

mark@beast ~ \$

vedb \$ Module = 'Introduction to Linux'

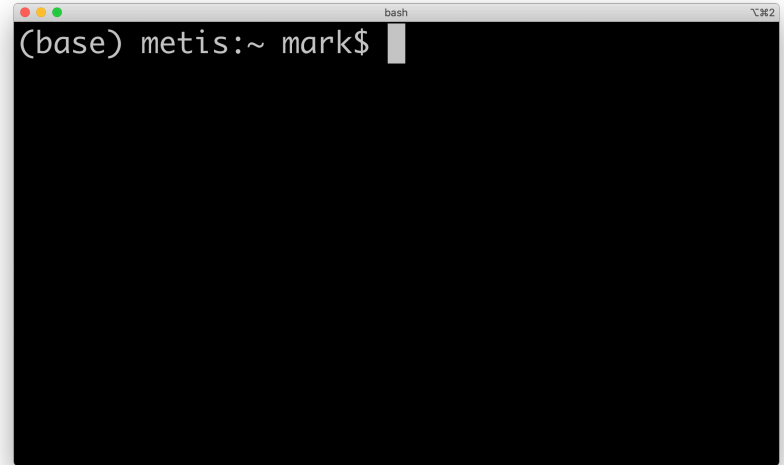
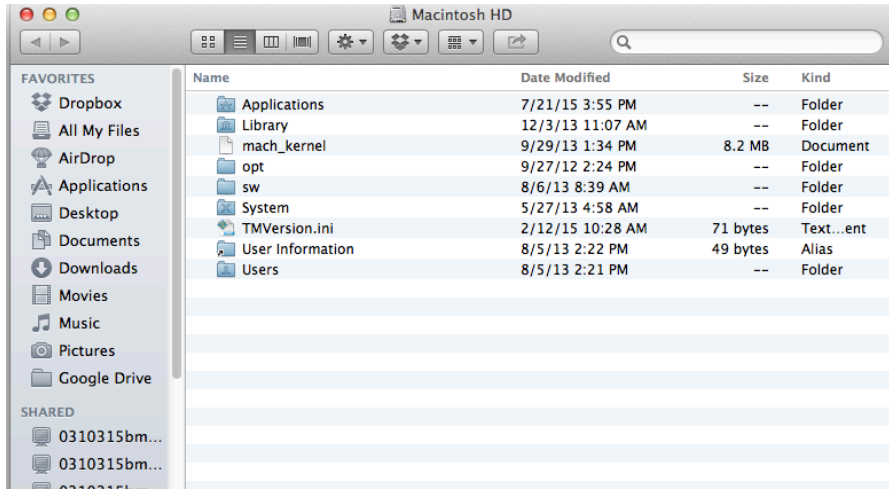
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Mark D. Lescroart, Ph.D.

Goals of this lecture:

1. Motivate the use of Unix and Linux for research computing
2. Give a bit of historical context for Unix and Linux

Navigating Directories



High performance computing clusters are accessed and run with Unix



Unix tools: ssh, sftp, wget, ftp, job schedulers (slurm, torque, sungrid engine)

