

# Linux Admin Commands

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## Linux Commands

# ----> root user

\$ ---> normal user

#whoami ---> for curr. user

#who

#date

#pwd ---> print working dir

#cal

#cal 2017

#cal 5 2016

#clear

## to get Host (Server) Name:

#hostname (short hostname)

`#hostname -f` (fully qualified hostname)

# to get IP Address:

#hostname -i (or)

#ip a (or)

# #ifconfig

## to get Memory details:

#free -m (RAM)

#df (HDD)

#df -h (Human Readable Format)

#df -m (File System in MB)

#du (dir usage)

## process management:

#ps

#ps -ef

#ps -ef | grep 'java'

#ps -ef | grep 'mysql'

#top

## to kill a process:

Syntax:

```
#kill <pid>
```

Ex:

```
#kill 1277
```

```
#kill -9 3456 (force kill)
```

## to kill a process by Name:

Syntax:

```
#pkill <pname>
```

Ex:

```
#pkill java
```

```
#pkill tomcat
```

## file Management:

#touch demo.txt    ---> to create an empty file

#touch file{1..100}

#cat > demo.txt    ---> to insert data

Hello world

good day

bye

[ctrl + d]

#cat demo.txt

#cat demo.txt > sample    ---> to copy data

#cat devops >> sample    ---> to append data

## to List files:

#ls

#ls -i (to list inode values)

#ls -r (to list in reverse order)

#ls -t (to list by time of modify)

#ls -s (to list by size)

#ls -a (to list hidden files)

#ls -l (for long list )

#cp demo.txt sample --> to copy data

#rm demo.txt --> to remove files

**#ls -l**

-	rwx	rwx	rwx	1	root	root	38	Aug 19	02:04	Demo.txt
file type	owner permi.	group permi.	others perm.	no.of links	owner (or) user	group	size	modified date & time		file name

### File type:

- --> Regular file(txt,images,docs...)
- d --> Directory
- l --> Link File
- s --> Socket File
- c --> Char. Special File
- b --> Block Special File

### Permissions

- r --> Read permi.
- w --> Write permi.
- x --> Execute permi.
- > no. permission

## to Manage directries:

```
#mkdir mydir  
#mkdir dir{1..100}  
#cp sample mydir/  
#cd mydir  
#cd ..    ---> to move to parent dir  
#cd /     ---> to move to root dir  
#cd ~     ---> to move to home dir  
#cd      ---> to move to home dir  
#cd -     ---> to move to previous working dir.  
#rmdir dir1  
#rm -rf mydir  
#rm -rf *
```

