

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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Цели и задачи работы

Цель лабораторной работы

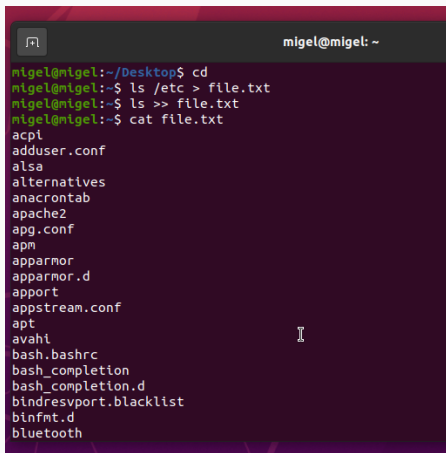
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

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

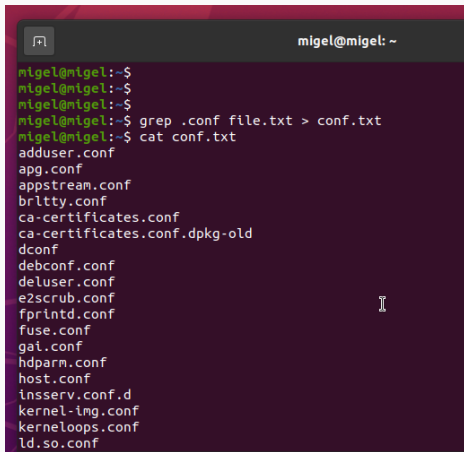
Перенаправление ввода-вывода



```
migel@migel: ~  
migel@migel:~/Desktop$ cd  
migel@migel:~$ ls /etc > file.txt  
migel@migel:~$ ls >> file.txt  
migel@migel:~$ cat file.txt  
acpi  
adduser.conf  
alsa  
alternatives  
anacrontab  
apache2  
apg.conf  
apm  
apparmor  
apparmor.d  
appport  
appstream.conf  
apt  
avahi  
bash.bashrc  
bash_completion  
bash_completion.d  
bindresvport.blacklist  
binfmt.d  
bluetooth
```

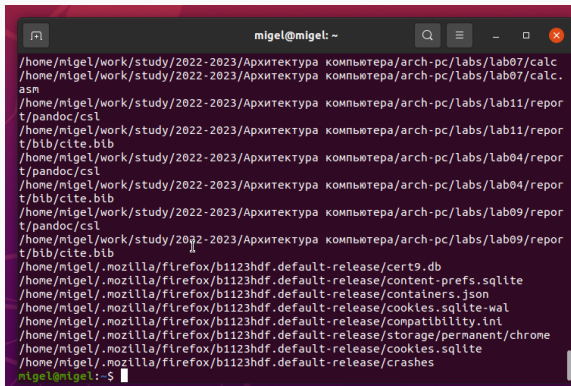
Рис. 1: Запись в файл

Работа фильтра



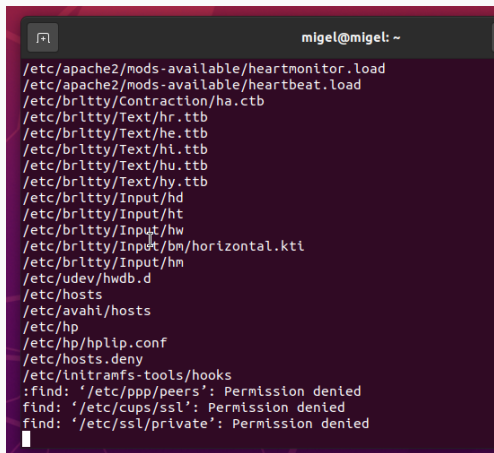
```
migel@migel: ~  
  
migel@migel:~$  
migel@migel:~$  
migel@migel:~$  
migel@migel:~$ grep .conf file.txt > conf.txt  
migel@migel:~$ cat conf.txt  
adduser.conf  
apg.conf  
appstream.conf  
brltty.conf  
ca-certificates.conf  
ca-certificates.conf.dpkg-old  
dconf  
debconf.conf  
deluser.conf  
e2scrub.conf  
fprintd.conf  
fuse.conf  
gai.conf  
hdparm.conf  
host.conf  
insserv.conf.d  
kernel-img.conf  
kerneloops.conf  
ld.so.conf
```

