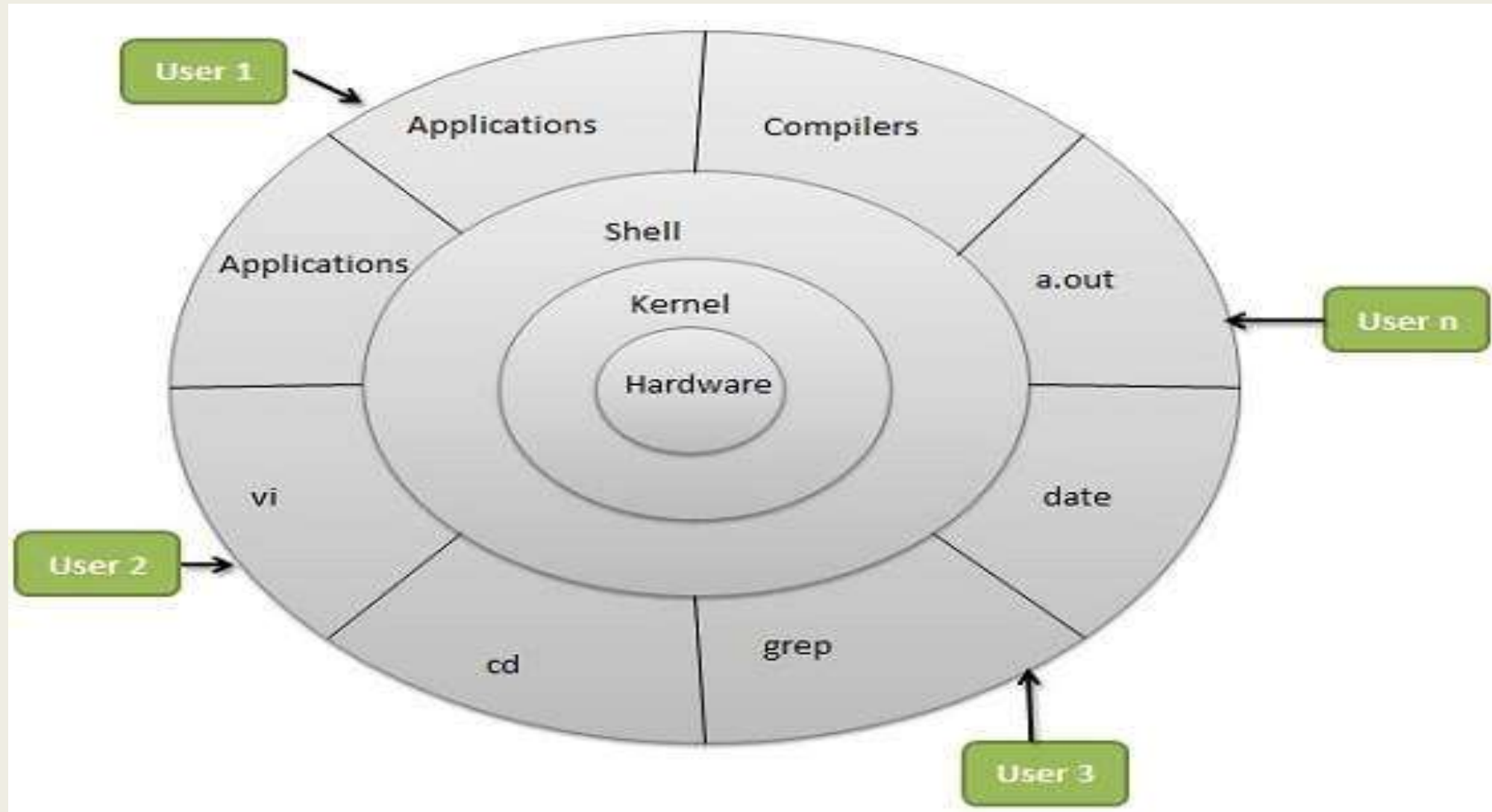# LINUX BASIC COMMANDS

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Introduction to Linux

- **Open Source Operating System**: - The Linux is free to use and everyone has freedom to contribute to its development. The code used to create Linux is free and available to the public to view, edit, and for users with the appropriate skills to contribute to.

