ASSIGNMENT

NETWORKING AND SYSTEM ADMINISTRATION LAB

[TOPIC: Basic Linux Commands]

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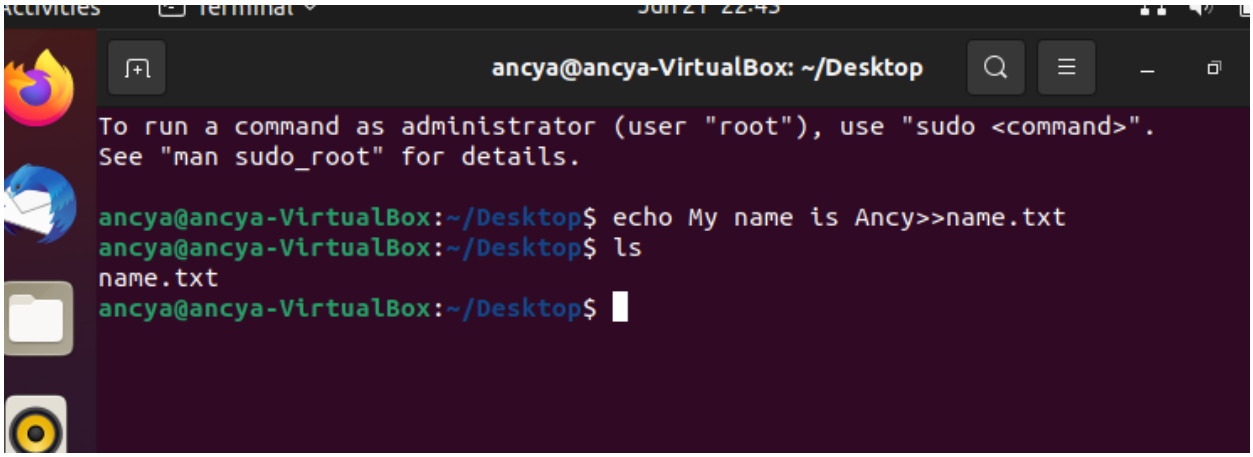
Basic Linux Commands

1. echo

echo command in linux is used to display line of text/string that are passed as an argument . This is a built in command that is mostly used in shell scripts and batch files to output status text to the screen or a file. echo is one of the most commonly and widely used built-in command for Linux bash and C shells, that typically used in scripting language and batch files to display a line of text/string on standard output or a file. The echo command writes text to standard output (stdout). The syntax of using the echo command is pretty straightforward: … Some common usages of the echo command are piping shell variable to other commands, writing text to stdout in a shell script, and redirecting text to a file.

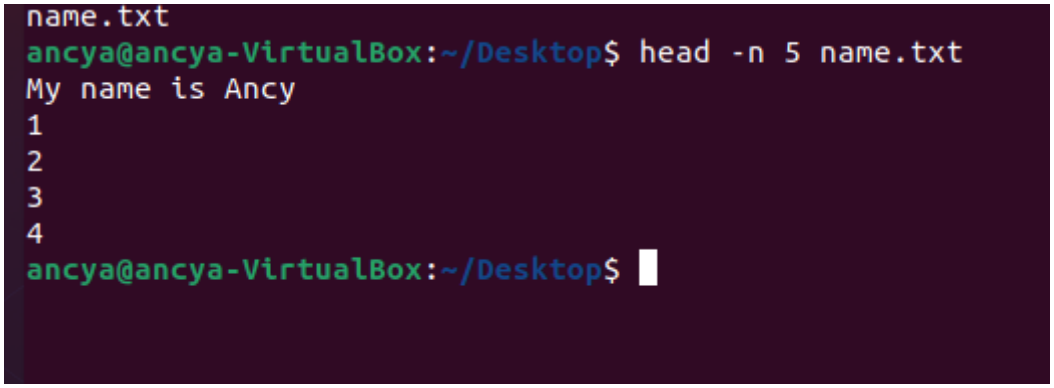


2. head

The head command is a command-line utility for outputting the first part of files given to it via standard input. It writes results to standard output. By default head returns the first ten lines of each file that it is given. head is used to print the first ten lines (by default) or any other amount specified of a file or files. cat , on the other hand, is used to read a file sequentially and print it to the standard output (that is, it prints out the entire contents of the file).

