

# Лабораторная работа №1

Установка и конфигурация операционной системы на виртуальную машину

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Сулейм Гамбердов

Российский университет дружбы народов, Москва, Россия

## Цель работы

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## Формулировка цели

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Приобрести практические навыки установки операционной системы на виртуальную машину и настройки минимально необходимых для дальнейшей работы сервисов.

## Ход выполнения работы

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# Создание ВМ и выбор ISO-образа

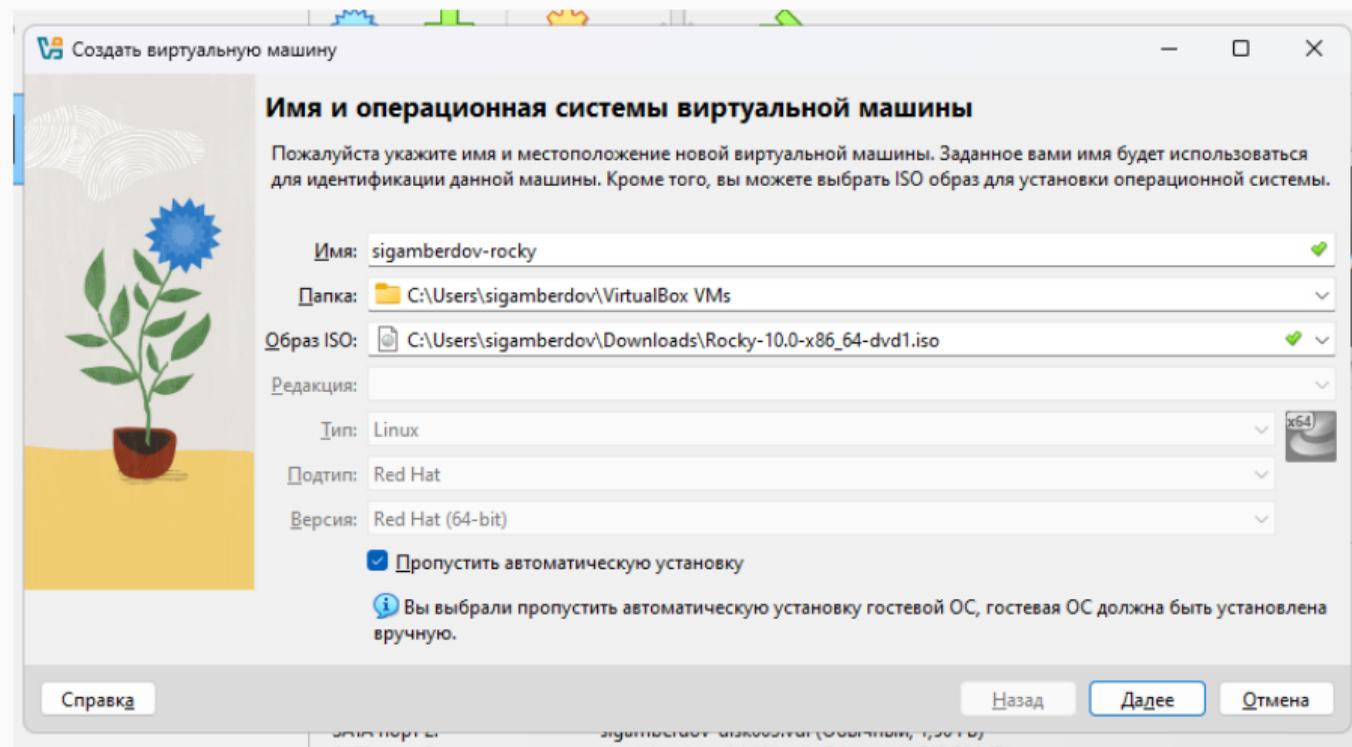


Рис. 1: Создание виртуальной машины и выбор ISO-образа

# Базовые параметры виртуальной машины

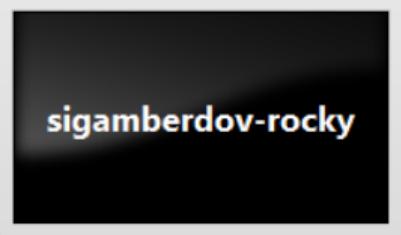
Общие

Имя: sigamberdov-rocky  
ОС: Red Hat (64-bit)

