

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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Цели и задачи работы

Цель лабораторной работы

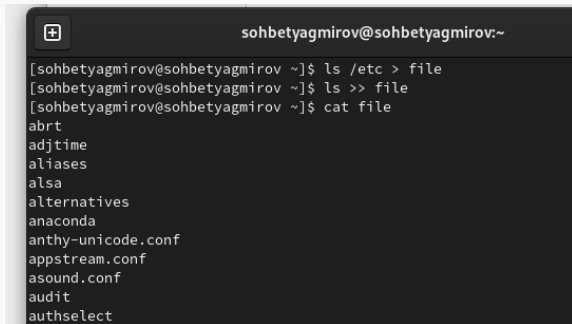
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

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

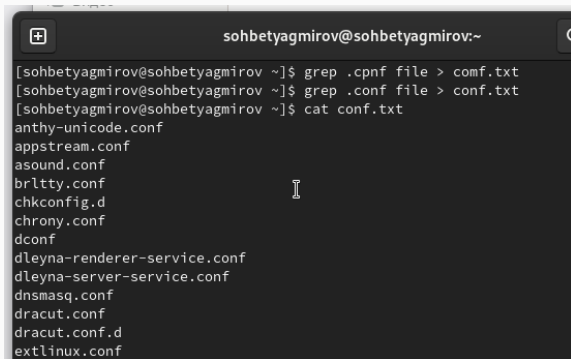
Перенаправление ввода-вывода



```
sohbetyagmirov@sohbetyagmirov:~  
[sohbetyagmirov@sohbetyagmirov ~]$ ls /etc > file  
[sohbetyagmirov@sohbetyagmirov ~]$ ls >> file  
[sohbetyagmirov@sohbetyagmirov ~]$ cat file  
abrt  
adjtime  
aliases  
alsa  
alternatives  
anaconda  
anthy-unicode.conf  
appstream.conf  
asound.conf  
audit  
authselect
```

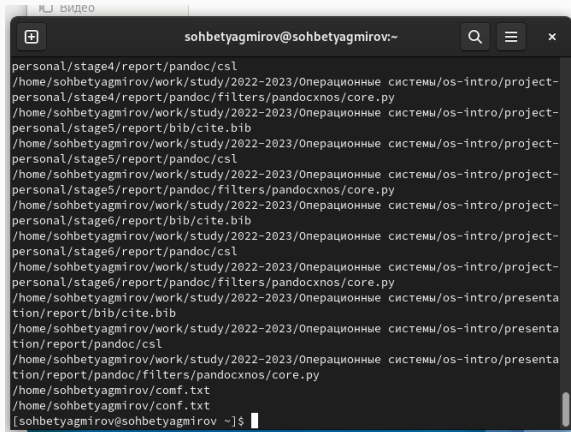
Рис. 1: Запись в файл

Работа фильтра



```
sohbetyagmirov@sohbetyagmirov:~  
[sohbetyagmirov@sohbetyagmirov ~]$ grep .cnpf file > conf.txt  
[sohbetyagmirov@sohbetyagmirov ~]$ grep .conf file > conf.txt  
[sohbetyagmirov@sohbetyagmirov ~]$ cat conf.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
```