Enter the head command, followed by the file of which you'd like to view: head /etc/passwd

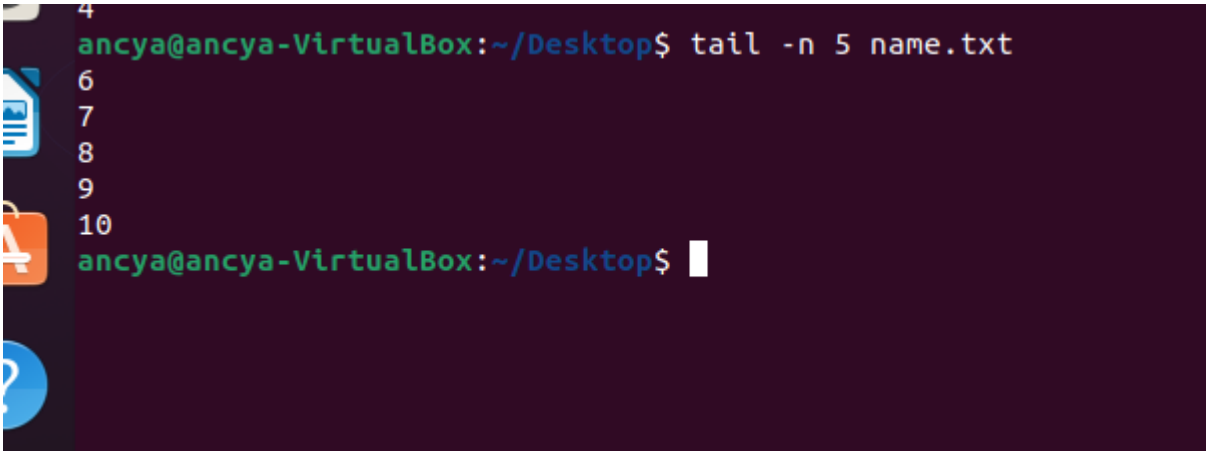
To change the number of lines displayed, use the -n option: head -n 5 /etc/passwd



3.tail

The tail command, as the name implies, print the last N number of data of the given input. By default it prints the last 10 lines of the specified files. If more than one file name is provided then data from each file is precedes by its file name. tail has two special command line option -f and -F (follow) that allows a file to be monitored. Instead of just displaying the last few lines and exiting, tail displays the lines and then monitors the file. As new lines are added to the file by another process, tail updates the display. Enter the tail command, followed by the file you'd like to view: tail /etc/passwd

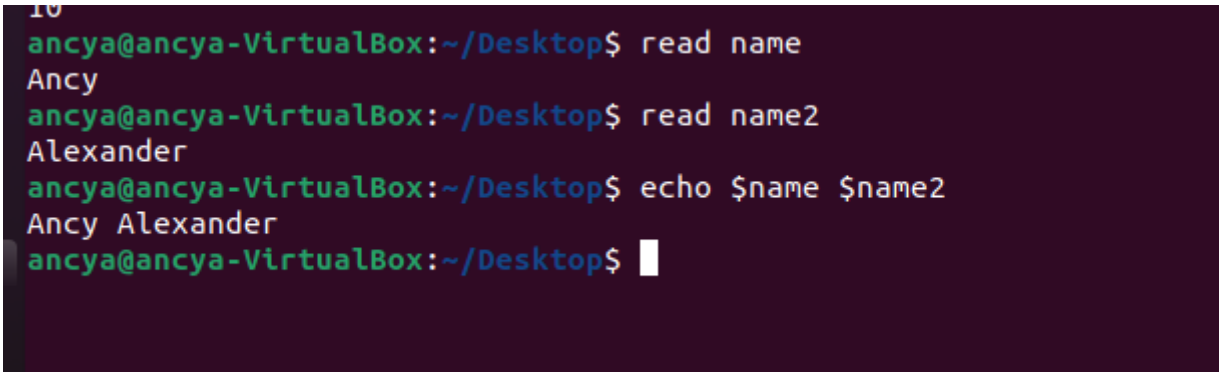
To change the number of lines displayed, use the -n option: tail -n 5 /etc/passwd



4.read

read command in Linux system is used to read from a file descriptor. Basically, this command read up the total number of bytes from the specified file descriptor into the buffer. If the number or count is zero then this command may detect the errors. But on success, it returns the number of bytes read.

