

## Курс «Анализ, оптимизация и аварийные работы в Linux»

### Методические указания по выполнению работы. Часть 2.

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#### Задача:

1. Установить недостающие пакеты.
2. Настроить ядро системы.
3. Установить загрузчик.
4. Запустить систему и прислать скриншот.

#### 1. Установка недостающих пакетов.

В первой части мы установили 468 пакетов:

```
* Messages for package sys-libs/gpm-1.20.7-r5:
* Unable to find kernel sources at /usr/src/linux
* Unable to calculate Linux Kernel version for build, attempting to use running version

* Regenerating GNU info directory index...
* Processed 99 info files.

* IMPORTANT: 8 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

(chroot ) livecd / #
```

После сборки пакетов поднимаемся вверх и находим следующую запись, которая говорит, что отсутствуют некоторые элементы:

```
>>> Installing (467 of 467) virtual/editor-0-r3::gentoo
* Messages for package sys-apps/systemd-251.7:
* Unable to find kernel sources at /usr/src/linux
* Unable to calculate Linux Kernel version for build, attempting to use running version
* Kernel version at least 4.15 required
* CONFIG_BINFMT_MISC: is not set when it should be.
* CONFIG_CGROUP_BPF: is not set when it should be.
* CONFIG_FANOTIFY: is not set when it should be.
* CONFIG_USER_NS: is not set when it should be.
* CONFIG_CHECKPOINT_RESTORE: is not set when it should be.
* CONFIG_AUTOFS4_FS: is not set when it should be.
* Please check to make sure these options are set correctly.
* Failure to do so may cause unexpected problems.

* Messages for package sys-apps/portage-3.0.38.1-r4:
```

Сохраним данную запись в файл:

```
( chroot ) livecd / # vim build.txt
```

Необходимо установить следующий пакет:

```
( chroot ) livecd / # eix genkernel
```

```
( chroot ) livecd / # eix genkernel
* sys-kernel/genkernel
  Available versions: 4.0.10 4.2.6-r6 4.2.6-r7 ~4.3.1 **9999*1 [+firmware ibm PYTHON_SINGLE_TARGET="python3_8 python3_9 python3_10"]
  Homepage:          https://wiki.gentoo.org/wiki/Genkernel https://gitweb.gentoo.org/proj/genkernel.git/
  Description:       Gentoo automatic kernel building scripts

( chroot ) livecd / #
```

Проверим какие сопутствующие пакеты **genkernel** установит:

```
( chroot ) livecd / # emerge -vp sys-kernel/genkernel
```

```
( chroot ) livecd / # emerge -vp sys-kernel/genkernel
These are the packages that would be merged, in order:

Calculating dependencies... done!
[ebuild N ] app-arch/cpio-2.12-r1::gentoo USE="nls" 1230 KiB
[ebuild N ] sys-kernel/linux-firmware-20221109::gentoo USE="redistributable -compress -initramfs -savedconfig (-unknown-license)" 289431 KiB
[ebuild N ] sys-kernel/genkernel-4.2.6-r7::gentoo USE="firmware (-ibm)" PYTHON_SINGLE_TARGET="python3_10 -python3_8 -python3_9" 170518 KiB

Total: 3 packages (3 new), Size of downloads: 461177 KiB

* IMPORTANT: 8 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

( chroot ) livecd / #
```

Устанавливаем данные пакеты:

```
( chroot ) livecd / # emerge sys-kernel/genkernel
```

```
>>> Installing (3 of 3) sys-kernel/genkernel-4.2.6-r7::gentoo
>>> Recording sys-kernel/genkernel in "world" favorites file...

* Messages for package sys-kernel/linux-firmware-20221109:

* Your configuration for sys-kernel/linux-firmware-20221109 has been saved in
* "/etc/portage/savedconfig/sys-kernel/linux-firmware-20221109" for your editing pleasure.
* You can edit these files by hand and remerge this package with
* USE=savedconfig to customise the configuration.
* You can rename this file/directory to one of the following for
* its configuration to apply to multiple versions:
* ${PORTAGE_CONFIGROOT}/etc/portage/savedconfig/
* [${CTARGET}|${CHOST}|"]/${CATEGORY}/${P}|${PN}]
* If you are only interested in particular firmware files, edit the saved
* configfile and remove those that you do not want.

* Regenerating GNU info directory index...
* Processed 86 info files.

* IMPORTANT: 9 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

( chroot ) livecd / #
```

Устанавливаем ядро системы:

```
( chroot ) livecd / # eix gentoo-sources
```

Нам потребуется версия ядра **5.15.75**:

```
( chroot ) livecd / # emerge sys-kernel/gentoo-sources

>>> Installing (1 of 1) sys-kernel/gentoo-sources-5.15.75::gentoo
* If you are upgrading from a previous kernel, you may be interested
* in the following document:
*   - General upgrade guide: https://wiki.gentoo.org/wiki/Kernel/Upgrade
* For more info on this patchset, and how to report problems, see:
* https://dev.gentoo.org/~mpagano/genpatches

>>> Recording sys-kernel/gentoo-sources in "world" favorites file...

* Messages for package sys-kernel/gentoo-sources-5.15.75:

* If you are upgrading from a previous kernel, you may be interested
* in the following document:
*   - General upgrade guide: https://wiki.gentoo.org/wiki/Kernel/Upgrade

* GNU info directory index is up-to-date.
( chroot ) livecd / #
```

Создадим символическую ссылку на ядро:

```
( chroot ) livecd / # ls -la /usr/src/

( chroot ) livecd / # ls -la /usr/src/
total 12
drwxr-xr-x  3 root root 4096 Dec  5 20:25 .
drwxr-xr-x 12 root root 4096 Nov 27 21:11 ..
-rw-r--r--  1 root root    0 Nov 27 21:08 .keep
drwxr-xr-x 25 root root 4096 Dec  5 20:25 linux-5.15.75-gentoo
( chroot ) livecd / #
```

```
( chroot ) livecd / # eselect kernel list

( chroot ) livecd / # eselect kernel list
Available kernel symlink targets:
[1]  linux-5.15.75-gentoo
( chroot ) livecd / #
```

```
( chroot ) livecd / # eselect kernel set 1

( chroot ) livecd / # eselect kernel set 1
( chroot ) livecd / # ls -la /usr/src/
total 12
drwxr-xr-x  3 root root 4096 Dec  5 21:09 .
drwxr-xr-x 12 root root 4096 Nov 27 21:11 ..
-rw-r--r--  1 root root    0 Nov 27 21:08 .keep
lrwxrwxrwx  1 root root   20 Dec  5 21:09 linux -> linux-5.15.75-gentoo
drwxr-xr-x 25 root root 4096 Dec  5 20:25 linux-5.15.75-gentoo
( chroot ) livecd / #
```