- **Link to view Linux Kernel source code**: - https://www.kernel.org/

- Linux Kernel source code is written primarily in C and Assembly language

- Developed by Linus Torvalds on September 17, 1991.

Architecture of Linux Operating System

Linux Basic Commands Categories

Basic commands of Linux can be categorizes into following categories: -

- o *SYSTEM & HARDWARE INFORMATION*

- o *USER INFORMATION AND MANAGEMENT*

- o *FILE AND DIRECTORY COMMANDS*

- o *PROCESS MANAGEMENT*

- o *FILE PERMISSIONS*

- o *NETWORKING*

- o *ARCHIVES (TAR FILES)*

- o *SEARCH*

- o *FILE TRANSFERS*

- o *FILE EDITING AND NAVIGATION INSIDE FILES*

System and Hardware Information

o   uname –a   #Display Linux system information

Linux aa34faf8af0b 3.10.0514.26.2.el7.x86_64 #1 SMP Tue Jul 4 15:04:05 UTC 2017 x86_64 x86_64 x86_64 GNU/Linux

o   uname –r   #Dispaly kernel release information

3.10.0-514.26.2.el7.x86_64

o   uptime   #for how long system has been running

11:56:15 up 14 days, 21:18, 0 users, load average: 23.14, 24.23, 24.68

o   hostname   #gives hostname of the system

root@ubuntu:~# hostname   ubuntu

o   hostname –I   #gives IP address of the Host

78.31.70.238

o   last reboot   #to check when the system has been last rebooted

wtmp begins Sat Sep 9 10:24:23 2017

o   date   #display the date and time

Mon Jan 01 2018 17:17:33 GMT+0530 (India Standard Time)

o   cal   #display current month calendar

o   free   #Display the free and used memory (-h for human readable, -m for MB, -g for GB)

	total	used	free	shared	buff/cache	available
Mem:	263861664	11205028	205258364	1867876	47398272	233338992
Swap:	4194300	1756284	2438016			

User Information and management

○ w   #show who is logged in and what they are doing.

    12:07:00 up 14 days, 21:29, 0 users, load average: 21.66, 24.14, 24.30

    USER   TTY   LOGIN@ IDLE JCPU PCPU WHAT

○ who   #who is logged into the system

    sagar   tty7   2018-02-02 21:34

    sagar   pts/0   2018-02-02 21:35 (:0)

○ whoami   #who are you logged in as

    [2018-01-01 17:41.43] ~

    [SAGAR.workgroup] ➤ whoami

    SAGAR

○ id   #display the current user id and group id

    [2018-01-01 17:41.49] ~

    [SAGAR.workgroup] ➤ id

    uid=1001(SAGAR) gid=513(UsersGrp) groups=1002(HomeUsers),1004(ORA_DBA),559(Performance Log Users),545(Users)

○ last   #who logged in last

    wtmp begins Fri Feb 2 21:53:58 2018

File and directory commands: -

- ls –al   #lists all file in long listed format

- ll   #actually aliased to `ls -l'

- pwd   #shows present working directory

- mkdir directory_name   #creates a new directory

- rmdir directory_name   #deletes an empty directory

- rm –r directory_name   #deletes the directory and its contents

- rm filename   #deletes a file

- cp file1 file2   #copy one file to another

- mv file1 file2   #move a file/ rename a file

- touch filename   #create a new file

- cat filename   #displays the file contents

File permission: -

- There are 3 types of users

    1. User(u)   2. Group(g)   3. Others/ World(o)

- Below are the permissions types
    - *Read= r*
    - *Write= w*
    - *Execute = x*
    - *No access = -*

- Commands to change the permissions of the file:- chmod

    example:- chmod 755 filename

	1/0	1/0	1/0
r =	-	-	-
w =	-	-	-
x =	-	-	-

Example: rwx rwx rwx   chmod 777 filename

Archives (Tar files): -

- o tar -cf archive.tar directory name   # Create tar named archive.tar containing directory.

