

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

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15 марта, 2023, Москва, Россия

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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.

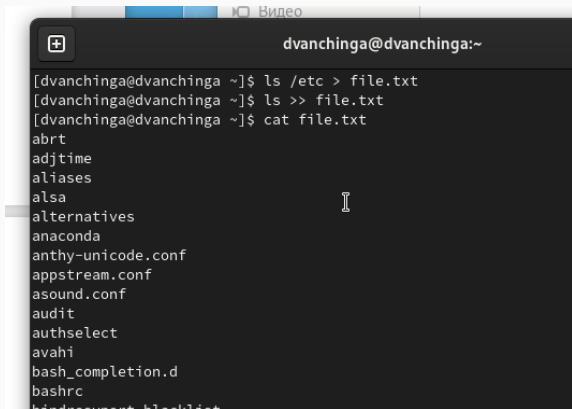
# Задачи лабораторной работы

- 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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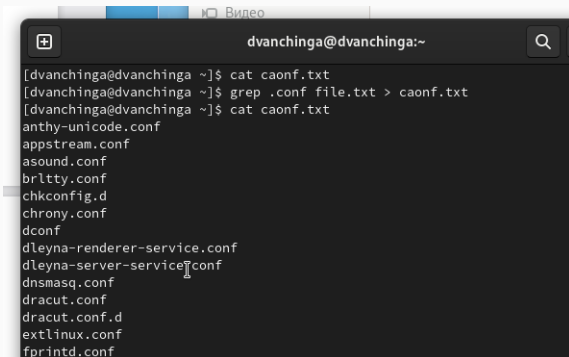
# Перенаправление ввода-вывода

A terminal window titled "dvanchinga@dvanchinga:~" with a dark background. The window shows a sequence of commands and their output. The first command is "ls /etc > file.txt", followed by "ls >> file.txt", and then "cat file.txt". The output of the cat command is a list of files from the /etc directory, including abrt, adjtime, aliases, alsa, alternatives, anaconda, anthy-unicode.conf, appstream.conf, asound.conf, audit, authselect, avahi, bash\_completion.d, bashrc, and bindresvport.blacklist. A cursor is visible on the line containing "alsa".

```
[dvanchinga@dvanchinga ~]$ ls /etc > file.txt
[dvanchinga@dvanchinga ~]$ ls >> file.txt
[dvanchinga@dvanchinga ~]$ 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
```

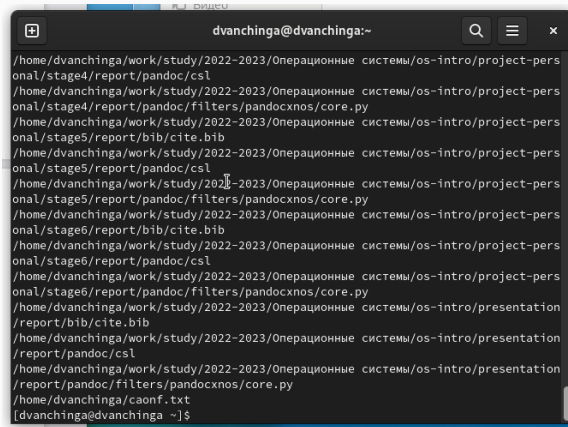
**Рис. 1:** Запись в файл

# Работа фильтра

A terminal window titled 'dvanchinga@dvanchinga:~' with a search icon in the top right. The window shows a sequence of commands and their output. The first command is 'cat caonf.txt', which produces a list of files ending in '.conf'. The second command is 'grep .conf file.txt > caonf.txt', which filters the list to only those files containing '.conf'. The third command is 'cat caonf.txt', which displays the filtered list of files.

```
[dvanchinga@dvanchinga ~]$ cat caonf.txt
[dvanchinga@dvanchinga ~]$ grep .conf file.txt > caonf.txt
[dvanchinga@dvanchinga ~]$ cat caonf.txt
anthy-unicode.conf
appstream.conf
asound.conf
brltty.conf
chkconfig.d
chrony.conf
dconf
dleyna-renderer-service.conf
dleyna-server-service.conf
dnsmasq.conf
dracut.conf
dracut.conf.d
extlinux.conf
fprintd.conf
```

