First Exam OF SUID ?


```
[root@localhost ~]# fdisk  -l
Disk /dev/sda: 30 GiB, 32212254720 bytes, 62914560 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xf085a991

Device     Boot    Start      End  Sectors  Size Id Type
/dev/sda1   *        2048  2050047  2048000 1000M 83 Linux
/dev/sda2         2050048 32770047 30720000 14.7G 83 Linux
/dev/sda3        32770048 36866047  4096000    2G 82 Linux swap /
Solaris
/dev/sda4        36866048 62914559 26048512 12.4G  5 Extended
[root@localhost ~]#
[root@localhost ~]# which  fdisk
/usr/sbin/fdisk
[root@localhost ~]#
[root@localhost ~]# ll  /usr/sbin/fdisk
-rwxr-xr-x. 1 root root 140008 Dec 11  2018 /usr/sbin/fdisk
[root@localhost ~]#
[root@localhost ~]# chmod   4755   /usr/sbin/fdisk
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ll  /usr/sbin/fdisk
-rwsr-xr-x. 1 root root 140008 Dec 11  2018 /usr/sbin/fdisk

                      OR

[root@localhost ~]#
[root@localhost ~]# chmod   u+s    /usr/sbin/fdisk
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# useradd   deepak
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# su - deepak
[deepak@localhost ~]$
[deepak@localhost ~]$ fdisk -l
Disk /dev/sda: 30 GiB, 32212254720 bytes, 62914560 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xf085a991

Device     Boot    Start      End  Sectors  Size Id Type
```

```
/dev/sda1   *          2048   2050047   2048000 1000M 83 Linux
/dev/sda2          2050048 32770047 30720000 14.7G 83 Linux
/dev/sda3          32770048 36866047  4096000    2G 82 Linux swap /
Solaris
/dev/sda4          36866048 62914559 26048512 12.4G  5 Extended
[deepak@localhost ~]$ exit
logout
[root@localhost ~]#
[root@localhost ~]# chmod  0755  /usr/sbin/fdisk
[root@localhost ~]#
[root@localhost ~]# ll  /usr/sbin/fdisk
-rwxr-xr-x. 1 root root 140008 Dec 11  2018 /usr/sbin/fdisk
[root@localhost ~]#
                            OR

[root@localhost ~]# chmod  u-s  /usr/sbin/fdisk
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ll  /usr/sbin/fdisk
-rwxr-xr-x. 1 root root 140008 Dec 11  2018 /usr/sbin/fdisk
[root@localhost ~]#



Second Example of SUID ?


[root@localhost ~]#
[root@localhost ~]# which  useradd
/usr/sbin/useradd
[root@localhost ~]#
[root@localhost ~]# ll  /usr/sbin/useradd
-rwxr-xr-x. 1 root root 161920 Dec 18  2018 /usr/sbin/useradd
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# chmod   4755  /usr/sbin/useradd
[root@localhost ~]#
[root@localhost ~]# chmod  u+s  /usr/sbin/useradd
[root@localhost ~]#
[root@localhost ~]# ll  /usr/sbin/useradd
-rwsr-xr-x. 1 root root 161920 Dec 18  2018 /usr/sbin/useradd
[root@localhost ~]#
[root@localhost ~]# su - deepak
[deepak@localhost ~]$
[deepak@localhost ~]$ useradd   deep

[deepak@localhost ~]$ ls  /home
alok   deepak   monika   rakesh   u1   user1   user3
deep   krishna   neeraj   soniya   u2   user2
[deepak@localhost ~]$ exit
logout
[root@localhost ~]#
```

```
[root@localhost ~]# chmod   u-s /usr/sbin/useradd
[root@localhost ~]# ll  /usr/sbin/useradd
-rwxr-xr-x. 1 root root 161920 Dec 18  2018 /usr/sbin/useradd
[root@localhost ~]#
[root@localhost ~]#


Third Example OF SUID ?

[root@localhost ~]# ll  /usr/bin/su
-rwsr-xr-x. 1 root root 52784 Dec 11  2018 /usr/bin/su
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ll  /usr/bin/passwd
-rwsr-xr-x. 1 root root 34512 Aug 12  2018 /usr/bin/passwd
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ll  /usr/sbin

[root@localhost ~]# ll  /usr/bin


******************* SUID Completed *************************


*************************************************************

Next-                 SGID   { Set group id }


[root@localhost ~]# mkdir  /linux
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ls -ld /linux
drwxr-xr-x. 2 root root 6 Sep 11 16:53 /linux
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# groupadd  ibm
[root@localhost ~]#
[root@localhost ~]# chgrp   ibm  /linux
[root@localhost ~]#
[root@localhost ~]# ls -ld /linux
drwxr-xr-x. 2 root ibm 6 Sep 11 16:53 /linux
[root@localhost ~]#
[root@localhost ~]# touch   /linux/abc{1..3}
[root@localhost ~]#
[root@localhost ~]# ll  /linux
total 0
-rw-r--r--. 1 root root 0 Sep 11 16:54 abc1
-rw-r--r--. 1 root root 0 Sep 11 16:54 abc2
```

```
-rw-r--r--. 1 root root 0 Sep 11 16:54 abc3
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# chmod   2755  /linux
[root@localhost ~]#
[root@localhost ~]# ls -ld  /linux
drwxr-sr-x. 2 root ibm 42 Sep 11 16:54 /linux
[root@localhost ~]#
[root@localhost ~]# touch  /linux/xyz{1..3}
[root@localhost ~]#
[root@localhost ~]# ll  /linux
total 0
-rw-r--r--. 1 root root 0 Sep 11 16:54 abc1
-rw-r--r--. 1 root root 0 Sep 11 16:54 abc2
-rw-r--r--. 1 root root 0 Sep 11 16:54 abc3
-rw-r--r--. 1 root ibm  0 Sep 11 16:55 xyz1
-rw-r--r--. 1 root ibm  0 Sep 11 16:55 xyz2
-rw-r--r--. 1 root ibm  0 Sep 11 16:55 xyz3
[root@localhost ~]#
[root@localhost ~]# chgrp  -R   ibm /linux
[root@localhost ~]#
[root@localhost ~]# ll  /linux
total 0
-rw-r--r--. 1 root ibm 0 Sep 11 16:54 abc1
-rw-r--r--. 1 root ibm 0 Sep 11 16:54 abc2
-rw-r--r--. 1 root ibm 0 Sep 11 16:54 abc3
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 xyz1
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 xyz2
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 xyz3
[root@localhost ~]#
[root@localhost ~]# touch  /linux/b{1..3}
[root@localhost ~]#
[root@localhost ~]# ll  /linux
total 0
-rw-r--r--. 1 root ibm 0 Sep 11 16:54 abc1
-rw-r--r--. 1 root ibm 0 Sep 11 16:54 abc2
-rw-r--r--. 1 root ibm 0 Sep 11 16:54 abc3
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 b1
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 b2
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 b3
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 xyz1
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 xyz2
-rw-r--r--. 1 root ibm 0 Sep 11 16:55 xyz3
[root@localhost ~]#
```