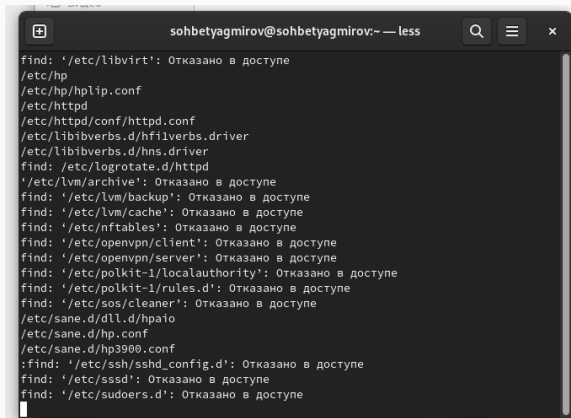
Рис. 2: Поиск расширения .conf



The image shows a terminal window titled "sohbetyagmirov@sohbetyagmirov:~". The terminal displays the output of a recursive search command, listing various files and directories. The search results include paths like "personal/stage4/report/pandoc/csl", "/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-personal/stage4/report/pandoc/filters/pandocxnos/core.py", and "/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-personal/stage5/report/bib/cite.bib". The terminal window has a dark background and a light-colored text. The title bar shows a window icon, the username and host, and standard window controls (search, menu, close).

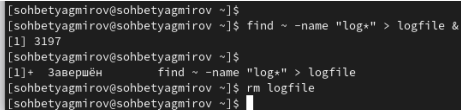
```
personal/stage4/report/pandoc/csl
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-
personal/stage4/report/pandoc/filters/pandocxnos/core.py
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-
personal/stage5/report/bib/cite.bib
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-
personal/stage5/report/pandoc/csl
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-
personal/stage5/report/pandoc/filters/pandocxnos/core.py
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-
personal/stage6/report/bib/cite.bib
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-
personal/stage6/report/pandoc/csl
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/project-
personal/stage6/report/pandoc/filters/pandocxnos/core.py
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/presenta
tion/report/bib/cite.bib
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/presenta
tion/report/pandoc/csl
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/presenta
tion/report/pandoc/filters/pandocxnos/core.py
/home/sohbetyagmirov/conf.txt
/home/sohbetyagmirov/conf.txt
[sohbetyagmirov@sohbetyagmirov ~]$
```

Рис. 3: Поиск файлов



```
sohbetyagmirov@sohbetyagmirov:~ — less
find: '/etc/libvirt': Отказано в доступе
/etc/hp
/etc/hp/hplip.conf
/etc/httpd
/etc/httpd/conf/httpd.conf
/etc/libibverbs.d/hfilverbs.driver
/etc/libibverbs.d/hns.driver
find: /etc/logrotate.d/httpd
'/etc/lvm/archive': Отказано в доступе
find: '/etc/lvm/backup': Отказано в доступе
find: '/etc/lvm/cache': 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/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
:find: '/etc/ssh/ssh_config.d': Отказано в доступе
find: '/etc/ssh/sssd': Отказано в доступе
find: '/etc/sudoers.d': Отказано в доступе
```

Рис. 4: Поиск файлов

A terminal window with a dark background and light text. The user 'sohbetyagmirov' is at the prompt '~'. They enter the command 'find ~ -name "log*" > logfile &'. The terminal shows the process ID '3197' and a status message '[1]+ завершён find ~ -name "log*" > logfile'. Finally, the user enters 'rm logfile' to delete the temporary file.

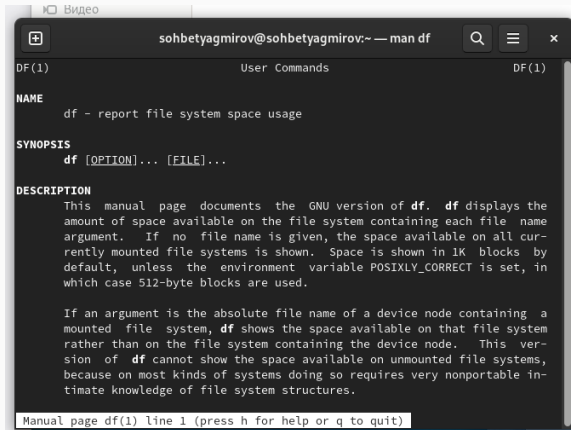
```
[sohbetyagmirov@sohbetyagmirov ~]$  
[sohbetyagmirov@sohbetyagmirov ~]$ find ~ -name "log*" > logfile &  
[1] 3197  
[sohbetyagmirov@sohbetyagmirov ~]$  
[1]+  завершён      find ~ -name "log*" > logfile  
[sohbetyagmirov@sohbetyagmirov ~]$ rm logfile  
[sohbetyagmirov@sohbetyagmirov ~]$
```