Далее нам потребуется файл первичной конфигурации ядра **config-5.4.0-54-generic**. Его можно взять по ссылке:

<https://vcp.meganet.ru/dists/video/trouble/config-5.4.0-54-generic>

```
( chroot ) livecd / # wget
https://vcp.meganet.ru/dists/video/trouble/config-5.4.0-54-
generic
```

Перемещаем файл в директорию **/usr/src/linux**:

```
( chroot ) livecd / # mv config-5.4.0-54-generic /usr/src/linux
```

И переименовываем его:

```
( chroot ) livedcd / # cd /usr/src/linux
( chroot ) livedcd /usr/src/linux # mv config-5.4.0-54-generic
.config
```

Вводим следующую команду:

```
( chroot ) livedcd /usr/src/linux # cd /
( chroot ) livedcd / # genkernel --menuconfig --no-clean --no-
mrproper all
```

Начнется процесс сборки ядра. В открывшемся меню нажимаем кнопку **Exit**:

```
.config - Linux/x86 5.15.75-gentoo Kernel Configuration
Linux/x86 5.15.75-gentoo Kernel Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenu ----). Highlighted letters are hotkeys.
Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search.
Legend: [*] built-in [ ] excluded <M> module < > module capable

General setup --->
[*] 64-bit kernel
Processor type and features --->
[*] Mitigations for speculative execution vulnerabilities --->
Power management and ACPI options --->
Bus options (PCI etc.) --->
Binary Emulations --->
[*] Virtualization --->
General architecture-dependent options --->
[*] Enable loadable module support --->
[*] Enable the block layer --->
IO Schedulers --->
Executable file formats --->
Memory Management options --->
[*] Networking support --->
Device Drivers --->
File systems --->
Security options --->

<Select> < Exit > < Help > < Save > < Load >
```

```
( chroot ) livedcd / # genkernel --menuconfig --no-clean --no-mrproper all
* Gentoo Linux Genkernel; Version 4.2.6
* Using genkernel configuration from '/etc/genkernel.conf' ...
* Running with options: --menuconfig --no-clean --no-mrproper all

* Working with Linux kernel 5.15.75-gentoo for x86_64
* Using kernel config file '/usr/share/genkernel/arch/x86_64/generated-config' ...
*
* Note: The version above is subject to change (depends on config and status of kernel sources).
*
kernel: >> Initializing ...
* >> --no-clean is set; Skipping 'make clean' ...
* >> --no-mrproper is set; Skipping 'make mrproper' ...
* >> Will ignore kernel config from '/usr/share/genkernel/arch/x86_64/generated-config'
* in favor of already existing but different kernel config
* found in '/usr/src/linux/.config' ...
* >> Running 'make oldconfig' ...
* >> Invoking menuconfig ...
* >> Kernel config was not modified!
* >> Re-running 'make oldconfig' due to changed kernel options ...
* >> Kernel version has changed (probably due to config change) since genkernel start:
* We are now building Linux kernel 5.15.75-gentoo-x86_64 for x86_64 ...
* >> Compiling 5.15.75-gentoo-x86_64 bzImage ...
```

За процессом сборки можно следить с помощью команды **tail**, подключившись еще раз по SSH с хост машины:

```
( chroot ) livedcd / # tail -f /var/log/genkernel.log
```

```
( chroot ) livedd / # tail -f /var/log/genkernel.log
CC [M] drivers/gpu/drm/radeon/rs690.o
MKREG drivers/gpu/drm/radeon/rv515_reg_safe.h
CC [M] drivers/gpu/drm/radeon/rs20.o
CC [M] fs/xfs/xfs_error.o
CC [M] fs/xfs/xfs_export.o
CC [M] drivers/gpu/drm/radeon/r600.o
CC [M] fs/xfs/xfs_extents_busy.o
CC [M] drivers/gpu/drm/radeon/rv770.o
CC [M] fs/xfs/xfs_file.o
CC [M] drivers/gpu/drm/radeon/radeon_test.o
CC [M] fs/xfs/xfs_filestream.o
```

Параллельно сборке ядра мы можем установить необходимые пакеты. Установим службу **syslog**:

```
( chroot ) livedd / # eix syslog
```

```
( chroot ) livedd / # eix syslog
* app-admin/newsyslog
  Available versions: 1.1.0.81-r1
  Homepage:          http://www.weird.com/~woods/projects/newsyslog.html
  Description:       a highly configurable program for managing and archiving log files

* app-admin/rsyslog
  Available versions: 8.2102.0-r1^t 8.2112.0-r1^t 8.2206.0-r1^t 8.2208.0-r1^t ~8.2210.0-r1^t {clickhouse curl dbi debug doc elasticsearch +gcrypt gnutls imhttp impcap jemalloc kafka kerberos kubernetes md blookup mongodb mysql normalize omhttp omhttpfs omudpspool +openssl postgres rabbitmq redis relp rfc3195 rfc5424hmac snmp +ssl systemd test usertools +uuid xxhash zeromq}
  Homepage:          https://www.rsyslog.com/
  Description:       An enhanced multi-threaded syslogd with database support and more

* app-admin/syslog-ng
  Available versions: 3.34.1^t 3.35.1^t 3.36.1^t ~3.37.1^t ~3.38.1^t {amqp caps dbi geoip2 http ipv6 json kafka mongodb pacct python redis smtp snmp spoof-source systemd tcpd test PYTHON_SINGLE_TARGET="python3_8 python3_9 python3_10 python3_11"}
  Homepage:          https://www.syslog-ng.com/products/open-source-log-management/
  Description:       syslog replacement with advanced filtering features
```