******************** END *********************************
Next - Sticky Bit

Example:-

```
[root@localhost ~]# mkdir  /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod   777   /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld /shareplace
drwxrwxrwx. 2 root root 6 Sep 11 17:09 /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod  1777  /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld /shareplace
drwxrwxrwt. 2 root root 6 Sep 11 17:09 /shareplace
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# useradd  soniya
[root@localhost ~]# useradd  alok
[root@localhost ~]#

[root@localhost ~]# su -  soniya
[soniya@localhost ~]$
[soniya@localhost ~]$ cd /shareplace
[soniya@localhost shareplace]$

[soniya@localhost shareplace]$ echo  "hello  testing team" >  test1
[soniya@localhost shareplace]$
[soniya@localhost shareplace]$ ll
total 4
-rw-rw-r--. 1 soniya soniya 20 Sep 11 17:12 test1
[soniya@localhost shareplace]$
[soniya@localhost shareplace]$ exit
logout
[root@localhost ~]# su - alok
[alok@localhost ~]$
[alok@localhost ~]$ cd /shareplace
[alok@localhost shareplace]$
[alok@localhost shareplace]$ echo  "hello" >  test2
[alok@localhost shareplace]$ ll
total 8
-rw-rw-r--. 1 soniya soniya 20 Sep 11 17:12 test1
-rw-rw-r--. 1 alok   alok    6 Sep 11 17:12 test2
[alok@localhost shareplace]$
[alok@localhost shareplace]$ rm  -rf  test1
rm: cannot remove 'test1': Operation not permitted
[alok@localhost shareplace]$
[alok@localhost shareplace]$ rm -rf  test2
[alok@localhost shareplace]$ ll
total 4
-rw-rw-r--. 1 soniya soniya 20 Sep 11 17:12 test1
[alok@localhost shareplace]$ exit
logout
[root@localhost ~]#
```

