

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

Руслан Гулиев Махно оглы НБИбд-02-21¹

5 мая, 2022, Москва, Россия

¹Российский Университет Дружбы Народов

Цели и задачи работы

Цель лабораторной работы

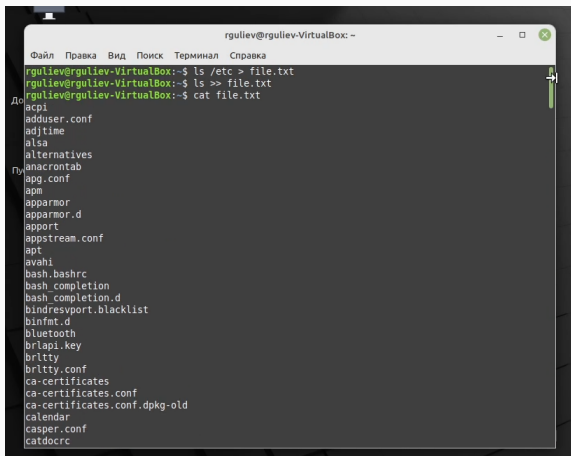
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

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



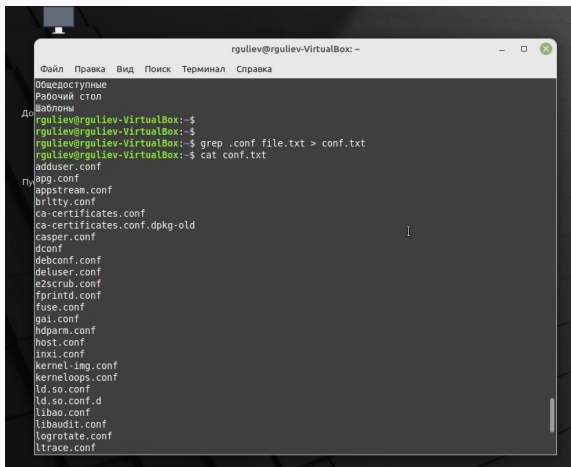
The screenshot shows a terminal window titled "rguliev@rguliev-VirtualBox: ~". The window has a menu bar with "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". The terminal displays the following commands and output:

```
rguliev@rguliev-VirtualBox:~$ ls /etc > file.txt
rguliev@rguliev-VirtualBox:~$ ls >> file.txt
rguliev@rguliev-VirtualBox:~$ cat file.txt
acpi
adduser.conf
adjtime
alsa
alternatives
anacrontab
apc.conf
apm
apparmor
apparmor.d
appport
appstream.conf
apt
avahi
bash.bashrc
bash_completion
bash_completion.d
bindresvport.blacklist
binfmt.d
bluetooth
brlapi.key
brltty
brltty.conf
ca-certificates
ca-certificates.conf
ca-certificates.conf.dpkg-old
calendar
casper.conf
catdocrc
```

On the left side of the terminal window, there are vertical labels: "Д" next to the first command, "П" next to the second command, and "П" next to the third command.

Figure 1: Запись в файл

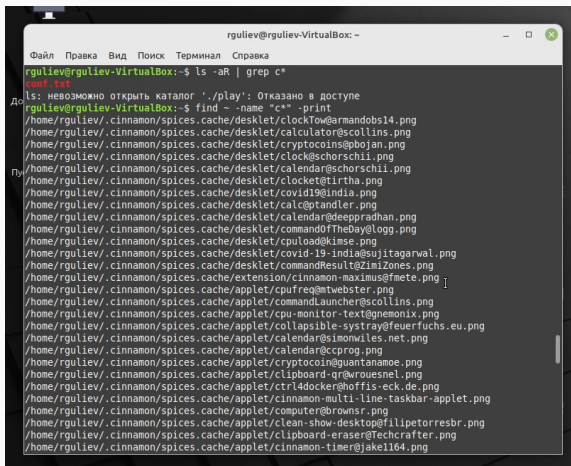
Работа фильтра



The screenshot shows a terminal window titled "rguliev@rguliev-VirtualBox: ~". The window has a menu bar with "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". The terminal content shows the following commands and output:

```
rguliev@rguliev-VirtualBox:~$  
rguliev@rguliev-VirtualBox:~$  
rguliev@rguliev-VirtualBox:~$ grep .conf file.txt > conf.txt  
rguliev@rguliev-VirtualBox:~$ cat conf.txt  
adduser.conf  
app.conf  
appstream.conf  
brltty.conf  
ca-certificates.conf  
casper.conf  
dconf  
debconf.conf  
deluser.conf  
e2scrub.conf  
fprintd.conf  
fuse.conf  
gai.conf  
hdparm.conf  
host.conf  
inxi.conf  
kernel.img.conf  
kerneloops.conf  
ld.so.conf  
ld.so.conf.d  
libao.conf  
libaudit.conf  
logrotate.conf  
ltrace.conf
```

