

Linux File and Directory Management Commands

Basic Commands

1. Listing Files and Directories

- ``ls`` - List files and directories
- ``ls -l`` - Long listing format
- ``ls -a`` - Show hidden files
- ``ls -lh`` - Human-readable file sizes
- ``ls -lt`` - Sort by modification time
- ``ls -R`` - List directories recursively

2. Changing Directories

- ``cd <directory>`` - Change to a directory
- ``cd ..`` - Move up one level
- ``cd ~`` - Go to the home directory
- ``cd -`` - Switch to the previous directory

3. Creating Files and Directories

- ``touch <file>`` - Create a new empty file
- ``touch file1 file2 file3`` - Create multiple files
- ``mkdir <dir>`` - Create a new directory
- ``mkdir -p dir1/dir2`` - Create nested directories
- ``mkdir dir1 dir2 dir3`` - Create multiple directories

4. Removing Files and Directories

- ``rm <file>`` - Remove a file
- ``rm file1 file2 file3`` - Remove multiple files
- ``rm -r <dir>`` - Remove a directory and its contents
- ``rm -rf <dir>`` - Force remove a directory
- ``rmdir dir1 dir2`` - Remove multiple empty directories

5. Copying Files and Directories

- ``cp <source> <destination>`` - Copy a file
- ``cp file1 file2 dir/`` - Copy multiple files to a directory
- ``cp -r <source> <destination>`` - Copy a directory recursively
- ``cp -i <file>`` - Prompt before overwriting

6. Moving and Renaming Files

- `mv <old> <new>` - Rename a file or directory
- `mv <file> <directory>` - Move file to a directory
- `mv file1 file2 dir/` - Move multiple files to a directory

7. Viewing File Contents

- `cat <file>` - View file content
- `tac <file>` - View file in reverse order
- `less <file>` - View file one page at a time
- `head -n <number> <file>` - View first N lines
- `tail -n <number> <file>` - View last N lines

Intermediate Commands

8. Finding Files and Directories

- `find <path> -name "<filename>"` - Find file by name
- `find <path> -type d -name "<dirname>"` - Find directory
- `locate <file>` - Search for a file (use `updatedb` to update database)

9. File Permissions

- `chmod 777 <file>` - Change file permissions (full access)
- `chmod 644 <file>` - Read/write for owner, read for others
- `chmod +x <file>` - Make file executable
- `chown user:group <file>` - Change file owner

10. Symbolic and Hard Links

- `ln <source> <hardlink>` - Create a hard link
- `ln -s <source> <symlink>` - Create a symbolic link

11. Archiving and Compression

- `tar -cvf archive.tar <files>` - Create a tar archive
- `tar -xvf archive.tar` - Extract a tar archive
- `tar -cvzf archive.tar.gz <files>` - Create compressed archive
- `tar -xvzf archive.tar.gz` - Extract compressed archive

Advanced Commands

12. Disk Usage and File Size

- `du -sh <file/dir>` - Get size of file/directory
- `df -h` - Check available disk space
- `stat <file>` - Display detailed file information

13. File Searching and Processing

- `grep "text" <file>` - Search for text in a file
- `sed 's/old/new/g' <file>` - Replace text in a file
- `awk '{print $1}' <file>` - Extract first column

14. File Integrity

- `md5sum <file>` - Generate an MD5 checksum
- `sha256sum <file>` - Generate a SHA-256 checksum

15. Mounting and Unmounting File Systems

- `mount /dev/sdX /mnt` - Mount a device
- `umount /mnt` - Unmount a device

Bonus: Useful One-Liners

- `find . -type f -size +100M` - Find files larger than 100MB
- `ls -l | grep "^d"` - List only directories
- `du -a | sort -n -r | head -10` - Show top 10 largest files