Рис. 2: Поиск расширения .conf

A terminal window with a dark background and light-colored text. The window title is 'migel@migel: ~'. It shows the output of a file search command, listing various files and their full paths. The paths are mostly under '/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/' and include files like 'calc.asm', 'report/pandoc/csl', 'bib/cite.bib', and Mozilla Firefox profile files like 'cert9.db', 'content-prefs.sqlite', 'containers.json', 'cookies.sqlite-wal', 'compatibility.ini', 'storage/permanent/chrome', 'cookies.sqlite', and 'crashes'. The prompt 'migel@migel:~\$' is visible at the bottom.

```
migel@migel: ~  
/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab07/calc  
asm  
/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab11/repor  
t/pandoc/csl  
/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab11/repor  
t/bib/cite.bib  
/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab04/repor  
t/pandoc/csl  
/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab04/repor  
t/bib/cite.bib  
/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab09/repor  
t/pandoc/csl  
/home/migel/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab09/repor  
t/bib/cite.bib  
/home/migel/.mozilla/firefox/b1123hdf.default-release/cert9.db  
/home/migel/.mozilla/firefox/b1123hdf.default-release/content-prefs.sqlite  
/home/migel/.mozilla/firefox/b1123hdf.default-release/containers.json  
/home/migel/.mozilla/firefox/b1123hdf.default-release/cookies.sqlite-wal  
/home/migel/.mozilla/firefox/b1123hdf.default-release/compatibility.ini  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome  
/home/migel/.mozilla/firefox/b1123hdf.default-release/cookies.sqlite  
/home/migel/.mozilla/firefox/b1123hdf.default-release/crashes  
migel@migel:~$
```

Рис. 3: Поиск файлов



A terminal window with a dark background and light-colored text. The window title bar shows a window icon and the text 'migel@migel: ~'. The terminal displays a series of file paths, likely the output of a 'find' command. The paths include directories like /etc/apache2/mods-available, /etc/brltty, and /etc/udev. The last three lines of the output show permission denied errors for the paths /etc/ppp/peers, /etc/cups/ssl, and /etc/ssl/private.

```
migel@migel: ~  
/etc/apache2/mods-available/heartmonitor.load  
/etc/apache2/mods-available/heartbeat.load  
/etc/brltty/Contraction/ha.ctb  
/etc/brltty/Text/hr.ttb  
/etc/brltty/Text/he.ttb  
/etc/brltty/Text/hl.ttb  
/etc/brltty/Text/hu.ttb  
/etc/brltty/Text/hy.ttb  
/etc/brltty/Input/hd  
/etc/brltty/Input/ht  
/etc/brltty/Input/hw  
/etc/brltty/Input/bm/horizontal.kti  
/etc/brltty/Input/hm  
/etc/udev/hwdb.d  
/etc/hosts  
/etc/avahi/hosts  
/etc/hp  
/etc/hp/hplip.conf  
/etc/hosts.deny  
/etc/initramfs-tools/hooks  
:find: '/etc/ppp/peers': Permission denied  
find: '/etc/cups/ssl': Permission denied  
find: '/etc/ssl/private': Permission denied
```

Рис. 4: Поиск файлов

```
nigel@migel:~$  
nigel@migel:~$ find /etc -name "h*" -print | less  
nigel@migel:~$  
nigel@migel:~$ find ~ -name "log*" > logfile &  
[1] 2777  
nigel@migel:~$  
[1]+  Done                  find ~ -name "log*" > logfile  
nigel@migel:~$ rm logfile  
nigel@migel:~$
```