Стандартным сервисом для Gentoo является **syslog-ng**, устанавливаем данный пакет:

```
( chroot ) livedd / # emerge -vp app-admin/syslog-ng
```

```
( chroot ) livedd / # emerge -vp app-admin/syslog-ng

These are the packages that would be merged, in order:

Calculating dependencies... done!
[ebuild N    ] dev-libs/ivykis-0.42.4::gentoo USE="-static-libs" 642 KiB
[ebuild N    ] app-admin/syslog-ng-3.36.1::gentoo USE="ipv6 python systemd -amqp -caps -dbi -geoip2 -http -json -kafka -mongodb -pacct -redis -smtp -snmp -spoof-source -tcpd -test" PYTHON_SINGLE_TARGET="python3_10 -python3_8 -python3_9" 5829 KiB

Total: 2 packages (2 new), Size of downloads: 6471 KiB
( chroot ) livedd / # █
```

```
( chroot ) livedd / # emerge app-admin/syslog-ng
```

```
>>> Installing (2 of 2) app-admin/syslog-ng-3.36.1::gentoo
* It is highly recommended that app-admin/logrotate be emerged to
* manage the log files. syslog-ng installs a file in /etc/logrotate.d
* for logrotate to use.
* The service file for systemd has changed to support multiple instances.
* To start the default instance issue:
* # systemctl start syslog-ng@default

>>> Recording app-admin/syslog-ng in "world" favorites file...

* Messages for package app-admin/syslog-ng-3.36.1:

* It is highly recommended that app-admin/logrotate be emerged to
* manage the log files. syslog-ng installs a file in /etc/logrotate.d
* for logrotate to use.
* The service file for systemd has changed to support multiple instances.
* To start the default instance issue:
* # systemctl start syslog-ng@default

* GNU info directory index is up-to-date.
(chroot) livecd / #
```

Установим службу планировщика задач **cron**:

```
( chroot ) livecd / # eix cronie
```

```
( chroot ) livecd / # eix cronie
* sys-process/cronie
  Available versions: 1.6.1-r1 1.6.1-r2 {+anacron +inotify pam selinux}
  Homepage:          https://github.com/cronie-cron/cronie
  Description:       Cronie is a standard UNIX daemon cron based on the original vixie-cron

(chroot) livecd / #
```

```
( chroot ) livecd / # emerge -vp sys-process/cronie
```

```
( chroot ) livecd / # emerge -vp sys-process/cronie

These are the packages that would be merged, in order:

Calculating dependencies... done!
[ebuild N    ] acct-group/cron-0::gentoo  0 KiB
[ebuild N    ] acct-group/crontab-0::gentoo  0 KiB
[ebuild N    ] acct-user/cron-0::gentoo  0 KiB
[ebuild N    ] sys-process/cronbase-0.3.7-r8::gentoo  0 KiB
[ebuild N    ] sys-process/cronie-1.6.1-r2::gentoo  USE="anacron inotify pam (-selinux)" 147 KiB

Total: 5 packages (5 new), Size of downloads: 147 KiB
(chroot) livecd / #
```

```
( chroot ) livecd / # emerge sys-process/cronie
```

```
>>> Recording sys-process/cronie in "world" favorites file...

* Messages for package acct-group/cron-0:
* Adding group cron

* Messages for package acct-group/crontab-0:
* Adding group crontab

* Messages for package acct-user/cron-0:
* Adding user cron

* GNU info directory index is up-to-date.
(chroot) livecd / #
```

Установим пакет **sudo**:

```
( chroot ) livecd / # eix sudo
```

```
( chroot ) livecd / # eix sudo
* app-admin/sudo
  Available versions: 1.9.11_p3-r1 1.9.12_p1 **9999*l {gcrypt ldap nls offensive pam sasl +secure-pa
th selinux +sendmail skey ssl sssd verify-sig}
  Homepage:          https://www.sudo.ws/
  Description:       Allows users or groups to run commands as other users
```

```
( chroot ) livecd / # emerge -vp app-admin/sudo
( chroot ) livecd / # emerge app-admin/sudo
```

```
* Messages for package app-admin/sudo-1.9.12_p1:
*
* To use the -A (askpass) option, you need to install a compatible
* password program from the following list. Starred packages will
* automatically register for the use with sudo (but will not force
* the -A option):
*
* [*] net-misc/ssh-askpass-fullscreen
*      net-misc/x11-ssh-askpass
*
* You can override the choice by setting the SUDO_ASKPASS environment
* variable to the program you want to use.
*
* GNU info directory index is up-to-date.
( chroot ) livecd / #
```

