

# 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.

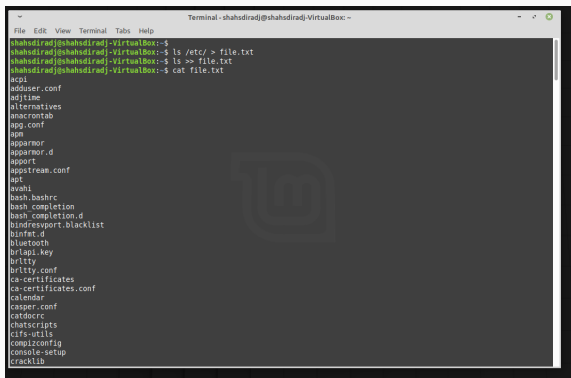
# Задачи лабораторной работы

- 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



The image shows a terminal window titled "Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~". The terminal displays the following commands and their output:

```
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$ ls /etc/ > file.txt  
shahsdiradj@shahsdiradj-VirtualBox:~$ ls >> file.txt  
shahsdiradj@shahsdiradj-VirtualBox:~$ cat file.txt  
acpi  
adduser.conf  
adjtime  
alternatives  
anacrontab  
app.conf  
apm  
apparmor  
apparmor.d  
apport  
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  
calendar  
casper.conf  
catdocrc  
chatscripts  
cifs-utils  
compizconfig  
console-setup  
cracklib
```

Figure 1: Запись в файл

# Работа фильтра

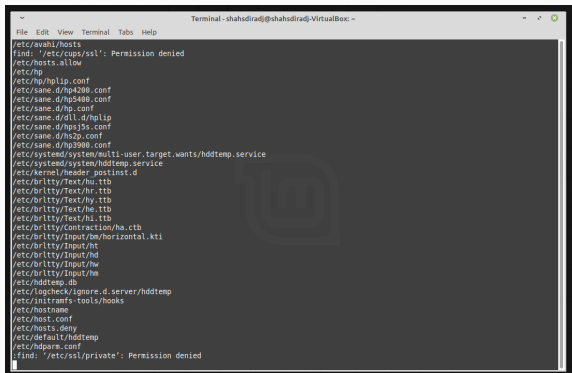
```
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$ grep .conf file.txt > conf.txt  
shahsdiradj@shahsdiradj-VirtualBox:~$ cat conf.txt  
adduser.conf  
app.conf  
appstream.conf  
brltty.conf  
ca-certificates.conf  
casper.conf  
compizconfig  
debconf.conf  
deluser.conf  
fuse.conf  
gai.conf  
gconf  
hdparm.conf  
host.conf  
inxi.conf  
kernel-irq.conf  
kerneloops.conf  
ld.so.conf  
ld.so.conf.d  
libao.conf  
libaudit.conf  
logrotate.conf  
ltrace.conf  
manpath.conf
```

**Figure 2:** Поиск расширения .conf

```
shahsdiradj@shahsdiradj-VirtualBox:~$ ls -R | grep c*
conf.txt
shahsdiradj@shahsdiradj-VirtualBox:~$ find -name "c*" -print
/home/shahsdiradj/.config/caja
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.script.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.configuration.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.executable.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.help.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.bundle.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.component.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.sfwk.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/config
/home/shahsdiradj/.config/libreoffice/4/user/extensions/bundled/registry/com.sun.star.comp.deployment.script.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/extensions/bundled/registry/com.sun.star.comp.deployment.configuration.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/extensions/bundled/registry/com.sun.star.comp.deployment.executable.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/extensions/bundled/registry/com.sun.star.comp.deployment.help.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/extensions/bundled/registry/com.sun.star.comp.deployment.bundle.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/extensions/bundled/registry/com.sun.star.comp.deployment.component.PackageRegistryBackend
/home/shahsdiradj/.config/libreoffice/4/user/extensions/bundled/registry/com.sun.star.comp.deployment.sfwk.PackageRegistryBackend
```