Рис. 5: Фоновый запуск процесса

```
[sohbetyagmirov@sohbetyagmirov ~]$  
[sohbetyagmirov@sohbetyagmirov ~]$ gedit &  
[1] 3218  
[sohbetyagmirov@sohbetyagmirov ~]$ ps | grep gedit  
3218 pts/0    00:00:00 gedit  
[sohbetyagmirov@sohbetyagmirov ~]$ kill 3218  
[sohbetyagmirov@sohbetyagmirov ~]$  
[1]+  Завершено      gedit  
[sohbetyagmirov@sohbetyagmirov ~]$
```

Рис. 6: Фоновый запуск и завершение процесса

Команды df и du



The screenshot shows a terminal window titled "sohbetyagmirov@sohbetyagmirov:~ — man df". The window displays the manual page for the 'df' command. The content is as follows:

```
DF(1)                                User Commands                                DF(1)

NAME
    df - report file system space usage

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

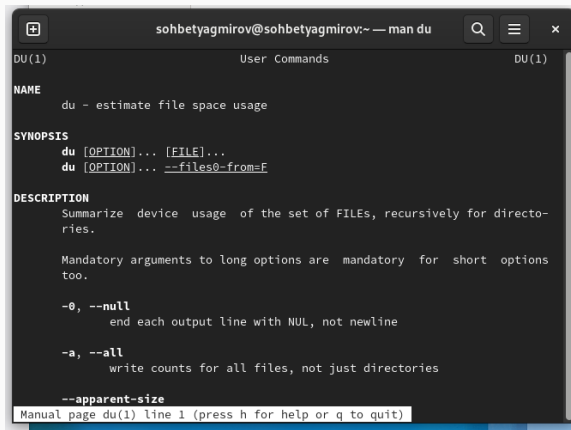
DESCRIPTION
    This manual page documents the GNU version of df. df displays the
    amount of space available on the file system containing each file name
    argument.  If no file name is given, the space available on all cur-
    rently mounted file systems is shown.  Space is shown in 1K blocks 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



A terminal window titled "sohbetyagmirov@sohbetyagmirov:~ — man du" displays the manual page for the 'du' command. The window has a dark background with light text. The terminal 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)
```

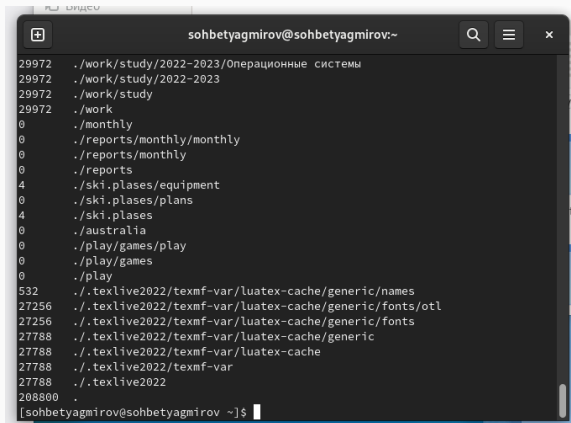
Рис. 8: Запуск команды df

Команды df и du

```
[sohbetyagmirov@sohbetyagmirov ~]$ man du
[sohbetyagmirov@sohbetyagmirov ~]$ df
Файловая система 1К-блоков  Использовано  Доступно  Использовано%  Смонтировано в
devtmpfs           4096             0      4096             0% /dev
tmpfs              1988872         5304    1983568             1% /dev/shm
tmpfs              795552          1876    793676             1% /run
/dev/sda2          61864960      18941180  42130628            32% /
tmpfs              1988872           8    1988864             1% /tmp
/dev/sda2          61864960      18941180  42130628            32% /home
/dev/sda1          996780         276852    651116             30% /boot
tmpfs              397772          172    397600             1% /run/user/1043
[sohbetyagmirov@sohbetyagmirov ~]$
```