Установим пакет **sddm** (Simple Desktop Display Manager):

```
( chroot ) livecd / # eix sddm
```

```
( chroot ) livecd / # eix sddm
* acct-group/sddm
  Available versions: 0
  Description:       A group for x11-misc/sddm
* acct-user/sddm
  Available versions: 0
  Description:       A user for x11-misc/sddm
* kde-plasma/sddm-kcm
  Available versions: (5) 5.25.5 ~5.26.3
  {debug}
  Homepage:          https://invent.kde.org/plasma/sddm-kcm
  Description:       KDE Plasma control module for SDDM
* x11-misc/sddm
  Available versions: 0.18.1-r6^t ~0.18.1-r7^t {+elogind +pam systemd test}
  Homepage:          https://github.com/sddm/sddm
  Description:       Simple Desktop Display Manager

Found 4 matches
( chroot ) livecd / #
```

```
( chroot ) livecd / # emerge -vp x11-misc/sddm
```

```
( chroot ) lived / # emerge -vp x11-misc/sddm

These are the packages that would be merged, in order:

Calculating dependencies... done!
[ebuild N ] acct-group/sddm-0::gentoo 0 KiB
[ebuild N ] x11-misc/util-macros-1.19.3::gentoo 83 KiB
[ebuild N ] x11-misc/xbitmaps-1.1.2-r1::gentoo 127 KiB
[ebuild N ] sys-apps/hwdata-0.364::gentoo 2237 KiB
[ebuild N ] acct-user/sddm-0::gentoo 0 KiB
[ebuild N ] x11-misc/xkeyboard-config-2.36::gentoo 861 KiB
[ebuild N ] app-emulation/spice-protocol-0.14.3::gentoo 22 KiB
[ebuild N ] x11-libs/libpciaccess-0.16-r1::gentoo USE="zlib" ABI_X86="(64) -32 (-x32)" 359 KiB
[ebuild N ] x11-libs/libxkbfile-1.1.0::gentoo ABI_X86="(64) -32 (-x32)" 357 KiB
[ebuild N ] x11-apps/iceauth-1.0.9::gentoo 128 KiB
[ebuild N ] x11-apps/rgb-1.0.6-r1::gentoo 136 KiB
[ebuild N ] x11-libs/libXfont2-2.0.5::gentoo USE="bzip2 ipv6 truetype -doc" 513 KiB
[ebuild N ] x11-libs/libxcvt-0.1.2::gentoo 10 KiB
[ebuild N ] media-libs/libepoxy-1.5.10-r1::gentoo USE="X egl -test" ABI_X86="(64) -32 (-x32)" 325 KiB
[ebuild N ] x11-apps/xrdb-1.2.1::gentoo 140 KiB
[ebuild N ] x11-apps/xkbcomp-1.4.5::gentoo 246 KiB
[ebuild N ] x11-apps/xinit-1.4.1-r1::gentoo USE="-twm" 173 KiB
[ebuild N ] x11-base/xorg-server-21.1.4:0/21.1.4::gentoo USE="systemd udev xorg -debug (-elogind) -minimal (-selinux) -suid -test -unwind -xcsecurity -xephyr -xnest -xvfb" 4825 KiB
[ebuild N ] x11-base/xorg-drivers-21.1-r1::gentoo INPUT_DEVICES="libinput -elographics -evdev -joy stick -synaptics -vmouse -void -wacom" VIDEO_CARDS="qxl -amdgpu -ast -dummy -fbdev (-freedreno) (-geode) -i915 -intel -mga -nouveau (-nv) -nvidia (-omap) -r128 -radeon -radeonsi -siliconmotion (-tegra) (-vc4) -vesa -via -virtualbox -vmware" 0 KiB
[ebuild N ] x11-drivers/xf86-input-libinput-1.2.1::gentoo 306 KiB
[ebuild N ] x11-drivers/xf86-video-qxl-0.1.5_p20200205-r1::gentoo USE="-xspice" PYTHON_SINGLE_TARGET="python3_10 -python3_8 -python3_9" 135 KiB
[ebuild N ] x11-misc/sddm-0.18.1-r6::gentoo USE="pam systemd (-elogind) -test" 3324 KiB

Total: 22 packages (22 new), Size of downloads: 14297 KiB
( chroot ) lived / #
```

```
( chroot ) lived / # emerge x11-misc/sddm

* Messages for package x11-misc/sddm-0.18.1-r6:

* Starting with 0.18.0, SDDM no longer installs /etc/sddm.conf
* Use it to override specific options. SDDM defaults are now
* found in: /usr/share/sddm/sddm.conf.d/00default.conf
*
* NOTE: If SDDM startup appears to hang then entropy pool is too low.
* This can be fixed by configuring one of the following:
*   - Enable CONFIG_RANDOM_TRUST_CPU in linux kernel
*   - # emerge sys-apps/haveged && rc-update add haveged boot
*   - # emerge sys-apps/rng-tools && rc-update add rngd boot
*
* For more information on how to configure SDDM, please visit the wiki:
* https://wiki.gentoo.org/wiki/SDDM
*
* GNU info directory index is up-to-date.
*
* IMPORTANT: 1 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

( chroot ) lived / #
```

Установим пакет загрузчика **grub**:

```
( chroot ) lived / # eix grub
```

```
* sys-boot/grub
  Available versions: (2) 2.06-r3(2/2.06-r3)^t 2.06-r4(2/2.06-r4)^t **9999(2/9999)*l^t
  {device-mapper doc efiemu +fonts libzfs mount nls sdl test +themes truetype GRUB_PLATFORMS="coreboot efi-32 efi-64 emu ieee1275 loongson multiboot pc qemu qemu-mips uboot xen xen-32 xen-pvh"}
  Homepage:          https://www.gnu.org/software/grub/
  Description:       GNU GRUB boot loader

* x11-misc/grub2-theme-preview
  Available versions: ~2.5.0^t ~2.6.0^t ~2.7.0^t {test GRUB_PLATFORMS="efi-64" PYTHON_TARGETS="python3_8 python3_9 python3_10 python3_11"}
  Homepage:          https://github.com/hartwork/grub2-theme-preview
  Description:       Preview a GRUB 2.x theme using KVM/QEMU

Found 5 matches
(chroot) livecd / #
```

```
( chroot ) livecd / # emerge -vp sys-boot/grub
(chroot) livecd / # emerge -vp sys-boot/grub

These are the packages that would be merged, in order:

Calculating dependencies... done!
[ebuild N ] sys-boot/grub-2.06-r4:2/2.06-r4::gentoo USE="fonts nls sdl themes truetype -device-mapper -doc -efiemu -libzfs -mount (-test)" GRUB_PLATFORMS="pc -coreboot -efi-32 -efi-64 -emu -ieee1275 (-loongson) -multiboot -qemu (-qemu-mips) -uboot -xen -xen-32 -xen-pvh" 8180 KiB

Total: 1 package (1 new), Size of downloads: 8180 KiB

* IMPORTANT: 1 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

(chroot) livecd / #
```

Добавим еще один пакет:

```
( chroot ) livecd / # emerge sys-boot/grub sys-apps/pciutils
>>> Installing (2 of 2) sys-apps/pciutils-3.8.0-r1::gentoo
>>> Recording sys-apps/pciutils in "world" favorites file...

* Messages for package sys-boot/grub-2.06-r4:

* For information on how to configure GRUB2 please refer to the guide:
  https://wiki.gentoo.org/wiki/GRUB2_Quick_Start
*
* Install additional packages for optional runtime features:
* sys-boot/os-prober for detecting other operating systems (grub-mkconfig)
* dev-libs/libisoburn for creating rescue media (grub-mkrescue)
* sys-fs/mdadm for enabling RAID device detection

* Regenerating GNU info directory index...
* Processed 90 info files.

* IMPORTANT: 1 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

(chroot) livecd / #
```