Рис. 5: Фоновый запуск процесса

```
migel@migel:~$  
migel@migel:~$ gedit &  
[1] 2819  
migel@migel:~$ ps | grep gedit  
2819 pts/0    00:00:00 gedit  
migel@migel:~$ ps 2819  
  PID TTY          STAT       TIME COMMAND  
  2819 pts/0    Sl          0:00 gedit  
migel@migel:~$ kill 2819  
migel@migel:~$  
[1]+  Terminated                  gedit  
migel@migel:~$
```

Рис. 6: Фоновый запуск и завершение процесса

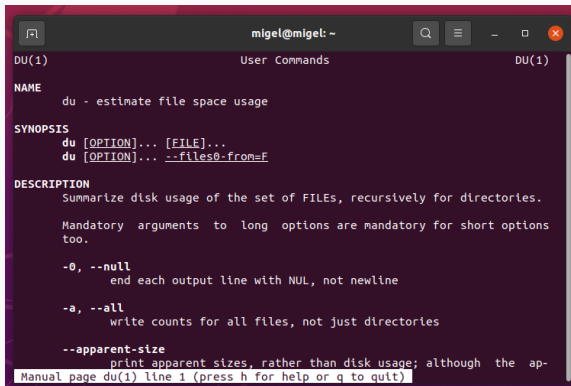
Команды df и du



```
migel@migel: ~  
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 contain-  
    ing 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 sys-  
    tems, because on most kinds of systems doing so requires very non-  
    portable intimate 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 "miguel@migel: ~" with standard window controls. The terminal displays the help text for the "du" command. The text 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.

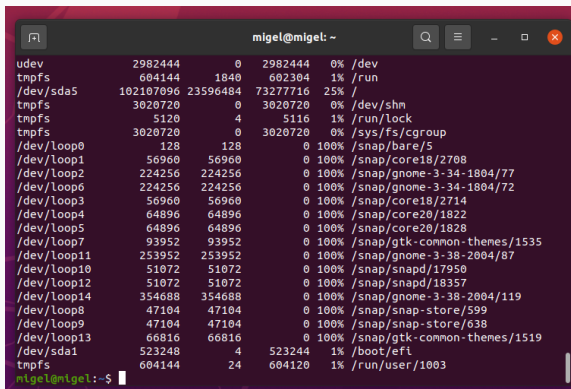
    -0, --null
        end each output line with NUL, not newline

    -a, --all
        write counts for all files, not just directories

    --apparent-size
        print apparent sizes, rather than disk usage; although the ap-
Manual page du(1) line 1 (press h for help or q to quit)
```

Рис. 8: Запуск команды df

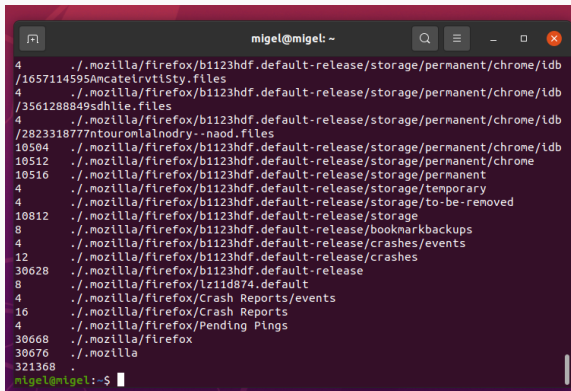
Команды df и du



```
migel@migel: ~  
udev                2982444      0   2982444    0% /dev  
tmpfs                604144      1840    602304    1% /run  
/dev/sda5           102107096 23596484 73277716   25% /  
tmpfs               3020720      0   3020720    0% /dev/shm  
tmpfs                5120        4     5116     1% /run/lock  
tmpfs               3020720      0   3020720    0% /sys/fs/cgroup  
/dev/loop0           128         128      0 100% /snap/bare/5  
/dev/loop1           56960       56960      0 100% /snap/core18/2708  
/dev/loop2           224256      224256      0 100% /snap/gnome-3-34-1804/77  
/dev/loop6           224256      224256      0 100% /snap/gnome-3-34-1804/72  
/dev/loop3           56960       56960      0 100% /snap/core18/2714  
/dev/loop4           64896       64896      0 100% /snap/core20/1822  
/dev/loop5           64896       64896      0 100% /snap/core20/1828  
/dev/loop7           93952       93952      0 100% /snap/gtk-common-themes/1535  
/dev/loop11          253952      253952      0 100% /snap/gnome-3-38-2004/87  
/dev/loop10          51072       51072      0 100% /snap/snapd/17950  
/dev/loop12          51072       51072      0 100% /snap/snapd/18357  
/dev/loop14          354688      354688      0 100% /snap/gnome-3-38-2004/119  
/dev/loop8           47104       47104      0 100% /snap/snap-store/599  
/dev/loop9           47104       47104      0 100% /snap/snap-store/638  
/dev/loop13          66816       66816      0 100% /snap/gtk-common-themes/1519  
/dev/sda1            523248      4     523244    1% /boot/efi  
tmpfs                604144      24     604120    1% /run/user/1003  
miguel@migel:~$
```

