



Navigation & File Management

Basic Navigation

<code>pwd</code>	Print working directory (shows the current directory).
<code>d</code>	Example: <code>pwd</code> <i># Output: /home/user/documents</i>
<code>c</code>	Change directory.
<code>d</code>	Examples: <code>cd /path/to/directory</code> <code>cd ..</code> <i># Move up one level</i> <code>cd ~</code> <i># Go to home directory</i> <code>cd -</code> <i># Go to the previous directory</i>
<code>l</code>	List directory contents.
<code>s</code>	Examples: <code>ls</code> <i># List files and directories in current directory</i> <code>ls -l</code> <i># Long listing format (permissions, size, date)</i> <code>ls -a</code> <i># Show hidden files and directories</i> <code>ls -t</code> <i># Sort by modification time (newest first)</i> <code>ls -R</code> <i># List subdirectories recursively</i>

File Manipulation

<code>touch</code>	Create an empty file.
<code>filename</code>	Example: <code>touch newfile.txt</code>
<code>cp source</code>	Copy a file or directory.
<code>destination</code>	Examples: <code>cp file1.txt file2.txt</code> <i># Copy file1 to file2</i> <code>cp -r dir1 dir2</code> <i># Copy directory dir1 to dir2 recursively</i>
<code>mv source</code>	Move or rename a file or directory.
<code>destination</code>	Examples: <code>mv file1.txt newfile.txt</code> <i># Rename file1 to newfile</i> <code>mv file1.txt /new/path/</code> <i># Move file1 to a different directory</i>
<code>rm</code>	Remove a file.
<code>filename</code>	Example: <code>rm file.txt</code> Caution: This action is irreversible!
<code>rm -r</code>	Remove a directory recursively (including all files and subdirectories).
<code>directory</code>	Example: <code>rm -r mydirectory</code> Caution: Use with extreme care!
<code>mkdir</code>	Create a new directory.
<code>directoryname</code>	Example: <code>mkdir newdirectory</code>
<code>rmdir</code>	Remove an empty directory.
<code>directoryname</code>	Example: <code>rmdir emptydirectory</code>

File Content Display

<code>cat</code>	Display the entire contents of a file.
<code>filename</code>	Example: <code>cat mytextfile.txt</code>
<code>less</code>	View file contents one page at a time.
<code>filename</code>	Navigate with arrow keys or <code>q</code> to quit.
<code>e</code>	Example: <code>less largefile.txt</code>
<code>head</code>	Display the first few lines of a file (default 10 lines).
<code>filename</code>	Example: <code>head mytextfile.txt</code> <code>head -n 20 mytextfile.txt</code> <i># Show the first 20 lines</i>
<code>tail</code>	Display the last few lines of a file (default 10 lines).
<code>filename</code>	Example: <code>tail mytextfile.txt</code> <code>tail -n 20 mytextfile.txt</code> <i># Show the last 20 lines</i> <code>tail -f mytextfile.txt</code> <i># Follow the file for live updates</i>

System Information & Process Management

System Information

<code>uname</code> <code>-a</code>	Display system information (kernel name, network node hostname, kernel release, kernel version, machine). Example: <code>uname -a</code>
<code>df</code> <code>-h</code>	Display disk space usage in a human-readable format. Example: <code>df -h</code>
<code>free</code> <code>-m</code>	Display memory usage in megabytes. Example: <code>free -m</code>
<code>uptime</code> <code>me</code>	Show how long the system has been running, along with the current time and load averages. Example: <code>uptime</code>
<code>lscpu</code> <code>u</code>	Display information about the CPU architecture. Example: <code>lscpu</code>

Process Management

<code>ps</code> <code>aux</code>	Display all running processes with detailed information. Example: <code>ps aux</code>
<code>top</code>	Display a dynamic real-time view of running processes. Example: <code>top</code>
<code>kill</code> <code>PID</code>	Terminate a process with the specified PID (Process ID). Example: <code>kill 1234</code>
<code>kill</code> <code>-9</code> <code>PID</code>	Forcefully terminate a process (use as a last resort). Example: <code>kill -9 1234</code> Caution: May cause data loss.
<code>bg</code>	Place a stopped process in the background. Example: <i># Ctrl+Z to stop a process, then:</i> <code>bg</code>
<code>fg</code>	Bring a background process to the foreground. Example: <code>fg</code>

User Management

<code>whoami</code> <code>i</code>	Display the current user's username. Example: <code>whoami</code>
<code>id</code>	Display user and group ID information. Example: <code>id</code>
<code>w</code>	Show who is logged on and what they are doing. Example: <code>w</code>
<code>last</code>	List last logged in users. Example: <code>last</code>

