

Linux Command Line

1: System Information

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- ① `uname -a` # Display Linux system information
- ② `uname -r` # Display kernel release information
- ③ `lsb_release -a` # Show which version of Ubuntu installed
- ④ `uptime` # Show how long system has been running
- ⑤ `hostname` # Show system host name
- ⑥ `hostname -I` # Display the IP address of the host
- ⑦ `last reboot` # Show the system reboot history
- ⑧ `date` # Show the current date & time
- ⑨ `cal` # Show this month's calendar
- ⑩ `w` # Display who is online
- ⑪ `whoami` # Who you are logged in as

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2: Hardware Information

- ① `cat /proc/cpuinfo` # Display CPU information
- ② `cat /proc/meminfo` # Display memory information
- ③ `free -h` # Display free & used memory (-h for human readable)
- ④ `lspci -tv` # Display PCI devices
- ⑤ `lsusb -tv` # Display USB devices
- ⑥ `dmi-decode` # Display DMI/SMBIOS (hardware info) from the BIOS
- ⑦ `hdparm -i /dev/sda` # Show info about disk sda
- ⑧ `hdparm -T /dev/sda` # Perform a read speed test on disk sda

3: Performance Monitoring & Statistics

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- ① top # Display & manage the top processes
- ② mpstat1 # Display processor related statistics
- ③ vmstat1 # Display virtual memory statistics
- ④ iostat # Display I/O statistics
- ⑤ tcpdump -i eth0 # Capture & display all packets on interface eth0
- ⑥ tcpdump -i eth0 -port 80 # Monitor all traffic on port 80 (HTTP)
- ⑦ \$ lsof # List all open files on the system
- ⑧ lsof -u user # List all open files by user
- ⑨ free -h # Display free & used memory
- ⑩ watch df -h # Execute "df -h", showing periodic updates

4: User Information & Management

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- ① id # Display the user & group ids of your current user.
- ② last # Display the last user who have logged onto the system.
- ③ who # Show who is logged into the System.
- ④ w # Show who is logged in & what they are doing.
- ⑤ groupadd test # Create a group named "test"
- ⑥ useradd -c "NANDANI NAND" -m NAND # Create an account named "NAND", with a comment of "NANDANI NAND" & create the user's home directory.
- ⑦ userdel NAND # Delete the NAND account.
- ⑧ usermod -aG sales NAND # Add the NAND to the sales group.

5: File & Directory Commands

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- ① ls -al # List all files in a long listing (detailed) format
- ② pwd # Display the present working directory.

- OS/11/2021 (3) mkdir directory # Create a directory named "directory"
- (4) rm file # Remove (delete) file
- (5) rm -r directory # Remove the directory & its contents recursively
- (6) rm -f file # Force removal of the file without prompting for confirmation.
- (7) rm -rf directory # Forcefully remove directory recursively.
- (8) rmfile # delete a file or files
- (9) cp file1 file2 # Copy file1 to file2
- (10) cp -r source_directory destination # Copy source_directory recursively to destination.
If destination exists, copy source_directory into destination, otherwise create destination with the contents of source_directory.
- (11) mv file file2 # Rename one more file i to file2.
If file2 is an existing directory, move file into directory file2.
- (12) ln -s /path/to/file linkname # Create symbolic link to linkname.
- (13) touch file # Create an empty file or update the access & modify time of file.
- (14) cat file # View the content of the file.
- (15) less file # Browse through a text file
- (16) head file # Display the first 10 lines of the file
- (17) tail file # Display the last 10 lines of the file
- (18) tail -f file # Display the last 10 lines of the file & follow the file as it grows.
- (19) lpr # Spool file for line printing
- (20) chgrp # change file group
- (21) more, page # Display file data at your terminal
- (22) file # Determine file type
- (23) vi # GNOME text editor
- (24) gedit # standard text editor.

6: Manipulating Data

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- ① awk # Pattern scanning & processing language
- ② perl # Data manipulation language.
- ③ cmp # Compare content of two files
- ④ paste # Merge file data
- ⑤ sed # Stream text editor
- ⑥ cut # Extract selected fields of each of a file
- ⑦ sort # Sort file data
- ⑧ diff # Differential file comparison
- ⑨ split # Split file into smaller files
- ⑩ expand, unexpand # Expand tabs to spaces, & vice versa
- ⑪ tr # Translate characters
- ⑫ uniq # Report repeated lines in files
- ⑬ join # Join files on some common field
- ⑭ look # Find lines in sorted data
- ⑮ wc # Count words, lines & characters
- ⑯ gzip # Compress file
- ⑰ zmore # File perusal filter for cat viewing of compressed text.
- ⑱ Uncompress # Uncompress files
- ⑲ zcat # Cat a compressed file
- ⑳ gunzip # Uncompress gzipped files
- ㉑ zcmp, zdiff # Compare compressed files.

