

Linux Tasks

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Overview

Before we dive into containers, CI/CD pipelines, or infrastructure as code, we start with the one thing that powers *everything*: Linux. This blog is your beginner-friendly guide to that world-because without understanding Linux, you'll always be guessing in DevOps.

Why Linux Matters in DevOps

1. Linux is not just another operating system-it's the engine room of DevOps.

What is Linux?

Linux is an open-source operating system that acts as the backbone for most modern infrastructure. Think of it as the layer that sits between your applications and the



hardware, managing resources, users, and permissions. It handles memory allocation, process scheduling, file access, device control, and networking. Its modular, secure, and flexible design is why it's the go-to OS for DevOps, developers, and system administrators around the world.

Why It Matters in DevOps:

- Ubiquity: Most production servers run on Linux, not Windows or macOS.
- Containers: Docker, Podman, and container runtimes leverage Linux kernel features like namespaces and cgroups.
- Automation: Bash scripts, cron jobs, and configuration tools like Ansible work seamlessly on Linux.
- Cloud-native: The major cloud providers (AWS, Azure, GCP) offer default Linux-based instances.
- Security & Access: Permissions, firewalls, and auditing in Linux give you fine-grained control over system security.

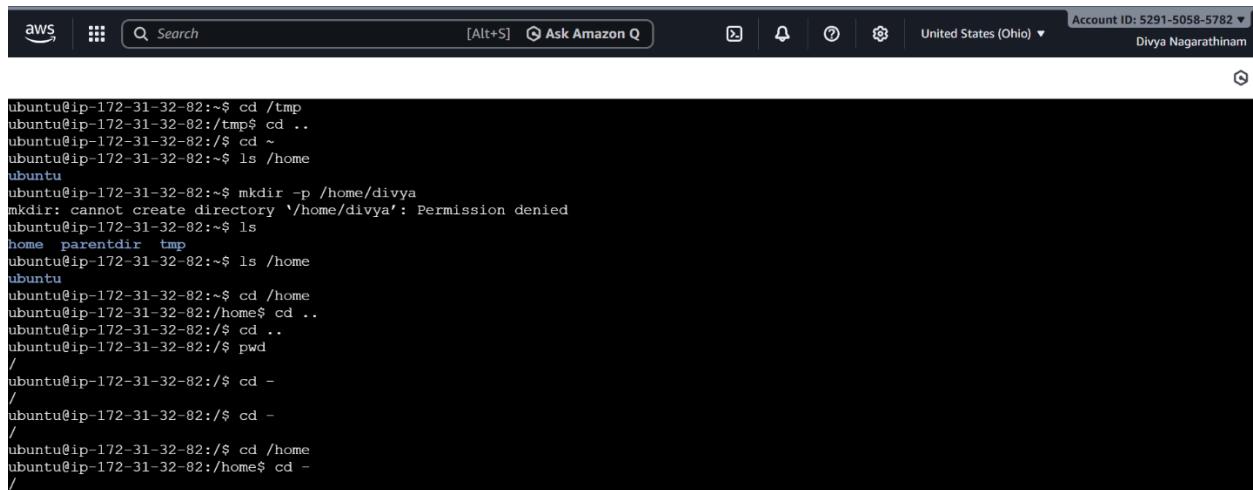
Simply put, understanding Linux gives you the keys to everything else in DevOps.

Task 1: Navigation

1. Change directory to /tmp
2. Move to parent directory
3. Change directory to home directory
4. Move to parent directory
5. Move again to parent directory
 - i. Where are you at? Verify with a command
6. Change to last visited directory

Task 1 - Output:

