

Linux and Networking- Linux Command Line Intro

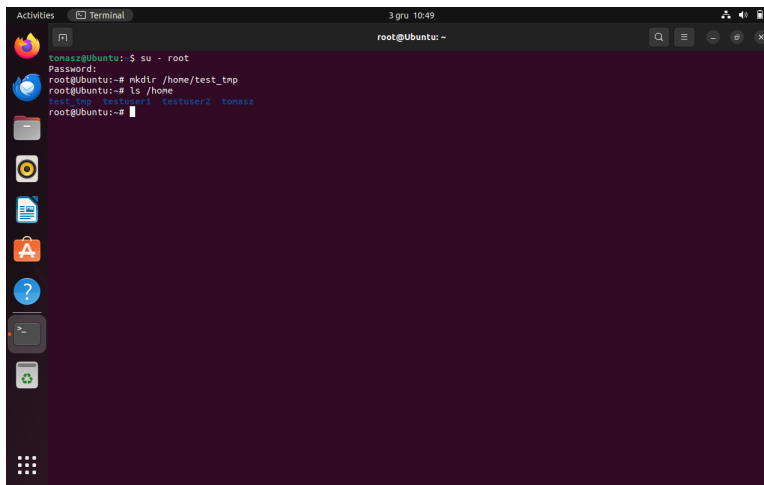
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11 grudnia 2023

1 BlockAllow file deletion from directory by other users

1.1 Task 1

Create test_tmp directory in /home folder from using the root user permissions

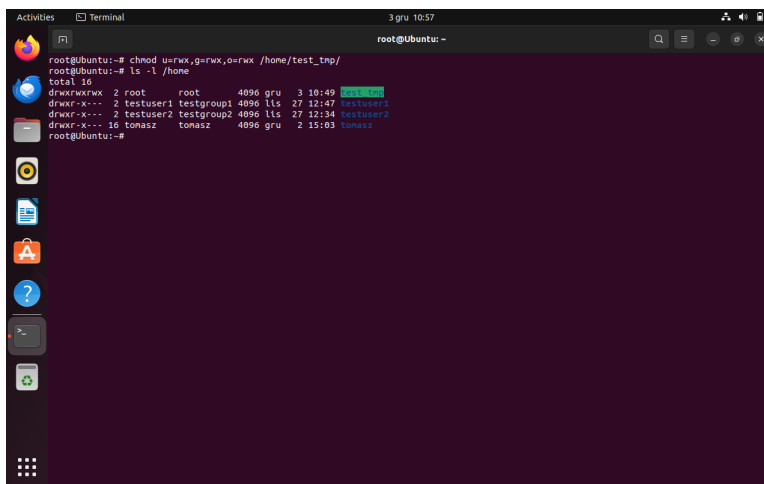


```
tonasz@ubuntu:~$ su - root
root@ubuntu:~# mkdir /home/test_tmp
root@ubuntu:~# ls /home
test_tmp  testuser1  testuser2  tonasz
root@ubuntu:~#
```

Figure 1: Create test_tmp directory

1.2 Task 2

Set rwx permissions for the owner, group and others to /home/test_tmp

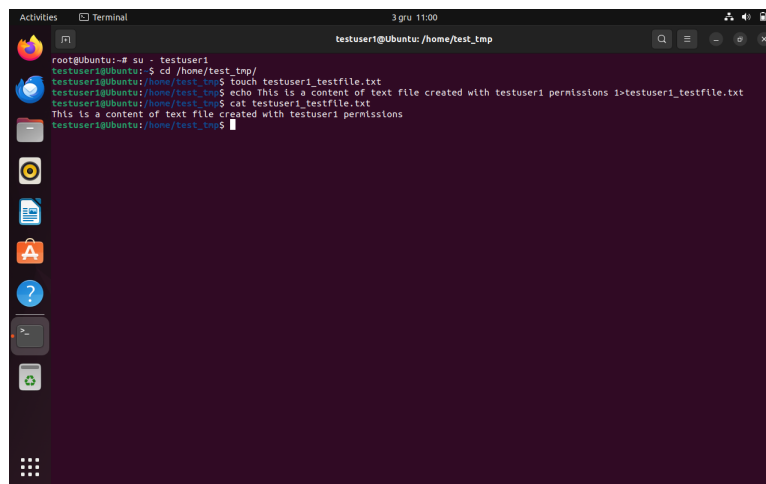


```
root@ubuntu:~# chmod u=rwx,g=rwx,o=rwx /home/test_tmp/
root@ubuntu:~# ls -l /home
total 16
drwxrwxrwx 2 root root 4096 gru 3 10:49 test_tmp
drwxr-xr-x 2 testuser1 testgroup1 4096 lls 27 12:47 testuser1
drwxr-xr-x 2 testuser2 testgroup2 4096 lls 27 12:34 testuser2
drwxr-xr-x 16 tonasz tonasz 4096 gru 2 11:03 tonasz
root@ubuntu:~#
```

Figure 2: Set rwx permission for all

1.3 Task 3

Create test TEXT files in /home/test_tmp folder with testuser1 permissions.

