**Hardware Information Commands**

Hardware information commands help provide insight into various hardware devices on the system. Use these commands to check [hardware](https://phoenixnap.com/glossary/what-is-hardware) information and see hardware device statuses.

| **Command** | **Description** |
| --- | --- |
| **lscpu** | See [CPU](https://phoenixnap.com/glossary/cpu-definition) information. |
| **lsblk** | See information about [block devices](https://phoenixnap.com/glossary/block-device). |
| **lspci -tv** | [Show PCI devices](https://phoenixnap.com/kb/lspci-command) (graphics card, network card, etc.) in a tree-like diagram. |
| **lsusb -tv** | Display USB devices in a tree-like diagram. |
| **lshw** | List hardware configuration information. |
| **cat /proc/cpuinfo** | Show detailed CPU information. |
| **cat /proc/meminfo** | View detailed system memory information. |
| **cat /proc/mounts** | See mounted [file systems](https://phoenixnap.com/kb/linux-file-system). |
| **free -h** | Display [free and used memory](https://phoenixnap.com/kb/free-linux-command). |
| **sudo dmidecode** | Show hardware information from the [BIOS](https://phoenixnap.com/glossary/basic-input-output-system-bios). |
| **hdparm -i /dev/[device\_name]** | Display disk data information. |
| **hdparm -tT /dev/[device\_name]** | Conduct a read speed test on the device/disk. |
| **badblocks -s /dev/[device\_name]** | Test for unreadable blocks on the device/disk. |
| **fsck /dev/[device\_name]** | [Run a disk check](https://phoenixnap.com/kb/fsck-command-linux) on an unmounted disk or partition. |

**Searching Commands**

Linux offers various commands to search for files, directories, and text. Use these commands to search for files and directories on the system and filter the search using various patterns.

| **Command** | **Description** |
| --- | --- |
| **find [path] -name [search\_pattern]** | [Find files and directories](https://phoenixnap.com/kb/guide-linux-find-command) that match the specified pattern in a specified location. |
| **find [path] -size [+100M]** | See files and directories larger than a specified size in a directory. |
| **grep [search\_pattern] [file\_name]** | [Search for a specific pattern](https://phoenixnap.com/kb/grep-multiple-strings) in a [file](https://phoenixnap.com/glossary/what-is-a-file) with [grep](https://phoenixnap.com/kb/grep-command-linux-unix-examples). |
| **grep -r [search\_pattern] [directory\_name]** | Recursively search for a pattern in a directory. |
| **locate [name]** | [Locate all files and directories](https://phoenixnap.com/kb/locate-command-in-linux) related to a particular name. |
| **which [command]** | [Search the command path](https://phoenixnap.com/kb/which-command-linux) in the **$PATH** environment variable. |
| **whereis [command]** | Use the [whereis command](https://phoenixnap.com/kb/whereis-command-linux" \t "_blank) to find the source, binary, and manual page for a command. |
| **awk '[search\_pattern] {print $0}' [file\_name]** | [Print all lines matching a pattern](https://phoenixnap.com/kb/awk-command-in-linux) in a file. See also the [gawk command](https://phoenixnap.com/kb/gawk-linux), the [GNU](https://phoenixnap.com/glossary/what-is-gnu) version of **awk**. |
| **sed 's/[old\_text]/[new\_text]/' [file\_name]** | [Find and replace text](https://phoenixnap.com/kb/sed-replace) in a specified file. |

**File Commands**

File commands help with file and directory management on the system. Create, delete, move, and modify files and directories from the terminal using the commands in the following table.

