



ALRIGHT!



LINUX TUTORIAL



100 LINUX QUESTIONS



1

Q: What is Linux and what are its main features?

Linux is a free and open-source operating system based on Unix. Its main features include its stability, security, flexibility, free of cost, and support for a wide range of hardware.



2

Q: What is the difference between Linux and UNIX?

The primary difference is that Linux is open source and free, while UNIX is proprietary. Additionally, Linux is widely used for a variety of applications, whereas UNIX is primarily used in large enterprises.



3

Q: What is the Linux Kernel?

The Linux kernel is the core of the Linux operating system. It acts as an interface between the computer's hardware and the software running on it.

It manages hardware resources, enables process control, file management, and system security.



4

Q: What is a shell in Linux?

A shell in Linux is an interface that allows users to interact with the operating system by running commands.



5

Q: What are some common shells in Linux?

Common Linux shells include Bash (Bourne-Again Shell), Tcsh, Zsh, and Ksh (Korn Shell).



6

Q: How do you create a new user in Linux?

You can create a new user in Linux using the useradd or adduser command.

```
sudo useradd -m -d /home/newuser -s /bin/bash -c "New  
User" -u 1001 -g users -G sudo,adm -e 2025-01-01 newuser
```



7

Q: What is the root user in Linux?

The root user is the superuser in Linux, with full administrative privileges to the entire system.