Система

Оперативная память: 4096 МБ  
Процессоры: 2  
Порядок загрузки: Гибкий диск, Оптический диск, Жёсткий диск  
Ускорение: Nested Paging, PAE/NX, Паравиртуализация KVM

Превью



Дисплей

Видеопамять: 16 МБ  
Графический контроллер: VMSVGA  
Сервер удалённого дисплея: Выключен  
Запись: Выключена

Носители

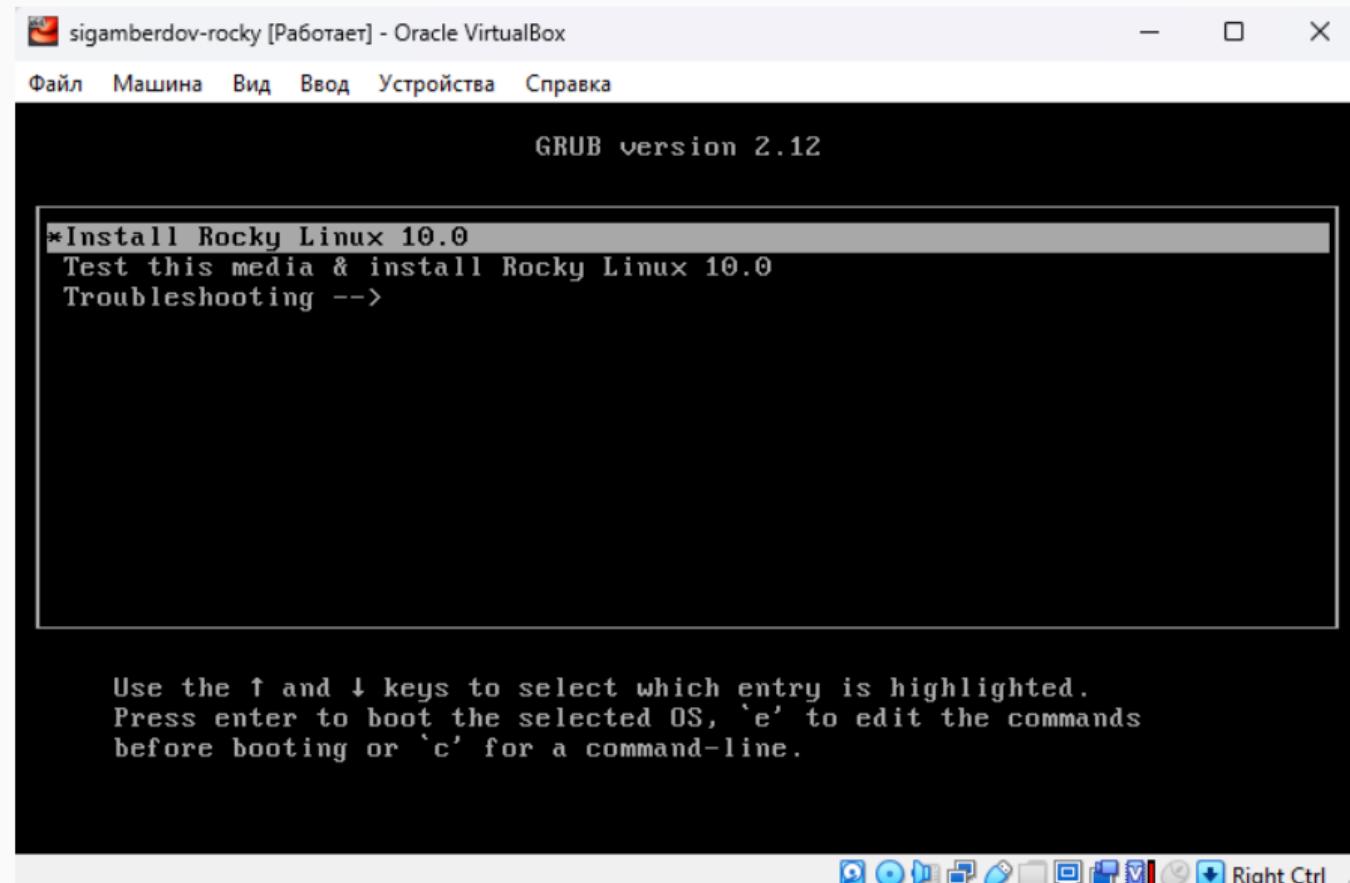
Контроллер: IDE  
Вторичное устройство IDE 0: [Оптический привод] Rocky-10.0-x86\_64-dvd1.iso (7,13 ГБ)  
Контроллер: SATA  
SATA порт 0: sigamberdov-rocky.vdi (Обычный, 50,00 ГБ)

