Linux-Day-2

10 November 2023 16:56

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Let's understand few terminologies between Windows & Linux

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- **Tell me what is directory?**
  - It's a folder, sometimes in windows we call it as a folder and in Linux we can call it as a directory.
  - Don't feel they are different if I interchange these two words between the windows and LINUX operating.

- Similarly in windows we call it as an **administrator** and in Linux we call it as a **root**

- In windows we call it as a **software** and in Linux we call it as a **package**.

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Linux file system hierarchy

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- **What is meant by hierarchy?**
  - Just take your **family** as an example for hierarchy
  - In and family **grandpa** will be there and his **sons** comes under him and his sons having some **children**.
  - This looks like tree structure right? this is what we call as a hierarchy.

- **Linux file system architecture also similar to the tree structure hierarchy.**

- Before we discuss the Linux file system hierarchy let's discussion windows file system hierarchy because we already aware of windows operating system.

  - **In windows what directories are available normally?**
    - C: drive or D: drive
    - In this two drives let's talk about C: drive
    - **Under C: drive what are the folders will be present?**
      - Program files
      - Program files 32 bit
      - Windows
      - Users
      - System 32
    - Like this many folders will be present and inside that folder again many files will be present.

- In the similar way Linux also all path will start with **slash (/)**
  - **/** - this slash we can call it as a **top level root directory**.
  - Under this top level root directory there will be many other directories.

- **Now let's see the directories under the top level root directory.**

  a. **root**
    - here the root directory is under the top level root directory. root directory is a subdirectory of top level root directory.
    - Like under C: drive program files folder will be there similarly under slash root directory is there.
    - No let's open the command prompt, the default home directory here what is there?
      - C:/Users/User1
    - When you login Linux machine with root user the home directly for the root user is /root.
    - Home directory is a default directory for the user.
    - Like when you close the shell are comment from and when you open the shell are come and from again you will directly go to the default home directory.

  a. **home**
    - home is a **sub-directory** under the **top level root directory**.
    - The home directory is similar to the **c:/users** folder in the windows.
    - All other non-root/non-admin users of the machine having the home directories under the /home directory
    - Just assume there is a user1 on the Linux machine so the home directory of the user one present and /home/user1
    - Once **user1** login to the machine by default it will go to the default home directory. So the default home directory for the **/home/user1**

  a. **boot**
    - What is meant by booting?
    - Click on the power on button some process will run in background and bring windows initial desktop screen.
    - During this process what happened in background?
    - The operating system related files will get activated on reloaded into the Ram and will bring something initial desktop screen mirror whether it is a Linux or windows or Mac.
    - So the boot directory contains OS is related files.
    - If we delete the files in boot directory the Operating System will get corrupted and you will not login into the machine.

  a. **etc**
      - Suppose you are my manager and you ask me to create you one Linux server.
      - I have created one liner and inform to my manager.
      - **Next my manager ask me like what is the configuration of the server?**

- **What I will tell?**
  - It's a RHEL machine I mean ready at enterprise Linux machine.
  - Having 8GB of memory.
  - And I have created five users in this Linux machine to login.
  - And I have created this machine with so & so host name.

- Like this all the configuration details I have told to my manager.

- **Now read this configuration files will get stored?**
  It will be stored under the etc directory.

- /etc directory some of the files will created automatically when you launching machine.
  We can customise the files in the etc directory based on our requirement.

a. usr

- When we install software in windows machine where it will get installed? C:/PROGRAMFILES
- SIMILARLY INSTALL ANY PACKAGES IN LINUX IT WILL GET INSTALLED UNDER SPLASH USER DIRECTORY.

a. bin

- The bin folder contains the Linux commands.
- Suppose when I executive **dir** command in windows I get response with the list of files in the current directory.
- And if I run some different command like **bir** I will get like this **command is not present** in windows like that.
- **Why like that you are getting error?**
  - Because that command not defined somewhere in the machine, so we are getting error.
  - The commands in the bin directory can be executed by any user whether it is a root user or non-root user.

- Don't get confused what is the non-root user it's a user without admin privileges are root privileges in Linux machine.

a. sbin

- It's a directory contains the commands similar to the bin folder but this commands can be executed only by the root user and non root cannot execute these commands.

a. tmp

- Contains temp files

Some machines will contains different directories under the /var

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Setup AWS account & Launch RHEL server

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Different ways of creating files

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- In windows normally how to create file?
  Right-Click + New File

- Different ways of creating files
  - cat
  - touch
  - echo
  - vi
  - Nano

- **Let's see how to create a file using cat**
  cat > file1.out
  This is Chaitanya
  I live in India
  Ctrl+c

- **How to read file using cat**
  cat file1.out

- **How to append data to file**
  cat >> file1.out
  I am Hyderabad city
  Ctrl+c

- **How to create file using touch**
  touch file2.out
  The file2.out is empty file & size of file is zero

- **How to create file using vi editor**
  vi file3.out

- Editor will be opened & it's only read only format.
- To write the data into file --> shift + I
- To exit from insert mode of file Esc
- To save file with modification --> :wq!
- Don't save changes & exit from file --> :q!
- Go to bottom of the file --> G
- Go to 10th line of file --> 10G

► **Create file using nano**
nano file4.out

a. To save the changes, press Ctrl + O (Hold down the Control key and press the letter 'O'). This will prompt you to confirm the filename. Press Enter to confirm.
b. To exit nano, press Ctrl + X. If you've made changes, it will ask if you want to save them. Press Y to confirm and then press Enter.