| **Command** | **Description** |
| --- | --- |
| **mkdir [directory\_name]** | [Create a new directory](https://phoenixnap.com/kb/create-directory-linux-mkdir-command). |
| **rm [file\_name]** | [Remove a file](https://phoenixnap.com/kb/how-to-remove-files-directories-linux-command-line). |
| **rm -r [directory\_name]** | Remove a directory recursively. |
| **rm -rf [directory\_name]** | Recursively remove a directory without requiring confirmation. |
| **cp [source\_file] [destination\_file]** | [Copy the contents of one file](https://phoenixnap.com/kb/how-to-copy-files-directories-linux) to another file using the [cp command](https://phoenixnap.com/kb/cp-command). |
| **cp -r [source\_directory] [destination\_directory]** | Recursively copy a directory to a second directory. |
| **mv [source\_file] [destination\_file]** | [Move or rename files](https://phoenixnap.com/kb/mv-command-linux) or directories. |
| **ln -s [path]/[file\_name] [link\_name]** | [Create a symbolic link](https://phoenixnap.com/kb/symbolic-link-linux) to a file. |
| **touch [file\_name]** | Create a new file using [touch](https://phoenixnap.com/kb/touch-command-in-linux). |
| **cat [file\_name]** | [Show the contents of a file](https://phoenixnap.com/kb/linux-cat-command). |
| **cat [source\_file] >> [destination\_file]** | Append file contents to another file. |
| **head [file\_name]** | Show the first ten lines of a file. |
| **tail [file\_name]** | Show the last ten lines of a file with the [tail command](https://phoenixnap.com/kb/linux-tail). |
| **more [file\_name]** | Display contents of a file page by page. |
| **less [file\_name]** | Show the contents of a file with navigation using the [less command](https://phoenixnap.com/kb/less-command-in-linux). |
| **nano [file\_name]** | Open or create a file using the [nano text editor](https://phoenixnap.com/kb/use-nano-text-editor-commands-linux). |
| **vi [file\_name]** **vim [file\_name]** | Open or create a file using the [Vi/Vim text editor](https://phoenixnap.com/kb/vim-commands-cheat-sheet). |
| **gpg -c [file\_name]** | Encrypt a file. |
| **gpg [file\_name].gpg** | Decrypt an encrypted *.gpg* file. |
| **wc -w [file\_name]** | Show the number of words, lines, and bytes in a file using [wc](https://phoenixnap.com/kb/wc-linux" \t "_blank). |
| **ls | xargs wc** | List the number of lines/words/characters in each file in a directory with the [xargs command](https://phoenixnap.com/kb/xargs-command" \t "_blank). |
| **cut -d [delimiter] [file\_name]** | [Cut a section of a file](https://phoenixnap.com/kb/linux-cut) and print the result to standard output. |
| **[data] | cut -d [delimiter]** | Cut a section of piped data and print the result to standard output. |
| **shred -u [file\_name]** | [Overwrite a file](https://phoenixnap.com/kb/shred-linux) to prevent its recovery, then delete it. |
| **diff [first\_file] [second\_file]** | [Compare two files](https://phoenixnap.com/kb/linux-diff) and display differences. |
| **source [file\_name]** | [Read and execute the file content](https://phoenixnap.com/kb/linux-source-command) in the current shell. |
| **[command] | tee [file\_name] >/dev/null** | [Store the command output in a file](https://phoenixnap.com/kb/linux-tee) and skip the terminal output. |

**Directory Navigation Commands**

Directory navigation commands provide shortcuts to navigate to the desired location quickly. Below are several crucial shortcuts to remember when navigating directories in Linux through the terminal.

| **Directory Navigation Commands** | **Description** |
| --- | --- |
| **ls** | [List files and directories](https://phoenixnap.com/kb/linux-ls-commands) in the current directory. |
| **ls -a** | List all files and directories in the current directory ([shows hidden files](https://phoenixnap.com/kb/show-hidden-files-linux)). |
| **ls -l** | List files and directories in long format. |
| **pwd** | [Show the directory](https://phoenixnap.com/kb/pwd-linux) you are currently working in. |
| **cd** **cd ~** | [Change directory](https://phoenixnap.com/kb/linux-cd-command) to **$HOME**. |
| **cd ..** | Move up one directory level. |
| **cd -** | Change to the previous directory. |
| **cd [directory\_path]** | Change location to a specified directory. |
| **dirs** | Show current directory stack. |

**File Compression Commands**

Archive and compress files to save space on your system and organize your data. There are various compression formats available on Linux, and the table below shows the most commonly used file compression commands.

| **Command** | **Description** |
| --- | --- |
| **tar cf [archive.tar] [file/directory]** | Archive an existing file or directory. |
| **tar xf [archive.tar]** | [Extract an archived file](https://phoenixnap.com/kb/extract-tar-gz-files-linux-command-line#htoc-using-tar-utility). |
| **tar czf [archive.tar.gz]** | Create a *.gz* compressed tar archive. |
| **gzip [file\_name]** **gunzip [file\_name.gz]** | [Compress](https://phoenixnap.com/glossary/file-compression) or decompress *.gz* files. |
| **bzip2 [file\_name]** **bunzip2 [file\_name.bz2]** | Compress or [decompress .bz2 files](https://phoenixnap.com/kb/bz2-unzip). |

**File Transfer Commands**

Depending on the transfer method and protocol, Linux has various file transfer commands. Use these commands to quickly transfer files between two remote machines or to download files from web servers.

