Linux Commands

There are some basic Linux commands with their arguments and functions:

1. **`ls`:** List directory contents
   - `-a`: List all files, including hidden files.
   - `-l`: Use a long listing format that includes file permissions, ownership, size, and modification date.
   - `-h`: Use human-readable file sizes.

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2. **`cd`:** Change directory
   - `<directory>`: Change to the specified directory.
   - `~`: Change to the home directory.
   - `-`: Change to the previous directory.

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3. **`pwd`:** Print working directory
   - No arguments.

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4. `**mkdir`:** Make directory
   - `<directory>`: Create a directory with the specified name.
   - `-p`: Create parent directories if they don't exist.

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5. **`rmdir`:** Remove directory
   - `<directory>`: Remove the specified directory.
   - `-p`: Remove parent directories if they are empty.

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6. **`cp`:** Copy files or directories
   - `<source>` `<destination>`: Copy the source file or directory to the destination.
   - `-r`: Copy directories recursively.
   - `-i`: Prompt before overwriting existing files.

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7. **`mv`:** Move or rename files or directories
   - `<source>` `<destination>`: Move the source file or directory to the destination.
   - `-i`: Prompt before overwriting existing files.

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8. **`rm`:** Remove files or directories
   - `<file>`: Remove the specified file.
   - `-r`: Remove directories and their contents recursively.
   - `-f`: Force removal without prompting.

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9. **`cat`:** Concatenate and print files
   - `<file>`: Display the contents of the specified file.
   - `-n`: Number the output lines.

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10. **`less`:** Display file contents page by page
    - `<file>`: Display the contents of the specified file.

    - `SPACE`: Scroll forward one screen.
    - `b`: Scroll backward one screen.

11. **`head`:** Display first lines of a file
    - `<file>`: Display the first 10 lines of the specified file.
    - `-n`: Specify the number of lines to display.

12. **`tail`:** Display last lines of a file
    - `<file>`: Display the last 10 lines of the specified file.
    - `-n`: Specify the number of lines to display.
    - `-f`: Output appended data as the file grows.

13. **`grep`:** Search file for lines matching a pattern
    - `<pattern>` `<file>`: Search for lines that match the specified pattern in the specified file.
    - `-i`: Ignore case when searching.
    - `-r`: Search recursively through directories.

14. **`find`:** Search for files in a directory hierarchy
    - `<directory>` `-name <pattern>`: Search for files in the specified directory that match the specified pattern.
    - `-type <type>`: Search for files of the specified type (`f` for regular files, `d` for directories, `l` for symbolic links).

15. **`chmod`:** Change file permissions
    - `<mode>` `<file>`: Change the permissions of the specified file to the specified mode (e.g. `chmod 644 file.txt`).
    - `-R`: Change permissions recursively for directories and their contents.

16. **`chown`:** Change file ownership
    - `<user>` `<file>`: Change the owner of the specified file to the specified user.
    - `-R`: Change ownership recursively for directories and their contents.

17. **`ps`:** Display information about running processes
    - No arguments: Display information about processes owned by the current user.
    - `-e`: Display information about all processes.
    - `-f`: Use a full listing format that includes process details.

18. **`kill`:** Send a signal to a process
    - `<pid>`: Send the default signal (`SIGTERM`) to the process with the specified process ID.
    - `-s <signal>` `<pid>`: Send the specified signal to the process with the specified process ID.

19. **`top`:** Display system resource usage and processes
    - No arguments: Display resource usage and process information

in real time.
    - `-u <user>`: Display resource usage and process information for the specified user.
    - `-p <pid>`: Display resource usage and process information for the specified process ID.

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20. **`df`:** Display disk space usage
    - No arguments: Display disk space usage for all mounted file systems.
    - `-h`: Use human-readable file sizes.
    - `-T`: Display file system type.

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21. **`du`:** Display disk usage of files and directories
    - `<file or directory>`: Display disk usage of the specified file or directory.
    - `-h`: Use human-readable file sizes.
    - `-s`: Display summary only.

