

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

Абдурахмонов Иброхимджон¹

8 июня, 2023, Москва, Россия

¹Российский Университет Дружбы Народов

Цели и задачи работы

Цель лабораторной работы

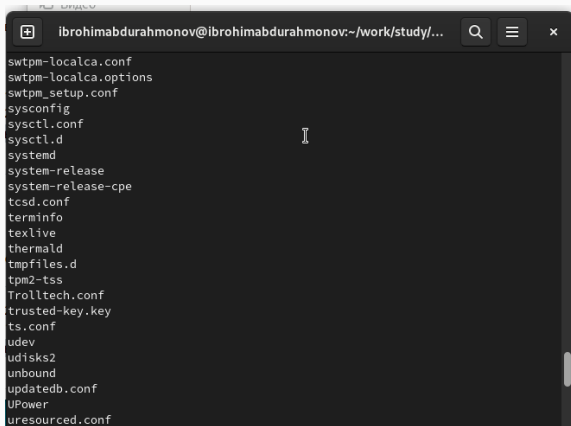
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

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



A terminal window with a dark background and light gray text. The window title bar shows the user 'ibrohimbudurahmonov' and the current directory '~/work/study/'. The terminal displays a list of files and directories, including configuration files like 'swtpm-localca.conf', system files like 'sysctl.conf', and various other system-related files. A cursor is visible on the line containing 'sysctl.d'.

```
ibrohimbudurahmonov@ibrohimbudurahmonov:~/work/study/...
swtpm-localca.conf
swtpm-localca.options
swtpm_setup.conf
sysconfig
sysctl.conf
sysctl.d
systemd
system-release
system-release-cpe
tcsd.conf
terminfo
texlive
thermald
tmpfiles.d
tpm2-tss
Trolltech.conf
trusted-key.key
ts.conf
udev
udisks2
unbound
updatedb.conf
UPower
uresourced.conf
```

Рис. 1: Запись в файл

Работа фильтра

A terminal window with a dark background and light text. The window title bar shows the user 'ibrohimabdurahmonov' and the current directory '~/work/study/...'. The terminal contains two commands and their outputs. The first command is 'grep .conf file.txt > conf.txt', which lists various .conf files. The second command is 'cat conf.txt', which displays the same list of files.

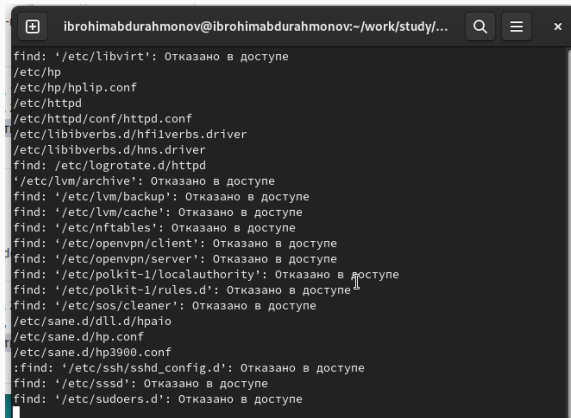
```
ibrohimabdurahmonov@ibrohimabdurahmonov:~/work/study/...  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ grep .conf file.txt > conf.txt  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ cat conf.txt  
anthy-unicode.conf  
appstream.conf  
asound.conf  
brltty.conf  
chkconfig.d  
chrony.conf  
dconf  
dleyna-renderer-service.conf  
dleyna-server-service.conf  
dnsmasq.conf  
dracut.conf  
dracut.conf.d  
extlinux.conf  
fprintd.conf
```

Рис. 2: Поиск расширения .conf

```
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ ls -R | grep c*  
chkconfig.d  
netconfig  
pkgconfig  
sysconfig  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ find ~ -name "c*" -print  
/home/ibrohimabdurahmonov/.mozilla/firefox/Crash Reports/crashreporter.ini  
/home/ibrohimabdurahmonov/.mozilla/firefox/kq8upxg9.default-release/crashes  
/home/ibrohimabdurahmonov/.mozilla/firefox/kq8upxg9.default-release/compatibilit  
y.ini  
/home/ibrohimabdurahmonov/.mozilla/firefox/kq8upxg9.default-release/cookies.sqli  
te  
/home/ibrohimabdurahmonov/.mozilla/firefox/kq8upxg9.default-release/cert9.db  
/home/ibrohimabdurahmonov/.mozilla/firefox/kq8upxg9.default-release/storage/perma  
nent/chrome  
/home/ibrohimabdurahmonov/.mozilla/firefox/kq8upxg9.default-release/storage/defa  
ult/https+++rutube.ru/cache  
/home/ibrohimabdurahmonov/.mozilla/firefox/kq8upxg9.default-release/storage/defa  
ult/https+++rutube.ru/cache/caches.sqlite
```

