

# Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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# Цели и задачи работы

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## 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.

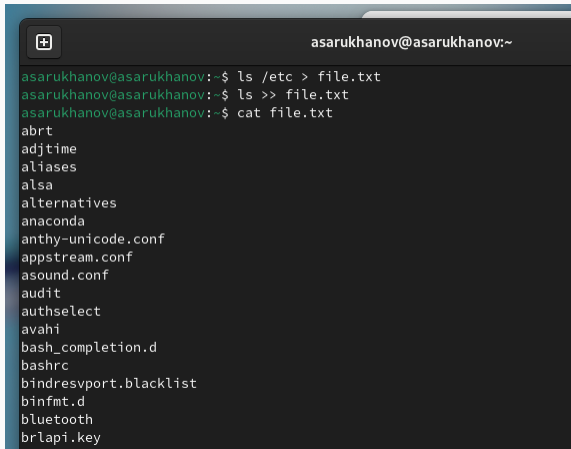
# Задачи лабораторной работы

- 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**

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# Перенаправление ввода-вывода



A terminal window with a dark background and light text. The title bar at the top shows a window icon and the text 'asarukhanov@asarukhanov:~'. The terminal content shows a series of commands and their outputs:

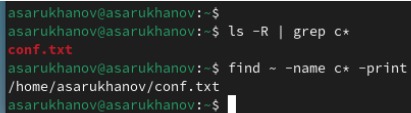
```
asarukhanov@asarukhanov:~$ ls /etc > file.txt
asarukhanov@asarukhanov:~$ ls >> file.txt
asarukhanov@asarukhanov:~$ cat file.txt
abrt
adjtime
aliases
alsa
alternatives
anaconda
anthy-unicode.conf
appstream.conf
asound.conf
audit
authselect
avahi
bash_completion.d
bashrc
bindresvport.blacklist
binfmt.d
bluetooth
brlapi.key
```

**Рис. 1:** Запись в файл

# Работа фильтра

```
asarukhanov@asarukhanov:~$  
asarukhanov@asarukhanov:~$ grep .conf file.txt > conf.txt  
asarukhanov@asarukhanov:~$ cat conf.txt  
anthy-unicode.conf  
appstream.conf  
asound.conf  
brltty.conf  
chkconfig.d  
chrony.conf  
dconf  
dleyna-server-service.conf  
dnsmasq.conf  
dracut.conf  
dracut.conf.d  
fprintd.conf  
fuse.conf  
host.conf  
idmapd.conf  
kdump.conf  
krb5.conf  
krb5.conf.d  
ld.so.conf  
ld.so.conf.d  
libaudit.conf  
libuser.conf  
locale.conf  
logrotate.conf  
makedumpfile.conf.sample  
man_db.conf  
mke2fs.conf
```

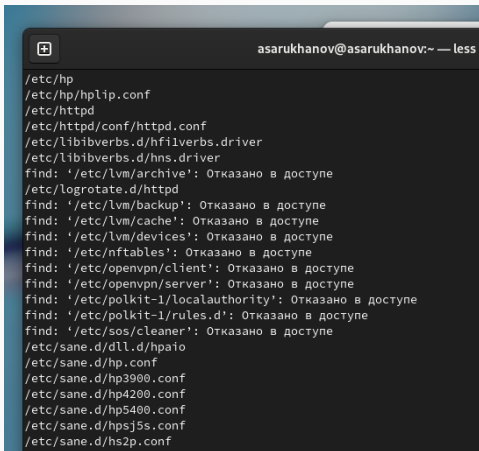
Рис. 2: Поиск расширения .conf

A terminal window with a dark background and light blue/green text. It shows a series of commands and their outputs. The first command is a prompt. The second command is 'ls -R | grep c\*', which outputs 'conf.txt' in red. The third command is 'find ~ -name c\* -print', which outputs '/home/asarukhanov/conf.txt'. The fourth line is another prompt.

