

Лабораторная работа №1

Установка и конфигурация операционной системы на виртуальную машину

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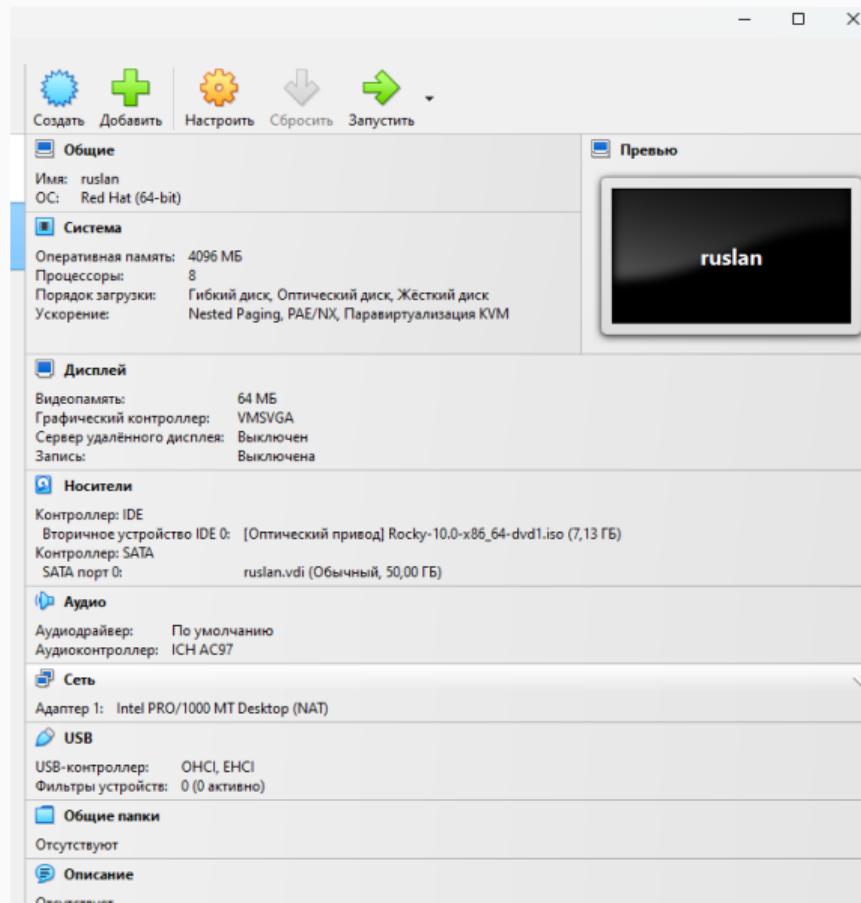
Цель работы

Основная цель

Получение практических навыков установки операционной системы Linux на виртуальную машину и её первичной настройки.

