

Лабораторная работа 11

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Задача

1. Продемонстрируйте навыки по изменению параметров GRUB и записи изменений в файл конфигурации (см. раздел 11.4.1).

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3. Продемонстрируйте навыки работы с GRUB без использования root (см. раздел 11.4.3)

Выполнение

```
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="crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M resume=/dev/mapper/r1-swap rd.lvm.lv=r1/root rd.lvm.lv=r1/swap"
GRUB_DISABLE_RECOVERY="true"
GRUB_ENABLE_BLSCFG=true
"
```

Рис. 1: /etc/default/grub

```
~  
~  
~  
"/etc/default/grub" 8L, 340B written  
[root@dmgeneralov ~]# grub2-mkconfig > /boot/grub2/grub.cfg  
Generating grub configuration file ...  
Adding boot menu entry for UEFI Firmware Settings ...  
done  
[root@dmgeneralov ~]#
```

Рис. 2: grub2-mkconfig


```
[ 1.052408] uhci_hcd: USB Universal Host Controller Interface driver
[ 1.056016] xhci_hcd 0000:02:00.0: xHCI Host Controller
[ 1.056716] xhci_hcd 0000:02:00.0: new USB bus registered, assigned bus number 1
[ 1.057935] xhci_hcd 0000:02:00.0: hcc params 0x00087001 hci version 0x100 quirks 0x0000000000000010
[ 1.060404] xhci_hcd 0000:02:00.0: xHCI Host Controller
[ 1.061046] xhci_hcd 0000:02:00.0: new USB bus registered, assigned bus number 2
[ 1.061695] xhci_hcd 0000:02:00.0: Host supports USB 3.0 SuperSpeed
[ 1.062753] usb usb1: New USB device found, idVendor=1d6b, idProduct=0002, bcdDevice= 5.14
[ 1.063610] usb usb1: New USB device strings: Mfr=3, Product=2, SerialNumber=1
[ 1.064466] usb usb1: Product: xHCI Host Controller
[ 1.064967] usb usb1: Manufacturer: Linux 5.14.0-162.6.1.el9_1.0.1.x86_64 xhci-hcd
[ 1.080358] usb usb1: SerialNumber: 0000:02:00.0
[ 1.080856] hub 1-0:1.0: USB hub found
[ 1.081238] hub 1-0:1.0: 15 ports detected
[ 1.082344] usb usb2: We don't know the algorithms for LPM for this host, disabling LPM.
[ 1.082821] usb usb2: New USB device found, idVendor=1d6b, idProduct=0003, bcdDevice= 5.14
[ 1.083439] usb usb2: New USB device strings: Mfr=3, Prod
```

Рис. 3: dmesg

```
load_video
set gfxpayload=keep
insmod gzio
linux ($root)/vmlinuz-5.14.0-162.6.1.el9_1.0.1.x86_64 root=/dev/mapper/rl-root\
ro crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M resume=/dev/mapper/rl-swap rd\
.lvm.lv=rl/root rd.lvm.lv=rl/swap systemd.unit=rescue.target_
initrd ($root)/initramfs-5.14.0-162.6.1.el9_1.0.1.x86_64.img
```

Press Ctrl-x to start, Ctrl-c for a command prompt or Escape to
discard edits and return to the menu. Pressing Tab lists
possible completions.

Рис. 4: linux

```

[ OK ] Reached target System Initialization.
        Starting Restore /run/initramfs on shutdown...
[ OK ] Started Rescue Shell.
[ OK ] Reached target Rescue Mode.
[ 5.046433] ACPI: bus type drm_connector registered
        Starting Record Runlevel Change in UTPP...
[ OK ] Finished Restore /run/initramfs on shutdown.
[ 5.980492] input: PC Speaker as /devices/platform/pcspkr/input/input5
[ OK ] Finished Record Runlevel Change in UTPP.
You are in rescue mode. After logging in, type "journalctl -xb" to view
system logs, "systemctl reboot" to reboot, "systemctl default" or "exit"
to boot into default mode.
Give root password for maintenance
(or press Control-D to continue): [ 5.965623] RAPL PMU: API unit is 2^-32 Jou
les, 8 fixed counters, 10737418240 ms ovfl timer
[ 5.992207] [drm] pci: virtio-vga detected at 0000:00:01.0
[ 5.992607] virtio-pci 0000:00:01.0: vgaarb: deactivate vga console
[ 6.020711] Console: switching to colour dummy device 80x25
[ 6.027157] [drm] features: -virgl +edid -resource_blob -host_visible
[ 6.027160] [drm] features: -context_init
[ 6.050533] [drm] number of scanouts: 1
[ 6.050557] [drm] number of cap sets: 0
[ 6.059575] [drm] Initialized virtio_gpu 0.1.0 0 for virtio0 on minor 0
[ 6.076704] virtio_gpu virtio0: [drm] drm_plane_enable.fb_damage_clips() not called
[ 6.076736] Console: switching to colour frame buffer device 160x50
[ 6.093763] virtio_gpu virtio0: [drm] fb0: virtio_gpudrmfb frame buffer device
[ 6.119641] ITCO_vendor_support: vendor-support=0
[ 6.127871] ITCO_sdt ITCO_sdt.1.auto: Found a ICH9 TCO device (Version=2, TCOBASE=0x0060)
[ 6.127896] snd_hda_codec_generic hdaudioC000: autoconfig for Generic: line_outs=1 (0x3/0x0/0x0/0x0/0x0) type:line
[ 6.127959] snd_hda_codec_generic hdaudioC000: speaker_outs=0 (0x0/0x0/0x0/0x0/0x0)
[ 6.127992] snd_hda_codec_generic hdaudioC000: hp_outs=0 (0x0/0x0/0x0/0x0/0x0)
[ 6.128040] snd_hda_codec_generic hdaudioC000: mono: mono_out=0x0
[ 6.128164] snd_hda_codec_generic hdaudioC000: inputs:
[ 6.128597] snd_hda_codec_generic hdaudioC000: Line=0x5
[ 6.133967] ITCO_sdt ITCO_sdt.1.auto: initialized. heartbeat=30 sec (nowayout=0)
[ 6.305799] intel_pmc_core intel_pmc_core.0: initialized

Login incorrect

Give root password for maintenance
(or press Control-D to continue):
root@dmageneralov ~]# _

