

Лабораторная работа №1

Основы Информационной безопасности

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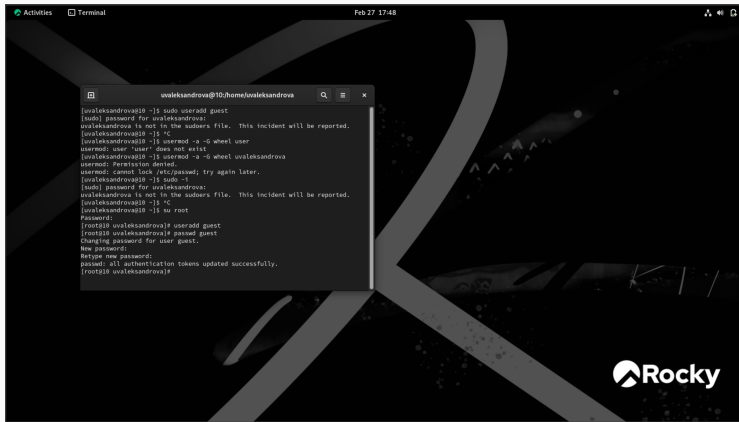
Информация

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Получение практических навыков работы в консоли с атрибутами файлов, закрепление теоретических основ дискреционного разграничения доступа в современных системах с открытым кодом на базе ОС Linux.

Выполнение лабораторной работы



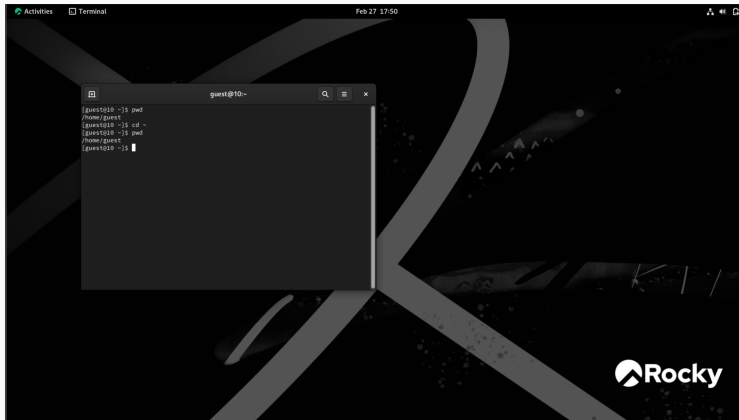
The image shows a terminal window titled 'uvaleksandrova@10:/home/uvaleksandrova' with a search icon and a close button. The terminal output shows the following commands and responses:

```
uvaleksandrova@10 ~$ sudo useradd guest
[sudo] password for uvaleksandrova:
uvaleksandrova is not in the sudoers file. This incident will be reported.
uvaleksandrova@10 ~$ ^C
uvaleksandrova@10 ~$ usermod -s /bin/bash user
usermod: user 'user' does not exist
uvaleksandrova@10 ~$ usermod -s /bin/bash uvaleksandrova
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
uvaleksandrova@10 ~$ sudo -i
[sudo] password for uvaleksandrova:
uvaleksandrova is not in the sudoers file. This incident will be reported.
uvaleksandrova@10 ~$ ^C
uvaleksandrova@10 ~$ su root
Password:
[root@10 uvaleksandrova]# useradd guest
[root@10 uvaleksandrova]# passwd guest
Changing password for user guest.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[root@10 uvaleksandrova]#
```

The background of the terminal window features a dark, abstract graphic with the word 'Rocky' and its logo in the bottom right corner.

Figure 1: Создание и настройка нового пользователя

4.

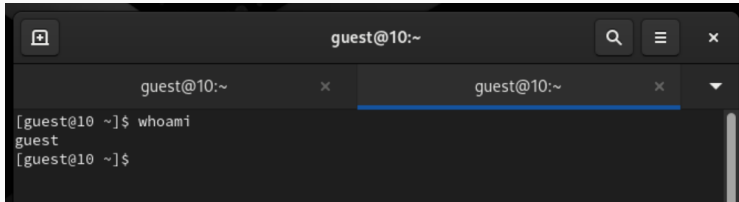


A screenshot of a Linux desktop environment with a dark theme. The desktop background features a large, stylized 'X' pattern. In the bottom right corner, the 'Rocky' logo is visible. A terminal window is open, displaying the following commands and output:

```
guest@10:~$ pwd
/home/guest
/home/guest$ cd ~
/home/guest$ pwd
/home/guest
/home/guest$
```

Figure 2: pwd

5.