root user

/root home dir

/ root dir

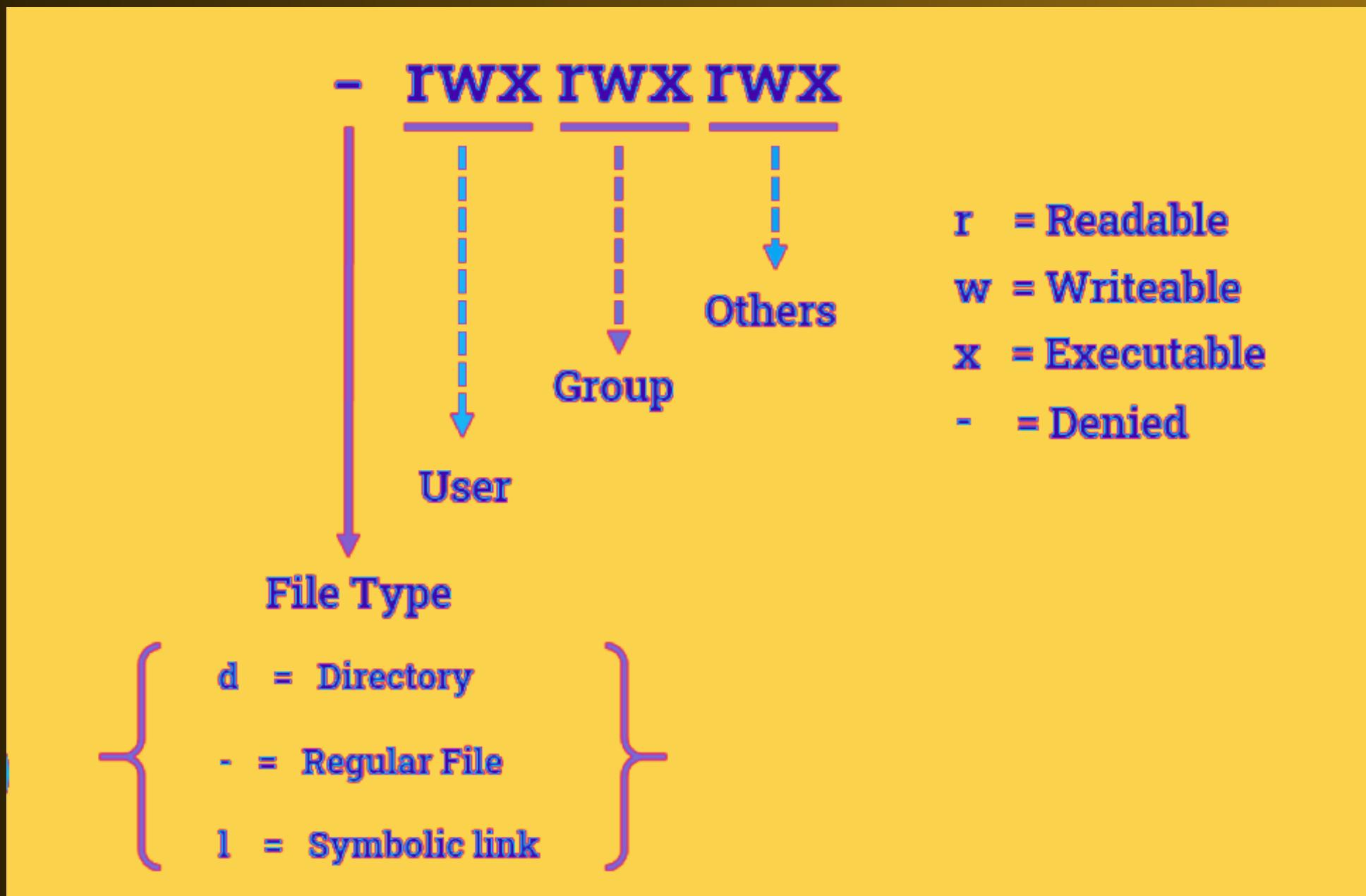


8

Q: Explain the file permissions in Linux.

Linux file permissions include read (r), write (w), and execute (x) for three categories: owner, group, and others.





9

Q: How do you change file permissions in Linux?

File permissions are changed using the chmod command.

```
chmod u=rwx,g=rx,o= file.txt
```



10

Q: What is a process in Linux?

A process is an running instance of a program in Linux.

Each process in Linux has a unique identifier called a Process ID (PID).



11

Q: How do you view active processes in Linux?

You can view active processes using commands like ps, top, or htop.



12

Q: How do you kill a process in Linux?

A process can be killed using the kill command followed by the process ID.

kill PID



13

Q: What is a daemon in Linux?

A daemon is a background process that runs continuously and typically starts at boot.



14

Q: What is the difference between soft link and hard link in Linux?

A soft link is a pointer to a file, while a hard link is a direct mirror of the file. Deleting the original file affects a soft link but not a hard link.



15

Q: What is the use of the df command in Linux?

The df command is used to display disk space usage of file systems.



16

Q: What does the free command do in Linux?

The free command displays the total amount of free and used physical RAM and swap memory in the system.



17

Q: Explain the purpose of the grep command.

grep is used to search text or searches the given file for lines containing a match to the given strings or words.

grep “string” file.txt



18

Q: How do you compress and extract files in Linux?

Files can be compressed using tools like gzip, bzip2, and extracted using gunzip, bunzip2.



19

Q: What is a symbolic link in Linux?

A symbolic link, or symlink, is a file that points to another file or directory. It's a reference that can be used to access the target file.



20

Q: What are inodes in Linux?

An inode is a data structure on a filesystem that stores information about a file except its name or actual data.

Every file or directory is associated with an inode, which is identified by an inode number in the filesystem. This inode number is a unique identifier within the filesystem.



21

Q: What is the purpose of the crontab in Linux?

crontab is used to schedule commands to be executed periodically. It holds the list of scheduled tasks.



22

Q: How can you find the IP address of a Linux server?

You can find the IP address using commands like ifconfig or ip addr show.



23

Q: Explain the purpose of the sshd service.

sshd is the SSH daemon that allows secure remote connections to the server.



24



Q: How do you check the status of a service in Linux?

The status of a service can be checked using
systemctl status servicename.

25

Q: What is the purpose of the /etc/passwd file?

The /etc/passwd file contains user account information.



26

Q: Explain the use of the vi editor.

vi is a text editor in Linux, used for creating and editing files.



27

Q: How do you search for a file in Linux?

You can search for a file using commands like find or locate.



