LONDON METROPOLITAN UNIVERSITY

informatics college • pokhara

Module Code & Module Title

Level 5 – CT5052NP Network Operating Systems

Assessment Type

Logbook 7

Semester

2023/24 Spring/Autumn

Student Name: Muna Pun

London Met ID: 23048838

College ID: NP04CP4A230233

Assignment Due Date: December 21st, 2024

Assignment Submission Date: December 19th, 2024

Submitted To: Prasant Adhikari

Word Count (Where Required): 1747

I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

Table Of Contents

Table Of Figure

1.Intoduction

The UNIX operating system has become widely used and successful, offering lessons for the future of operating systems. The widespread adoption and success of the UNIX operating system and aims to identify the reasons for its success and draw lessons for the future of operating systems. (B. Kernighan, 1982).

2. Aim

The aim of this lab is to help participants gain hands-on experience with fundamental Linux commands by creating directory structures, navigating through directories using relative and absolute pathnames, manipulating files, and managing file permissions. The goal is to understand how to use these commands effectively to manage a Linux file system.

3. Objectives

It is about implementing and comprehending basic Linux operations that are concerned with directories, files, and certain permissions. This exercise has the following objectives:

i. To create directory structures and practice using the mkdir command with both relative and absolute pathnames.

ii. To change working directories with relative pathnames and understand how to navigate through different levels of a directory structure.

iii. To create, copy, move files from directories, demonstrate file manipulation, show that we can change file and location names.

iv. To understand operations on files like creating a text file with the help of tools like cat, copying, or moving files to different directories with a changed name.

v. To display file permissions changes through changing, modifying, and even removing access permissions for files and directories, then observe their effects on file accessibility.

vi. To print a specific text to the terminal by echo and printf with different formats and symbols.

vii. To use the ls command with various options like -a, -d, -l, -R, and grasp the changes in outputs.

ix. To work on reading, write, and execute permission scenarios in the real directory structure to master permissions for directories and files.

4. Required tool

The following are the tools that I used to make this report:

- Kali Linux

  Kali Linux, known initially as BackTrack Linux, is a free and open-source Linux-based operating system geared at advanced penetration testing and security auditing. Kali Linux has hundreds of tools that perform different information security activities, including penetration testing, security research, computer forensics, and reverse engineering. (Jena, 2024)

- Oracle Virtual box

  Oracle VM VirtualBox is a tool for virtualizing x86 and AMD64/Intel64 computing architecture, enabling users to deploy desktops, servers, and operating systems as virtual machines. You can use this solution to deploy as many virtual machines as the host architecture has the resources for. (Ashtari, 2022)

5. Question For Workshop

1. Create the directory structure. Use **mkdir** command and relative pathnames from your home directory. Try both: **no option** and –**p option**, for the command.

Ans: Using the **mkdir** command we create a directory structure with the help of tree diagram and Also, giving the relative pathnames from home directory.

Figure 1:Making tree directories using mkdir command

2. Change to the 1level3 directory by one step using a relative pathname. Ans: Here we have changed to the 1level3 directory by one step using a relative pathname.

Ans: Here we have changed to the 1level3 directory by one step using a relative pathname.

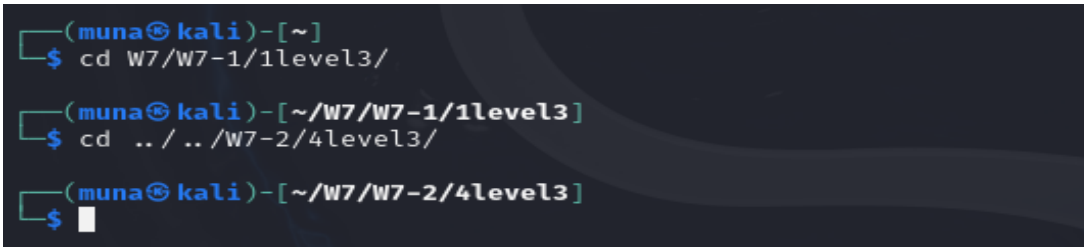

Figure 2: Changing the directory using a relative pathname

3.Practice in changing directories in your directory structure by one command using **relative pathnames**, e.g., from 1level3 to 2level3, from 2level3 to 4level3, from 4level3 to W7, etc. Use names of parent and child directories (‘.’ and ‘..’) as well.