Рис. 3: Поиск файлов

Команда поиска



```
ibrohimabdurahmonov@ibrohimabdurahmonov:~/work/study/...
find: '/etc/libvirt': Отказано в доступе
/etc/hp
/etc/hp/hplip.conf
/etc/httpd
/etc/httpd/conf/httpd.conf
/etc/libibverbs.d/hfi1verbs.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': Отказано в доступе
find: '/etc/sudoers.d': Отказано в доступе
```

Рис. 4: Поиск файлов

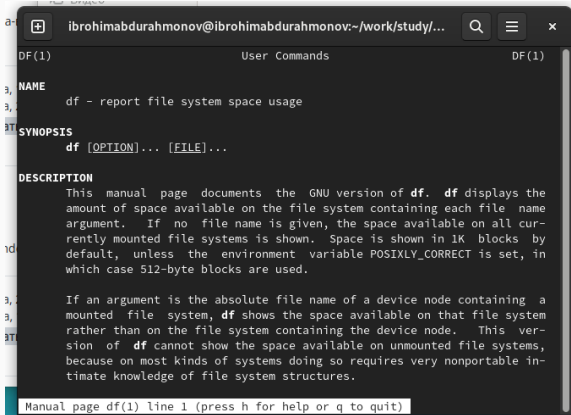
```
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ find /etc -name "h*" -print  
| less  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ find ~ -name "log*" > logfile  
&  
[1] 9751  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ find: '/home/ibrohimabdurahmonov/play/games': Отказано в доступе  
  
[1]+ Выход 1          find ~ -name "log*" > logfile  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ rm logfile  
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$
```

Рис. 5: Фоновый запуск процесса

```
[ibrohimburahmonov@ibrohimburahmonov os-intro]$  
[ibrohimburahmonov@ibrohimburahmonov os-intro]$ gedit &  
[1] 9782  
[ibrohimburahmonov@ibrohimburahmonov os-intro]$  
[ibrohimburahmonov@ibrohimburahmonov os-intro]$ ps | grep gedit  
  9782 pts/0    00:00:00 gedit  
[ibrohimburahmonov@ibrohimburahmonov os-intro]$ kill 9782  
[ibrohimburahmonov@ibrohimburahmonov os-intro]$  
[1]+  Завершено      gedit  
[ibrohimburahmonov@ibrohimburahmonov os-intro]$
```

Рис. 6: Фоновый запуск и завершение процесса

Команды df и du



The screenshot shows a terminal window with a dark background. The title bar at the top reads "ibrohimabdurahmonov@ibrohimabdurahmonov:~/work/study/...". Below the title bar, the text "DF(1)" appears on both the left and right sides, with "User Commands" centered between them. The main content of the terminal is the manual page for the 'df' command, which is organized into sections: NAME, SYNOPSIS, and DESCRIPTION. The NAME section states "df - report file system space usage". The SYNOPSIS section shows "df [OPTION]... [FILE]...". The DESCRIPTION section contains two paragraphs: the first explains that 'df' displays the amount of space available on the file system containing each file name argument, and the second explains that if an argument is the absolute file name of a device node, 'df' shows the space available on that file system rather than on the file system containing the device node. 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)".

```
ibrohimabdurahmonov@ibrohimabdurahmonov:~/work/study/...
DF(1)                                User Commands                                DF(1)

NAME
  df - report file system space usage

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

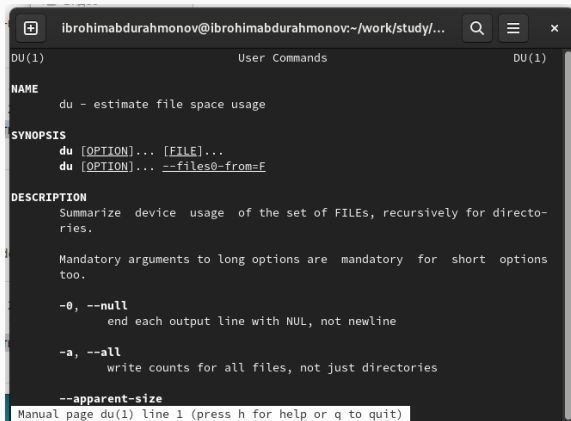
DESCRIPTION
  This manual page documents the GNU version of df. df displays the
  amount of space available on the file system containing each file name
  argument.  If no file name is given, the space available on all cur-
  rently mounted file systems is shown. Space is shown in 1K blocks by
  default,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



```
ibrohimbardurahmonov@ibrohimbardurahmonov:~/work/study/...
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)
```

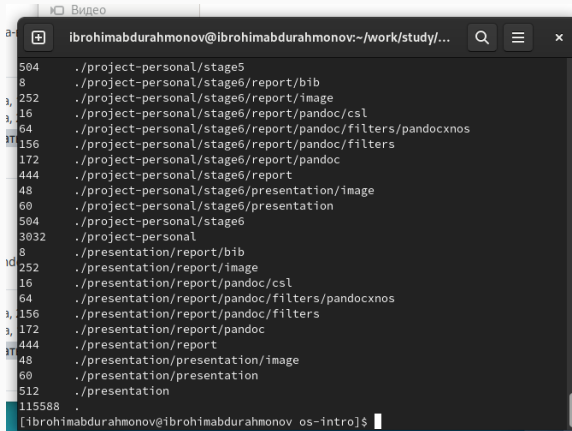
Рис. 8: Запуск команды df

Команды df и du