**Рис. 2:** Поиск расширения .conf

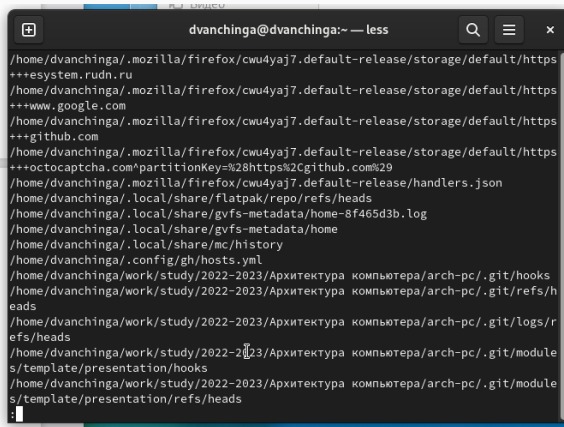
A terminal window titled 'dvanchinga@dvanchinga:~' with a search icon, a menu icon, and a close icon in the title bar. The terminal displays a list of file paths, likely the result of a recursive search command. The paths are organized into a tree structure, showing directories like 'stage4', 'stage5', and 'stage6' under 'report', which are further divided into 'pandoc' and 'filters' subdirectories. The search results include files like 'core.py', 'cite.bib', and 'caonf.txt'. The prompt at the bottom is '[dvanchinga@dvanchinga ~]\$'.

```
dvanchinga@dvanchinga:~  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage4/report/pandoc/csl  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage4/report/pandoc/filters/pandocxnos/core.py  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage5/report/bib/cite.bib  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage5/report/pandoc/csl  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage5/report/pandoc/filters/pandocxnos/core.py  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage6/report/bib/cite.bib  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage6/report/pandoc/csl  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/project-pers  
onal/stage6/report/pandoc/filters/pandocxnos/core.py  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/presentation  
/report/bib/cite.bib  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/presentation  
/report/pandoc/csl  
/home/dvanchinga/work/study/2022-2023/Операционные системы/os-intro/presentation  
/report/pandoc/filters/pandocxnos/core.py  
/home/dvanchinga/caonf.txt  
[dvanchinga@dvanchinga ~]$
```

Рис. 3: Поиск файлов



# Команда поиска



```
dvanchinga@dvanchinga:~ — less
/home/dvanchinga/.mozilla/firefox/cwu4yaj7.default-release/storage/default/https
+++system.rudn.ru
/home/dvanchinga/.mozilla/firefox/cwu4yaj7.default-release/storage/default/https
+++www.google.com
/home/dvanchinga/.mozilla/firefox/cwu4yaj7.default-release/storage/default/https
+++github.com
/home/dvanchinga/.mozilla/firefox/cwu4yaj7.default-release/storage/default/https
+++octocaptcha.com^partitionKey=%28https%2Cgithub.com%29
/home/dvanchinga/.mozilla/firefox/cwu4yaj7.default-release/handlers.json
/home/dvanchinga/.local/share/flatpak/repo/refs/heads
/home/dvanchinga/.local/share/gvfs-metadata/home-8f465d3b.log
/home/dvanchinga/.local/share/gvfs-metadata/home
/home/dvanchinga/.local/share/mc/history
/home/dvanchinga/.config/gh/hosts.yml
/home/dvanchinga/work/study/2022-2023/Архитектура компьютера/arch-pc/.git/hooks
/home/dvanchinga/work/study/2022-2023/Архитектура компьютера/arch-pc/.git/refs/h
eads
/home/dvanchinga/work/study/2022-2023/Архитектура компьютера/arch-pc/.git/logs/r
efs/heads
/home/dvanchinga/work/study/2022-2023/Архитектура компьютера/arch-pc/.git/module
s/template/presentation/hooks
/home/dvanchinga/work/study/2022-2023/Архитектура компьютера/arch-pc/.git/module
s/template/presentation/refs/heads
:
```

