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The ultimate Linux commands cheat sheet | FOSS Linux

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26–33 minutes

Knock, knock!

Who's there?

FOSSLinux

FOSSLinux who?

FOSSLinux with a Cool Linux Commands Cheat Sheet!

The world of Linux is uniquely structured by its maze of commands that continue to make it more than just an ordinary operating system. A typical Linux desktop user might relate to several hundreds of these commands. On the other hand, a server administrator used to bare-bone Linux server's packages installation and management can count over 1000 differing commands.

So the real question this article piece is asking you is this, how many Linux commands are you familiar with? If we took a survey on all FossLinux readers, the majority answer would be '**only a handful.**' This response is what this article is here to fix. There is more to using Linux commands on your Operating System terminal

than just updating your system and navigating to user and system directories. If you are a Linux user, then you must flexibly adapt to the usage of as many Linux commands as possible.

The reason for memorizing most of the Linux commands is not because they are too many but because they are too random for you to categorically relate to the scenarios that best apply to each of them. FossLinux is here to fix this problem. We want to map each Linux command to where they belong categorically.

This approach's expected long-term effect is that you continuously reference this Linux command cheat sheet based on the category of each specified command you seek. And because practice remains the initiator of perfection, you won't have to remember or reference this article within no time. It will be your muscle memory doing all the work as you perfectly key-in the commands of your choice with complete adherence to their syntax rules.

Linux commands cheat sheet

Time to key-in these categorical Linux commands.



Commonly Used Linux Commands

You will most probably find yourself randomly needing to use these Linux command sets to improve your user experience and flexibly meet any set OS objectives.

Command	Description
ls	It is a list command and will display the directories and files

Command	Description
	visible under the present working directory
ls -R	Goes a step further to display or list files in sub-directories of the present working directory
ls -a	The argument -a in this list command helps list all the hidden files in the present working directory
ls -al	The argument -al in this list command gives a detailed list of the displayed files and directories with extra information such as size, permission, owner, etc.
cd or cd ~	Takes you to the Home directory of your Linux operating system
cd ..	navigates you backwards to the parent directory of the current directory you are under.
cd	combine it with a target directory under the present working directory to navigate to it e.g cd Downloads
cd /	Takes you to the root directory of your Linux operating system

Command	Description
cat > filename	It will create a file called filename
cat filename	It will display the contents of a file called filename
cat file_1 file_2 > file_3	Joins the content of file_1 and file_2 and copies the result to a newly created file_3
mv file_random "defined file path"	It will move the file called file_random to the target file path or destination you will define.
mv file_name new_filename	It will rename the file called file_name to a new file name called new_filename
sudo	A command used by sudoer users to execute privileged commands applicable to a root user or superuser.
rm filename	It will delete a file called filename
man	Use it with a Linux command you do not understand to get help on how to use it. E.g man sudo
history	It will display a list of the previous Linux terminal commands you have executed under that specific session.

Command	Description
clear	It will clear your command-line interface if you feel it is too crowded.
mkdir directory_name	it will create a director called directory_name
rmdir my_directory	It will delete a directory called my_directory
mv	You can use it to rename a directory or a file
pr -x	It will divide or split a file to x defined columns.
pr -h	Use it to add a header to a target file.
pr -n	Uses Line numbers to denote a target user file.
lp -nc, lpr c	It is a printing function and in this case it will print c copies of a target file.
lp -d lp -P	Helps you identify the name of the printer you are using.
apt or apt-get	A Debian distro package command for installing system updates and package applications

Command	Description
mail -s 'mail_subject' -c 'cc-mail_address' -b 'bcc-mail_address' 'to-mail_address'	Use this command to send an email from the terminal.
mail -s "mail_subject" to-mail_address < attachment_filename	Use this command to also send an email from the terminal but this time with an attachment.

Linux Commands for System Information

You will find these commands useful when you want to query specific information about your Linux system.

