

Introduction to Linux, Basic Commands, File Management, and User Management

Section 1: Linux Basics

1. What is Linux, and how does it differ from other operating systems like Windows and macOS?

*The Linux operating system is an open-source system that serves as the foundation for many other systems, Linux open source system and Windows system not open source.

2. Name three popular Linux distributions and briefly describe one of them.

* Kali Linux, Dabian and Ubuntu, The Dabian system is considered one of the most concerned systems for safety.

3. What is the root directory in Linux, and what is its significance?

* It is the highest level of authority in Linux folders or commands and the rest of the volumes branch out of it.

4. Explain the difference between an absolute path and a relative path in Linux.

* The absolute path is the island directory of the file and the relative path depends on the directory and the absolute path is indicated by the symbol / while the relative path is referred to as the symbol ./ in the command window

5. What command would you use to update the package list on a Debian-based system?

* `sudo apt update`.

Section 2: Basic Commands and Navigation

6. Write the command to display the current working directory.

*`pwd`

7. How do you change to the `/etc` directory from your current location?

* `cd /etc`

8. List the contents of the `/home` directory, including hidden files, in a detailed list format.

* `ls -la /home`

9. Explain the purpose of the `ls -l` command and what information it provides.

* Displays the contents and information of the directory in detail.

10. What command can be used to return to your home directory from any location in the file system?

* `cd ~`

Section 3: File Management

11. Write the command to create an empty file named `testfile.txt`.

* `touch testfile.txt`

12. How do you create a directory named `testdir`?

* `mkdir testdir`

13. Write the command to copy `testfile.txt` to `backup_testfile.txt`.

* `cp testfile.txt backup_testfile.txt`

14. What command would you use to move (rename) `testfile.txt` to `newfile.txt`?

* `mv testfile.txt newfile.txt`

15. Write the command to remove the directory `testdir` and its contents.

* `rm -r testdir`

Section 4: User and Group Management

16. How can you list all existing users on the system?

* `cat /etc/passwd`

17. Write the command to create a new user with the username `newuser`.

* `sudo adduser newuser`

18. How do you create a new group named `newgroup`?

* `sudo groupadd newgroup`

19. Write the command to add the user `newuser` to the group `newgroup`.

* `sudo usermod -s /bin/bash newgroup newuser`

20. What command would you use to change the password for the user 'newuser'?

* `sudo passwd newuser`

Section 5: Practical Application

21. Describe the steps you would take to install a Linux distribution on a virtual machine.

* Download and install VirtualBox

* Create a new virtual machine

* Download the ISO file for Linux distribution

* Configure the virtual machine

* Start installation

22. If you are in the '/home/user' directory, what command would you use to navigate to '/var/log'?

* `cd /var/log`

23. How do you display the contents of the current directory in a human-readable format?

* `ls -lh`

24. Explain what the following command does: '`cp -r /home/user/docs /home/user/docs_backup`'.

* Copies the contents of the docs directory to a new directory named docs-backup

25. What is the difference between the '`rm`' and '`rm -r`' commands?

* `rm` / Used to delete a file or files only.

* `rm -r` / Used to delete a directory (folder) and its contents

26. Explain the significance of the '/etc' directory in Linux.

* It is a central repository for critical system configuration files. Plays a vital role in managing the Linux system by storing network configuration files, authentication and authorization files for users.