Getting familiar with Command Line Interface

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Agenda

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- Anatomy of a command (syntax)
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About Me...

- CCBC Alumni
- Linux Administrator at Kennedy Krieger Institute
- Part-time Administrator for Swift Staffing

CLI, Shell, Terminal ???

- Shell is a program that takes commands from the keyboards and gives them to the operating system to perform upon
- The shell provides us a command line user interface as mean of interacting with the OS by issues a sequence of commands
- Terminal is a program that open a window and lets you interact with the shell

Shell and Terminal

- Bash is among the popular shell available on most linux distros. Bourne Again SHell is an enhanced version of the Unix shell program “sh”
- Other shells: ksh, tcsh, csh, zsh, dash
- $ cat /etc/shells
- Terminal: xfce-terminal, gnome-terminal kconsole, xterm, aterm

Anatomy of a command

command [OPTIONS] [ARGUMENTS]

$ ls -t -l /home

- ls : command
- -t -l : options or flags to control the behavior
- /home : argument, what's being operated on

What’s a command ?

Command can be an executable program, compile program (c/c++), shell script, python, ruby, perl script, an alias, function or built into the shell itself.

- $ type cd

  vs

- $ type cp

- $ help

Where does the shell find commands?

For external commands (not built-in), the shell looks for the them in your path.

- $ echo $PATH
- $ cat /etc/environment
- $ which date

Command history

- history : display command’s history
- history N: display the last N lines of your history
- !! : your most recent command
- !N: run the Nth command
- Ctrl+r : searches command previously typed

Basic commands

- pwd : Print the current working directory

  $ pwd
- cd : Change working directory

  $ cd /home
- ls : list the current of directory

  $ ls

  $ ls -al
- cp : copy files

  $ cp source-file destination-file

Basic commands (contd)

- mv : move or rename file

  $ mv oldfile newfile
- rm : remove files and directories

  $ rm filename
- mkdir :

  $ mkdir newdirectory
- cat : display the content of a file

  $ cat /etc/issue
- less : display the content of a file. User can page up and down through the file

  $ less /etc/services

Basic commands (contd)

- head or tail: display the first or last 10 lines of a file

  $ head /etc/services
- du : file space usage on directory

  $ du -sh /home
- df: report filesytem disk usage

  $ df -h
- locate: search for a filename

  $ locate issue
- ps : display the list of currently running process.

  $ ps aux

Package management

- $ dpkg -l
- $ dpkg -i package_name.deb
- $ dpkg -r package-name # Remove
- $ dpkg -P package-name # Purge
- $ dpkg -L package-name
- $ dpkg -S /bin/ls
- $dpkg-query -S ‘/bin/ls’
- $dpkg-query -S ‘passwd*’

Package management (contd)

- $ apt-get update
- $ apt-get upgrade
- $ apt-get install apache2
- $ apt-get remove apache2
- $ apt-get --purge remove apache2
- $ apt-cache search game
- $ apt-cache show apache2

Shell script example

```
#!/bin/bash
echo “Jan” > cli.txt
echo “Feb” >> cli.txt
echo “Mar” >> cli.txt
echo “Mar” >> cli.txt
cat cli.txt
sort cli.txt | tee cli-sorted.txt
uniq cli.txt | tee cli-uniq.txt
```

Shell script example 2

```
#!/bin/bash
# Install apache, create page, configure firewall
apt-get -y install apache2
cd /var/www
echo '<b>Yeah...It works.<b>' > index.html
ufw allow ssh/tcp
ufw allow http/tcp
ufw enable
ufw status
```

The End

Questions / Comments ?

References

- https://help.ubuntu.com/community/UsingTheTerminal
- http://www.tldp.org/LDP/Bash-Beginners-Guide/html/
- http://linuxcommand.org/lc3_learning_the_shell.php
- https://help.ubuntu.com/community/AptGet/Howto
- http://linux.byexamples.com/
- http://ss64.com/