Command	Description
uname -a	Displays basic system information like machine name and the supported operating system architecture.
uname -r	Outputs the kernel release information like the kernel version.
lsb_release -a	If you are using any Linux distro, this command displays its Distributor ID, Description, Release, and Codename.
uptime	Outputs how long your Linux system has been active together with the load average of this duration.

Command	Description
hostname	Outputs your system's hostname or the name you have given your Linux machine
hostname -I	Outputs the assigned IP address your system is currently using depending on the network connection it is under.
last reboot	A useful command for you to gauge how many times your system restarted.
date	Useful in displaying the current date and time.
cal	Outputs the present month's calendar.
w	Lets you know who or which systems are online especially if you are in a large network.
whoami	Outputs the name of the current user using the Linux system

Linux Commands for File Permissions

File permissions in Linux relate to Read (r), Write (w), and Execute (x) privileges. They employ changes associated with directory and file ownership. This ownership privilege can apply to a specific user, a user group, or other user levels defined within the Linux system.

Command	Description
ls -l	Outputs the file type and the file permissions needed to access the target file.

Command	Description
chown root /u	In this command, the ownership of /u is transferred to the root user.
chown user:group file_name	The user and group privileges linked to file_name are changed.
chmod 777 [file_name]	Everyone access the file called file_name will have read, write, and execute permissions.
chmod 755 [file_name]	The owner of the file called file_name will have read, write, and execute permissions while other users will only have read and execute permissions.
chmod 766 [file_name]	The owner of the file called file_name has complete access to it while group and other users can only read and execute.
chown [user] [file_name]	The ownership of the file called file_name is assigned or changed to a new owner called user.
chmod -c -R	Assign a file the read, write, and execute permissions.
touch -a -t	Useful in creating or modifying a file timestamp.
chown -c -R	Useful in changing the ownership of an assigned or owned file.
chgrp -c -R	Useful in changing the group permission of a

Command	Description
	file.

Linux Commands for Networking

Under a Linux operating system, it is almost impossible not to cross paths with network-related tasks. The following commands will be useful along the way.

Command	Description
SSH username@ip_address or hostname	Enables SSH login or sign-in to a remote Linux machine by specifying the machine's username and IP address.
ping hostname	Useful in analyzing the responsiveness of a hostname connected to a network.
dir	Helps you view files under a remote computer's active directory.
cd "dir_name"	Access a directory called dir_name on a remote computer.
put filename	It will upload a file called filename from your local computer to a target remote computer.
get filename	It will download a file called filename from a specified remote computer to your local machine.

Command	Description
quit	Logout from a remote connection.
ping -c hostname	It will print a routing packet trace associated with the targeted hostname or IP address
ssh -i	Grants user access to openSSH client.
tcpdump	Used to dump network traffic.
telnet	Grants access to the TELNET protocol's user interface.
netstat -r -v	Prints network routing, information, and connections.
ip addr show	Outputs network interfaces and their related IP addresses.
ip address add [IP_address]	Used under interface eth0 to assign an IP address.
ifconfig	Outputs configured network interfaces' IP addresses.
netstat -pnltu	A netstat command for revealing active or listening ports on a network.
netstat -nutlp	A netstat command for displaying udp and tcp ports.
whois [domain_name]	Reveals more information regarding an active domain name

Command	Description
	on the internet.
dig [domain_name]	Reveals DNS information and configuration regarding an active domain name.
dig -x host	It is applicable when dealing with DNS and will reverse lookup an active domain.
dig -x [IP_address]	It is also applicable when dealing with DNS and will reverse lookup an active IP address.
host domain_name	It will lookup the IP address of an active domain
host -l hostname	It will output the local IP address of the specified hostname with other additional useful information.
wget [file_name]	Useful in downloading a file from a specified domain name storage directory.
ifconfig -a	Outputs all the network interface details of a system with inclusion to the IP address.
ifconfig eth0	Outputs eth0 configuration and address details.
ethtool eth0	Used to manage hardware and network drivers query and control

Command	Description
	settings

Linux Commands for Archives and File Compression

You will never fail to come across file archives or files in a compressed state within the Linux operating system environment. The following commands will be useful.

