

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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Цели и задачи работы

Цель лабораторной работы

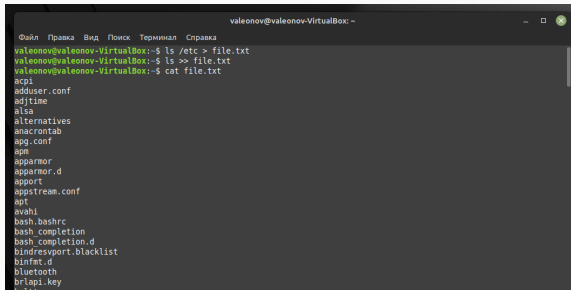
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

Задачи лабораторной работы

- 1 Изучить перенаправление ввода-вывода
- 2 Изучить работу фильтров
- 3 Изучить команду поиска
- 4 Ознакомиться с управлением процессами
- 5 Ознакомиться с командами `df` `du`

Процесс выполнения лабораторной работы

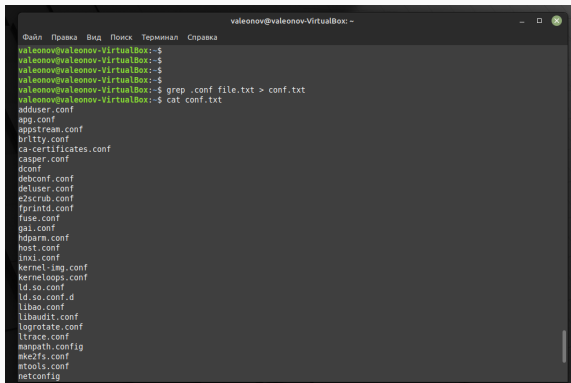
Перенаправление ввода-вывода



```
valeonov@valeonov-VirtualBox: ~  
Файл  Правка  Вид  Поиск  Терминал  Справка  
valeonov@valeonov-VirtualBox:~$ ls /etc > file.txt  
valeonov@valeonov-VirtualBox:~$ ls >> file.txt  
valeonov@valeonov-VirtualBox:~$ cat file.txt  
acpi  
adduser.conf  
adjtime  
alsa  
alternatives  
anacrontab  
apc.conf  
apm  
apparmor  
apparmor.d  
appport  
appstream.conf  
apt  
avahi  
bash.bashrc  
bash_completion  
bash_completion.d  
bindresvport.blacklist  
binfmt.d  
bluetooth  
brlapi.key  
bcltty
```

Figure 1: Запись в файл

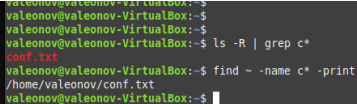
Работа фильтра



The screenshot shows a terminal window titled 'valeonov@valeonov-VirtualBox: ~'. The window has a menu bar with 'Файл', 'Правка', 'Вид', 'Поиск', 'Терминал', and 'Справка'. The terminal content shows the following commands and output:

```
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$ grep .conf file.txt > conf.txt  
valeonov@valeonov-VirtualBox:~$ cat conf.txt  
adduser.conf  
apg.conf  
appstream.conf  
brltty.conf  
ca-certificates.conf  
casper.conf  
dconf  
debconf.conf  
deluser.conf  
e2scrub.conf  
fprintd.conf  
fuse.conf  
gai.conf  
hdparm.conf  
host.conf  
inxi.conf  
kernel.img.conf  
kerneloops.conf  
ld.so.conf  
ld.so.conf.d  
libao.conf  
libaudit.conf  
logrotate.conf  
ltrace.conf  
manpath.config  
mke2fs.conf  
mttools.conf  
netconfig
```

Figure 2: Поиск расширения .conf



```
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$ ls -R | grep c*  
conf.txt  
valeonov@valeonov-VirtualBox:~$ find ~ -name c* -print  
/home/valeonov/conf.txt  
valeonov@valeonov-VirtualBox:~$
```

Figure 3: Поиск файлов


```
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$ ls -R | grep c*  
conf.txt  
valeonov@valeonov-VirtualBox:~$ find ~ -name c* -print  
/home/valeonov/conf.txt  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$
```

