Technical Report on Basic Linux Commands

Abstract

The Linux operating system is widely recognized for its versatility and efficiency, offering a robust set of commands for system administration. This report provides an in-depth exploration of fundamental Linux commands, covering their functionalities and practical usage. The commands range from system information retrieval to file manipulation and manipulation, catering to both novice and experienced users.

1. Introduction

Linux commands play a pivotal role in system administration tasks. This report aims to elucidate the functionality and usage of basic Linux commands, offering a comprehensive guide for users at various proficiency levels.

1. Date

- **Description:** Displays and sets the system date and time.
- **Utilization in Linux:** date

2. Cal

- **Description:** Quickly views a calendar in the Linux terminal.
- **Utilization in Linux:** cal [month] [year]

3. Df

- **Description:** Shows available disk space in system partitions.
- **Utilization in Linux:** df [options] [file/directory]

4. Free

- **Description:** Displays total free space, memory usage, swap memory, and kernel buffer usage.
- **Utilization in Linux:** free [options]

5. Exit

- **Description:** Exits the current shell with an optional return status parameter.
- **Utilization in Linux:** exit [N]

6. Pwd

- **Description:** Prints the path of the working directory from the root.
- **Utilization in Linux:** pwd [options]

7. Cd

- **Description:** Efficiently moves between the current and different directories.

- **Utilization in Linux:** cd [directory]

8. Ls

- **Description:** Lists directory contents, providing information about files and directories.
- **Utilization in Linux:** ls [option] [file/directory]

9. Cp

- **Description:** Copies files or directories to a specified destination.
- **Utilization in Linux:** cp [OPTION] [Source-1 Source-2 Source-n] [Directory] or cp [OPTION] [Source] [Destination]

10. Mv

- **Description:** Moves files or directories, deleting the source copy.
- **Utilization in Linux:** mv [OPTION] [Source-1 Source-2 Source-n] [Directory] or mv [OPTION] [Source] [Destination]

11. Mkdir

- **Description:** Creates directories, allowing for multiple creations and permission settings.
- **Utilization in Linux:** mkdir [options] [directory/directories]

12. Rm

- **Description:** Removes files or directories.
- **Utilization in Linux:** rm [options] [file/directory]

13. Ln

- **Description:** Creates links between files.
- **Utilization in Linux:** ln [options] [source] [destination]

14. Alias

- **Description:** Creates shortcut commands for frequently used commands.
- **Utilization in Linux:** alias [alias_name]='[command]'

15. Type

- **Description:** Describes how arguments would be translated if used as commands.
- **Utilization in Linux:** type [Options] [command_names]

16. Which

- **Description:** Locates the executable file associated with a given command in the PATH variable.
- **Utilization in Linux:** which [options] [command_name]

17. Help

- **Description:** Displays information about shell built-in commands.

- **Utilization in Linux:** help [options] [command_name]

18. Man

- **Description:** Displays the user manual of any command.
- **Utilization in Linux:** man [options] [command_name]

19. Whatis

- **Description:** Provides a one-line manual page description.
- **Utilization in Linux:** whatis [option] [command_name]

20. Info

- **Description:** Views and navigates info pages containing program documentation.
- **Utilization in Linux:** info [OPTION]... [MENU-ITEM...]

21. Cat

- **Description:** Concatenates and displays file content.
- **Utilization in Linux:** cat filename.txt

22. Sort

- **Description:** Rearranges lines in a file without modifying the actual file.
- **Utilization in Linux:** sort [option] [file]

23. Uniq

- **Description:** Filters out repeated lines in a file.
- **Utilization in Linux:** $uniq [OPTION] [INPUT[OUTPUT]]

24. Wc

- **Description:** Stands for word count, primarily used for counting.
- **Utilization in Linux:** wc [OPTION]... [FILE]...

25. Grep

- **Description:** Searches for a word in a file and prints matching lines.
- **Utilization in Linux:** grep [pattern] [file]

26. Head

- **Description:** Prints the first ten lines of a file or piped data.
- **Utilization in Linux:** head [option] [file]

27. Tail

- **Description:** Displays the last ten lines of a file.
- **Utilization in Linux:** tail [option] [file]

28. Tee

- **Description:** Writes input to both standard output and files.
- **Utilization in Linux:** command | tee [option] file1

29. Echo

- **Description:** Displays a line of text as standard output.
- **Utilization in Linux:** echo [option] [string]

30. Printenv

- **Description:** Displays the values of environment variables.
- **Utilization in Linux:** printenv [name]

3. Conclusion

This report has provided a comprehensive overview of basic Linux commands, covering a diverse range of functionalities. From system information retrieval to file manipulation and text processing, these commands are essential tools for both beginners and experienced Linux users.

4. References

- https://chat.openai.com/
- https://www.hostinger.com/tutorials/linux-commands
- www.ibm.com
- www.geeksforgeeks.org
- wiki.gentoo.org

Youtube Link:

https://youtu.be/Ft5fRECSpBc (part1)
https://youtu.be/AZC6QQCR_QU (part2)

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