Beginning System Administration DeCal

Week 3

February 23, 2009

What is a shell?

- Just another program
- Allows you to interact with the filesytem
- Allows you to run other programs
- Provides a compact programming environment for task automation

Basic Navigation

- cd - change directory
- ls - list directory contents
- pwd - print working directory
- mkdir - make an emtpy directory
- rmdir - remove an empty directory

Review

- Checked where we were in the filesystem with pwd
- Created a directory with mkdir
- Entered the direcotry with cd and created subdirectories with mkdir
- Deleted a subdirectory with rmdir
- Returned to our home directory with cd

Moving Things Around

- touch - create empty file/update file timestamp
- cp - copy
- mv - move
- rm - remove
- scp - secure copy
- rsync - remote synchronize

Keep it Simple

- Chain small simple programs together to do something bigger
- The shell uses **pipes** ('|') to chain programs together
- Takes the output of one command and use as input to another command

Redirection

- Programs have two standard output file descriptors: stdout and stderr and one standard input file descriptor: stdin
- You can control where the flow of these descriptors.

Permissions

- UNIX systems use 3 groups of permissions: user, group, other.
- For each group, there are three permissions: read, write, execute
- read: 4, write: 2, execute 1
- The permission is based on adding up the permission values and the position tells which group the permission is applied to.
- For directories, the execute permission allows for the traversal of the directory

Links

- Links are like shortcuts to other files or directories
- Two kinds of links: symbolic/soft links, hard links
- Symbolic links are references to the original file
- Hard links are additional links to the original file