Figure 4: Поиск файлов

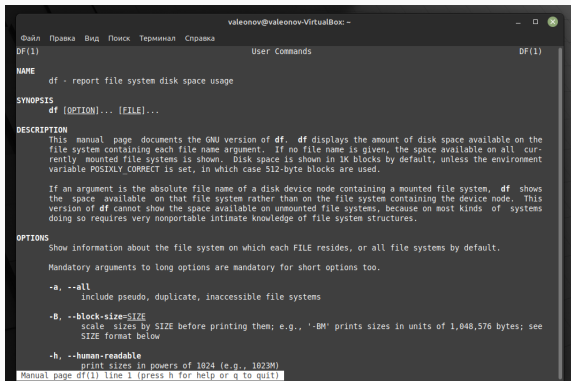
```
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$ find /etc -name "log*" > logfile &  
[1] 3714  
valeonov@valeonov-VirtualBox:~$ find: '/etc/cups/ssl': Отказано в доступе  
find: '/etc/ssl/private': Отказано в доступе  
find: '/etc/polkit-1/localauthority': Отказано в доступе  
[1]+  Выход 1      find /etc -name "log*" > logfile  
valeonov@valeonov-VirtualBox:~$ rm logfile  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$
```

Figure 5: Фоновый запуск процесса

```
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$ gedit &  
[1] 3814  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$  
valeonov@valeonov-VirtualBox:~$ ps  
  PID TTY          TIME CMD  
 2063 pts/0    00:00:01 bash  
 3814 pts/0    00:00:00 gedit  
 3842 pts/0    00:00:00 ps  
valeonov@valeonov-VirtualBox:~$ ps | grep gedit  
 3814 pts/0    00:00:00 gedit  
valeonov@valeonov-VirtualBox:~$ kill 3814  
valeonov@valeonov-VirtualBox:~$  
[1]+  Завершено      gedit  
valeonov@valeonov-VirtualBox:~$
```

Figure 6: Фоновый запуск и завершение процесса

Команды df и du



The screenshot shows a terminal window titled 'valeonov@valeonov-VirtualBox: ~'. The window has a menu bar with 'Файл', 'Правка', 'Вид', 'Поиск', 'Терминал', and 'Справка'. The terminal content displays the manual page for the 'df' command, which is titled 'DF(1)' in the top right corner. The manual page includes the following sections:

- NAME**
df - report file system disk space usage
- SYNOPSIS**
df [OPTION]... [FILE]...
- DESCRIPTION**
This manual page documents the GNU version of df. df displays the amount of disk space available on the file system containing each file name argument. If no file name is given, the space available on all currently mounted file systems is shown. Disk space is shown in 1K blocks by default, unless the environment variable POSIXLY_CORRECT is set, in which case 512-byte blocks are used.

If an argument is the absolute file name of a disk device node containing a mounted file system, df shows the space available on that file system rather than on the file system containing the device node. This version of df cannot show the space available on unmounted file systems, because on most kinds of systems doing so requires very nonportable intimate knowledge of file system structures.
- OPTIONS**
Show information about the file system on which each FILE resides, or all file systems by default.

Mandatory arguments to long options are mandatory for short options too.

-a, --all
include pseudo, duplicate, inaccessible file systems

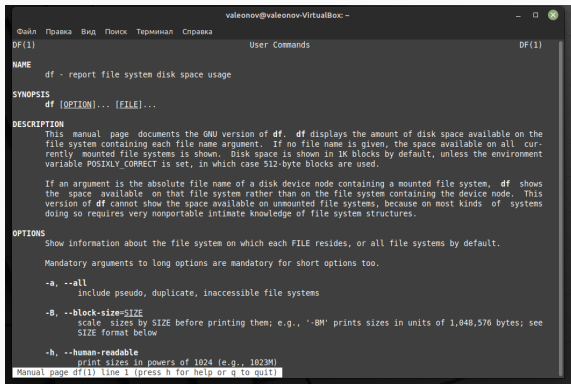
-B, --block-size=SIZE
scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in units of 1,048,576 bytes; see SIZE format below

-h, --human-readable
print sizes in powers of 1024 (e.g., 1023M)

At the bottom of the terminal window, a status bar reads: 'Manual page df(1) line 1 (press h for help or q to quit)'.

