

LINUX COMMANDS CHEAT SHEET

SYSTEM

#uname -a =>Display linux system information
#uname -r =>isplay kernel release information
#uptime =>Show how long the system has been running + load
#hostname =>Show system host name
#hostname -i =>Display the IP address of the host
#last reboot =>Show system reboot history
#date =>Show the current date and time
#cal =>Show this month calendar
#w =>Display who is online
#whoami =>Who you are logged in as
#finger user =>Display information about user

HARDWARE

#dmesg =>Detected hardware and boot messages
#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
#free -m =>Used and free memory (-m for MB)
#lspci -tv =>Show PCI devices
#lsusb -tv =>Show USB devices
#dmidecode =>Show hardware info from the BIOS
#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

USERS

#id =>Show the active user id with login and group
#last =>Show last logins on the system
#who =>Show who is logged on the system
#groupadd admin =>Add group "admin"
#useradd -c "Sam Tomshi" =>g admin -m sam #Create user "sam"
#userdel sam =>Delete user sam
#adduser sam =>Add user "sam"
#usermod =>Modify user information

FILE COMMANDS

#ls -al =>Display all information about files/ directories
#pwd =>Show the path of current directory
#mkdir directory-name =>Create a directory
#rm file-name =>Delete file
#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
#cp -r dir1 dir2 =>Copy dir1 to dir2, create dir2 if it doesn't exist
#mv file1 file2 =>Rename source to dest / move source to directory
#ln -s /path/to/file-name link-name #Create symbolic link to file-name
#touch file =>Create or update file
#cat > file =>Place standard input into file
#more file =>Output contents of file
#head file =>Output first 10 lines of file
#tail file =>Output last 10 lines of file
#tail -f file =>Output contents of file as it grows starting with the last 10 lines
#gpg -c file =>Encrypt file
#gpg file.gpg =>Decrypt file
#wc =>print the number of bytes, words, and lines in files
#xargs =>Execute command lines from standard input

PROCESS RELATED

#ps =>Display your currently active processes
#ps aux | grep 'telnet' =>Find all process id related to telnet process
#pmap =>Memory map of process
#top =>Display all running processes
#killpid =>Kill process with mentioned pid
#killall proc =>Kill all processes named proc
#pkill process-name =>Send signal to a process with its name
#bg =>Lists stopped or background jobs
#fg =>Brings the most recent job to foreground
#fg n =>Brings job n to the foreground

FILE PERMISSION RELATED

#chmod octal file-name =>Change the permissions of file to octal
Example
#chmod 777 /data/test.c =>Set rwx permission for owner,group,world
#chmod 755 /data/test.c =>Set rwx permission for owner,rw for group and world
#chown owner-user file =>Change owner of the file
#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

NETWORK

#ifconfig -a =>Display all network ports and ip address
#ifconfig eth0 =>Display specific ethernet port
#ethtool eth0 =>Linux tool to show ethernet status
#mii-tool eth0 =>Linux tool to show ethernet status
#ping host =>Send echo request to test connection
#whois domain =>Get who is information for domain
#dig domain =>Get DNS information for domain
#dig -x host =>Reverse lookup host
#host google.com =>Lookup DNS ip address for the name
#hostname -i =>Lookup local ip address
#wget file =>Download file
#netstat -tupl =>List active connections to / from system

COMPRESSION / ARCHIVES

#tar cf home.tar home =>Create tar named home.tar containing home/
#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

INSTALL PACKAGE

#rpm -i pkgname.rpm =>Install rpm based package
#rpm -e pkgname =>Remove package

INSTALL FROM SOURCE

#!/configure
#make
#make install

SEARCH

#grep pattern files =>Search for pattern in files
#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"
#find /home -size +1000k =>Find files larger than 1000k in /home

LOGIN (SSH AND TELNET)

#ssh user@host =>Connect to host as user
#ssh -p port user@host =>Connect to host using specific port
#telnet host =>Connect to the system using telnet port

FILE TRANSFER

scp
#scp file.txt server2:/tmp =>Secure copy file.txt to remote host /tmp folder
rsync
#rsync -a /home/apps /backup/ =>Synchronize source to destination

DISK USAGE

#df -h =>Show free space on mounted filesystems
#df -i =>Show free inodes on mounted filesystems
#disk -l =>Show disks partitions sizes and types
#du -ah =>Display disk usage in human readable form
#du -sh =>Display total disk usage on the current directory

DIRECTORY TRAVERSE

#cd .. =>To go up one level of the directory tree
#cd =>Go to \$HOME directory
#cd /test =>Change to /test directory



