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## LAB 6: Linux

Q1.

```
Wed Sep 6 14:52:22 EET 2023
[kerolosyoussef@localhost ~]$ ls
bash_out  Documents  file1  kero3  kero6  Music  oldpasswd  sortfile
Desktop   Downloads  kero   kero4  ls_error  mycv  Pictures  Templates
docs      error      kero2  kero5  ls_out    myteam  Public    Videos
[kerolosyoussef@localhost ~]$ compress -v mycv
mycv:  -- replaced with mycv.Z Compression: 25.67%
[kerolosyoussef@localhost ~]$ uncompress -v mycv.Z
mycv.Z:  -- replaced with mycv
[kerolosyoussef@localhost ~]$ gzip -v mycv
mycv:  39.1% -- replaced with mycv.gz
[kerolosyoussef@localhost ~]$ ls
bash_out  Documents  file1  kero3  kero6  Music  oldpasswd  sortfile
Desktop   Downloads  kero   kero4  ls_error  mycv.gz  Pictures  Templates
docs      error      kero2  kero5  ls_out    myteam  Public    Videos
[kerolosyoussef@localhost ~]$ gunzip -v mycv.gz
mycv.gz:  39.1% -- replaced with mycv
```

```
Wed Sep 6 15:25:49 EET 2023
[kerolosyoussef@localhost ~]$ zip file.zip ls_error mycv
updating: ls_error (deflated 94%)
updating: mycv (deflated 39%)
[kerolosyoussef@localhost ~]$ unzip -l file.zip
Archive:  file.zip
  Length      Date    Time    Name
  -----
  140176  08-31-2023  19:22    ls_error
    261   08-30-2023  16:24    mycv
  -----
  140437                  2 files
```

Efficiency of compression in gzip is better than compress and they are different in extensions they treat with.

Q2.

```
[kerolosyoussef@localhost ~]$ zcat file.zip
ls: cannot open directory '/boot/efi/EFI/redhat': Permission denied
ls: cannot open directory '/boot/grub2': Permission denied
ls: cannot open directory '/boot/loader/entries': Permission denied
ls: cannot open directory '/etc/audit': Permission denied
ls: cannot open directory '/etc/cups/ssl': Permission denied
```

Q3.

```
[kerolosyoussef@localhost ~]$ tar cvf etc.tar /etc
tar: Removing leading '/' from member names
/etc/
/etc/mtab
/etc/fstab
tar: /etc/crypttab: Cannot open: Permission denied
/etc/dnf/
/etc/dnf/modules.d/
/etc/dnf/modules.d/container-tools.module
/etc/dnf/modules.d/llvm-toolset.module
/etc/dnf/modules.d/perl.module
/etc/dnf/modules.d/perl-DBD-SQLite.module
/etc/dnf/modules.d/perl-DBI.module
/etc/dnf/modules.d/perl-IO-Socket-SSL.module
/etc/dnf/modules.d/perl-libwww-perl.module
/etc/dnf/modules.d/python36.module
/etc/dnf/modules.d/virt.module
/etc/dnf/aliases.d/
/etc/dnf/dnf.conf
/etc/dnf/modules.defaults.d/
/etc/dnf/plugins/
/etc/dnf/plugins/copr.conf
```

Q4.

```
[kerolosyoussef@localhost ~]$ find -mtime -2
.
./.mozilla/firefox/rl4rxajq.default-default
./.mozilla/firefox/rl4rxajq.default-default/.parentlock
./.mozilla/firefox/rl4rxajq.default-default/prefs.js
./.mozilla/firefox/rl4rxajq.default-default/storage.sqlite
./.mozilla/firefox/rl4rxajq.default-default/extensions.json
./.mozilla/firefox/rl4rxajq.default-default/storage/permanent/chrome/idb
./.mozilla/firefox/rl4rxajq.default-default/storage/permanent/chrome/idb/1657114
595AmcateirvtiSty.sqlite
./.mozilla/firefox/rl4rxajq.default-default/sessionCheckpoints.json
./.mozilla/firefox/rl4rxajq.default-default/permissions.sqlite
./.mozilla/firefox/rl4rxajq.default-default/places.sqlite
./.mozilla/firefox/rl4rxajq.default-default/datareporting
./.mozilla/firefox/rl4rxajq.default-default/datareporting/glean/db/data.safe.bin
./.mozilla/firefox/rl4rxajq.default-default/datareporting/glean/pending_pings
./.mozilla/firefox/rl4rxajq.default-default/datareporting/glean/tmp
./.mozilla/firefox/rl4rxajq.default-default/datareporting/archived
./.mozilla/firefox/rl4rxajq.default-default/datareporting/archived/2023-09
./.mozilla/firefox/rl4rxajq.default-default/datareporting/archived/2023-09/16939
```