- o tar -xf archive_name.tar   # Extract the contents from archive.tar.

- o tar -czf archive.tar.gz directory name   # Create a gzip compressed tar file name archive.tar.gz.

- o tar -xzf archive_name.tar.gz   # Extract a gzip compressed tar file.

Directory Navigation: -

o cd ..   # To go up one level of the directory tree. (Change into the parent directory.)

o cd   # Go to the $HOME directory

o cd /etc   # Change to the /etc directory

o cd -   # go back to previous directory (last accessed directory)

Process management : -

- ps   #your currently running processes

- ps –ef   #all the currently running processes on the system

- ps- -ef |grep processname   #process information for process name

- kill pid   #kill a process

- top   #display and manage the top processes

- killall processname   #kill all processes named there

- program &   #start program in the background

- bg   #display stopped or background processes

- fg   #bring the most recent background job to foreground

Networking: -

o   ifconfig   #Displays network interface and ip address

o   ping   #to check given address is alive or not

o   dig domain_name   #display DNS information for domain

o   dig –x IP_Address   #Reverse lookup of IP_Address

o   host domain   #display DNS IP address for domain

o   hostname   #display the hostname

> [2018-01-01 19:06.49] ~
>
> [SAGAR.workgroup] ➤ hostname
>
> workgroup

o   netstat   #Display listening tcp and udp ports and corresponding programs

> –   [SAGAR.workgroup] ➤ netstat
>
> –   Active Connections
>
> –   Proto Local Address   Foreign Address   State
>
> –   TCP   10.10.156.9:4280   hk2sch130022025:https ESTABLISHED
>
> –   TCP   10.10.156.9:4294   sb-in-f188:5228   ESTABLISHED
>
> –   TCP   10.10.156.9:6010   static:https   ESTABLISHED
>
> –   TCP   10.10.156.9:9327   static:https   ESTABLISHED
>
> –   TCP   10.10.156.9:9635   13.75.42.223:https   TIME_WAIT

File Transfers: -

o scp file.txt server:/tmp   # Secure copy file.txt to the /tmp folder on server

o scp server:/var/www/*.html /tmp   # Copy *.html files from server to the local /tmp folder.

o scp -r server:/var/www /tmp   # Copy all files and directories recursively from server to the current system's /tmp folder.

Search: -

- grep "pattern" file   # Search for pattern in file

- grep -r "pattern" directory   # Search recursively for pattern in directory

- locate name   # Find files and directories by name

- find /home/Sagar -name 'prefix*'   # Find files in /home/Sagar that start with "prefix".

- find /home -size +250M   # Find files larger than 250MB in /home

Movement within a file: -

- h, j, k ,l   #left, down, up

- $ #to end of a line

- ^   #to the beginning of a line

- G   #end of a file

- :1   #to the beginning of a file

- :47   #to the given line (here on 47th line)

<u>File Editing</u>: -

o   Most common editor in Linux → vi editor

o   Commands for editing files in vi editor

     o   vi filename   *# to open file in editor (Command mode)*

     o   Press "i"   *# to go in INSERT mode*

     o   double esc   *# moving to command mode*

     o   :w   *#to save changes*

     o   :q   *#to exit*

     o   :q!   *#force exit*

     o   :wq   *#save changes and exit*

File Editing (contd…): -

- o dd   #remove a line

- o 5dd   #remove 5 lines

- o u   #undo last action

- o :s/string   #searching a string in file

- o :s/string/replace   #search and replace a string in current line

- o :%s/string/replace   #search and replace a string in whole file

- o :%s/string/replace/i #search and replace a string in whole file(Case Insensitive)

<u>Disk usages</u>: -

o   df –h   # Show free and used space on mounted filesystems

o   df –l   # Show free and used inodes on mounted filesystems

o   fdisk –l   # Display disks partitions sizes and types

o   du –ah   # Display disk usage for all files and directories in human readable format

o   du –sh   # Display total disk usage off the current directory

THANK YOU