Установим стандартный для KDE пакет консоли **konsole**:

```
( chroot ) livecd / # eix konsole
```

```
( chroot ) livecd / # eix konsole
* kde-apps/konsole
  Available versions: (5) 22.04.3^t ~22.08.3^t
  {X debug +handbook test}
  Homepage:          https://apps.kde.org/konsole/ https://konsole.kde.org
  Description:       KDE's terminal emulator

* kde-apps/konsolekalendar
  Available versions: (5) 22.04.3 ~22.08.3
  {debug +handbook}
  Homepage:          https://apps.kde.org/ https://userbase.kde.org/KonsoleKalendar
  Description:       Command line interface to KDE calendars

Found 2 matches
( chroot ) livecd / #
```

```
( chroot ) livecd / # emerge -vp kde-apps/console
( chroot ) livecd / # emerge kde-apps/console
```

Параллельно установим пакет файлового менеджера **mc**:

```
( chroot ) livecd / # eix app-misc/mc
( chroot ) livecd / # emerge -vp app-misc/mc
( chroot ) livecd / # emerge app-misc/mc
```

```
* WARNING... WARNING... WARNING...
* Additional kernel parameters that *may* be required to boot properly:

* Do NOT report kernel bugs as genkernel bugs unless your bug
* is about the default genkernel configuration...
*
* Make sure you have the latest ~arch genkernel before reporting bugs.
( chroot ) livecd / # eix app-misc/mc
* app-misc/mc
  Available versions: 4.8.28-r2^t **9999*l^t {X +edit gpm nls sftp +slang spell test unicode}
  Homepage:          https://midnight-commander.org
  Description:       GNU Midnight Commander is a text based file manager

( chroot ) livecd / # emerge -vp app-misc/mc

These are the packages that would be merged, in order:

Calculating dependencies * waiting for lock on /var/db/.pkg.portage_lockfile ...
[ ok ]

... done!
[ebuild N ] app-text/aspell-0.60.8-r4::gentoo USE="nls unicode" L10N="en ru -af -am -ar -ast -az -
be -bg -bn -br -ca -cs -csb -cy -da -de -de-1901 -el -eo -es -et -fa -fi -fo -fr -fy -ga -gd -gl -grc -g
u -gv -he -hi -hil -hr -hsb -hu -hus -hy -ia -id -is -it -kn -ku -ky -la -lt -lv -mg -mi -mk -ml -mn -mr
-ms -mt -nb -nds -nl -nn -no -ny -or -pa -pl -pt-BR -pt-PT -qu -ro -rw -sc -sk -sl -sr -sv -sw -ta -te
-tet -tk -tl -tn -tr -uk -uz -vi -wa -yi -zu" 3405 KiB
[ebuild N ] app-dicts/aspell-ru-0.99.1-r2::gentoo 418 KiB
[ebuild N ] app-dicts/aspell-en-2020.12.07.0-r1::gentoo 185 KiB
[ebuild N ] app-misc/mc-4.8.28-r2::gentoo USE="X edit gpm nls slang spell unicode -sftp -test" 227
9 KiB

Total: 4 packages (4 new), Size of downloads: 6285 KiB

* IMPORTANT: 1 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

( chroot ) livecd / #
```

```
* Messages for package app-misc/mc-4.8.28-r2:

* To enable exiting to latest working directory,
* put this into your ~/.bashrc:
* . /usr/libexec/mc/mc.sh

* Regenerating GNU info directory index...
* Processed 93 info files.

* IMPORTANT: 2 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

( chroot ) livecd / #
```

```

Left      File      Command  Options  Right
<- /      .[^]>    <- /boot .[^]>
Name      Size    Modify time
/bin      4096    Dec 4 20:42
/boot    4096    Dec 6 18:56
/dev     3520    Nov 28 20:14
/etc     4096    Dec 6 20:52
/home    4096    Nov 27 21:08
/lib     4096    Dec 6 18:46
/lib64   4096    Dec 6 19:53
/lost+found 16384  Nov 28 20:15
/media   4096    Nov 27 21:08
/mnt     4096    Nov 27 21:08
/opt     4096    Nov 27 21:08
/proc    0        Nov 28 19:12
/root    4096    Dec 6 20:52
/run     4096    Dec 6 18:43
/sbin    4096    Nov 29 04:18
/sys     0        Nov 28 19:12
/tmp     4096    Dec 6 20:52
/usr     4096    Nov 27 21:11
/var     4096    Nov 27 21:08
build.txt 629     Dec 4 20:28

/bin      18G/43G (41%)
UP- -DIR 18G/43G (41%)

Hint: You can specify the username when doing ftps: 'cd ftp://user@machine.edu'
lived /boot #
1Help 2Menu 3View 4Edit 5Copy 6RenMov 7Mkdir 8Delete 9PullDn 10Quit

```

Установим пакет **bash-comple**:

```
( chroot ) lived / # eix bash-comple
```

```

( chroot ) lived / # eix bash-comple
* app-shells/bash-completion
  Available versions: 2.11^t **9999*l^t [+eselect test]
  Homepage:          https://github.com/scop/bash-completion
  Description:       Programmable Completion for bash

* app-shells/tmux-bash-completion
  Available versions: **9999*l
  Homepage:          https://github.com/imomaliyev/tmux-bash-completion
  Description:       bash-completion scripts for tmux

Found 2 matches
( chroot ) lived / #

```

```
( chroot ) lived / # emerge app-shells/bash-completion
```

```

>>> Installing (3 of 3) app-shells/bash-completion-2.11::gentoo
>>> Recording app-shells/bash-completion in "world" favorites file...

* Regenerating GNU info directory index...
* Processed 93 info files.

* IMPORTANT: 2 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

( chroot ) lived / #

