Linux Commands

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Directory Commands

Command	Description	Example
pwd	Shows current working directory	pwd → /home/ansible
ls	Lists files and folders in current directory	ls
ls -l	Long listing with permissions, owners, size, etc.	ls -l
ls -a	Shows hidden files (starts with .)	ls -a
cd	Change directory	cd /etc/ansible
cd ..	Go back one directory	cd ..
cd ~	Go to your home directory	cd ~
mkdir	Make a new directory	mkdir my_folder
mkdir -p	Create nested directories	mkdir -p my/folder/structure
rmdir	Remove an empty directory	rmdir old_folder

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File Commands

Command	Description	Example
touch	Create a new empty file	touch file.txt
cat	Display file content	cat file.txt
more / less	View file content page by page	less longfile.log
head	Show first 10 lines of a file	head file.txt
tail	Show last 10 lines of a file	tail file.txt
tail -f	Monitor a file live (e.g., logs)	tail -f /var/log/syslog

`cp`	Copy a file or directory	`cp file.txt backup.txt`
`cp -r`	Copy a directory recursively	`cp -r dir1/ dir2/`
`mv`	Move or rename a file or directory	`mv file.txt newname.txt`
`rm`	Delete a file	`rm file.txt`
`rm -r`	Delete a directory and contents	`rm -r folder/`
`rm -rf`	Force delete directory (no confirmation) ⚠️	`rm -rf folder/`

Permission & Ownership Commands

Command	Description	Example
`chmod`	Change file permissions	`chmod 755 script.sh`
`chown`	Change file owner	`chown user:group file.txt`
`stat`	Show detailed info about a file	`stat file.txt`
`file`	Determine file type	`file image.png` → `PNG image data`

Search & Find Files

Command	Description	Example
`find`	Search files/directories	`find /home -name "*.sh"`
`locate`	Quickly find files (needs `updatedb`)	`locate nginx.conf`
`which`	Find path of a command	`which python3`
`grep`	Search text inside files	`grep "error" /var/log/syslog`

File & Directory Links

Command	Description	Example
ln	Create hard link	ln file.txt file_link.txt
ln -s	Create symbolic (soft) link	ln -s /var/www site_link

🔍 Search Within Files

Command	Description	Example
grep -r	Recursively search in directory	grep -r "TODO" ./project
grep -i	Case-insensitive search	grep -i "error" logs.txt
grep -v	Show lines that do **not** match	grep -v "debug" logs.txt

📄 File Viewing Tools

Command	Description	Example
nano	Simple terminal text editor	nano file.txt
vim / vi	Advanced text editor	vim script.sh
less	View file one page at a time	less longfile.log

🧹 Disk Usage & Space

Command	Description	Example
df -h	Show disk usage (human-readable)	df -h
du -sh	Show size of a directory	du -sh /var/log
du -ah	Show size of files and directories	du -ah /home/user

📁 Directory Tree

Command	Description	Example
tree	Display directory structure as a tree	tree /etc/ansible

📦 Archive & Compress Files

Command	Description	Example

`tar -cvf`	Create tar archive	`tar -cvf backup.tar folder/`
`tar -xvf`	Extract tar archive	`tar -xvf backup.tar`
`tar -czvf`	Create compressed `.tar.gz` archive	`tar -czvf backup.tar.gz folder/`
`tar -xzvf`	Extract `.tar.gz` archive	`tar -xzvf backup.tar.gz`
`zip -r`	Compress files into `.zip`	`zip -r backup.zip folder/`
`unzip`	Extract `.zip` file	`unzip backup.zip`

🖥️ Basic System Commands

Command	Description	Example
`uname -a`	Kernel and OS info	`uname -a`
`hostname`	Show or set hostname	`hostname`
`uptime`	Show how long system is running	`uptime`
`top` / `htop`	Show running processes (htop is better UI)	`top`
`ps aux`	Show all running processes	`ps aux`
`who` / `w`	Who is logged in	`who`
`free -h`	Show RAM usage	`free -h`
`vmstat`	Show system performance	`vmstat 2`
`iostat`	Show disk I/O usage	`iostat`
`df -h`	Disk space usage	`df -h`
`du -sh`	Directory size	`du -sh /var/log`
`journalctl -xe`	View systemd logs (more detailed)	`journalctl -xe`
`uptime`	System running time	`uptime`

🌐 Network Commands

Command	Description	Example
`ifconfig`	Show IP addresses	`ifconfig`
`ping`	Test network connectivity	`ping google.com`
`curl`	Fetch a URL or API response	`curl https://example.com`
`wget`	Download files from the web	`wget https://file.com/file.zip`

traceroute	Show path to destination	traceroute google.com
nslookup	Query DNS	nslookup google.com
dig	DNS lookup tool	dig google.com
telnet <IP> <PORT>	Test port connectivity	telnet 192.168.0.253 22