Figure 3: Поиск файлов

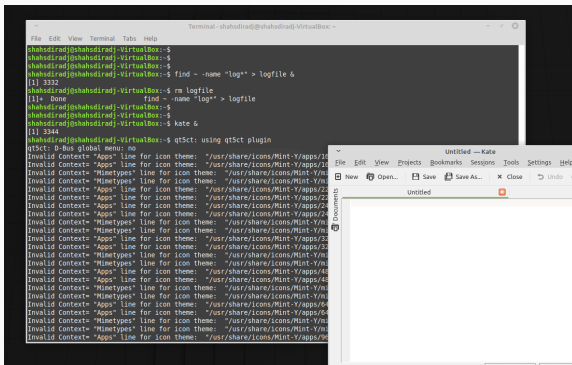




```
Terminal - shahsdirad@shahsdirad-VirtualBox: ~  
File Edit View Terminal Tabs Help  
/etc/avahi/hosts  
find: '/etc/cups/ssl': Permission denied  
/etc/hosts.allow  
/etc/hp  
/etc/hp/hplip.conf  
/etc/sane.d/hp4200.conf  
/etc/sane.d/hp5400.conf  
/etc/sane.d/hp.conf  
/etc/sane.d/dll.d/hplip  
/etc/sane.d/hpsj5s.conf  
/etc/sane.d/hsp.conf  
/etc/sane.d/hp3900.conf  
/etc/systemd/system/multi-user.target.wants/hddtemp.service  
/etc/systemd/system/hddtemp.service  
/etc/kernel/header_postinst.d  
/etc/brltty/Text/hu.ttb  
/etc/brltty/Text/hr.ttb  
/etc/brltty/Text/hy.ttb  
/etc/brltty/Text/he.ttb  
/etc/brltty/Text/hi.ttb  
/etc/brltty/Contraction/ha.ctb  
/etc/brltty/Input/bm/horizontal.kti  
/etc/brltty/Input/ht  
/etc/brltty/Input/hd  
/etc/brltty/Input/hw  
/etc/brltty/Input/hm  
/etc/hddtemp.db  
/etc/logcheck/ignore.d.server/hddtemp  
/etc/initramfs-tools/hooks  
/etc/hostname  
/etc/host.conf  
/etc/hosts.deny  
/etc/default/hddtemp  
/etc/hdparm.conf  
:find: '/etc/ssl/private': Permission denied
```

Figure 4: Поиск файлов

## Управление процессами



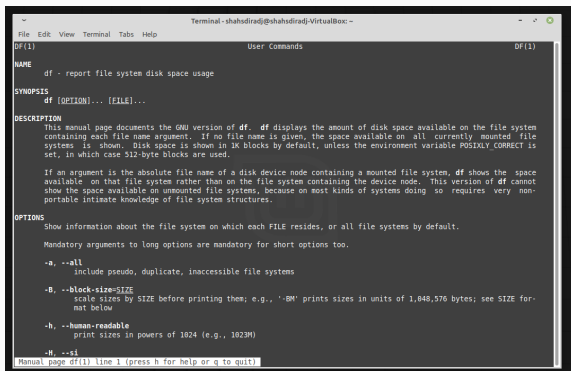
### Figure 5: Фооновый запуск процесса

```
Invalid context= "Minetypes" line for icon theme: "/usr/share/icons/Mint-Y/minetypes/128px/"
Invalid context= "Apps" line for icon theme: "/usr/share/icons/Mint-Y/apps/256/"
Invalid context= "Apps" line for icon theme: "/usr/share/icons/Mint-Y/apps/256/2x/"
Invalid context= "Apps" line for icon theme: "/usr/share/icons/Mint-Y/apps/symbolic/"
Invalid context= "Minetypes" line for icon theme: "/usr/share/icons/Mint-Y/minetypes/symbolic/"

shahsdirad@shahsdiradj-VirtualBox:~$
shahsdirad@shahsdiradj-VirtualBox:~$ ps | grep kate
3354 pts/0    00:00:00 kate
shahsdirad@shahsdiradj-VirtualBox:~$ kill 3354
shahsdirad@shahsdiradj-VirtualBox:~$
```

Figure 6: Фоновый запуск и завершение процесса

# Команды df и du



The screenshot shows a terminal window titled "Terminal - shahsdirad@shahsdirad-VirtualBox: -". The terminal displays the manual page for the 'df' command. The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". 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 non-portable 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)

