



COMMON LINUX COMMANDS

*green commands for first Linux test_

*blue commands for labs 3.1.1 - 3.1.3_

*yellow commands for lab 3.2.2_

1	<code>cd</code> <code>cd /home/gope/twerk</code>	<p>Stands for "change directory"</p> <p><code>cd .</code> - current directory <code>cd ..</code> - go to above directory in hierarchy <code>/home/gopedir/ed</code> (currently in ed) - cmd will take to gopedir b/c it is above/before current dir <code>cd ~</code> - default home directory <code>cd -</code> - previous directory you were in</p>
2	<code>ls</code> <code>ls /home/gope</code>	<p>lists all files in the directory</p> <p><code>ls -a</code> (all) - shows all files in the dir, even if they are hidden <code>ls -l</code> (long) - Shows detailed info like file permission, number of links, owner name, file size/stamp, modified date etc <code>ls -la</code> - Combination of <code>-a</code> and <code>-l</code></p>
3	<code>touch</code> <code>touch [filename]</code>	<p>Used to create new files, updates the timestamps of files</p>
4	<code>file</code> <code>file gopefile.gif</code>	<p>Used to determine the actual file type and description of the file (in linux files do not confirm to their file ext.) gope.js is can be any file not just JS</p>
5	<code>cat</code> <code>cat gopefile gopefile2</code>	<p>See the contents of a file(s) (small files), stands for concatenate because it can combine the contents of multiple files. Can also be used to</p>

		<p>create new files</p> <p><code>cat > gope.txt</code> - makes a text file and allows you to edit it. Use CTRL+C to exit the file and input a new command</p>
6	<p><code>less</code></p> <p><code>less gopefile</code></p>	<p>Shows the file in a page format</p> <p><code>q</code> - quit</p> <p><code>g</code> - beginning of page</p> <p><code>G</code> - end of page</p> <p><code>/search</code> - search for specific text</p> <p><code>h</code> - get help of using less cmd</p>
7	<code>history</code>	Look at all the previous commands
8	<code>echo</code>	<p>Print a statement to screen</p> <p><code>echo simp</code> - will print simp to the console</p> <p><code>echo gope > gope.txt</code> - will create 'gope.txt' and add gope to it</p> <p><code>echo simp >> gope.txt</code> - will add 'simp' to the end of gope.txt file, used to append</p>
9	<code>clear</code>	Clears the display
10	CTRL + C	Exit a file, bring up user prompt to enter a new command
11	<p><code>cp</code></p> <p><code>cp file.py /home/username/dir</code></p>	Copy files to a specified path
12	Wild cards	<p><code>*</code> - represents all character/strings</p> <p><code>ls *.gif /home/gope</code> - lists all .gif files in gope</p> <p><code>?</code> - represents a single character</p> <p><code>ls *.??g</code> - lists all files like jpg and png, but not mpeg b/c it is four chars.</p> <p><code>ls ?x*.png</code> - all png files with second letter x</p> <p><code>[]</code> - defines a range</p> <p><code>ls [a-z]</code> - list all files with names a.. or z...</p> <p><code>ls [^a-z]</code> - lists all files that are not name a or z,</p>

		note the use of the caret ^
13	Flags	<p>-r - (recursive) used to copy or remove all files (children) within a dir (including the dir) cp -r gopedir/ home/gope</p> <p>-i - used to prompt the user before overwriting or deleting files *when used with grep -i is for insensitive, which searches for all lines matching the given string no matter the case.</p> <p>-b - used to make a backup of a file which is overwritten, renames the file with ~</p> <p>mv -b gopefile /home/gopedir - will overwrite the file 'gopefile' that is in gopedir and make a backup of it.</p> <p>-p - parent flag, used to make subdirectories inside a dir</p> <p>mkdir -p /gopedir2/chrislap/nut - makes two dir inside the parent dir (gopedir2)</p> <p>-f - forcefully remove all files even those that are write protected</p> <p>-c - create -d - decrypt -ef - <u>every</u> process in <u>full-format</u> listing</p> <p>*there are many other flags</p>
14	mv	<p>used to move or rename a file mv gopefile gopetwerk - gopefile is renamed to gopetwerk</p> <p>mv gopefile gope2 /home/gopedir - gopefile and gope2 are moved to gopedir</p>

15	<code>mkdir</code>	make directory inside parent directory, default is usually '/home' <code>mkdir gopedir2 gopetwerk</code> - makes two dir called 'gopedir2' and 'gopetwerk' inside 'home'
16	<code>rm</code> <code>rm chris-genesis-pswd.js</code>	remove files <code>rmdir gopedir</code> - used to remove a directory, simply using 'rm' will not work <code>rm -r gopedir</code> - also works, because it will remove all files inside the dir and the dir itself
17	<code>find</code> <code>find gope.py</code>	Used to look for certain files and directories <code>-type</code> - specific type of file <code>-name</code> - specify the name of the file <code>find -type d -name gopedir</code> - looks for the type directory defined by 'd' named 'gopedir'
18	<code>man</code>	Brings up the manual for a command with in-depth description <code>man rm</code> - will bring up the manual for the 'rm' command including the flags; use 'q' to exit/quit manual
19	<code>alias</code>	used to assign aliases to long commands <code>alias gope='ls -la'</code> - will create gope as an alias for 'ls -la' command. <u>NO SPACES</u> before and after the equal sign and use <u>SINGLE QUOTES</u> only; now 'gope' can be used in place of 'ls -la' <code>unalias gope</code> - will remove 'gope' as an alias
20	Head out commands	<code>exit</code> - exit the terminal <code>logout</code> - logout of linux <code>reboot</code> - reboot the computer

