

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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Цели и задачи работы

Цель лабораторной работы

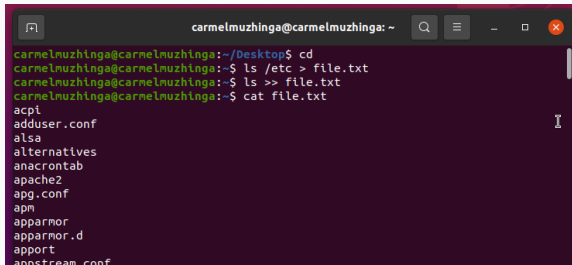
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

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

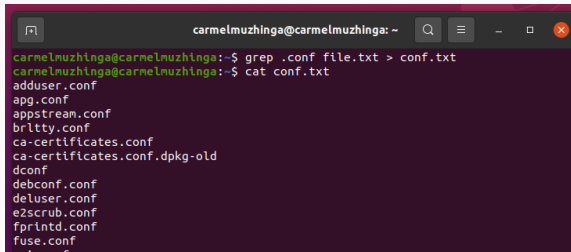
Перенаправление ввода-вывода



```
carmelmuzhinga@carmelmuzhinga: ~  
carmelmuzhinga@carmelmuzhinga:~/Desktop$ cd  
carmelmuzhinga@carmelmuzhinga:~$ ls /etc > file.txt  
carmelmuzhinga@carmelmuzhinga:~$ ls >> file.txt  
carmelmuzhinga@carmelmuzhinga:~$ cat file.txt  
acpi  
adduser.conf  
alsa  
alternatives  
anacrontab  
apache2  
apg.conf  
apm  
apparmor  
apparmor.d  
appport  
appstream.conf
```

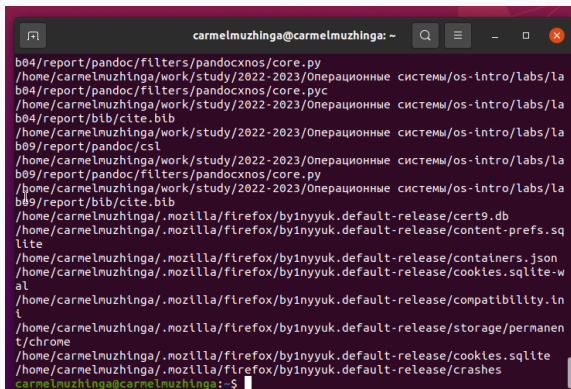
Рис. 1: Запись в файл

Работа фильтра

A terminal window with a dark purple background. The title bar shows the user 'carmelmuzhinga@carmelmuzhinga' and the home directory '~'. The terminal contains the following text:

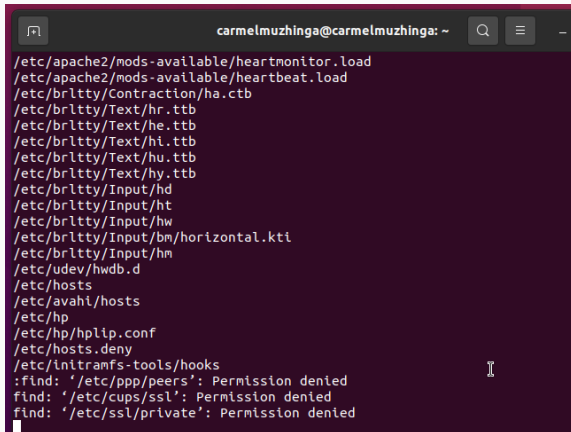
```
carmelmuzhinga@carmelmuzhinga:~$ grep .conf file.txt > conf.txt
carmelmuzhinga@carmelmuzhinga:~$ cat conf.txt
adduser.conf
apg.conf
appstream.conf
brltty.conf
ca-certificates.conf
ca-certificates.conf.dpkg-old
dconf
debconf.conf
deluser.conf
e2scrub.conf
fprintd.conf
fuse.conf
gdm.conf
```

