Linux Fundamentals – Room Report

Submitted By:
Name: Arsalan Khan
Position/Role: Internee
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Platform:
TryHackMe

Objective:
Understand and practice essential Linux commands and concepts including file system navigation, file manipulation, permissions, process management, and basic scripting to build a strong foundation in Linux.

Tools Used:
• Linux Terminal (TryHackMe environment)
• Bash shell commands
• Nano/Vim text editors

Task 1: Introduction

Description:
This task introduces Linux as an operating system, explaining its popularity and wide usage across various devices and systems, from smart cars to supercomputers. It sets the stage for learning essential Linux commands and interacting with the file system.

Task 2: A Bit of Background on Linux

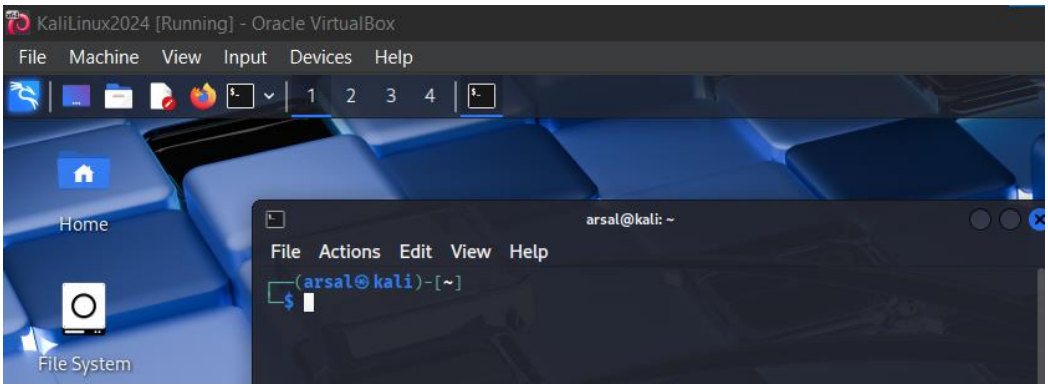
Description:
This task covers the broad usage of Linux in everyday technology, highlighting its presence in websites, car systems, Point of Sale systems, and critical infrastructure. It also explains that Linux is an umbrella term for many UNIX-based operating systems known as distributions or "flavours." Ubuntu and Debian are examples of popular distributions, and Ubuntu will be used throughout this learning series.

Task 3 Summary:

Description:
This task introduces the interactive Ubuntu Linux machine provided within the TryHackMe browser environment. Normally, you start the machine by clicking the "Start Machine" button and receive information such as the machine's IP address and expiry timer. The environment allows you to follow along with the room's material directly in your browser.

Steps Performed:

- Instead of using the in-browser environment, I performed this task on my local Ubuntu VM.
- Opened the terminal on my VM to simulate interaction with the Linux machine.
- Followed along with the instructions as if interacting with the TryHackMe deployed machine.