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1 – SYSTEM INFORMATION

```
# Display Linux system information
uname -a
```

```
# Display kernel release information
uname -r
```

```
# Show which version of redhat installed
cat /etc/redhat-release
```

```
# Show how long the system has been running + load
uptime
```

```
# Show system host name
hostname
```

```
# Display the IP addresses of the host
hostname -I
```

```
# Show system reboot history
last reboot
```

```
# Show the current date and time
date
```

```
# Show this month's calendar  
cal
```

```
# Display who is online  
w
```

```
# Who you are logged in as  
whoami
```

2 – HARDWARE INFORMATION

```
# Display messages in kernel ring buffer  
dmesg
```

```
# Display CPU information  
cat /proc/cpuinfo
```

```
# Display memory information  
cat /proc/meminfo
```

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

```
# Display PCI devices  
lspci -tv
```

```
# Display USB devices  
lsusb -tv
```

```
# Display DMI/SMBIOS (hardware info) from the BIOS  
dmidecode
```

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

```
# Perform a read speed test on disk sda  
hdparm -tT /dev/sda
```

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

3 – PERFORMANCE MONITORING AND STATISTICS

```
# Display and manage the top processes  
top
```

```
# Interactive process viewer (top alternative)  
htop
```

```
# Display processor related statistics  
mpstat 1
```

```
# Display virtual memory statistics  
vmstat 1
```

```
# Display I/O statistics  
iostat 1
```

```
# Display the last 100 syslog messages (Use  
/var/log/syslog for Debian based systems.)  
tail 100 /var/log/messages
```

```
# Capture and display all packets on interface eth0  
tcpdump -i eth0
```

```
# Monitor all traffic on port 80 ( HTTP )  
tcpdump -i eth0 'port 80'
```

```
# List all open files on the system  
lsof
```

```
# List files opened by user  
lsof -u user
```

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

```
# Execute "df -h", showing periodic updates  
watch df -h
```

4 – USER INFORMATION AND MANAGEMENT

```
# Display the user and group ids of your current user.
id

# Display the last users who have logged onto the system.
last

# Show who is logged into the system.
who

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

# Create a group named "test".
groupadd test

# Create an account named john, with a comment of "John
Smith" and create the user's home directory.
useradd -c "John Smith" -m john

# Delete the john account.
userdel john

# Add the john account to the sales group
usermod -aG sales john
```

5 – FILE AND DIRECTORY COMMANDS

```
# List all files in a long listing (detailed) format
ls -al

# Display the present working directory
pwd

# Create a directory
mkdir directory

# Remove (delete) file
rm file
```

```
# Remove the directory and its contents recursively
rm -r directory

# Force removal of file without prompting for
confirmation
rm -f file

# Forcefully remove directory recursively
rm -rf directory

# Copy file1 to file2
cp file1 file2

# Copy source_directory recursively to destination. If
destination exists, copy source_directory into
destination, otherwise create destination with the
contents of source_directory.
cp -r source_directory destination

# Rename or move file1 to file2. If file2 is an existing
directory, move file1 into directory file2
mv file1 file2

# Create symbolic link to linkname
ln -s /path/to/file linkname

# Create an empty file or update the access and
modification times of file.
touch file

# View the contents of file
cat file

# Browse through a text file
less file

# Display the first 10 lines of file
head file

# Display the last 10 lines of file
tail file
```

```
# Display the last 10 lines of file and "follow" the file
as it grows.
tail -f file
```

6 – PROCESS MANAGEMENT

```
# Display your currently running processes
ps
```

```
# Display all the currently running processes on the
system.
ps -ef
```

```
# Display process information for processname
ps -ef | grep processname
```

```
# Display and manage the top processes
top
```

```
# Interactive process viewer (top alternative)
htop
```

```
# Kill process with process ID of pid
kill pid
```

```
# Kill all processes named processname
killall processname
```

```
# Start program in the background
program &
```

```
# Display stopped or background jobs
bg
```

