

# 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.

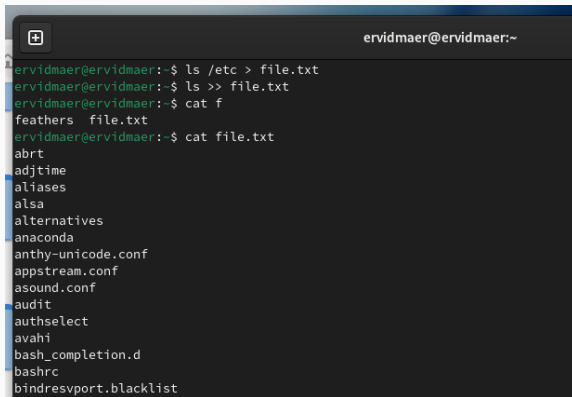
# Задачи лабораторной работы

- 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 'ervidmaer@ervidmaer:~'. The terminal content shows a series of commands and their output. The first command 'ls /etc > file.txt' creates a file. The second 'ls >> file.txt' appends the current directory's contents to the file. The third 'cat f' shows the first few lines of the file, and the fourth 'cat file.txt' shows the entire contents.

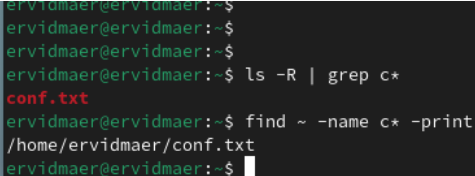
```
ervidmaer@ervidmaer:~$ ls /etc > file.txt
ervidmaer@ervidmaer:~$ ls >> file.txt
ervidmaer@ervidmaer:~$ cat f
feathers  file.txt
ervidmaer@ervidmaer:~$ cat file.txt
abrt
adjtime
aliases
alsa
alternatives
anaconda
anthy-unicode.conf
appstream.conf
asound.conf
audit
authselect
avahi
bash_completion.d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

Рис. 1: Запись в файл

# Работа фильтра

```
ervidmaer@ervidmaer:~$  
ervidmaer@ervidmaer:~$ grep .conf file.txt > conf.txt  
ervidmaer@ervidmaer:~$ 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
```

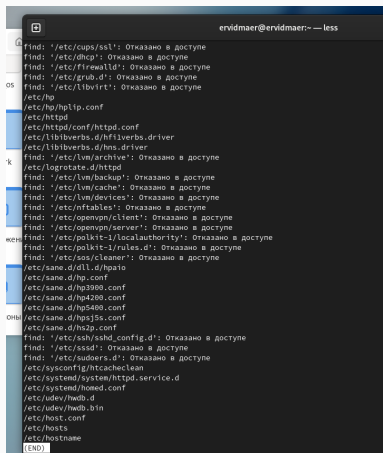
Рис. 2: Поиск расширения .conf



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

**Рис. 3:** Поиск файлов





