

# Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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# Цели и задачи работы

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## 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**

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# Перенаправление ввода-вывода

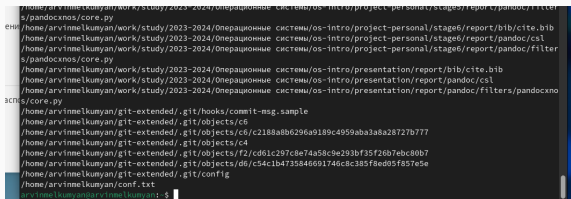
```
arvinmelkumyan@arvinmelkumyan:~$ ls /etc > file.txt
arvinmelkumyan@arvinmelkumyan:~$ ls >> file.txt
arvinmelkumyan@arvinmelkumyan:~$ cat file.txt
abrt
adjtime
aliases
alsa
alternatives
anaconda
anthy-unicode.conf
appstream.conf
asound.conf
audit
authselect
avahi
bash_completion.d
bashrc
bindresvport.blacklist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

**Рис. 1:** Запись в файл

# Работа фильтра

```
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$ grep .conf file.txt > conf.txt  
arvinmelkumyan@arvinmelkumyan:~$ 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
```

Рис. 2: Поиск расширения .conf



```
/home/arvinnekkunyan/work/study/2023-2024/Операционные системы/os-intro/project-personal/stage6/report/pandoc/filters/pandocxnos/core.py
/home/arvinnekkunyan/work/study/2023-2024/Операционные системы/os-intro/project-personal/stage6/report/bib/cite.bib
/home/arvinnekkunyan/work/study/2023-2024/Операционные системы/os-intro/project-personal/stage6/report/pandoc/csl
/home/arvinnekkunyan/work/study/2023-2024/Операционные системы/os-intro/project-personal/stage6/report/pandoc/filters/pandocxnos/core.py
/home/arvinnekkunyan/work/study/2023-2024/Операционные системы/os-intro/presentation/report/bib/cite.bib
/home/arvinnekkunyan/work/study/2023-2024/Операционные системы/os-intro/presentation/report/pandoc/csl
/home/arvinnekkunyan/work/study/2023-2024/Операционные системы/os-intro/presentation/report/pandoc/filters/pandocxnos/core.py
/home/arvinnekkunyan/git-extended/.git/hooks/commit-msg.sample
/home/arvinnekkunyan/git-extended/.git/objects/c6
/home/arvinnekkunyan/git-extended/.git/objects/c6/c2188a8b6296a9189c4959aba3a8a28727b777
/home/arvinnekkunyan/git-extended/.git/objects/c4
/home/arvinnekkunyan/git-extended/.git/objects/f2/cd61c297c8e74a58c9e293bf35f26b7ebc80b7
/home/arvinnekkunyan/git-extended/.git/objects/d6/c54c1b4735846691746c8c385f8ed05f857e5e
/home/arvinnekkunyan/git-extended/.git/config
/home/arvinnekkunyan/conf.txt
arvinnekkunyan@arvinnekkunyan: $
```

Рис. 3: Поиск файлов



```
find: '/etc/polkit-1/rules.d': Отказано в доступе
find: '/etc/sos/cleaner': Отказано в доступе
find: '/etc/sane.d/dll.d/hpaio
/etc/sane.d/hp.conf
/etc/sane.d/hp3900.conf
/etc/sane.d/hp4200.conf
/etc/sane.d/hp5400.conf
/etc/sane.d/hpsj5s.conf
/etc/sane.d/hs2p.conf
find: '/etc/ssh/ssh_config.d': Отказано в доступе
find: '/etc/ssh/sshd_config.d': Отказано в доступе
find: '/etc/sudoers.d': Отказано в доступе
/etc/sysconfig/htcacheclean
/etc/systemd/system/httpd.service.d
/etc/systemd/homed.conf
/etc/udev/hwdb.d
/etc/udev/hwdb.bin
/etc/host.conf
:
```

**Рис. 4:** Поиск файлов

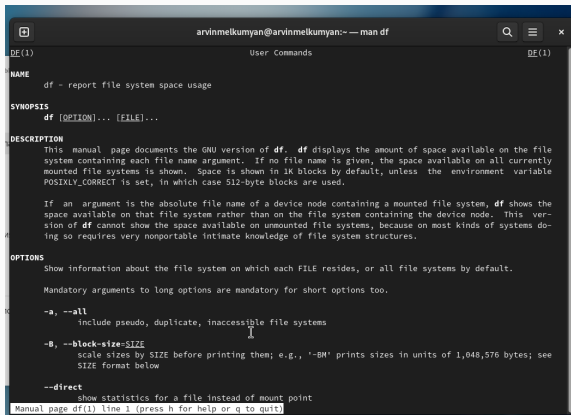
```
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$ find /etc -name "h*" -print | less  
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$ find ~ -name "log*" > logfile &  
[1] 5175  
arvinmelkumyan@arvinmelkumyan:~$  
[1]+  Завершён      find ~ -name "log*" > logfile  
arvinmelkumyan@arvinmelkumyan:~$ rm logfile  
arvinmelkumyan@arvinmelkumyan:~$
```

Рис. 5: Фоновый запуск процесса

