

Linux Commands Revision



Linux History

- Unix (Ken Thompson & Dennis Ritchie) AT&T company
- FSF & GNU (Gnu is Not Unix) & GPL (Richard Stallman) 1984
 - Hurd Kernel
- Minix (Andrew Tanenbaum)
- Linux (Linus Torvalds) 1991
- GNU/Linux (complete, open source, UNIX-like operating system)
- Open source: software and source code available to all
 - The freedom to distribute software and source code
 - The ability to modify and create derived works
 - Integrity of author's code

Linux Structure

- BootLoader (grub, uboot, vivi)
 - Kernel (www.kernel.org)
 - Filesystem (FHS)
 - shell (bash & ash & sh)
 - init process
 - Scripts & Environment variables
 - Applications
 - GUIs & TUI
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Linux principles

- Everything is a file (including hardware)
 - Small, single-purpose programs
 - Ability to chain programs together to perform complex tasks
 - Avoid user interfaces
 - Configuration data stored in text
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Linux View

- Gnome & Kde (X Window system)
 - root & users
 - Common applications
 - gedit, open office, totem, nautilus
 - Internet
 - Terminal
 - Virtual console
 - file types
 - normal (text, audio, document)
 - directory
 - special (node, pipe, link (symbolic & hard))
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Filesystem Hierarchy Standard

- / root directory
 - /bin commands & executable files
 - /sbin system commands & executable files
 - /boot kernel & bootloader
 - /dev hardware device files (nodes)
 - /etc configuration files and startup scripts
 - /home users' home directories
 - /root root home directory
 - /lib shared library files
 - /media mount points for storage media
 - /opt third party applications
 - /proc virtual process files
 - /usr other users applications & libraries
 - /var files that change a lot
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Commands & help

- `command [option(s)] [parameter(s)]`
- `man`
- `info`
- `--help`
- `sudo`

Common commands

- `cd` change directory
 - `pwd` print current working directory
 - `ls` list files in current directory
 - `cp` copy
 - `mv` move & rename
 - `touch` create a new file
 - `mkdir` create a directory
 - `rm` remove files
 - `file` file type
 - `cat` print file contents
 - `less` view file contents in pages
 - `passwd` change user's password
 - Absolute and Relative Pathnames
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Text tools

- nano
- vim
 - modes
 - keyboard shortcuts
- gedit

Permissions

- ls -l

- | --- | --- | ---

- | **rwX** | **rwX** | **rwX**

t | **own** | **grp** | **other**

- chmod
 - letter mode
 - numeric mode
- Users & Groups
 - chown
 - chgrp

Programs Packages (debian)

- apt-get
 - install update remove
- dpkg
 - Binary packages
- Source packages
 - ./configure [options]
 - make
 - make install

man

- man sections 1 5 8
- Display manual page descriptions
 - man -f command
 - whatis what?
- Search the manual page names and descriptions
 - man -k pattern
 - apropos pattern

System information commands

- `whoami` print effective user
- `hostname` show or set the system's host name
- `date` print or set the system date and time
- `cal` displays a calendar and the date of Easter
 - `cal [[month] year]`
- `uptime` Tell how long the system has been running
- `w` Show who is logged on and what they are doing
- `finger` user information lookup program
 - `finger user-name`
- `uname` print system information
 - `uname -a`
- `free` Display amount of free and used memory
- `df` report file system disk space usage
- `du` estimate file space usage
 - `du -sh file-or-folder-name`

Pipe & Redirection

- `cat file-name | less`
- Standard output
 - `command > file`
- Standard error
 - `command 2> file`
- The Black hole
 - `/dev/null`

File Search tools

- **whereis** locate the location for a command
 - **whereis** command
 - **whereis** -b command
- **locate** find files by name
 - **locate** file-name
 - **updatedb** update a database for mlocate
- **find** search for files in a directory hierarchy
 - **find** path-to-search-in -name search-word

Text files search tools

- **grep** print lines matching a pattern
 - `grep search-pattern file-name`
 - `grep -v`
 - `cat file-name | grep pattern`
- **cut** remove sections from each line of files
 - `cut -d"delimiter" -f"field" file-name`
 - `cut -d: -f1 /etc/passwd`
- **Print the shell for a user**
 - `grep root /etc/passwd | cut -d: -f7`

Process Management

- **ps** report a snapshot of the current processes
 - **ps axu**
 - **ps axo**
- **top** display Linux tasks
- **pidof** find the process ID of a running program
- **kill** send a signal to a process
 - **kill pid**
 - **kill -s signal-number pid**
- **killall** kill processes by name
 - **killall process-name**

Archiving

- tar The GNU version of the tar archiving utility
 - tar cf myfile.tar myfolder
 - tar xvf myfile.tar
 - tar xvf myfile.tar.bz2
 - tar xvfz myfile.tar.gz

Thank You

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