Рис. 4: Поиск файлов

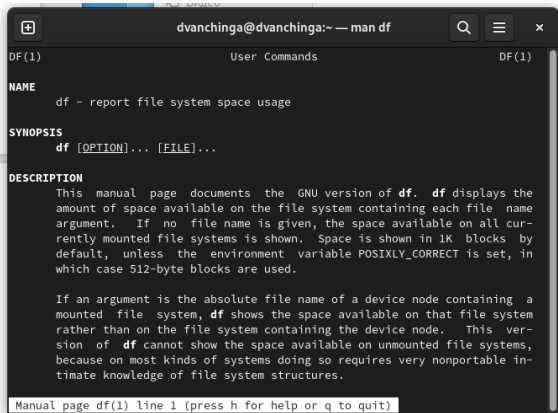
```
[dvanchinga@dvanchinga ~]$  
[dvanchinga@dvanchinga ~]$ find ~ -name "h*" -print | less  
[dvanchinga@dvanchinga ~]$  
[dvanchinga@dvanchinga ~]$  
[dvanchinga@dvanchinga ~]$ find ~ -name "log*" > logfile &  
[1] 3188  
[dvanchinga@dvanchinga ~]$  
[1]+  Завершён          find ~ -name "log*" > logfile  
[dvanchinga@dvanchinga ~]$ rm logfile  
[dvanchinga@dvanchinga ~]$
```

Рис. 5: Фоновый запуск процесса

```
[dvanchinga@dvanchinga ~]$  
[dvanchinga@dvanchinga ~]$ gedit &  
[1] 3209  
[dvanchinga@dvanchinga ~]$ ps | grep gedit  
3209 pts/0    00:00:00 gedit  
[dvanchinga@dvanchinga ~]$ kill 3209  
[dvanchinga@dvanchinga ~]$  
[1]+  Завершено      gedit  
[dvanchinga@dvanchinga ~]$
```

Рис. 6: Фоновый запуск и завершение процесса

# Команды df и du



```
dvanchinga@dvanchinga:~ — man df
DF(1)                                User Commands                                DF(1)

NAME
    df - report file system space usage

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

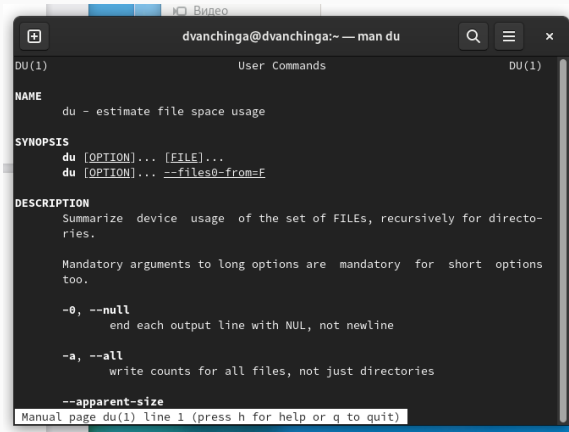
DESCRIPTION
    This manual page documents the GNU version of df. df displays the
    amount of space available on the file system containing each file name
    argument.  If no file name is given, the space available on all cur-
    rently mounted file systems is shown.  Space is shown in 1K blocks 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 ver-
    sion of df cannot show the space available on unmounted file systems,
    because on most kinds of systems doing so requires very nonportable in-
    timate knowledge of file system structures.

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 titled "dvanchinga@dvanchinga:~ — 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
        Manual page du(1) line 1 (press h for help or q to quit)
```

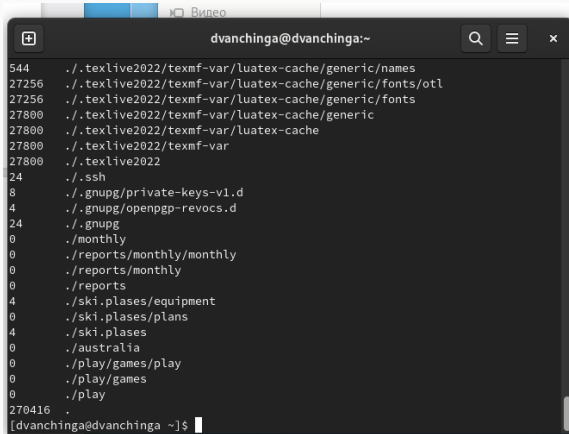
Рис. 8: Запуск команды df

# Команды df и du

```
[dvanchinga@dvanchinga ~]$ man du
[dvanchinga@dvanchinga ~]$ df
Файловая система 1К-блоков  Использовано  Доступно  Использовано%  Смонтировано в
devtmpfs           4096             0         4096             0% /dev
tmpfs              1988872         5736      1983136             1% /dev/shm
tmpfs              795552         1876      793676             1% /run
/dev/sda2          61864960      18946544  42123776            32% /
/dev/sda2          61864960      18946544  42123776            32% /home
tmpfs              1988872         24       1988848             1% /tmp
/dev/sda1          996780        276852    651116             30% /boot
tmpfs              397772         164      397608             1% /run/user/1020
[dvanchinga@dvanchinga ~]$
```

