Mohamed Ahmed Mohamed Abd-Elgani
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1. Compress a file by compress, gzip, zip commands and decompress it again. State the differences between compress and gzip commands.

Compress

gzip

zip

```
sok    ~/♫ /original        11:41     zip or_zip.zip or.txt
  adding: or.txt (deflated 88%)

sok    ~/♫ /original        11:42    |
```

```
sok    ~/♫ /original        12:37    ls -lh or_zip.zip
-rw-rw-r-- 1 sok sok 7.0M Dec 25 12:37 or_zip.zip
```

```
sok    ~/♫ /original        11:42    unzip or_zip.zip
Archive:  or_zip.zip
replace or.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: or.txt
```

	Compress	Gzip	Zip
size	12	7	7
Result ex	.z	.gz	.zip
Replace Source file	Yes	yes	no

2.What is the command used to view the content of a compressed file.
Zcat ==> zip – gzip

bzcat ===> bzip

3.Backup /etc directory using tar utility.

```
sok    ~/♫        13:13     tar cvf ~/Music/arcs/etc.tar /etc 2>/dev/null |

sok    ~/♫        13:13     ls
./  ../  arcs/  comp/  original/

sok    ~/♫        13:13     ls arcs/
./  ../  etc.tar

sok    ~/♫        13:13    |
```

4. Starting from your home directory, find all files that were modified in the last two day.

```
sok    ~/♫      13:36    ls -R -l ~ | grep 'Dec 23' > ~/Music/modified.txt 2> /dev/null &
[2] 16800
```

```
sok    ~/♫      13:39    find /home/sok -type f -mtime -2 > ~/Music/modified.txt 2>/dev/nul
```

5. Starting from /etc, find files owned by root user.

```
sok    ~/♫      13:39    ls -R -l /etc | grep 'root' >root_related.txt 2> /dev/null &
```

```
sok    ~/♫      13:39    sudo find /etc -user root > ~/Music/root_related.txt
```

6. Find all directories in your home directory.

```
sok    ~/♫      13:44    ls -R -l ~ | grep '^d' >./alldhome.txt 2> /dev/null &
[2] 17248
```

```
sok    ~/♫      13:46    find ~ -type d &
```

7.Write a command to search for all files on the system that, its name is ".profile".

```
root@sok-HP-Compaq-Pro-6300-MT:~# find / -type f -name '.profile'
/home/islam/.profile
/home/sok/.profile
/home/test/.profile
find: '/run/user/1000/doc': Permission denied
find: '/run/user/1000/gvfs': Permission denied
/snap/core22/1033/etc/skel/.profile
/snap/core22/1033/root/.profile
/snap/core22/864/etc/skel/.profile
/snap/core22/864/root/.profile
/snap/core18/2796/etc/skel/.profile
/snap/core18/2796/root/.profile
/snap/core18/2812/etc/skel/.profile
/snap/core18/2812/root/.profile
/snap/core20/2105/etc/skel/.profile
/snap/core20/2105/root/.profile
/snap/core20/2015/etc/skel/.profile
/snap/core20/2015/root/.profile
/root/.profile
/etc/skel/.profile
root@sok-HP-Compaq-Pro-6300-MT:~#
```

8.Identify the file types of the following: /etc/passwd, /dev/pts/0, /etc, /dev/sda

```
root@sok-HP-Compaq-Pro-6300-MT:~# file /etc/passwd /dev/pts/0 /etc /dev/sda
/etc/passwd: ASCII text
/dev/pts/0:   character special (136/0)
/etc:         directory
/dev/sda:     block special (8/0)
root@sok-HP-Compaq-Pro-6300-MT:~#
```

9. List the inode numbers of /, /etc, /etc/hosts.

```
root@sok-HP-Compaq-Pro-6300-MT:~# ls -di / /etc /etc/hosts
      2 /  1572865 /etc  1573029 /etc/hosts
```

10. Copy /etc/passwd to your home directory, use the commands diff and cmp, and Edit in the file you copied, and then use these commands again, and check the output.

```
sok    ~      14:03    cp /etc/passwd ~

sok    ~      14:14    diff ./passwd /etc/passwd

sok    ~      14:14    man camp
No manual entry for camp

sok    ~      14:14    man cmp

sok    ~      14:14    cmp ./passwd /etc/pass
passwd    passwd-

sok    ~      14:14    cmp ./passwd /etc/passwd

sok    ~      14:20    edit ./passwd

sok    ~      14:21    cmp ./passwd /etc/passwd

sok    ~      14:21    diff ./passwd /etc/passwd

sok    ~      14:21    edit ./passwd

sok    ~      14:21    diff ./passwd /etc/passwd
2c2
< dae:on:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
---
> daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin

sok    ~      14:21    cmp ./passwd /etc/passwd
./passwd /etc/passwd differ: byte 36, line 2

sok    ~      14:21    
```

11. Create a symbolic link of /etc/passwd in /boot.

```
sok    ~        14:23      sudo ln -s /etc/passwd /boot/spasswd
[sudo] password for sok:

sok    ~        14:24      cd /boot/

sok    /boot        14:24     ls
./                      initrd.img-6.2.0-36-generic  System.map-6.2.0-36-generic
../                     initrd.img-6.2.0-37-generic  System.map-6.2.0-37-generic
config-6.2.0-36-generic  initrd.img-6.2.0-39-generic  System.map-6.2.0-39-generic
config-6.2.0-37-generic  initrd.img.old@             vmlinuz@
config-6.2.0-39-generic  memtest86+.bin              vmlinuz-6.2.0-36-generic
efi/                    memtest86+.elf              vmlinuz-6.2.0-37-generic
grub/                   memtest86+_multiboot.bin     vmlinuz-6.2.0-39-generic
initrd.img@             spasswd@                    vmlinuz.old@

sok    /boot        14:24
```

12. Create a hard link of /etc/passwd in /boot. Could you? Why?

```
sok    /boot        14:24      sudo ln -i /etc/passwd /boot/spasswd
ln: replace '/boot/spasswd'? y

sok    /boot        14:25     ls
./                      initrd.img-6.2.0-36-generic  System.map-6.2.0-36-generic
../                     initrd.img-6.2.0-37-generic  System.map-6.2.0-37-generic
config-6.2.0-36-generic  initrd.img-6.2.0-39-generic  System.map-6.2.0-39-generic
config-6.2.0-37-generic  initrd.img.old@             vmlinuz@
config-6.2.0-39-generic  memtest86+.bin              vmlinuz-6.2.0-36-generic
efi/                    memtest86+.elf              vmlinuz-6.2.0-37-generic
grub/                   memtest86+_multiboot.bin     vmlinuz-6.2.0-39-generic
initrd.img@             spasswd                     vmlinuz.old@

sok    /boot        14:25      ls -i spasswd
1577439 spasswd

sok    /boot        14:27      ls -i /etc/pass
passwd    passwd-

sok    /boot        14:27      ls -i /etc/passwd
1577439 /etc/passwd

sok    /boot        14:27
```

Self study

dpkg	apt
sok ~ 16:19 sudo dpkg –i brave.deb sok ~ 16:23 sudo apt update	sok ~ 16:19 sudo apt install brave sok ~ 16:21 sudo apt-get install brave sok ~ 16:23 sudo apt-get update sok ~ 16:24 apt search brave

yum	rpm
yum install Brave ==>install yum update Brave==>update yum remove Brave==>remove	rpm -ivh Brave.rpm==> install rpm -Uvh Brave.rpm==>update rpm -e Brave==>remove