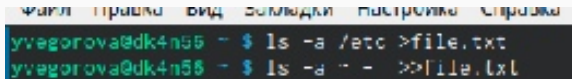


Лабораторная работа №6

Ознакомление с инструментами поиска файлов и фильтрации текстовых данных. Приобретение практических навыков: по управлению процессами (и заданиями), по проверке использования диска и обслуживанию файловых систем.

Запись файлов в file.txt

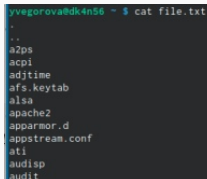
Записываем в файл file.txt названия файлов, содержащихся в каталоге /etc. Дописываем в этот же файл названия файлов, содержащихся в домашнем каталоге:



```
File: /etc/hosts  Type: Text  Size: 1024  Permissions: -rw-r--r--  Owner: root  Group: root  Mode: 0644  Content: # This file describes the hosts on the system.  yvegorova@dk4n55 ~ $ ls -a /etc >file.txt
yvegorova@dk4n55 ~ $ ls -a ~ - >>file.txt
```

Figure 1: Запись в file.txt названия файлов из каталога /etc и домашнего каталога

Выводим имена всех файлов из file.txt, имеющих расширение .conf, после записываем их в новый текстовый файл conf.txt:



```
yvegorova@dk4n55 ~ $ cat file.txt
.
..
a2ps
acpi
adjtime
afs.keytab
alsa
apache2
apparmor.d
appstream.conf
ati
audisp
audit
```

Поиск файлов с помощью команды find

Определяем, какие файлы в домашнем каталоге имеют имена, начинающиеся с символа “с” с помощью команды find:

```
root@ssh000000:~# find -name "c*" -print
./usr/share/evolution/addressbook/system/contacts.db
./usr/share/evolution/calendar
./usr/share/evolution/calendar/system/calendar.ics
./usr/share/evolution/mail/local/cur
./usr/share/evolution/mail/local/drafts/cur
./usr/share/evolution/mail/local/outbox/cur
./usr/share/evolution/mail/local/sent/cur
./usr/share/evolution/mail/local/templates/cur
./usr/share/evolution/categories.xml
./usr/share/ntp/cache.db
./usr/share/evolution/config/gtk-3.0/assets/close-normal.svg
./usr/share/evolution/config/gtk-3.0/assets/close-active.svg
./usr/share/evolution/config/gtk-3.0/assets/close-hover.svg
./usr/share/evolution/config/gtk-3.0/assets/close-backdrop-normal.svg
./usr/share/evolution/config/gtk-3.0/assets/close-backdrop-active.svg
./usr/share/evolution/config/gtk-3.0/assets/close-backdrop-hover.svg
./usr/share/evolution/config/gtk-3.0/colors.css
./usr/share/evolution/config/libreoffice4/user/connect/certificate.pem
./usr/share/evolution/config/libreoffice4/user/connect/config
./usr/share/evolution/config/libreoffice4/user/connect
./usr/share/evolution/config/libreoffice4/user/extensions/shared/registry/com.sun.star.comp.deployment.component.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/shared/registry/com.sun.star.comp.deployment.configuration.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/shared/registry/com.sun.star.comp.deployment.executable.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/shared/registry/com.sun.star.comp.deployment.help.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/shared/registry/com.sun.star.comp.deployment.script.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/shared/registry/com.sun.star.comp.deployment.uiw.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/shared/registry/com.sun.star.comp.deployment.bundle.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/bundled/registry/com.sun.star.comp.deployment.component.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/bundled/registry/com.sun.star.comp.deployment.configuration.PackageRegistryBackend
./usr/share/evolution/config/libreoffice4/user/extensions/bundled/registry/com.sun.star.comp.deployment.configuration.PackageRegistryBackend/config
```

Figure 4: Поиск файлов, начинающиеся с символа “с”

Поиск файлов с помощью команды find

Выводим на экран имена файлов, начинающиеся с символа `h` из каталога `/etc`:

