# Basic Linux Commands

## Introduction

Linux provides a variety of command-line tools to interact with the filesystem, manage processes, and perform system administration tasks. Understanding basic commands is essential for navigating and managing a Linux system efficiently. This section covers fundamental commands including:

* ls (list directory contents)
* find (search for files and directories)
* ps (display process information)
* mv (move or rename files)
* cp (copy files and directories)
* rm (remove files and directories)
* cd (change directory)

# Common Practical Examples

## 1. List Files and Directories (ls)

### Display contents of a directory

ls

### Show hidden files

ls -a

### Display files with detailed information

ls -l

### Sort files by modification time (newest first)

ls -lt

## 2. Find Files and Directories (find)

### Search for a file by name in the current directory

find . -name "file.txt"

### Find all .log files in /var/log modified in the last 7 days

find /var/log -name "\*.log" -mtime -7

### Search for empty files

find /home/user -type f -empty

### Find and delete all .tmp files

find /tmp -name "\*.tmp" -exec rm {} \;

## 3. Display Running Processes (ps)

### Show all running processes

ps aux

### Filter a specific process by name

ps aux | grep nginx

### Display processes for a specific user

ps -u username

### Show process tree

ps -axjf

## 4. Move and Rename Files (mv)

### Move a file to another directory

mv file.txt /home/user/documents/

### Rename a file

mv oldname.txt newname.txt

### Move multiple files to a directory

mv file1.txt file2.txt /home/user/

## 5. Copy Files and Directories (cp)

### Copy a file to another location

cp file.txt /home/user/

### Copy a directory recursively

cp -r /source/dir /destination/dir

### Copy multiple files

cp file1.txt file2.txt /destination/

### Preserve file attributes during copy

cp -p file.txt /backup/

## 6. Remove Files and Directories (rm)

### Delete a file

rm file.txt

### Delete multiple files

rm file1.txt file2.txt

### Remove a directory and its contents

rm -r /home/user/temp/

### Force delete a file without confirmation

rm -f important.log

## 7. Change Directory (cd)

### Move to the home directory

cd ~

### Navigate to a specific directory

cd /var/log/

### Move to the previous directory

cd -

### Move up one directory level

cd ..

# Additional Notes

* Always use rm -i to avoid accidental deletion of important files.
* Use find -exec to combine search and action operations.
* When using ps, consider htop for a more interactive process viewer.
* ls -lh is useful for viewing file sizes in a human-readable format.
* Use tab completion to quickly navigate directories with cd.