Ans: Using relative pathnames in changing directories in directory structure.

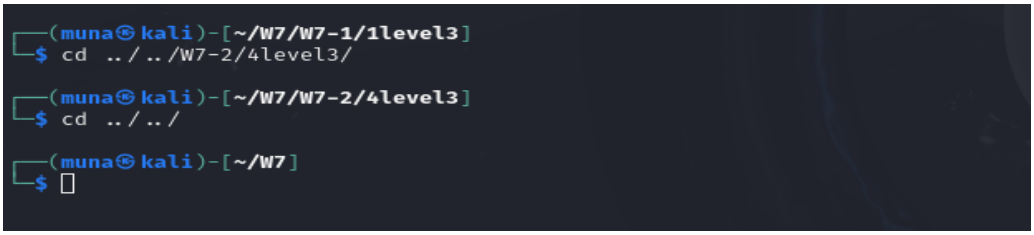

Figure 3:Using relative pathnames in changing directories

4. Change to 1level3 and create a text file by any tool (e.g., by cat or cal like last tutorial).

Ans: Creating a text file by using command : cat>file and changing to 1level3 by using command: cd ../../W7-1/1level3/

Figure 4:Creating text file using cat

5. Copy this text file from **1level3** to **1level3** (with the name **file1**), **2level3**, and to **3level3** changing its name. Show that there are these files in corresponding directories.

Ans: Copying text files and showing that these files are in corresponding directories.

