

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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Цели и задачи работы

Цель лабораторной работы

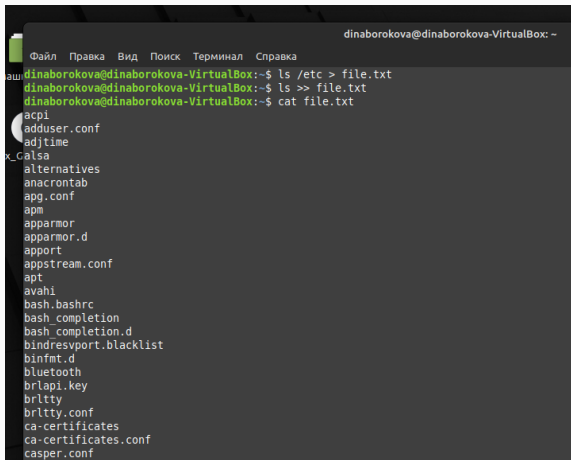
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

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

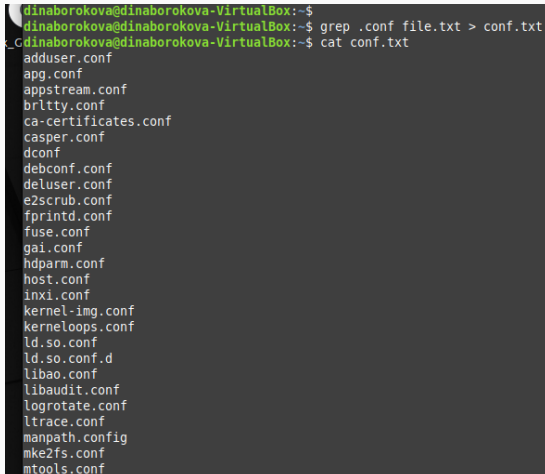


The screenshot shows a terminal window titled "dinaborokova@dinaborokova-VirtualBox: ~". The menu bar includes "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". The terminal displays the following commands and output:

```
dinaborokova@dinaborokova-VirtualBox:~$ ls /etc > file.txt
dinaborokova@dinaborokova-VirtualBox:~$ ls >> file.txt
dinaborokova@dinaborokova-VirtualBox:~$ cat file.txt
acpi
adduser.conf
adjtime
x_Calsa
alternatives
anacrontab
apg.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
casper.conf
```

Figure 1: Запись в файл

Работа фильтра

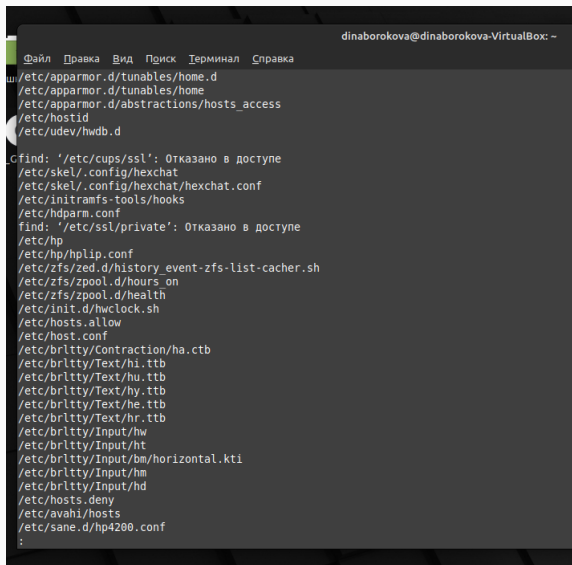
A terminal window with a dark background and light-colored text. The prompt is 'dinaborokova@dinaborokova-VirtualBox:~\$'. The first command is 'grep .conf file.txt > conf.txt'. The second prompt is 'dinaborokova@dinaborokova-VirtualBox:~\$' and the command is 'cat conf.txt'. The output is a list of 25 files, each on a new line.

```
dinaborokova@dinaborokova-VirtualBox:~$ grep .conf file.txt > conf.txt
dinaborokova@dinaborokova-VirtualBox:~$ cat conf.txt
adduser.conf
apg.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
manpath.config
mke2fs.conf
mtools.conf
```

Figure 2: Поиск расширения .conf

```
xattr.com
dinaborokova@dinaborokova-VirtualBox:~$
dinaborokova@dinaborokova-VirtualBox:~$
dinaborokova@dinaborokova-VirtualBox:~$ ls -R | grep c*
conf.txt
dinaborokova@dinaborokova-VirtualBox:~$ find ~ -name c* -print
/home/dinaborokova/conf.txt
dinaborokova@dinaborokova-VirtualBox:~$
dinaborokova@dinaborokova-VirtualBox:~$
```