28

Q: What is the purpose of the iptables?

iptables is a command-line utility in Linux used for configuring network packet filtering rules.

With **iptables**, you can define rules for how incoming, outgoing, and forwarding network packets should be handled and manipulated.



29



Q: What are environment variables in Linux?

An environment variable is a named value that can affect the way running processes behave on a computer.
They are part of the environment in which a process runs.

printenv

30



Q: How do you set an environment variable in Linux?

Environment variables can be set using the `export` command,
e.g., `export VARNAME=value`.

31

Q: What is the purpose of the /etc/shadow file?

The /etc/shadow file stores actual password data in an encrypted format for user's accounts with additional properties related to user password.



32

Q: Explain the use of the ping command.

ping is used to test the reachability of a host on an IP network and to measure the round-trip time for messages sent to the destination computer.



33

Q: What is the difference between wget and curl?

Both are command-line tools for transferring data over the network. wget is simpler and designed to download files, whereas curl offers more protocols and features.

protocols including HTTP, HTTPS, FTP, FTPS, SCP, SFTP, TFTP, LDAP, LDAPS, DICT, TELNET, FILE, IMAP, POP3, SMTP, and SMB.



34



Q: How do you check disk usage in Linux?

Disk usage can be checked using the `df` and `du` commands.

35



Q: Explain the use of the tail command.

tail displays the last part of files. It's commonly used to view the end of log files.

36

Q: What is the purpose of the xargs command?

xargs is used to build and execute command lines from standard input. It's useful for combining commands in a pipeline.

```
find . -name "*.txt" | xargs rm
```



37

Q: How do you schedule a task in Linux?

Tasks can be scheduled using cron jobs, which are defined in crontab files.

`*/15 * * * * /path/to/command`



38



Q: What is a package manager in Linux?

A package manager is a collection of tools that automates the process of installing, upgrading, configuring, and removing software packages in a consistent manner.

39

Q: Name some common package managers in Linux.

Common package managers include apt (for Debian/Ubuntu), yum (for RHEL/CentOS), and zypper (for openSUSE).



40



Q: What is the difference between yum and rpm?

yum is a front-end tool for package management that automatically resolves dependencies,

while rpm is a lower-level tool that manages individual packages without automatically handling dependencies.

41



Q: How do you list all installed packages in Linux?

This can be done using the package manager's list command, like

apt list --installed in Debian/Ubuntu or
rpm -qa in RHEL/CentOS.

42

Q: What is a Linux service?

A service in Linux is a program that runs in the background, typically initiated at system startup.



43



Q: How do you start, stop, and restart services in Linux?

Services are managed using the `systemctl` command, e.g.,
`systemctl start servicename`, `systemctl stop servicename`, and
`systemctl restart servicename`.

44



Q: Explain the purpose of the /etc/fstab file.

/etc/fstab is a system configuration file that contains information about different file systems and how they are mounted.

45

Q: What is LVM and what are its advantages?

LVM stands for Logical Volume Manager. It allows for flexible disk management by creating, resizing, and deleting logical volumes.



46

Q: How do you create a simple script in Linux?

A simple script can be created using a text editor, starting with the shebang line (`#!/bin/bash` for a bash script), followed by shell commands. The script file should be made executable with `chmod +x scriptname`.



47

Q: What is the use of the nohup command?

nohup is used to run a command/script in the background even after logging out from the shell.



48

Q: Explain the use of the sed command.

sed (stream editor) is used for parsing and transforming text, typically used in pipelines.

```
sed 's/Linux/UNIX/g' example.txt
```



49

Q: What is the purpose of the /var directory?

The /var directory contains variable data like system logs (/var/log), mail (/var/mail), and temporary files required for running applications.



50



Q: How do you monitor system performance in Linux?

System performance can be monitored using tools like

- top,
- htop,
- vmstat,
- iostat, and sar.

51



Q: Explain the purpose of the ssh command.

ssh (Secure Shell) is a protocol used to securely access and manage systems remotely.

52

Q: How do you secure an SSH server?

