

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

Хохлов Дмитрий Сергеевич¹

31 августа, 2024, Москва, Россия

¹Российский Университет Дружбы Народов

Цели и задачи работы

Цель лабораторной работы

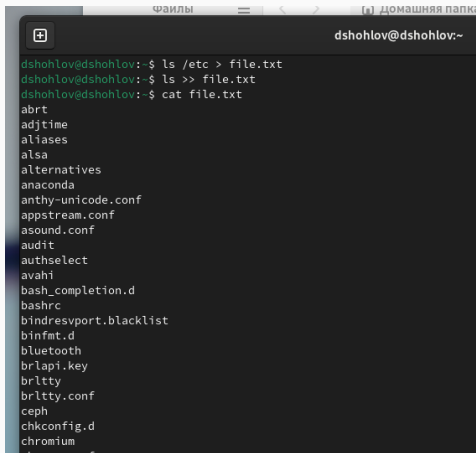
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

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



The screenshot shows a terminal window with a dark background. The title bar at the top indicates the window is titled 'Файлы' (Files) and shows the user 'dshohlov@dshohlov:~'. The terminal content shows the following commands and output:

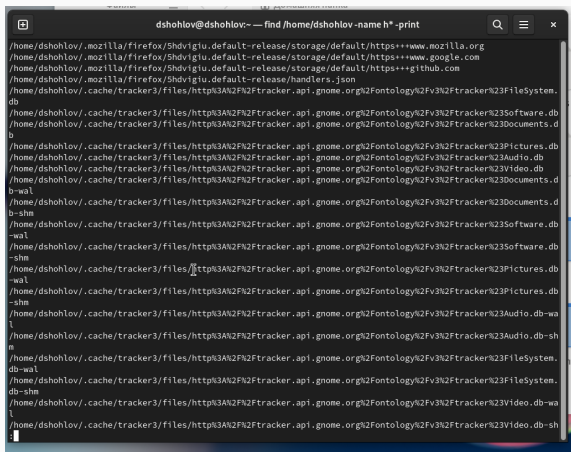
```
dshohlov@dshohlov:~$ ls /etc > file.txt
dshohlov@dshohlov:~$ ls >> file.txt
dshohlov@dshohlov:~$ cat file.txt
abrt
adjtime
aliases
alsa
alternatives
anaconda
anthy-unicode.conf
appstream.conf
asound.conf
audit
authselect
avahi
bash_completion.d
bashrc
bindresvport.blacklist
binfmt.d
bluetooth
brlapi.key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

Рис. 1: Запись в файл

Работа фильтра

```
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$ grep .conf file.txt > conf.txt  
dshohlov@dshohlov:~$ 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  
mttools.conf  
ndctl.conf.d  
netconfig  
nfs.conf
```

Рис. 2: Поиск расширения .conf

A screenshot of a terminal window with a dark background. The title bar shows the user 'dshohlov@dshohlov' and the command '— find /home/dshohlov -name h* -print'. The terminal displays the output of the 'find' command, listing various files and directories. The results include paths like '/home/dshohlov/.mozilla/firefox/Shdvigiu.default-release/storage/default/https+++www.mozilla.org', '/home/dshohlov/.mozilla/firefox/Shdvigiu.default-release/storage/default/https+++google.com', and several files in the '/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23FileSystem.db' directory. The list continues with files for 'Software.db', 'Documents.db', 'Pictures.db', 'Audio.db', and 'Video.db'. The terminal window has standard Linux window controls (minimize, maximize, close) in the top right corner.

```
dshohlov@dshohlov:~ — find /home/dshohlov -name h* -print
/home/dshohlov/.mozilla/firefox/Shdvigiu.default-release/storage/default/https+++www.mozilla.org
/home/dshohlov/.mozilla/firefox/Shdvigiu.default-release/storage/default/https+++google.com
/home/dshohlov/.mozilla/firefox/Shdvigiu.default-release/storage/default/https+++github.com
/home/dshohlov/.mozilla/firefox/Shdvigiu.default-release/handlers.json
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23FileSystem.db
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Software.db
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Documents.db
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Pictures.db
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Audio.db
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Video.db
b-wal
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Documents.db
b-shm
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Software.db
-wal
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Software.db
-shm
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Pictures.db
-wal
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Pictures.db
-shm
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Audio.db-wal
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Audio.db-shm
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23FileSystem.db-wal
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23FileSystem.db-shm
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Video.db-wal
/home/dshohlov/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Ffontology%2Fv3%2Ftracker%23Video.db-sh
```

Рис. 3: Поиск файлов