Figure 2: Поиск расширения .conf

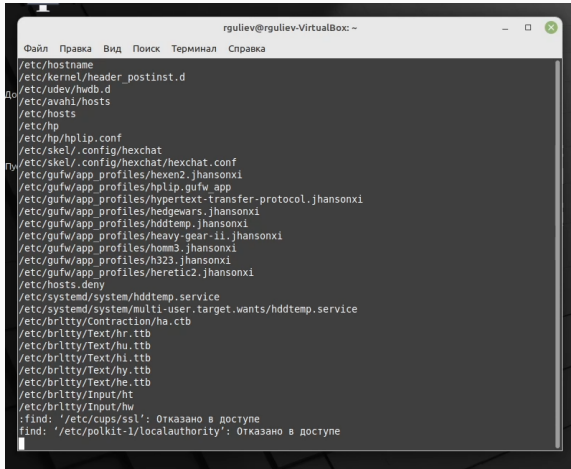


The screenshot shows a terminal window titled "rguliev@rguliev-VirtualBox: -". The menu bar includes "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". The terminal content shows the following commands and output:

```
rguliev@rguliev-VirtualBox:~$ ls -aR | grep c*
conf.txt
ls: невозможно открыть каталог './play': Отказано в доступе
rguliev@rguliev-VirtualBox:~$ find ~ -name "c*" -print
/home/rguliev/.cinnamon/spices.cache/desklet/clockTow@armandobs14.png
/home/rguliev/.cinnamon/spices.cache/desklet/calculator@scollins.png
/home/rguliev/.cinnamon/spices.cache/desklet/cryptocoins@pbojan.png
/home/rguliev/.cinnamon/spices.cache/desklet/clock@schorschii.png
/home/rguliev/.cinnamon/spices.cache/desklet/calendar@schorschii.png
/home/rguliev/.cinnamon/spices.cache/desklet/clocket@tirtha.png
/home/rguliev/.cinnamon/spices.cache/desklet/covid19@india.png
/home/rguliev/.cinnamon/spices.cache/desklet/calc@ptandler.png
/home/rguliev/.cinnamon/spices.cache/desklet/calendar@deeppradhan.png
/home/rguliev/.cinnamon/spices.cache/desklet/commandOfTheDay@logg.png
/home/rguliev/.cinnamon/spices.cache/desklet/cpuLoad@kimse.png
/home/rguliev/.cinnamon/spices.cache/desklet/covid-19-india@sujitagarwal.png
/home/rguliev/.cinnamon/spices.cache/desklet/commandResult@ZimiZones.png
/home/rguliev/.cinnamon/spices.cache/extension/cinnamon-maximus@fmete.png
/home/rguliev/.cinnamon/spices.cache/applet/cpufreq@twebster.png
/home/rguliev/.cinnamon/spices.cache/applet/commandLauncher@scollins.png
/home/rguliev/.cinnamon/spices.cache/applet/cpu-monitor-text@gnemonix.png
/home/rguliev/.cinnamon/spices.cache/applet/collapsible-systray@feuerfuchs.eu.png
/home/rguliev/.cinnamon/spices.cache/applet/calendar@simonwiles.net.png
/home/rguliev/.cinnamon/spices.cache/applet/calendar@ccprog.png
/home/rguliev/.cinnamon/spices.cache/applet/cryptocoin@guantanamoe.png
/home/rguliev/.cinnamon/spices.cache/applet/clipboard-gr@wrouesnel.png
/home/rguliev/.cinnamon/spices.cache/applet/ctrl4docker@hoffis-eck.de.png
/home/rguliev/.cinnamon/spices.cache/applet/cinnamon-multi-line-taskbar-applet.png
/home/rguliev/.cinnamon/spices.cache/applet/computer@browsr.png
/home/rguliev/.cinnamon/spices.cache/applet/clean-show-desktop@fillipetorresbr.png
/home/rguliev/.cinnamon/spices.cache/applet/clipboard-eraser@Techcrafter.png
/home/rguliev/.cinnamon/spices.cache/applet/cinnamon-timer@jakell164.png
```