SSH security can be enhanced by disabling root login, changing the default port, using key-based authentication, and configuring firewalls.



53

Q: What is the purpose of the /home directory?

The /home directory contains the personal directories of all users.



54



Q: Explain the use of the awk command.

awk is a powerful programming language and tool used for pattern scanning and processing.

awk '{print \$2}' data.txt

55

Q: How do you find the amount of free memory in the system?

Free memory can be checked using the free command or by examining the contents of /proc/meminfo.



56

Q: What is swap space in Linux?

Swap space is a portion of a hard disk drive (HDD) that is used for virtual memory when the physical memory (RAM) is full.



57

Q: How do you create a swap file in Linux?

A swap file can be created using dd to allocate space, mkswap to set up a Linux swap area, and swapon to enable the swap file.



58

Q: What is the purpose of the /etc/hosts file?

The /etc/hosts file is used to map hostnames to IP addresses.



59



Q: How do you set a static IP address in Linux?

A static IP address is set by editing network configuration files or using network management tools or commands, depending on the distribution.

Ex: nmcli

60

Q: Explain the purpose of the nslookup command.

nslookup is a network administration command-line tool used for querying the Domain Name System (DNS) to obtain domain name or IP address mapping.



61

Q: What is the difference between iptables and firewalld?

iptables is a traditional form of Linux firewall, and firewalld is a more dynamic, front-end friendly tool that interfaces with iptables configurations.



62



Q: What is dmidecode command used for?

The dmidecode command in Linux is used to retrieve detailed information about the system's hardware from the BIOS/DMI table in a human-readable format.

Q: What are runlevels in Linux?

Runlevels are predefined modes that a Linux system can run in, each with a specific purpose, like single-user mode, multi-user mode, GUI mode, etc. check using **runlevel** command

- 0: Halt/Shut down the system
- 5: Full multi-user mode (with graphical user interface)



64



Q: How do you change runlevels?

Runlevels can be changed using the `init/telinit` command or `systemctl` in systemd-based systems.

65

Q: What is the purpose of the /boot directory?

The /boot directory contains essential files needed to boot the system, including the Linux kernel, initial RAM disk images, and the bootloader configuration.



66

Q: Explain the purpose of the rsync command.

rsync is used for fast and versatile file copying, both locally and remotely. It's commonly used for backups and mirroring.



67

Q: What is a Linux distribution?

A Linux distribution is a version of the operating system that includes the Linux kernel, a package management system and other supporting software and libraries.



68

Q: Name some popular Linux distributions.

Popular distributions include Ubuntu, Fedora, CentOS, Debian, Red Hat Enterprise Linux (RHEL), and openSUSE.



69

Q: How do you change the hostname of a Linux system?

The hostname can be changed using the hostnamectl command or by editing /etc/hostname.



70

Q: What are system logs and where are they located?

System logs record various activities of the operating system.
They are typically located in the /var/log directory.



71

Q: Explain the purpose of the netstat command.

netstat is used to display network connections, routing tables, interface statistics, masquerade connections, and multicast memberships.



Q: How do you add a new disk to a Linux system without rebooting?

- Scan the SCSI bus using commands like
`echo "----" > /sys/class/scsi_host/host0/scan`
- Partitioning (ex `/dev/sdb` using `fdisk`)
- Formatting the new disk (using `mkfs`)
- Mount.



73

Q: What is the purpose of the /etc/sysconfig directory?

/etc/sysconfig contains scripts and configuration files that manage the startup of services and configure aspects of system behavior.



74

Q: How do you update all packages in Linux?

This can be done using the package manager,
e.g., apt-get update && apt-get upgrade for Debian/Ubuntu or
yum update for RHEL/CentOS.



75

Q: What are the common network configuration files in Linux?

Common files include /etc/network/interfaces (Debian/Ubuntu), /etc/sysconfig/network-scripts/ifcfg-eth0 (RHEL/CentOS), and /etc/netplan/*.yaml (newer Ubuntu versions).