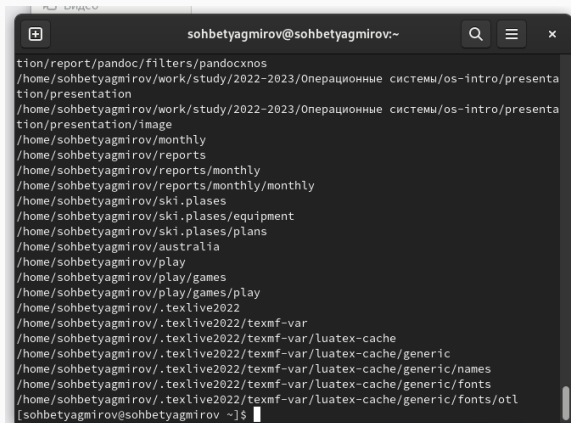
Рис. 9: Справка по команде du

Команды df и du

A terminal window titled 'sohbetyagmirov@sohbetyagmirov:~' with a search icon, a menu icon, and a close icon in the title bar. The terminal displays the output of the 'du' command, showing disk usage for various directories. The output is as follows:

```
29972  ./work/study/2022-2023/Операционные системы
29972  ./work/study/2022-2023
29972  ./work/study
29972  ./work
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
532    ./texlive2022/texmf-var/luatex-cache/generic/names
27256  ./texlive2022/texmf-var/luatex-cache/generic/fonts/otl
27256  ./texlive2022/texmf-var/luatex-cache/generic/fonts
27788  ./texlive2022/texmf-var/luatex-cache/generic
27788  ./texlive2022/texmf-var/luatex-cache
27788  ./texlive2022/texmf-var
27788  ./texlive2022
208800 .
[sohbetyagmirov@sohbetyagmirov ~]$
```

Рис. 10: Запуск команды du

A terminal window with a dark background and light text. The title bar shows the user 'sohbetyagmirov' and the shell '~'. The terminal displays the output of a 'find' command, listing various directories and files in a tree-like structure. The paths include directories like 'report/pandoc/filters/pandocxnos', 'work/study/2022-2023/Операционные системы/os-intro/presentation', and various subdirectories under the home directory. The command prompt '[sohbetyagmirov@sohbetyagmirov ~]\$' is visible at the bottom.

```
tion/report/pandoc/filters/pandocxnos
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/presentation/presentation
/home/sohbetyagmirov/work/study/2022-2023/Операционные системы/os-intro/presentation/presentation/image
/home/sohbetyagmirov/monthly
/home/sohbetyagmirov/reports
/home/sohbetyagmirov/reports/monthly
/home/sohbetyagmirov/reports/monthly/monthly
/home/sohbetyagmirov/ski.places
/home/sohbetyagmirov/ski.places/equipment
/home/sohbetyagmirov/ski.places/plans
/home/sohbetyagmirov/australia
/home/sohbetyagmirov/play
/home/sohbetyagmirov/play/games
/home/sohbetyagmirov/play/games/play
/home/sohbetyagmirov/.texlive2022
/home/sohbetyagmirov/.texlive2022/texmf-var
/home/sohbetyagmirov/.texlive2022/texmf-var/luatex-cache
/home/sohbetyagmirov/.texlive2022/texmf-var/luatex-cache/generic
/home/sohbetyagmirov/.texlive2022/texmf-var/luatex-cache/generic/names
/home/sohbetyagmirov/.texlive2022/texmf-var/luatex-cache/generic/fonts
/home/sohbetyagmirov/.texlive2022/texmf-var/luatex-cache/generic/fonts/otl
[sohbetyagmirov@sohbetyagmirov ~]$
```

Рис. 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.