```
ervidmaer@ervidmaer:~ — less
find: '/etc/cups/ssl': Отказано в доступе
find: '/etc/dhcp': Отказано в доступе
find: '/etc/firewall': Отказано в доступе
find: '/etc/grub.d': Отказано в доступе
find: '/etc/libvirt': Отказано в доступе
/etc/hp
/etc/hp/hpclip.conf
/etc/httpd
/etc/httpd/conf/httpd.conf
/etc/liblverbs.d/hfi1verbs.driver
/etc/liblverbs.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/openvpn/client': Отказано в доступе
find: '/etc/openvpn/server': Отказано в доступе
find: '/etc/pklt-1/localauthority': Отказано в доступе
find: '/etc/pklt-1/rules.d': Отказано в доступе
find: '/etc/sas/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/hpsj5p.conf
find: '/etc/ssh/sshd_config.d': Отказано в доступе
find: '/etc/ssh': Отказано в доступе
find: '/etc/sudoers.d': Отказано в доступе
/etc/sysconfig/htcacheclean
/etc/systemd/system/httpd.service.d
/etc/systemd/homed.conf
/etc/udev/hwdb.d
/etc/udev/hwdb.bin
/etc/hosts.conf
/etc/hosts
/etc/hostname
(END)
```

Рис. 4: Поиск файлов

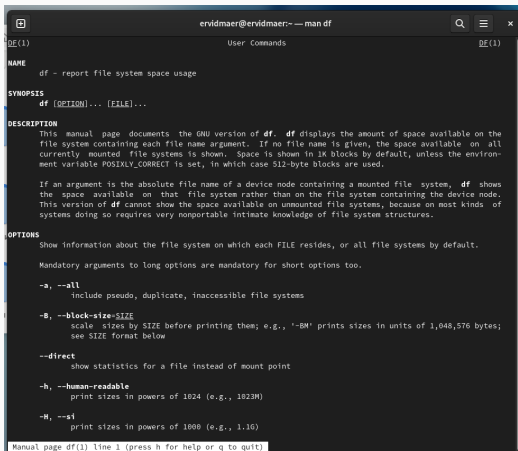
```
ervidmaer@ervidmaer:~$  
ervidmaer@ervidmaer:~$  
ervidmaer@ervidmaer:~$ dind ~ -name "log*" > logfile &  
[1] 4697  
bash: dind: команда не найдена...  
ervidmaer@ervidmaer:~$  
ervidmaer@ervidmaer:~$ find ~ -name "log*" > logfile &  
[2] 4730  
[1] Выход 127          dind ~ -name "log*" > logfile  
ervidmaer@ervidmaer:~$  
[2]+ Завершён          find ~ -name "log*" > logfile  
ervidmaer@ervidmaer:~$ rm logfile  
ervidmaer@ervidmaer:~$
```

Рис. 5: Фоновый запуск процесса

```
eravidmaer@eravidmaer:~$  
eravidmaer@eravidmaer:~$ find ~ -name "log*" > logfile &  
[2] 4730  
[1] Выход 127      dind ~ -name "log*" > logfile  
eravidmaer@eravidmaer:~$  
[2]+ Завершён      find ~ -name "log*" > logfile  
eravidmaer@eravidmaer:~$ rm logfile  
eravidmaer@eravidmaer:~$  
eravidmaer@eravidmaer:~$  
eravidmaer@eravidmaer:~$ gedit &  
[1] 4764  
eravidmaer@eravidmaer:~$  
eravidmaer@eravidmaer:~$ ps | grep gedit  
    4764 pts/0    00:00:00 gedit  
eravidmaer@eravidmaer:~$ kill 4764  
eravidmaer@eravidmaer:~$  
[1]+ Завершено      gedit  
eravidmaer@eravidmaer:~$
```

Рис. 6: Фоновый запуск и завершение процесса

# Команды df и du



```
ervidmaer@ervidmaer:~ -- 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 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

  --direct
      show statistics for a file instead of mount point

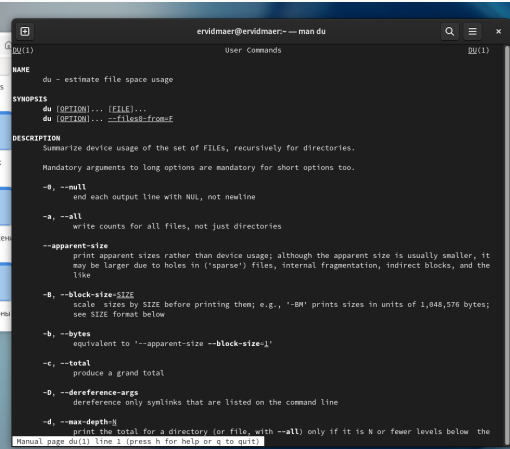
  -h, --human-readable
      print sizes in powers of 1024 (e.g., 1023M)

  -H, --si
      print sizes in powers of 1000 (e.g., 1.1G)