How to remove Sticky Bit ?

```
[root@localhost ~]#
[root@localhost ~]# chmod  0755  /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod  0755  /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld /shareplace
drwxr-xr-x. 2 root root 19 Sep 11 17:13 /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod   o-t  /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld /shareplace
drwxr-xr-x. 2 root root 19 Sep 11 17:13 /shareplace
[root@localhost ~]#
```

*******************************END***************************

How to Apply SGID and Sticky Bit ?

```
[root@localhost ~]# ls -ld /shareplace
drwxr-xr-x. 2 root root 19 Sep 11 17:13 /shareplace
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# chgrp   ibm  /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld /shareplace
drwxr-xr-x. 2 root ibm 19 Sep 11 17:13 /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod  3777   /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod  g+s,o+t /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld /shareplace
drwxrwsrwt. 2 root ibm 19 Sep 11 17:13 /shareplace


root@localhost ~]# su - soniya
[soniya@localhost ~]$
[soniya@localhost ~]$ cd /shareplace
[soniya@localhost shareplace]$
[soniya@localhost shareplace]$ touch abc1
[soniya@localhost shareplace]$ ll
total 4
-rw-rw-r--. 1 soniya ibm     0 Sep 11 17:18 abc1
-rw-rw-r--. 1 soniya soniya 20 Sep 11 17:12 test1
```

```
[soniya@localhost shareplace]$ exit
logout
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# su - alok
[alok@localhost ~]$
[alok@localhost ~]$ cd /shareplace
[alok@localhost shareplace]$
[alok@localhost shareplace]$ touch abc3
[alok@localhost shareplace]$
[alok@localhost shareplace]$ ll
total 4
-rw-rw-r--. 1 soniya ibm      0 Sep 11 17:18 abc1
-rw-rw-r--. 1 alok   ibm      0 Sep 11 17:18 abc3
-rw-rw-r--. 1 soniya soniya 20 Sep 11 17:12 test1
[alok@localhost shareplace]$
[alok@localhost shareplace]$
[alok@localhost shareplace]$ rm -rf  abc1
rm: cannot remove 'abc1': Operation not permitted
[alok@localhost shareplace]$
[alok@localhost shareplace]$ echo  "hello" >  abc1
-bash: abc1: Permission denied
[alok@localhost shareplace]$ exit

[root@localhost ~]# chmod  7777   /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld  /shareplace
drwsrwsrwt. 2 root ibm 43 Sep 11 17:18 /shareplace
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# chmod   3755  /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld  /shareplace
drwsr-sr-t. 2 root ibm 43 Sep 11 17:18 /shareplace

[root@localhost ~]#
[root@localhost ~]# ls -ld  /shareplace
drwsr-sr-t. 2 root ibm 43 Sep 11 17:18 /shareplace
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# chmod 3777   /shareplace
[root@localhost ~]# ls -ld  /shareplace
drwsrwsrwt. 2 root ibm 43 Sep 11 17:18 /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod   o-x   /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld  /shareplace
drwsrwsrwT. 2 root ibm 43 Sep 11 17:18 /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod   o+x   /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld  /shareplace
```

```
drwsrwsrwt. 2 root ibm 43 Sep 11 17:18 /shareplace
[root@localhost ~]#
[root@localhost ~]# chmod   g-x  /shareplace
[root@localhost ~]# ls -ld  /shareplace
drwsrwSrwt. 2 root ibm 43 Sep 11 17:18 /shareplace
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# stat  /shareplace
  File: /shareplace
  Size: 43            Blocks: 0          IO Block: 4096   directory
Device: 802h/2050d    Inode: 1152297      Links: 2
Access: (7767/drwsrwSrwt)  Uid: (     0/    root)   Gid: ( 1055/
ibm)
Context: unconfined_u:object_r:default_t:s0
Access: 2019-09-11 17:18:56.681053658 +0530
Modify: 2019-09-11 17:18:55.508053646 +0530
Change: 2019-09-11 17:24:18.222057092 +0530
 Birth: -
[root@localhost ~]#
[root@localhost ~]# chmod   g+x  /shareplace
[root@localhost ~]#
[root@localhost ~]# ls -ld  /shareplace
drwsrwsrwt. 2 root ibm 43 Sep 11 17:18 /shareplace

************************************
```