```
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$ find ~ -name "log*" > logfile &  
[1] 3638  
dshohlov@dshohlov:~$  
[1]+  Завершён      find ~ -name "log*" > logfile  
dshohlov@dshohlov:~$ rm logfile  
dshohlov@dshohlov:~$
```

Рис. 4: Поиск файлов

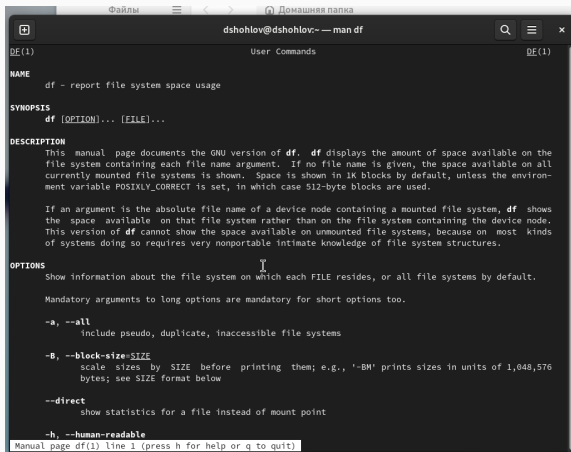
```
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$ find ~ -name "log*" > logfile &  
[1] 3638  
dshohlov@dshohlov:~$  
[1]+  Завершён      find ~ -name "log*" > logfile  
dshohlov@dshohlov:~$ rm logfile  
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$ gedit &  
[1] 3676  
dshohlov@dshohlov:~$ ps | grep gedit  
    3676 pts/0    00:00:00 gedit  
dshohlov@dshohlov:~$ kill 3676  
dshohlov@dshohlov:~$  
[1]+  Завершено      gedit  
dshohlov@dshohlov:~$
```

Рис. 5: Фоновый запуск процесса

```
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$ find ~ -name "log*" > logfile &  
[1] 3638  
dshohlov@dshohlov:~$  
[1]+  Завершён      find ~ -name "log*" > logfile  
dshohlov@dshohlov:~$ rm logfile  
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$  
dshohlov@dshohlov:~$ gedit &  
[1] 3676  
dshohlov@dshohlov:~$ ps | grep gedit  
3676 pts/0    00:00:00 gedit  
dshohlov@dshohlov:~$ kill 3676  
dshohlov@dshohlov:~$  
[1]+  Завершено      gedit
```

Рис. 6: Фоновый запуск и завершение процесса

Команды df и du



```
Файлы  Домашняя папка
dshohlov@dshohlov:~ -- 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 environ-
  ment 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

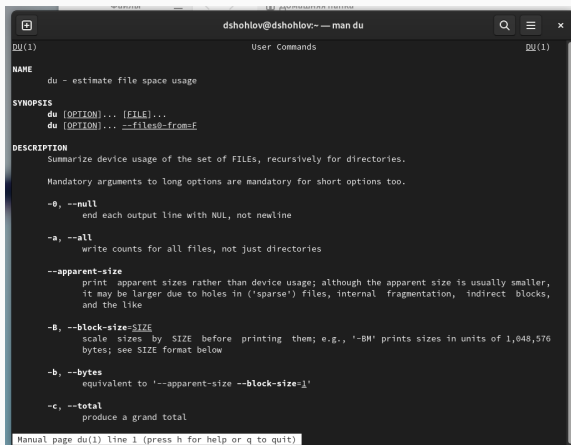
  -B, --block-size=SIZE
      scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in units of 1,048,576
      bytes; see SIZE format below

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

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

Рис. 7: Справка по команде df

Команды df и du



```
dshohlov@dshohlov:~ -- man du
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'

    -c, --total
        produce a grand total

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

Рис. 8: Запуск команды df

Команды df и du

```
dshonlov@dshonlov:~$  
dshohlov@dshohlov:~$ df  
Файловая система 1К-блоков  Использовано  Доступно  Использовано%  Смонтировано в  
/dev/sda3          103805952      23329444  76309660      24% /  
devtmpfs           4096           0         4096          0% /dev  
tmpfs              4044844        0         4044844       0% /dev/shm  
tmpfs              1617940        1884      1616056       1% /run  
tmpfs              4044848        16         4044832       1% /tmp  
/dev/sda3          103805952      23329444  76309660      24% /home  
/dev/sda2           996780        271404     656564       30% /boot  
tmpfs              808968        168        808800       1% /run/user/1089  
dshohlov@dshohlov:~$
```

Рис. 9: Справка по команде du

Команды df и du

```
78 ./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 ./emacs.d/elc-cache/29.3-bf1c73ce
0 ./emacs.d/elc-cache
0 ./emacs.d
0 ./monthly
0 ./reports/monthly/monthly
0 ./reports/monthly
0 ./reports
8 ./ski.places/equipment
0 ./ski.places/plans
8 ./ski.places
0 ./australia
0 ./paly/games/paly
0 ./paly/games
0 ./paly
396872 .
dshohlov@dshohlov:~$
```

Рис. 10: Запуск команды du

```
/home/dshohlov/git-extended/.git/logs/refs  
/home/dshohlov/git-extended/.git/logs/refs/heads  
/home/dshohlov/git-extended/.git/logs/refs/remotes  
/home/dshohlov/git-extended/.git/logs/refs/remotes/origin  
/home/dshohlov/.emacs.d  
/home/dshohlov/.emacs.d/eln-cache  
/home/dshohlov/.emacs.d/eln-cache/29.3-bf1c73ce  
/home/dshohlov/monthly  
/home/dshohlov/reports  
/home/dshohlov/reports/monthly  
/home/dshohlov/reports/monthly/monthly  
/home/dshohlov/ski.places  
/home/dshohlov/ski.places/equipment  
/home/dshohlov/ski.places/plans  
/home/dshohlov/australia  
/home/dshohlov/paly  
/home/dshohlov/paly/games  
/home/dshohlov/paly/games/paly  
dshohlov@dshohlov:~$
```

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.