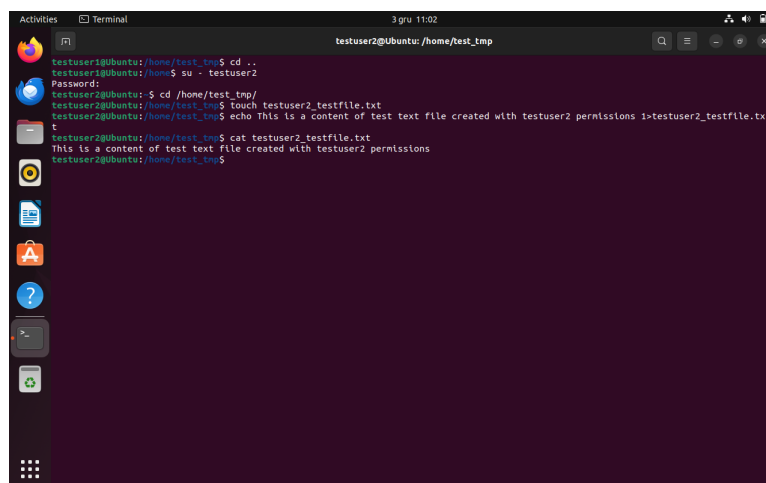
A terminal window titled 'testuser1@Ubuntu: /home/test_tmp' showing the following commands and output:

```
root@ubuntu:~# su - testuser1
testuser1@ubuntu:~$ cd /home/test_tmp/
testuser1@ubuntu: /home/test_tmp$ touch testuser1_testfile.txt
testuser1@ubuntu: /home/test_tmp$ echo This is a content of text file created with testuser1 permissions >testuser1_testfile.txt
testuser1@ubuntu: /home/test_tmp$ cat testuser1_testfile.txt
This is a content of text file created with testuser1 permissions
testuser1@ubuntu: /home/test_tmp$
```

Figure 3: Testuser1 create text file

1.4 Task 4

Create test TEXT files in /home/test_tmp folder with testuser2 permissions.

A terminal window titled 'testuser2@Ubuntu: /home/test_tmp' showing the following commands and output:

```
testuser1@ubuntu: /home/test_tmp$ cd ..
testuser1@ubuntu: /home$ su - testuser2
Password:
testuser2@ubuntu:~$ cd /home/test_tmp/
testuser2@ubuntu: /home/test_tmp$ touch testuser2_testfile.txt
testuser2@ubuntu: /home/test_tmp$ echo This is a content of test text file created with testuser2 permissions >testuser2_testfile.txt
testuser2@ubuntu: /home/test_tmp$ cat testuser2_testfile.txt
This is a content of test text file created with testuser2 permissions
testuser2@ubuntu: /home/test_tmp$
```

Figure 4: Testuser2 create text file

1.5 Task 5 and Task 6

Block file deletion from this directory by other users. Used command

```
sudo chmod 773 /home/test_tmp
```

Then try deleting files belonging to testuser1 from the testuser2 account.

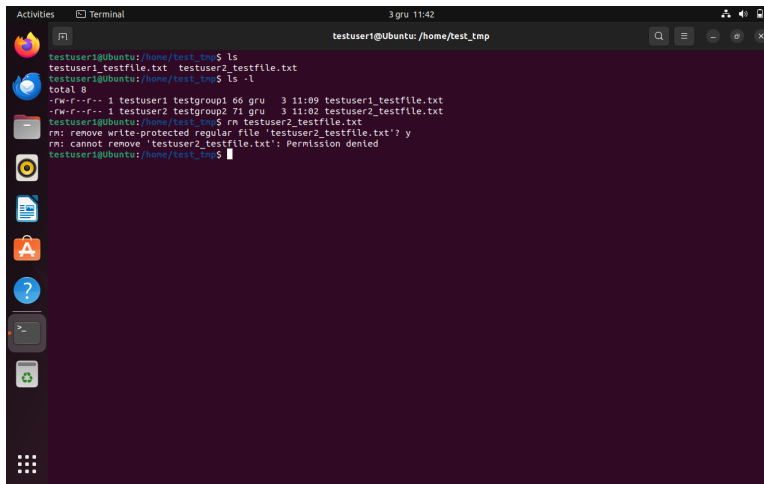


Figure 5: Block file deletion by other users

1.6 Task 7 and Task 8

Allow file deletion from this directory by other users Try deleting files belonging to testuser1 from the testuser2 account

