

## Module 4 Linux Essentials

### TASK 4.3

After you have logged into the system, do the following.

1. Invoke **pwd** to see your current working directory (there should be your home directory).

```
mykhailo_litvinov@mruletkin:~$ pwd
/home/mykhailo_litvinov
mykhailo_litvinov@mruletkin:~$
```

2. Collect output of these commands

**ls -l /** - output information in long format

**ls** - output information in simple format

**ls ~** - output the relative path

**ls -l** - output information about content in long format

**ls -a** – output list of each file (including opened)

**ls -la** - output list of each file (including opened) in long format

**ls -lda ~** output information about directory in long format

```
root@mruletkin:~# ls -l /
total 2097248
drwxr-xr-x  2 root root      4096 Mar 30 10:37 bin
drwxr-xr-x  3 root root      4096 Apr 13 18:51 boot
drwxr-xr-x  2 root root      4096 Mar 30 10:30 cdrom
drwxr-xr-x 18 root root     38880 Apr 15 16:46 dev
drwxr-xr-x 95 root root      4096 Apr  5 15:28 etc
drwxr-xr-x  4 root root      4096 Apr  5 14:31 home
lrwxrwxrwx  1 root root         33 Apr 13 18:50 initrd.img -> boot/initrd.img-4.15.0-96-generic
lrwxrwxrwx  1 root root         33 Mar 30 10:32 initrd.img.old -> boot/initrd.img-4.15.0-91-generic
drwxr-xr-x 22 root root      4096 Mar 30 11:07 lib
drwxr-xr-x  2 root root      4096 Feb  3 18:22 lib64
drwx----- 2 root root    16384 Mar 30 10:29 lost+found
drwxr-xr-x  3 root root      4096 Mar 30 11:05 media
drwxr-xr-x  2 root root      4096 Feb  3 18:22 mnt
drwxr-xr-x  4 root root      4096 Apr  5 12:35 opt
dr-xr-xr-x 122 root root         0 Apr 15 16:46 proc
drwx----- 9 root root      4096 Apr  6 19:16 root
drwxr-xr-x 29 root root     1040 Apr 15 16:51 run
drwxr-xr-x  2 root root    12288 Apr 15 16:47/sbin
drwxr-xr-x  7 root root      4096 Apr 15 16:47 snap
drwxr-xr-x  2 root root      4096 Feb  3 18:22 srv
-rw-----  1 root root 2147483648 Mar 30 10:32 swap.img
dr-xr-xr-x 13 root root         0 Apr 15 16:56 sys
drwxrwxrwt  9 root root      4096 Apr 15 16:51 tmp
drwxr-xr-x 11 root root      4096 Apr  5 12:35 usr
drwxr-xr-x 13 root root      4096 Feb  3 18:24 var
-rw-----  1 root root         0 Apr 15 16:47 VBox.log
lrwxrwxrwx  1 root root         30 Apr 13 18:50 vmlinuz -> boot/vmlinuz-4.15.0-96-generic
lrwxrwxrwx  1 root root         30 Mar 30 10:32 vmlinuz.old -> boot/vmlinuz-4.15.0-91-generic
root@mruletkin:~# ls
' '$ '\030' file1.txt  file.txt  first  snap  ubuntu.tar
root@mruletkin:~#
```

```

root@mruletkin:~# ls ~
'$'\030' file1.txt file.txt first snap ubuntu.tar
root@mruletkin:~# ls -l
total 65064
-rw-r--r-- 1 root root 1880 Apr 5 12:39 '$'\030'
-rw-r--r-- 1 root root 0 Apr 5 14:24 file1.txt
-rw-r--r-- 1 root root 0 Apr 6 18:49 file.txt
drwxr-xr-x 2 root root 4096 Apr 6 19:16 first
drwxr-xr-x 4 root root 4096 Apr 5 14:51 snap
-rw-r--r-- 1 root root 66612224 Apr 5 16:28 ubuntu.tar
root@mruletkin:~# ls -a
. '$'\030' .bashrc file1.txt first .local snap ubuntu.tar
.. .bash_history .config file.txt .kube .profile .ssh .vim
root@mruletkin:~# ls -la
total 65104
drwx----- 9 root root 4096 Apr 6 19:16 .
drwxr-xr-x 24 root root 4096 Apr 13 20:40 ..
-rw-r--r-- 1 root root 1880 Apr 5 12:39 '$'\030'
-rw----- 1 root root 330 Apr 13 19:52 .bash_history
-rw-r--r-- 1 root root 3106 Apr 9 2018 .bashrc
drwxr-x--- 3 root root 4096 Apr 1 11:50 .config
-rw-r--r-- 1 root root 0 Apr 5 14:24 file1.txt
-rw-r--r-- 1 root root 0 Apr 6 18:49 file.txt
drwxr-xr-x 2 root root 4096 Apr 6 19:16 first
drwxr-x--- 4 root root 4096 Apr 5 15:31 .kube
drwxr-xr-x 3 root root 4096 Mar 30 11:54 .local
-rw-r--r-- 1 root root 148 Aug 17 2015 .profile
drwxr-xr-x 4 root root 4096 Apr 5 14:51 snap
drwx----- 2 root root 4096 Mar 30 10:40 .ssh
-rw-r--r-- 1 root root 66612224 Apr 5 16:28 ubuntu.tar
drwxr-xr-x 2 root root 4096 Mar 30 12:05 .vim
root@mruletkin:~# ls -lda ~
drwx----- 9 root root 4096 Apr 6 19:16 /root
root@mruletkin:~#

```

Note differences between produced outputs. Describe (in few words) purposes of these commands.

