

# Cumulative Cheat Sheet - 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                              |
| 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      |

| Command    | Syntax                          | Description  | Example                                     |
|------------|---------------------------------|--|---|
| 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                             |
| ip         | ip [INTERFACE]                  | Display or configure network interface parameters                | ip addr                                     |
| 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  |
|  |                            | List all cron jobs                                       | crontab -l  |
| Schedule tasks to run at specified times using cron daemon | m h dom mon dow<br>command | 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                                    |

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# Skills Network