Linux Short notes

FOR DEVOPS ENGINEERS

TRAIN WITH SHUBHAM

Linux Short Notes

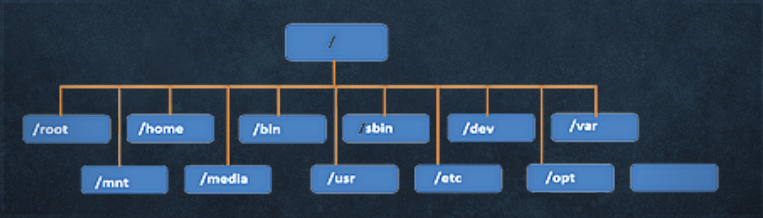
History of Linux

Linux came from a Unix family, Linux is free and open-source software operating systems, which was developed by Linus Torvalds in September 1991.

In 1991, When Linus Torvalds was a student at the University of Helsinki, Finland, USA.

He developed the first code of Linux 0.01 and post it on Minix newsgroup 17 Sep 1991, his code become so popular people encourage him to develop new code and he was lead to develop new code and release the first "official" version of Linux, version 0.02 on October 5, 1991.

Linux File system Hierarchy



In Linux everything is represented as a file including a hardware program, the files are stored in a directory, and every directory contains a file with a tree structure. That is called File System Hierarchy.

Linux uses single rooted, inverted tree-like structure.

Root Directory represents with / (forward slash) It is a top-level directory in Linux.

Basic Commands

#*pwd* → it shows the present working directory
#*ls* → it shows available files and directory list in the present working directory.
#*uname* → it shows the name of the kernel (OS)
#*uname -r* → it shows version of the kernel
#*cd* → it use for change directory
#*clear* → it use for clear screen
#*whoami* → it show currently login user name
#*history* → it show list of previously used commands
#*date* → it show time and date

Create file or directory

1. For create single directory
#*mkdir /shubham*

2. For create multiple directory
#*mkdir dev qa test*

3. For create directory path (directory inside directory)
#*mkdir -p /dev/qa/test/devops*

4. For create number of directory
#*mkdir /student{1..10}*

Create file

Touch:
Touch command is use for create empty file, we can't write data in a file, can't edit or save file.
1. Create single file with touch command
#touch notes

2. Create multilpe file
#touch python java react

3.Create number of files
#touch books{1..10}

Linux File System Permission

Type of File Permission

- Basic Permission
- Special Permission
- Access Control List (ACL) Permission

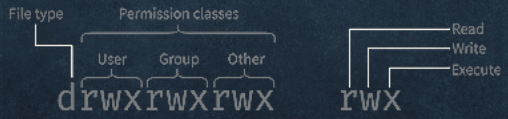
For check file permission

#ls -l /notes.txt

-rw-r—r—. 1 root root 0 Jan 4 14:59 /notes.txt

Permission
Link
Owner
Group owner
Size of file
Date & time of file creation
Name of file

Permission in details



Permission Group

Permission Description

Owner (u) → Permissions used for the owner of the file
Group (g) → Permissions used by members of the group
Other (o) → Permissions used by all other users

For change permission

For add read permission to owner
#chmod u+r /notes.txt

For add read write permission to group
#chmod g+rw /notes.txt

For remove read permission to others
#chmod o-r /notes.txt

For change ownership

Syntax:
#chown <user name> <file/directory name>

eg.
#chown ajay /notes.txt

For change group ownership

Syntax:
#chgrp <group name> <file/directory name>

eg.
#chgrp ibmgrp /notes.txt

Set permission with numeric value

r (read) = 4
w (write) = 2
x (execute) = 1

For set permission with numeric value
#chmod 751 /shub

Regular Expressions

What is Regular Expressions?

- Regular expressions are special characters which
- help search data, matching complex patterns.

GREP (Global Regular Expression Print)

- The grep filter searches a file for a particular pattern
- of characters, and displays all lines that contain that
- pattern.

- Search a word (string in a file)
  #grep root /etc/passwd

- Search a string in multiple files
  #grep root /etc/passwd /etc/group

- Search a string in all files recursively
  #grep -r root /

- Display the file names that matches the string
  #grep -l root /etc/passwd/etc/shadow

- Display the file names that do not contain the string
  #grep -L root /etc/passwd /etc/shadow

- Search and redirect output in a new file
  #grep root /etc/passwd > /mnt/find.txt

Archive File in Linux

- Archiving is the process of combining multiple files and directories (same or different sizes) into one file. Archive process is very useful for backup and compression size of data in Linux.

What is Tar

- The Linux “tar” stands for tape archive, which is used by large number of Linux/Unix system administrators to compress size or drives backup.
  For create archive tar used some compression algorithms Such as gzip,bz2 and xz

Tar command syntax

#tar <options> <files>

Commonly used options

c -for create
x -for extract
v -for verbose
f -for forcefully
t -for test
z -for gzip
j -for bz2
J -for xz
C -for specific destination

For create a tar archive file

tar -cvf /mnt/backup.tar /var

For extract a tar archive file on default location

#tar -xvf /mnt/backup.tar

For extract a tar archive file with compress in size (gzip)
#tar -xvzf /mnt/backup.tar.gz

For create a tar archive file with compress in size (bzip2/bz2)
tar -cvjf /mnt/backup.tar.bz2 /var

For extract a tar archive file with compress in size (bzip2/bz2)
#tar -xvjf /mnt/backup.tar.bz2

For create a tar archive file with compress in size (xz)
tar -cvJf /mnt/backup.tar.xz /var

For extract a tar archive file with compress in size (xz)
#tar -xvJf /mnt/backup.tar.xz

Job Automation

- Job automation allow us perform task automatically in OS by using tools.
- This feature is very useful for administrator to assign task to OS whenever he is not present or perform daily basis work.

Two type of job automation

1. at—at command is used to execute job only one time.
2. crontab—Crontab command is use for to execute job multiple time.

For set job with at command

#date

#at 8:10 AM

at>useradd shub
at>

Ctrl+d (write & quit)

For show pending at job
#atq

For remove at job
#atrm 2

For restrict user from accessing at
#vim /etc/at.deny

Shub (add here user name)
:wq (write&quit)

For start crond service
systemctl start crond

For enable crond service (Permanent on)
systemctl enable crond

For set cron jobs
#crontab -e

Thank You bhaio

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