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

Рис. 7: Справка по команде df

# Команды df и du



```
ervidmaer@ervidmaer:~ -- man du
du(1)                                User Commands                                du(1)

NAME
du - estimate file space usage

SYNOPSIS
du [OPTION]... [FILE]...
du [OPTION]... --files-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'

  -c, --total
      produce a grand total

  -D, --dereference-args
      dereference only symlinks that are listed on the command line

  -d, --max-depth=N
      print the total for a directory (or file, with --all) only if it is N or fewer levels below the
      Manual page du(1) line 1 (press h for help or q to quit)
```

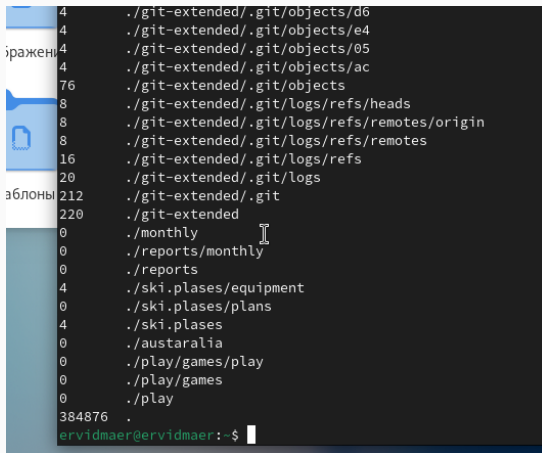
Рис. 8: Запуск команды df

# Команды df и du

```
ervidmaer@ervidmaer:~$  
ervidmaer@ervidmaer:~$ man df  
ervidmaer@ervidmaer:~$ man du  
ervidmaer@ervidmaer:~$ df  
Файловая система 1К-блоков  Иستخدمانو  Доступно  Иستخدمانو%  Смонтировано в  
/dev/sda3      103805952    41585156  59635068      42% /  
devtmpfs        4096          0     4096          0% /dev  
tmpfs           4044836       0    4044836       0% /dev/shm  
tmpfs           1617936      1888    1616048       1% /run  
/dev/sda3      103805952    41585156  59635068      42% /home  
/dev/sda2       996780     271404    656564       30% /boot  
tmpfs           4044840      16    4044824       1% /tmp  
tmpfs           808964       176    808788       1% /run/user/1077  
ervidmaer@ervidmaer:~$
```

Рис. 9: Справка по команде du

# Команды df и du



```
4      ./git-extended/.git/objects/d6
4      ./git-extended/.git/objects/e4
4      ./git-extended/.git/objects/05
4      ./git-extended/.git/objects/ac
76     ./git-extended/.git/objects
8      ./git-extended/.git/logs/refs/heads
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
0      ./reports
4      ./ski.plases/equipment
0      ./ski.plases/plans
4      ./ski.plases
0      ./austaralia
0      ./play/games/play
0      ./play/games
0      ./play
384876 .
ervidmaer@ervidmaer:~$
```

Рис. 10: Запуск команды du

```
/home/ervidmaer/git-extended/.git/objects/42  
/home/ervidmaer/git-extended/.git/objects/3b  
/home/ervidmaer/git-extended/.git/objects/f5  
/home/ervidmaer/git-extended/.git/objects/d6  
/home/ervidmaer/git-extended/.git/objects/e4  
/home/ervidmaer/git-extended/.git/objects/05  
/home/ervidmaer/git-extended/.git/objects/ac  
/home/ervidmaer/git-extended/.git/logs  
/home/ervidmaer/git-extended/.git/logs/refs  
/home/ervidmaer/git-extended/.git/logs/refs/heads  
/home/ervidmaer/git-extended/.git/logs/refs/remotes  
/home/ervidmaer/git-extended/.git/logs/refs/remotes/origin  
/home/ervidmaer/monthly  
/home/ervidmaer/reports  
/home/ervidmaer/reports/monthly  
/home/ervidmaer/ski.plases  
/home/ervidmaer/ski.plases/equipment  
/home/ervidmaer/ski.plases/plans  
/home/ervidmaer/austaralia  
/home/ervidmaer/play  
/home/ervidmaer/play/games  
/home/ervidmaer/play/games/play  
ervidmaer@ervidmaer:~$
```

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.