Linux Commands Cheat Sheet

Contents

File and Directory Management

Navigation

- Change directory:
  `cd /path/to/directory`
- Go to the home directory:
  `cd ~`
- Go to the previous directory:
  `cd -`
- List files and directories:
  `ls`
- List detailed file info:
  `ls -l`
- List hidden files:
  `ls -a`

File Operations

- Copy files:
  `cp source destination`
- Copy directories:
  `cp -r source_dir destination_dir`
- Move or rename files:
  `mv source destination`
- Delete files:
  `rm file.txt`
- Delete directories:
  `rm -r directory_name`
- Create a new file:
  `touch file.txt`
- Create a new directory:
  `mkdir directory_name`
- Remove an empty directory:
  `rmdir directory_name`

File Viewing and Editing

Viewing Files

- Display file content:
  `cat file.txt`
- View file content one page at a time:
  `less file.txt`
- Display the first 10 lines of a file:
  `head file.txt`
- Display the last 10 lines of a file:
  `tail file.txt`
- Follow a file in real-time:
  `tail -f file.txt`

Editing Files

- Edit files using `nano`:
  `nano file.txt`
- Edit files using `vim`:

```
vim file.txt
```

File Permissions and Ownership

Changing Permissions

- Change file permissions (e.g., `rwx`):
  ```
  chmod 755 file.txt
  ```
- Change directory permissions recursively:
  ```
  chmod -R 755 directory_name
  ```

Changing Ownership

- Change file owner:
  ```
  chown user file.txt
  ```
- Change file owner and group:
  ```
  chown user:group file.txt
  ```
- Change ownership recursively:
  ```
  chown -R user:group directory_name
  ```

Searching and Finding Files

File Search

- Search for a file by name:
  ```
  find /path -name "filename"
  ```
- Search for files by extension:
  ```
  find /path -name "*.txt"
  ```

Content Search

- Search for text in a file:
  ```
  grep 'pattern' file.txt
  ```
- Search recursively in a directory:
  ```
  grep -r 'pattern' /path
  ```

Disk and System Information

Disk Usage

- Check disk space usage:
  `df -h`
- Check directory or file size:
  `du -sh /path`

System Information

- Display system information:
  `uname -a`
- Show current logged-in users:
  `who`
- Display memory usage:
  `free -h`
- Show running processes:
  `top`
- Display detailed process list:
  `ps aux`

Networking

Network Configuration

- Display IP address:
  `ip addr`
- Test network connectivity:
  `ping example.com`
- Display open network ports:
  `netstat -tuln`

File Transfers

- Copy files between systems:
  `scp file.txt user@remote:/path`
- Download files using `wget`:

```
wget http://example.com/file.zip
```

Process Management

Process Operations

- Show current running processes:
  ```
  ps aux
  ```
- Kill a process by PID:
  ```
  kill PID
  ```
- Kill a process by name:
  ```
  pkill process_name
  ```

Background and Foreground

- Run a command in the background:
  ```
  command &
  ```
- List background jobs:
  ```
  jobs
  ```
- Bring a background job to the foreground:
  ```
  fg %job_number
  ```

User Management

User and Group Operations

- Add a new user:
  ```
  sudo useradd username
  ```
- Change a user's password:
  ```
  sudo passwd username
  ```
- Add a user to a group:
  ```
  sudo usermod -aG groupname username
  ```

Switching Users

- Switch to another user:
  ```
  su - username
  ```

- Execute a command as another user:

  `sudo command`

Archiving and Compression

Creating Archives

- Create a `.tar` archive:

  `tar -cvf archive.tar file_or_directory`

- Create a compressed `.tar.gz` archive:

  `tar -czvf archive.tar.gz file_or_directory`

Extracting Archives

- Extract a `.tar` archive:

  `tar -xvf archive.tar`

- Extract a `.tar.gz` archive:

  `tar -xzvf archive.tar.gz`

Package Management

Debian/Ubuntu (APT)

- Update package list:

  `sudo apt update`

- Upgrade all packages:

  `sudo apt upgrade`

- Install a package:

  `sudo apt install package_name`

- Remove a package:

  `sudo apt remove package_name`

Red Hat/CentOS (YUM/DNF)

- Install a package:

  `sudo yum install package_name`

  `sudo dnf install package_name`

- Remove a package:

  `sudo yum remove package_name`

  `sudo dnf remove package_name`

Arch Linux (Pacman)

- Update package list:

  `sudo pacman -Sy`
- Upgrade all packages:
- Install a package:

  `sudo pacman -S package_name`
- Remove a package:
- `sudo pacman -R package_name`
- Search for a package:

  `pacman -Ss search_term`

Arch Linux (yay)

- Install a package:

  `yay -S package_name`
- Remove a package: `yay -R package_name`
- Search for a package:

  `yay -Ss search_term`

Shell Scripting

Variables and Scripts

- Assign a variable:

  `variable_name="value"`
- Print a variable:

  `echo $variable_name`
- Run a shell script:

  `bash script.sh`

Loops and Conditions

- Example `for` loop:

```
for i in {1..5}; do
    echo $i
done
```

- Example `if` statement:

```
if [ condition ]; then
    echo "Condition met"
fi
```

Miscellaneous

History and Aliases

- Show command history:
  `history`
- Create a command alias:
  `alias ll='ls -la'`

Permissions and Ownership

- Display current working directory:
  `pwd`
- Change the hostname:
  `sudo hostname new_hostname`