# **Linux Commands In Structured Order**

# **1. SYSTEM**

$ uname -a => Display linux system information

$ uname -r => Display kernel release information (refer uname command in detail)

$ cat /etc/redhat\_release => Show which version of redhat installed

$ uptime => Show how long system running + load (learn uptime command)

$ hostname => Show system host name

$ hostname -i => Display the IP address of the host (all options hostname)

$ last reboot => Show system reboot history (more examples last command)

$ date => Show the current date and time (options of date command)

$ cal => Show this month calendar (what more in cal)

$ w => Display who is online (learn more about w command)

$ whoami => Who you are logged in as (example + sreenshots)

$ finger user => Display information about user (many options of finger command)

# **2. HARDWARE**

$ dmesg => Detected hardware and boot messages (dmesg many more options)

$ cat /proc/cpuinfo => CPU model

$ cat /proc/meminfo => Hardware memory

$ cat /proc/interrupts => Lists the number of interrupts per CPU per I/O device

$ lshw => Displays information on hardware configuration of the system

$ lsblk => Displays block device related information in Linux (sudo yum install util-linux-ng)

$ free -m => Used and free memory (-m for MB) (free command in detail)

$ lspci -tv => Show PCI devices (very useful to find vendor ids)

$ lsusb -tv => Show USB devices (read more lsusb options)

$ lshal => Show a list of all devices with their properties

$ dmidecode => Show hardware info from the BIOS (vendor details)

$ hdparm -i /dev/sda # Show info about disk sda

$ hdparm -tT /dev/sda # Do a read speed test on disk sda

$ badblocks -s /dev/sda # Test for unreadable blocks on disk sda

# **3. STATISTICS**

$ top => Display and update the top cpu processes (30 example options)

$ mpstat 1 => Display processors related statistics (learn mpstat command)

$ vmstat 2 => Display virtual memory statistics (very useful performance tool)

$ iostat 2 => Display I/O statistics (2sec Intervals) (more examples)

$ tail -n 500 /var/log/messages => Last 10 kernel/syslog messages (everyday use tail options)

$ tcpdump -i eth1 => Capture all packets flows on interface eth1 (useful to sort network issue)

$ tcpdump -i eth0 'port 80' => Monitor all traffic on port 80 ( HTTP )

$ lsof => List all open files belonging to all active processes.(sysadmin favorite command)

$ lsof -u testuser => List files opened by specific user

$ free -m => Show amount of RAM (daily usage command)

$ watch df -h => Watch changeable data continuously(interesting linux command)

# **4. USERS**

$ id => Show the active user id with login and group(with screenshot)

$ last => Show last logins on the system (few more examples)

$ who => Show who is logged on the system(real user who logged in)

$ groupadd admin => Add group "admin" (force add existing group)

$ useradd -c "Sam Tomshi" -g admin -m sam => Create user "sam" and add to group "admin"(here read all parameter)

$ userdel sam => Delete user sam (force,file removal)

$ adduser sam => Add user "sam"

$ usermod => Modify user information(mostly useful for linux system admins)

# **5. FILE COMMANDS**

$ ls -al => Display all information about files/ directories(20 examples)

$ pwd => Show current directory path(simple but need every day)

$ mkdir directory-name => Create a directory(create mutiple directory)

$ rm file-name => Delete file(be careful of using rm command)

$ rm -r directory-name => Delete directory recursively

$ rm -f file-name => Forcefully remove file

$ rm -rf directory-name => Forcefully remove directory recursively

$ cp file1 file2 => Copy file1 to file2 (15 cd command examples)

$ cp -r dir1 dir2 => Copy dir1 to dir2, create dir2 if it doesn't exist

$ mv file1 file2 => Move files from one place to another(with 10 examples)

$ ln -s /path/to/file-name link-name => Create symbolic link to file-name (examples)

$ touch file => Create or update file (timestamp change)

$ cat > file => Place standard input into file (15 cat command examples)

$ more file => Output the contents of file (help display long tail files)

$ head file => Output the first 10 lines of file (with different parameters)

$ tail file => Output the last 10 lines of file (detailed article with tail options)

$ tail -f file => Output the contents of file as it grows starting with the last 10 lines

$ gpg -c file => Encrypt file (how to use gpg)

$ gpg file.gpg => Decrypt file

# **6. PROCESS RELATED**

$ ps # Display your currently active processes (many parameters to learn)

$ ps aux | grep 'telnet' # Find all process id related to telnet process

$ pmap # Memory map of process (kernel,user memory etc)

$ top # Display all running processes (30 examples)

$ kill pid # Kill process with mentioned pid id (types of signals)

$ killall proc # Kill all processes named proc

$ pkill processname # Send signal to a process with its name

$ bg # Resumes suspended jobs without bringing them to foreground (bg and fg command)

$ fg # Brings the most recent job to foreground

$ fg n # Brings job n to the foreground

# **7. FILE PERMISSION RELATED**

$ chmod octal file-name # Change the permissions of file to octal , which can be found separately for user, group and world

octal value (more examples)

