

Comprehensive list of Linux commands

Here's a comprehensive list of Linux commands with descriptions and examples. This list covers most commonly used commands for file management, system monitoring, networking, and more.

File and Directory Operations

1. `ls` - List directory contents

- Example:

bash

Copy

```
ls -l /home # List files in /home with details
```

2. `cd` - Change directory

- Example:

bash

Copy

```
cd /var/log # Move to /var/log directory
```

3. `pwd` - Print working directory

- Example:

bash

Copy

```
pwd # Show current directory path
```

4. `mkdir` - Create a directory

- Example:

bash

Copy

```
mkdir new_folder # Create a directory named new_folder
```

5. `rmdir` - Remove an empty directory

- Example:

bash

Copy

```
rmdir empty_folder # Remove empty_folder
```

6. `rm` - Remove files or directories

- Example:

bash

Copy

```
rm file.txt # Delete file.txt  
rm -r folder # Recursively delete folder and its contents
```

7. `cp` - Copy files or directories

- Example:

bash

Copy

```
cp file.txt /backup # Copy file.txt to /backup  
cp -r folder /backup # Copy folder recursively
```

8. **mv** - Move or rename files or directories

- Example:

bash

Copy

```
mv file.txt /backup # Move file.txt to /backup
mv old_name.txt new_name.txt # Rename file
```

9. **touch** - Create an empty file or update file timestamp

- Example:

bash

Copy

```
touch newfile.txt # Create newfile.txt
```

10. **cat** - Display file content

- Example:

bash

Copy

```
cat file.txt # Show content of file.txt
```

11. **more** - View file content page by page

- Example:

bash

Copy

```
more largefile.txt # View largefile.txt page by page
```

12. **less** - View file content with backward navigation

- Example:

bash

Copy

```
less largefile.txt # View file with backward navigation
```

13. **head** - Display the first part of a file

- Example:

bash

Copy

```
head -n 10 file.txt # Show first 10 lines of file.txt
```

14. **tail** - Display the last part of a file

- Example:

bash

Copy

```
tail -n 10 file.txt # Show last 10 lines of file.txt  
tail -f logfile.log # Follow logfile.log in real-time
```

15. **find** - Search for files or directories

- Example:

bash

Copy

```
find /home -name "*.txt" # Find all .txt files in /home
```

16. **grep** - Search text using patterns

- Example:

bash

Copy

```
grep "error" logfile.log # Search for "error" in logfile.log
```

17. **tar** - Archive files

- Example:

bash

Copy

```
tar -cvf archive.tar folder # Create archive.tar from folder  
tar -xvf archive.tar # Extract archive.tar
```

18. **zip** / **unzip** - Compress and extract files

- Example:

bash

Copy

```
zip archive.zip file.txt # Compress file.txt into archive.zip  
unzip archive.zip # Extract archive.zip
```

19. **chmod** - Change file permissions

- Example:

bash

Copy

```
chmod 755 script.sh # Set permissions to rwxr-xr-x
```

20. **chown** - Change file ownership

- Example:

bash

Copy

```
chown user:group file.txt # Change owner and group of file.txt
```

System Monitoring and Management

1. **ps** - Display running processes

- Example:

bash

Copy

```
ps aux # Show all running processes
```

2. **top** - Display real-time system stats

- Example:

bash

Copy

```
top # Show live system stats
```

3. **htop** - Interactive process viewer (requires installation)

- Example:

bash

Copy

```
htop # Interactive system monitoring
```

4. **kill** - Terminate a process

- Example:

bash

Copy

```
kill 1234 # Terminate process with PID 1234  
kill -9 1234 # Forcefully terminate process
```

5. **df** - Display disk space usage

- Example:

bash

Copy

```
df -h # Show disk usage in human-readable format
```

6. **du** - Display directory space usage

- Example:

bash

Copy

```
du -sh /home # Show total size of /home
```

7. **free** - Display memory usage

- Example:

bash

Copy

```
free -h # Show memory usage in human-readable format
```

8. **uname** - Display system information

- Example:

bash

Copy

```
uname -a # Show all system information
```

9. **uptime** - Show system uptime

- Example:

bash

Copy

```
uptime # Display how long the system has been running
```

10. **shutdown** - Shutdown or restart the system

- Example:

bash

Copy

```
shutdown now # Shutdown immediately  
shutdown -r now # Restart immediately
```