A terminal window titled 'guest@10:~' with search, menu, and close icons. It contains two tabs, both labeled 'guest@10:~'. The active tab shows the command '[guest@10 ~]\$ whoami' and its output 'guest' on the next line. The prompt '[guest@10 ~]\$' is visible at the bottom.

```
[guest@10 ~]$ whoami
guest
[guest@10 ~]$
```

Figure 3: whoami

6.



```
guest@10:~  
[guest@10 ~]$ id  
uid=1001(guest) gid=1001(guest) groups=1001(guest) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[guest@10 ~]$ group  
bash: group: command not found...  
[guest@10 ~]$ groups  
guest
```

Figure 4: id

```

[guest@10 ~]$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/sbin/nologin
dbus:x:81:81:System message bus:/sbin/nologin
polkitd:x:998:996:User for polkitd:/sbin/nologin
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin
pipewire:x:997:993:PipeWire System Daemon:/var/run/pipewire:/sbin/nologin
sssd:x:996:992:User for sssd:/sbin/nologin
libstoragemgmt:x:990:990:daemon account for libstoragemgmt:/usr/sbin/nologin
systemd-oom:x:989:989:systemd Userspace OOM Killer:/usr/sbin/nologin
tss:x:59:59:Account used for TPM access:/usr/sbin/nologin
geoclue:x:988:987:User for geoclue:/var/lib/geoclue:/sbin/nologin
cockpit-ws:x:987:986:User for cockpit web service:/nonexisting:/sbin/nologin
cockpit-wsinstance:x:986:985:User for cockpit-ws instances:/nonexisting:/sbin/nologin
flatpak:x:985:984:User for flatpak system helper:/sbin/nologin
colord:x:984:983:User for colord:/var/lib/colord:/sbin/nologin
clevis:x:983:982:Clevis Decryption Framework unprivileged user:/var/cache/clevis:/usr/sbin/nologin
setroubleshoot:x:982:981:SELinux troubleshoot server:/var/lib/setroubleshoot:/usr/sbin/nologin
gdm:x:42:42:/var/lib/gdm:/sbin/nologin
pesign:x:981:980:Group for the pesign signing daemon:/run/pesign:/sbin/nologin
gnome-initial-setup:x:980:979:/run/gnome-initial-setup:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin
chrony:x:979:978:chrony system user:/var/lib/chrony:/sbin/nologin
dnsmasq:x:978:977:Dnsmasq DHCP and DNS server:/var/lib/dnsmasq:/usr/sbin/nologin
tcpdump:x:72:72:/sbin/nologin
uvaleksandrova:x:1000:1000:uvaleksandrova:/home/uvaleksandrova:/bin/bash
vboxadd:x:977:1:/var/run/vboxadd:/bin/false
guest:x:1001:1001:/home/guest:/bin/bash
[guest@10 ~]$

```

8.

```
[guest@l0 ~]$ cat /etc/passwd | grep guest  
guest:x:1001:1001:./home/guest:/bin/bash
```

Figure 6: grep

```
[guest@i0 ~]$ ls -l /home/  
total 8  
drwx-----. 14 guest      guest      4096 Feb 27 17:51 guest  
drwx-----. 14 uvaleksandrova uvaleksandrova 4096 Feb 27 17:40 uvaleksandrova  
[guest@i0 ~]$
```

Figure 7: Существующие директории

```
[guest@l0 ~]$ lsattr /home
lsattr: Permission denied While reading flags on /home/uvaleksandrova
----- /home/guest
[guest@l0 ~]$
```

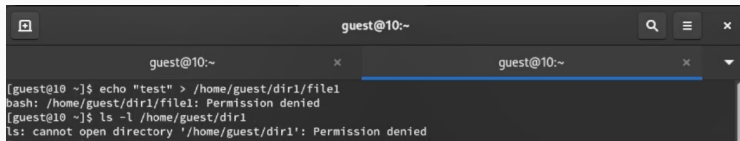
Figure 8: lsattr

```
[guest@i0 ~]$ ls -l
total 0
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Desktop
drwxr-xr-x. 2 guest guest 6 Feb 27 17:59 dir1
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Documents
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Downloads
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Music
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Pictures
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Public
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Templates
drwxr-xr-x. 2 guest guest 6 Feb 27 17:49 Videos
[guest@i0 ~]$ lsattr
----- ./Desktop
----- ./Downloads
----- ./Templates
----- ./Public
----- ./Documents
----- ./Music
----- ./Pictures
----- ./Videos
----- ./dir1
```

Figure 9: Атрибуты

```
[guest@10 ~]$ chmod 000 dir1
[guest@10 ~]$ lsattr
----- ./Desktop
----- ./Downloads
----- ./Templates
----- ./Public
----- ./Documents
----- ./Music
----- ./Pictures
----- ./Videos
lsattr: Permission denied While reading flags on ./dir1
```

Figure 10: chmod



```
guest@10:~  
[guest@10 ~]$ echo "test" > /home/guest/dir1/file1  
bash: /home/guest/dir1/file1: Permission denied  
[guest@10 ~]$ ls -l /home/guest/dir1  
ls: cannot open directory '/home/guest/dir1': Permission denied
```

Figure 11: echo



```
[root@10 guest]# ls -l /home/guest/dir1  
total 0  
[root@10 guest]#
```

Figure 12: Проверка создания файла

Минимальные права для совершения операций

Операция	Минимальные права на директорию	Минимальные права на файл
Создание файла	d(300)	-
Удаление файла	d(300)	-
Чтение файла	d(100)	(400)
Запись в файл	d(100)	(200)
Переименование файла	d(300)	(000)
Создание поддиректории	d(300)	-
Удаление поддиректории	d(300)	-

Я получила практические навыки работы в консоли с атрибутами файлов, закрепила теоретические основы дискреционного разграничения доступа в современных системах с открытым кодом на базе ОС Linux.