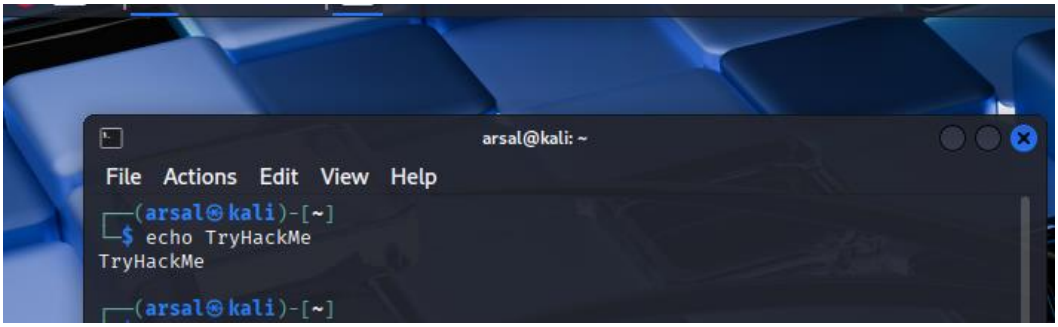


Task 4: Running Your First Few Commands

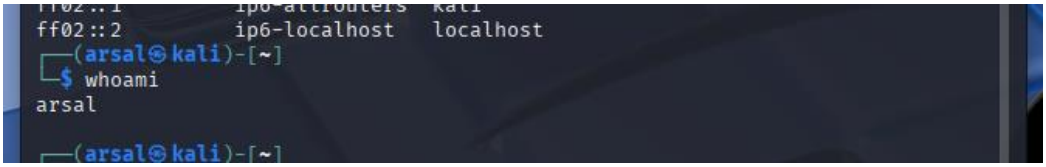
Description:
This task introduces basic Linux terminal commands used to interact with the system via a text-based interface (Terminal). You learn to use commands like echo to output text and whoami to display the current logged-in username. The task emphasizes understanding command syntax, such as when to use quotes.

Steps Performed:

- Opened the terminal on my Ubuntu VM (instead of the browser-based TryHackMe machine).
- Ran echo TryHackMe to output the text "TryHackMe".



- Executed whoami to find out the current username of my VM session.



Task 5: Interacting With the Filesystem

Description

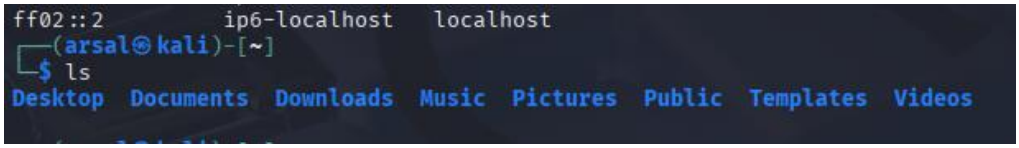
This task introduces essential Linux commands for interacting with the filesystem without a graphical interface. You learn to:

- List files and directories (`ls`)
- Change directories (`cd`)
- Output file contents (`cat`)
- Print the current directory path (`pwd`)

These commands form the foundation for navigating and managing files in Linux.

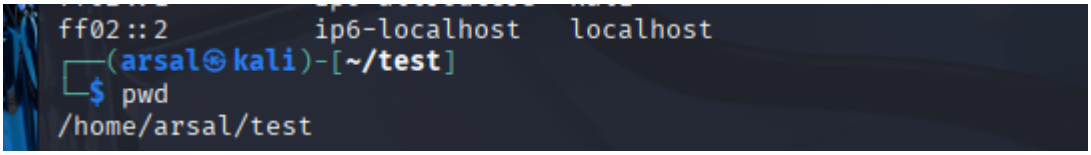
Steps I Performed

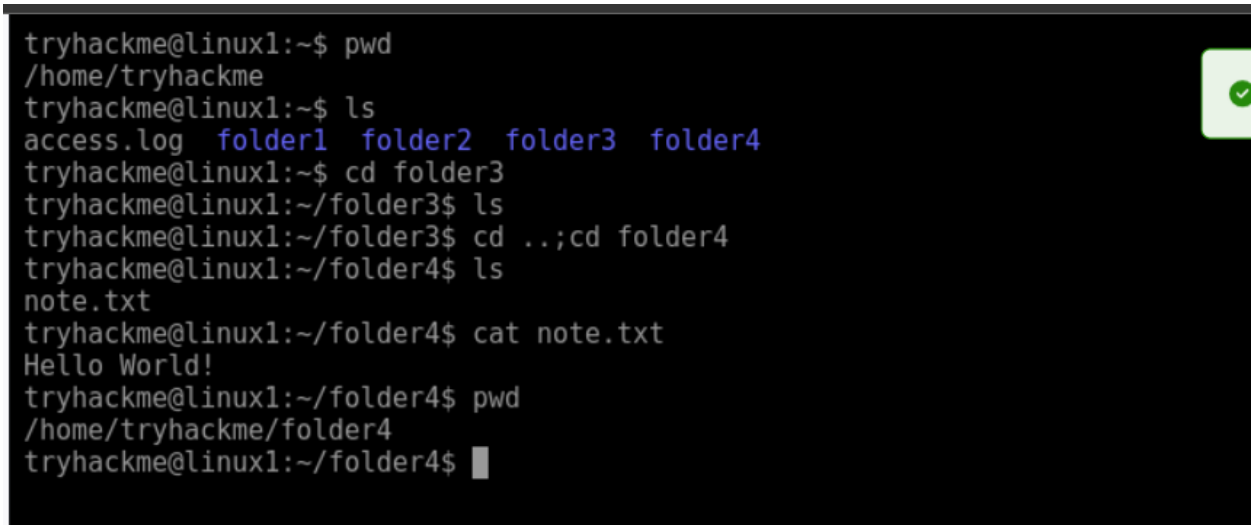
- Started by using ls in the home directory to list all files and folders.