| **Command** | **Description** |
| --- | --- |
| **scp [source\_file] [user]@[remote\_host]:[destination\_path]** | Copy a file to a server directory securely using the [Linux scp command](https://phoenixnap.com/kb/linux-scp-command). |
| **rsync -a [source\_directory] [user]@[remote\_host]:[destination\_directory]** | Synchronize the contents of a directory with a backup directory using the [rsync command](https://phoenixnap.com/kb/rsync-command-linux-examples" \t "_blank). |
| **wget [link]** | Download files from [FTP](https://phoenixnap.com/glossary/what-is-ftp) or web servers via the [wget command](https://phoenixnap.com/kb/wget-command-with-examples" \t "_blank). |
| **curl -O [link]** | Transfer data to or from a server with various protocols using the [curl command](https://phoenixnap.com/kb/curl-command). |
| **ftp [remote\_host]** | Transfer files between local and remote systems interactively using FTP. |
| **sftp [user]@[remote\_host]** | Securely transfer between local and remote hosts using [SFTP](https://phoenixnap.com/kb/what-is-sftp). |

**User and Group Commands**

Linux is a multiuser system, and there are various commands to add, modify, remove, and manage users and groups. The table below outlines the critical user and group commands.

| **Command** | **Description** |
| --- | --- |
| **id** | See details about the active users. |
| **last** | Show the last system logins. |
| **who** | Display who is currently logged into the system with the [who command](https://phoenixnap.com/kb/linux-who-command). |
| **w** | Show which users arelogged in and their activity with the [w command](https://phoenixnap.com/kb/w-command-in-linux). |
| **finger [user\_name]** | Show user information. |
| **sudo useradd [user\_name]** | Create a new user account. |
| **sudo adduser [user\_name]** | Create a new user account through the [adduser command](https://phoenixnap.com/kb/linux-adduser" \t "_blank) interface. |
| **sudo userdel [user\_name]** | Delete a user account. |
| **sudo usermod -aG [group\_name] [user\_name]** | [Modify user information](https://phoenixnap.com/kb/usermod-linux) ([add a user to a group](https://phoenixnap.com/kb/add-user-to-linux-group)). |
| **passwd** **sudo passwd [user\_name]** | Change the current user's password or another user's password with the [passwd command](https://phoenixnap.com/kb/passwd-command-in-linux). |
| **sudo groupadd [group\_name]** | Add a new group. |
| **sudo groupdel [group\_name]** | Delete a group. |
| **sudo groupmod -n [new\_name] [old\_name]** | Modify a user group (change group name). |
| **sudo [command]** | Temporarily elevate user privileges to superuser or root using the [sudo command](https://phoenixnap.com/kb/linux-sudo-command" \t "_blank). |
| **su - [user\_name]** | [Switch the user account](https://phoenixnap.com/kb/su-command-linux-examples) or become a superuser. |
| **chgrp [group\_name] [file/directory]** | [Change file or directory group](https://phoenixnap.com/kb/chgrp-command). |

### Package Installation Commands

Specific package manager commands vary between different [Linux distributions](https://phoenixnap.com/glossary/what-is-a-linux-distribution). Choose the commands that match your specific distribution.

#### Debian and Ubuntu-Based Distributions

Debian and Ubuntu-based distributions use the **apt-get**, **apt**, and **dpkg** commands to manage packages. Below are crucial commands necessary to install packages on these systems.

| **Command** | **Description** |
| --- | --- |
| **sudo apt-get install [package\_name]** | Install an APT package using the [apt-get package utility](https://phoenixnap.com/kb/how-to-use-apt-get-commands). |
| **sudo apt install [package\_name]** | Install an APT package using a [newer APT package manager](https://phoenixnap.com/kb/apt-linux). |
| **apt search [keyword]** | Search for a package in the APT repositories. |
| **apt list** | List packages installed with APT. |
| **apt show [package\_name]** | Show information about a package. |
| **sudo dpkg -i [package\_name.deb]** | Install a .deb package with the Debian package manager ([dpkg command](https://phoenixnap.com/kb/dpkg-command" \t "_blank)). |
| **sudo dpkg -l** | List packages installed with dpkg. |

**System Management and Information Commands**

Use the terminal to manage the system directly. The commands show how to view basic system information, change options, and reboot or restart the system.