Read is a bash builtin command that reads the contents of a line into a variable. It allows for word splitting that is tied to the special shell variable IFS. It is primarily used for catching user input but can be used to implement functions taking input from standard input.



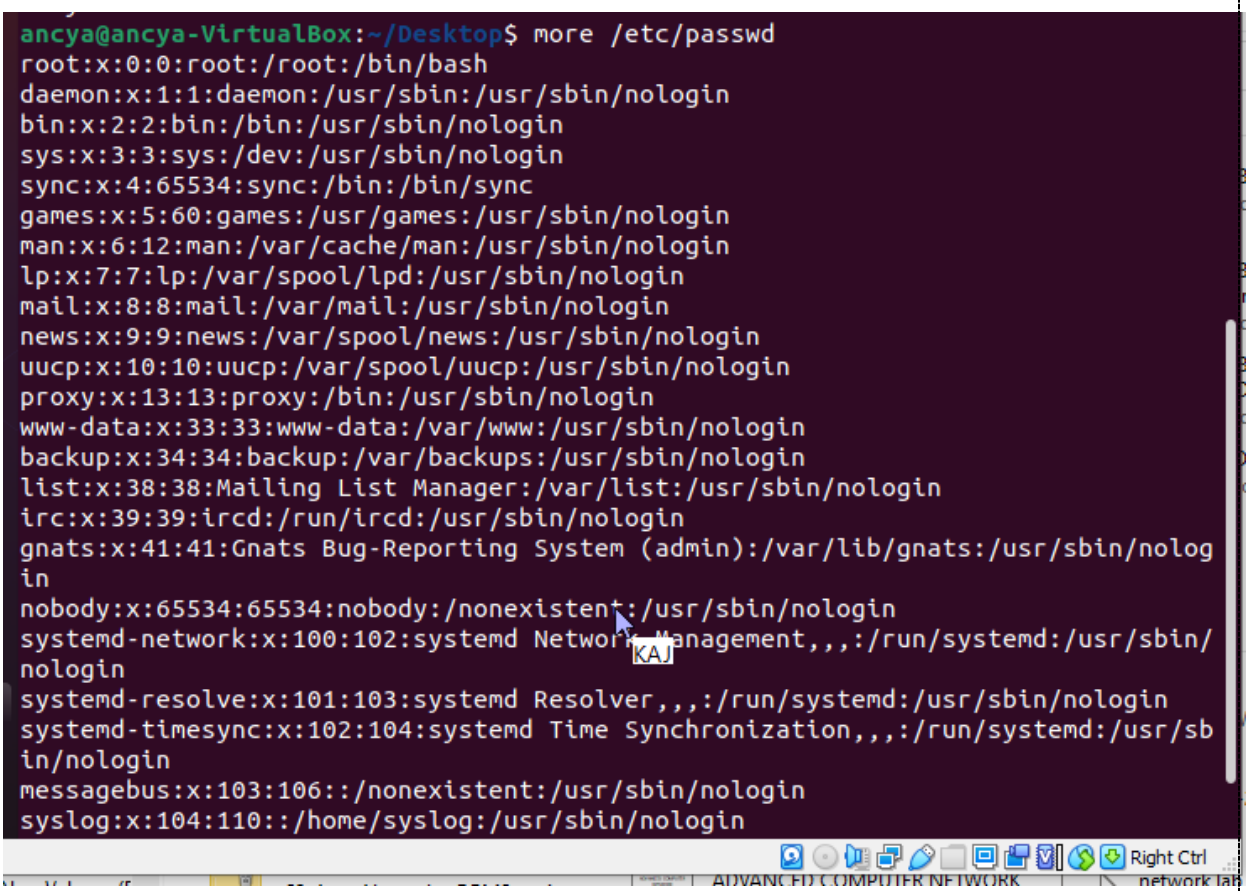
5.more

more command is used to view the text files in the command prompt, displaying one screen at a time in case the file is large (For example log files). The more command also allows the user do scroll up and down through the page. The syntax along with options and command is as follows. Another application of more is to use it with some other command after a pipe. When the output is large, we can use more command to see output one by one.

more [-options] [-num] [+/pattern] [+linenum] [file_name]

- [-options]: any option that you want to use in order to change the way the file is displayed. Choose any one from the followings: (-d, -l, -f, -p, -c, -s, -u)

- [-num]: type the number of lines that you want to display per screen.
- [+/pattern]: replace the pattern with any string that you want to find in the text file.
- [+linenum]: use the line number from where you want to start displaying the text content.
- [file_name]: name of the file containing the text that you want to display on the screen.