## Hard Link and Soft Link

### Soft Link: "shortcut"

```
#ln -s demo.txt Slink
```

```
#ls -i          ---> lists diff. inode values
```

### Hard Link: "replica"

```
#ln demo.txt Hlink
```

```
#ls -i          ---> lists similar inode values
```

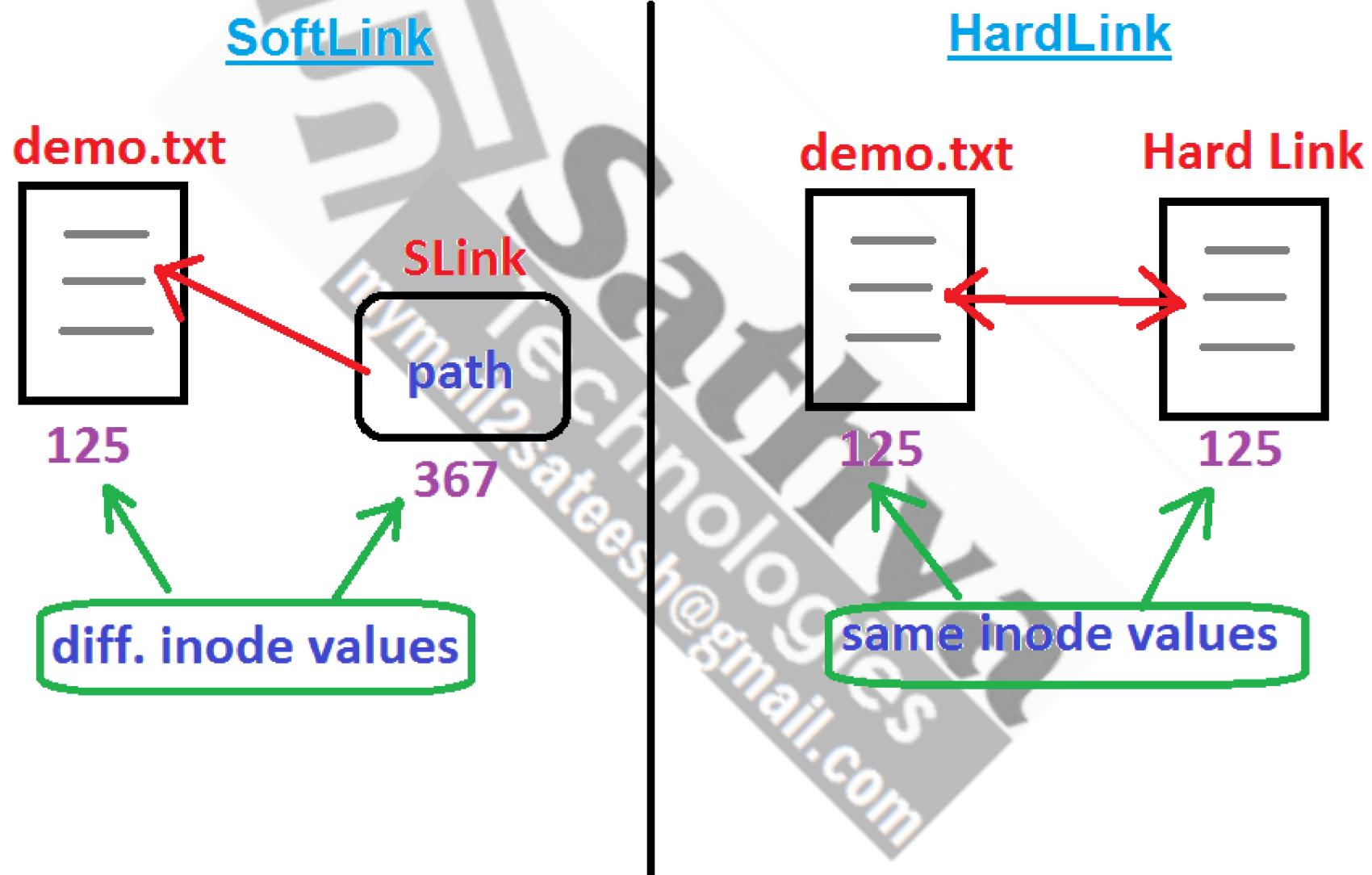
```
#cat demo.txt
```

```
#cat SLink
```

```
#rm demo.txt
```

```
#cat SLink  ---> can not access data from Slink
```

```
#cat HLink  ---> still it can access data
```



## File security

### chmod :

diff. file permissions ...

Read (r) ---> 4      r & w --> 4+2 = 6

Write (w) ---> 2      r & x --> 4+1 = 5

Execute (x)---> 1      w & x --> 2+1 = 3

No permi. ---> 0      r,w&x --> 7

### Syntax-1:

#chmod [permission] <File Name>

Ex:

#chmod 421 demo.txt

#chmod 536 demo.txt

#chmod 777 demo.txt

#chmod 000 demo.txt

## File security

### Syntax-2 :

```
#chmod [who] [+/-/=] [permi] <File Name>
```

who

u ---> user (or) owner

g ---> group

o ---> others

+ ---> grant permi.

- ---> revoke permi.

= ---> grant a specific permi. and revoke other permi.

Ex:

```
#chmod u+r demo
```

```
#chmod g-w demo
```

```
#chmod o=x demo
```

## User and Group Management

```
#sudo su -                                     → to switch root user  
#sudo -i                                     → to list all users  
#cat /etc/passwd                            → to list all groups  
#cat /etc/group                               → to create a Group:  
#groupadd sales                             → to create a User  
#useradd satish                            → to set passwd  
#useradd -g sales john  
#passwd satish  
  
Enter new passwd : satish  
#usermod -g sales satish → to modify primary group  
#usermod -G finance satish → to modify Secondary group  
#id satish  
#groupmod -n stock finance → to modify a group  
#userdel satish                         → to delete user:  
#groupdel sales                          → to delete group:
```

## to change Ownership

#chown satish demo.txt ---> to chnage owner

#chgrp sales demo.txt ---> to chnage group

#chown satish:satish demo.txt

---> to chnage owner & group

#chown -R satish:satish mydir

## tr

**Syntax:**

```
#tr <OldChar> <NewChar> < FileName
```

**Ex:**

```
#tr A x < Emp.txt
```

```
#tr AEIOU aeiou < emp.txt | tee Result
```

## Sort

**Syntax:**

```
#sort [option] <File Name>
```

**Ex:**

```
#sort demo.txt ---> display in Ascending order
```

```
#sort -r demo.txt ---> display in Descending order
```

```
#sort -u demo.txt ---> display unique data in Asc order
```

```
#sort -o Result demo.txt ---> output will store in Result file
```