Рис. 2: Поиск расширения .conf

A terminal window with a dark background and light-colored text. The window title is 'carmelmuzhinga@carmelmuzhinga: ~'. The terminal shows the output of a file search command, listing various files and their paths. The paths include directories like '/home/carmelmuzhinga/work/study/2022-2023/Операционные системы/os-intro/labs/la' and specific files like 'core.py', 'cite.bib', 'cert9.db', 'content-prefs.sqlite', 'containers.json', 'cookies.sqlite-wal', 'compatibility.ini', 'storage/permanent/chrome', and 'crashes'. The prompt 'carmelmuzhinga@carmelmuzhinga:~\$' is visible at the bottom.

```
carmelmuzhinga@carmelmuzhinga: ~  
b04/report/pandoc/filters/pandocxnos/core.py  
/home/carmelmuzhinga/work/study/2022-2023/Операционные системы/os-intro/labs/la  
b04/report/pandoc/filters/pandocxnos/core.py  
/home/carmelmuzhinga/work/study/2022-2023/Операционные системы/os-intro/labs/la  
b04/report/bib/cite.bib  
/home/carmelmuzhinga/work/study/2022-2023/Операционные системы/os-intro/labs/la  
b09/report/pandoc/csl  
/home/carmelmuzhinga/work/study/2022-2023/Операционные системы/os-intro/labs/la  
b09/report/pandoc/filters/pandocxnos/core.py  
/home/carmelmuzhinga/work/study/2022-2023/Операционные системы/os-intro/labs/la  
b09/report/bib/cite.bib  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/cert9.db  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/content-prefs.sql  
ite  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/containers.json  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/cookies.sqlite-w  
al  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/compatibility.in  
i  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/cookies.sqlite  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/crashes  
carmelmuzhinga@carmelmuzhinga:~$
```

Рис. 3: Поиск файлов



```
carmelmuzhinga@carmelmuzhinga: ~  
/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/hi.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

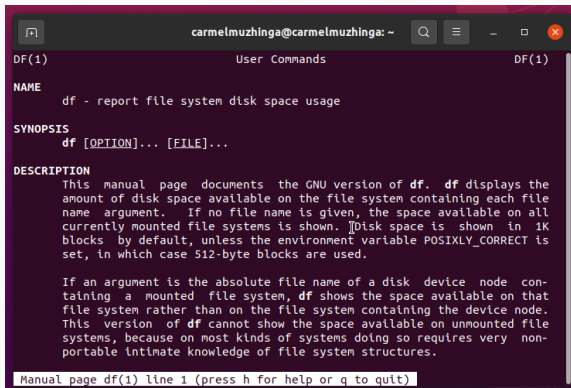
```
carmelmuzhinga@carmelmuzhinga:~$ find /etc -name "h*" -print | less
carmelmuzhinga@carmelmuzhinga:~$
carmelmuzhinga@carmelmuzhinga:~$ find ~ -name "log*" > logfile &
[1] 4054
carmelmuzhinga@carmelmuzhinga:~$
[1]+  Done                  find ~ -name "log*" > logfile
carmelmuzhinga@carmelmuzhinga:~$ rm logfile
carmelmuzhinga@carmelmuzhinga:~$
```

Рис. 5: Фоновый запуск процесса

```
carmelmuzhinga@carmelmuzhinga:~$  
carmelmuzhinga@carmelmuzhinga:~$ gedit &  
[1] 4089  
carmelmuzhinga@carmelmuzhinga:~$  
carmelmuzhinga@carmelmuzhinga:~$ ps 4089  
  PID TTY          STAT TIME COMMAND  
  4089 pts/0        SL   0:00 gedit  
carmelmuzhinga@carmelmuzhinga:~$ ps | grep gedit  
  4089 pts/0        00:00:00 gedit  
carmelmuzhinga@carmelmuzhinga:~$ kill 4089  
carmelmuzhinga@carmelmuzhinga:~$  
[1]+  Terminated          gedit  
carmelmuzhinga@carmelmuzhinga:~$
```

Рис. 6: Фоновый запуск и завершение процесса

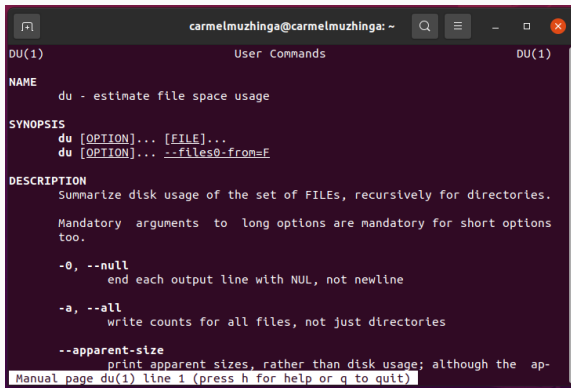
Команды df и du