6. less

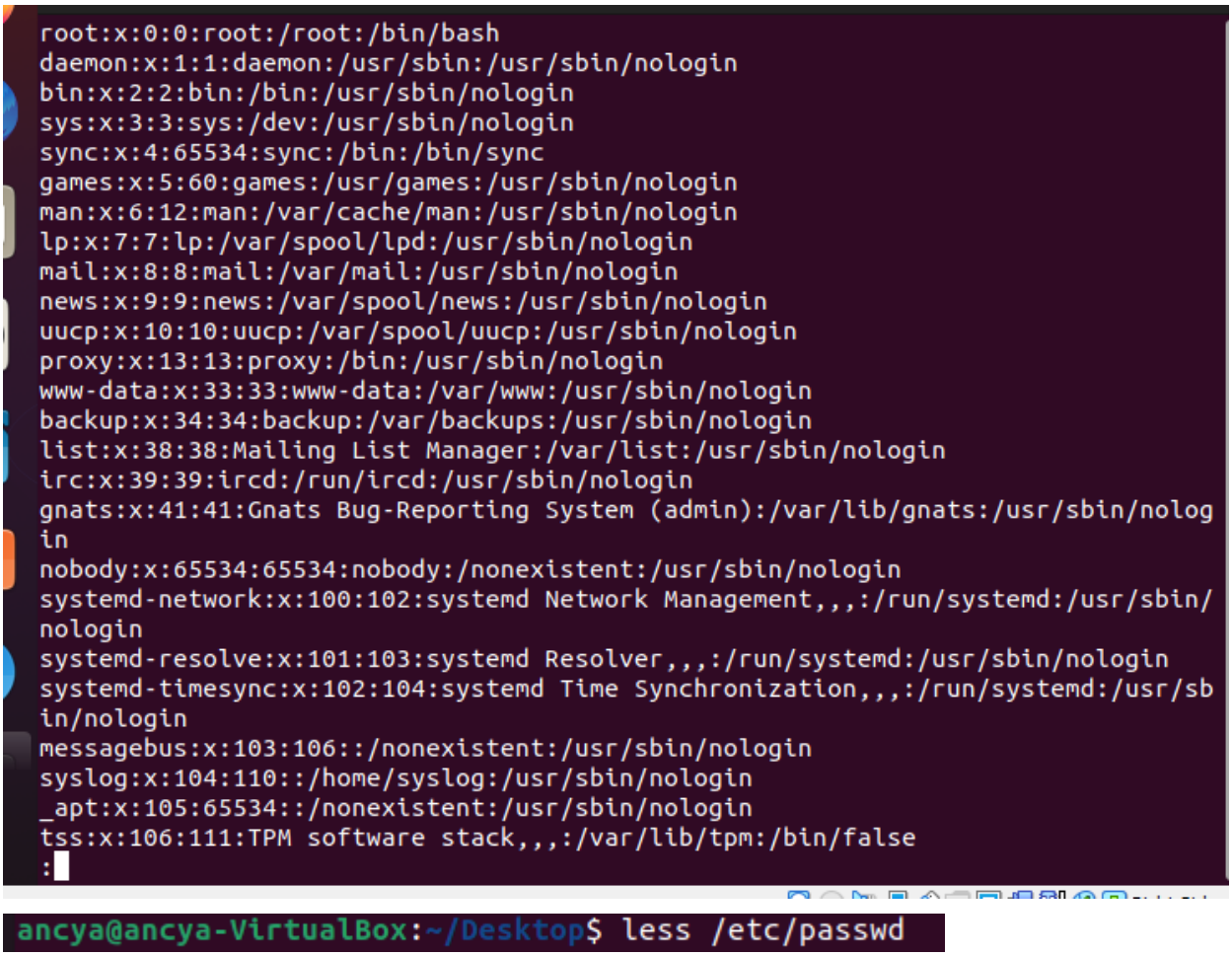
Less command is linux utility which can be used to read contents of text file one page(one screen) per time. It has faster access because if file is large, it don't access complete file, but access it page by page.

