

Лабораторная работа №11

Управление загрузкой системы

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Цель работы

Основная цель

Получить навыки работы с загрузчиком системы **GRUB2**.

Ход выполнения работы

Модификация параметров GRUB2

```
grub      [---]  0 L:[ 1+ 8  9/  9] *(327 / 327b) <EOF> [*][X]
GRUB_TIMEOUT=10
GRUB_DISTRIBUTOR="$(sed 's, release .*$,,g' /etc/system-release)"
GRUB_DEFAULT=saved
GRUB_DISABLE_SUBMENU=true
GRUB_TERMINAL_OUTPUT="console"
GRUB_CMDLINE_LINUX="resume=UUID=c466c7a2-d841-488a-bf7f-d2c113bd16e9 rd.lvm.lv=rl_vbox/root rd.lvm.lv=rl_vbo
GRUB_DISABLE_RECOVERY="true"
GRUB_ENABLE_BLSCFG=true
```

Рис. 1: Редактирование файла /etc/default/grub

Модификация параметров GRUB2

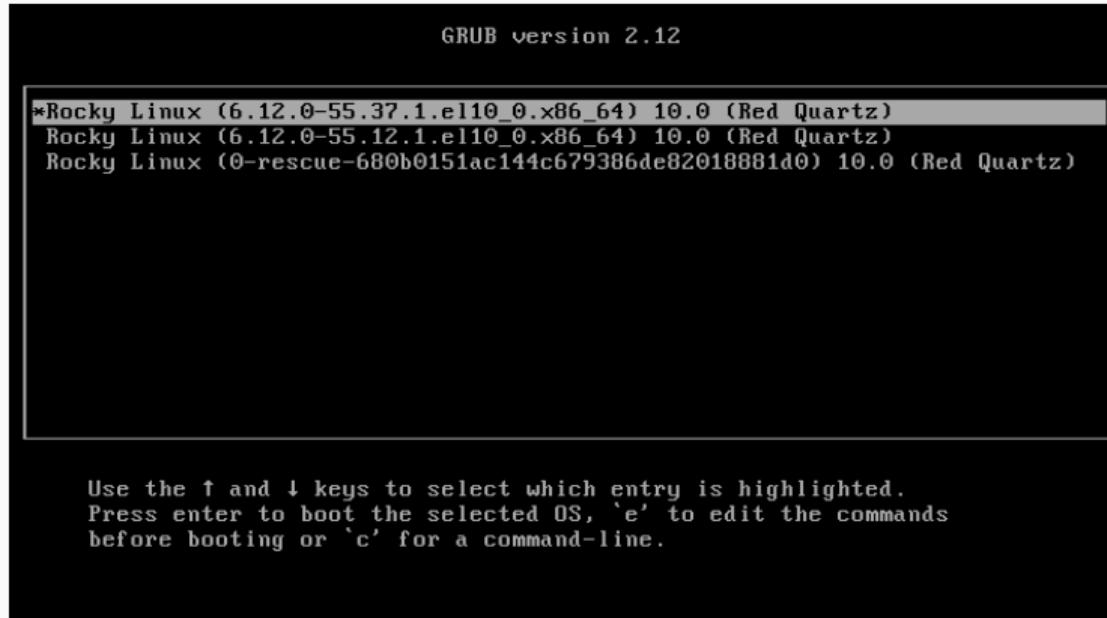


Рис. 2: Меню GRUB с вариантами загрузки Rocky Linux

Модификация параметров GRUB2

```
GRUB version 2.12

load_video
set gfxpayload=keep
insmod gzio
linux ($root)/vmlinuz-6.12.0-55.37.1.el10_0.x86_64 root=/dev/mapper/r1_vbox\
-root ro resume=UUID=c466c7a2-d841-488a-bf7f-d2c113bd16e9 rd.lvm.lv=r1_vbox\
/root rd.lvm.lv=r1_vbox/swap systemd.unit=rescue.target
initrd ($root)/initramfs-6.12.0-55.37.1.el10_0.x86_64.img $tuned_initrd

Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for
a command-line or ESC to discard edits and return to the GRUB menu.
```

Рис. 3: Редактирование строки загрузки с параметром rescue.target

Режим восстановления (rescue mode)

```
systemd-journald.socket          loaded active running
systemd-udevd-control.socket     loaded active running
systemd-udevd-kernel.socket      loaded active running
dev-disk-by\x2duuid-c466c7a2\x2dd841\x2d488a\x2dbf7f\x2dd2c113bd16e9.swap
cryptsetup.target                 loaded active active
integritysetup.target            loaded active active
local-fs-pre.target              loaded active active
local-fs.target                  loaded active active
network-pre.target               loaded active active
rescue.target                    loaded active active
sound.target                     loaded active active
swap.target                      loaded active active
sysinit.target                   loaded active active
veritysetup.target               loaded active active

Legend: LOAD  + Reflects whether the unit definition was properly loaded.
        ACTIVE + The high-level unit activation state, i.e. generalization of SUB.
        SUB   + The low-level unit activation state, values depend on unit type.

69 loaded units listed. Pass --all to see loaded but inactive units, too.
To show all installed unit files use 'systemctl list-unit-files'.
root@haoladar:~# systemctl show-environment
LANG=en_US.UTF-8
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin
XDG_DATA_DIRS=/var/lib/flatpak/exports/share:/usr/local/share/:/usr/share/
root@haoladar:~#
```