```

Рис. 5: rescue

systemctl list-units

```

systemd-ask-password-console.path
init.scope
dracut-shutdown.service
load-static-nodes.service
lvm2-monitor.service
nis-domainname.service
rescue.service
systemd-journal-flush.service
systemd-journald.service
systemd-network-generator.service
systemd-random-seed.service
systemd-remount-fs.service
systemd-sysctl.service
systemd-tmpfiles-setup-dev.service
systemd-tmpfiles-setup.service
systemd-udev-trigger.service
systemd-udev.service
systemd-update-utmp.service
-.slice
system-modprobe.slice
system-systemd\x2dhibernate\x2dresume.slice
system.slice
dm-event.socket
lvm2-lvmpolld.socket
systemd-journald-dev-log.socket
systemd-journald.socket
systemd-udev-control.socket
systemd-udev-kernel.socket
dev-mapper-fl\x2dswap
cryptsetup.target
integritypsetup.target
local-fs-pre.target
local-fs.target
network-pre.target
rescue.target
sound.target
swap.target
sysinit.target
veritysetup.target

loaded active waiting Dispatch Password Requests to Console Directly
loaded active running System and Service Manager
loaded active exited Restore /run/initramfs on shutdown
loaded active exited Create List of Static Device Nodes
loaded active exited Monitoring of LVM2 mirrors, snapshots etc. up
loaded active exited Read and set NIS domainname from /etc/sysconf
loaded active running Rescue Shell
loaded active exited Flush Journal to Persistent Storage
loaded active running Journal Service
loaded active exited Generate network units from Kernel command
loaded active exited Load/Save Random Seed
loaded active exited Remount Root and Kernel File Systems
loaded active exited Apply Kernel Variables
loaded active exited Create Static Device Nodes in /dev
loaded active exited Create Volatile Files and Directories
loaded active exited Coldplug All udev Devices
loaded active running Rule-based Manager for Device Events and Files
loaded active exited Record System Boot/Shutdown in UTMP
loaded active active Root Slice
loaded active active Slice /system/modprobe
loaded active active Slice /system/systemd-hibernate-resume
loaded active active System Slice
loaded active listening Device-mapper event daemon FIFOs
loaded active listening LVM2 poll daemon socket
loaded active running Journal Socket (/dev/log)
loaded active running Journal Socket
loaded active running udev Control Socket
loaded active running udev Kernel Socket
loaded active active /dev/mapper/r1-swap
loaded active active Local Encrypted Volumes
loaded active active Local Integrity Protected Volumes
loaded active active Preparation for Local File Systems
loaded active active Local File Systems
loaded active active Preparation for Network
loaded active active Rescue Mode
loaded active active Sound Card
loaded active active Swaps
loaded active active System Initialization
loaded active active Local Uvity Protected Volumes

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.
65 loaded units listed. Pass --all to see loaded but inactive units, too.
To show all installed unit files use 'systemctl list-unit-files'.
[root@mgenera1ov ~]# systemctl show-environment
LANG=en_US.UTF-8
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin
[root@mgenera1ov ~]#
```

Рис. 6: systemctl list-units

systemctl list-units

```
sys-devices-platform-serial8250-tty-ttyS1.device
sys-devices-platform-serial8250-tty-ttyS2.device
sys-devices-platform-serial8250-tty-ttyS3.device
sys-devices-pnp0-00:00-tty-ttyS0.device
sys-devices-virtual-block-dm\x2d0.device
sys-devices-virtual-block-dm\x2d1.device
sys-module-configfs.device
sys-subsystem-net-devices-enp1s0.device
-.mount
init.scope
emergency.service
systemd-journald.service
-.slice
system-systemd\x2dhibernate\x2dresume.slice
system.slice
systemd-journald-dev-log.socket
systemd-journald.socket
emergency.target
```

