QUICK REFERENCE GUIDE
LINUX COMMANDS

“GUIDE FOR LINUX COMMANDS”
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## 1-SYSTEM

- `uname -a`  # Display linux system information
- `uname -r`  # Display kernel release information
- `cat /etc/redhat_release`  # Show which version of redhat installed
- `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

## 2-HARDWARE

- `dmesg`  # Detected hardware and boot messages
- `cat /proc/cpuinfo`  # CPU model
- `cat /proc/meminfo`  # Hardware memory
- `free -m`  # Used and free memory (-m for MB)
- `lspci -tv`  # Show PCI devices
- `lsusb -tv`  # Show USB devices
- `lshal`  # Show a list of all devices with their properties
- `dmidecode`  # Show DMI/SMBIOS: hw 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

## 3-STATISTICS

- `top`  # Display and update the top cpu processes
- `mpstat 1`  # Display processors related statistics
- `vmstat 2`  # Display virtual memory statistics
- `iostat 2`  # Display I/O statistics (2sec Intervals)
- `tail -n 500 /var/log/messages`  # Last 10 kernel/syslog messages
# tcpdump -i eth1
# tcpdump -i eth0 'port 80'
# lsof
# lsof -u testuser
# free -m
# watch df -h

# Capture all packets flows on interface eth1
# Monitor all traffic on port 80 (HTTP)
# List all open files belonging to all active processes.
# List files opened by specific user
# Show amount of RAM
# Watch changeable data continuously

## 4-USERS

<table>
<thead>
<tr>
<th>Command</th>
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</tr>
</thead>
<tbody>
<tr>
<td># id</td>
<td># id</td>
</tr>
<tr>
<td># last</td>
<td># last</td>
</tr>
<tr>
<td># who</td>
<td># who</td>
</tr>
<tr>
<td># groupadd admin</td>
<td># groupadd admin</td>
</tr>
<tr>
<td># useradd -c &quot;Sam Tomshi&quot; -g admin -m sam</td>
<td># useradd -c &quot;Sam Tomshi&quot; -g admin -m sam</td>
</tr>
<tr>
<td># userdel sam</td>
<td># userdel sam</td>
</tr>
<tr>
<td># adduser sam</td>
<td># adduser sam</td>
</tr>
<tr>
<td># usermod</td>
<td># usermod</td>
</tr>
</tbody>
</table>

## 5-FILE COMMANDS

<table>
<thead>
<tr>
<th>Command</th>
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</thead>
<tbody>
<tr>
<td># ls -al</td>
<td># Display all information about files/directories</td>
</tr>
<tr>
<td># pwd</td>
<td># Show the path of current directory</td>
</tr>
<tr>
<td># mkdir directory-name</td>
<td># Create a directory</td>
</tr>
<tr>
<td># rm file-name</td>
<td># Delete file</td>
</tr>
<tr>
<td># rm -r directory-name</td>
<td># Delete directory recursively</td>
</tr>
<tr>
<td># rm -f file-name</td>
<td># Forcefully remove file</td>
</tr>
<tr>
<td># rm -rf directory-name</td>
<td># Forcefully remove directory recursively</td>
</tr>
<tr>
<td># cp file1 file2</td>
<td># Copy file1 to file2</td>
</tr>
<tr>
<td># cp -r dir1 dir2</td>
<td># Copy dir1 to dir2, create dir2 if it doesn’t exist</td>
</tr>
<tr>
<td># mv file1 file2</td>
<td># Rename or move file1 to file2. If file2 is an existing directory, move file1 into directory file2</td>
</tr>
<tr>
<td># ln -s /path/to/file-name link-name</td>
<td># Create symbolic link to file-name</td>
</tr>
<tr>
<td># touch file</td>
<td># Create or update file</td>
</tr>
<tr>
<td># cat &gt; file</td>
<td># Place standard input into file</td>
</tr>
<tr>
<td># more file</td>
<td># Output the contents of file</td>
</tr>
<tr>
<td># head file</td>
<td># Output the first 10 lines of file</td>
</tr>
</tbody>
</table>
# tail file  # Output the last 10 lines of file
# tail -f file  # Output the contents of file as it grows starting with the last 10 lines
# gpg -c file  # Encrypt file
# gpg file.gpg  # Decrypt file