Рис. 4: Работа системы в rescue-режиме

Аварийный режим (emergency mode)

```
GRUB version 2.12

load_video
set gfxpayload=keep
insmod gzio
linux ($root)/vmlinuz-6.12.0-55.37.1.el10_0.x86_64 root=/dev/mapper/r1_vbox\
-root ro resume=UUID=c466c7a2-d841-488a-bf7f-d2c113bd16e9 rd.lvm.lv=r1_vbox\
/root rd.lvm.lv=r1_vbox/swap systemd.unit=emergency.target
initrd ($root)/initramfs-6.12.0-55.37.1.el10_0.x86_64.img $tuned_initrd

Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for
a command-line or ESC to discard edits and return to the GRUB menu.
```

Рис. 5: Редактирование строки загрузки с параметром emergency.target

Аварийный режим (emergency mode)

```
● sys-devices-pci0000:00-0000:00:00.0-ata3-host2-target2:0:0:0:0-block-sda-sda3.device          loaded activating
● sys-devices-pci0000:00-0000:00:00.0-ata3-host2-target2:0:0:0:0-block-sda-sda3.device          loaded activating
● sys-devices-pci0000:00-0000:00:00.0-ata3-host2-target2:0:0:0:0-block-sda-sda3.device          loaded activating
● sys-devices-platform-serial10250-serial10250:0-serial10250:0-0-tty-ttyS0.device           loaded activating
● sys-devices-platform-serial10250-serial10250:0-serial10250:0-0-tty-ttyS1.device           loaded activating
● sys-devices-platform-serial10250-serial10250:0-serial10250:0-0-tty-ttyS2.device           loaded activating
● sys-devices-platform-serial10250-serial10250:0-serial10250:0-0-tty-ttyS3.device           loaded activating
● sys-devices-virtual-block-dm\x2dR.device          loaded active
● sys-devices-virtual-block-dm\x2dR.device          loaded active
● sys-module-configuration.device      loaded activating
● sys-module-fuse.device            loaded activating
└─mount
  └─sys-kernel-config.mount        loaded active
init.scope
  emergency.service
  plymouth-start.service
  systemd-journald.service
  .slice
  system.slice
  systemd-journald-dev-log.socket
  systemd-journald.socket
  emergency.target

Legend: LOAD  -> Reflects whether the unit definition was properly loaded.
        ACTIVE -> The high-level unit activation state, i.e. generalization of SUB.
        SUB   -> The low-level unit activation state, values depend on unit type.

68 loaded units listed. Pass --all to see loaded but inactive units, too.
To show all installed unit files use 'systemctl list-unit-files'.
root@baoladee:~#
```

Рис. 6: Работа системы в emergency-режиме

Сброс пароля root

Редактирование параметров загрузки

```
GRUB version 2.12

load_video
set gfxpayload=keep
insmod gzio
linux ($root)/vmlinuz-6.12.0-55.37.1.el10_0.x86_64 root=/dev/mapper/r1_vbox\
-root ro resume=UUID=c466c7a2-d841-488a-bf7f-d2c113bd16e9 rd.lvm.lv=r1_vbox\
/root rd.lvm.lv=r1_vbox/swap rd.break
initrd ($root)/initramfs-6.12.0-55.37.1.el10_0.x86_64.img $tuned_initrd

Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for
a command-line or ESC to discard edits and return to the GRUB menu.
```

Рис. 7: Добавление параметра rd.break для сброса пароля

Попытка сброса пароля

```
Generating "/run/initramfs/rdsosreport.txt"

a[1]Entering emergency mode. Exit the shell to continue.
Type "journalctl" to view system logs.
You might want to save "/run/initramfs/rdsosreport.txt" to a USB stick or /boot
after mounting them and attach it to a bug report.

o
r
YGive root password for maintenance
p(or press Control-D to continue):
iash-5.2# mount -o remount,rw /sysroot
sh-5.2# chroot /sysroot
sh: chroot: command not found
sh-5.2# passwd
sh: passwd: command not found
sh-5.2#
```

Рис. 8: Попытка выполнения сброса пароля в initramfs

Итоги работы

В ходе работы были изучены методы модификации параметров загрузчика **GRUB2**, отработка режимов восстановления и аварийной загрузки, а также выполнен сброс пароля пользователя **root**.