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 (or use -u) 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
```