

Basics of Linux and Command Line

Linux Users Group at UTA

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WTF is Linux?

- Open source operating system built on top of UNIX
- Hundreds of different distributions
- Runs on almost anything

Core Concepts

- Unix utilities designed around doing one thing only and doing it well
- Use of plain text for communicating and recording data between programs
- Client/Server architecture

Client / Server Architecture

- Instead of one program handling data input, processing, and presents interface
- Client connects to server, presents data, takes input, sends requests
- Server handles requests, processes data
- Server processes called daemons, have d at the end, ex. httpd, sshd, mysqld
- ex. Web browsers, online games, email, ssh

Users and Groups

- Powerful system of user access controls and file permissions
- Allows access to certain files and applications

File System

/

- Root directory for entire file system

/bin

- Essential command binaries
- Copy, paste, renaming, etc
- Will go over more of this in a bit

/boot

- Contains everything we need to boot the system
- Linux kernel, the initial ramdisk, bit of the boot loader.

/dev

- Devices
- hard disks, keyboard, mice, etc

/etc

- Contains almost all of your system-wide configuration
- System hostname, network config, all of the configuration file for the services like httpd, mysqld, sshd
- Filesystem mounts, password, and group files

/home

- User home directories
- Things like my documents, music, pictures, etc
- Personal settings

/lib

- Shared code libraries for entire system

/media

- Removable media
- Flash drives, CDs, etc

/opt

- Optional software packages you install

/proc

- Virtual filesystem providing information about processes and kernel, ex. memory consumption
- Can change aspects of running kernel, such as network settings

/root

- root user's home directory

/sbin

- Similar to /bin in that it holds system utilities
- More administrator oriented, ex. formatting disks, changing network settings, rebooting system

/srv

- Hosted content, such as web content

/tmp

- Temporary files from applications, and system
- Don't store anything important here

/usr

- User applications and utilities
- Contains it's own /bin, /sbin, /lib

/var

- State information
- Log files, mail spools, databases used by system

Command Line

Sources

- <http://www.ucs.cam.ac.uk/docs/leaflets/u5/u5>
- <http://sysadminecasts.com/episodes/12-crash-course-on-the-filesystem-hierarchy-standard>
- <http://sysadminecasts.com/episodes/13-crash-course-on-common-commands>
- <https://sysadminecasts.com/episodes/28-cli-monday-cat-grep-awk-sort-and-uniq>
- <https://library.linode.com/using-linux/linux-concepts>