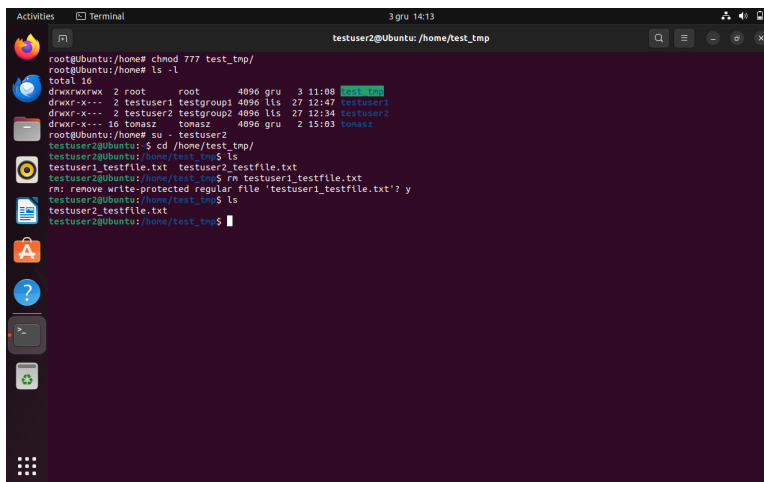


Figure 6: Allow file deletion from this directory

2 Verify that SUID bit does not work for executable Shell scripts

2.1 Task 1 and Task 2

- Create suid_test.sh script from the testuser1 credentials with the following content: “#!/bin/sh whoami”,
- Set execution bit for everyone

```

testuser1@ubuntu:/home/test_tmp$ touch suid_test.sh
testuser1@ubuntu:/home/test_tmp$ nano suid_test.sh
testuser1@ubuntu:/home/test_tmp$ ls -l
total 8
-rwxr-xr-x 1 testuser1 testgroup1 18 gru  3 14:24 suid_test.sh
-rwxr-xr-x 1 testuser2 testgroup2 71 gru  3 11:00 testuser2_testfile.txt
testuser1@ubuntu:/home/test_tmp$ chmod +x suid_test.sh
testuser1@ubuntu:/home/test_tmp$ ls -l
total 8
-rwxr-xr-x 1 testuser1 testgroup1 18 gru  3 14:24 suid_test.sh
-rwxr-xr-x 1 testuser2 testgroup2 71 gru  3 11:00 testuser2_testfile.txt
testuser1@ubuntu:/home/test_tmp$ cat suid_test.sh
#!/bin/sh
whoami
testuser1@ubuntu:/home/test_tmp$

```

Figure 7: Create script

2.2 Task 3

Try executing test_suid.sh script from different users

```

root@ubuntu:/home/test_tmp$ ./suid_test.sh
root
root@ubuntu:/home/test_tmp$ su - testuser2
testuser2@ubuntu:/home/test_tmp$ ./suid_test.sh
testuser2
testuser2@ubuntu:/home/test_tmp$ su -
Password:
root@ubuntu:/home/test_tmp$ su - testuser1
testuser1@ubuntu:/home/test_tmp$ ./suid_test.sh
testuser1
testuser1@ubuntu:/home/test_tmp$ su - tomasz
Password:
tomasz@ubuntu:/home/test_tmp$ ./suid_test.sh
tomasz
tomasz@ubuntu:/home/test_tmp$

