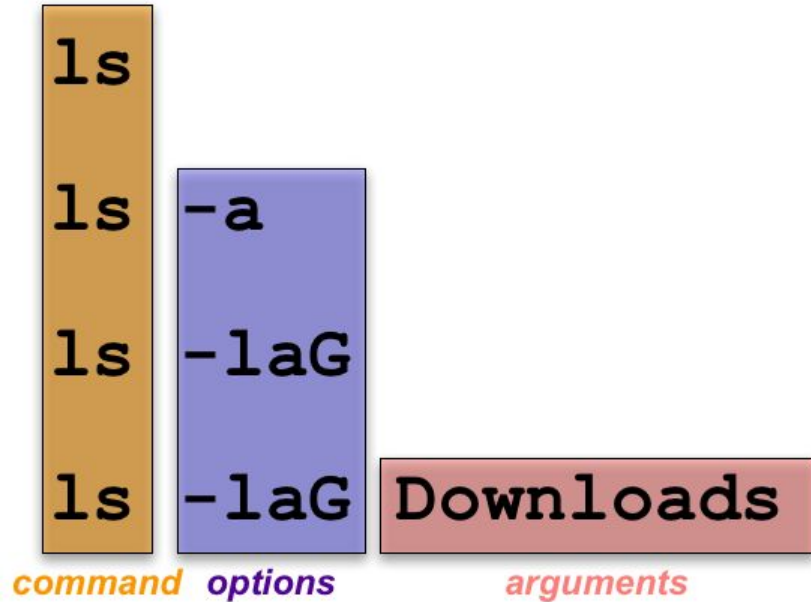
To move back up a folder use `..` Ex.

`cd ..`

To move back up 2 folders use `../..` Ex.

`cd ../../`

# Anatomy of a command



# Important built-in commands

<code>pwd</code>	print working (i.e., current) directory
<code>ls</code>	list directory contents
<code>cd</code>	change directory
<code>mkdir</code>	make directory
<code>nano filepath</code>	open a text editor
<code>head filepath</code>	print the first ten lines of a file to the terminal
<code>tail filepath</code>	print the last ten lines of a file to the terminal
<code>less filepath</code>	interactively print contents of a file to the terminal
<code>mv old-path new-path</code>	move (or rename) a directory or a file
<code>cp existing-path new-path</code>	copy a directory or a file
<code>rm filepath</code>	remove a file - be careful, this is permanent!
<code>rm -r directory-path</code>	remove a directory - be careful, this is permanent!
<code>man command</code>	Shows manual for that command
<code>clear</code>	Clears your screen

# Practice on your own!

1. Launch a terminal window
2. Use `pwd` to see what folder you're in
3. Navigate to your scratch directory using an absolute file path
4. Make a dummy folder called "test"
5. List out what's in your scratch directory to see if you successfully made a "test" folder
6. Enter into that folder
7. List what's in there (should be empty)
8. Navigate up a folder (hint: use `..`)
9. Delete the folder you just created