



IBM Course: Hands-on Introduction to Linux Commands and Shell Scripting

Introduction to Linux

Command	Syntax	Description	Example
List	ls [OPTIONS] [FILE/DIRECTORY]	List files and directories at path	ls /home/user/documents
Print Working Directory	pwd	Print present working directory	pwd
Change Directory	cd [DIRECTORY]	Change current directory	cd /home/user/documents
Super user do	sudo [COMMAND]	Run command with superuser privileges	sudo apt update
Text Editor	nano [FILE]	Open file with Nano text editor	nano myfile.txt

Introduction to Linux Commands

Informational, Navigational, & Management Commands

Command	Syntax	Description	Example
Who Am I	whoami	Return username	whoami
User ID	id	Return current user or group ID	id
System Information	uname [OPTIONS]	Display system information	uname -a
Manual Pages	man [COMMAND]	Display manual page for a command	man ls
Curl	curl [OPTIONS] [URL]	Transfer data from or to server	curl https://some_website.com
Date	date [OPTIONS]	Display current date and time	date
Find	find [DIRECTORY] [OPTIONS]	Find files and directories at specified path	find /home/user -name '*.txt'
Make Directory	mkdir [DIRECTORY]	Create new directory	mkdir myfolder
Remove Directory	rmdir [DIRECTORY]	Remove empty directory	rmdir myfolder
Process Status	ps [OPTIONS]	Display process status information	ps -ef
Table of Processes	top	Display live system resource usage	top
Disk Usage	df [OPTIONS] [FILESYSTEM]	Display disk space usage	df -h

Command	Syntax	Description	Example
Create Empty File	touch [FILE]	Create new file or update timestamp	touch myfile.txt
Copy	cp [OPTIONS] [SOURCE] [DESTINATION]	Copy files or directories from source to destination	cp myfile.txt /home/user/documents
Move	mv [OPTIONS] [SOURCE] [DESTINATION]	Move or rename files and directories	mv myfile.txt /home/user/documents
Remove	rm [OPTIONS] [FILE/DIRECTORY]	Remove files	rm my_scratch_file.txt
		Remove nonempty directory	rm -r path_to_temp_directory
	rmdir [OPTIONS] [DIRECTORY]	Remove empty directory	rmdir path_to_my_directory
Change Mode	chmod [OPTIONS] [MODE] [FILE]	Change file or directory permissions	chmod u+x myfile.txt

Working with Text Files, Networking & Archiving Commands

Command	Syntax	Description	Example
Concatenate	cat [FILE]	Display the contents of a file	cat myfile.txt
		Concatentate and display contents of multiple files	cat file1 file2
More	more [FILE]	Display file one screen at a time	more myfile.txt
Head	head [OPTIONS] [FILE]	Display first N lines of file	head -5 myfile.txt
Tail	tail [OPTIONS] [FILE]	Display last N lines of file	tail -5 myfile.txt
Echo	echo [ARGUMENTS]	Display arguments in console	echo Hello, World!
Sort	sort [OPTIONS] [FILE]	Alphanumerically sort file contents	sort file.txt
Unique	uniq [OPTIONS] [FILE]	Report or remove consecutively repeated lines in file	uniq file.txt
Word Count	wc [OPTIONS] [FILE]	Print the number of lines, words, and characters in a file	wc file.txt
Grep	grep [OPTIONS] PATTERN [FILE]	Search for a specified pattern in a file	grep "hello" file.txt
Paste	paste [OPTIONS] [FILE1] [FILE2]	Merge lines of files side by side	paste file1.txt file2.txt
Cut	cut [OPTIONS] [FILE]	Remove sections from each line of a file	cut -d":" -f1 /etc/passwd
Tar	tar [OPTIONS] [FILE]	Archive files together into a single file	tar -czvf archive.tar.gz /directory
Zip	zip [OPTIONS] [FILE]	Compress files into a zip archive	zip archive.zip file1.txt file2.txt
Unzip	unzip [OPTIONS] [FILE]	Uncompress files from a zip archive	unzip archive.zip
Hostname	hostname	Print the name of the current host system	hostname
Ping	ping [OPTIONS] HOSTNAME/IP	Send ICMP ECHO_REQUEST packets to a network host	ping google.com

Command	Syntax	Description	Example
Ifconfig	ifconfig [INTERFACE]	Display or configure network interface parameters	ifconfig
IP	ip [OPTIONS]	Show or manipulate routing, devices, policy routing, and tunnels	ip addr
Curl	curl [OPTIONS] URL	Transfer data from or to a server	curl https://some_website.com
Wget	wget [OPTIONS] URL	Download files from the web	wget https://some_website.com/some_file.txt

Introduction to Shell Scripting

Command	Syntax	Description	Example
Shebang	#!/bin/[shell]	First line of shell script	#!/bin/bash
Pipe	filter1 filter2	Chain any number of filters	ls sort -r
Locate executable	which [EXECUTABLE]	Display location of bash executable	which bash
Bash	bash [SCRIPT]	Interpret and run script using Bash shell	bash script.txt
Set	set [OPTION]	List all shell variables	set
Define variable	[VARIABLE_NAME]=[VALUE]	Define shell variable by name and assign value	name="John"
Read	read [VARIABLE]	Read from standard input and store result in variable	read name
Env	env	Print all environment variables and their values	env
Export	export [VARIABLE]	Extend scope of local variable to all child processes	export name
Crontab	crontab [OPTIONS]	Open crontab default editor	crontab -e
Schedule tasks to run at specified times using cron daemon	m h dom mon dow command	List all cron jobs	crontab -l
		Append date/time to file every Sunday at 6:15 pm	15 18 * * 0 date >> sundays.txt
		Back up home directory every Monday at 3:00 am	0 3 * * 1 tar -cvf my_backup_path\my_archive.tar.gz \$HOME\
		Run shell script first minute of first day of each month	1 0 1 * * ./My_Script.sh

Authors

Jeff Grossman
Sam Propupchuk

Other Contributors

Rav Ahuja

Change Log

Date (YYYY-MM-DD)	Version	Changed By	Change Description
2023-06-07	1.2	Jeff Grossman	Add missing content
2023-05-10	2.0	Nick Yi	Created table version
2023-04-26	1.3	Nick Yi	Updated to reflect cheat sheet changes
2023-03-20	1.2	Jeff Grossman	Add text wrangling content
2023-03-08	1.1	Jeff Grossman	Add content for M4 Projects
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