Figure 3: Поиск файлов



```
dinaborokova@dinaborokova-VirtualBox: ~
Файл  Правка  Вид  Поиск  Терминал  Справка
/etc/apparmor.d/tunables/home.d
/etc/apparmor.d/tunables/home
/etc/apparmor.d/abstractions/hosts_access
/etc/hostid
/etc/udev/hwdb.d
Gfind: '/etc/cups/ssl': Отказано в доступе
/etc/skel/.config/hexchat
/etc/skel/.config/hexchat/hexchat.conf
/etc/initramfs-tools/hooks
/etc/hdparm.conf
find: '/etc/ssl/private': Отказано в доступе
/etc/hp
/etc/hp/hplip.conf
/etc/zfs/zed.d/history_event-zfs-list-cacher.sh
/etc/zfs/zpool.d/hours_on
/etc/zfs/zpool.d/health
/etc/init.d/hwclock.sh
/etc/hosts.allow
/etc/host.conf
/etc/brltty/Contraction/ha.ctb
/etc/brltty/Text/hi.ttb
/etc/brltty/Text/hu.ttb
/etc/brltty/Text/hy.ttb
/etc/brltty/Text/he.ttb
/etc/brltty/Text/hr.ttb
/etc/brltty/Input/hw
/etc/brltty/Input/ht
/etc/brltty/Input/bm/horizontal.kti
/etc/brltty/Input/hm
/etc/brltty/Input/hd
/etc/hosts.deny
/etc/avahi/hosts
/etc/sane.d/hp4200.conf
:
```

Figure 4: Поиск файлов

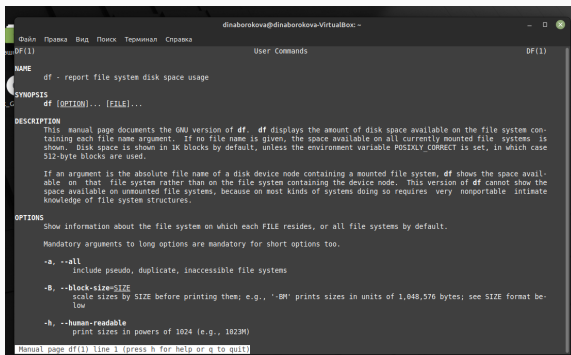
```
dinaborokova@dinaborokova-VirtualBox:~$  
dinaborokova@dinaborokova-VirtualBox:~$  
dinaborokova@dinaborokova-VirtualBox:~$ find ~ -name log* > logfile &  
[1] 1996  
dinaborokova@dinaborokova-VirtualBox:~$  
[1]+  Завершён          find ~ -name log* > logfile  
dinaborokova@dinaborokova-VirtualBox:~$ rm logfile  
dinaborokova@dinaborokova-VirtualBox:~$  
dinaborokova@dinaborokova-VirtualBox:~$
```

Figure 5: Фоновый запуск процесса

```
ежике  
dinaborokova@dinaborokova-VirtualBox:~$  
dinaborokova@dinaborokova-VirtualBox:~$ gedit &  
[1] 2107  
dinaborokova@dinaborokova-VirtualBox:~$  
dinaborokova@dinaborokova-VirtualBox:~$ ps | grep gedit  
    2107 pts/0    00:00:00 gedit  
dinaborokova@dinaborokova-VirtualBox:~$ kill 2107  
dinaborokova@dinaborokova-VirtualBox:~$  
[1]+  Завершено      gedit  
dinaborokova@dinaborokova-VirtualBox:~$
```

Figure 6: Фоновый запуск и завершение процесса

Команды df и du

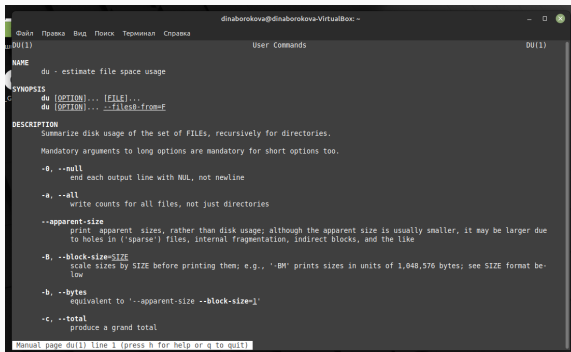


The screenshot shows a terminal window titled "dinaborkova@dinaborkova-VirtualBox: ~". The terminal displays the manual page for the 'df' command. The window has a menu bar with "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". The terminal content is as follows:

```
df(1) User Commands df(1)
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 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
  -h, --human-readable
      print sizes in powers of 1024 (e.g., 1023M)
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 "dinaborokova@dinaborokova-VirtualBox: ~". The terminal is displaying the manual page for the 'du' command. The window has a menu bar with "Файл", "Правка", "Вид", "Поиск", "Терминал", and "Справка". 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 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'

    -c, --total
        produce a grand total

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

Figure 8: Запуск команды df

Команды df и du

