Linux Commands

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These are some of the basic linux commands for every distribution of linux

SYSTEM INFORMATION

* Display Linux system information
  uname -a
* Display kernel release information
  uname -r
* Show which version of Red Hat installed
  cat /etc/redhat-release
* Show how long the system has been running + load
  uptime
* Show system host name
  hostname
* Display all local 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

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

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

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

FILE AND DIRECTORY COMMANDS

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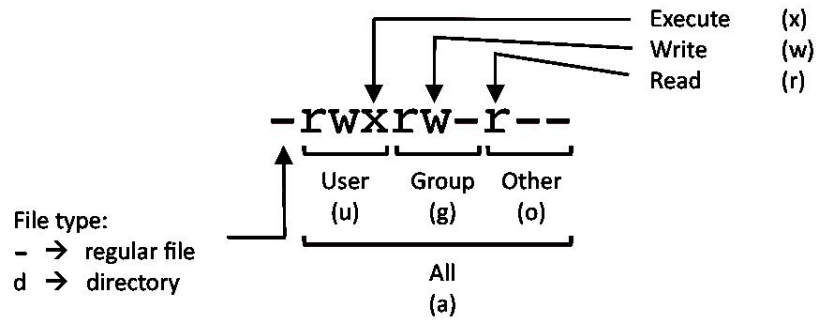   **ls -al**

* 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

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

FILE PERMISSIONS

```
          ┌─────────────── Execute  (x)
          │   ┌─────────── Write    (w)
          │   │ ┌───────── Read     (r)
          ▼   ▼ ▼
       -rwxrw-r--
     ▲  └─┘ └─┘ └─┘
     │  User Group Other
     │  (u)  (g)   (o)
File type:
-  →  regular file
d  →  directory      All
                     (a)
```

   PERMISSION   EXAMPLE

   U   G   W
   rwx rwx rwx   chmod 777 filename
   rwx rwx r-x   chmod 775 filename
   rwx r-x r-x   chmod 755 filename
   rw- rw- r--   chmod 664 filename
   rw- r-- r--   chmod 644 filename

* NOTE: Use 777 sparingly!

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

NETWORKING

* Display all network interfaces and IP address
     ip a

* Display eth0 address and details
     ip addr show dev 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 of the host.
    hostname -I

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

* Display listening tcp and udp ports and corresponding programs
    netstat -nutlp

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

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

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

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

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/

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

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