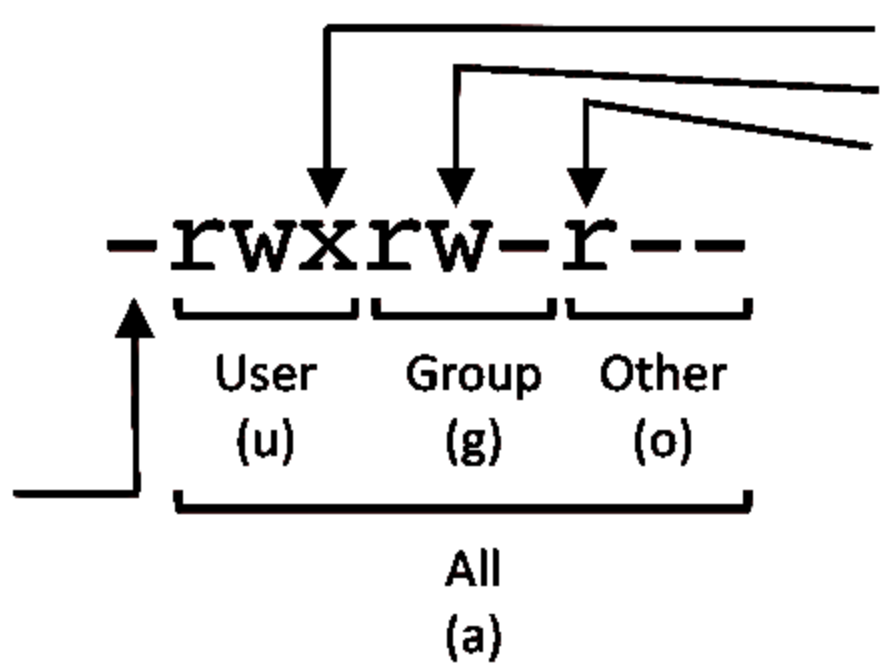
```
# Brings the most recent background job to foreground
fg
```

```
# Brings job n to the foreground
fg n
```

7 – FILE PERMISSIONS

File type:

- → regular file
d → directory



PERMISSION

EXAMPLE

U G W
rwx rwx rwx
rwx rwx r-x
rwx r-x r-x
rw- rw- r--
rw- r-- r--

chmod 777 filename
chmod 775 filename
chmod 755 filename
chmod 664 filename
chmod 644 filename

NOTE: Use 777 sparingly!

LEGEND

U = User
G = Group
W = World

r = Read
w = write
x = execute
- = no access

8 – NETWORKING

Display all network interfaces and ip address
ifconfig -a


```
# Display eth0 address and details
ifconfig eth0

# Query or control network driver and hardware settings
ethtool eth0

# Send ICMP echo request to host
ping host

# Display whois information for domain
whois domain

# Display DNS information for domain
dig domain

# Reverse lookup of IP_ADDRESS
dig -x IP_ADDRESS

# Display DNS ip address for domain
host domain

# Display the network address of the host name.
hostname -i

# Display all local ip addresses
hostname -I

# Download http://domain.com/file
wget http://domain.com/file

# Display listening tcp and udp ports and corresponding
programs
netstat -nutlp
```

9 – ARCHIVES (TAR FILES)

```
# Create tar named archive.tar containing directory.
tar cf archive.tar directory

# Extract the contents from archive.tar.
```

```
tar xf archive.tar
```

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

```
# Extract a gzip compressed tar file.  
tar xzf archive.tar.gz
```

```
# Create a tar file with bzip2 compression  
tar cjf archive.tar.bz2 directory
```

```
# Extract a bzip2 compressed tar file.  
tar xjf archive.tar.bz2
```

10 – INSTALLING PACKAGES

```
# Search for a package by keyword.  
yum search keyword
```

```
# Install package.  
yum install package
```

```
# Display description and summary information about  
package.  
yum info package
```

```
# Install package from local file named package.rpm  
rpm -i package.rpm
```

```
# Remove/uninstall package.  
yum remove package
```

```
# Install software from source code.  
tar zxvf sourcecode.tar.gz  
cd sourcecode  
./configure  
make  
make install
```

11 – SEARCH

```
# Search for pattern in file  
grep pattern file
```

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

```
# Find files and directories by name
locate name
```

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

```
# Find files larger than 100MB in /home
find /home -size +100M
```

12 – SSH LOGINS

```
# Connect to host as your local username.
ssh host
```

```
# Connect to host as user
ssh user@host
```

```
# Connect to host using port
ssh -p port user@host
```

13 – FILE TRANSFERS

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

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

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

```
# Synchronize /home to /backups/home
rsync -a /home /backups/
```

```
# Synchronize files/directories between the local and
remote system with compression enabled
rsync -avz /home server:/backups/
```

14 – DISK USAGE

```
# Show free and used space on mounted filesystems
df -h
```

```
# Show free and used inodes on mounted filesystems
df -i
```

```
# Display disks partitions sizes and types
fdisk -l
```

```
# Display disk usage for all files and directories in
human readable format
du -ah
```

```
# Display total disk usage off the current directory
du -sh
```

15 – DIRECTORY NAVIGATION

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

```
# Go to the $HOME directory
cd
```

```
# Change to the /etc directory
cd /etc
```