1. cd /tmp
2. cd ..
3. cd ~
4. cd ..
5. cd ..
6. i. pwd
6. cd -



```

ubuntu@ip-172-31-32-82:~$ cd /tmp
ubuntu@ip-172-31-32-82:/tmp$ cd ..
ubuntu@ip-172-31-32-82:/$ cd ~
ubuntu@ip-172-31-32-82:~/home$ ls
ubuntu
ubuntu@ip-172-31-32-82:~/home$ mkdir -p /home/divya
mkdir: cannot create directory '/home/divya': Permission denied
ubuntu@ip-172-31-32-82:~/home$ ls
home parentdir tmp
ubuntu@ip-172-31-32-82:~/home$ cd ..
ubuntu@ip-172-31-32-82:~/$ cd ..
ubuntu@ip-172-31-32-82:~/$ pwd
/
ubuntu@ip-172-31-32-82:~/$ cd -
/
ubuntu@ip-172-31-32-82:~/$ cd -
/
ubuntu@ip-172-31-32-82:~/$ cd /home
ubuntu@ip-172-31-32-82:/home$ cd -
/

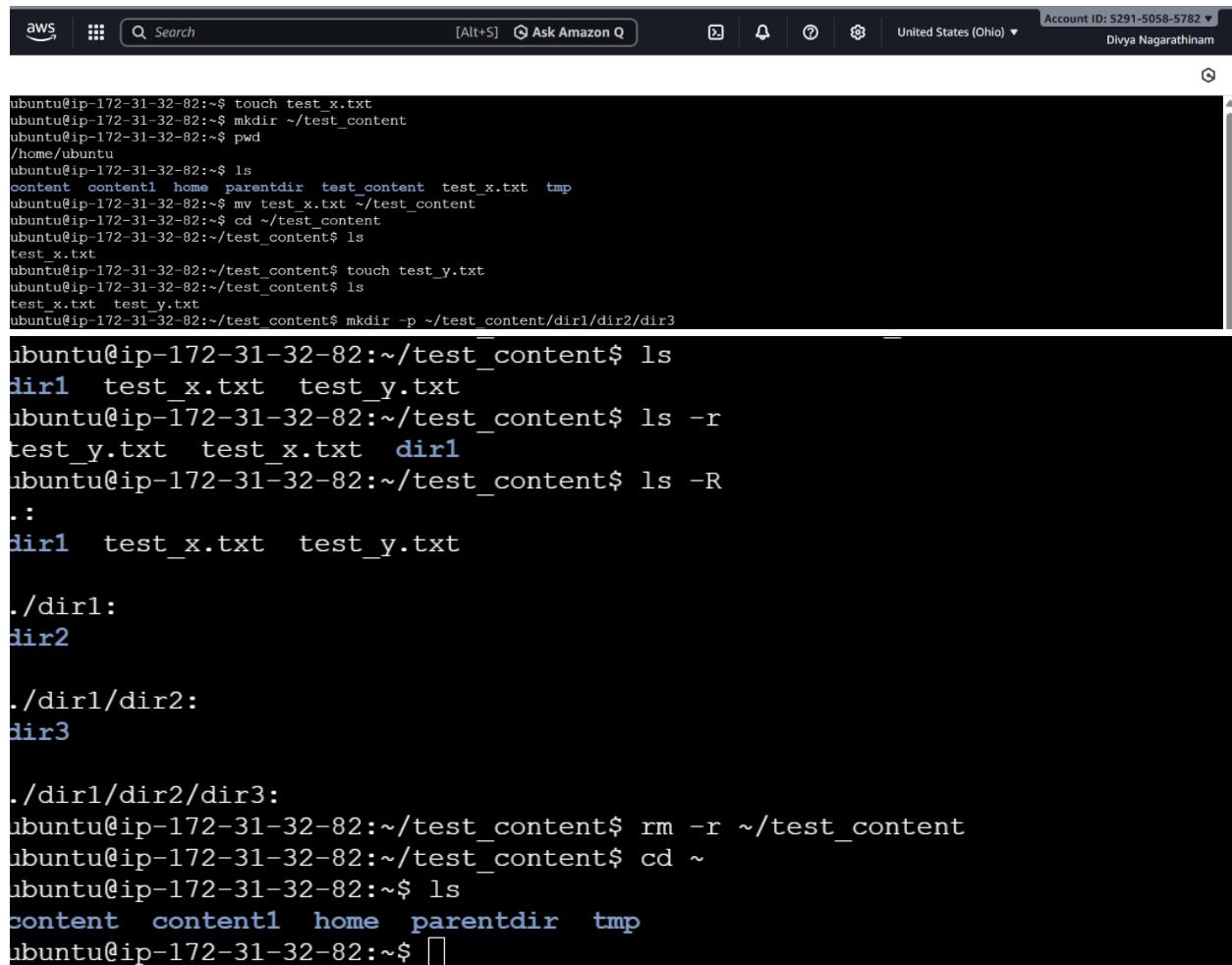
```