7: Process Management

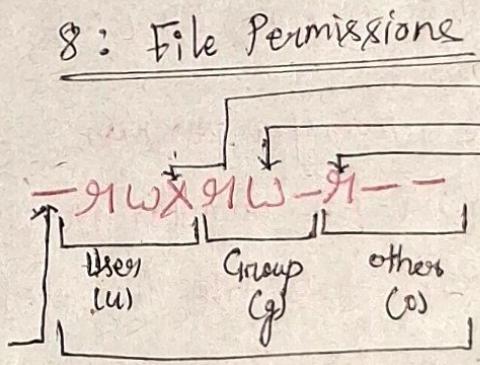
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- ① ps # Display your currently running process
- ② ps -ef # Display all the currently running processes on the system
- ③ ps -ef | grep processname # Display the process information for processname
- ④ top # Display & manage the top processes
- ⑤ htop # Interactive process viewer (top alternative)

- ⑥ kill pid # Kill process with process ID of pid
 ⑦ killall processname # Kill all process named processname
 ⑧ program & # Start program in the background
 ⑨ bg # Display stopped or background jobs
 ⑩ fg # Brings the most recent background job to foreground.
 ⑪ fg n # Brings job onto the foreground.

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File type:
 - → regular file
 d → directory
 c → character device



Execute (x)
 Write (w)
 Read (r)

LEGEND

U	= User
G	= Group
W	= World
r	= read
w	= write
x	= execute
-	= no access

PERMISSION			EXAMPLE		
U	G	W	U	G	W
rwx	rwx	rwx	chmod 777	filename	
rwx	rwx	r-x	chmod 775	filename	
rwx	r-X	r-X	chmod 755	filename	
rwx-	rW-	r--	chmod 664	filename	
rwx-	r1--	r--	chmod 644	filename	

9: Networking

- ① ifconfig -a # Display all network interfaces & ip
 ② ifconfig eth0 # Display eth0 address & details
 ③ ethtool eth0 # Query & Control N/W drivers & setting

- ① ping host # Send ICMP echo request to host
 ⑤ whois domain # Display DNS information for domain
 ⑥ dig domain # Display whois information for domain
 ④ dig -x IPADDRESS # Reverse lookup of IPADDRESS
 ⑧ host domain # Display DNS ip address for domain.
 ⑨ hostname -i # Display the NW address of the host name
 ⑩ hostname -l # Display all local ip address
 ⑪ wget http://domain.com/file # Download http://domain.com/file
 ⑫ netstat -nltsp # Display listening tcp & udp ports & corresponding programs.
 ⑬ ftp # File transfer program
 ⑭ tftp # Trivial file transfer program
 ⑮ sftp # Secure shell file transfer program
 ⑯ ncpt # Remote file copy
 ⑰ scp # Secure shell remote file copy
 ⑱ wget # Non-interactive N/w downloader
 ⑲ telnet # Make terminal connection to another host
 ⑳ ssh # Secure shell terminal exec command connection
 ㉑ rlogin # Remote login to a Linux host
 ㉒ rsh # Remote shell
 ㉓ curl # Transfer data from a url

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10: Archives [TAR files]

- ① tar cf archive.tar directory # Create tar named archive.tar containing directory
 ② tar xf archive.tar # Extract the contents from archive
 • tar -tar czf
 ③ archive.tar.gz directory # Create a gzip compressed tar file
 name archive.tar.gz

- ④ tar xzf archive.tar.gz # Extract a gzip compressed tar file
 ⑤ tar cf archive.tar.bz2 directory # Create a tar file with bzip2
 ⑥ tar xjf archive.tar.bz2 # Extract a bzip2 compressed file

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11: Installing Packages

- ① yum search keyword # Search for a package by keyword
 ② yum install package # Install package
 ③ yum info package # Display description & summary info about package
 ④ rpm -i package.rpm # Install package from local file named package.rpm
 ⑤ yum remove package # Remove / Uninstall package
 ⑥ tar zxvf sourcecode.tar.gz # Install s/w from source code
 cd sourcecode
 ./configure
 make
 make install

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12: Search

- ① grep pattern file # Search for pattern in file
 ② grep -r pattern directory # Search recursively for pattern in directory
 ③ locate name # Find files in directories by name
 ④ find /home/john -name "prefix" # Find the files in /home/john that starts with "prefix".
 ⑤ find /home -size +100M # Find file larger than 100MB in home.

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13: SSH LOGINS

- ① ssh host # Connect to host as your local username
 ② ssh user@host # Connect to host as user
 ③ ssh -p port user@host # Connect to host using port

14: File Transfer

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- ① `scp file.txt server:/tmp` # Secure copy file.txt to the /tmp folder on server
 - ② `scp server:/var/www/*.html /tmp` # Copy *.html files from server to the local /tmp folder.
 - ③ `rsync -a home /backups/` # Synchronize /home to /backups/home
 - ④ `rsync -avz home server:/backups/` # Synchronize files/directories between the local and remote system with compression enabled.

15: DISK USAGE

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- ① `df -h` # Show free & used space on mounted file systems
 - ② `df -i` # Show free & used inodes on mounted file systems
 - ③ `fdisk -l` # Display disks/partition size & types
 - ④ `du -ah` # Display disk usage for all files & directories in human readable format
 - ⑤ `du -sh` # Display total disk usage off the current directory

16: Directory Navigation

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- ① `cd ..` # To go up one level of the directory tree (change into the parent directory)
 - ② `cd` # Go to the \$HOME directory
 - ③ `cd /etc` # Change to /etc directory

17: Programming

- ① `make` # Maintain groups of programs
- ② `size` # Print program's sizes
- ③ `nm` # Print program's name list
- ④ `strip` # Remove symbol-table & relocation bits
- ⑤ `bepp` # Make C++ beautifier
- ⑥ `gcc` # GNU ANSI C compiler

- ⑦ Ctrace # C program debugger
- ⑧ indent # indent & format C program source
- ⑨ cxxref # generate C program cross reference
- ⑩ g++ # GNU C++ compiler