

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

```
knmehdiev@kamilmehdiel-VirtualBox:~$  
knmehdiev@kamilmehdiel-VirtualBox:~$ ls /etc/ > file.txt  
knmehdiev@kamilmehdiel-VirtualBox:~$ ls >> file.txt  
knmehdiev@kamilmehdiel-VirtualBox:~$ cat file.txt  
acpi  
adduser.conf  
adjtime  
alsa  
alternatives  
anacrontab  
apache2  
apg.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
```

Figure 1: Запись в файл

Работа фильтра

```
knmehdiev@kamilmehdiel-VirtualBox:~$  
knmehdiev@kamilmehdiel-VirtualBox:~$  
knmehdiev@kamilmehdiel-VirtualBox:~$ grep .conf file.txt > conf.txt  
knmehdiev@kamilmehdiel-VirtualBox:~$ cat conf.txt  
adduser.conf  
apg.conf  
appstream.conf  
brltty.conf  
ca-certificates.conf  
ca-certificates.conf.dpkg-old  
casper.conf  
compizconfig  
dconf  
debconf.conf  
deluser.conf  
e2scrub.conf  
fprind.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
```

Figure 2: Поиск расширения .conf

```
knmehdiev@kamilmehdiel-VirtualBox:~$  
knmehdiev@kamilmehdiel-VirtualBox:~$ ls -R | grep c*  
conf.txt  
knmehdiev@kamilmehdiel-VirtualBox:~$ find ~ -name "c*" -print  
/home/knmehdiev/.local/share/evolution/calendar  
/home/knmehdiev/.local/share/evolution/calendar/system/calendar.ics  
/home/knmehdiev/.local/share/evolution/addressbook/system/contacts.db  
/home/knmehdiev/.config/caja  
/home/knmehdiev/.config/kdeconnect/certificate.pem  
/home/knmehdiev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-card-database.tdb  
/home/knmehdiev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-device-volumes.tdb  
/home/knmehdiev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-default-source  
/home/knmehdiev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-stream-volumes.tdb  
/home/knmehdiev/.config/pulse/cookie  
/home/knmehdiev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-default-sink  
/home/knmehdiev/.mozilla/firefox/dm8t9sh5.default-release/compatibility.ini  
/home/knmehdiev/.mozilla/firefox/dm8t9sh5.default-release/cert9.db  
/home/knmehdiev/.mozilla/firefox/dm8t9sh5.default-release/storage/permanent/chrome
```

Figure 3: Поиск файлов

Команда поиска

```
find: '/etc/ppp/peers': Отказано в доступе
/etc/logcheck/ignore.d.server/hddtemp
/etc/hp
/etc/hp/hplip.conf
/etc/hdparm.conf
find: '/etc/polkit-1/localauthority': Отказано в доступе
/etc/host.conf
/etc/apparmor.d/tunables/home.d
/etc/apparmor.d/tunables/home
/etc/gufw/app_profiles/h323.jhansonxi
/etc/gufw/app_profiles/hedgewars.jhansonxi
/etc/gufw/app_profiles/heavy-gear-ii.jhansonxi
/etc/gufw/app_profiles/hexen2.jhansonxi
/etc/gufw/app_profiles/homm3.jhansonxi
/etc/gufw/app_profiles/heretic2.jhansonxi
/etc/gufw/app_profiles/hplip.gufw_app
/etc/gufw/app_profiles/hddtemp.jhansonxi
/etc/gufw/app_profiles/hypertext-transfer-protocol.jhansonxi
/etc/udev/hwdb.d
/etc/hosts
/etc/sane.d/hpsj5s.conf
/etc/sane.d/hp5400.conf
/etc/sane.d/hp4200.conf
/etc/sane.d/hs2p.conf
/etc/sane.d/dll.d/hplip
/etc/sane.d/hp3900.conf
/etc/sane.d/hp.conf
```

Figure 4: Поиск файлов

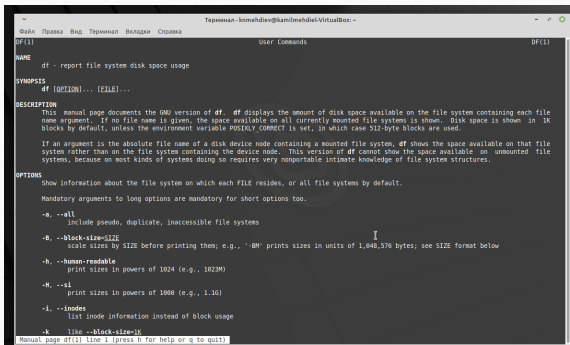
```
knmehdiev@kamilmehdie-VirtualBox:~$  
knmehdiev@kamilmehdie-VirtualBox:~$ find ~ -name "log*" > logfile &  
[1] 2679  
knmehdiev@kamilmehdie-VirtualBox:~$ rm logfile  
[1]+  Завершён      find ~ -name "log*" > logfile  
knmehdiev@kamilmehdie-VirtualBox:~$
```

Figure 5: Фоновый запуск процесса

```
knmehdiev@kamilmehdiel-VirtualBox:~$  
knmehdiev@kamilmehdiel-VirtualBox:~$ gedit &  
[1] 2688  
knmehdiev@kamilmehdiel-VirtualBox:~$ ps | grep gedit  
2688 pts/0    00:00:00 gedit  
knmehdiev@kamilmehdiel-VirtualBox:~$ kill 2688  
knmehdiev@kamilmehdiel-VirtualBox:~$
```

