

# Cumulative Cheat Sheet - Hands-On Introduction to Linux Commands and Shell Scripting

## Introduction to Linux

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

## Introduction to Linux Commands

### Informational, Navigational, & Management Commands

Command	Syntax	Description	Example
Who Am I	<code>whoami</code>	Return username	<code>whoami</code>
User ID	<code>id</code>	Return current user or group ID	<code>id</code>
System Information	<code>uname [OPTIONS]</code>	Display system information	<code>uname -a</code>

Manual Pages	<code>man [COMMAND]</code>	Display manual page for a command	<code>man ls</code>
Curl	<code>curl [OPTIONS] [URL]</code>	Transfer data from or to server	<code>curl https://some_website.com</code>
Date	<code>date [OPTIONS]</code>	Display current date and time	<code>date</code>
Find	<code>find [DIRECTORY] [OPTIONS]</code>	Find files and directories at specified path	<code>find /home/user -name '*.txt'</code>
Make Directory	<code>mkdir [DIRECTORY]</code>	Create new directory	<code>mkdir myfolder</code>
Remove Directory	<code>rmdir [DIRECTORY]</code>	Remove empty directory	<code>rmdir myfolder</code>
Process Status	<code>ps [OPTIONS]</code>	Display process status information	<code>ps -ef</code>
Table of Processes	<code>top</code>	Display live system resource usage	<code>top</code>
Disk Usage	<code>df [OPTIONS] [FILESYSTEM]</code>	Display disk space usage	<code>df -h</code>
Create Empty File	<code>touch [FILE]</code>	Create new file or update timestamp	<code>touch myfile.txt</code>
Copy	<code>cp [OPTIONS] [SOURCE] [DESTINATION]</code>	Copy files or directories from source to destination	<code>cp myfile.txt /home/user/documents</code>
Move	<code>mv [OPTIONS] [SOURCE] [DESTINATION]</code>	Move or rename files and directories	<code>mv myfile.txt /home/user/documents</code>
Remove	<code>rm [OPTIONS] [FILE/DIRECTORY]</code>	Remove files	<code>rm my_scratch_file.txt</code>
		Remove nonempty	<code>rm -r path_to_temp_directory</code>

		directory	
	<code>rmdir [OPTIONS] [DIRECTORY]</code>	Remove empty directory	<code>rmdir path_to_my_directory</code>
Change Mode	<code>chmod [OPTIONS] [MODE] [FILE]</code>	Change file or directory permissions	<code>chmod u+x myfile.txt</code>

## Working with Text Files, Networking & Archiving Commands

Command	Syntax	Description	Example
Concatenate	<code>cat [FILE]</code>	Display the contents of a file	<code>cat myfile.txt</code>
		Concatentate and display contents of multiple files	<code>cat file1 file2</code>
More	<code>more [FILE]</code>	Display file one screen at a time	<code>more myfile.txt</code>
Head	<code>head [OPTIONS] [FILE]</code>	Display first N lines of file	<code>head -5 myfile.txt</code>
Tail	<code>tail [OPTIONS] [FILE]</code>	Display last N lines of file	<code>tail -5 myfile.txt</code>
Echo	<code>echo [ARGUMENTS]</code>	Display arguments in console	<code>echo Hello, World!</code>
Sort	<code>sort [OPTIONS] [FILE]</code>	Alphanumerically sort file contents	<code>sort file.txt</code>
Unique	<code>uniq [OPTIONS] [FILE]</code>	Report or remove consecutively repeated lines in file	<code>uniq file.txt</code>
Word Count	<code>wc [OPTIONS] [FILE]</code>	Print the number of lines, words, and characters in a file	<code>wc file.txt</code>

Grep	<code>grep [OPTIONS] PATTERN [FILE]</code>	Search for a specified pattern in a file	<code>grep "hello" file.txt</code>
Paste	<code>paste [OPTIONS] [FILE1] [FILE2]</code>	Merge lines of files side by side	<code>paste file1.txt file2.txt</code>
Cut	<code>cut [OPTIONS] [FILE]</code>	Remove sections from each line of a file	<code>cut -d":" -f1 /etc/passwd</code>
Tar	<code>tar [OPTIONS] [FILE]</code>	Archive files together into a single file	<code>tar -czvf archive.tar.gz /directory</code>
Zip	<code>zip [OPTIONS] [FILE]</code>	Compress files into a zip archive	<code>zip archive.zip file1.txt file2.txt</code>
Unzip	<code>unzip [OPTIONS] [FILE]</code>	Uncompress files from a zip archive	<code>unzip archive.zip</code>
Hostname	<code>hostname</code>	Print the name of the current host system	<code>hostname</code>
Ping	<code>ping [OPTIONS] HOSTNAME/IP</code>	Send ICMP ECHO_REQUEST packets to a network host	<code>ping google.com</code>
ip	<code>ip [INTERFACE]</code>	Display or configure network interface parameters	<code>ip addr</code>
IP	<code>ip [OPTIONS]</code>	Show or manipulate routing, devices, policy routing, and tunnels	<code>ip addr</code>
Curl	<code>curl [OPTIONS] URL</code>	Transfer data from or to a server	<code>curl https://some_website.com</code>

Wget	wget [OPTIONS] URL	Download files from the web	wget https://some_website.com/some_file.txt
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## 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
		List all cron jobs	crontab -l
Schedule tasks to run at	m h dom mon dow command	Append date/time to file every	15 18 * * 0 date >> sundays.txt

specified times using cron daemon		Sunday at 6:15 pm	
		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