		shutdown - shutdown the computer, usually after 1 minute of inputting the cmd
21	date	Shows the date and time
22	top	Shows information on currently running processes and CPU and memory utilization, similar to task manager in Windows
23	grep <pre>cat > gope.txt gope linux chris gope linux some random text gope more random text</pre>	<p>'Global regular expression print'</p> <p>Used to search text files for specific <u>lines</u></p> <pre>grep "gope" gope.txt gope linux chris gope linux some random text gope</pre> <ul style="list-style-type: none"> - will return the first two lines b/c they contain 'gope' but not the third because it has no 'gope' <p>-i - case insensitive, searches for all matching strings regardless of case.</p> <p>-c - returns the number of lines that matches the given string</p> <p>*there are many other options that can be used with grep</p>
24	df	gives a report of the system disk usage
25	diff	shows the content of two files to compare the 'difference' between them
26	head	outputs the first 10 lines of a file
27	tail	output the last 10 lines of a file

28	<code>kill</code> <code>kill [PID]</code>	used to send signals to processes to terminate them, using the Process ID which can be obtained by entering <code>'top'</code>
29	<code>ping</code>	used to send an ICMP ECHO_REQUEST to a network in order to get a message back from it, sends a file and outputs how long it took to get a response <code>ping sphscompsci.github.io</code> <code>PING sphscompsci.github.io (185.199.108.153)</code> <code>56(84) bytes of data.</code> <code>64 bytes from 185.199.108.153 (185.199.108.153):</code> <code>icmp_seq=5 ttl=60 time=6.66 ms</code>
30	<code>ps</code>	stands for 'process status' used to report information on currently running processes
31	<code>tar</code> <code>tar cf [name.tar] [filename(s)]</code> <code>tar cf gope.tar gope.py script.js</code>	used to archive file, compresses files usually into a .tar file; 'tape archive'. Also to uncompress files. - must use 'c' to create and 'f' for file options, 'cf' must be followed by archive name and files that will be archived
32	<code>whoami</code>	Outputs your username
33	<code>pwd</code>	Output the name of the directory you are in; 'Print Working Directory'
34	<code>sudo</code>	'Superuser do' used for admin privileges. To avoid typing 'sudo' for long periods of time switch to the root user to get full (root) access

		<p><code>sudo su</code> - will switch user to root using admin priv.</p> <p><code>username@comp_name\$ sudo su</code></p> <p><code>root@comp_name# su username</code> - to switch back</p>
35	<code>whatis</code>	<p>Displays a one line description for a command</p> <p><code>whatis grep</code></p> <p><code>grep (1)</code> - print lines that match patterns</p> <p><code>whatis whatis</code></p> <p><code>whatis (1)</code> - display one-line manual page descriptions</p>
36	Creating, writing and running python files	<p><code>cat > gope.py</code> - '.py' extension is not necessarily required since the python interpreter only looks at the code, but can be convenient when using on different OS; 'gope.txt' with the same code will run the same way as 'gope.py'</p> <pre>num1 = 1 num2 = 6 print (num1 + num2)</pre> <p><code>sudo apt install python3</code> - if python isn't already installed</p> <p><code>python3 gope.py</code> - use 'python' to call the python interpreter.</p> <p>7</p> <p>Will print the sum of 'num1' and 'num2'</p>
37	<code>nano</code> <code>sudo nano gope.txt</code>	<p>used to edit files; may or may not need admin privileges</p> <p>CTRL + O is usually used to save, CTRL + X to exit</p>

		after saving
38	!!	Run the previous command
39	apt-get	used to install programs sudo apt-get install python3 - admin priv. is required, will install python3 sudo apt-get remove python3 - will remove python3
40	gpg	GNU Privacy Guard, a tool used to encrypt data with variety of encryption algorithms gpg -c chris.smp - used to encrypt gpg -d chris.smp - used to decrypt
41	Pipe (indicated by " ")	Connects the output of one command to the input of another ps -ef more - the ps command output is piped to more, now you can use more with the output of ps
42	more	Used to view contents of a text file Options -- sort=uid - sorts/groups processes by UID
43	sleep	Used to put system to sleep (30 sec by default) use s, m and h for seconds, minutes and hours respectively
44	bg & fg	bg runs a process in background, while fg runs processes in foreground from background
45	tcpdump	Requires 'sudo' access, allows you to use command-line version of Wireshark

		-w - filename where packets will be stored -n - records IP addresses instead of hostnames -s [#] - size of the full packet -i ens5 - network interface to monitor (Ethernet) not port 22 - ignores login connection (SSH)

<https://linuxjourney.com/> - Learn command line

<https://bellard.org/jslinux/> - online LINUX terminal (some cmds may not work)

*most basic commands are compatible across all distributions, however some may not work on other distributions. All commands listed here, work on Ubuntu 19.10