Figure 3: Поиск файлов

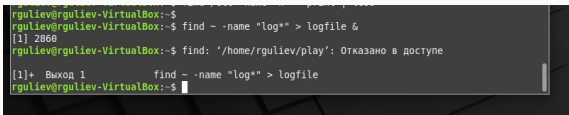
Команда поиска



```
rguliev@rguliev-VirtualBox: ~
Файл Правка Вид Поиск Терминал Справка

/etc/hostname
/etc/kernel/header_postinst.d
/etc/udev/hwdb.d
/etc/avahi/hosts
/etc/hosts
/etc/hp
/etc/hp/hplip.conf
/etc/skel/.config/hexchat
/etc/skel/.config/hexchat/hexchat.conf
/etc/gufw/app_profiles/hexen2.jhansonxi
/etc/gufw/app_profiles/hplip.gufw_app
/etc/gufw/app_profiles/hypertext-transfer-protocol.jhansonxi
/etc/gufw/app_profiles/hedgewars.jhansonxi
/etc/gufw/app_profiles/hddtemp.jhansonxi
/etc/gufw/app_profiles/heavy-gear-ii.jhansonxi
/etc/gufw/app_profiles/homm3.jhansonxi
/etc/gufw/app_profiles/h323.jhansonxi
/etc/gufw/app_profiles/heretic2.jhansonxi
/etc/hosts.deny
/etc/systemd/system/hddtemp.service
/etc/systemd/system/multi-user.target.wants/hddtemp.service
/etc/brltty/Contraction/ha.ctb
/etc/brltty/Text/hr.ttb
/etc/brltty/Text/hu.ttb
/etc/brltty/Text/hi.ttb
/etc/brltty/Text/hy.ttb
/etc/brltty/Text/he.ttb
/etc/brltty/Input/ht
/etc/brltty/Input/hw
:find: '/etc/cups/ssl': Отказано в доступе
:find: '/etc/polkit-1/localauthority': Отказано в доступе
```

Figure 4: Поиск файлов



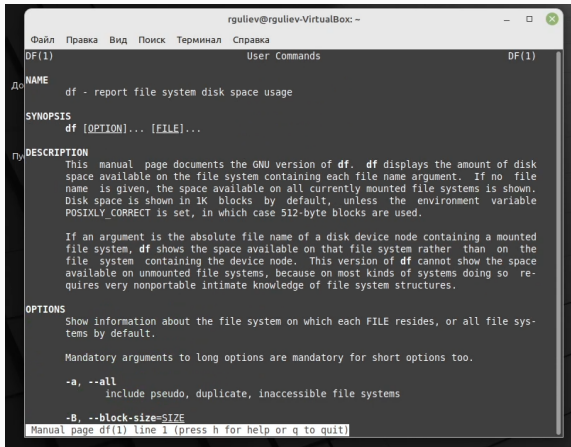
```
rguliev@rguliev-VirtualBox:~$  
rguliev@rguliev-VirtualBox:~$ find ~ -name "log*" > logfile &  
[1] 2860  
rguliev@rguliev-VirtualBox:~$ find: '/home/rguliev/play': Отказано в доступе  
[1]+ Выход 1      find ~ -name "log*" > logfile  
rguliev@rguliev-VirtualBox:~$
```

Figure 5: Фоновый запуск процесса

```
rguliev@rguliev-VirtualBox:~$  
rguliev@rguliev-VirtualBox:~$  
rguliev@rguliev-VirtualBox:~$ gedit &  
[1] 3582  
rguliev@rguliev-VirtualBox:~$ ps | grep gedit  
3582 pts/0    00:00:01 gedit  
rguliev@rguliev-VirtualBox:~$ kill 3582  
rguliev@rguliev-VirtualBox:~$
```

Figure 6: Фоновый запуск и завершение процесса

Команды df и du



The screenshot shows a terminal window titled "rguliev@rguliev-VirtualBox: ~". The window has a menu bar with "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". Below the menu bar, there is a header for the manual page: "DF(1)" on the left and "DF(1)" on the right, with "User Commands" in the center. The main content of the manual page is as follows:

```
NAME
df - report file system disk space usage

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

DESCRIPTION
This manual page documents the GNU version of df. df displays the amount of disk
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.
Disk 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 disk 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 re-
quires very nonportable intimate knowledge of file system structures.

OPTIONS
Show information about the file system on which each FILE resides, or all file sys-
tems by default.

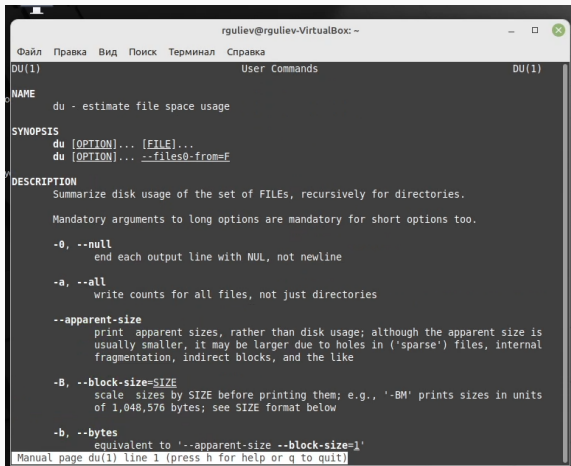
Mandatory arguments to long options are mandatory for short options too.

-a, --all
    include pseudo, duplicate, inaccessible file systems

-B, --block-size=SIZE
    Manual page df(1) line 1 (press h for help or q to quit)
```

Figure 7: Справка по команде df

Команды df и du



The screenshot shows a terminal window titled "rguliev@rguliev-VirtualBox: ~". The window contains the manual page for the "du" command. The menu bar at the top includes "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". The title bar of the manual page is "DU(1) User Commands DU(1)".

