

Introduction to Linux File System

Explore the fundamental concepts of the Linux file system hierarchy and learn how directories and files are organized. Gain a solid understanding of the structure and navigation principles that will serve as the foundation for effective file manipulation.

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Understanding the Linux File System Hierarchy

The Linux file system hierarchy is a structured organization of directories and files that allows for efficient storage and retrieval of data. By understanding the hierarchy, you can navigate and locate files and directories with ease.

Root Directory (/)

The root directory serves as the starting point of the file system hierarchy. It is represented by a forward slash (/) and contains all other directories and files in the system.

Common Directories

- `/bin`: Contains essential executable files (binaries) for system and user commands.
- `/etc`: Stores system configuration files.
- `/home`: Houses user home directories.
- `/var`: Holds variable data, such as logs and spool files.
- `/tmp`: Stores temporary files.

System Directories

- `/boot`: Contains boot-related files.
- `/dev`: Represents devices in the system.
- `/lib`: Stores shared library files required by system programs.
- `/proc`: Provides information about running processes and system resources.
- `/sys`: Presents a view of the system's hardware devices and drivers.

Additional Directories

- `/mnt`: Used as a mount point for temporary file systems.

- `/opt`: Typically contains optional software packages.
- `/srv`: Stores data for specific services provided by the system.

By understanding the Linux file system hierarchy, you can easily locate and organize files and directories, facilitating efficient file management in your journey.

*Rivet Joint Specifics

- `/nra`: This is a mount point to the A-side on the RAID (aka Filer).
- `/nrb`: This is a mount point to the B-side on the RAID.

It is important to note that the RJ utilizes both CentOS and Redhat Linux distributions, but they are highly customized by our software vendors. You may find files and folders that link to other folders, as well as zombie files since they are old and no longer needed but were not removed before software delivery.

File System Navigation and Directory Structure

When working with Linux file systems, understanding the directory structure is essential for effective file system navigation and management.

Root Directory

The root directory is represented by a forward slash (/) and serves as the starting point of the file system. All other directories and files are organized hierarchically under the root directory.

Directory Structure

Linux follows a tree-like directory structure. Directories can contain other directories and files, creating a hierarchical structure.

Common Directories

- `/bin`: Contains essential system binaries and commands.
- `/home`: Home directories for individual users.
- `/etc`: Configuration files for system-wide settings.
- `/var`: Variable files such as logs, caches, and temporary files.
- `/usr`: User programs and data, including libraries, executables, and documentation.

File System Navigation

To navigate the file system, you can use the following commands:

- `cd`: Change directory
- `ls`: List files and directories

- `pwd` : Print current working directory
- `mkdir` : Create a new directory

Example Commands

Here are some examples of file system navigation:

This command changes the current directory to the `/nra/data/mission/common` directory.

```
$ cd /nra/data/mission/common
```

This command lists the files and directories in the current directory.

```
$ ls
```

This command prints the current working directory (or folder you are in).

```
$ pwd
```

This command creates a new directory called `new_directory` inside `/nra/data/mission/common`.

```
$ mkdir new_directory
```