```
dinaborokova@dinaborokova-VirtualBox:~$  
dinaborokova@dinaborokova-VirtualBox:~$ df  
Файл. система 1K-блоков  Иستخدمانو  Доступно  Иستخدمانو%  Смонтировано в  
tmpfs          401948      1188    400760         1% /run  
/dev/sda3      40453376   9373680  28992580       25% /  
tmpfs          2009732      0    2009732         0% /dev/shm  
tmpfs          5120        4     5116          1% /run/lock  
/dev/sda2      524252      5364    518888         2% /boot/efi  
tmpfs          401944      108    401836         1% /run/user/1000  
/dev/sr0       62390      62390      0          100% /media/dinaborokova/VBox_GAs_6.1.38  
dinaborokova@dinaborokova-VirtualBox:~$
```

Figure 9: Справка по команде du

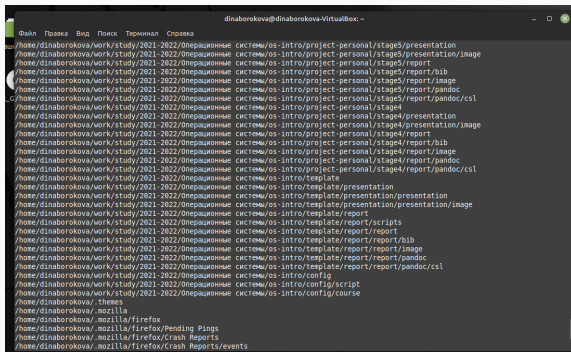
Команды df и du

```

dinaborkova@dinaborkova-VirtualBox: ~
File  Права  Вид  Поиск  Терминал  Справка
888 ./mozilla/firefox/m62hy0hg.default-release/storage/default
4 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome/idb/3870112724rsegnmott-es_files
4 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome/idb/282331877ntourmalnodyr--nadd_files
4 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome/idb/3561288849sdhle_files
4 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome/idb/14511886entourmalnodyr--eprc_files
4 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome/idb/2910633365upshs_files
4 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome/idb/1657114595Acateivrt1sty_files
824 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome/idb
832 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent/chrome
836 ./mozilla/firefox/m62hy0hg.default-release/storage/permanent
860 ./mozilla/firefox/m62hy0hg.default-release/storage/temporary
92 ./mozilla/firefox/m62hy0hg.default-release/daterreporting/archived/2022-11
96 ./mozilla/firefox/m62hy0hg.default-release/daterreporting/archived
20 ./mozilla/firefox/m62hy0hg.default-release/daterreporting/glean/db
24 ./mozilla/firefox/m62hy0hg.default-release/daterreporting/glean/pending_pings
4 ./mozilla/firefox/m62hy0hg.default-release/daterreporting/glean/events
4 ./mozilla/firefox/m62hy0hg.default-release/daterreporting/glean/tsp
44 ./mozilla/firefox/m62hy0hg.default-release/daterreporting/glean
152 ./mozilla/firefox/m62hy0hg.default-release/daterreporting
20 ./mozilla/firefox/m62hy0hg.default-release/bookmarks/backups
28 ./mozilla/firefox/m62hy0hg.default-release/sessionstore-backups
84 ./mozilla/firefox/m62hy0hg.default-release/saved-telemetry-pings
4 ./mozilla/firefox/m62hy0hg.default-release/security-state
4 ./mozilla/firefox/m62hy0hg.default-release/browser-extension-data/amazonodotcomsearch.mozilla.org
4 ./mozilla/firefox/m62hy0hg.default-release/browser-extension-data/bingsearch.mozilla.org
12 ./mozilla/firefox/m62hy0hg.default-release/browser-extension-data
14696 ./mozilla/firefox/m62hy0hg.default-release
8 ./mozilla/firefox/p8Bvpuj6.default
14732 ./mozilla/firefox
4 ./mozilla/extensions
14740 ./mozilla
4 ./monthly
139584
dinaborkova@dinaborkova-VirtualBox: ~$

```

Figure 10: Запуск команды du



```
dinaborokova@dinaborokova-VirtualBox: ~
Файл Поиск Вид Поиск Терминал Справка

/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage5/presentation
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage5/presentation/image
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage5/report
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage5/report/bib
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage5/report/image
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage5/report/pandoc
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage5/report/pandoc/csl
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4/presentation
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4/presentation/image
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4/report
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4/report/bib
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4/report/image
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4/report/pandoc
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/project-personal/stage4/report/pandoc/csl
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/presentation
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/presentation/presentation
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/presentation/presentation/image
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/report
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/report/scripts
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/report/report
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/report/report/bib
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/report/report/image
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/report/report/pandoc
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/template/report/report/pandoc/csl
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/config
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/config/script
/home/dinaborokova/work/study/2021-2022/Операционные  система/os-intro/config/course
/home/dinaborokova/.themes
/home/dinaborokova/.mozilla
/home/dinaborokova/.mozilla/firefox
/home/dinaborokova/.mozilla/firefox/Pending Pings
/home/dinaborokova/.mozilla/firefox/Crash Reports
/home/dinaborokova/.mozilla/firefox/Crash Reports/events
```

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.