Аудио

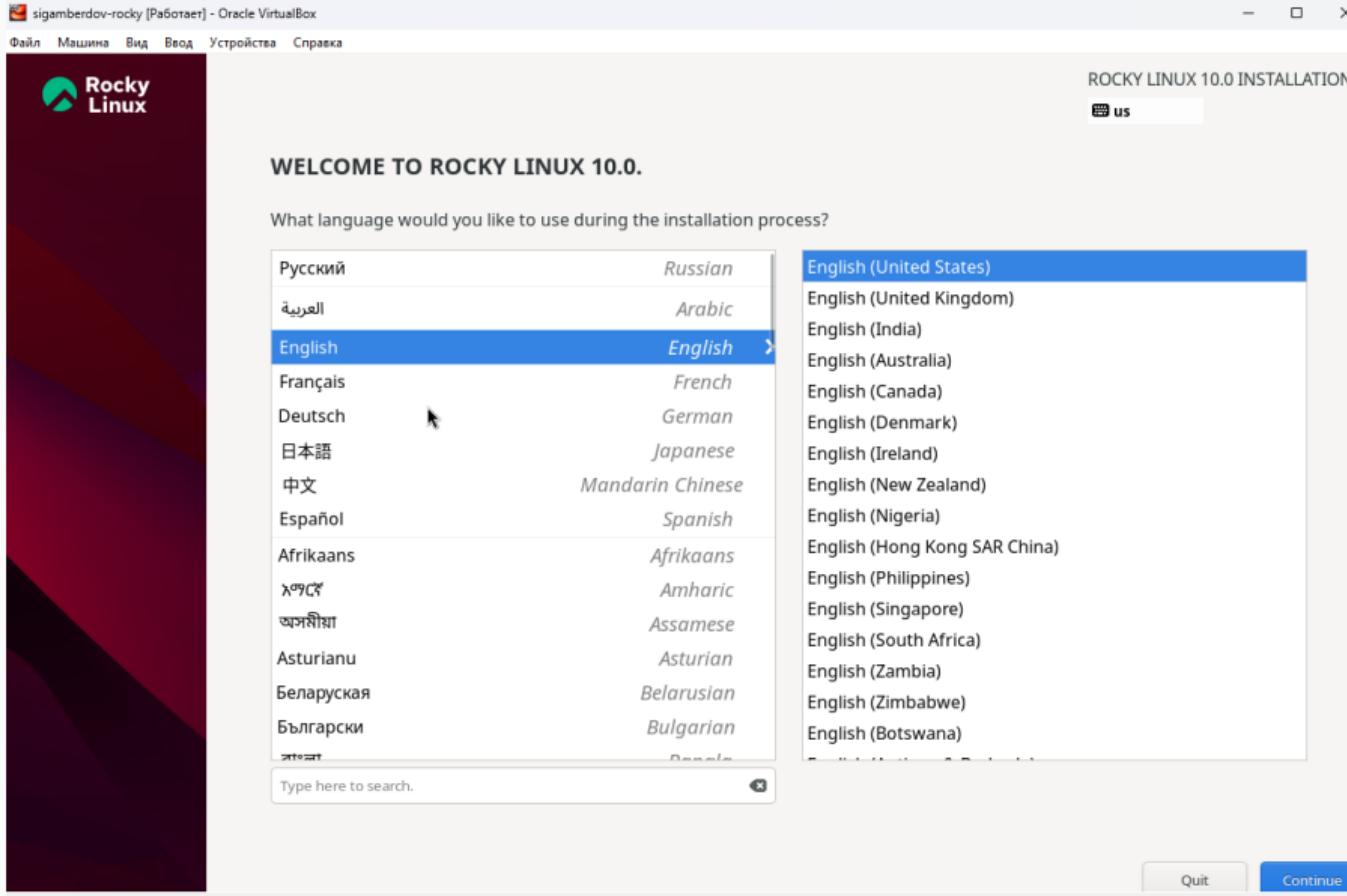
Аудиодрайвер: По умолчанию  
Аудиоконтроллер: ICH AC97