For example, if it's a large file and you are reading it using any text editor, then the complete file will be loaded to main memory, but less command don't load entire file, but load it part by part, which makes it faster.

mostly used Options :

-E : causes less to automatically exit the first time it reaches end of file.

- -f : forces non-regular file to open.
- -F : causes less to exit if entire file can be displayed on first screen
- -g : highlight the string which was found by last search command
- -G : suppresses all highlighting of strings found by search commands
- -i : cause searches to ignore case
- -n : suppresses line numbers
- -p pattern : it tells less to start at the first occurrence of pattern in the file
- -s : causes consecutive blank lines to be squeezed into a single blank line



7. cut

The cut command in linux is a command for cutting out the sections from each line of files and writing the result to standard output. It can be used to cut parts of a line by byte position, character and field. Basically the cut command slices a line and extracts the text. It is necessary to specify option with command otherwise it gives error. If more than one file name is provided then data from each file is not precedes by its file name.

```
ancya@ancya-VirtualBox:~/Desktop$ cut -b 1,2,3 name.txt
My
1
2
3
4
5
6
7
8
9
10
ancya@ancya-VirtualBox:~/Desktop$
```

8. paste

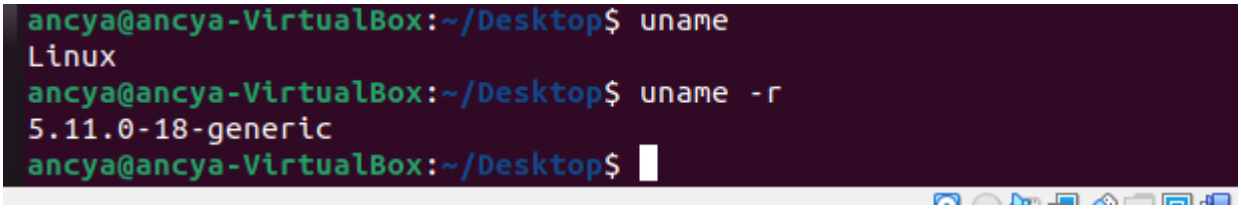
Paste is a command that allows you to insert data from the clipboard into an application. The Paste command is most commonly used to copy text from one area to another. For example, you can copy a paragraph from a text document and paste it into an email message.

```
ancya@ancya-VirtualBox:~/Desktop$ paste name.txt newfile.txt
My name is Ancy
1
2
3
4
5
6
7
8
9
10
ancya@ancya-VirtualBox:~/Desktop$
```

9. uname

Uname command is used to display basic information about the operating system and hardware. With options, Uname prints kernel details, and system architecture. Uname is the short name for 'UNIX name'. Uname command works on all Linux and Unix like operating systems. uname is a command-line utility that prints basic information about the operating system name and system hardware.

The uname() function returns a string naming the current system in the character array sysname. The arrays release and version further identify the operating system. The array machine contains a name that identifies the hardware that the system is running on.



10. cp

cp stands for copy. This command is used to copy files or group of files or directory. It creates an exact image of a file on a disk with different file name. cp command require at least two filenames in its arguments. Third syntax is used to copy multiple Sources(files) to Directory.

'cp' means copy. 'cp' command is used to copy a file or a directory. To copy a file into the same directory syntax will be, cp <existing file name> <new file name>

```
ancya@ancya-VirtualBox:~/Desktop$ mkdir files
ancya@ancya-VirtualBox:~/Desktop$ ls
files  name.txt  newfile.txt
ancya@ancya-VirtualBox:~/Desktop$ cp name.txt files
ancya@ancya-VirtualBox:~/Desktop$ cd files
ancya@ancya-VirtualBox:~/Desktop/files$ ls
name.txt
ancya@ancya-VirtualBox:~/Desktop/files$
```

11. locate

To use locate, open a terminal and type locate followed by the file name you are looking for. In this example, I'm searching for files that contain the word 'sunny' in their name. Locate can also tell you how many times a search keyword is matched in the database.

Command. locate is a Unix utility which serves to find files on filesystems. It searches through a prebuilt database of files generated by the updatedb command or by a daemon and compressed using incremental encoding. It operates significantly faster than find , but requires regular updating of the database.