- Identified how many directories exist in the current folder.
- Used `ls` on individual directories to check for files.
- Found a directory that contained a file and used cat to view its contents.

- Navigated into that directory using `cd`.
- Used pwd to confirm my current directory path.





Answers to Questions

1. **How many folders are there in the current directory?**
   Answer: 4

2. **Which directory contains a file?**
   Answer: folder4
3. **What is the contents of this file?**
   Answer: Hello world
4. **What is the full path of the directory where the file is located?**
   Answer: /home/tryhackme/folder4

Task 6: Searching for Files

Description

In this task, we learned how to efficiently search for files and content inside files on a Linux system. Instead of manually navigating directories, we used commands like `find` to locate files by name, and `grep` to search for specific strings inside files. This greatly improves efficiency when working with large filesystems or log files.

- **`find`** command helps locate files by name or pattern anywhere within a directory tree.
- **`grep`** searches inside files for matching text strings, filtering output for relevant lines.

Steps I Performed (on AttackBox VM)

1. Navigated to the home directory:
2. Used `grep` to search the `access.log` file for the flag starting with "THM":
3. The command output included the flag string.

Answer to Question

Use grep on "access.log" to find the flag that has a prefix of "THM". What is the flag?

Answer:
`THM{ACCESS}`

Task 7 Answers: An Introduction to Shell Operators

1. If we wanted to run a command in the background, what operator would we want to use?

Answer:
&

2. If I wanted to replace the contents of a file named "passwords" with the word "password123", what would my command be?

Answer:
echo password123 > passwords

3. Now if I wanted to add "tryhackme" to this file named "passwords" but also keep "password123", what would my command be?

Answer:
echo tryhackme >> passwords

Task 8: Conclusions & Summaries

In this final task of the Linux Fundamentals room, I reflected on the key learnings covered throughout the series. This room provided a solid foundation for interacting with Linux systems, focusing on essential commands and concepts.

Summary of key points covered:

- **Understanding Linux's ubiquity:** Linux powers many devices and services worldwide, from web servers to smart devices.
- **Interacting with a Linux machine:** Gained hands-on experience running commands on a deployed Linux Ubuntu machine (I performed the tasks on my own VM for practice).
- **Fundamental commands:** Learned commands like `echo`, `whoami`, `ls`, `cd`, `cat`, and `pwd` to output text, identify users, navigate and inspect the filesystem.
- **Efficient file searching:** Used `find` to locate files by name and `grep` to search within files for specific text, increasing efficiency.

- **Introduction to shell operators:** Explored operators such as `&`, `&&`, `>`, and `>>` to run background processes, chain commands, and redirect output.

Overall, this room laid the groundwork for becoming proficient in Linux, helping to build muscle memory with essential terminal commands and workflows. The next step will be to continue practicing these skills and progress onto Linux Fundamentals Part 2 for more advanced topics.