TRAINING CONTENT

Linux Basics

YOUR NEXT DESTINATION

OF SOFTWARE OUTSOURCING

Lecture Outline

- Types of links soft and hard link
- Filter commands
- Simple filter and advance filter commands
- Start and stop services
- Find and kill the process with id and name

Soft Link and Hard Link In Linux

A **soft link** is an actual link to the original file, whereas a **hard link** is a mirror copy of the original file. If you delete the original file, the soft link has no value, because it points to a non-existent file.

But in the case of hard link, it is entirely opposite. Even if you delete the original file, the hard link will still have the data of the original file. Because hard link acts as a mirror copy of the original file.

Creating Soft Link and Hard Link

Creating Soft Link

#mkdir test
cd test
#echo "Welcome to Soft Link" >source.file
cat source.file
Now, create a soft link to the source.file.
#ln -s source.file softlink.file
#**cat source.file**
#**cat softlink.file**
#ls –lia
#rm -rf source.file
#cat softlink.file

Creating Hard Link

#echo "Welcome to HardLink" >source.file
#**cat source.file**
#ln source.file hardlink.file
#**cat hardlink.file**
#ls –lia
#rm -rf source.file
#cat hardlink.file

An Inode number is **a uniquely existing number for all the files in Linux** and all Unix type systems. When a file is created on a system, a file name and Inode number is assigned to it.

Filter and Advanced filter Commands

Filters are **commands that always read their input from 'stdin' and write their output to 'stdout'**. Users can use file redirection and 'pipes' to setup 'stdin' and 'stdout' as per their need. Pipes are used to direct the 'stdout' stream of one command to the 'stdin' stream of the next command.

More

The more command is useful for file analysis. It will read the big size file. It will display the large file data in page format. The page down and page up key will not work. To display the new record, we need to press “enter” key.

#cat /var/log/messages | more

Less

The less command is like more command but it is faster with large files. It will display the large file data in page format. The page down and page up key will work. To display the new record, we need to press “enter” key.

cat /var/log/messages | less

Filter and Advanced filter Commands Contd.

Head/tail

As the name suggested, we are able to filter / read the initial or top lines or row of data. By default, it will read the first 10 lines or records of the give data. If we need to read the more lines, then we need to specify the number of lines that we need to read with the help of "-n" keyword.

#head -n 7 /var/log/messages

#tail -n 7 /var/log/messages

find

The find filter command is useful to find the files from the Linux operating system.

Code:

find <location> <comparison-criteria> <search-term>

#find / -name messages

Grep

The grep, egrep, fgrep, rgrep are similar commands. It will be useful to filter or extract the matching pattern string form the input data or file.

#grep -i "cpuset" /var/log/messages

Filter and Advanced filter Commands Contd.

Sort

As the name suggested, we can sort or filter the records in ascending order.

#vi a.txt

z

r

q

a

w

S

sort a.txt

Uniq

The uniq command is useful to omit repeated records or lines from the standard input.

If you want to display the number of occurrences of a line or record in the input file or data.

We can use the “-c” keyword in the uniq command.

Code:

#uniq -c a.txt

Start and stop services

In old centos or rhel system, you should know that you can use "**service**" command or directly run "**/etc/init.d/<service_name> start/stop/restart**" to start/stop/restart a service. but in centos 7 or RHEL 7, you need to use "**systemctl**" command to start/stop/restart service instead of "service".

Syntex for start|stop|restart

Systemctl start| stop| restart service name

Here http service will be used as example.

#yum install httpd –y (install if not installed)

#systemctl status httpd

#systemctl stop httpd

#systemctl start httpd

#systemctl restart httpd

Find and kill the process with id and name

kill command in Linux (located in /bin/kill), is a built-in command which is used **to terminate processes manually**. kill command sends a signal to a process which terminates the process.

ps aux | grep -i “name of your desired program”

#ps aux | grep -i httpd

```
[root@localhost ~]# ps aux | grep -i httpd
root       2820  0.0  0.4 211572  4840 ?        Ss   21:04   0:00 /usr/sbin/httpd -DFOREGROUND
apache     2821  0.0  0.2 213656  2968 ?        S    21:04   0:00 /usr/sbin/httpd -DFOREGROUND
apache     2822  0.0  0.2 213656  2976 ?        S    21:04   0:00 /usr/sbin/httpd -DFOREGROUND
apache     2823  0.0  0.2 213656  2960 ?        S    21:04   0:00 /usr/sbin/httpd -DFOREGROUND
apache     2824  0.0  0.2 213656  2976 ?        S    21:04   0:00 /usr/sbin/httpd -DFOREGROUND
apache     2825  0.0  0.2 213656  2976 ?        S    21:04   0:00 /usr/sbin/httpd -DFOREGROUND
root       2845  0.0  0.0 112640   984 pts/0    R+   21:06   0:00 grep --color=auto -i httpd
[root@localhost ~]#
```

#kill process_id

#kill 2802

If not executed use below command

kill -9 process_id

#kill -9 2802

References

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Thank You

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