```
carmelmuzhinga@carmelmuzhinga: ~  
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 con-  
    taining 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 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

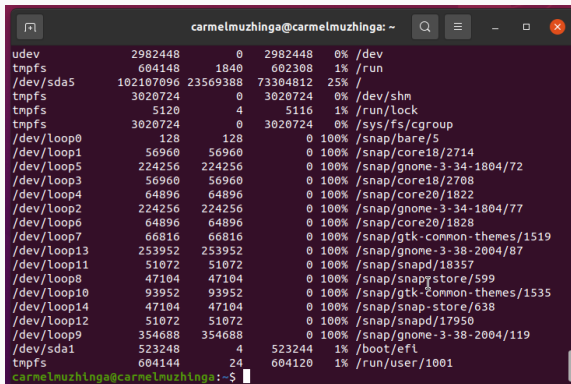
Команды df и du



```
carmelmuzhinga@carmelmuzhinga: ~  
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

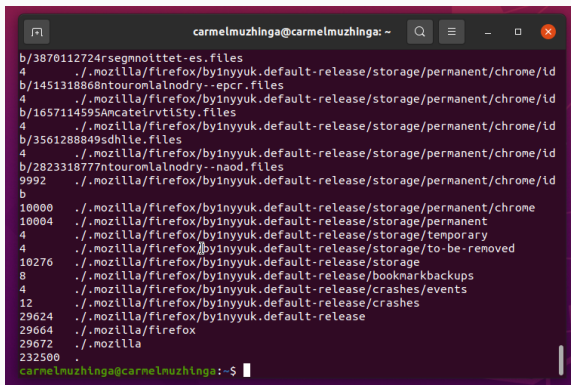


A terminal window titled 'carmelmuzhinga@carmelmuzhinga: ~' showing the output of the 'df' command. The output is a table with columns for file system type, size, used space, available space, and mount point. The file systems listed include udev, tmpfs, /dev/sda5, /dev/shm, /run/lock, /sys/fs/cgroup, and various loop devices (loop0 through loop14) mounted on snap packages like snap/bare/5, snap/core18/2714, snap/gnome-3-34-1804/72, snap/core18/2708, snap/core20/1822, snap/gnome-3-34-1804/77, snap/core20/1828, snap/gtk-common-themes/1519, snap/gnome-3-38-2004/87, snap/snapd/18357, snap/snap-store/599, snap/gtk-common-themes/1535, snap/snap-store/638, snap/snapd/17950, snap/gnome-3-38-2004/119, /boot/efi, and /run/user/1001.

File System	Type	Size	Used	Avail	Use%	Mount Point
udev		2982448	0	2982448	0%	/dev
tmpfs		604148	1840	602308	1%	/run
/dev/sda5		102107096	23569388	73304812	25%	/
tmpfs		3020724	0	3020724	0%	/dev/shm
tmpfs		5120	4	5116	1%	/run/lock
tmpfs		3020724	0	3020724	0%	/sys/fs/cgroup
/dev/loop0		128	128	0	100%	/snap/bare/5
/dev/loop1		56960	56960	0	100%	/snap/core18/2714
/dev/loop5		224256	224256	0	100%	/snap/gnome-3-34-1804/72
/dev/loop3		56960	56960	0	100%	/snap/core18/2708
/dev/loop4		64896	64896	0	100%	/snap/core20/1822
/dev/loop2		224256	224256	0	100%	/snap/gnome-3-34-1804/77
/dev/loop6		64896	64896	0	100%	/snap/core20/1828
/dev/loop7		66816	66816	0	100%	/snap/gtk-common-themes/1519
/dev/loop13		253952	253952	0	100%	/snap/gnome-3-38-2004/87
/dev/loop11		51072	51072	0	100%	/snap/snapd/18357
/dev/loop8		47104	47104	0	100%	/snap/snap-store/599
/dev/loop10		93952	93952	0	100%	/snap/gtk-common-themes/1535
/dev/loop14		47104	47104	0	100%	/snap/snap-store/638
/dev/loop12		51072	51072	0	100%	/snap/snapd/17950
/dev/loop9		354688	354688	0	100%	/snap/gnome-3-38-2004/119
/dev/sda1		523248	4	523244	1%	/boot/efi
tmpfs		604144	24	604120	1%	/run/user/1001

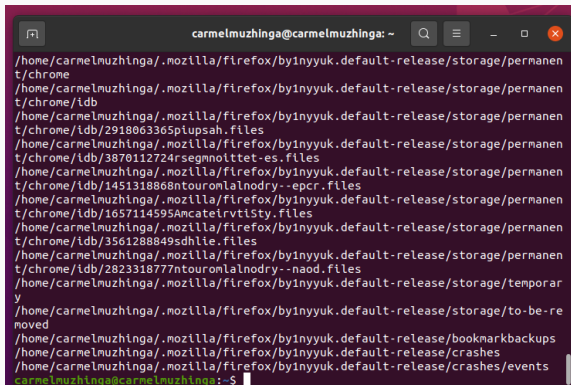
Рис. 9: Справка по команде du

Команды df и du