Task 2: Create & Destroy

1. Create a file called **x**
2. Create a directory called **content**
3. Move **x** file to the **content** directory
4. Create a file inside the **content** directory called **y**
5. Create the following directory structure in **content** directory: **dir1/dir2/dir3**
6. Remove the **content** directory

Task 2 - Output:

1. touch x.txt, echo test >> x.txt
2. mkdir ~/content
3. mv x.txt ~/content
4. cd ~/content, ls, touch y.txt, echo test >> x.txt, ls
5. mkdir -p ~/content/dir1/dir2/dir3, ls -R
6. rm -r ~/content, cd ~, ls



The screenshot shows a terminal window with the following session:

```
ubuntu@ip-172-31-32-82:~$ touch test_x.txt
ubuntu@ip-172-31-32-82:~$ mkdir ~/test_content
ubuntu@ip-172-31-32-82:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-32-82:~$ ls
content contentl home parentdir test_content test_x.txt tmp
ubuntu@ip-172-31-32-82:~$ mv test_x.txt ~/test_content
ubuntu@ip-172-31-32-82:~$ cd ~/test_content
ubuntu@ip-172-31-32-82:~/test_content$ ls
test_x.txt
ubuntu@ip-172-31-32-82:~/test_content$ touch test_y.txt
ubuntu@ip-172-31-32-82:~/test_content$ ls
test_x.txt test_y.txt
ubuntu@ip-172-31-32-82:~/test_content$ mkdir -p ~/test_content/dir1/dir2/dir3
ubuntu@ip-172-31-32-82:~/test_content$ ls
dir1 test_x.txt test_y.txt
ubuntu@ip-172-31-32-82:~/test_content$ ls -r
test_y.txt test_x.txt dir1
ubuntu@ip-172-31-32-82:~/test_content$ ls -R
.:
dir1 test_x.txt test_y.txt

./dir1:
dir2

./dir1/dir2:
dir3

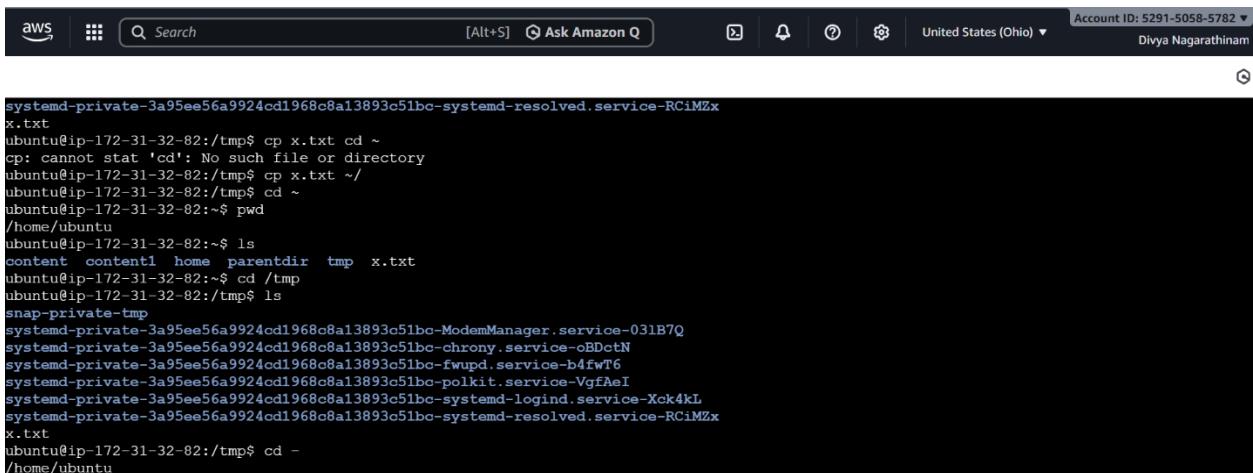
./dir1/dir2/dir3:
ubuntu@ip-172-31-32-82:~/test_content$ rm -r ~/test_content
ubuntu@ip-172-31-32-82:~/test_content$ cd ~
ubuntu@ip-172-31-32-82:~$ ls
content contentl home parentdir tmp
ubuntu@ip-172-31-32-82:~$ 
```