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22. **`tar`:** Manipulate archive files
    - `c`: Create a new archive file.
    - `x`: Extract files from an archive file.
    - `t`: List the contents of an archive file.
    - `f`: Use the specified file as the archive file.
    - `z`: Compress or decompress files using gzip.
    - `j`: Compress or decompress files using bzip2.

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23. **`gzip`:** Compress files using the gzip algorithm
    - `<file>`: Compress the specified file.
    - `-d`: Decompress the specified file.
    - `-k`: Keep the original file after compressing or decompressing.

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24. **`gunzip`:** Decompress files compressed with gzip
    - `<file>`: Decompress the specified file.
    - `-k`: Keep the original file after decompressing.

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25. **`ssh`:** Connect to a remote host over SSH
    - `<user>@<host>`: Connect to the specified host as the specified user.
    - `-p <port>`: Use the specified port for the SSH connection.

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26. **`scp`:** Copy files between hosts over SSH
    - `<source>` `<destination>`: Copy the source file or directory to the destination over SSH.
    - `-r`: Copy directories recursively.
    - `-P <port>`: Use the specified port for the SSH connection.

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27. **`rsync`:** Copy files between hosts efficiently
    - `<source>` `<destination>`: Copy the source file or directory to the destination.
    - `-r`: Copy directories recursively.

    - `-a`: Preserve file permissions and ownership.
    - `-v`: Verbose output.

28. **`ping`:** Test network connectivity to a host
    - `<host>`: Test network connectivity to the specified host.
    - `-c <count>`: Send the specified number of packets.
    - `-i <interval>`: Wait the specified number of seconds between packets.

29. **`ifconfig`:** Configure network interfaces
    - No arguments: Display network interface configuration.
    - `<interface>` `<address>`: Configure the specified network interface with the specified IP address.
    - `up`: Enable the specified network interface.

30. **`route`:** Display or modify the routing table
    - No arguments: Display the routing table.
    - `add <network> gw <gateway>`: Add a route to the specified network via the specified gateway.
    - `del <network>`: Delete the route to the specified network.

31. **`netstat`:** Display network connections and statistics
    - No arguments: Display active network connections.
    - `-a`: Display all network connections, including listening sockets.
    - `-r`: Display the routing table.

32. **`iptables`:** Configure firewall rules
    - `<chain>` `<rule>`: Add a rule to the specified chain (e.g. `iptables INPUT -p tcp --dport 22 -j ACCEPT`).
    - `-L`: List the current firewall rules.
    - `-F`: Flush all firewall rules.

33. **`systemctl`:** Control the systemd system and service manager
    - `start <service>`: Start the specified service.
    - `stop <service>`: Stop the specified service.
    - `restart <service>`: Restart the specified service.
    - `status <service>`: Display the status of the specified service.

34. **`journalctl`:** Query the systemd journal
    - No arguments: Display all log messages in the journal.
    - `-u <unit>`: Display log messages for the specified systemd unit.
    - `-f`: Follow the journal in real time.

35. **`passwd`:** Change user password
    - No arguments: Change the password for the current user.
    - `<user>`: Change the password for the specified user.

36. **`useradd`:** Add a new user account

- `<user>`: Create a new user account with the specified username.
    - `-m`: Create a home directory for the new user.

37. **`userdel`:** Delete a user account
    - `<user>`: Delete the specified user account.
    - `-r`: Remove the user's home directory and mail spool.

38. **`groupadd`:** Add a new group
    - `<group>`: Create a new group with the specified name.

39. **`groupdel`:** Delete a group
    - `<group>`: Delete the specified group.

40. **`sudo`:** Execute a command with superuser privileges
    - `<command>`: Execute the specified command with superuser privileges.
    - `-u <user>`: Execute the command as the specified user.

41. **`su`:** Switch to another user account
    - `<user>`: Switch to the specified user account.
    - `-`: Switch to the specified user account and its environment.

42. **`whoami`:** Display current user name
    - No arguments.

43. **`hostname`:** Display or set the system hostname
    - No arguments: Display the current hostname