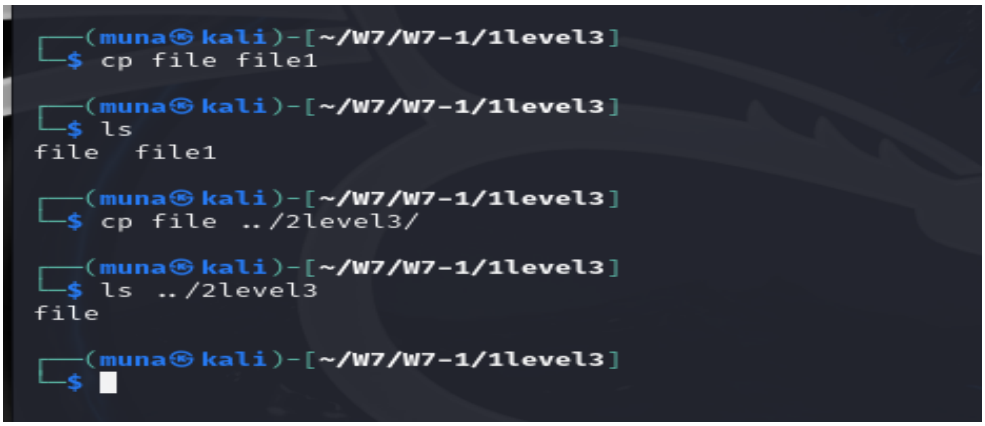

Figure 5: Copying files

6. Move this file to **4level3.** Show that there is this file in **4level3** and there is not in **1level3.**

Ans: Moving file to **4level3** using command: mv file ../ ../W7-2/4level3/

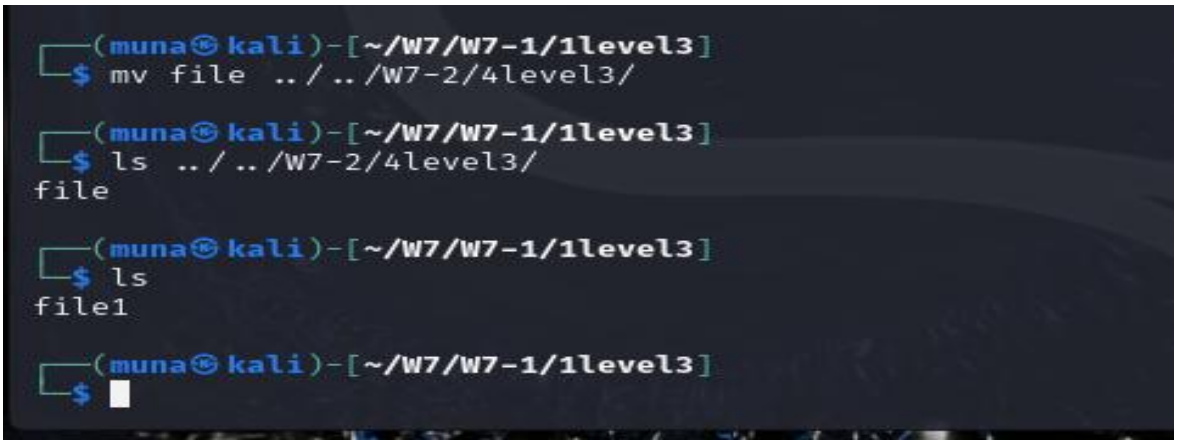

Figure 6:Moving file using mv

7. Print the following texts each in one echo or printf command:

Hello! I can do it

5 > (20: 8) < (30 * 2)

Line 1

Line 2

a-b, A-B, –, +,<,> , #, $, %, &.

Ans: Printing the texts with the help of echo command.

Figure 7:Printing a text using echo command

8. Give the ls command (without options and with **a, d, g, l, R** options) in home directory, **w7, w7-1,** and **1level3** directories. Explain for yourself the results received.

Ans: Giving the ls command without options. Here is the output of the man ls.