```

Далее необходимо отредактировать файл **fstab**, в котором будут храниться наши точки монтирования:

```
( chroot ) livecd / # blkid
( chroot ) livecd / # blkid | grep sda >> /etc/fstab
( chroot ) livecd / # vim /etc/fstab
```

```
( chroot ) livecd / # blkid
/dev/loop0: TYPE="squashfs"
/dev/sda4: LABEL="root" UUID="1484fdd8-4f65-4dbd-8b4d-810db8f037e2" BLOCK_SIZE="4096" TYPE="ext4" PARTLABEL="Linux filesystem" PARTUUID="15c9b1ac-b7a9-4140-be07-144dba8102bc"
/dev/sda2: UUID="75144c8d-b742-4aa0-a4e8-c9cdfcc7aed9" TYPE="swap" PARTLABEL="Linux swap" PARTUUID="ad449585-9228-4611-beb9-059c2b874aeb"
/dev/sda3: LABEL="tmp" UUID="295b5b48-5bef-4c87-a994-6603b73315a7" BLOCK_SIZE="4096" TYPE="ext4" PARTLABEL="Linux filesystem" PARTUUID="8a4ad681-e90a-4a59-b795-8b01fd247796"
/dev/sda1: PARTLABEL="BIOS boot partition" PARTUUID="d4244394-fda7-44ae-966b-6e43a2de0338"
( chroot ) livecd / # blkid | grep sda >> /etc/fstab
( chroot ) livecd / # vim /etc/fstab
```

```
( chroot ) livecd / # blkid
( chroot ) livecd / # blkid | grep sda >> /etc/fstab
( chroot ) livecd / # vim /etc/fstab
```

```
# <fs>                <mountpoint>    <type>          <opts>          <dump/pass>
UUID=75144c8d-b742-4aa0-a4e8-c9cdfcc7aed9 none            swap            sw              0 0
UUID=1484fdd8-4f65-4dbd-8b4d-810db8f037e2 /              ext4            noatime,nodir  0 1
UUID=295b5b48-5bef-4c87-a994-6603b73315a7 /tmp           ext4            noatime,nodir  0 1
```

Устанавливаем загрузчик **grub**:

```
( chroot ) livecd / # grub-install --force --no-floppy /dev/sda
( chroot ) livecd / # grub-install --force --no-floppy /dev/sda
Installing for i386-pc platform.
Installation finished. No error reported.
( chroot ) livecd / #
```

Загрузчик установлен. Отредактируем файл конфигурации загрузчика:

```
( chroot ) livecd / # vim /etc/default/grub
```

```
GRUB_DISTRIBUTOR="Gentoo"

# Default menu entry
#GRUB_DEFAULT=0

# Boot the default entry this many seconds after the menu is displayed
#GRUB_TIMEOUT=5
#GRUB_TIMEOUT_STYLE=menu

# Append parameters to the linux kernel command line
GRUB_CMDLINE_LINUX="init=/lib/systemd/systemd"
#
```

Вводим команду:

```
( chroot ) livecd / # grub-mkconfig -o /boot/grub/grub.cfg
```

```
( chroot ) livecd / # grub-mkconfig -o /boot/grub/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-5.15.75-gentoo-x86_64
Found initrd image: /boot/initramfs-5.15.75-gentoo-x86_64.img
Warning: os-prober will not be executed to detect other bootable partitions.
Systems on them will not be added to the GRUB boot configuration.
Check GRUB_DISABLE_OS_PROBER documentation entry.
done
( chroot ) livecd / #
```

Сконфигурируем **systemd**:

```
( chroot ) livecd / # systemctl enable cronie
( chroot ) livecd / # systemctl enable dbus
( chroot ) livecd / # systemctl enable sshd
```

Создадим пользователя:

```
( chroot ) livecd / # useradd -m -d /home/tech -G wheel -c
"Trifontsov V. Anton" -s /bin/bash tech
```

```
( chroot ) livecd / # useradd -m -d /home/tech -G wheel -c "Trifontsov V. Anton" -s /bin/bash tech
Creating mailbox file: No such file or directory
( chroot ) livecd / #
```

Проверяем:

```
( chroot ) livecd / # su - tech
```

```
( chroot ) livecd / # useradd -m -d /home/tech -G wheel -c "Trifontsov V. Anton" -s /bin/bash tech
Creating mailbox file: No such file or directory
( chroot ) livecd / # su - tech
tech@livecd ~ $
```

Вводим команду:

```
( chroot ) livecd / # visudo
```

И раскомментируем следующие строки:

```
%wheel ALL=(ALL:ALL) ALL
%sudo ALL=(ALL:ALL) ALL
```

```
## User privilege specification
##
root ALL=(ALL:ALL) ALL

## Uncomment to allow members of group wheel to execute any command
%wheel ALL=(ALL:ALL) ALL

## Same thing without a password
# %wheel ALL=(ALL:ALL) NOPASSWD: ALL

## Uncomment to allow members of group sudo to execute any command
%sudo ALL=(ALL:ALL) ALL

## Uncomment to allow any user to run sudo if they know the password
## of the user they are running the command as (root by default).
# Defaults targetpw # Ask for the password of the target user
# ALL ALL=(ALL:ALL) ALL # WARNING: only use this together with 'Defaults targetpw'

## Read drop-in files from /etc/sudoers.d
@includedir /etc/sudoers.d
```

91,1

Bot

Устанавливаем пользователю пароль:

```
( chroot ) livecd / # passwd tech
```

```
( chroot ) livecd / # passwd tech

You can now choose the new password or passphrase.

A valid password should be a mix of upper and lower case letters, digits, and
other characters. You can use a password containing at least 7 characters
from all of these classes, or a password containing at least 8 characters
from just 3 of these 4 classes.
An upper case letter that begins the password and a digit that ends it do not
count towards the number of character classes used.

A passphrase should be of at least 3 words, 11 to 72 characters long, and
contain enough different characters.

Alternatively, if no one else can see your terminal now, you can pick this as
your password: "wander6shabby5boring".

Enter new password:
Re-type new password:
passwd: password updated successfully
( chroot ) livecd / #
```

Отообразим список всех групп:

```
( chroot ) livecd / # getent group
```

Добавим нашего пользователя в следующие группы:

```
( chroot ) livecd / # gpasswd -a tech disk
( chroot ) livecd / # gpasswd -a tech lp
( chroot ) livecd / # gpasswd -a tech mem
( chroot ) livecd / # gpasswd -a tech kmem
( chroot ) livecd / # gpasswd -a tech audio
( chroot ) livecd / # gpasswd -a tech cdrom
( chroot ) livecd / # gpasswd -a tech tape
( chroot ) livecd / # gpasswd -a tech video
( chroot ) livecd / # gpasswd -a tech cdrw
( chroot ) livecd / # gpasswd -a tech usb
( chroot ) livecd / # gpasswd -a tech messagebus
( chroot ) livecd / # gpasswd -a tech plugdev
( chroot ) livecd / # gpasswd -a tech polkitd
( chroot ) livecd / # gpasswd -a tech lpadmin
```

