

Операционные системы

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

```
root@debian:~# ls /etc/ > file.txt
root@debian:~# ls >> file.txt
root@debian:~# cat file.txt
adduser.conf
alsa
alternatives
anacrontab
apache2
apg.conf
apparmor
apparmor.d
appstream.conf
apt
avahi
bash.bashrc
bash_completion
bash_completion.d
bindresvport.blacklist
binfmt.d
bluetooth
bogofilter.cf
ca-certificates
ca-certificates.conf
chatscripts
chromium
console-setup
```

Рис. 1: Запись в файл

```
root@debian:~# grep .conf file.txt > conf.txt
root@debian:~# cat conf.txt
adduser.conf
apg.conf
appstream.conf
ca-certificates.conf
dconf
debconf.conf
deluser.conf
```

Рис. 2: Поиск расширения .conf

Поиск файлов

Рис. 3: Поиск файлов

```
root@debian:~# find /etc
/etc
/etc/mtab
/etc/hostname
/etc/networks
/etc/rc5.d
/etc/rc5.d/S01hwclock.sh
/etc/rc5.d/S01udev
/etc/rc5.d/S01alsa-utils
/etc/rc5.d/S01keyboard-setup.sh
/etc/rc5.d/S01apparmor
/etc/rc5.d/S01procps
/etc/rc5.d/S01networking
/etc/rc5.d/S01x11-common
/etc/rc5.d/S01kmod
/etc/rc5.d/S01plymouth-log
/etc/dpkg
/etc/dpkg/dpkg.cfg.d
/etc/dpkg/dpkg.cfg.d/force-unsafe-io
/etc/dpkg/dpkg.cfg
/etc/dpkg/origins
/etc/dpkg/origins/debian
/etc/dpkg/origins/default
/etc/shadow
/etc/passwd
/etc/logrotate.d
/etc/logrotate.d/dpkg
/etc/logrotate.d/apt
/etc/logrotate.d/speech-dispatcher
/etc/logrotate.d/btmp
/etc/logrotate.d/sane-utils
/etc/logrotate.d/ppp
/etc/logrotate.d/cups-daemon
/etc/logrotate.d/bootlog
/etc/logrotate.d/wtmp
/etc/logrotate.d/alternatives
/etc/emacs
```



```
root@debian:~# find /etc -name "hx*" -print | less

[5]+  Stopped                  find /etc -name "hx*" -print | less
root@debian:~# find /etc -name "log*" > logfile &
[6] 6752
root@debian:~# find /etc -name "hx*" -print | less
[6]  Done                      find /etc -name "log*" > logfile

[7]+  Stopped                  find /etc -name "hx*" -print | less
root@debian:~# find ~ -name "log*" > logfile &
[8] 6764
root@debian:~# rm logfile
[8]  Done                      find ~ -name "log*" > logfile
root@debian:~#
```

Рис. 5: Фоновый запуск процесса

```
update-alternatives: using /usr/bin/gedit to provide /usr/bin/gnome-text-editor (gnome-text-editor) in auto mode
update-alternatives: warning: not replacing /usr/bin/gnome-text-editor with a link
[8]  Exit 127                  gedit
root@debian:~# gedit &
[8] 6925
root@debian:~# Error creating proxy: The connection is closed (g-io-error-quark, 18)
Error creating proxy: The connection is closed (g-io-error-quark, 18)
Error creating proxy: The connection is closed (g-io-error-quark, 18)
Error creating proxy: The connection is closed (g-io-error-quark, 18)
Error creating proxy: The connection is closed (g-io-error-quark, 18)
```

Команды df и du

```
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

    -h, --human-readable
        print sizes in powers of 1024 (e.g., 1023M)

    -H, --si
        print sizes in powers of 1000 (e.g., 1.1G)

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

Рис. 7: Справка по команде df

```
DU(1)                                     User Commands                               DU(1)

NAME
    du - estimate file space usage

SYNOPSIS
```

```
/root/reports/monthly/monthly/june
/root/reports/monthly/monthly/april
/root/reports/monthly/monthly/may
/root/vboxpostinstall.sh
/root/ski.plases
/root/ski.plases/plans
/root/ski.plases/equipment
/root/ski.plases/equipment/equiplist
/root/ski.plases/equipment/equiplist2
/root/may
/root/.profile
/root/feathers2
/root/my_os
/root/.gnupg
/root/.gnupg/.#1k0x0000562b92d0a3c0.debian.2632
/root/.gnupg/pubring.kbx~
/root/.gnupg/private-keys-v1.d
/root/.gnupg/private-keys-v1.d/809f4270623a4f63880364488801c5a562236581.key
/root/.gnupg/private-keys-v1.d/2fa2378c60e5f8f64b2fb7718b2875322ecd0268.key
/root/.gnupg/S.gpg-agent.extra
/root/.gnupg/openpgp-revocs.d
/root/.gnupg/openpgp-revocs.d/066856d186a6287f6aea1750cc745529d6e23236.rev
/root/.gnupg/S.gpg-agent
/root/.gnupg/S.gpg-agent.browser
/root/.gnupg/.#1k0x00005da5e9e1760.debian.2631
/root/.gnupg/S.gpg-agent.ssh
/root/.gnupg/tzstdb.gpg
/root/.gnupg/pubring.kbx
/root/.bash_history
/root/monthly
/root/monthly/june
/root/monthly/april
/root/monthly/may
/root/.bashrc
/root/.cache
/root/.gitconfig
root@debian:~#
```

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.