- Command **ls** lets see content of directory and find out the attributes files and directories

3. Execute and describe the following commands (store the output, if any):

**mkdir test** - create directory "test"

**cd test** - enter to the directory "test"

**pwd** – output the current path

**touch test.txt** create file "test.txt"

**ls -l test.txt** output long information about file "test.txt"

**mkdir test2** - create directory "test2"

**mv test.txt test2** – move file "test.txt" to the directory "test2"

**cd test2** - enter to the directory "test2"

**ls** – output information about content of "test2"

**mv** test.txt test2.txt - rename file “test.txt” in “test2.txt”

**ls** – output new name of file

**cp** test2.txt .. – copying file “test2.txt”

**cd** ..

**ls**

**rm** test2.txt – remove file “test2.txt”

**rmdir** test2 - remove directory “test2”

```
root@mruletkin:~# mkdir test
root@mruletkin:~# cd test
root@mruletkin:~/test# pwd
~/test
root@mruletkin:~/test#
root@mruletkin:~/test# touch test.txt
root@mruletkin:~/test# ls -l test.txt
-rw-r--r-- 1 root root 0 Apr 15 20:22 test.txt
root@mruletkin:~/test# mkdir test2
root@mruletkin:~/test# mv test.txt test2
root@mruletkin:~/test# cd test2
root@mruletkin:~/test/test2# ls
test.txt
root@mruletkin:~/test/test2# mv test.txt test2.txt
root@mruletkin:~/test/test2# ls
test2.txt
root@mruletkin:~/test/test2# cp test2.txt ~/test
root@mruletkin:~/test/test2# cd
root@mruletkin:~# cd test
root@mruletkin:~/test# ls
test2  test2.txt
root@mruletkin:~/test# rm test2.txt
root@mruletkin:~/test# cd test2
root@mruletkin:~/test/test2# ls
test2.txt
root@mruletkin:~/test/test2# rm test2.txt
root@mruletkin:~/test/test2# cd
root@mruletkin:~# cd test
root@mruletkin:~/test# rmdir test2
root@mruletkin:~/test# ls
```

#### 4. Execute and describe the difference

**cat** /etc/fstab

**less** /etc/fstab

**more** /etc/fstab

```
root@mruletkin:~/test# cd
root@mruletkin:~# cat /etc/fstab
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point> <type> <options> <dump> <pass>
# / was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/4fbf83d5-6513-4726-8f38-3a4011f7e5de / ext4 defaults 0 0
/swap.img none swap sw 0 0
root@mruletkin:~# less /etc/fstab
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point> <type> <options> <dump> <pass>
# / was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/4fbf83d5-6513-4726-8f38-3a4011f7e5de / ext4 defaults 0 0
/swap.img none swap sw 0 0

[3]+ Stopped less /etc/fstab
root@mruletkin:~# more /etc/fstab
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point> <type> <options> <dump> <pass>
# / was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/4fbf83d5-6513-4726-8f38-3a4011f7e5de / ext4 defaults 0 0
/swap.img none swap sw 0 0
root@mruletkin:~# _
```

- **cat** used to combine files and full-screen displaying text files
- **less** and **more** are responsible for outputting of information in full-screen pages

#### 5. Add to archive all 'test' directories.

- a. to the pure 'tar';
- b. to the zipped 'tar' with only tar command;
- c. to the zipped 'tar' with gzip command;

```

root@mruletkin:~# tar -cvf test.tar test
test/
root@mruletkin:~# ls
'$\030'  file1.txt  file.txt  first  snap  test  test.tar  ubuntu.tar
root@mruletkin:~# tar -czf testz.tgz test
root@mruletkin:~# ls
'$\030'  file1.txt  file.txt  first  snap  test  test.tar  testz.tgz  ubuntu.tar
root@mruletkin:~# gzip test.tar
root@mruletkin:~# ls
'$\030'  file1.txt  file.txt  first  snap  test  test.tar.gz  testz.tgz  ubuntu.tar
root@mruletkin:~# _

```

extract from archives all above.

```

root@mruletkin:~# tar -xvf testz.tgz
test/
root@mruletkin:~# ls
'$\030'
4e5021d210f65ebe915670c7089120120bc0a303b90208592851708c1b8c04bd.json  first
85a81177d4281af6c8dc7e4cfcc8aa33f9c031991eaf2e349628e3b462c9fb82  manifest.json
c04ff1820d1857aed15ab3884e18b63bcffcee7e1d3f20575dc05c251b8fe9e3  repositories
e21c93ee46e050c5be8f77e1048d1f9b6679941570972c6ffdd0f71aa38ddb25  snap
e260ca1c1f8cd0093994a9bba5b467f158a6913972169faff2d7fc3443e8df54  test
file1.txt  test.tar.gz
file.txt  testz.tgz
root@mruletkin:~# gunzip test.tar.gz
root@mruletkin:~# ls
'$\030'
4e5021d210f65ebe915670c7089120120bc0a303b90208592851708c1b8c04bd.json  file1.txt  test
85a81177d4281af6c8dc7e4cfcc8aa33f9c031991eaf2e349628e3b462c9fb82  file.txt  test.tar
c04ff1820d1857aed15ab3884e18b63bcffcee7e1d3f20575dc05c251b8fe9e3  first  testz.tgz
e21c93ee46e050c5be8f77e1048d1f9b6679941570972c6ffdd0f71aa38ddb25  manifest.json  ubuntu.tar
e260ca1c1f8cd0093994a9bba5b467f158a6913972169faff2d7fc3443e8df54  repositories
root@mruletkin:~# _

```

5. Look through man pages of the listed above commands.