Ход выполнения работы

Создание виртуальной машины



Выбор программного окружения

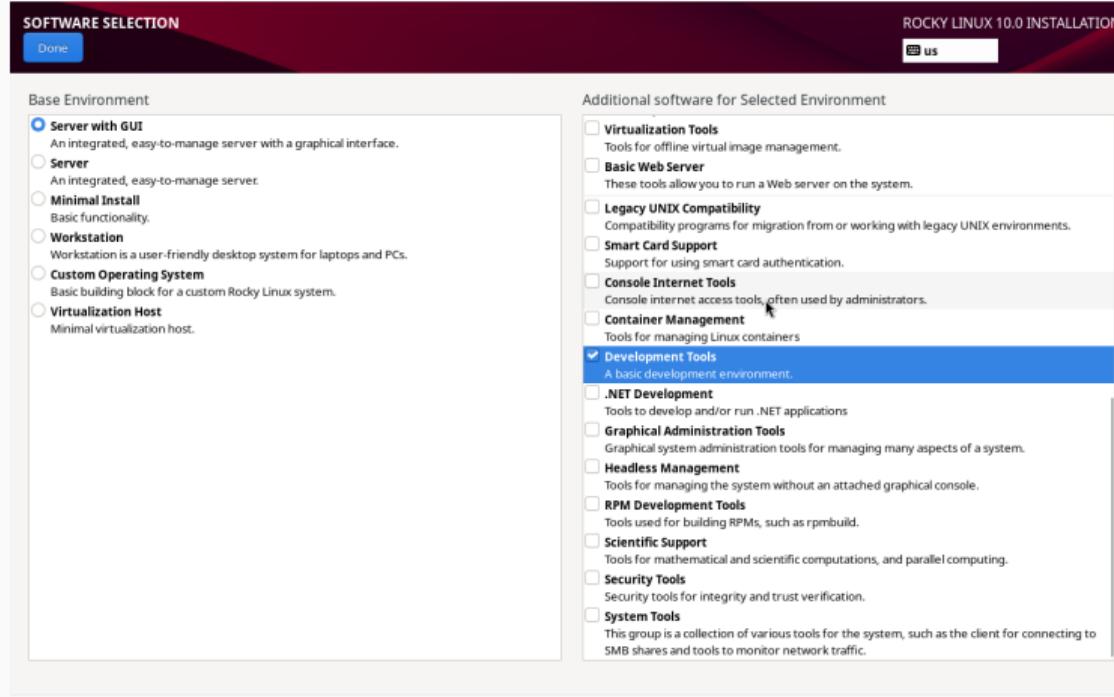


Рис. 2: Software Selection

Разметка диска

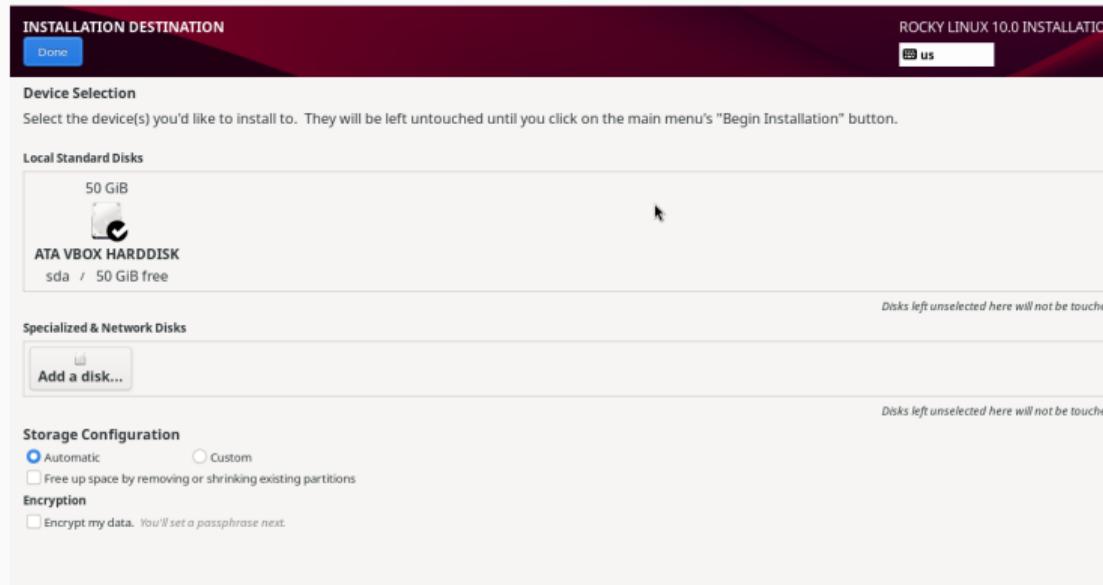


Рис. 3: Installation Destination

Настройка сети

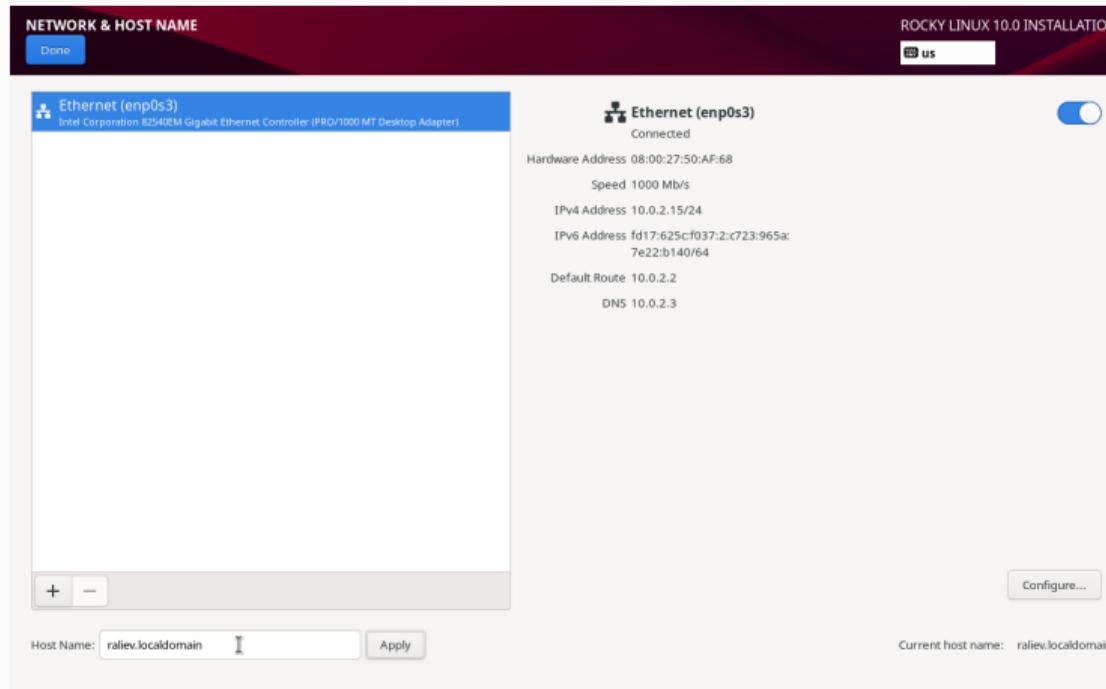


Рис. 4: Network & Host Name

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

The screenshot shows a user creation interface with the following fields:

- Full name:** raliev
- User name:** raliev
- Checkboxes:**
 - Add administrative privileges to this user account (wheel group membership)
 - Require a password to use this account
- Password:** A field containing six black dots, with a visibility icon (eye) to its right. Below it is a progress bar indicating the password's strength is "Weak".
- Confirm password:** A field containing six black dots, with a visibility icon (eye) to its right.
- Advanced...**: A button located below the password fields.

Рис. 6: User Creation

Installation Summary

INSTALLATION SUMMARY

ROCKY LINUX 10.0 INSTALLATION
us

LOCALIZATION

- Keyboard**
English (US), Russian
- Language Support**
English (United States)
- Time & Date**
Europe/Moscow timezone

SOFTWARE

- Installation Source**
Auto-detected source
- Software Selection**
Server with GUI

SYSTEM

- Installation Destination**
Automatic partitioning selected
- KDUMP**
Kdump is disabled
- Network & Host Name**
Connected: enp0s3

USER SETTINGS

- Root Account**
Root password is set
- User Creation**
Administrator privilege will be created