Сеть

# Запуск установщика через GRUB



# Выбор языка установки



# Выбор программного окружения

SOFTWARE SELECTION

Done

ROCKY LINUX 10.0 INSTALLATION

us

Base Environment

- Server with GUI**  
An integrated, easy-to-manage server with a graphical interface.
- Server**  
An integrated, easy-to-manage server.
- Minimal Install**  
Basic functionality.
- Workstation**  
Workstation is a user-friendly desktop system for laptops and PCs.
- Custom Operating System**  
Basic building block for a custom Rocky Linux system.
- Virtualization Host**  
Minimal virtualization host.

Additional software for Selected Environment

- Virtualization Tools**  
Tools for offline virtual image management.
- Basic Web Server**  
These tools allow you to run a Web server on the system.
- Legacy UNIX Compatibility**  
Compatibility programs for migration from or working with legacy UNIX environments.
- Smart Card Support**  
Support for using smart card authentication.
- Console Internet Tools**  
Console internet access tools, often used by administrators.
- Container Management**  
Tools for managing Linux containers
- Development Tools**  
A basic development environment.
- .NET Development**  
Tools to develop and/or run .NET applications
- Graphical Administration Tools**  
Graphical system administration tools for managing many aspects of a system.
- Headless Management**  
Tools for managing the system without an attached graphical console.
- RPM Development Tools**  
Tools used for building RPMs, such as rpmbuild.
- Scientific Support**  
Tools for mathematical and scientific computations, and parallel computing.
- Security Tools**  
Security tools for integrity and trust verification.
- System Tools**  
This group is a collection of various tools for the system, such as the client for connecting to SMB shares and tools to monitor network traffic.