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

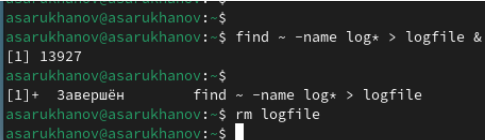
**Рис. 3:** Поиск файлов



A terminal window with a dark background and light text. The title bar at the top shows a window icon and the text 'asarukhanov@asarukhanov:~ — less'. The terminal content shows a list of files and directories under '/etc', followed by several 'find' commands and their outputs, all indicating 'Отказано в доступе' (Access denied).

```
asarukhanov@asarukhanov:~ — less
/etc/hp
/etc/hp/hplip.conf
/etc/httpd
/etc/httpd/conf/httpd.conf
/etc/libibverbs.d/hfiverbs.driver
/etc/libibverbs.d/hns.driver
find: '/etc/lvm/archive': Отказано в доступе
/etc/logrotate.d/httpd
find: '/etc/lvm/backup': Отказано в доступе
find: '/etc/lvm/cache': Отказано в доступе
find: '/etc/lvm/devices': Отказано в доступе
find: '/etc/nftables': Отказано в доступе
find: '/etc/openssh/client': Отказано в доступе
find: '/etc/openssh/server': Отказано в доступе
find: '/etc/polkit-1/localauthority': Отказано в доступе
find: '/etc/polkit-1/rules.d': Отказано в доступе
find: '/etc/sos/cleaner': Отказано в доступе
/etc/sane.d/dll.d/hpaio
/etc/sane.d/hp.conf
/etc/sane.d/hp3900.conf
/etc/sane.d/hp4200.conf
/etc/sane.d/hp5400.conf
/etc/sane.d/hpsj5s.conf
/etc/sane.d/hs2p.conf
```

**Рис. 4:** Поиск файлов



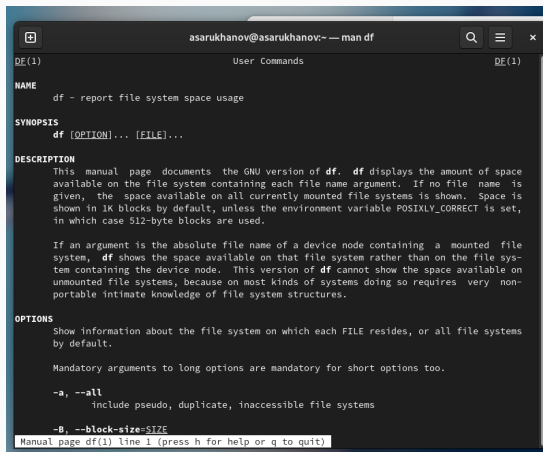
```
asarukhanov@asarukhanov:~$  
asarukhanov@asarukhanov:~$ find ~ -name log* > logfile &  
[1] 13927  
asarukhanov@asarukhanov:~$  
[1]+  Завершён      find ~ -name log* > logfile  
asarukhanov@asarukhanov:~$ rm logfile  
asarukhanov@asarukhanov:~$
```

Рис. 5: Фоновый запуск процесса

```
asarukhanov@asarukhanov:~$  
asarukhanov@asarukhanov:~$ gedit &  
[1] 13970  
asarukhanov@asarukhanov:~$ ps | grep gedit  
13970 pts/0    00:00:00 gedit  
asarukhanov@asarukhanov:~$ kill 13970  
asarukhanov@asarukhanov:~$  
[1]+  Завершено      gedit  
asarukhanov@asarukhanov:~$
```

Рис. 6: Фоновый запуск и завершение процесса

# Команды df и du



```
asarukhanov@asarukhanov:~ -- man df
DF(1)                                User Commands                                DF(1)

NAME
    df - report file system space usage

SYNOPSIS
    df [OPTION]... [FILE]...

DESCRIPTION
    This manual page documents the GNU version of df. df displays the amount of 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. 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 device node containing a mounted file
    system, df shows the space available on that file system rather than on the file sys-
    tem 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 non-
    portable intimate knowledge of file system structures.

OPTIONS
    Show information about the file system on which each FILE resides, or all file systems
    by default.

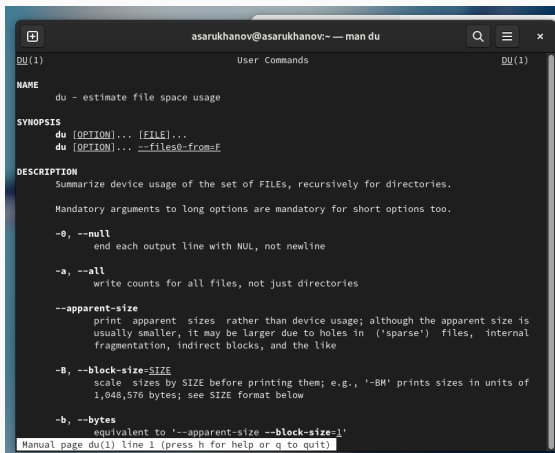
    Mandatory arguments to long options are mandatory for short options too.

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

    -B, --block-size=SIZE
        Manual page df(1) line 1 (press h for help or q to quit)
```