76

Q: How do you change the default runlevel?

The default runlevel can be changed by editing the /etc/inittab file in SysVinit systems or by using systemctl set-default in systemd systems.



- Runlevel 0 (Halt): Mapped to `poweroff.target`
- Runlevel 1 (Single User Mode): Mapped to `rescue.target`
- Runlevel 2 (Multi-user Mode without Networking): Mapped to `multi-user.target` (but in most modern distributions, networking is generally started at all multi-user runlevels)
- Runlevel 3 (Multi-user Mode with Networking): Mapped to `multi-user.target`
- Runlevel 4 (User-Defined/Spare): Mapped to `multi-user.target` as well, typically not used and available for custom configurations
- Runlevel 5 (Multi-user Mode with Networking and GUI): Mapped to `graphical.target`
- Runlevel 6 (Reboot): Mapped to `reboot.target`

77

Q: What is the purpose of the /etc/resolv.conf file?

/etc/resolv.conf contains information about DNS servers and search domains for the host.



78

Q: How do you find which process is using a particular file?

This can be found using the lsof command, which lists open files and the processes using them.



79

Q: What is the purpose of the dmesg command?

dmesg displays the kernel-related messages and helps in troubleshooting hardware and driver related issues.



80



Q: Explain the purpose of the usermod command.

usermod is used to modify a user's system properties, such as username, home directory, and group.

81



Q: How do you find the size of a directory in Linux?

The size of a directory can be found using the du command.

82

Q: What is the purpose of the /etc/cron.* directories?

These directories contain scripts that are run periodically at fixed times, dates, or intervals by the cron daemon.



83

Q: How do you change the priority of a process in Linux?

The priority of a process can be changed using the renice command.



84

Q: What is the purpose of the mount command?

mount is used to attach a filesystem to a directory in the filesystem tree.



85

Q: Explain the purpose of the umask command.

umask sets the default file creation permissions for new files and directories.



86

Q: What is the purpose of the /opt directory?

/opt is used for storing optional software and packages that are not part of the default installation.



87

Q: How do you find out which processes are listening on a specific port?

This can be found using `netstat -tuln` or `ss -tuln`.



88



Q: Explain the purpose of the dig command.

dig (Domain Information Groper) is a network administration command-line tool for querying DNS name servers.

89

Q: What is quota in Linux?

A quota is a system feature used to limit the amount of disk space and/or the number of files (inodes) a user or group can use.



90

Q: How do you set a quota for users in Linux?

Quotas are set using the `quota` and `edquota` commands, and by modifying filesystem configuration.



91



Q: What is the purpose of the /usr directory?

/usr contains user utilities and applications, supporting files for the operating system.

92

Q: How do you find the hardware details of your system?

Hardware details can be found using commands like lshw, lscpu, lsblk, and lspci.



93

Q: What is the purpose of the sysctl command?

sysctl is used to modify kernel parameters at runtime.



94

Q: How do you check the kernel version of your Linux system?

The kernel version can be checked using `uname -r`.



95

Q: What is the difference between a service and a daemon in Linux?

A daemon is a background process that runs continuously, often started at boot time. A service is a process that performs a specific function and may not run continuously.



96



Q: How do you redirect output in Linux?

Output can be redirected using the `>` for standard output and `2>` for standard error.

97



Q: What is the purpose of the /proc directory?

/proc is a virtual filesystem that provides a mechanism to access kernel and process information in a file-like structure.

98



Q: Explain the purpose of the tr command.

tr is used for translating or deleting characters from standard input and writing to standard output.

```
echo "hello world" | tr 'a-z' 'A-Z'
```

99



Q: What is the difference between PATH and LD_LIBRARY_PATH?

PATH is an environment variable specifying a set of directories where executable programs are located.

LD_LIBRARY_PATH is used to specify a set of directories where libraries should be searched for first, before the standard set of directories.

100



Q: How do you create a read-only file in Linux?

A file can be made read-only using the chmod command, for example, chmod 444 filename.