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.
56 loaded units listed. Pass --all to see loaded but inactive units, too.
To show all installed unit files use 'systemctl list-unit-files'.
lines 40-63/63 (END)

Рис. 7: systemctl list-units

```
[ 5.165612] SGI XFS with ACLs, security attributes, scrub, quota, no debug enabled
[ 5.170740] XFS (dm-0): Mounting V5 Filesystem
[ 5.200834] XFS (dm-0): Starting recovery (logdev: internal)
[ 5.220266] XFS (dm-0): Ending recovery (logdev: internal)
[ OK ] Mounted /sysroot.
[ OK ] Reached target Initrd Root File System.
       Starting Reload Configuration from the Real Root...
[ OK ] Finished Reload Configuration from the Real Root.
[ OK ] Reached target Initrd File Systems.
[ OK ] Reached target Initrd Default Target.
       Starting dracut pre-pivot and cleanup hook...
[ 5.396412] dracut-pre-pivot[585]: Warning: Break before switch_root
       Starting Dracut Emergency Shell...

Generating "/run/initramfs/rdsosreport.txt"

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.

switch_root:/# _
```

Рис. 8: initramfs

```
switch_root:/# mount -o remount,rw /sysroot
switch_root:/# chroot /sysroot
sh-5.1# passwd
Changing password for user root.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
passwd: all authentication tokens updated successfully.
sh-5.1# load_policy -i
[ 200.615030] audit: type=1404 audit(1671277628.071:2): enforcing=1 old_enforcing=0 auid=4294967295 ses=4294967295 enabled=1 old-enabled=1 lsm=selinux res=1
[ 200.685581] SELinux: policy capability network_peer_controls=1
[ 200.686018] SELinux: policy capability open_perms=1
[ 200.686295] SELinux: policy capability extended_socket_class=1
[ 200.686617] SELinux: policy capability always_check_network=0
[ 200.686928] SELinux: policy capability cgroup_seclabel=1
[ 200.687326] SELinux: policy capability nnp_nosuid_transition=1
[ 200.687679] SELinux: policy capability genfs_seclabel_symlinks=0
[ 200.737555] audit: type=1403 audit(1671277628.194:3): auid=4294967295 ses=4294967295 lsm=selinux res=1
sh-5.1# chcon -t shadow_t /etc/shadow
sh-5.1# _
```

Рис. 9: passwd

```
Rocky Linux 9.1 (Blue Onyx)
Kernel 5.14.0-162.6.1.el9_1.0.1.x86_64 on an x86_64

dmgenera1ov login: root
Password:
[ 348.771544] systemd[1]: Starting D-Bus System Message Bus...
[ 348.786218] systemd[1]: dbus-broker.service: Main process exited, code=exited, status=1/FAILURE
[ 348.786546] systemd[1]: dbus-broker.service: Failed with result 'exit-code'.
[ 348.787877] systemd[1]: Failed to start D-Bus System Message Bus.
[ 348.791135] systemd[1]: Starting D-Bus System Message Bus...
[ 348.813395] systemd[1]: dbus-broker.service: Main process exited, code=exited, status=1/FAILURE
[ 348.813820] systemd[1]: dbus-broker.service: Failed with result 'exit-code'.
[ 348.814189] systemd[1]: Failed to start D-Bus System Message Bus.
[ 348.817385] systemd[1]: Starting D-Bus System Message Bus...
[ 348.835463] systemd[1]: dbus-broker.service: Main process exited, code=exited, status=1/FAILURE
[ 348.835923] systemd[1]: dbus-broker.service: Failed with result 'exit-code'.
[ 348.836416] systemd[1]: Failed to start D-Bus System Message Bus.
[ 348.842289] systemd[1]: Starting D-Bus System Message Bus...
[ 348.861885] systemd[1]: dbus-broker.service: Main process exited, code=exited, status=1/FAILURE
[ 348.862282] systemd[1]: dbus-broker.service: Failed with result 'exit-code'.
[ 348.862686] systemd[1]: Failed to start D-Bus System Message Bus.
[ 348.866060] systemd[1]: Starting D-Bus System Message Bus...
[ 348.879911] systemd[1]: dbus-broker.service: Main process exited, code=exited, status=1/FAILURE
[ 348.880690] systemd[1]: dbus-broker.service: Failed with result 'exit-code'.
[ 348.881221] systemd[1]: Failed to start D-Bus System Message Bus.
[ 348.882485] systemd[1]: dbus-broker.service: Start request repeated too quickly.
[ 348.882746] systemd[1]: dbus-broker.service: Failed with result 'exit-code'.
[ 348.883121] systemd[1]: Failed to start D-Bus System Message Bus.
[ 348.883247] systemd[1]: dbus.socket: Failed with result 'service-start-limit-hit'.
Last login: Sat Dec 17 14:27:38 on tty1
[root@dmgenera1ov ~]# _
```


Я получил опыт работы с загрузчиком GRUB.