Figure 6: Фоновый запуск и завершение процесса

Команды df и du



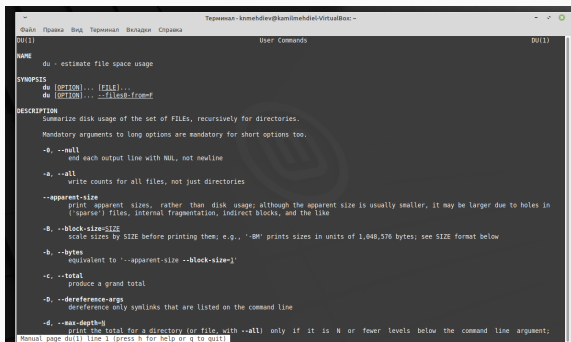
```

-
Терминал - kamelshadiy@kamelshadiy-VirtualBox: ~
Файл Правка Вид Терминал Вкладки Справка
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.
-s, --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
    print sizes in powers of 1000 (e.g., 1.1G)
-i, --inodes
    list inode information instead of block usage
-k
    like --block-size=K
Manual page df(1) line 1 (press h for help or q to quit)

```

Figure 7: Справка по команде df

Команды df и du



```
-
File: Правка Вид Терминал Вкладки Справка
Терминал - kmehdiev@kamlinehdie-VirtualBox: -
DU(1) User Commands DU(1)
NAME
du - estimate file space usage
SYNOPSIS
du [OPTION]... [FILE]...
du [OPTION]... --files-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
  -d, --dereference-args
      dereference only symlinks that are listed on the command line
  -d, --max-depth=N
      print the total for a directory (or file, with --all) only if it is N or fewer levels below the command line argument;
Manual page du(1) line 1 (press h for help or q to quit)
```

Figure 8: Запуск команды df

Команды df и du

```
[1]+  Завершено      gedit
knmehdiev@kamilmehdiel-VirtualBox:~$
knmehdiev@kamilmehdiel-VirtualBox:~$ man df
knmehdiev@kamilmehdiel-VirtualBox:~$ man du
knmehdiev@kamilmehdiel-VirtualBox:~$ df
Файл.система  1K-блоков  Использовано  Доступно  Использовано%  Смонтировано в
udev          4015232      0    4015232      0% /dev
tmpfs         812432      1612    810820      1% /run
/dev/sda5     122810976   19241628  97287876     17% /
tmpfs         4062156      0    4062156      0% /dev/shm
tmpfs         5120         4     5116         1% /run/lock
tmpfs         4062156      0    4062156      0% /sys/fs/cgroup
/dev/sda1     523248      4     523244      1% /boot/efi
tmpfs         812428      20     812408      1% /run/user/1041
knmehdiev@kamilmehdiel-VirtualBox:~$
```

Figure 9: Справка по команде du

Команды df и du

```
knmehdiev@kamilmehdiel-VirtualBox:~$  
knmehdiev@kamilmehdiel-VirtualBox:~$ du  
4      ./Общедоступные  
8      ./local/state/gh  
12     ./local/state  
4      ./local/share/keyrings  
8      ./local/share/evolution/calendar/system  
4      ./local/share/evolution/calendar/trash  
16     ./local/share/evolution/calendar  
8      ./local/share/evolution/tasks/system  
4      ./local/share/evolution/tasks/trash  
16     ./local/share/evolution/tasks  
4      ./local/share/evolution/mail/trash  
8      ./local/share/evolution/mail  
4      ./local/share/evolution/memos/trash  
8      ./local/share/evolution/memos  
4      ./local/share/evolution/addressbook/system/photos  
92     ./local/share/evolution/addressbook/system  
4      ./local/share/evolution/addressbook/trash  
100    ./local/share/evolution/addressbook  
152    ./local/share/evolution  
40     ./local/share/gvfs-metadata  
856    ./local/share/baloo  
4      ./local/share/gnote  
12     ./local/share/kwalletd  
1072   ./local/share  
1088   ./local  
4      ./reports/monthly/monthly  
8      ./reports/monthly
```

Figure 10: Запуск команды du

```
knmehdiev@kamilmehdie-VirtualBox:~$  
knmehdiev@kamilmehdie-VirtualBox:~$  
knmehdiev@kamilmehdie-VirtualBox:~$  
knmehdiev@kamilmehdie-VirtualBox:~$ find ~ -type d  
/home/knmehdiev  
/home/knmehdiev/Общедоступные  
/home/knmehdiev/.local  
/home/knmehdiev/.local/state  
/home/knmehdiev/.local/state/gh  
/home/knmehdiev/.local/share  
/home/knmehdiev/.local/share/keyrings  
/home/knmehdiev/.local/share/evolution  
/home/knmehdiev/.local/share/evolution/calendar  
/home/knmehdiev/.local/share/evolution/calendar/system  
/home/knmehdiev/.local/share/evolution/calendar/trash  
/home/knmehdiev/.local/share/evolution/tasks  
/home/knmehdiev/.local/share/evolution/tasks/system  
/home/knmehdiev/.local/share/evolution/tasks/trash  
/home/knmehdiev/.local/share/evolution/mail  
/home/knmehdiev/.local/share/evolution/mail/trash  
/home/knmehdiev/.local/share/evolution/memos  
/home/knmehdiev/.local/share/evolution/memos/trash  
/home/knmehdiev/.local/share/evolution/addressbook  
/home/knmehdiev/.local/share/evolution/addressbook/system  
/home/knmehdiev/.local/share/evolution/addressbook/system/photos  
/home/knmehdiev/.local/share/evolution/addressbook/trash  
/home/knmehdiev/.local/share/gvfs-metadata  
/home/knmehdiev/.local/share/baloo  
/home/knmehdiev/.local/share/gnote  
/home/knmehdiev/.local/share/kwalletd  
/home/knmehdiev/reports  
/home/knmehdiev/reports/monthly
```

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.