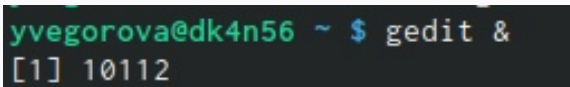
```
yvegorova@dk4n56 ~ $ find /etc -name "h*" -print
find: '/etc/audisp/plugins.d': Отказано в доступе
/etc/conf.d/hdparm
/etc/conf.d/hsqldb
/etc/conf.d/hostname
/etc/conf.d/hddtemp
/etc/conf.d/hwclock
/etc/hotplug.d
/etc/hsqldb
/etc/hosts.allow
/etc/hostname
/etc/harbour.cfg
/etc/init.d/hdparm
/etc/init.d/hsqldb
/etc/init.d/hotplug
/etc/init.d/hddtemp
/etc/harbour
/etc/harbour/hb-charmap.def
/etc/avahi/hosts
/etc/distcc/hosts
find: '/etc/cron.daily': Отказано в доступе
find: '/etc/cron.monthly': Отказано в доступе
find: '/etc/lvm/cache': Отказано в доступе
/etc/sane.d/hp4200.conf
/etc/sane.d/hp3900.conf
/etc/sane.d/hp5400.conf
/etc/sane.d/hp.conf
/etc/sane.d/hs2p.conf
/etc/xdg/xfce4/helpers.rc
/etc/runlevels/default/hdparm
/etc/runlevels/boot/hostname
/etc/runlevels/boot/hwclock
find: '/etc/polkit-1/rules.d': Отказано в доступе
/etc/httpd
/etc/brltty/Input/hw
/etc/brltty/Input/hd
```

Запускаем в фоновом режиме процесс, который будет записывать в файл ~/logfile файлы, имена которых начинаются с log:

```
yvegorova@dk4n56 ~ $ find /var/log -name "log*" -print > logfile &  
[1] 9942
```

Figure 6: Запускаем процесс записи в файл файлов, начинающихся с log

Запускаем из консоли в фоновом режиме редактор gedit:



```
yvegorova@dk4n56 ~ $ gedit &  
[1] 10112
```

Figure 7: Запуск в фоновом режиме редактора gedit

Определяем идентификатор процесса gedit, используя команду ps, конвейер и фильтр grep:



```
yvegorova@dk4n56 ~ $ ps aux | grep gedit  
yvegorov+ 10170  0.0  0.0 10156  972 pts/0    S+   20:29   0:00 grep --colour=auto gedit
```

Figure 8: Определение идентификатора процесса gedit

Читаем справку команды kill с помощью команды man, после чего используем ее для завершения процесса gedit:

```
KILL(1)                                     User: Commands                                KILL(1)

NAME
  kill - send a signal to a process

SYNOPSIS
  kill [-options] pid [ ... ]

DESCRIPTION
  The default signal for kill is TERM. Use -l or -L to list available signals. Particularly useful signals include HUP, INT, KILL, STOP, CONT, and 9. Alternate signals may be specified in three ways: %d, -SIGNAME, or -KILL. Negative PID values may be used to choose whole process groups; see the PIDs column in ps. (command and -mt. A PID of 0 is special; it indicates all processes except the kill process itself and self.

OPTIONS
  -s signal [ ... ]
    Send signal to every pid listed.

  -signal name
  -s signal
  --signal signal
    Specify the signal to be sent. The signal can be specified by using name or number. The behavior of signals is explained in signal(7) manual page.

  -w www value
    Use signal(2) rather than kill(2) and the value argument is used to specify an integer to be sent with the signal. If the receiving process has installed a handler for this signal using the SA_SIGINFO flag in sigaction(2), then it can obtain this data via the siginfo_t struct of the siginfo_t structure.

  -l, --list [signal]
    List signal names. This option has optional argument, which will convert signal number to signal name, or other way round.

  -h, --table
    List signal names in a nice table.

NOTES
  Your shell (command line interpreter) may have a built-in kill command. You may need to run the command described here as /bin/kill to solve the conflict.

EXAMPLES
  kill -9 1
    Kill all processes you can kill.

  kill -9 0
    Kill all processes you can kill.

man page kill(1) line 1 (press h for help or q to exit)
```

Figure 9: Справка команды kill

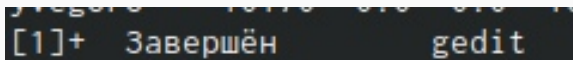


Figure 10: Завершение процесса gedit

Команды df и du

Выполняем команды df и du, предварительно получаем более подробную информацию об этих командах с помощью команды man:

```
df(1)                                User Commands                                df(1)

NAME
  df - report file system disk space usage

SYNOPSIS
  df [-PPTG]... [-tTYPE]...

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 is part of df control since the space available on unmounted file systems, located on non-kernel file systems such as vxfs,
  is highly very susceptible to data corruption of the system's kernel.

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=UNIT
      scale sizes by UNIT before printing them; e.g., 'gb' prints sizes in units of 1,048,576 bytes; see SIZE FORMAT below

  -h, --human-readable
      print sizes in powers of 1024 (e.g., 1024K)

  -k, --k
      print sizes in powers of 1024 (e.g., 1.1G)

  -l, --local
      list local information instead of block usage

  -P, --posix
      use --block-size=512

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

Figure 11: Информация о команде df.