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

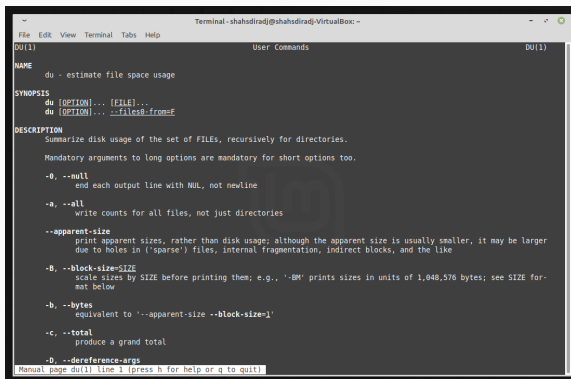
Figure 7: Справка по команде df

# Команды df и du

```
shahsdiradj@shahsdiradj-VirtualBox:~$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
udev            1982952         0   1982952   0% /dev
tmpfs           403672      1060    402612   1% /run
/dev/sda1       51341792 9905332  38798740  21% /
tmpfs           2018348         0   2018348   0% /dev/shm
tmpfs           5120         4      5116   1% /run/lock
tmpfs           2018348         0   2018348   0% /sys/fs/cgroup
tmpfs           403668        12    403656   1% /run/user/1000
shahsdiradj@shahsdiradj-VirtualBox:~$
```

Figure 8: Запуск команды df

# Команды df и du



The screenshot shows a terminal window titled "Terminal-shahsdiradj@shahsdiradj-VirtualBox: ~". The terminal displays the manual page for the 'du' command. At the top, it says "DU(1)" on the left and "DU(1)" on the right, with "User Commands" in the center. The content includes:

```
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.

-o, --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 for
    format below

-b, --bytes
    equivalent to '--apparent-size --block-size=1'

-c, --total
    produce a grand total

-D, --dereference-args
    Manual page du(1) line 1 (press h for help or q to quit)
```

Figure 9: Справка по команде du

# Команды df и du

```
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$ du  
4      ./play/games/play  
8      ./play/games  
12     ./play  
4      ./config/akonadi  
20     ./config/hexchat  
4      ./config/autostart-scripts  
8      ./config/gtk-3.0  
8      ./config/dconf  
20     ./config/session  
8      ./config/qt5ct  
4      ./config/enchant  
16     ./config/Thunar  
12     ./config/xed  
8      ./config/caja  
4      ./config/libreoffice/4/user/uno_packages/cache/uno_packages  
4      ./config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.script.PackageRegistryBackend  
8      ./config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.configuration.PackageRegistryBackend  
end  
4      ./config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.executable.PackageRegistryBackend  
8      ./config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.help.PackageRegistryBackend  
4      ./config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.bundle.PackageRegistryBackend  
4      ./config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.component.PackageRegistryBackend  
4      ./config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.sfw.PackageRegistryBackend  
40     ./config/libreoffice/4/user/uno_packages/cache/registry  
52     ./config/libreoffice/4/user/uno_packages/cache  
56     ./config/libreoffice/4/user/uno_packages  
1016   ./config/libreoffice/4/user/database/biblio  
1024   ./config/libreoffice/4/user/database  
4      ./config/libreoffice/4/user/config/soffice.cfg/modules/swriter/statusbar  
4      ./config/libreoffice/4/user/config/soffice.cfg/modules/swriter/images/Bitmaps
```

Figure 10: Запуск команды du

```
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$  
shahsdiradj@shahsdiradj-VirtualBox:~$ find ~ -type d  
/home/shahsdiradj  
/home/shahsdiradj/play  
/home/shahsdiradj/play/games  
/home/shahsdiradj/play/games/play  
/home/shahsdiradj/.config  
/home/shahsdiradj/.config/akonadi  
/home/shahsdiradj/.config/hexchat  
/home/shahsdiradj/.config/autostart-scripts  
/home/shahsdiradj/.config/gtk-3.0  
/home/shahsdiradj/.config/dconf  
/home/shahsdiradj/.config/session  
/home/shahsdiradj/.config/qt5ct  
/home/shahsdiradj/.config/enchant  
/home/shahsdiradj/.config/Thunar  
/home/shahsdiradj/.config/xed  
/home/shahsdiradj/.config/caja  
/home/shahsdiradj/.config/libreoffice  
/home/shahsdiradj/.config/libreoffice/4  
/home/shahsdiradj/.config/libreoffice/4/user  
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages  
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache  
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/uno_packages  
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry  
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.script.PackageRegistryBackend  
/home/shahsdiradj/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun.star.comp.deployment.configuration.PackageRegistryBackend
```

Figure 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.