```

Figure 8: Execute test_suid.sh script from different users

2.3 Task 4

Try changing UIDs to the different users to test_suid.sh and repeat Task 3

```

testuser1@ubuntu:/home/test_tmp$ chmod testuser1 suid_test.sh
testuser1@ubuntu:/home/test_tmp$ chmod testuser2 suid_test.sh
testuser1@ubuntu:/home/test_tmp$ su -
Password:
root@ubuntu:/home/test_tmp$ chmod testuser2 suid_test.sh
root@ubuntu:/home/test_tmp$ ls -l
total 8
-rwxr-xr-x 1 testuser2 testgroup1 18 gru  3 14:24 suid_test.sh
-rwxr-xr-x 1 testuser2 testgroup2 71 gru  3 11:00 testuser2_testfile.txt
root@ubuntu:/home/test_tmp$ su - testuser1
testuser1@ubuntu:/home/test_tmp$ ./suid_test.sh
testuser1
testuser1@ubuntu:/home/test_tmp$ su - tomasz
Password:
tomasz@ubuntu:/home/test_tmp$ ./suid_test.sh
tomasz
tomasz@ubuntu:/home/test_tmp$

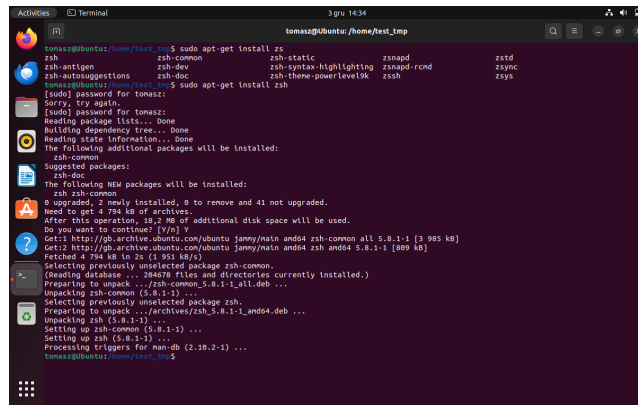
```

Figure 9: Set execution bit for everyone

3 Changing the Shell for the users

3.1 Task 1

Install zsh.

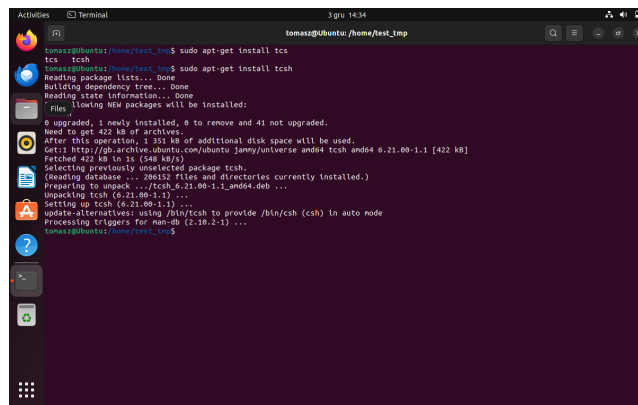


```
tomasz@ubuntu:~/test_tmp$ sudo apt-get install zsh
zsh      zsh-common      zsh-static      zshnapd      zstd
zsh-antigen  zsh-dev      zsh-syntax-highlighting  zshnapd-rcmd  zsync
zsh-autosuggestions  zsh-doc      zsh-theme-powerlevel9k  zshsh
tomasz@ubuntu:~/test_tmp$ sudo apt-get install zsh
[sudo] password for tomasz:
Sorry, try again.
[sudo] password for tomasz:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  zsh-common
Suggested packages:
  zsh-doc
The following NEW packages will be installed:
  zsh zsh-common
0 upgraded, 2 newly installed, 0 to remove and 41 not upgraded.
Need to get 4 794 kB of archives.
After this operation, 10.2 MB of additional disk space will be used.
Do you want to continue? [y/n] y
Get:1 http://gb.archive.ubuntu.com/ubuntu jammy/main amd64 zsh-common all 5.8.1-1 [3 985 kB]
Get:2 http://gb.archive.ubuntu.com/ubuntu jammy/main amd64 zsh amd64 5.8.1-1 [809 kB]
Fetched 4 794 kB in 1s (5 951 kB/s)
Selecting previously unselected package zsh-common.
(Reading database ... 286978 files and directories currently installed.)
Preparing to unpack .../zsh-common_5.8.1-1_all.deb ...
Unpacking zsh-common (5.8.1-1) ...
Selecting previously unselected package zsh.
Preparing to unpack .../archives/zsh_5.8.1-1_amd64.deb ...
Unpacking zsh (5.8.1-1) ...
Setting up zsh-common (5.8.1-1) ...
Setting up zsh (5.8.1-1) ...
Processing triggers for man-db (2.10.2-1) ...
tomasz@ubuntu:~/test_tmp$
```