Q5.

```
[kerołosyoussef@localhost ~]$ cd /etc
[kerołosyoussef@localhost etc]$ find -user root
.
./mtab
./fstab
./crypttab
./dnf
./dnf/modules.d
./dnf/modules.d/container-tools.module
./dnf/modules.d/llvm-toolset.module
./dnf/modules.d/perl.module
./dnf/modules.d/perl-DBD-SQLite.module
./dnf/modules.d/perl-DBI.module
./dnf/modules.d/perl-IO-Socket-SSL.module
./dnf/modules.d/perl-libwww-perl.module
./dnf/modules.d/python36.module
./dnf/modules.d/virt.module
./dnf/aliases.d
./dnf/dnf.conf
./dnf/modules.defaults.d
./dnf/plugins
./dnf/plugins/copr.conf
./dnf/plugins/copr.d
./dnf/plugins/debuginfo-install.conf
```

Q6.

```
[kerołosyoussef@localhost /]$ find -d
```

```
./proc/1071/attr
./proc/1071/wchan
./proc/1071/stack
./proc/1071/schedstat
./proc/1071/cpuset
./proc/1071/cgroup
./proc/1071/cpu_resctrl_groups
./proc/1071/oom_score
./proc/1071/oom_adj
./proc/1071/oom_score_adj
./proc/1071/loginuid
./proc/1071/sessionid
./proc/1071/coredump_filter
./proc/1071/io
./proc/1071/uid_map
./proc/1071/gid_map
./proc/1071/projid_map
./proc/1071/setgroups
./proc/1071/timers
./proc/1071/timerslack_ns
./proc/1071/patch_state
./proc/1071
^C
```

Q7.

```
[kerołosyoussef@localhost ~]$ find -name ".profile"
```

```
find: './proc/4433/fdinfo': Permission denied
find: './proc/4433/ns': Permission denied
find: './proc/4446/task/4446/fd': Permission denied
find: './proc/4446/task/4446/fdinfo': Permission denied
find: './proc/4446/task/4446/ns': Permission denied
find: './proc/4446/fd': Permission denied
find: './proc/4446/map_files': Permission denied
find: './proc/4446/fdinfo': Permission denied
find: './proc/4446/ns': Permission denied
find: './run/gdm': Permission denied
find: './run/firewalld': Permission denied
find: './run/udisks2': Permission denied
find: './run/chrony': Permission denied
find: './run/libvirt/qemu/dbus': Permission denied
find: './run/libvirt/nwfilter-binding': Permission denied
find: './run/libvirt/nwfilter': Permission denied
find: './run/libvirt/nodedev': Permission denied
find: './run/libvirt/secrets': Permission denied
find: './run/libvirt/interface': Permission denied
find: './run/libvirt/common': Permission denied
```

Q8.

```
[kerołosyoussef@localhost ~]$ file /etc/passwd
/etc/passwd: ASCII text
[kerołosyoussef@localhost ~]$ file /dev/pts/0
/dev/pts/0: character special (136/0)
[kerołosyoussef@localhost ~]$ file /etc
/etc: directory
[kerołosyoussef@localhost ~]$ file /dev/sda
/dev/sda: cannot open `/dev/sda' (No such file or directory)
```

Q9.

```
[kerołosyoussef@localhost ~]$ ls -ld /
128 /
[kerołosyoussef@localhost ~]$ ls -ld /etc
16777345 /etc
[kerołosyoussef@localhost ~]$ ls -ld /etc/hosts
16935292 /etc/hosts
```

Q10.

```
[kerołosyoussef@localhost ~]$ cp /etc/passwd ~
```

```
[kerołosyoussef@localhost ~]$ sudo diff /etc/passwd passwd
[kerołosyoussef@localhost ~]$ sudo cmp /etc/passwd passwd
```



```
[kerolosyoussef@localhost ~]$ sudo chmod u+rw passwd
[kerolosyoussef@localhost ~]$ vi passwd
[kerolosyoussef@localhost ~]$ sudo diff /etc/passwd passwd
2c2
< bin:x:1:1:bin:/bin:/sbin/nologin
---
> hhjnb:x:1:1:bin:/bin:/sbin/nologin
[kerolosyoussef@localhost ~]$ sudo cmp /etc/passwd passwd
/etc/passwd passwd differ: byte 33, line 2
```

Q11.

```
[kerolosyoussef@localhost ~]$ ln -s /etc/passwd /boot
```

```
[kerolosyoussef@localhost ~]$ ls -li /etc/passwd /boot/passwd
 36267 lrwxrwxrwx. 1 root root  11 Sep  6 17:17 /boot/passwd -> /etc/passwd
18139540 -rwxr--r--. 1 root root 2641 Aug 29 15:26 /etc/passwd
```

Q12.

```
[kerolosyoussef@localhost ~]$ ln /etc/passwd /boot
ln: failed to create hard link '/boot/passwd' => '/etc/passwd': Invalid cross-device link
```