Figure 7: Справка по команде df

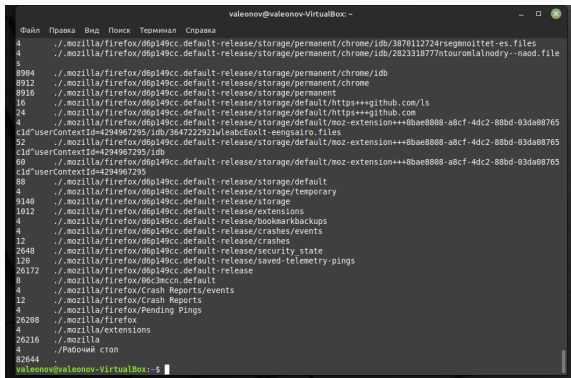
Команды df и du



```
valeonov@valeonov-VirtualBox: ~  
Файл Правка Вид Поиск Терминал Справка  
DF(1) User Commands DF(1)  
  
NAME  
df - report file system disk space usage  
  
SYNOPSIS  
df [OPTION]... [FILE]...  
  
DESCRIPTION  
This manual page documents the GNU version of df. df displays the amount of disk space available on the  
file system containing each file name argument. If no file name is given, the space available on all cur-  
rently mounted file systems is shown. Disk space is shown in 1K blocks by default, unless the environment  
variable POSIXLY_CORRECT is set, in which case 512-byte blocks are used.  
  
If an argument is the absolute file name of a disk device node containing a mounted file system, df shows  
the space available on that file system rather than on the file system containing the device node. This  
version of df cannot show the space available on unmounted file systems, because on most kinds of systems  
doing so requires very nonportable intimate knowledge of file system structures.  
  
OPTIONS  
Show information about the file system on which each FILE resides, or all file systems by default.  
  
Mandatory arguments to long options are mandatory for short options too.  
  
-a, --all  
include pseudo, duplicate, inaccessible file systems  
  
-B, --block-size=SIZE  
scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in units of 1,048,576 bytes; see  
SIZE format below  
  
-h, --human-readable  
print sizes in powers of 1024 (e.g., 1023M)  
Manual page df(1) line 1 (press h for help or q to quit)
```

Figure 8: Запуск команды df

Команды df и du



```
valeonov@valeonov-VirtualBox: -
Файл  Правка  Вид  Поиск  Терминал  Справка
4      ./mozilla/firefox/d6p149cc.default-release/storage/permanent/chrome/idb/3870112724rsegmnoittet-es.files
4      ./mozilla/firefox/d6p149cc.default-release/storage/permanent/chrome/idb/2823318777ntourolmalnodry- -naod.file
5
8994   ./mozilla/firefox/d6p149cc.default-release/storage/permanent/chrome/idb
8912   ./mozilla/firefox/d6p149cc.default-release/storage/permanent/chrome
8916   ./mozilla/firefox/d6p149cc.default-release/storage/permanent
16     ./mozilla/firefox/d6p149cc.default-release/storage/default/https++github.com/ls
24     ./mozilla/firefox/d6p149cc.default-release/storage/default/https++github.com
4      ./mozilla/firefox/d6p149cc.default-release/storage/default/moz-extension++8bae8808-a8cf-4dc2-88bd-03da08765
cid"userContextId=4294967295/idb/364722292lwleabcExolt-eengsairo.files
52     ./mozilla/firefox/d6p149cc.default-release/storage/default/moz-extension++8bae8808-a8cf-4dc2-88bd-03da08765
cid"userContextId=4294967295/idb
60     ./mozilla/firefox/d6p149cc.default-release/storage/default/moz-extension++8bae8808-a8cf-4dc2-88bd-03da08765
cid"userContextId=4294967295
88     ./mozilla/firefox/d6p149cc.default-release/storage/default
4      ./mozilla/firefox/d6p149cc.default-release/storage/temporary
9140   ./mozilla/firefox/d6p149cc.default-release/storage
1012   ./mozilla/firefox/d6p149cc.default-release/extensions
4      ./mozilla/firefox/d6p149cc.default-release/bookmarkbackups
4      ./mozilla/firefox/d6p149cc.default-release/crashes/events
12     ./mozilla/firefox/d6p149cc.default-release/crashes
2648   ./mozilla/firefox/d6p149cc.default-release/security.state
120    ./mozilla/firefox/d6p149cc.default-release/saved-telemetry-pings
26172  ./mozilla/firefox/d6p149cc.default-release
8      ./mozilla/firefox/06c3mccn.default
4      ./mozilla/firefox/06c3mccn.Crash Reports/events
12     ./mozilla/firefox/06c3mccn.Crash Reports
4      ./mozilla/firefox/06c3mccn.Pending Pings
26208  ./mozilla/firefox
4      ./mozilla/extensions
26216  ./mozilla
4      ./Рабочий стол
82644  .
valeonov@valeonov-VirtualBox:~$
```