```
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$ find /etc -name "h*" -print | less  
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$ find ~ -name "log*" > logfile &  
[1] 5175  
arvinmelkumyan@arvinmelkumyan:~$  
[1]+  Завершён      find ~ -name "log*" > logfile  
arvinmelkumyan@arvinmelkumyan:~$ rm logfile  
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$ gedit &  
[1] 5212  
arvinmelkumyan@arvinmelkumyan:~$ ps | grep gedit  
5212 pts/0    00:00:00 gedit  
arvinmelkumyan@arvinmelkumyan:~$ kill 5212  
[1]+  Завершено    gedit  
arvinmelkumyan@arvinmelkumyan:~$  
arvinmelkumyan@arvinmelkumyan:~$
```

Рис. 6: Фоновый запуск и завершение процесса

# Команды df и du



```
arvinmelkumyan@arvinmelkumyan:~ — 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 environment 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

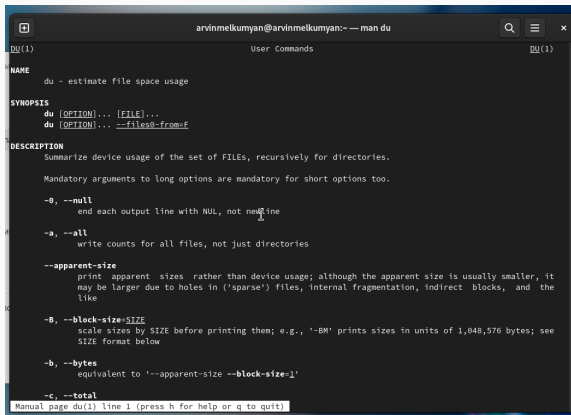
  -B, --block-size=SIZE
      scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in units of 1,048,576 bytes; see SIZE format below

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

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

Рис. 7: Справка по команде df

# Команды df и du



```
arvinmelkumyan@arvinmelkumyan:~$ 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
      Manual page du(1) line 1 (press h for help or q to quit)
```

Рис. 8: Запуск команды df

# Команды df и du

```
arvinmelkumyan@arvinmelkumyan:~$ df
Файловая система 1K-блоков  Использовано  Доступно  Использовано%  Смонтировано в
/dev/sda3          103805952    23728692  75950332         24% /
devtmpfs           4096         0         4096          0% /dev
tmpfs              4044832         0  4044832          0% /dev/shm
tmpfs              1617936      1884  1616052          1% /run
tmpfs              4044836         52  4044784          1% /tmp
/dev/sda3          103805952    23728692  75950332         24% /home
/dev/sda2           996780      271404   656564         30% /boot
tmpfs              808964         176   808788          1% /run/user/1090
arvinmelkumyan@arvinmelkumyan:~$
```

Рис. 9: Справка по команде du

# Команды df и du

```
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      ./monthly
0      ./reports/monthly/monthly
0      ./reports/monthly
асп0   ./reports
4      ./ski.plases/equipment
0      ./ski.plases/plans
4      ./ski.plases
0      ./australia
0      ./play/games/play
0      ./play/games
0      ./play
424648 .
arvinmelkumyan@arvinmelkumyan:~$
```

Рис. 10: Запуск команды du

```
НИИ /home/arvinmelkumyan/git-extended/.git/objects/f2  
/home/arvinmelkumyan/git-extended/.git/objects/d6  
/home/arvinmelkumyan/git-extended/.git/objects/5f  
/home/arvinmelkumyan/git-extended/.git/logs  
/home/arvinmelkumyan/git-extended/.git/logs/refs  
/home/arvinmelkumyan/git-extended/.git/logs/refs/heads  
/home/arvinmelkumyan/git-extended/.git/logs/refs/remotes  
/home/arvinmelkumyan/git-extended/.git/logs/refs/remotes/origin  
/home/arvinmelkumyan/monthly  
/home/arvinmelkumyan/reports  
СПО /home/arvinmelkumyan/reports/monthly  
/home/arvinmelkumyan/reports/monthly/monthly  
/home/arvinmelkumyan/ski.plases  
/home/arvinmelkumyan/ski.plases/equipment  
/home/arvinmelkumyan/ski.plases/plans  
/home/arvinmelkumyan/australia  
/home/arvinmelkumyan/play  
/home/arvinmelkumyan/play/games  
/home/arvinmelkumyan/play/games/play  
arvinmelkumyan@arvinmelkumyan:~$
```

Рис. 11: Поиск директорий



## **Выводы по проделанной работе**

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В данной работе мы ознакомились с инструментами поиска файлов и фильтрации текстовых данных. А также приобрели практические навыки по управлению процессами.