Networking

1. **ping** - Test network connectivity

- Example:

bash

Copy

```
ping google.com # Ping Google
```

2. **ifconfig** - Configure or display network interfaces

- Example:

bash

Copy

```
ifconfig # Show network interfaces
```

3. **ip** - Advanced network configuration

- Example:

bash

Copy

```
ip addr show # Display IP addresses
```

4. **netstat** - Display network connections

- Example:

bash

Copy

```
netstat -tuln # Show listening ports
```

5. **ssh** - Connect to a remote server

- Example:

bash

Copy

```
ssh user@192.168.1.1 # SSH into a remote server
```

6. **scp** - Securely copy files between hosts

- Example:

bash

Copy

```
scp file.txt user@192.168.1.1:/home # Copy file.txt to remote server
```

7. **wget** - Download files from the web

- Example:

bash

Copy

```
wget https://example.com/file.zip # Download file.zip
```

8. **curl** - Transfer data from or to a server

- Example:

bash

Copy

```
curl -O https://example.com/file.zip # Download file.zip
```

9. **nslookup** - Query DNS records

- Example:

bash

Copy

```
nslookup google.com # Lookup DNS for google.com
```

10. **dig** - DNS lookup utility

- Example:

bash

Copy

```
dig google.com # Query DNS information for google.com
```

User and Permission Management

1. **useradd** - Add a new user

- Example:

bash

Copy

```
useradd john # Create a new user named john
```

2. **passwd** - Change user password

- Example:

bash

Copy

```
passwd john # Set password for user john
```

3. **usermod** - Modify user account

- Example:

bash

Copy

```
usermod -aG sudo john # Add john to sudo group
```

4. **userdel** - Delete a user

- Example:

bash

Copy

```
userdel john # Delete user john
```

5. **groupadd** - Add a new group

- Example:

bash

Copy

```
groupadd developers # Create a new group named developers
```

6. **groupdel** - Delete a group

- Example:

bash

Copy

```
groupdel developers # Delete group developers
```

7. **su** - Switch user

- Example:

bash

Copy

```
su john # Switch to user john
```

8. **sudo** - Execute commands as superuser

- Example:

bash

Copy

```
sudo apt update # Run apt update as superuser
```

Package Management

1. **apt** - Package manager for Debian-based systems

- Example:

bash

Copy

```
sudo apt update # Update package list
sudo apt install nginx # Install nginx
```

2. **yum** - Package manager for RHEL-based systems

- Example:

bash

Copy

```
sudo yum install httpd # Install Apache on RHEL
```

3. **dnf** - Modern package manager for Fedora

- Example:

bash

Copy

```
sudo dnf install nginx # Install nginx on Fedora
```

4. **pacman** - Package manager for Arch Linux

- Example:

bash

Copy

```
sudo pacman -S nginx # Install nginx on Arch
```

Miscellaneous

1. **echo** - Display a line of text

- Example:

bash

Copy

```
echo "Hello, World!" # Print "Hello, World!"
```

2. **date** - Display or set the system date and time

- Example:

bash

Copy

```
date # Show current date and time
```

3. **history** - Display command history

- Example:

bash

Copy

```
history # Show command history
```

4. **man** - Display manual pages

- Example:

bash

Copy

```
man ls # Show manual for ls command
```

5. **alias** - Create command shortcuts

- Example:

bash

Copy

```
alias ll='ls -la' # Create alias for ls -la
```

6. **cron** - Schedule tasks

- Example:

bash

Copy

```
crontab -e # Edit cron jobs
```

7. **ln** - Create links between files

- Example:

bash

Copy

```
ln -s /path/to/file link_name # Create symbolic link
```

8. **diff** - Compare files line by line

- Example:

bash

Copy

```
diff file1.txt file2.txt # Compare two files
```

This list covers most of the essential Linux commands.