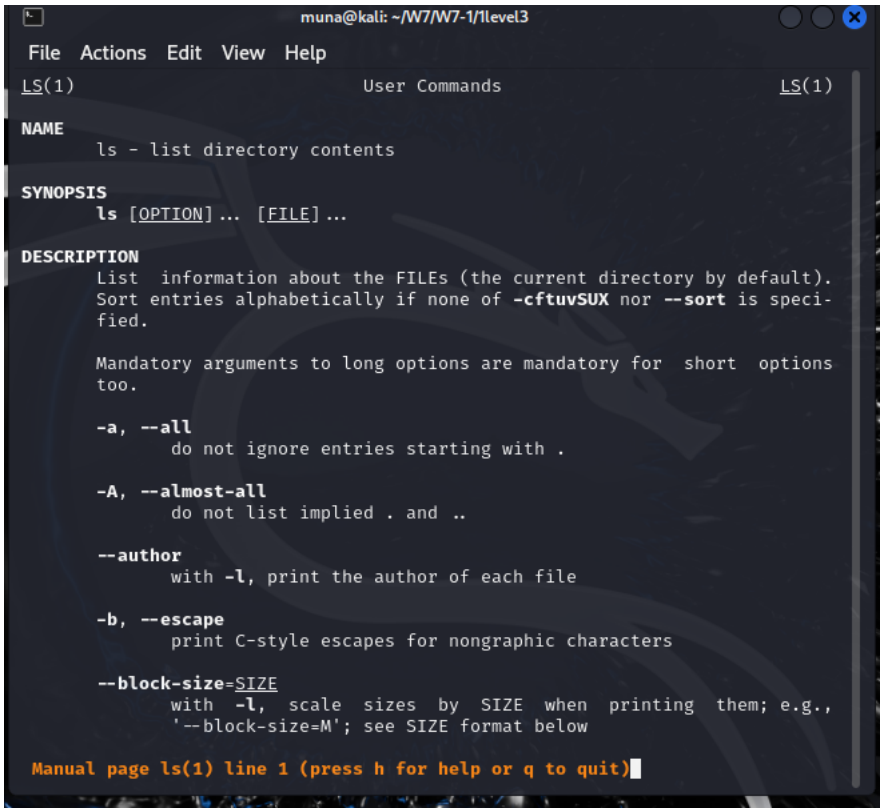

Figure 9:The ouput of man ls

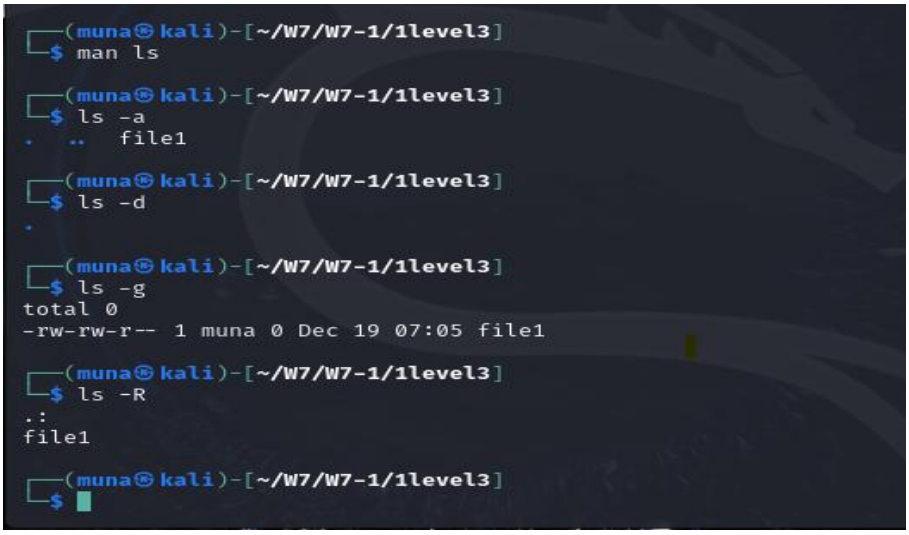

Figure 8:Using the ls command (a, d, g, l, R options)

9. Change to the **W7** directory. Remove the directory files **w7-2, 3level-3, 4level3** and all ordinary files in them. Use the **option –i** of the **rm and rmdir** commands. Show that there are not these ordinary directory files in your file structure.

Ans: Changing to W7 directory removing the directory files W7-2

Figure 10: changing directory and removing files

10. Change to **W7-1.**

- Display **access permissions** for the file file1 in **1level3.**

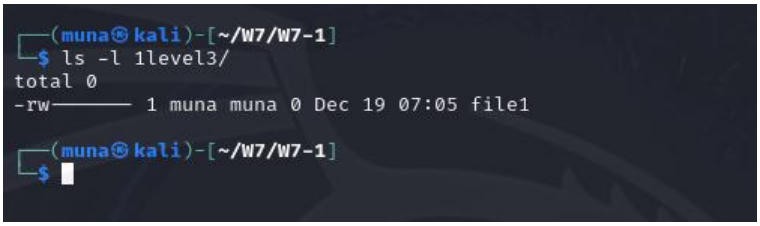

Figure 11: Display access permissions

- **Remove** all **access permissions** for this file

Figure 12:Remove all permissions

- Display access permission for this file.

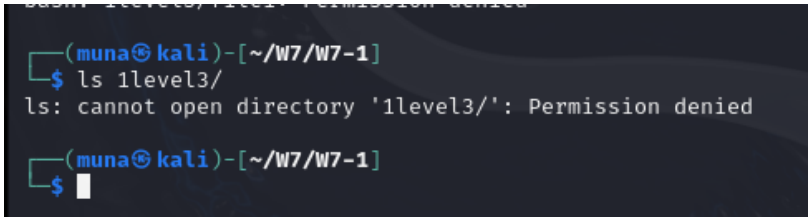

Figure 13:Display access permission

- Try to read this file using any utility (e.g., cat).

Figure 14:Try to read file using cat

- Try to write into this file using any utility (e.g., cat with the sign >> append). Add read and write access permissions for yourself for this file.

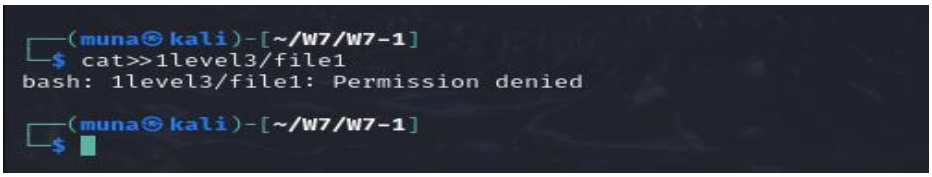

Figure 15:Try to write file using cat

- Display access permissions for this file.

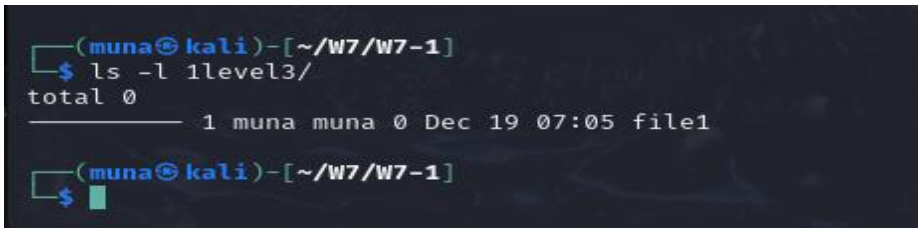

Figure 16:Display access permission

- Try to read this file using any utility.