6-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
# kill pid  # Kill process with mentioned pid id
# killall proc  # Kill all processes named proc
# bg  # Lists stopped or background jobs
# 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
4 - read
2 – write
1 – execute
Example
# chmod 777 /data/test.c  # Shows rwx permission for owner,rwx permission for group, rwx permission for world
# chmod 755 /data/test.c  # Shows 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

Example:

# chown bobbin:expertsgroup test.txt
# ls -l test.txt
-rw-r--r-- 1 bobbin expertsgroup 0 Mar 04 08:56 test.txt
## 8-NETWORK

- `# ifconfig -a` # Display all network ports and ip address
- `# ifconfig eth0` # Display specific ethernet port ip address and details
- `# 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

## 9-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
- `# tar xzf file.tar.gz` # Extract a tar using gzip
- `# tar cjf file.tar.bz2 -` # Create a tar with bzip2 compression
- `# gzip file` # Compress file and renames it to file.gz

## 10-INSTALL PACKAGE

- `# rpm -I pkgname.rpm` # Install rpm based package
- `# rpm -e pkgname` # Remove package
- Install from source
  - `./configure`
  - `make`
  - `make install`

## 11-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 +10000k` # Find files larger than 10000k in /home
### 12-LOGIN (SSH AND TELNET)

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code># ssh user@host</code></td>
<td>Connect to host as user</td>
</tr>
<tr>
<td><code># ssh -p port user@host</code></td>
<td>Connect to host using specific port</td>
</tr>
<tr>
<td><code># telnet host</code></td>
<td>Connect to the system using telnet port</td>
</tr>
</tbody>
</table>

### 13-FILE TRANSFER

<table>
<thead>
<tr>
<th>Command</th>
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</tr>
</thead>
<tbody>
<tr>
<td><code>scp</code></td>
<td>Secure copy file.txt to remote host /tmp folder</td>
</tr>
<tr>
<td><code># scp file.txt server2:/tmp</code></td>
<td></td>
</tr>
<tr>
<td><code># scp nixsavy@server2:/www/*.html /www/tmp</code></td>
<td>Copy *.html files from remote host to current system /www/tmp folder</td>
</tr>
<tr>
<td><code># scp -r nixsavy@server2:/www /www/tmp</code></td>
<td>Copy all files and folders recursively from remote server to the current system /www/tmp folder</td>
</tr>
<tr>
<td><code>rsync</code></td>
<td>Synchronize source to destination</td>
</tr>
<tr>
<td><code># rsync -a /home/apps /backup/</code></td>
<td></td>
</tr>
<tr>
<td><code># rsync -avz /home/apps expertslogin@192.168.10.1:/backup</code></td>
<td>Synchronize files/directories between the local and remote system with compression enabled</td>
</tr>
</tbody>
</table>

### 14-DISK USAGE

<table>
<thead>
<tr>
<th>Command</th>
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</tr>
</thead>
<tbody>
<tr>
<td><code># df -h</code></td>
<td>Show free space on mounted filesystems</td>
</tr>
<tr>
<td><code># df -i</code></td>
<td>Show free inodes on mounted filesystems</td>
</tr>
<tr>
<td><code>fdisk -l</code></td>
<td>Show disks partitions sizes and types (run as root)</td>
</tr>
<tr>
<td><code># du -ah</code></td>
<td>Display disk usage in human readable form</td>
</tr>
<tr>
<td><code># du -sh</code></td>
<td>Display total disk usage on the current directory</td>
</tr>
</tbody>
</table>

### 15-DIRECTORY TRAVERSE

<table>
<thead>
<tr>
<th>Command</th>
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</tr>
</thead>
<tbody>
<tr>
<td><code># cd ..</code></td>
<td>To go up one level of the directory tree</td>
</tr>
<tr>
<td><code># cd</code></td>
<td>Go to $HOME directory</td>
</tr>
<tr>
<td><code># cd /test</code></td>
<td>Change to /test directory</td>
</tr>
</tbody>
</table>