Рис. 9: Справка по команде du

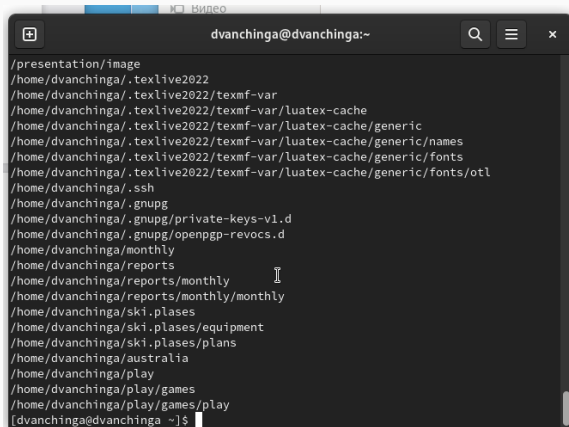
# Команды df и du



A terminal window titled "dvanchinga@dvanchinga:~" with a search icon, menu icon, and close icon in the title bar. The window shows the output of the 'du' command, listing the size of various directories and files. The output is as follows:

```
544  ./texlive2022/texmf-var/luatex-cache/generic/names
27256 ./texlive2022/texmf-var/luatex-cache/generic/fonts/otl
27256 ./texlive2022/texmf-var/luatex-cache/generic/fonts
27800 ./texlive2022/texmf-var/luatex-cache/generic
27800 ./texlive2022/texmf-var/luatex-cache
27800 ./texlive2022/texmf-var
27800 ./texlive2022
24  ./ssh
8  ./gnupg/private-keys-v1.d
4  ./gnupg/openpgp-revocs.d
24  ./gnupg
0  ./monthly
0  ./reports/monthly/monthly
0  ./reports/monthly
0  ./reports
4  ./ski.places/equipment
0  ./ski.places/plans
4  ./ski.places
0  ./australia
0  ./play/games/play
0  ./play/games
0  ./play
270416 .
[dvanchinga@dvanchinga ~]$
```

Рис. 10: Запуск команды du

A terminal window titled 'dvanchinga@dvanchinga:~' with standard window controls. The terminal displays a vertical list of directory paths, including presentation/image, home/dvanchinga/.texlive2022, and various subdirectories like texmf-var, luatex-cache, fonts, and ssh. The cursor is positioned at the end of the last line, '[dvanchinga@dvanchinga ~]\$'.

```
dvanchinga@dvanchinga:~  
/presentation/image  
/home/dvanchinga/.texlive2022  
/home/dvanchinga/.texlive2022/texmf-var  
/home/dvanchinga/.texlive2022/texmf-var/luatex-cache  
/home/dvanchinga/.texlive2022/texmf-var/luatex-cache/generic  
/home/dvanchinga/.texlive2022/texmf-var/luatex-cache/generic/names  
/home/dvanchinga/.texlive2022/texmf-var/luatex-cache/generic/fonts  
/home/dvanchinga/.texlive2022/texmf-var/luatex-cache/generic/fonts/otl  
/home/dvanchinga/.ssh  
/home/dvanchinga/.gnupg  
/home/dvanchinga/.gnupg/private-keys-v1.d  
/home/dvanchinga/.gnupg/openpgp-revocs.d  
/home/dvanchinga/monthly  
/home/dvanchinga/reports  
/home/dvanchinga/reports/monthly  
/home/dvanchinga/reports/monthly/monthly  
/home/dvanchinga/ski.places  
/home/dvanchinga/ski.places/equipment  
/home/dvanchinga/ski.places/plans  
/home/dvanchinga/australia  
/home/dvanchinga/play  
/home/dvanchinga/play/games  
/home/dvanchinga/play/games/play  
[dvanchinga@dvanchinga ~]$
```

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.