```
du(1)                                User Commands                                du(1)

NAME
  du - estimate file space usage

SYNOPSIS
  du [-CPT]... [-tTIME]...
  du [-CPT]... --file-segment=SIZE

DESCRIPTION
  Summarize disk usage of the set of FILES, recursively for directories.

  Mandatory arguments to long options are mandatory for short options too.

  -C, --total
      read each output line with 0, not newline

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

  --segment-size=SIZE
      print segment sizes, rather than disk usage; although the segment size is usually smaller, it may be larger due to holes in (sparse) files, internal frag-
  mentation, indirect blocks, and the like
```

Команды df и du

```
yvegorova@dk4n56 ~ $ df
Файловая система          1К-блоков  Использовано  Доступно  Использовано%  Смонтировано в
none                        4000180      28460       3971720        1% /run
udev                       3890156        0       3890156        0% /dev
tmpfs                      4000180      326092       3674088        8% /dev/shm
/dev/sda8                  401612356    108701320    292911036       24% /
/dev/sda6                  91557952     851328     80032680        1% /var/cache/opensfs
tmpfs                      4000180      175744     3824436        5% /tmp
mark.sci.pfu.edu.ru:/com/lib/portage 1048320000    504344576    543975424       49% /com/lib/portage
mark.sci.pfu.edu.ru:/usr/portage      18350080     5858816     11009792       35% /usr/portage
mark.sci.pfu.edu.ru:/usr/local/share/portage 18350080     5858816     11009792       35% /usr/local/share/portage
AFS                               2147483647      240       2147483647        0% /afs
tmpfs                      4000180      799796       3920180        2% /run/user/4154
mark.sci.pfu.edu.ru:/usr/local/share/portage 18350080     5858816     11009792       35% /usr/local/share/portage
```

Figure 13: Команда df.

```
yvegorova@dk4n56 ~ $ du
```

Figure 14: Команда du.

```
2 ./course-directory-student-template/.git/modules/template/presentation/refs/tags
3 ./course-directory-student-template/.git/modules/template/presentation/refs/remotes/origin
5 ./course-directory-student-template/.git/modules/template/presentation/refs/remotes
12 ./course-directory-student-template/.git/modules/template/presentation/refs
17 ./course-directory-student-template/.git/modules/template/presentation/objects/pack
20 ./course-directory-student-template/.git/modules/template/presentation/objects/info
41 ./course-directory-student-template/.git/modules/template/presentation/objects
3 ./course-directory-student-template/.git/modules/template/presentation/logs/refs/remotes/origin
5 ./course-directory-student-template/.git/modules/template/presentation/logs/refs/remotes
3 ./course-directory-student-template/.git/modules/template/presentation/logs/refs/heads
10 ./course-directory-student-template/.git/modules/template/presentation/logs/refs
13 ./course-directory-student-template/.git/modules/template/presentation/logs
107 ./course-directory-student-template/.git/modules/template/presentation
3 ./course-directory-student-template/.git/modules/template/report/info
31 ./course-directory-student-template/.git/modules/template/report/hooks
3 ./course-directory-student-template/.git/modules/template/report/refs/heads
2 ./course-directory-student-template/.git/modules/template/report/refs/tags
3 ./course-directory-student-template/.git/modules/template/report/refs/remotes/origin
5 ./course-directory-student-template/.git/modules/template/report/refs/remotes
12 ./course-directory-student-template/.git/modules/template/report/refs
199 ./course-directory-student-template/.git/modules/template/report/objects/pack
20 ./course-directory-student-template/.git/modules/template/report/objects/info
203 ./course-directory-student-template/.git/modules/template/report/objects
```

11) Воспользовавшись справкой команды `find`, выводим имена всех директорий, имеющих в домашнем каталоге.

A terminal window with a dark background. The prompt is 'yvegorova@dk4n56 ~ \$'. The command 'find type d' is being typed, with a cursor at the end of the line.

```
yvegorova@dk4n56 ~ $ find type d
```

Figure 16: Вывод всех директорий, имеющих в домашнем каталоге.

В ходе данной лабораторной работы я ознакомилась с инструментами поиска файлов и фильтрации текстовых данных, приобрела практические навыки: по управлению процессами (и заданиями), по проверке использования диска и обслуживанию файловых систем.