

### Scripting

*bash filename* - Runs script

*Shebang* - "#!bin/bash" - First line of bash script. Tells script what binary to use

*./filename* - Also runs script

*#* - Creates a comment

*echo \${variable}* - Prints variable

*hello\_int = 1* - Treats "1" as a string

Use *UPPERCASE* for constant variables

Use *lowercase\_with\_underscores* for regular variables

*echo \$(( \${hello\_int} + 1 ))* - Treats *hello\_int* as an integer and prints 2

*mktemp* - Creates temporary random file

*test* - Denoted by "[[ condition ]]" tests the condition

*bash -x* - Prints commands and their arguments

*ps -f* - Copies the current shell in the fork

*exit value* - Exits the script with **value** exit code

*-n variable* - decides if variable is not empty

*-z variable* - Decides if variable is empty

*\$?* - Stands for the previous exit code

*\$#* - Stands for the number of arguments passed

*[[ \$# -ne 2 ]]* - Evaluates to true if the number of arguments is not equal to 2

*-f filename* - Determines if **filename** is a file

*-d directoryName* - Determines if **directoryName** is a directory

*\$1, \$2, \$3* - Refers to the first, second, and third arguments

*-eq* - means ==

*-lt* - Means <

*-le* - Means <=

*-gt* - Means >

*-ge* - Means >=

*dirname* - Prints directory name of of argument

### Scripting (cont)

*sleep value* - Forces the script to wait **value** seconds

*while* [[ condition ];] do stuff; done

*if* [[ condition ];] do stuff; fi

*until* [[ condition ];] do stuff; done

*words="house dogs telephone dog"* - Declares words array

*for* word in \${words} - traverses each element in array

*for* counter in {1..10} - Loops 10 times

*for* ((:)) - Is infinite for loop

*break* - exits loop body

*for* ((counter=1; counter -le 10; counter++)) - Loops 10 times

*\${array[l]}* - Indexes array

*\${array[]}* - References the whole array.

Can also use @\*

*declare -A array* - declares associative array

*myassocarray=( [apple]="red" [banana]="yellow" )* - Creates associative array

*\${myassocarray[banana]}* - References bananas value in the array

*unset array[l]* - Deletes the l index

*unset array* - Deletes the array

*\$#array* - Outputs the length of the array

*alias ll = 'ls -l'* - Creates the ll command as an alias

*home() { do stuff ; }* Creates the home function

*return* - defaults to the previous exit value

*local* - Creates local variable within function

*cut* - Cuts away parts of the output

### GitHub

*git clone <url>* - Clones gitkeeper url

*git add <filename>* - Adds the file to git

*git commit* - Commits all files to git

*git push* - Pushes all git files to host

### Package / Networking

*dnf upgrade* - Updates system packages

*dnf install* - Installs package

*dnf search* - Searches for package

*dnf remove* - Removes package

*systemctl start* - Starts systemd service

*systemctl stop* - Stops systemd service

*systemctl restart* - Restarts systemd service

*systemctl reload* - Reloads systemd service configuration files

*systemctl enable* - Enable systemd service at boot

*systemctl disable* - Disable systemd service

*systemctl status* - Displays activity state and some log lines of service

*atq* - Displays currently scheduled commands

*at* - Runs command once at certain time/day

*atrm* - Remove scheduled commands

*crontab -e* - Create a file for scheduled commands to run

*journalctl* - Shows logs

*dmesg* - Shows kernel messages, hardware, driver, etc.

*history* - Shows previous commands

*script* - Records all input and writes it to a file

*route* - Configures IP connection

*hostname* - Sets system host name

*netstat -rn* - Gives routing table

*ifconfig* - Outputs network interface

*ip addr* - Shows different addresses and internet connections

### Package / Networking (cont)

*traceroute -I* - Gives list of IPs the machine went through

*wget* - Downloads file from internet

*brctl, nmcli* - Creates bridging between ports

### Other Stuff

**Ctrl - U** - Deletes command line

**Ctrl - C** - Aborts command

**Ctrl - Z** - Suspends command

*fg* - Resumes command after suspension

**Ctrl - T** - Fix misspelled command

*cal* - Prints ASCII calendar

### System Information

*free* - Displays amount of free and used memory in system

*df* - Reports file system disk space usage

*lsblk* - Reports information about block devices

*fdisk* - Manipulates disk partition table

*uname* - Prints system information

*top* - Display and update sorted info about processes

*uptime* - Displays the amount of time the machine has been running

### User/Root Commands

*useradd* - Creates new user

*passwd* - Sets password for new user

*userdel* - Removes user

*chsh --shell /bin/sh username* - Changes shell

*sudo groupadd groupname* - Creates group

*chown* - Changes owner

*chgrp* - Changes group

*chmod* - Changes permissions

*chmod ug +x filename* - Gives user and group permission to execute file

### User/Root Commands (cont)

*chmod 1777 filename* - Sets all permissions and a sticky bit

### Samba

*smbpasswd* - Sets server password

### File and Directory Manipulation

*ls* - Shows all files in current directory

*ls -a* - Shows all files including hidden files in current directory

*pwd* - Shows current directory (present working directory)

*cd* - Changes current directory

*pstree* - Shows running processes as a tree

*ps* - Report a snapshot of current processes

*cp* - Copies files

*cp filename newfilename* - Creates new file with old file information

*cp filename directory/* - Puts file into directory

*mv* - Moves files

*mv filename directory/* - Moves file into directory

*rm* - Removes/deletes files

*rm -r* - Deletes directories

*rm -r directory/* - Removes directory

*rm -rf directory/* - Removes directory to oblivion

*mkdir* - Creates directories

*echo* - Moves data (e.g. moves text into a file)

*echo text >> filename* - Moves text into file

*cat* - Reads file text or concatenate files and print file text

*touch* - Creates any kind of file

*tail* - Outputs last part of files

*less* - Views files instead of opening them. Lets user scroll through

*awk* - Selects data and presents rows and columns in output

### File and Directory Manipulation (cont)

*awk '{print \$1,\$2,\$3}' filename* - Prints first, second, third words of each line

*sort* - Sorts lines of text files

*vi filename* - Opens text editor for file. Hard to use

*file filename* - Gives information on file

*more filename* - Displays file contents (no scrolling)

*grep "text" filename* - Searches for text within file

*find* - Finds files

*whoami* - Prints current user

*rmdir* - Removes directories

*du* - Displays file space usage

*yes* - Displays the same line of text until interrupted