

Minute Essay From Last Lecture
One person mentioned lots of commands not previously known about. That's a goal of this course: Likely you won't remember details of many of the topics we discuss, but what I hope you do remember is what's available.
Others mentioned questions I think are of general interest ...

Slide 2



Slide 3

Uses for Links

• Uses for hard links are less obvious, but a traditional use is to give multiple names to the same file. On our systems, c++ and gcc++ are names for the same file. (Curiously enough, cc is a symbolic link to gcc, however.)

Slide 4

 Digression/detail: UNIX/Linux filesystems usually keep track of what blocks on disk make up a file by using an "i-node" (index node), which also stores timestamps, permissions, etc. A file's directory entry points to an i-node; for hard links, each link points to the same i-node. ls -i lists i-nodes so you can know ... Slide 5

Uses for Background Jobs

- One use is to launch a GUI-based program from a terminal window; by running it in the background you avoid tying up the window, (Why would you want to do that? maybe it's easier than finding the program in the menus, or maybe you want to look at any error messages it prints. Or this may provide an easy way to make the program killable to kill, bring it to foreground with fg and interrupt with ctrl-c.)
- Another is to start a long-running program; this is most useful if you redirect output (more about that soon).
 - Yet another use, sort of, is if you're logged in remotely and editing something with vim; if you need to, say, consult a man page, rather than exiting vim you can suspend it with ctrl-Z, consult the page, and then get vim back with fg.

man pages, Revisited(?)

- SYNOPSIS section can be quite dense, but tries to specify in a standard way all the options/arguments:
- Arguments in brackets are optional.
- Arguments separated by | are "either/or".

Slide 6

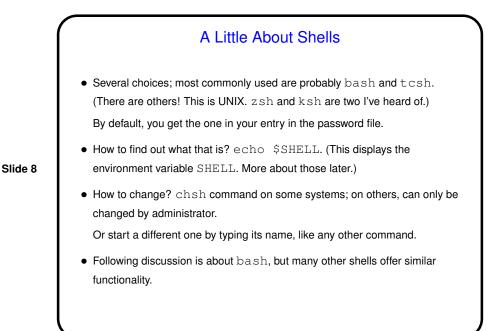
Starting a Shell

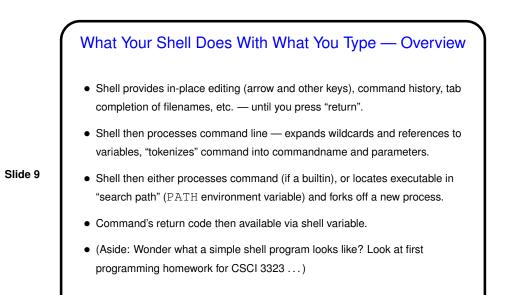
• From the console, type ctrl-alt-Fn, where n is ...

Well, it used to be 1 through 6, with the graphical console accessible via ctrl-alt-F7. Now graphical consoles start at ctrl-alt-F1 (can be more than one if more than one user logged in), and the virtual consoles start at ctrl-alt-F2 or later, up through ctrl-alt-F6.

Slide 7

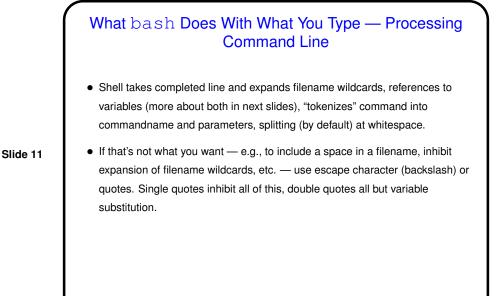
- From a graphical environment, start a "terminal" (a.k.a. terminal window, terminal session, etc.).
- From a Windows system, run putty.
- Log in remotely with ssh.

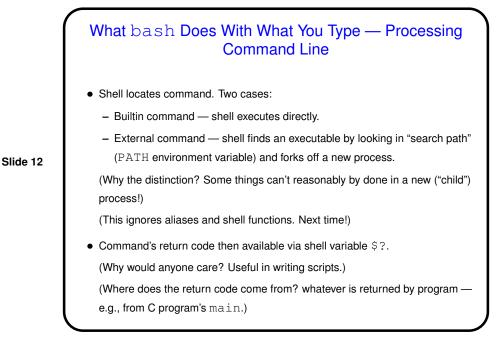


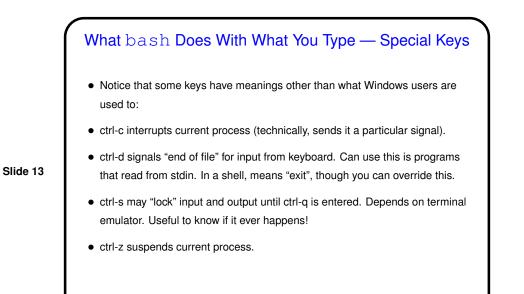


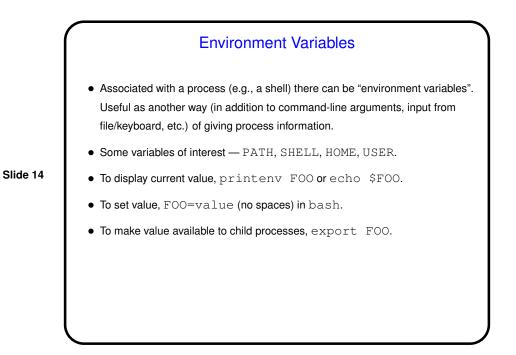


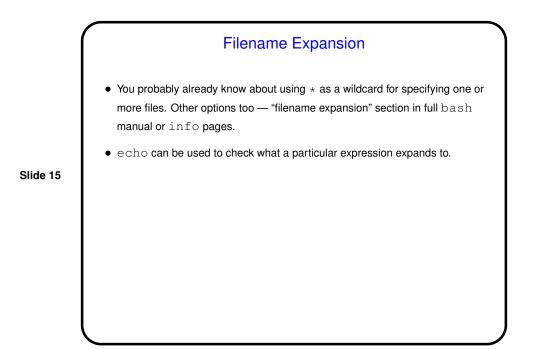
- Simple editing left and right arrows; ctrl-a, ctrl-e, etc. Also ctrl-u for "line kill" and ctrl-k for "delete to end of line".
- Command history move forward/back with up and down arrows, search with ctrl-r.
- Tab completion for filenames, command names, etc. (Press tab key twice to show choices, if more than one.)
- Read about bash and/or readline man and info pages for more info. (If you ever write a program that needs command-line functionality, readline library is useful.)
- Slide 10











Minute Essay

How is the pace of the class so far? too fast (too much new-to-you info), too slow (too little new-to-you info), ...?

Slide 16