4 - read

2 - write

1 - execute

Example

$ chmod 777 /data/test.c # Set rwx permission for owner , rwx permission for group, rwx permission for world

$ chmod 755 /data/test.c # Set rwx permission for owner,rx for group and world

$ chown owner-user file # Change owner of the file (chown more examples)

$ chown owner-user:owner-group file-name # Change owner and group owner of the file

$ chown owner-user:owner-group directory # Change owner and group owner of the directory

Example

$ chown bobbin:linoxide test.txt

$ ls -l test.txt

-rw-r--r-- 1 bobbin linoxide 0 Mar 04 08:56 test.txt

# **8. NETWORK**

$ ifconfig -a # Display all network ports and ip address (set mtu and other all options,ifconfig now in deprecated network command)

$ ifconfig eth0 # Display specific ethernet port ip address and details

$ ip addr show # Display all network interfaces and ip address(available in iproute2 package,powerful than ifconfig)

$ ip address add 192.168.0.1 dev eth0 # Set ip address

$ ethtool eth0 # Linux tool to show ethernet status (set full duplex , pause parameter)

$ mii-tool eth0 # Linux tool to show ethernet status (more or like ethtool)

$ ping host # Send echo request to test connection (learn sing enhanced ping tool)

$ whois domain # Get who is information for domain

$ dig domain # Get DNS information for domain (screenshots with other available parameters)

$ dig -x host # Reverse lookup host

$ host google.com # Lookup DNS ip address for the name (8 examples of host command)

$ hostname -i # Lookup local ip address (set hostname too)

$ wget file # Download file (very useful other option)

$ netstat -tupl # Listing all active listening ports(tcp,udp,pid) (13 examples)

# **9. COMPRESSION / ARCHIVES**

$ tar cf home.tar home # Create tar named home.tar containing home/ (11 tar examples)

$ tar xf file.tar # Extract the files from file.tar

$ tar czf file.tar.gz files # Create a tar with gzip compression

$ gzip file # Compress file and renames it to file.gz (untar gzip file)

# **10. INSTALL PACKAGE**

**REDHAT family(single package)**

$ sudo rpm -i pkgname.rpm # Install rpm based package (Installing, Uninstalling, Updating, Querying ,Verifying)

$ sudo rpm -e pkgname # Remove package

**REDHAT family(Package with dependency from internet)**

$ sudo yum install package-name  #Install with dep

$ sudo yum remove package-name # Remove package

**UBUNTU/DEBIAN**

$ sudo dpkg -i package-name #Install deb pack

$ sudo dpkg -e package-name #Remove deb pack

**UBUNTU/Debian(Package with dependency from internet)**

$ sudo apt-get install package-name #Install with dep

$ sudo apt-get remove package-name #Remove deb pack

**Install from source**

./configure

make

make install (what it is)

# **11. SEARCH**

$ grep pattern files # Search for pattern in files (you will this command often)

$ grep -r pattern dir # Search recursively for pattern in dir

$ locate file # Find all instances of file

$ find /home/tom -name 'index\*' # Find files names that start with "index"(10 find examples)

$ find /home -size +10000k # Find files larger than 10000k in /home

# **12. LOGIN (SSH AND TELNET)**

$ ssh user@host # Connect to host as user (secure data communication command)

$ ssh -p port user@host # Connect to host using specific port

$ telnet host # Connect to the system using telnet port

# **13. FILE TRANSFER**

scp

$ scp file.txt server2:/tmp # Secure copy file.txt to remote host /tmp folder

$ scp nixsavy@server2:/www/\*.html /www/tmp # Copy \*.html files from remote host to current system /www/tmp folder

$ scp -r nixsavy@server2:/www /www/tmp # Copy all files and folders recursively from remote server to the current system /www/tmp folder

rsync

$ rsync -a /home/apps /backup/ # Synchronize source to destination

$ rsync -avz /home/apps linoxide@192.168.10.1:/backup # Synchronize files/directories between the local and remote system with compression enabled

# **14. DISK USAGE**

$ df -h # Show free space on mounted filesystems(commonly used command)

$ df -i # Show free inodes on mounted filesystems

$ fdisk -l # Show disks partitions sizes and types(fdisk command output)

$ du -ah # Display disk usage in human readable form (command variations)

$ du -sh # Display total disk usage on the current directory

$ findmnt # Displays target mount point for all filesystem (refer type,list,evaluate output)

$ mount device-path mount-point # Mount a device

# **15. DIRECTORY TRAVERSE**

$ cd .. # To go up one level of the directory tree(simple & most needed)

$ cd # Go to $HOME directory

$ cd /test # Change to /test directory

# **16. Services**

$ sudo service apache2 start # Starts apache2 on ubuntu

$ sudo service httpd start # Starts apache2 on Redhat

$ sudo service httpd stop

$ sudo service httpd restart # Restart services

$ sudo service httpd reload # Reload conf

$ chkconfig httpd on # starts httpd at boot time

$ chkconfig httpd off # stops httpd at boot time