Figure 10: Install zsh

3.2 Task 2

Install tcsh.



```
tomasz@ubuntu:~/test_tmp$ sudo apt-get install tcsh
tcsh tcsh
tomasz@ubuntu:~/test_tmp$ sudo apt-get install tcsh
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  tcsh
0 upgraded, 1 newly installed, 0 to remove and 41 not upgraded.
Need to get 422 kB of archives.
After this operation, 1 351 kB of additional disk space will be used.
Get:1 http://gb.archive.ubuntu.com/ubuntu jammy/universe amd64 tcsh amd64 6.21.00-1-1 [422 kB]
Fetched 422 kB in 1s (548 kB/s)
Selecting previously unselected package tcsh.
(Reading database ... 286978 files and directories currently installed.)
Preparing to unpack .../tcsh_6.21.00-1-1_amd64.deb ...
Unpacking tcsh (6.21.00-1-1) ...
Setting up tcsh (6.21.00-1-1) ...
update-alternatives: using /bin/tcsh to provide /bin/csh (csh) in auto mode
Processing triggers for man-db (2.10.2-1) ...
tomasz@ubuntu:~/test_tmp$
```

Figure 11: Install tcsh

3.3 Task 3

Change shell to zsh for the user testuser1.

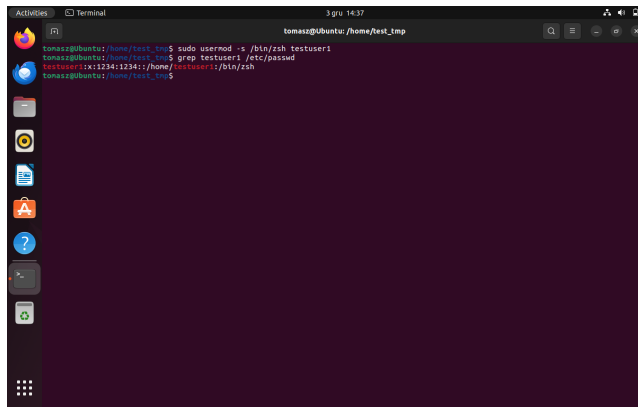


Figure 12: Change shell to zsh

3.4 Task 4

Log-in to CLI with the testuser1 credentials

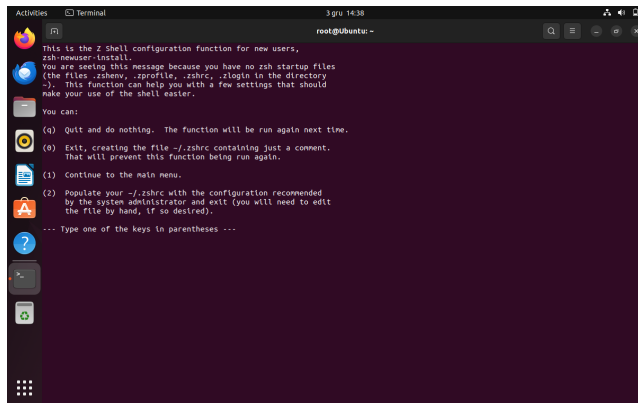


Figure 13: Log in to testuser1 shell

3.5 Task 5

Output processes list for the testuser1.

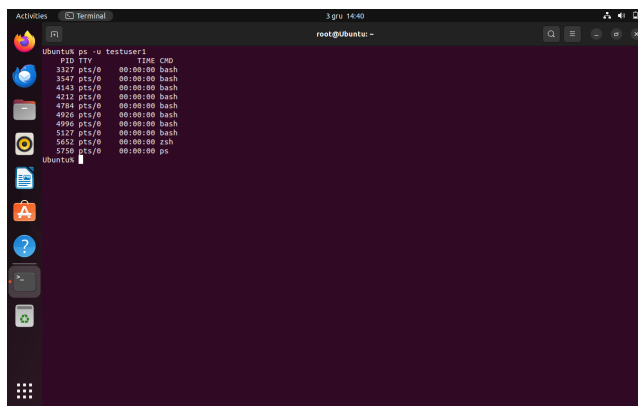


Figure 14: List testuser1 processes

3.6 Task 6

Output processes list for the testuser2.