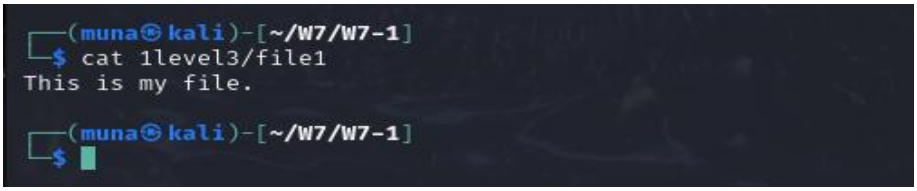

Figure 17:Try to read file using cat

- Try to write into this file using any utility.

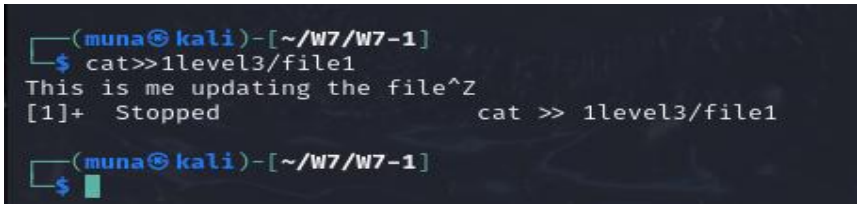

Figure 18:Try to write into file using cat

11. Here, Is the 11 questions are describing:

- Display access permissions for 1level3

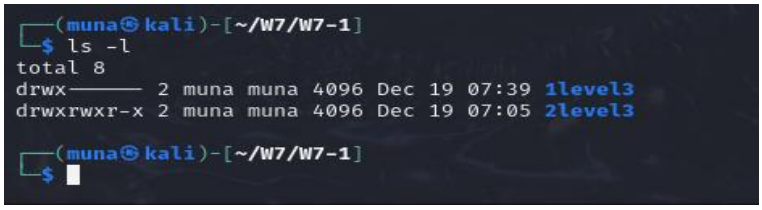

Figure 19:Display access permissions

- Remove all access permissions for the 1level3 directory.

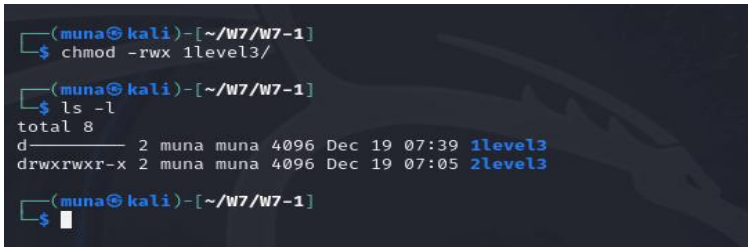

Figure 20:Remove all permissions

- Try to read a file from 1level3 using any utility.

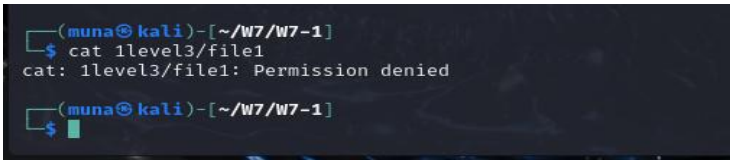

Figure 21: Try to read file using cat

- Try to put a file into 1level3 using any utility.

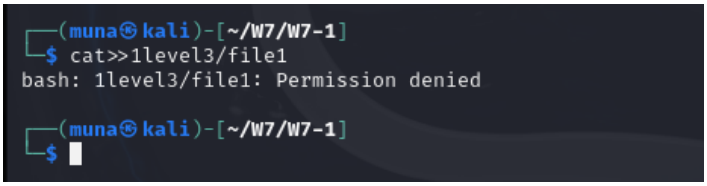

Figure 22:Try to copy file using cat

- Try to search in 1level3 using any command (e.g., the ls command).