Figure 9: Справка по команде du

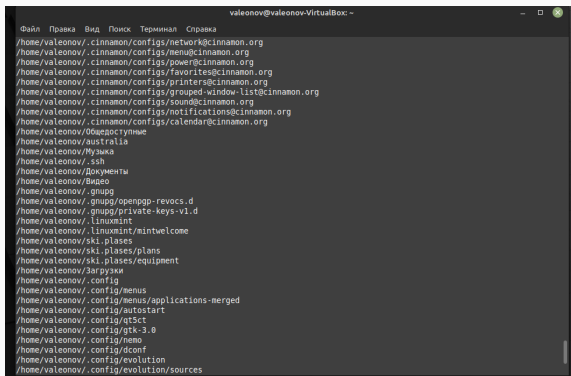
Команды df и du

```
valeonov@valeonov-VirtualBox:~$ df
```

Видл. система	ИК-блоков	Использовано	Доступно	Используется	Смонтировано
/tmpfs	4096	1216	408732	1%	/run
/dev/sda3	40433376	9458040	28008220	23%	/
/dev/sda1	2089728	0	2089728	0%	/dev/shm
/dev/sda2	5120	4	5116	1%	/run/lock
/dev/sda2	524252	5364	518888	2%	/boot/efi
/tmpfs	4091944	112	401832	1%	/run/user/1000
/dev/sr1	2387656	2387656	0	100%	/media/valeonov/Linux Mint 21 Cinnamon 64-bit
/dev/sr0	62390	62390	0	100%	/media/valeonov/VBox_GAS_6.1.38

```
valeonov@valeonov-VirtualBox:~$
```

Figure 10: Запуск команды du



```
valeonov@valeonov-VirtualBox: ~  
Файл  Правка  Вид  Поиск  Терминал  Справка  
/home/valeonov/.cinnamon/configs/network@cinnamon.org  
/home/valeonov/.cinnamon/configs/menu@cinnamon.org  
/home/valeonov/.cinnamon/configs/power@cinnamon.org  
/home/valeonov/.cinnamon/configs/favorites@cinnamon.org  
/home/valeonov/.cinnamon/configs/printers@cinnamon.org  
/home/valeonov/.cinnamon/configs/grouped-window-list@cinnamon.org  
/home/valeonov/.cinnamon/configs/sound@cinnamon.org  
/home/valeonov/.cinnamon/configs/notifications@cinnamon.org  
/home/valeonov/.cinnamon/configs/calendar@cinnamon.org  
/home/valeonov/Общедоступные  
/home/valeonov/australia  
/home/valeonov/Музыка  
/home/valeonov/.ssh  
/home/valeonov/Документы  
/home/valeonov/Видео  
/home/valeonov/.gnupg  
/home/valeonov/.gnupg/openpgp-revocs.d  
/home/valeonov/.gnupg/private-keys-v1.d  
/home/valeonov/.linuxmint  
/home/valeonov/.linuxmint/mintwelcome  
/home/valeonov/ski.places  
/home/valeonov/ski.places/plans  
/home/valeonov/ski.places/equipment  
/home/valeonov/Зарядки  
/home/valeonov/.config  
/home/valeonov/.config/menus  
/home/valeonov/.config/menus/applications-merged  
/home/valeonov/.config/autostart  
/home/valeonov/.config/qt5ct  
/home/valeonov/.config/gtk-3.0  
/home/valeonov/.config/nemo  
/home/valeonov/.config/dconf  
/home/valeonov/.config/evolution  
/home/valeonov/.config/evolution/sources
```

Figure 11: Поиск директорий

Выводы по проделанной работе

В данной работе мы ознакомились с инструментами поиска файлов и фильтрации текстовых данных. А также приобрели практические навыки по управлению процессами.