Рис. 7: Installation Summary

Завершение установки

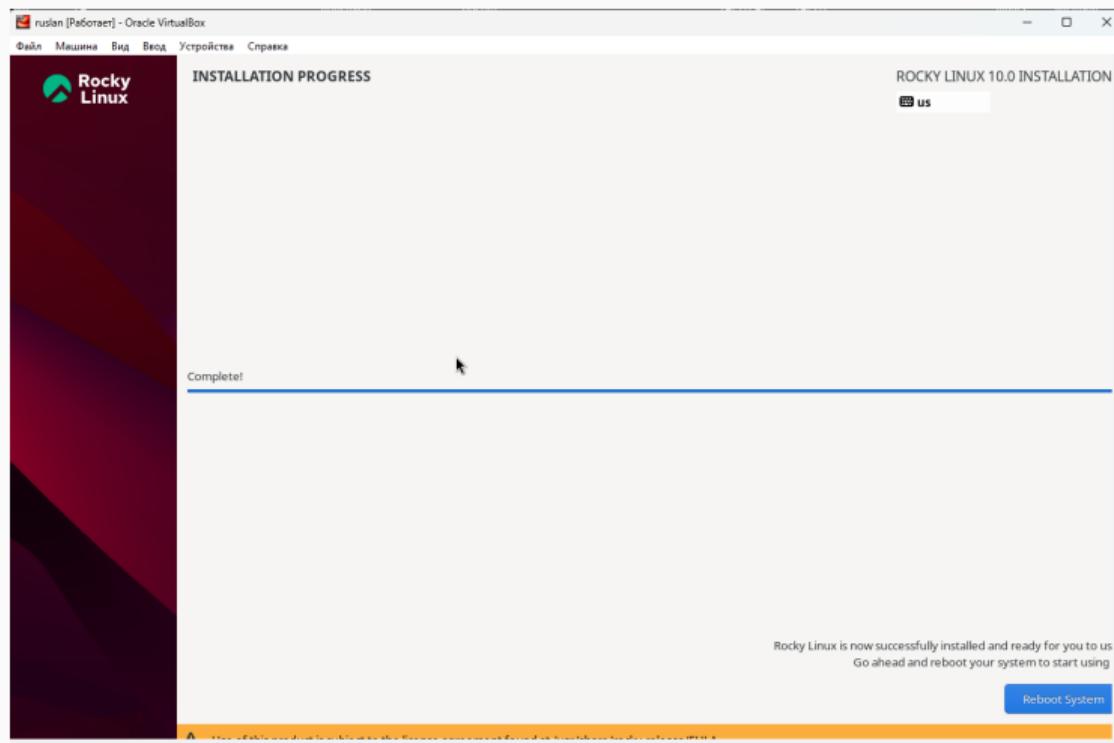


Рис. 8: Installation Complete

Guest Additions

```
root@raliev:~# cd /run/media/raliev/VBox_GAs_7.1.12/
root@raliev:/run/media/raliev/VBox_GAs_7.1.12# ./VBoxLinuxAdditions.run
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@raliev:/run/media/raliev/VBox_GAs_7.1.12#
```

Рис. 9: VirtualBox Guest Additions

Анализ загрузки

```
root@raliev:~# dmesg | grep "Linux ver"
[    0.00000] Linux version 6.12.0-55.12.1.el10_0.x86_64 (mockbuild@iad1-prod-build001.bld.equ.rockyli
nux.org) (gcc (GCC) 14.2.1 20250110 (Red Hat 14.2.1-7), GNU ld version 2.41-53.el10) #1 SMP PREEMPT_DYN
AMIC Fri May 23 17:41:02 UTC 2025
root@raliev:~# dmesg | grep "avail"
[    0.004110] On node 0, zone DMA: 1 pages in unavailable ranges
[    0.004123] On node 0, zone DMA: 97 pages in unavailable ranges
[    0.007544] On node 0, zone Normal: 16 pages in unavailable ranges
[    0.007797] [mem 0xe0000000-0xfebfffff] available for PCI devices
[    0.161373] Memory: 3958872K/4193848K available (18432K kernel code, 5782K rwdta, 14104K rodata, 43
20K init, 6792K bss, 229204K reserved, 0K cma-reserved)
root@raliev:~# dmesg | grep "MHz"
[    0.000005] tsc: Detected 3187.202 MHz processor
[    7.182332] e1000 0000:00:03.0 eth0: (PCI:33MHz:32-bit) 08:00:27:50:af:68
root@raliev:~# dmesg | grep "Hyper"
[    0.000000] Hypervisor detected: KVM
root@raliev:~# 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 168K 391M   1% /run/user/1000
/dev/sr0         59M  59M   0 100% /run/media/raliev/VBox_GAs_7.1.12
tmpfs          391M  60K 391M   1% /run/user/0
root@raliev:~#
```

Рис. 10: dmesg output

Итоги работы

Заключение

В ходе лабораторной работы была успешно установлена и настроена операционная система Rocky Linux на виртуальную машину. Получены практические навыки работы с установщиком ОС, настройки пользователей, сети, дисков и анализа загрузки системы.