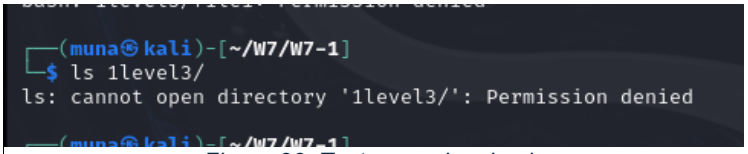

Figure 23: Try to search using ls

- Add read, write, and execute access permissions for yourself for the 1level3 directory

Figure 24: Add read, write and execute access permission

- Display access permissions for 1level3.

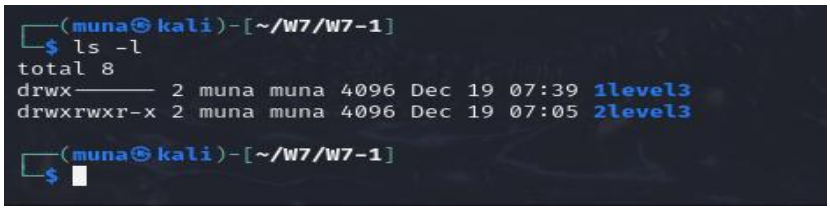

Figure 25: Display access permission

- Try to read a file from 1level3 using any utility.

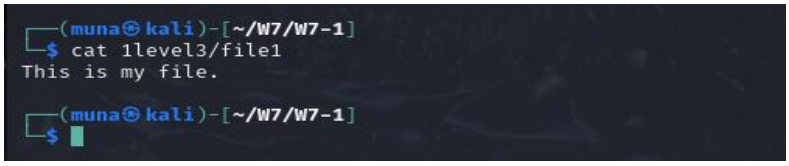

Figure 26: Read file using cat

- Try to put a file into 1level3 using any utility.

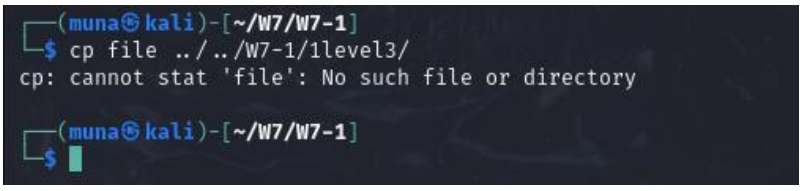

Figure 27: Copy file to 1level3

- Try to search in 1level3 using any command (e.g., the ls command).

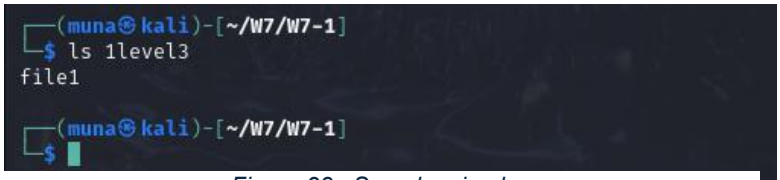

Figure 28: Search using ls

6. Conclusion

The Workshop turned out great due to the successful implementations of basic Linux commands. In this case, it helped create directories, navigate through them, and manipulate them, apart from files; these were exercised with a few exercises in file permission management—that is, a lot of commands like mkdir, cd, cp, mv, echo, and ls along with permission-related tasks involving uses of chmod, ls-l, and rm.

In this regard, participants have also gained practical work experience in dealing with directories and files, where they can change the permissions of files and handle errors when restricted permissions are applied. This exercise thus meant for a start for practical insights into file management in Linux, directory navigation, and permissions handling; therefore, one can get a better understanding of system overview and system administration under Linux.

Upon following these steps, the trainees can implement basic operations on Linux in a more effective manner, hence reinforcing their capability to use the command line and comprehend file/directory management concerning access controls in systems that operate on Linux.

7. References

Ashtari, H. (2022, August 12). *What Is VirtualBox? Meaning, Working, Installation, and Uses*. Retrieved from spiceworks.com: https://www.spiceworks.com/tech/cloud/articles/what-isvirtualbox/#_001

B. Kernighan, S. P. (1982). *The UNIX Operating System: A Model for Software Design.* Science.

Jena, B. K. (2024, Sep 10). *What is Kali Linux: History, Features and Ways to Install*. Retrieved from Simplilearn.com: https://www.simplilearn.com/tutorials/cryptography-tutorial/whatis-kali-linux