Command	Description
tar xvfz	Used for creating or extracting files with .tar or .tgz extensions.
gzip, gunzip, zcat filename	Used in creating, extracting. or viewing files with .gz extension
uuencode, uudecode	Used in creating or extracting files with .Z extension.
zip, unzip -v	Used in creating or extracting files with .Zip extension.
rpm	Used in creating or extracting files with .rpm extension.
bzip2, bunzip2	Used in creating or extracting files with .bz2 extension.
rar	Used in creating or extracting files with .rar extension.
tar cf [compressed_filename.tar] [file_name]	This command creates an tar archive called compressed_filename for the

Command	Description
	file_name file.
tar xf [compressed_filename.tar]	This command extracts the tar archive called compressed_filename.
tar czf [compressed_filename.tar.gz]	This command compresses a tar file into a gzip archive.
tar cf my_archive.tar directory	This command creates a tar archive called my_archive with a directory in it.
tar xzf my_archive.tar.gz	This command extracts a compressed tar file inside a gzip archive
tar cjf archive.tar.bz2 director	This command compresses a tar file inside a bz2 archive.
tar xjf archive.tar.bz2	This command extracts a tar file compressed inside a bz2 archive.

Linux Commands for Installing Packages

Since you will be using the Linux terminal to install most of your packages from various repositories, you will need to memorize the following commands.

Command	Description
yum search	Trace a package installation based on

Command	Description
[keyword]	specific keywords.
yum install package.rpm	The use of a YUM package manager to install and configure a package.
yum info package	The use of the YUM package manager to find more information about a package before optionally proceeding with its installation.
rpm -i package.rpm	Using the RPM package manager to install a downloaded package.
yum remove package	Using the YUM package manager to uninstall or remove a package from your system.
tar zxvf sourcecode.tar.gz cd sourcecode ./configure make make install	Command sequence to install a package software that comes as a source code.
dnf install package.rpm	Using the DNF package manager to install a package software.
apt install package	Using the APT package manager to install a package software.
rpm -e package.rpm	Using the RPM package manager to remove or uninstall an rpm package

Linux Search Commands

The commands in this category effectively deal with file patterns, sizes, and even their naming conventions.

Command	Description
grep [pattern] [file]	Employs a specific pattern to search the contents of a file.
grep -r [pattern] [directory_name]	Recursively or repeatedly searches within a specified directory for a defined pattern match.
locate [name]	It will track and locate directories and files based on a name identity.
find [/path/to/folder /location] -name [a]	Traces a specific system directory location then queries the names of its files and folders based on a character match. In this case [a]
find [/path/to/folder /location] -size [+100M]	It will trace a system directory location and list the files within it that are bigger than 100 M in size.
find /home/FossLinux -name 'prefix*'	Traces a specified system path for files with a matching prefix.

Linux Commands for SSH Logins

SSH logins are useful when you want access to remote computers or servers. These commands give you undisputed flexibility in file access, management, and manipulation.

Command	Description
ssh username@hostname	Connects you to a remote machine or server based on a valid username and hostname or IP address.
ssh host	Connects you to a specified host through the default port 22.
ssh -p [port] username@hostname	Connects you to a remote machine or server through a specified port.
telnet hostname	Uses telnet's default port 23 to connect you to a target hostname, remote machine, or server.

Linux Commands for File Transfers and Management

It is very rare to log-in to a Linux operating system environment and not feel the urge to transfer a file, directory, or folder from one system path to another. These file management commands ensure that you won't have to be switching from the command-line interface to the desktop graphical interface each time you feel like making a file or directory change or query.

Command	Description
find	This command is useful when you need to find a specific file
ls -a -C -h	Lists or displays the content of an active directory.