## Настройка сети и имени хоста

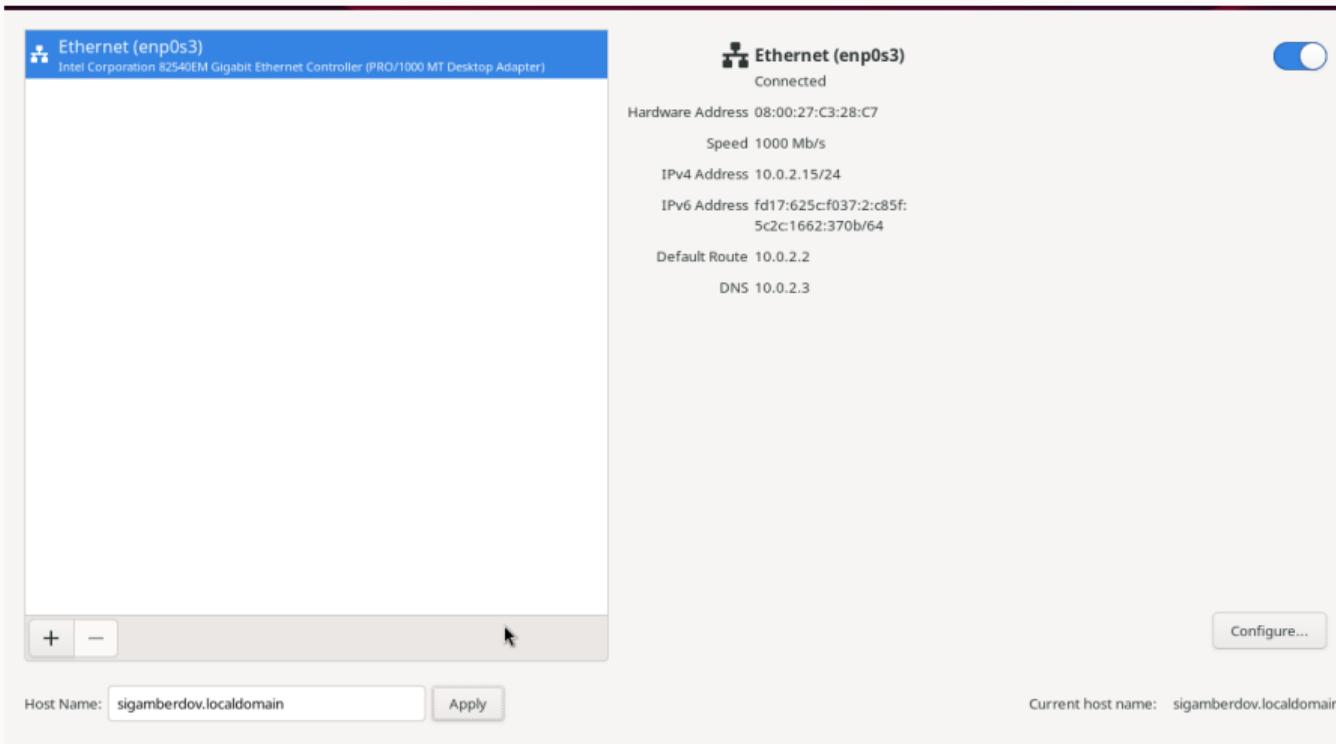


Рис. 6: Настройка сети и имени хоста

# Настройка учётной записи root

The root account is used for administering the system.

The root user (also known as super user) has complete access to the entire system. For this reason, logging into this system as the root user is best done only to perform system maintenance or administration.

## Disable root account

Disabling the root account will lock the account and disable remote access with root account. This will prevent unintended administrative access to the system.

## Enable root account

Enabling the root account will allow you to set a root password and optionally enable remote access to root account on this system.

Root Password:  

 Weak

Confirm:  

Allow root SSH login with password

## Создание пользователя с правами администратора

Full name

User name

Add administrative privileges to this user account (wheel group membership)

Require a password to use this account

Password  Weak

Confirm password

Advanced...

Рис. 8: Создание пользователя с административными правами

# Проверка сводки параметров и старт установки

INSTALLATION SUMMARY

ROCKY LINUX 10.0 INSTALLATION  
us

LOCALIZATION	SOFTWARE	SYSTEM
<b>Keyboard</b> English (US), Russian	<b>Installation Source</b> Auto-detected source	<b>Installation Destination</b> Automatic partitioning selected
<b>Language Support</b> English (United States)	<b>Software Selection</b> Server with GUI	<b>KDUMP</b> Kdump is disabled
<b>Time &amp; Date</b> Europe/Moscow timezone		<b>Network &amp; Host Name</b> Connected: enp0s3