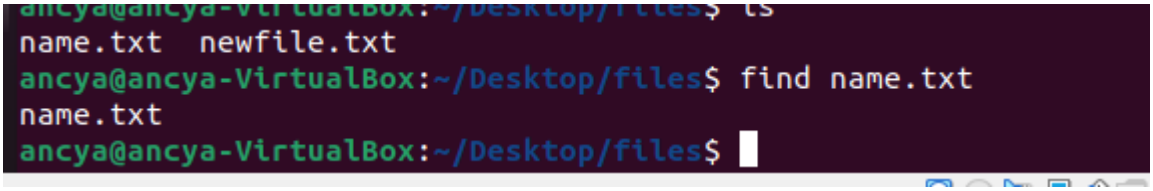
Try using this command: sudo apt-get install locate . – ...

For the future: if you're looking for a program and don't know the package, install apt-file: sudo apt-get install apt-file and search for the program using apt-file: apt-file search /usr/bin/locate .

```
ancya@ancya-VirtualBox:~/Desktop/files$ locate name.txt
/home/ancya/Desktop/name.txt
/home/ancya/Desktop/files/name.txt
ancya@ancya-VirtualBox:~/Desktop/files$
```

12. find

The find command is one of the most powerful tools in the Linux system administrators arsenal. It searches for files and directories in a directory hierarchy based on a user given expression and can perform user-specified action on each matched file.



13. grep

To search multiple files with the grep command, insert the filenames you want to search, separated with a space character. The terminal prints the name of every file that contains the matching lines, and the actual lines that include the required string of characters. You can append as many filenames as needed.

To use the grep command in Linux

- Grep Command Syntax: grep [options] PATTERN [FILE…] ... • Examples of using 'grep'
- grep foo /file/name. ...
- grep -i “foo” /file/name. ...
- grep 'error 123' /file/name. ...
- grep -r “192.168.1.5” /etc/ ...
- grep -w “foo” /file/name. ...
- egrep -w 'word1|word2' /file/name.

```
ancya@ancya-VirtualBox:~/Desktop/files$ grep Ancy name.txt
My name is Ancy
ancya@ancya-VirtualBox:~/Desktop/files$
```

14. df

The df command (short for disk free), is used to display information related to file systems about total space and available space. If no file name is given, it displays the space available on all currently mounted file systems.

df (abbreviation for disk free) is a standard Unix command used to display the amount of available disk space for file systems on which the invoking user has appropriate read access. df is typically implemented using the statfs or statvfs system calls.

To view disk space usage run the df command. This will print a table of information to standard output. This can be useful to discover the amount of free space available on a system or filesystems. Use% - the percentage that the filesystem is in use.

```
ancya@ancya-VirtualBox:~/Desktop/files$ df
Filesystem     1K-blocks    Used Available Use% Mounted on
tmpfs              99556    1356     98200   2% /run
/dev/sda3        9735476 7709868   1511356  84% /
tmpfs             497772       0    497772   0% /dev/shm
tmpfs               5120       4      5116   1% /run/lock
tmpfs               4096       0      4096   0% /sys/fs/cgroup
/dev/sda2         524252    5340    518912   2% /boot/efi
tmpfs              99552     124     99428   1% /run/user/1000
ancya@ancya-VirtualBox:~/Desktop/files$
```

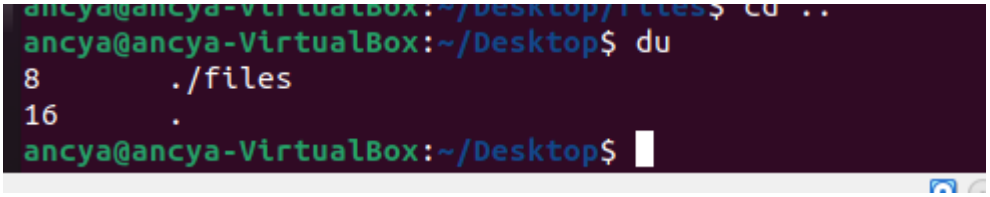
15. du

The du command is a standard Linux/Unix command that allows a user to gain disk usage information quickly. It is best applied to specific

directories and allows many variations for customizing the output to meet your needs.

With no arguments, 'du' reports the disk space for the current directory. Normally the disk space is printed in units of 1024 bytes, but this can be overridden. Options -a --all Show counts for all files, not just directories.