Command	Description
<code>rm -r -f</code>	Used to remove or delete active files and directories instances.
<code>locate -i</code>	Uses updatedb(8) to track and find files on your system.
<code>cp -a -R -i</code>	Used to copy directories or files from an active directory instance.
<code>du -s</code>	Give important information regarding the disk usage (storage space) on your Linux system. It is efficient when combined with the Sudo command.
<code>file -b -i</code>	Helps identify the type of file on your system.
<code>mv -f -i</code>	Used for moving directories or files to a different system path or location.
<code>grep, egrep, fgrep -i -v</code>	Useful in printing lines with a matching pattern.
<code>scp file.txt server:/tmp</code>	Uses secure copy command to copy file to a remote server. In this case the tmp folder
<code>scp server:/var /www/*.html /tmp</code>	Uses secure copy command to copy files from a remote server to a directory on a local machine. In this case it will copy all files with the .html extension.
<code>scp -r</code>	It will recursively copy all the files and

Command	Description
server:/var/www /tmp	directories on a remote server's active directory to a target machine directory. In this case the tmp directory
rsync -a /home /backups/	Synchronizes the content of two directories (/home and /backups) on the same machine.
rsync -avz /home server:/backups/	It synchronizes the content of an active director on a local machine with the content of an active directory on a remote server.

Linux File and Directory Commands

It would help if you also had flexibility in dealing with your user and system files and directories.

Command	Description
ls	It will list the files and directories under an active director path.
ls -a	Lists only active files, but in a long and detailed list.
pwd	reveals the present directory you are working under.
mkdir [dir_name]	It will create a directory with the specified name.
rm [filename]	It will delete a file with the specified

Command	Description
	name.
rm -r [directory_name]	It will delete a directory with the specified name.
rm -rf [directory_name]	It will recursively and forcefully delete a directory with the specified name.
cp filename1 filename2	It will copy the contents of filename1 to filename2
cp -r [directory1] [directory2]	It will recursively copy the content of directory1 to directory2
mv filename1 filename2	It will rename filename1 to filename2
ln -s /path/to /[file_name] [link_name]	Use this command to create a symbolic link (link_name) to a specified file name (file_name).
touch [filename]	Used to create a new file with a specified extension.
more [filename]	It will open and display the contents of a specified file.
cat [filename]	It will also open and display the contents of a specified file.
cat filename1 >> filename2	It appends or adds the content of filename1 at the bottom of filename2.
head filename	Outputs the first ten lines of a specified file name.

Command	Description
tail filename	Outputs the last ten lines of a specified file name.
gpg -c filename	Used to encrypt a specified file.
gpg filename.gpg	Used to decrypt a specified file with a .gpg extension.
wc filename	Outputs number of bytes, lines, and words of a specified file name.
less filename	This command enables a user to browse through the content of a text file
tail -f filename	Not only outputs the last 10 lines of a specified file but also follows the growth progress of this file when more content is added to it.
cd	Takes you to the Home directory of our Linux system
cd ..	Takes you to the previous active directory or one level up.
cd /target/directory	Navigate to the location of a specific directory name.

Linux Commands for Disk Utilities and Usage

It is also important to know how to interact with the various hardware components that connect with your Linux system.

Command	Description
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Command	Description
df -h	Works with mounted systems to reveal their free and used space.
df -i	Works with mounted systems to reveal their free inodes. These inodes hold disk block location data and other attributes.
fdisk -l	Reveals disk information like types, sizes, and partitions.
du -ah	Outputs files and directories disk usage.
du -sh	Outputs your currently active directory's disk usage.
findmnt	Outputs the target mount point associated with all your file system.
mount device_path mount_point	Use this command syntax to mount a device.
mkfs -t -V	Use this command to create a new file system.
resize2fs	Used for updating a file system, especially after lvextend*
fsck -A -N	Used to check and repair a file system.
pvcreate	Used for creating a physical volume.
mount -a -t	Used for mounting a file system.
lvcreate	Used for creating a logical volume.

Command	Description
umount -f -v	Used for unmounting a mounted file system.

Linux Commands for Environment Variables

An environment variable describes the environment behavior of your operating system. The usage and description of the following commands make more sense to this definition.

Command	Description
echo \$Variable_name	Outputs the value of a defined variable on the terminal.
env	Outputs data related to all environment variables.
variable_name = variable_value	Use this command syntax to assign a variable name with a variable value.
Unset	Used to remove or get rid of a variable.
export Variable = value	Used to assign an environment variable a new value.