USER SETTINGS

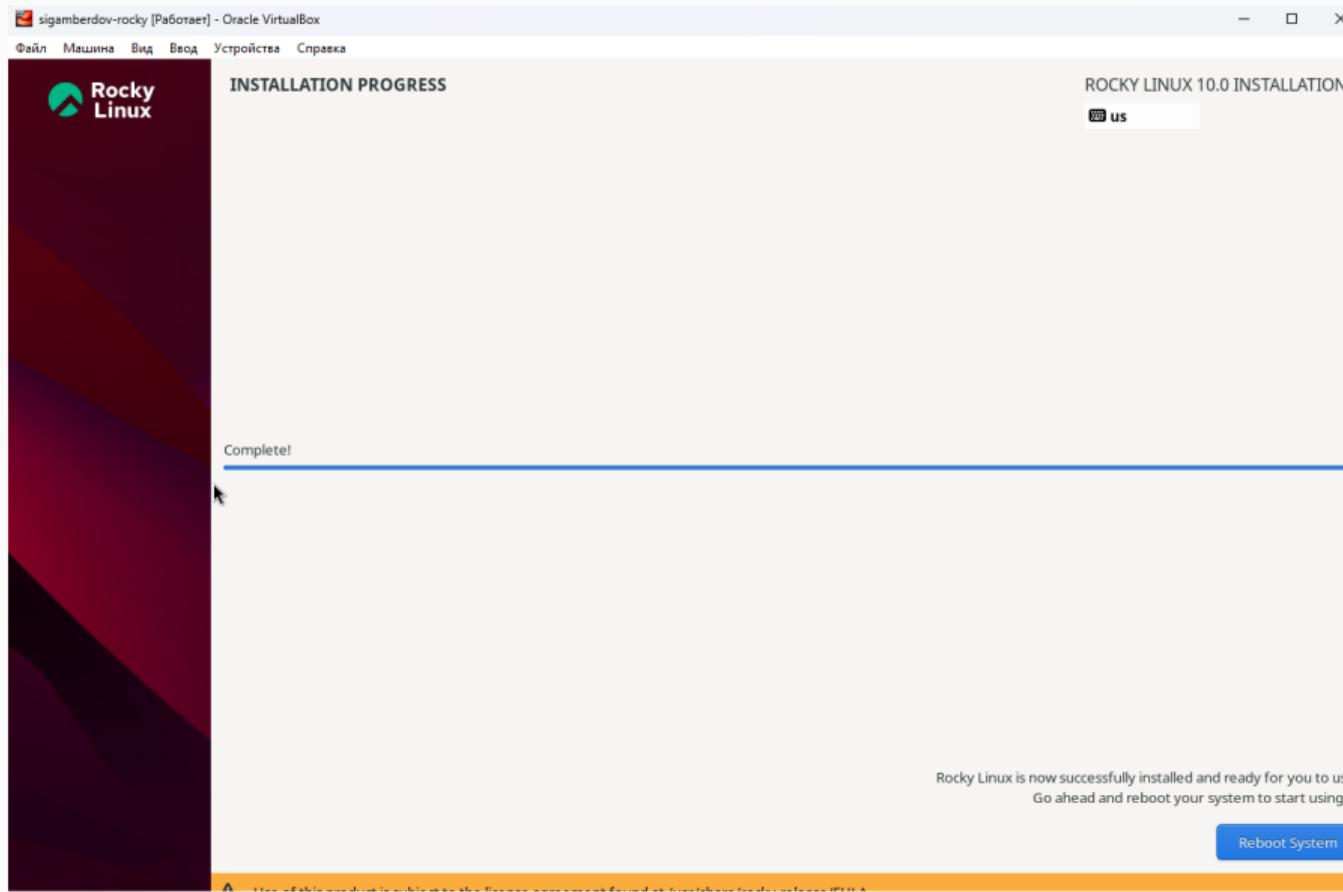
**Root Account**  
Root password is set

**User Creation**  
Administrator sigamberdov will be created

11/15

Quit Begin Installation

# Завершение установки и перезагрузка



# Установка VirtualBox Guest Additions

```
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12... + ×
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12# ./VBoxLinuxAdditions.ru
n
Verifying archive integrity... 100% MD5 checksums are OK. All good.
Uncompressing VirtualBox 7.1.12 Guest Additions for Linux 100%
VirtualBox Guest Additions installer
VirtualBox Guest Additions: Starting.
VirtualBox Guest Additions: Setting up modules
VirtualBox Guest Additions: Building the VirtualBox Guest Additions kernel
modules. This may take a while.
VirtualBox Guest Additions: To build modules for other installed kernels, run
VirtualBox Guest Additions: /sbin/rcvboxadd quicksetup <version>
VirtualBox Guest Additions: or
VirtualBox Guest Additions: /sbin/rcvboxadd quicksetup all
VirtualBox Guest Additions: Building the modules for kernel
6.12.0-55.12.1.el10_0.x86_64.
grep: warning: stray \ before /
grep: warning: stray \ before /
grep: warning: stray \ before /
VirtualBox Guest Additions: reloading kernel modules and services
VirtualBox Guest Additions: kernel modules and services 7.1.12 r169651 reloaded
VirtualBox Guest Additions: NOTE: you may still consider to re-login if some
user session specific services (Shared Clipboard, Drag and Drop, Seamless or
Guest Screen Resize) were not restarted automatically
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12#
```

# Анализ загрузки и файловых систем

```
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12# dmesg | grep "Linux ver"
[    0.000000] Linux version 6.12.0-55.12.1.el10_0.x86_64 (mockbuild@iad1-prod-build001.bld.equ.rockylinux.org) (gcc (GCC) 14.2.1 20250110 (Red Hat 14.2.1-7), GNU ld version 2.41-53.el10) #1 SMP PREEMPT_DYNAMIC Fri May 23 17:41:02 UTC 2025