Task 3: Copy Time

1. Create an empty file called `x` in `/tmp`
2. Copy the `x` file you created to your home directory
3. Create a copy of `x` file called `y`
4. Create a directory called `files` and move `x` and `y` there
5. Copy the directory "files" and name the copy `copy_of_files`
6. Rename `copy_of_files` directory to `files2`
7. Remove `files` and `files2` directories

Task 3 - Output:

1. `cd /tmp, touch x.txt`
2. `cp x.txt ~/, cd ~, pwd, ls`
3. `cp x.txt y.txt,`
4. `mkdir ~/files, mv x.txt y.txt ~/files, pwd, ls`
5. `cp -r ~/files ~/copyoffiles`
6. `mv ~/copyoffiles ~/files2, pwd, ls`
7. `rm -r ~/files ~/files2, pwd, ls`



```

aws Search [Alt+S] Ask Amazon Q Account ID: 5291-5058-5782 ▾ United States (Ohio) ▾ Divya Nagarathinam
systemd-private-3a95ee56a9924cd1968c8a13893c51bc-systemd-resolved.service-RCiMZX
x.txt
ubuntu@ip-172-31-32-82:/tmp$ cp x.txt cd ~
cp: cannot stat 'cd': No such file or directory
ubuntu@ip-172-31-32-82:/tmp$ cp x.txt ~/
ubuntu@ip-172-31-32-82:/tmp$ cd ~
ubuntu@ip-172-31-32-82:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-32-82:~$ ls
content content1 home parentdir tmp x.txt
ubuntu@ip-172-31-32-82:~$ cd /tmp
ubuntu@ip-172-31-32-82:/tmp$ ls
snap-private-tmp
systemd-private-3a95ee56a9924cd1968c8a13893c51bc-ModemManager.service-031B7Q
systemd-private-3a95ee56a9924cd1968c8a13893c51bc-chrony.service-0BDctN
systemd-private-3a95ee56a9924cd1968c8a13893c51bc-fwupd.service-b4fwT6
systemd-private-3a95ee56a9924cd1968c8a13893c51bc-polkit.service-VgfAeI
systemd-private-3a95ee56a9924cd1968c8a13893c51bc-systemd-logind.service-Xck4kL
systemd-private-3a95ee56a9924cd1968c8a13893c51bc-systemd-resolved.service-RCiMZX
x.txt
ubuntu@ip-172-31-32-82:/tmp$ cd -
/home/ubuntu

```

```
ubuntu@ip-172-31-32-82:~/files$ cp -r ~/files ~/CopyOfFiles
ubuntu@ip-172-31-32-82:~/files$ cd ~
ubuntu@ip-172-31-32-82:~$ ls
CopyOfFiles content contentl files home parentdir tmp
ubuntu@ip-172-31-32-82:~$ cd ~/CopyOfFiles
ubuntu@ip-172-31-32-82:~/CopyOfFiles$ ls
x.txt y.txt
ubuntu@ip-172-31-32-82:~/CopyOfFiles$ cd ~
ubuntu@ip-172-31-32-82:~$ ls
CopyOfFiles content contentl files home parentdir tmp
ubuntu@ip-172-31-32-82:~$ rm -r ~/files ~/CopyOfFiles
ubuntu@ip-172-31-32-82:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-32-82:~$ ls
content contentl home parentdir tmp
ubuntu@ip-172-31-32-82:~$ []
ubuntu@ip-172-31-32-82:~/tmp$ cd -
/home/ubuntu
ubuntu@ip-172-31-32-82:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-32-82:~$ cp x.txt y.txt
ubuntu@ip-172-31-32-82:~$ ls
content contentl home parentdir tmp x.txt y.txt
ubuntu@ip-172-31-32-82:~$ mkdir ~/files
ubuntu@ip-172-31-32-82:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-32-82:~$ ls
content contentl files home parentdir tmp
ubuntu@ip-172-31-32-82:~$ cd ~/files
ubuntu@ip-172-31-32-82:~/files$ ls
x.txt y.txt
ubuntu@ip-172-31-32-82:~/files$ cp -r ~/files ~/CopyOfFiles
ubuntu@ip-172-31-32-82:~/files$ cd ~
ubuntu@ip-172-31-32-82:~$ ls
```