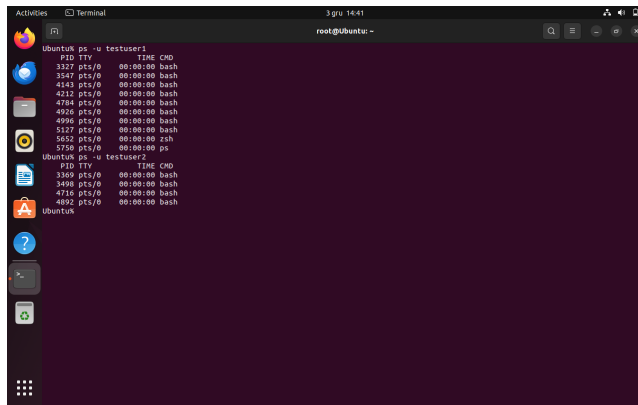


Figure 15: List testuser2 processes

3.7 Task 7

Change shell to tcsh for the user testuser2

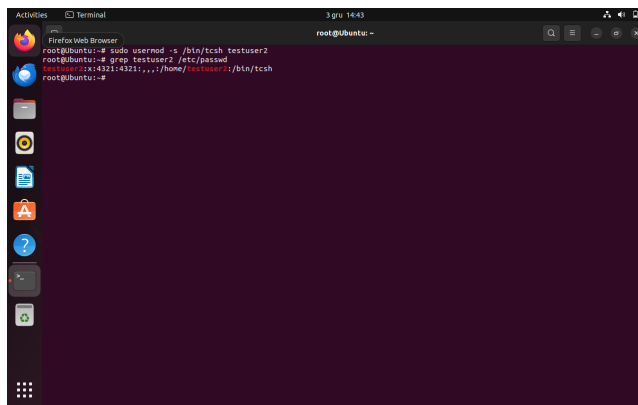


Figure 16: Change shell to tcsh for the user testuser2

3.8 Task 8

Log-in to CLI with the testuser2 credentials

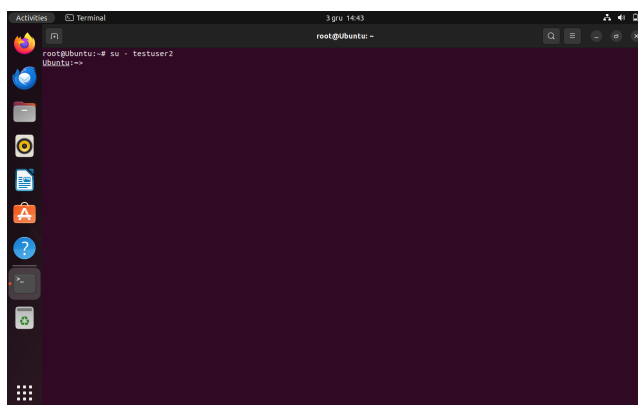


Figure 17: Change shell to tcsh for the user testuser2

3.9 Task 9

Output processes list for the root user

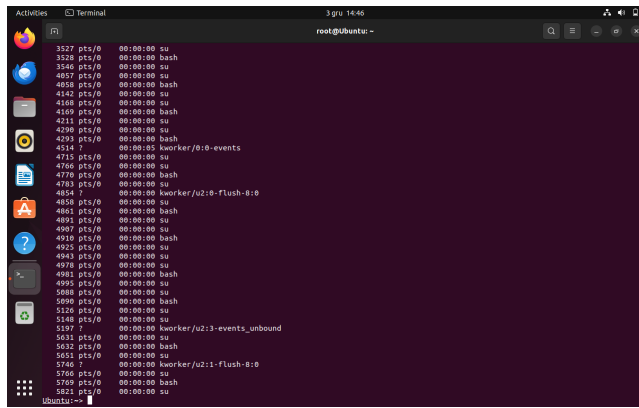


Figure 18: Process root list

4 Find task

- Find all files containing SUID bit in,
- Provide find options used,
- Capture and provide an output for evaluation

Output file will be provided as an attachment. It will be provided on my Google Drive.

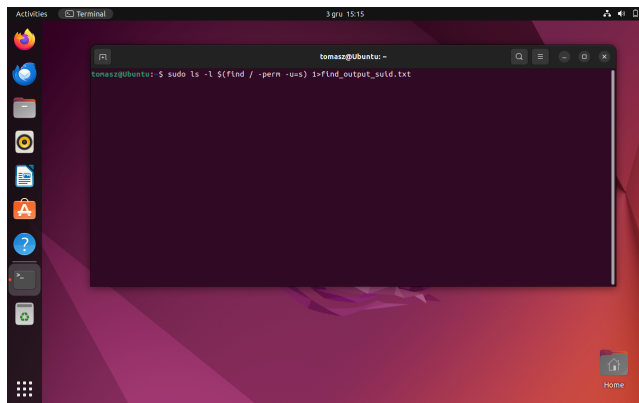


Figure 19: Find all files containig SUID bit in