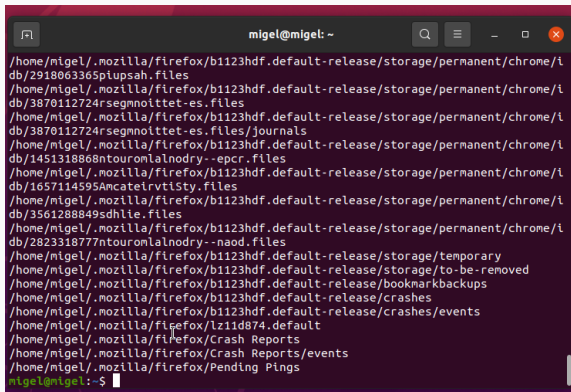
Рис. 9: Справка по команде du

Команды df и du



```
migel@migel: ~  
4      ./mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/ldb  
/1657114595AmcateIrvtISy.files  
4      ./mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/ldb  
/3561288849sdhlie.files  
4      ./mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/ldb  
/2823318777ntouromlalnody--naod.files  
10504  ./mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/ldb  
10512  ./mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome  
10516  ./mozilla/firefox/b1123hdf.default-release/storage/permanent  
4      ./mozilla/firefox/b1123hdf.default-release/storage/temporary  
4      ./mozilla/firefox/b1123hdf.default-release/storage/to-be-removed  
10812  ./mozilla/firefox/b1123hdf.default-release/storage  
8      ./mozilla/firefox/b1123hdf.default-release/bookmarkbackups  
4      ./mozilla/firefox/b1123hdf.default-release/crashes/events  
12     ./mozilla/firefox/b1123hdf.default-release/crashes  
30628  ./mozilla/firefox/b1123hdf.default-release  
8      ./mozilla/firefox/Lz11d874.default  
4      ./mozilla/firefox/Crash Reports/events  
16     ./mozilla/firefox/Crash Reports  
4      ./mozilla/firefox/Pending Pings  
30668  ./mozilla/firefox  
30676  ./mozilla  
321368 .  
migel@migel:~$
```

Рис. 10: Запуск команды du



```
migel@migel: ~  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/i  
db/2918063365piupsah.files  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/i  
db/3870112724rsegmnoittet-es.files  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/i  
db/3870112724rsegmnoittet-es.files/journals  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/i  
db/1451318868ntouromlalnodyr--epcr.files  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/i  
db/1657114595AmcateirvtiSty.files  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/i  
db/3561288849sdhlie.files  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/permanent/chrome/i  
db/2823318777ntouromlalnodyr--naod.files  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/temporary  
/home/migel/.mozilla/firefox/b1123hdf.default-release/storage/to-be-removed  
/home/migel/.mozilla/firefox/b1123hdf.default-release/bookmarkbackups  
/home/migel/.mozilla/firefox/b1123hdf.default-release/crashes  
/home/migel/.mozilla/firefox/b1123hdf.default-release/crashes/events  
/home/migel/.mozilla/firefox/lz11d874.default  
/home/migel/.mozilla/firefox/Crash Reports  
/home/migel/.mozilla/firefox/Crash Reports/events  
/home/migel/.mozilla/firefox/Pending Pings  
migel@migel:~$
```

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.