## Uniq

Syntax:

```
#uniq [option] <File Name>
```

Ex:

```
#uniq demo.txt
```

```
#uniq -u demo.txt    ---> to get only uniq  
values
```

```
#uniq -d demo.txt    ---> to get only  
duplicate values
```

## File Compression & Extraction

### tar:

File Compression Methods      100 Mb

1. GunZip ----> 1/4 size (25 Mb)
2. BunZip ----> 1/8 size (12 Mb)

File Data ---> Char, Numbers, alphanumeric , binary , raw .....  
...Duplicate data

### Method-1: (tar)

for Compression:

```
#tar -cf backup.tar *.txt
```

for Extraction :

```
#tar -xf backup.tar
```

## File Compression & Extraction

### Method-2: (GunZip)

for Compression:

```
#tar -czf backup.tar.gz sample
```

for Extraction :

```
#tar -xzf backup.tar.gz
```

### Method-3: (BunZip)

for Compression:

```
#tar -cjf newBackup.tar.bz2 sample
```

for Extraction :

```
#tar -xjf newBackup.tar.bz2
```

## HEAD

### Syntax:

```
#head [option] <File Name>
```

Ex:

```
#head demo.txt      ---> list first 10 lines
```

```
#head -n 5 demo.txt ---> list first 5 lines
```

## TAIL

### Syntax:

```
#tail [option] <File Name>
```

Ex:

```
#tail demo.txt      ---> list last 10 lines
```

```
#tail -n 3 demo.txt ---> list last 3 lines
```

```
#head -n 4 /etc/passwd | tail -n 1 ---> list 4th line
```

## Grep

### Syntax:

```
#grep [option] <String> <File Name>
```

Ex:

```
#grep -e HELLO demo.txt
```

```
#grep -e HELLO -e DEVOPS demo.txt
```

```
#grep -i HELLO demo.txt ---> ignore case
```

```
#grep -l HELLO *.txt ---> list files
```

```
#grep -v HELLO demo.txt ---> other lines
```

## Cut

### Syntax:

```
#cut [option] <File Name>
```

Ex:

```
#cut -f 1 emp.txt ---> list 1st column
```

```
#cut -f 1,3 emp.txt ---> list 1,3 columns
```

```
#cut -f 2 -d '#' emp.txt ---> list '#' columns
```

## Paste

### Syntax:

```
#paste <File1> <File2>
```

Ex:

```
# cut -f 2 -d '#' emp.txt > file1
```

```
# cut -f 4 -d '#' emp.txt > file2
```

```
# paste file1 file2
```

```
# paste file1 file2 > file3
```

```
# paste -d '$' file1 file2
```

## FIND

### Syntax:

```
#find [dir] [option] <File Name>
```

### Ex:

```
#find . -name demo    ---> to search in curr. Dir
```

```
#find ~ -name demo    ---> to search in home dir
```

```
#find / -name demo    ---> to search in root dir
```

```
#find . -iname demo ---> to search a file by ignore case
```

```
#find / -atime -1     ---> the file which is modified on today
```

```
#find / -atime 1      ---> the file which is modified on on day  
                           before (yesterday)
```

```
#find / -atime +30    ----> lists files which were modified on  
                           30 days before...
```

```
#find / -atime +30 | rm -rf
```

```
#find / -size +100M
```

## vi (or) vim

**Syntax:**

#vi <file Name>

**Ex:**

#vi sample.txt

[press 'i' for insert mode]

hello world

good day

bye

[press 'Esc' for Esc mode]

:wq ----> write and Quit

:w ----> write and continue

:q ----> to quit

:q! ----> quit without saving

:wq! ----> write and Quit forcefully

## vi (or) vim

yy ---> copy a line (or) Yanking

p ---> paste after the current line

P ---> paste to before a current line

u ---> undo

dd ---> to delete a line (or) cut the line

**to Search a Word:** / <word>

**Ex:**

/ hello

n --> to search a Next word

N --> to search a Previous word

:15 --> cursor will moves to 15th line

:11s/games/SATHYA ---> one word will replace in 11th line

:11s/games/SATHYA/g ---> all words will replace in 11th line

:%s/sbin/HELLO/g ---> all word will replace in all lines

## to Get Help :

```
#man ls  
#man cp  
#whatis copy  
#paste --help
```

## to grant sudo privilege to a Normal User :

```
# su root  
# vi /etc/sudoers
```

```
root  ALL=(ALL:ALL) ALL  
sathya ALL=(ALL:ALL) ALL
```

(press 'Esc')

:wq! --->write and quit forcefully