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12# dmesg | grep "MHz"
[    0.000005] tsc: Detected 3187.204 MHz processor
[    6.622474] e1000 0000:00:03.0 eth0: (PCI:33MHz:32-bit) 08:00:27:c3:28:c7
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12# dmesg | grep "avail"
[    0.004354] On node 0, zone DMA: 1 pages in unavailable ranges
[    0.004367] On node 0, zone DMA: 97 pages in unavailable ranges
[    0.007744] On node 0, zone Normal: 16 pages in unavailable ranges
[    0.007996] [mem 0xe0000000-0xfbffff] available for PCI devices
[    0.149966] Memory: 3962368K/4193848K available (18432K kernel code, 5782K rwdta, 14104K rodata, 4320K init, 6792K bss, 227572K reserved, 0K cma-reserved)
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12# dmesg | grep "Hyper"
[    0.000000] Hypervisor detected: KVM
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12# df -h
Filesystem           Size  Used Avail Use% Mounted on
/dev/mapper/rl_vbox-root  45G  6.3G   39G  14% /
devtmpfs              4.0M    0  4.0M   0% /dev
tmpfs                 2.0G   84K  2.0G   1% /dev/shm
tmpfs                 782M  9.3M  773M   2% /run
tmpfs                 1.0M    0  1.0M   0% /run/credentials/systemd-journald.service
/dev/sda2               960M  283M  678M  30% /boot
tmpfs                 391M  164K  391M   1% /run/user/1000
tmpfs                 391M   60K  391M   1% /run/user/0
/dev/sr0                  59M   59M    0 100% /run/media/sigamberdov/VBox_GAs_7.1.12
root@sigamberdov:/run/media/sigamberdov/VBox_GAs_7.1.12#
```

108 × 35

## Итоги работы

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Операционная система Rocky Linux 10.0 установлена на виртуальную машину Oracle VirtualBox, выполнена базовая настройка (сеть, root, пользователь с административными правами). Установлены VirtualBox Guest Additions и проведён анализ параметров загрузки системы, что подтверждает корректную установку и готовность системы к дальнейшей эксплуатации.