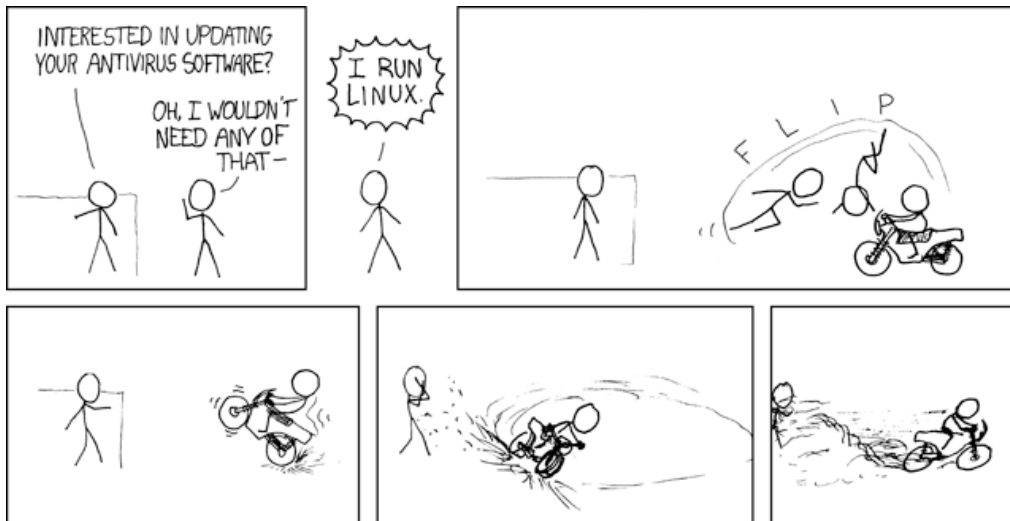
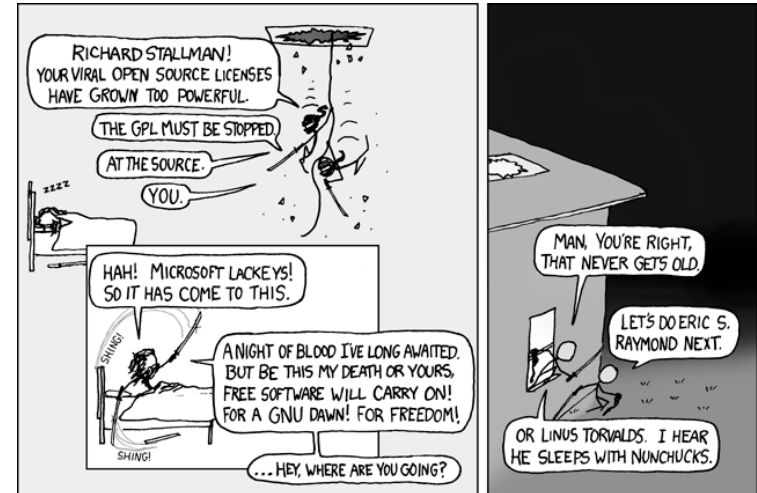
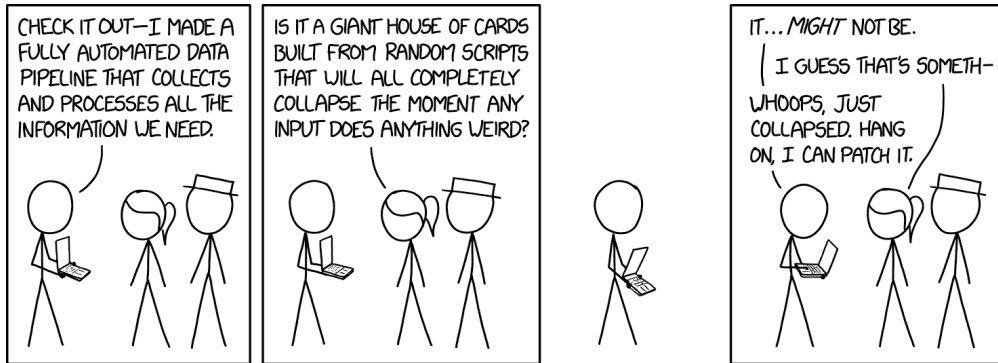
Why learn to use Unix?

- Efficient navigation & file manipulation
- Access to remote computing resources
- Access to research software
- Provides insight into how and why computers work as they do.

Why learn the Unix command line in addition to other languages like python or R?

- Shell scripting is the basis for many tasks:
 - automation
 - installation of programs
 - configuration of your computational environment

Understand XKCD



What is this Linux you speak of?

Unix is older – released in 1971

First portable os; user logins, parallel processes

ls, cp, mv, cat, & more all date back to this release

Linux began as an open-source alternative to Unix,
primarily developed by Richard Stallman and Linus Torvalds in 1991

Many modern
varieties:



Ubuntu



CentOS



linux Mint
from freedom came elegance



fedora

Introduction to the terminal



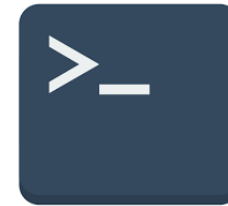
MobaXterm



PuTTY



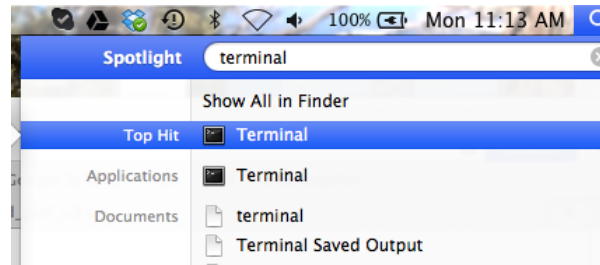
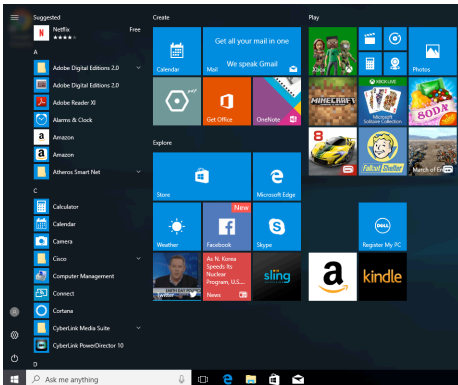
Windows
terminal