| **Command** | **Description** |
| --- | --- |
| **uname -r** | Show system information via [uname command](https://phoenixnap.com/kb/uname-linux" \t "_blank). |
| **uname -a** | See [kernel release information](https://phoenixnap.com/kb/check-linux-kernel-version). |
| **uptime** | [Display system uptime](https://phoenixnap.com/kb/linux-uptime), including the load average. |
| **hostname** | View system hostname. |
| **hostname -i** | Show the [IP address](https://phoenixnap.com/glossary/what-is-an-ip-address) of the system. |
| **last reboot** | List system reboot history. |
| **date** | See [current time and date](https://phoenixnap.com/kb/linux-date-command). |
| **timedatectl** | Query and change the [system clock](https://phoenixnap.com/kb/how-to-set-or-change-timezone-date-time-ubuntu). |
| **cal** | Show current calendar (month and day). |
| **w** | [List logged-in users](https://phoenixnap.com/kb/w-command-in-linux). |
| **whoami** | [See which user you are using](https://phoenixnap.com/kb/whoami-linux). |
| **finger [user\_name]** | Show information about a particular user. |
| **ulimit [flags] [limit]** | [View or limit](https://phoenixnap.com/kb/ulimit-linux-command) system resource amounts. |
| **shutdown [hh:mm]** | [Schedule a system shutdown](https://phoenixnap.com/kb/linux-shutdown-command). |
| **shutdown now** | Shut down the system immediately. |
| **modprobe [module\_name]** | [Add a new kernel module](https://phoenixnap.com/kb/modprobe-command). |
| **dmesg** | [Show bootup messages](https://phoenixnap.com/kb/dmesg-linux). |

**Disk Usage Commands**

Disk usage commands provide insight into disk space status. You can use the **df** and **du** commands to [check disk space in Linux](https://phoenixnap.com/kb/linux-check-disk-space). Common disk usage commands are outlined in the table below.

| **Command** | **Description** |
| --- | --- |
| **df -h** | Check free and used space on mounted systems. |
| **df -i** | Show free inodes on mounted file systems. |
| **fdisk -l** | Display disk partitions, sizes, and types with the command. |
| **du -ah** | See [disk usage for all files and directories](https://phoenixnap.com/kb/show-linux-directory-size). |
| **du -sh** | Show disk usage of the current directory. |
| **mount** | Show currently mounted file systems. |
| **findmnt** | Display target mount point for all file systems. |
| **mount [device\_path] [mount\_point]** | [Mount a device](https://phoenixnap.com/kb/linux-mount-command). |

**Network Commands**

The table below shows a brief list of common Linux network commands. For a more comprehensive list, check out our [Linux Network Commands Cheat Sheet](https://phoenixnap.com/kb/linux-network-commands).

| **Description** | **Command** |
| --- | --- |
| **ip addr show** | [List IP addresses](https://phoenixnap.com/kb/linux-ip-command-examples) and network interfaces. |
| **ip address add [IP\_address]** | Assign an IP address to interface **eth0**. |
| **ifconfig** | Display IP addresses of all network interfaces. |
| **ping [remote\_host]** | [Ping](https://phoenixnap.com/glossary/what-is-ping) remote host. |
| **netstat -pnltu** | See active (listening) ports with the [netstat command](https://phoenixnap.com/kb/netstat-command). |
| **netstat -tuln** | Show [TCP](https://phoenixnap.com/glossary/transmission-control-protocol-tcp) and [UDP](https://phoenixnap.com/glossary/what-is-udp) ports and their programs. |
| **whois [domain\_name]** | Display more information about a [domain](https://phoenixnap.com/glossary/what-is-a-domain). |
| **dig [domain\_name]** | Show [DNS](https://phoenixnap.com/kb/what-is-domain-name-system) information about a domain using the [dig command](https://phoenixnap.com/kb/linux-dig-command-examples). |
| **dig -x [domain\_name]** | Do a reverse DNS lookup on the domain. |
| **dig -x [IP\_address]** | Do a [reverse DNS lookup](https://phoenixnap.com/kb/reverse-dns-lookup) of an IP address. |
| **host [domain\_name]** | Perform an IP lookup for a domain. |
| **hostname -I** | Show the local IP address. |
| **nslookup [domain\_name]** | Receive [information about an internet domain](https://phoenixnap.com/kb/nslookup-command). |

**Linux Shell Keyboard Shortcuts**

The Linux shell contains several keyboard shortcuts that are important to know. The commands help control the terminal behavior in specific situations. The table below outlines the most important shortcuts.

| **Shortcut** | **Description** |
| --- | --- |
| **Ctrl** + **C** | Kill process running in the terminal. |
| **Ctrl** + **Z** | Stop the current process. The process can be resumed in the foreground with **fg** or in the background with **bg**. |
| **Ctrl** + **W** | Cut one word before the cursor and add it to the clipboard. |
| **Ctrl** + **U** | Cut part of the line before the cursor and add it to the clipboard. |
| **Ctrl** + **K** | Cut part of the line after the cursor and add it to the clipboard. |
| **Ctrl** + **Y** | Paste from clipboard. |
| **Ctrl** + **R** | Recall the last command that matches the provided characters. |
| **Ctrl** + **O** | Run the previously recalled command. |
| **Ctrl** + **G** | Exit command history without running a command. |
| **clear** | [Clear the terminal screen](https://phoenixnap.com/kb/clear-terminal). |
| **!!** | Run the last command again. |
| **exit** | Log out of the current session. |