Interview Questions

JAVA-112: Session 1 - Introduction to Linux

Answering interview questions is crucial in your journey of applied learning. Review them to ensure your understanding of important topics covered in the previous session and to prepare yourself for upcoming challenges. Remember that it's important to answer these questions on your own before viewing the solution. The solutions are hyperlinked to community posts on our platform.

**Note: The questions below have been sourced from previous interviews**

Questions

1. [Why is the command line important in Linux?](https://crio.do/learn/crio-community/topic/why-is-the-command-line-important-in-linux/209670)
2. [How do you navigate through directories in the terminal?](https://crio.do/learn/crio-community/topic/how-do-you-navigate-through-directories-in-the-terminal/209671)
3. [What is the difference between an argument and an option in a command?](https://crio.do/learn/crio-community/topic/what-is-the-difference-between-an-argument-and-an-option-in-a-command/209672)
4. [Can you describe the Linux directory structure? What is the significance of directories like /etc, /var, and /home?](https://www.crio.do/learn/crio-community/topic/can-you-describe-the-linux-directory-structure-what-is-the-significance-of-directories-like-etc-var-and-home/209673/)
5. [Explain the difference between an absolute path and a relative path.](https://crio.do/learn/crio-community/topic/explain-the-difference-between-an-absolute-path-and-a-relative-path/209674)
6. [How do you create, copy, and delete files in Linux?](https://crio.do/learn/crio-community/topic/how-do-you-create-copy-and-delete-files-in-linux/209675)
7. [What is a bash script and how do you create one?](https://crio.do/learn/crio-community/topic/what-is-a-bash-script-and-how-do-you-create-one/209676)
8. [How do you pass variables to a bash script and how can you retrieve them inside the script?](https://crio.do/learn/crio-community/topic/how-do-you-pass-variables-to-a-bash-script-and-how-can-you-retrieve-them-inside-the-script/209677)

**1. Why is the command line important in Linux?**

The command line (or terminal) is important in Linux because:

* It provides **direct access** to the operating system’s core functionalities.
* It enables **automation** through scripting (e.g., Bash scripts).
* Many administrative tasks like managing files, installing software, setting permissions, and configuring systems are **more efficient and powerful** via command line.
* It is essential for **remote access** (e.g., via SSH) to Linux servers.
* GUI may not always be available, especially in **headless servers**, making the terminal indispensable.

**2. How do you navigate through directories in the terminal?**

You use the cd (change directory) command:

* cd /home/user – Goes to an absolute path.
* cd .. – Moves one directory up.
* cd ~ or just cd – Goes to your home directory.
* pwd – Shows the current directory (print working directory).
* ls – Lists files and directories in the current directory.

**3. What is the difference between an argument and an option in a command?**

* **Argument**: The **target** the command operates on. Example: filename.txt in cat filename.txt
* **Option (or flag)**: A **modifier** that changes the behavior of the command. Typically starts with - or --. Example: -l in ls -l

Example:  
ls -l /home

* -l is the **option** (long listing format)
* /home is the **argument** (directory to list)

**4. Can you describe the Linux directory structure? What is the significance of directories like /etc, /var, and /home?**

Linux follows a hierarchical directory structure:

* / – Root of the filesystem.
* /etc – Configuration files for the system and applications.
* /var – Variable files like logs, mail, print queues. These files **change frequently**.
* /home – User directories. Each user gets a folder like /home/username.
* Other important ones:
  + /bin – Essential binaries (e.g., ls, cp).
  + /usr – User applications and files.
  + /tmp – Temporary files.
  + /dev – Device files.
  + /proc – Virtual files representing system processes and info.

**5. Explain the difference between an absolute path and a relative path.**

* **Absolute Path**: Starts from the root / and shows the full location.  
  Example: /home/user/documents/file.txt
* **Relative Path**: Starts from the current directory and is relative to it.  
  Example: ../documents/file.txt or ./file.txt

**6. How do you create, copy, and delete files in Linux?**

* **Create a file**:
  + touch filename.txt
  + echo "Hello" > file.txt
  + nano or vim to create and edit
* **Copy a file**:
  + cp source.txt destination.txt
* **Delete a file**:
  + rm filename.txt

Be cautious with rm, as deleted files do not go to a recycle bin.

**7. What is a bash script and how do you create one?**

* A **bash script** is a file containing a sequence of commands that are executed by the Bash shell.

**Steps to create a bash script:**

1. Create a file with .sh extension:

bash

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nano script.sh

1. Start the file with a shebang:

bash

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#!/bin/bash

1. Add commands:

bash

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echo "Hello, World!"

1. Save and make it executable:

bash

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chmod +x script.sh

1. Run it:

bash

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./script.sh

**8. How do you pass variables to a bash script and how can you retrieve them inside the script?**

**Passing variables** via command line:

bash

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./script.sh arg1 arg2

**Inside script.sh**:

bash

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#!/bin/bash

echo "First argument: $1"

echo "Second argument: $2"

* $0 – Script name
* $1, $2, ... – Positional parameters
* $@ – All arguments
* $# – Number of arguments