Проверим в какие группы добавлен пользователь:

```
( chroot ) livecd / # id tech
```

```
( chroot ) livecd / # gpasswd -a tech disk
Adding user tech to group disk
( chroot ) livecd / # gpasswd -a tech lp
Adding user tech to group lp
( chroot ) livecd / # gpasswd -a tech mem
Adding user tech to group mem
( chroot ) livecd / # gpasswd -a tech kmem
Adding user tech to group kmem
( chroot ) livecd / # gpasswd -a tech audio
Adding user tech to group audio
( chroot ) livecd / # gpasswd -a tech cdrom
Adding user tech to group cdrom
( chroot ) livecd / # gpasswd -a tech tape
Adding user tech to group tape
( chroot ) livecd / # gpasswd -a tech video
Adding user tech to group video
( chroot ) livecd / # gpasswd -a tech cdrw
Adding user tech to group cdrw
( chroot ) livecd / # gpasswd -a tech usb
Adding user tech to group usb
( chroot ) livecd / # gpasswd -a tech messagebus
Adding user tech to group messagebus
( chroot ) livecd / # gpasswd -a tech plugdev
Adding user tech to group plugdev
( chroot ) livecd / # gpasswd -a tech polkitd
Adding user tech to group polkitd
( chroot ) livecd / # gpasswd -a tech lpadmin
Adding user tech to group lpadmin
( chroot ) livecd / # id tech
uid=1000(tech) gid=1000(tech) groups=1000(tech),6(disk),7(lp),8(mem),9(kmem),10(wheel),18(audio),19(cdrom),26(tape),27(video),80(cdrw),85(usb),101(messagebus),272(plugdev),102(polkitd),106(lpadmin)
( chroot ) livecd / #
```

### Установим пакеты htop и lsof:

```
( chroot ) livecd / # eix htop
( chroot ) livecd / # eix lsof
```

```
( chroot ) livecd / # eix htop
* sys-process/bashtop
  Available versions: ~0.9.25
  Homepage:          https://github.com/aristocratos/bashtop
  Description:       Resource monitor that shows usage and stats

* sys-process/htop
  Available versions: 3.2.1-r1 3.2.1-r2 **9999*1 {caps debug delayacct hwloc llvm-libunwind lm-sensors opencv unicode unwind vserver}
  Homepage:          https://htop.dev/ https://github.com/htop-dev/htop
  Description:       interactive process viewer

Found 2 matches
( chroot ) livecd / # eix lsof
* sys-process/lsof
  Available versions: 4.95.0^t 4.96.3^t ~4.96.4^t {examples ipv6 rpc selinux}
  Homepage:          https://github.com/lsof-org/lsof
  Description:       Lists open files for running Unix processes

( chroot ) livecd / #
```

```
( chroot ) livecd / # emerge sys-process/htop sys-process/lsof
```

```
>>> Installing (2 of 2) sys-process/htop-3.2.1-r2::gentoo
* Updating .desktop files database ... [ ok ]
* Updating icons cache ... [ ok ]

>>> Recording sys-process/htop in "world" favorites file...

* GNU info directory index is up-to-date.

* IMPORTANT: 3 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

( chroot ) livecd / #
```

Установим пакеты **tcpdump** и **telnet**:

```
( chroot ) livedcd / # eix tcpdump
( chroot ) livedcd / # eix telnet
( chroot ) livedcd / # emerge net-analyzer/tcpdump net-
misc/telnet-bsd
```

Добавим нашего пользователя в группу **pcap**:

```
( chroot ) livedcd / # gpasswd -a tech pcap
```

Установим пакет **ethtool**:

```
( chroot ) livedcd / # eix ethtool
( chroot ) livedcd / # emerge sys-apps/ethtool
```

Установим пакет **qemu**:

```
( chroot ) livedcd / # eix qemu
( chroot ) livedcd / # emerge app-emulation/qemu-guest-agent
```

Добавим службу **qemu** в автозагрузку:

```
( chroot ) livedcd / # systemctl enable qemu-guest-agent
```

Из директории **/var/cache/distfiles** удалим все файлы за исключением двух:

Left	File	Command	Options	Right
<- /				<- /var/cache/distfiles
.n	Name		Size   Modify time	.n
/bin			4096   Dec 4 20:42	..
/boot			4096   Dec 6 21:31	.layout.conf.d-es.gentoo.org
/dev			3520   Nov 28 20:14	.mirror-cache.json
/etc			4096   Dec 7 19:43	
/home			4096   Dec 7 17:53	

Вводим следующие команды:

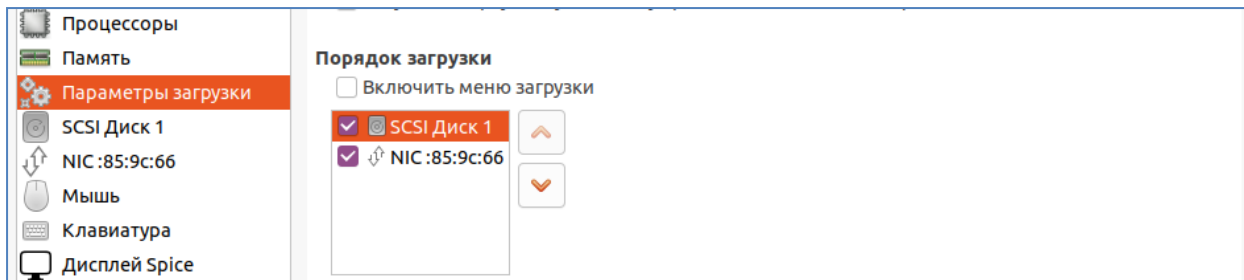
```
( chroot ) livedcd / # exit
livedcd / # cd /mnt/gentoo
livedcd /mnt/gentoo # umount dev/pts
livedcd /mnt/gentoo # umount dev/shm
livedcd /mnt/gentoo # umount dev
livedcd /mnt/gentoo # umount proc
livedcd /mnt/gentoo # umount sys
livedcd /mnt/gentoo # mount
livedcd /mnt/gentoo # ls -la
livedcd /mnt/gentoo # tar -cvzf gentoo.tar.gz bin boot dev etc
home lib lib64 media mnt opt proc run sbin sys tmp usr var
```

После того, как наш архив создан выключаем VM:

```
livedcd ~ # poweroff
```

```
3: bond0: <NO-CARRIER,BROADCAST,MULTICAST,MASTER,UP> mtu 1500 qdisc noqueue stat
e DOWN group default qlen 1000
    link/ether 9a:8e:c9:93:61:d9 brd ff:ff:ff:ff:ff:ff
livedcd ~ # poweroff_
```

Заходим в меню **Показать виртуальное оборудование** и в **Параметрах загрузки** выставляем загрузку с диска.