NAME
du - estimate file space usage

SYNOPSIS
du [OPTION]... [FILE]...
du [OPTION]... --files0-from=F

DESCRIPTION
Summarize disk 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 disk 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'

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

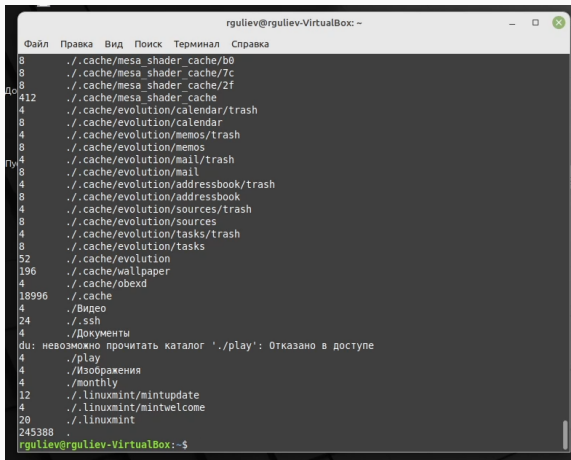
Figure 8: Запуск команды df

Команды df и du

```
rguliev@rguliev-VirtualBox:~$ man du
rguliev@rguliev-VirtualBox:~$
rguliev@rguliev-VirtualBox:~$ df
Файл. система  1К-блоков  Использовано  Доступно  Использовано%  Смонтировано в
udev           1968132      0    1968132      0% /dev
tmpfs           403820      1160    401860      1% /run
/dev/sda5       411279816   9134424   381183856    3% /
tmpfs           2015084      0    2015084      0% /dev/shm
tmpfs           5120         4      5116         1% /run/lock
tmpfs           2015084      0    2015084      0% /sys/fs/cgroup
/dev/sda1       523248      4      523244      1% /boot/efi
tmpfs           403816      24      402992      1% /run/user/1000
rguliev@rguliev-VirtualBox:~$
```

Figure 9: Справка по команде du

Команды df и du



```
rguliev@rguliev-VirtualBox: ~
Файл Правка Вид Поиск Терминал Справка
8 ./cache/mesa_shader_cache/b0
8 ./cache/mesa_shader_cache/7c
8 ./cache/mesa_shader_cache/2f
412 ./cache/mesa_shader_cache
4 ./cache/evolution/calendar/trash
8 ./cache/evolution/calendar
4 ./cache/evolution/memos/trash
8 ./cache/evolution/memos
4 ./cache/evolution/mail/trash
8 ./cache/evolution/mail
4 ./cache/evolution/addressbook/trash
8 ./cache/evolution/addressbook
4 ./cache/evolution/sources/trash
8 ./cache/evolution/sources
4 ./cache/evolution/tasks/trash
8 ./cache/evolution/tasks
52 ./cache/evolution
196 ./cache/wallpaper
4 ./cache/obexd
18996 ./cache
4 ./Видео
24 ./ssh
4 ./Документы
du: невозможно прочитать каталог './play': Отказано в доступе
4 ./play
4 ./Изображения
4 ./monthly
12 ./linuxmint/mintupdate
4 ./linuxmint/mintwelcome
20 ./linuxmint
245388 .
rguliev@rguliev-VirtualBox:~$
```

Figure 10: Запуск команды du

```
245388 .
Пы rguliev@rguliev-VirtualBox:~$
rguliev@rguliev-VirtualBox:~$
rguliev@rguliev-VirtualBox:~$ find ~ -type d
/home/rguliev
/home/rguliev/.gnupg
/home/rguliev/.gnupg/private-keys-v1.d
/home/rguliev/.gnupg/openpgp-revocs.d
/home/rguliev/ski.plases
/home/rguliev/ski.plases/equipment
/home/rguliev/ski.plases/plans
/home/rguliev/dir
/home/rguliev/Общедоступные
/home/rguliev/australia
/home/rguliev/Шаблоны
/home/rguliev/reports
/home/rguliev/reports/monthly
/home/rguliev/reports/monthly/monthly
/home/rguliev/.cinnamon
/home/rguliev/.cinnamon/spices.cache
/home/rguliev/.cinnamon/spices.cache/desklet
/home/rguliev/.cinnamon/spices.cache/extension
/home/rguliev/.cinnamon/spices.cache/applet
/home/rguliev/.cinnamon/spices.cache/theme
/home/rguliev/.cinnamon/configs
```

Figure 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.