Text Processing & Search

Text Processing

<code>grep pattern</code> <code>filename</code>	Search for a pattern in a file. Examples: <pre>grep 'error' logfile.txt # Find lines containing 'error' grep -i 'error' logfile.txt # Case-insensitive search grep -r 'error' ./ # Recursive search in current directory</pre>
<code>sed 's/old/new/g'</code> <code>filename</code>	Stream editor for replacing text in a file. This example replaces all occurrences of 'old' with 'new'. Example: <pre>sed 's/apple/orange/g' fruits.txt</pre>
<code>awk '{print \$1}'</code> <code>filename</code>	A powerful text processing tool. This example prints the first column of each line. Example: <pre>awk '{print \$1}' data.txt # Print the first column awk '{print \$1, \$3}' data.txt # Print the first and third columns</pre>
<code>sort filename</code>	Sort lines in a file. Example: <pre>sort unsorted.txt sort -n numbers.txt # Sort numerically</pre>
<code>uniq filename</code>	Remove duplicate lines from a file (often used with <code>sort</code>). Example: <pre>sort file.txt uniq # Remove duplicate lines after sorting</pre>
<code>wc filename</code>	Count words, lines, and bytes in a file. Example: <pre>wc text.txt # Output: lines words bytes filename wc -l text.txt # Only count lines</pre>
<code>cut -d',' -f1</code> <code>filename</code>	Cut sections from each line of a file. This example cuts the first field from a comma-separated file. Example: <pre>cut -d',' -f1 data.csv # Extract the first field</pre>

Find Command

<code>find . -name "*.txt"</code>	Find files with a specific name pattern in the current directory and its subdirectories. Example: <pre>find . -name "*.txt" # Find all .txt files</pre>
<code>find . -type f -size +1M</code>	Find files larger than 1MB in the current directory and its subdirectories. Example: <pre>find . -type f -size +1M # Find files larger than 1MB</pre>
<code>find . -mtime -7</code>	Find files modified in the last 7 days. Example: <pre>find . -mtime -7 # Find files modified in the last 7 days</pre>
<code>find . -empty</code>	Find empty files and directories. Example: <pre>find . -empty # Find empty files and directories</pre>
<code>find . -perm 777</code>	Find files with specific permissions. Example: <pre>find . -perm 777 # Find files with 777 permissions</pre>

Networking & Package Management

Networking Tools

<code>ping</code> <code>hostname</code>	Test network connectivity to a host. Example: <pre>ping google.com</pre>
<code>traceroute</code> <code>hostname</code>	Trace the route packets take to a host. Example: <pre>traceroute google.com</pre>
<code>netstat - tulnp</code>	Display network connections, listening ports, and associated processes. Example: <pre>netstat -tulnp</pre>
<code>ifconfig</code> or <code>ip addr</code>	Display network interface configuration. Example: <pre>ifconfig ip addr</pre>
<code>ssh</code> <code>user@host</code>	Secure Shell - connect to a remote host. Example: <pre>ssh user@example.com</pre>
<code>scp</code> <code>user@host:file</code> <code>localfile</code>	Secure Copy - copy files between hosts. Example: <pre>scp user@example.com:/path/to/rem ote/file localfile.txt</pre>

Package Management (Debian/Ubuntu)

<code>sudo apt update</code>	Update the package lists. Example: <pre>sudo apt update</pre>
<code>sudo apt upgrade</code>	Upgrade installed packages. Example: <pre>sudo apt upgrade</pre>
<code>sudo apt install package_name</code>	Install a new package. Example: <pre>sudo apt install vim</pre>
<code>sudo apt remove package_name</code>	Remove a package. Example: <pre>sudo apt remove vim</pre>
<code>sudo apt purge package_name</code>	Remove a package and its configuration files. Example: <pre>sudo apt purge vim</pre>
<code>apt show package_name</code>	Show information about a package. Example: <pre>apt show vim</pre>

Package Management (RedHat/CentOS/Fedora)

<code>sudo yum update</code>	Update all packages. Example: <pre>sudo yum update</pre>
<code>sudo yum install package_name</code>	Install a package. Example: <pre>sudo yum install vim</pre>
<code>sudo yum remove package_name</code>	Remove a package. Example: <pre>sudo yum remove vim</pre>
<code>yum info package_name</code>	Show information about a package. Example: <pre>yum info vim</pre>
<code>sudo dnf update</code>	Update all packages (Fedora). Example: <pre>sudo dnf update</pre>
<code>sudo dnf install package_name</code>	Install a package (Fedora). Example: <pre>sudo dnf install vim</pre>