Linux Commands for System Processes Management

If you are looking for an internal grip or understanding of how your Linux operating system relays its functions and operations, then the following commands will be useful.

Command	Description
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Command	Description
bg	Sends a running process to execute in the background.
fg	Sends a stopped or halted process to keep executing on the foreground.
top	Outputs all active processes details.
htop	It is an interactive process viewer command.
ps	Outputs a running process's status to a system user.
ps -ef	Outputs all active or executing processes on the Linux system.
ps -ef grep process_name	Outputs the running process information for a specified process name.
ps PID	Outputs a running processes's status in reference to its process ID.
pidof	Reveals the process ID of a specified process.
kill PID	Kills a running process based on its process ID.
nice	Grants execution rights to a process with an assigned priority.
renice	Changes or alters the execution priority of an already running system process.

Command	Description
df	Outputs free and used storage information regarding the system's hard disks.
free	Outputs information about the system RAM's and swap's free and used memory.
free -m	Also outputs information about the system RAM's and swap's free and used memory.
killall	Stops all the actively executing processes by their process names.
killall process_name	Will stop a running process based on the process name.
sensors	Outputs the Linux system's CPU temperature.
top	Outputs actively running processes and provides an interface for real-time monitoring of these processes.
kill -1 -9	Used to send a signal to a running process.
service [start stop restart]	Used for managing system services through an executable sysV init script. You can start, stop, or restart the specified system service.
ps aux	Outputs a snapshot of the current running processes.

Command	Description
dmesg -k	Outputs system messages. Helps in troubleshooting the health status of your Linux system.
program &	Executes a program in the system background.
fg n	Moves a running job n to the system's foreground.

Linux Commands for VI Editing

The command sequences related to the VI editor let you manage your files from the terminal without seeking a text editing app with a graphical interface. VIM is an improved version of this editor with additional features. The VIM editor absorbs all the implementation of the VI editor's commands.

Command	Description
vi	launch the VIM editor.
:q!	quit the editor without saving the implemented changes.
:wq	quit the editor and also make changes to the open file.
i	Takes the editor to insert mode and initiates a cursor.
a	An insert mode that enables the system user to write their input after a cursor.

Command	Description
A	An insert mode for writing at the end of the line.
ESC key	Used to exit the insert mode.
u	Undo Vim command for the last change.
U	Undo Vim command for an entire line.
o	Insert mode for opening a new line.
dd	Vim command to delete a line.
3dd	Vim command to delete three lines.
D	Vim command to delete line content(s) that follow or succeed the cursor.
C	Vim command to delete line content(s) that follow or succeed the cursor and additionally allows the system user to insert new text.
dw	Vim command to delete a word.
4dw	Vim command to delete four words.
cw	Vim command to change a word.
x	Vim command for character deletion at the cursor.
r	Vim command to replace a character.
R	With this command, all the characters succeeding the cursor are overwritten.
s	Command to substitute a single character under cursor and then continues to insert mode.

Command	Description
S	Command to substitute an entire line and then initiate insert mode at the beginning of that same line.
~	Vim command to change the case (upper or lower) of individual characters.

Linux Commands for File Editors

You can use the following Linux command shortcuts to access your favorite file editor without the need to navigate to the Graphical User Interface to launch them

Command	Description
ex	Launches a basic editor.
vi	Launches visual editor.
nano	Launches the GNU nano editor.
view	Launches an editor in view or read-only mode.
emacs	Launches emacs, an extensible and customizable system editor.
sublime	Launches sublime text editor.
sed	launches stream editor.
pico	launches pico, a simple editor.

Linux Commands for File Utilities

There is more to how you can interact with files on a Linux

operating system. These Linux commands paint a clearer picture.