```
carmelmuzhinga@carmelmuzhinga: ~  
b/3870112724rsegmnoittet-es.files  
4      ./mozilla/firefox/byinyuk.default-release/storage/permanent/chrome/id  
b/1451318868ntouromlalnody--epcr.files  
4      ./mozilla/firefox/byinyuk.default-release/storage/permanent/chrome/id  
b/1657114595AncateIrvtiSty.files  
4      ./mozilla/firefox/byinyuk.default-release/storage/permanent/chrome/id  
b/3561288849sdhlie.files  
4      ./mozilla/firefox/byinyuk.default-release/storage/permanent/chrome/id  
b/2823318777ntouromlalnody--naod.files  
9992   ./mozilla/firefox/byinyuk.default-release/storage/permanent/chrome/id  
b  
10000  ./mozilla/firefox/byinyuk.default-release/storage/permanent/chrome  
10004  ./mozilla/firefox/byinyuk.default-release/storage/permanent  
4      ./mozilla/firefox/byinyuk.default-release/storage/temporary  
4      ./mozilla/firefox/byinyuk.default-release/storage/to-be-removed  
10276  ./mozilla/firefox/byinyuk.default-release/storage  
8      ./mozilla/firefox/byinyuk.default-release/bookmarkbackups  
4      ./mozilla/firefox/byinyuk.default-release/crashes/events  
12     ./mozilla/firefox/byinyuk.default-release/crashes  
29624  ./mozilla/firefox/byinyuk.default-release  
29664  ./mozilla/firefox  
29672  ./mozilla  
232500 .  
carmelmuzhinga@carmelmuzhinga:~$
```

Рис. 10: Запуск команды du



```
carmelmuzhinga@carmelmuzhinga: ~  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome/idb  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome/idb/2918063365piupsah.files  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome/idb/3870112724rsegmnoittet-es.files  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome/idb/1451318868ntouromlalnodry--epcr.files  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome/idb/1657114595AmcateirvtiSty.files  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome/idb/3561288849sdhlie.files  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/permanen  
t/chrome/idb/2823318777ntouromlalnodry--naod.files  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/temporar  
y  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/storage/to-be-re  
moved  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/bookmarkbackups  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/crashes  
/home/carmelmuzhinga/.mozilla/firefox/byinyuk.default-release/crashes/events  
carmelmuzhinga@carmelmuzhinga:~$
```

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.