Нажимаем кнопку **Применить**, запускаем VM.

```
This is localhost.unknown_domain (Linux x86_64 5.15.75-gentoo-x86_64) 21:08:36
localhost login: tech
Password:
Last login: Wed Dec  7 17:54:38 -00 2022 on pts/0
tech@localhost ~ $ sudo su -

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

#1) Respect the privacy of others.
#2) Think before you type.
#3) With great power comes great responsibility.

Password:
```

Система запустилась.

Добавляем в автозагрузку **syslog-ng**:

```
localhost ~ # systemctl enable syslog-ng@default
localhost ~ # systemctl start syslog-ng@default
localhost ~ # systemctl status syslog-ng@default
```

```
localhost ~ # systemctl enable syslog-ng@default
Created symlink /etc/systemd/system/multi-user.target.wants/syslog-ng@default.service → /lib/systemd/system/syslog-ng@.
localhost ~ # systemctl start syslog-ng@default
localhost ~ # systemctl status syslog-ng@default
■ syslog-ng@default.service - System Logger Daemon "default" instance
   Loaded: loaded (/lib/systemd/system/syslog-ng@.service; enabled; preset: disabled)
   Active: active (running) since Wed 2022-12-07 21:10:53 -00; 7s ago
     Docs: man:syslog-ng(8)
  Main PID: 1053 (syslog-ng)
    Tasks: 6 (limit: 4696)
   Memory: 7.0M
      CPU: 164ms
   CGroup: /system.slice/system-syslog\x2dng.slice/syslog-ng@default.service
           └─1053 /usr/sbin/syslog-ng -F --enable-core --cfgfile /etc/syslog-ng/syslog-ng.conf --control /run/syslog-

Dec 07 21:10:53 localhost systemd[1]: Starting System Logger Daemon "default" instance...
Dec 07 21:10:53 localhost systemd[1]: Started System Logger Daemon "default" instance.
lines 1-13/13 (END)
```

Подключим сеть:

```
localhost ~ # ifconfig -a
localhost ~ # ifconfig enp3s0 10.100.10.23/26
localhost ~ # route add default gw 10.100.10.1
localhost ~ # ping ya.ru
```

```
localhost ~ # ifconfig -a
emp3s0: flags=4098<BROADCAST,MULTICAST> mtu 1500
    ether 52:54:00:85:9c:66 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

localhost ~ # ifconfig emp3s0 10.100.10.23/26
localhost ~ # route add default gw 10.100.10.1
localhost ~ # ping ya.ru
PING ya.ru (87.250.250.242) 56(84) bytes of data.
64 bytes from ya.ru (87.250.250.242): icmp_seq=1 ttl=246 time=34.1 ms
64 bytes from ya.ru (87.250.250.242): icmp_seq=2 ttl=246 time=34.2 ms
64 bytes from ya.ru (87.250.250.242): icmp_seq=3 ttl=246 time=34.0 ms
^C
--- ya.ru ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 34.046/34.141/34.242/0.080 ms
localhost ~ #
```

Подключимся к VM по SSH:

```
user@host:~$ ssh -l tech 10.100.10.23
```

Установим пакет **dhcp**:

```
localhost ~ # eix dhcp
```

```
* net-misc/dhcp
  Available versions: 4.4.3_p1 [+client ipv6 ldap selinux +server ssl vim-syntax]
  Homepage:          https://www.isc.org/dhcp
  Description:       ISC Dynamic Host Configuration Protocol (DHCP) client/server
```

```
localhost ~ # emerge -vp net-misc/dhcp
```

```
localhost ~ # emerge -vp net-misc/dhcp

These are the packages that would be merged, in order:

Calculating dependencies... done!
[ebuild N ] acct-group/dhcp-0-r1::gentoo 0 KiB
[ebuild N ] acct-user/dhcp-0-r1::gentoo 0 KiB
[ebuild N ] app-vim/dhcpd-syntax-20030825-r1::gentoo 3 KiB
[ebuild N ] net-misc/dhcp-4.4.3_p1::gentoo USE="client ipv6 server ssl vim-syntax -ldap (-selinux)"
9845 KiB

Total: 4 packages (4 new), Size of downloads: 9848 KiB

* IMPORTANT: 3 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.
```

Исключим из пакета **server**:

```
localhost ~ # echo "net-misc/dhcp -server" >>
/etc/portage/package.use/package.use
localhost ~ # emerge -vp net-misc/dhcp
```

```
Calculating dependencies... done!
[ebuild N ] acct-group/dhcp-0-r1::gentoo 0 KiB
[ebuild N ] acct-user/dhcp-0-r1::gentoo 0 KiB
[ebuild N ] app-vim/dhcpd-syntax-20030825-r1::gentoo 3 KiB
[ebuild N ] net-misc/dhcp-4.4.3_p1::gentoo USE="client ipv6 ssl vim-syntax -ldap (-selinux) -server"
9845 KiB
```

Устанавливаем пакет **dhcp**:

```
localhost ~ # emerge net-misc/dhcp
```

```
>>> Installing (4 of 4) net-misc/dhcp-4.4.3_p1::gentoo
* The client and relay functionality will be removed in the next release!
* Upstream have decided to discontinue this functionality.

>>> Recording net-misc/dhcp in "world" favorites file...

* Messages for package acct-group/dhcp-0-r1:
* Adding group dhcp

* Messages for package acct-user/dhcp-0-r1:
* Adding user dhcp

* Messages for package app-vim/dhcpd-syntax-20030825-r1:
*
* This plugin provides syntax highlighting for dhcpd.conf files.
*

* Messages for package net-misc/dhcp-4.4.3_p1:
* The client and relay functionality will be removed in the next release!
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* GNU info directory index is up-to-date.

* IMPORTANT: 3 news items need reading for repository 'gentoo'.
* Use eselect news read to view new items.

localhost ~ #
```