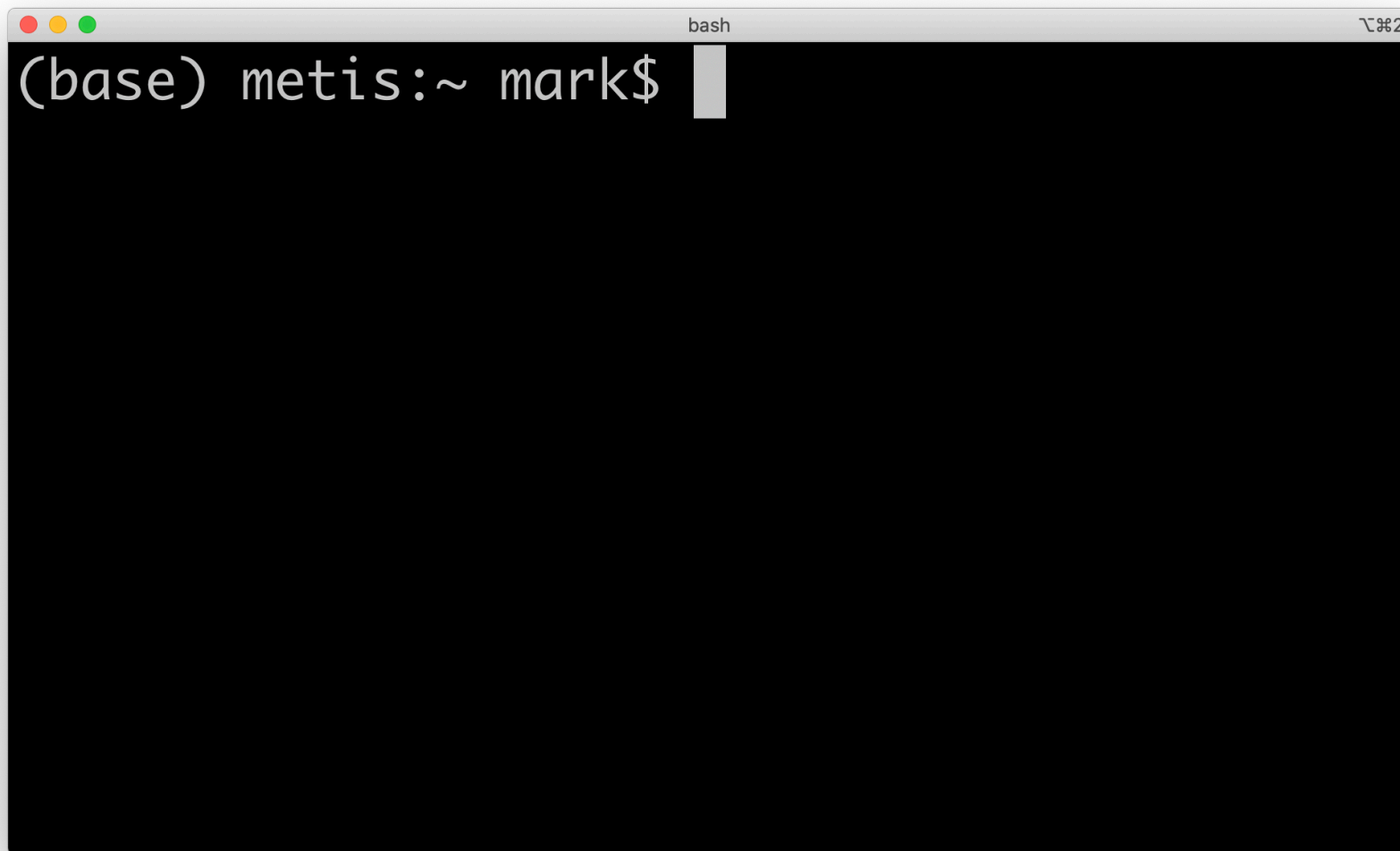
Mac
terminal



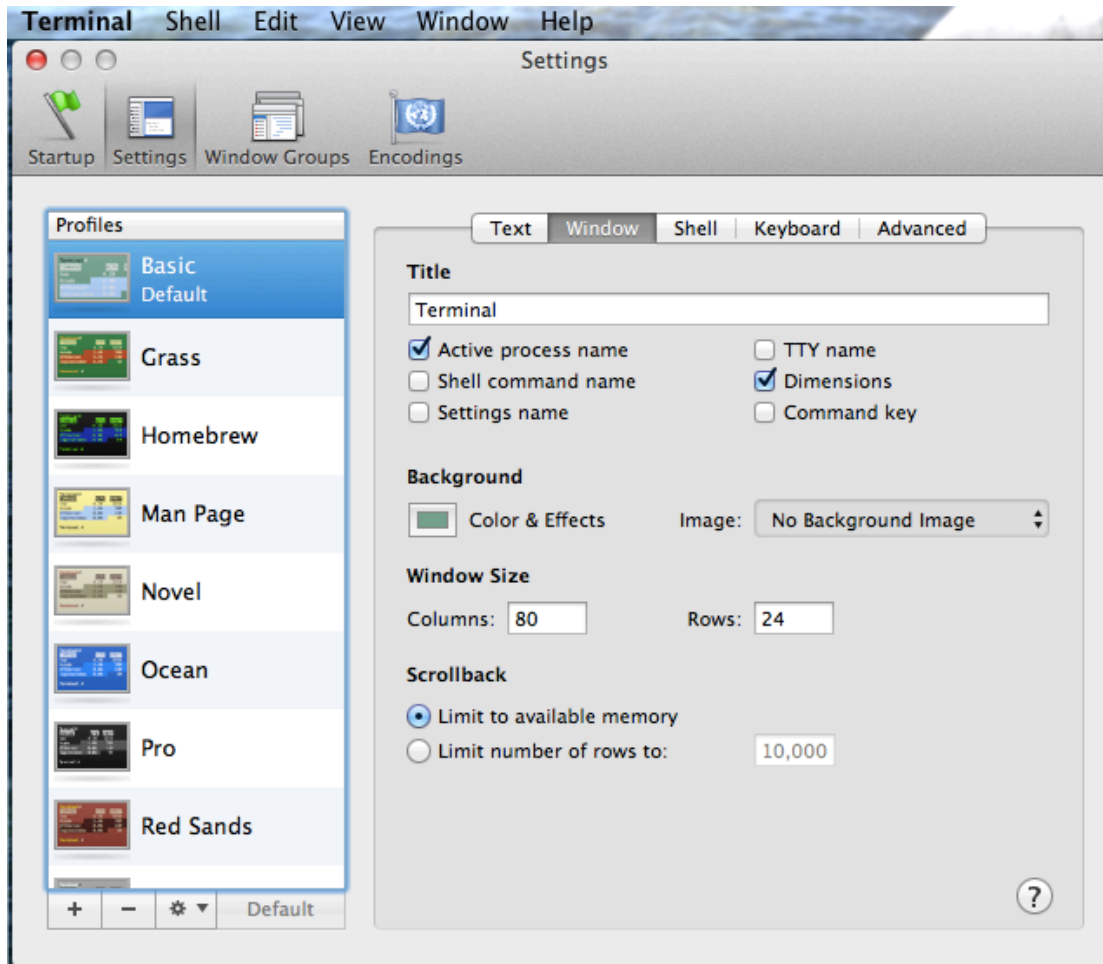
iTerm



Put a link somewhere to make opening this quick, as you will use it frequently! (add it to your dock or start menu)



Customize Terminal



Background color,
text size,
font, color, etc.

Conventions

\$ indicates command line prompt

<bracketed text> indicates
placeholder text in the
example to be replaced

```
$ ls data-shell/
```

```
$ <some text here>
```

```
$ ssh <user>@pronghorn.rc.unr.edu
```

Terminal, pros and cons

Pros:

- Fast
- Access to remote resources
- Scriptable! (later)

Cons:

- Difficult to discover functionality
- Difficult to remember commands!

So:

- autocomplete!
- *man program*
- *program --help*
- Google