```
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ man df
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$ df
Файловая система 1К-блоков  Использовано  Доступно  Использовано  Смонтировано в
devtmpfs           4096             0      4096             0% /dev
tmpfs              1988872        12524    1976348             1% /dev/shm
tmpfs              795552         1880     793672             1% /run
/dev/sda2          61864960      31378768  30063408            52% /
/dev/sda2          61864960      31378768  30063408            52% /home
/dev/sda1          996780        276852    651116             30% /boot
tmpfs              1988872         16    1988856             1% /tmp
tmpfs              397772         164    397608             1% /run/user/1061
[ibrohimabdurahmonov@ibrohimabdurahmonov os-intro]$
```

Рис. 9: Справка по команде du

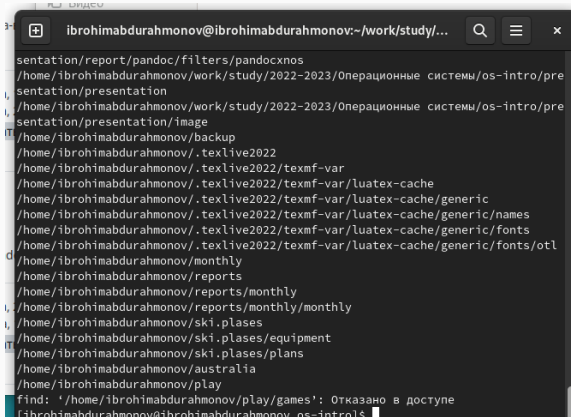
Команды df и du



```
ibrohimbardurahmonov@ibrohimbardurahmonov:~/work/study/...
504  ./project-personal/stage5
8    ./project-personal/stage6/report/bib
252  ./project-personal/stage6/report/image
16   ./project-personal/stage6/report/pandoc/csl
64   ./project-personal/stage6/report/pandoc/filters/pandocxnos
156  ./project-personal/stage6/report/pandoc/filters
172  ./project-personal/stage6/report/pandoc
444  ./project-personal/stage6/report
48   ./project-personal/stage6/presentation/image
60   ./project-personal/stage6/presentation
504  ./project-personal/stage6
3032 ./project-personal
8    ./presentation/report/bib
252  ./presentation/report/image
16   ./presentation/report/pandoc/csl
64   ./presentation/report/pandoc/filters/pandocxnos
156  ./presentation/report/pandoc/filters
172  ./presentation/report/pandoc
444  ./presentation/report
48   ./presentation/presentation/image
60   ./presentation/presentation
512  ./presentation
11558 .
[ibrohimbardurahmonov@ibrohimbardurahmonov os-intro]$
```

Рис. 10: Запуск команды du

Команда поиска

A terminal window with a dark background and light text. The title bar shows the user 'ibrohimabdurahmonov' and the current directory '~/work/study/...'. The terminal displays the output of a 'find' command, listing various directories and files. The output is truncated at the bottom with a message indicating that the search was refused due to permissions.

```
ibrohimabdurahmonov@ibrohimabdurahmonov:~/work/study/...  
sentation/report/pandoc/filters/pandocxnos  
/home/ibrohimabdurahmonov/work/study/2022-2023/Операционные системы/os-intro/pre  
sentation/presentation  
/home/ibrohimabdurahmonov/work/study/2022-2023/Операционные системы/os-intro/pre  
sentation/presentation/image  
/home/ibrohimabdurahmonov/backup  
/home/ibrohimabdurahmonov/.texlive2022  
/home/ibrohimabdurahmonov/.texlive2022/texmf-var  
/home/ibrohimabdurahmonov/.texlive2022/texmf-var/luatex-cache  
/home/ibrohimabdurahmonov/.texlive2022/texmf-var/luatex-cache/generic  
/home/ibrohimabdurahmonov/.texlive2022/texmf-var/luatex-cache/generic/names  
/home/ibrohimabdurahmonov/.texlive2022/texmf-var/luatex-cache/generic/fonts  
/home/ibrohimabdurahmonov/.texlive2022/texmf-var/luatex-cache/generic/fonts/otl  
/home/ibrohimabdurahmonov/monthly  
/home/ibrohimabdurahmonov/reports  
/home/ibrohimabdurahmonov/reports/monthly  
/home/ibrohimabdurahmonov/reports/monthly/monthly  
/home/ibrohimabdurahmonov/ski.places  
/home/ibrohimabdurahmonov/ski.places/equipment  
/home/ibrohimabdurahmonov/ski.places/plans  
/home/ibrohimabdurahmonov/australia  
/home/ibrohimabdurahmonov/play  
find: '/home/ibrohimabdurahmonov/play/games': Отказано в доступе  
ibrohimabdurahmonov@ibrohimabdurahmonov:~/work/study/...
```

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.