Рис. 7: Справка по команде df

# Команды df и du



The screenshot shows a terminal window with the title bar "asarukhanov@asarukhanov:~ — man du". The window displays the manual page for the 'du' command. The content is as follows:

```
DU(1)                                User Commands                                DU(1)

NAME
    du - estimate file space usage

SYNOPSIS
    du [OPTION]... [FILE]...
    du [OPTION]... --files0-from=F

DESCRIPTION
    Summarize device usage of the set of FILES, recursively for directories.

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

    -0, --null
        end each output line with NUL, not newline

    -a, --all
        write counts for all files, not just directories

    --apparent-size
        print apparent sizes rather than device usage; although the apparent size is usually smaller, it may be larger due to holes in ('sparse') files, internal fragmentation, indirect blocks, and the like

    -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

    -b, --bytes
        equivalent to '--apparent-size --block-size=1'

Manual page du(1) line 1 (press h for help or q to quit)
```

Рис. 8: Запуск команды df

# Команды df и du

```
asarukhanov@asarukhanov:~$  
asarukhanov@asarukhanov:~$ df  
Файловая система 1К-блоков  Использовано  Доступно  Использовано%  Смонтировано в  
/dev/sda3          103805952    37601624  63350824        38% /  
devtmpfs           4096          0      4096           0% /dev  
tmpfs              4044832       0  4044832          0% /dev/shm  
tmpfs              1617936      1888  1616048          1% /run  
/dev/sda3          103805952    37601624  63350824        38% /home  
tmpfs              4044832       44  4044788          1% /tmp  
/dev/sda2           996780      271404  656564          30% /boot  
tmpfs              808964       212  808752           1% /run/user/1082  
asarukhanov@asarukhanov:~$
```

Рис. 9: Справка по команде du

# Команды df и du

```
8      ./git-extended/.git/logs/refs/remotes/origin
8      ./git-extended/.git/logs/refs/remotes
16     ./git-extended/.git/logs/refs
20     ./git-extended/.git/logs
212    ./git-extended/.git
220    ./git-extended
0      ./monthly
0      ./reports/monthly/monthly
0      ./reports/monthly
0      ./reports
4      ./ski.plases/equipment
0      ./ski.plases/plans
4      ./ski.plases
0      ./australia
0      ./play/games/play
0      ./play/games
0      ./play
377420 .
asarukhanov@asarukhanov:~$
```

Рис. 10: Запуск команды du

```
/home/asarukhanov/.git/extended/.git/objects/3c
/home/asarukhanov/.git/extended/.git/objects/9a
/home/asarukhanov/.git/extended/.git/logs
/home/asarukhanov/.git/extended/.git/logs/refs
/home/asarukhanov/.git/extended/.git/logs/refs/heads
/home/asarukhanov/.git/extended/.git/logs/refs/remotes
/home/asarukhanov/.git/extended/.git/logs/refs/remotes/origin
/home/asarukhanov/monthly
/home/asarukhanov/reports
/home/asarukhanov/reports/monthly
/home/asarukhanov/reports/monthly/monthly
/home/asarukhanov/ski.places
/home/asarukhanov/ski.places/equipment
/home/asarukhanov/ski.places/plans
/home/asarukhanov/australia
/home/asarukhanov/play
/home/asarukhanov/play/games
/home/asarukhanov/play/games/play
asarukhanov@asarukhanov:~$
```

Рис. 11: Поиск директорий



## **Выводы по проделанной работе**

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