Command	Description
tr -d	Command for translating or deleting a character.
uniq -c -u	Command for reporting or omitting repeated lines.
split -l	Command for splitting a file into segments.
wc -w	This command prints the number of bytes, words, and newlines on a specified file.
head -n	Outputs the first few contents of a specified file.
cut -s	removes or deletes a file's section.
diff -q	Command to compare files line by line.
join -i	Given that two files have a common field, this command will join the lines of these files.
more, less	Enables a system user to view the contents of a file, a single file page view at a time.
sort -n	Command to sort the lines within a text file.
comm -3	After two files are sorted, this command can be used to sort them line by line.
cat -s	Command to concatenate or link files to a specific standard output.
tail -f	Command to output the last portion of a file.

Linux Commands for Scripting

Once your skillset on using the Linux operating system improves

with time, you might be inspired to scribble some scripts from your OS environment. These commands apply both to the scripting languages you might be familiar with and the scripting environment setup to make your Linux OS life as comfortable as possible.

[table “49” not found /]

Linux Commands for Hardware Information

What if you want to know how your hardware is performing under a Linux operating system environment? Consider the use of the following commands.

Command	Description
dmesg	Outputs the kernel ring buffer messages.
cat /proc/cpuinfo	Outputs CPU information of your machine.
cat /proc/meminfo	Outputs Memory information of your machine.
free -h	Outputs both free and used machine memory info.
lshw	Outputs the system's hardware configuration information.
lsblk	Outputs the system's block devices information.
lspci -tv	Outputs the system's PCI devices.
lsusb -tv	Outputs the system's USB devices.
dmidecode	Outputs the system's hardware information on DMI/SMBIOS related to the BIOS.

Command	Description
hdparm -i /dev/disk	Outputs a specified disk data information.
hdparm -tT /dev/[device]	Used with a specified system disk to output its read speed test performance.
badblocks -s /dev/[device]	Used to reveal and test unreadable blocks on a specified disk sda.

Linux Commands for Performance Monitoring and Statistics

It helps to statistically assess how the Linux OS is adapting to its hardware environment.

Command	Description
mpstat 1	Outputs processor-related statistics.
vmstat 1	Outputs statistical data related to the system's virtual memory.
iostat 1	Outputs I/O (Input/Output) statistics.
lsdf	Outputs all the system's open files.
lsdf -u user	Outputs a list of all the files opened by a system user.
watch df -h	A command to output periodic system updates.
tail 100 /var/log /messages	Command to output the most recent 100 syslog messages. The Debian systems equivalent of this command is /var/log/syslog
tcpdump -i eth0	An interface eth0-related command for outputting captured packets.

Command	Description
<code>tcpdump -i eth0 'port 80'</code>	Command for monitoring traffic through port 80

Linux Commands As Keyboard Shortcuts

To be good at these commands, you only need to master a few keyboard strokes.

Command	Description
Ctrl + C	Command to kill a running process.
Ctrl + Z	Command to stop a currently active process.
Ctrl + W	Command to cut a single word preceding the cursor.
Ctrl + U	Command to cut a line fragment preceding the cursor.
Ctrl + K	Command to cut a line fragment succeeding the cursor.
Ctrl + Y	Command to paste from clipboard.
Ctrl + R	Command to recall the last used command.
Ctrl + O	Command to execute the previously recalled command.
Ctrl + G	Command to exit command history.
!!	Command to execute a previously executed command.

Command	Description
exit	Command to sign off from an active session.

Linux Misc Commands

These are miscellaneous commands that are also useful in further improving your Linux operating system's user experience.

Command	Description
date -d	Command to print formatted date.
'[command_name]	A backquote to execute a specified command.
export	A command for assigning or removing an environment variable.
cal	Command to print a calendar.
expr	A command used to evaluate an expression.
bc	Launches a high-precision calculator shell.
pwd -P	Reveals the current system directory you are under.

Final Note

The Linux Command Cheat Sheet exists to make the life of individuals pursuing a comfortable Linux life easy. You can comfortably adapt to these commands to make your Linux OS usage more efficient. As you have noticed, the categorical grouping of these commands has a few duplicated commands in

other command categories. It just shows how flexible and adaptable a Linux command can be instead of being restricted to a single system function. Good luck in mastering and implementing these Linux Command Cheat Sheet categories.