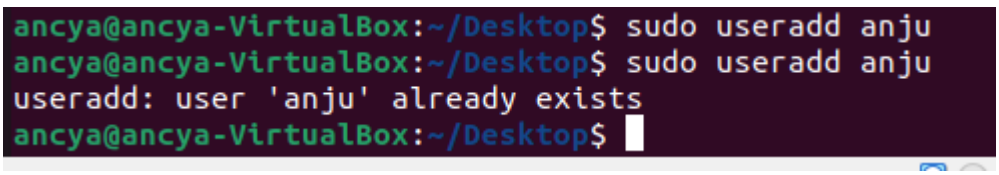
As you may have seen that the du command in Linux outputs all the sizes of all the files. But if all you want to see is the summarized output, then you can use the -s option which stands for a summary. I'm also combining it with the -h option to view human-readable info.



16. useradd

Only root or users with sudo privileges can use the useradd command to create new user accounts. When invoked, useradd creates a new user account according to the options specified on the command line and the default values set in the /etc/default/useradd file.

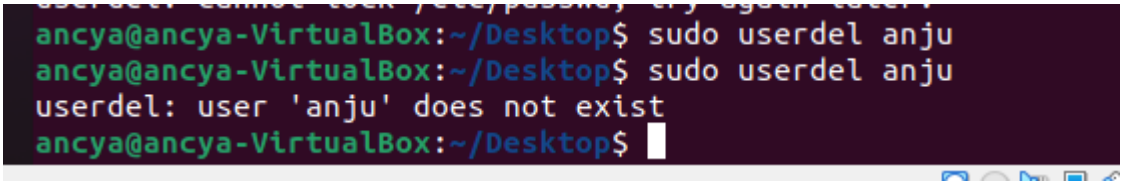
In Linux, a 'useradd' command is a low-level utility that is used for adding/creating user accounts in Linux and other Unix-like operating systems. The 'adduser' is much similar to useradd command, because it is just a symbolic link to it.



17. userdel

userdel command in Linux system is used to delete a user account and related files. This command basically modifies the system account files, deleting all the entries which refer to the username LOGIN. It is a low-level utility for removing the users.

Another option is to use the -f (--force) option that tells userdel to forcefully remove the user account, even if the user is still logged in or if there are running processes that belong to the user.



18. sudo

The sudo command allows you to run programs with the security privileges of another user (by default, as the superuser). It prompts you for your personal password and confirms your request to execute a command by checking a file, called sudoers , which the system administrator configures

Use the visudo command to edit the configuration file: sudo visudo. This will open /etc/sudoers for editing. To add a user and grant full sudo privileges, add the following line: [username] ALL=(ALL:ALL) ALL. Save and exit the file.

```
ancya@ancya-VirtualBox:~/Desktop$ sudo useradd anju
ancya@ancya-VirtualBox:~/Desktop$ sudo useradd anju
useradd: user 'anju' already exists
ancya@ancya-VirtualBox:~/Desktop$
```

19. mv

mv stands for move. mv is used to move one or more files or directories from one place to another in a file system like UNIX. It has two distinct functions:

(i) It renames a file or folder.

(ii) It moves a group of files to a different directory.

No additional space is consumed on a disk during renaming. This command normally works silently means no prompt for confirmation.

```
ancya@ancya-VirtualBox:~/Desktop$ ls
files  name.txt  newfile.txt
ancya@ancya-VirtualBox:~/Desktop$ mv newfile.txt files
ancya@ancya-VirtualBox:~/Desktop$ ls
files  name.txt
ancya@ancya-VirtualBox:~/Desktop$ cd files
ancya@ancya-VirtualBox:~/Desktop/files$ ls
name.txt  newfile.txt
ancya@ancya-VirtualBox:~/Desktop/files$
```

20. passwd

The passwd command changes passwords for user accounts. A normal user may only change the password for their own account, while the superuser may change the password for any account. passwd also changes the account or associated password validity period.

Creates a password definition, without a password value, that prompts users for a password while a script is running. To display password status information of a user , use -S option in passwd command.

-d, –delete: This option deletes the user password and makes the account password-less. -e, –expire: This option immediately expires the account password and forces the user to change password on their next login. -h, –help: Display help related to the passwd command.

The passwd command sets and changes passwords for users. Use this command to change your own password or another user's password. You can also use the passwd command to change the full name (gecos) associated with your login name and the shell you use as an interface to the operating system.