

Лабораторная работа №1

Установка и конфигурация операционной системы на виртуальную машину

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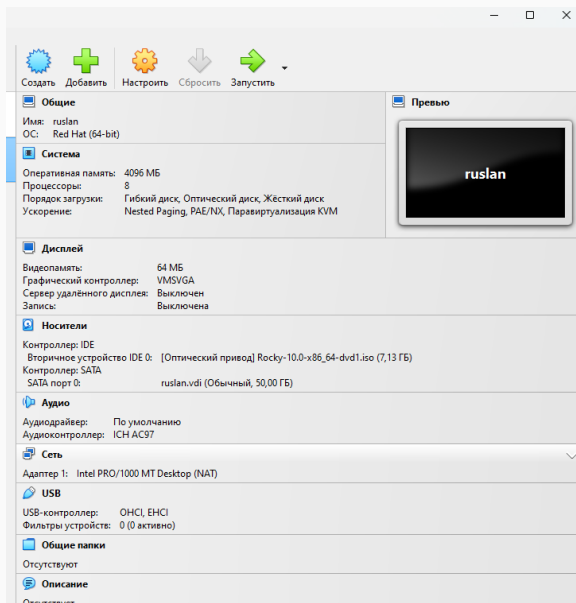
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Цель работы

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

Ход выполнения работы

Создание виртуальной машины



Выбор программного окружения

SOFTWARE SELECTION

ROCKY LINUX 10.0 INSTALLATION

Done

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.

Рис. 2: Software Selection

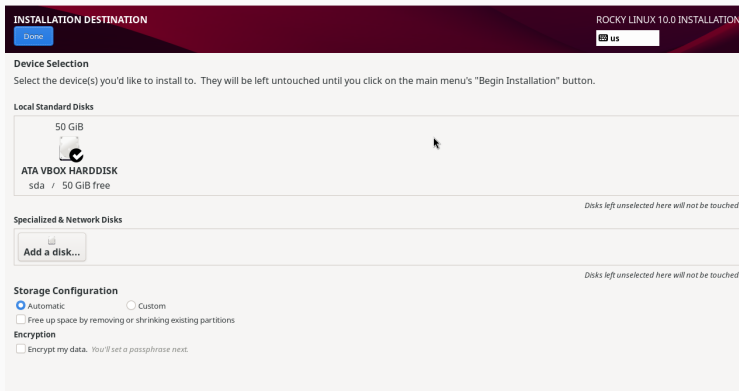


Рис. 3: Installation Destination

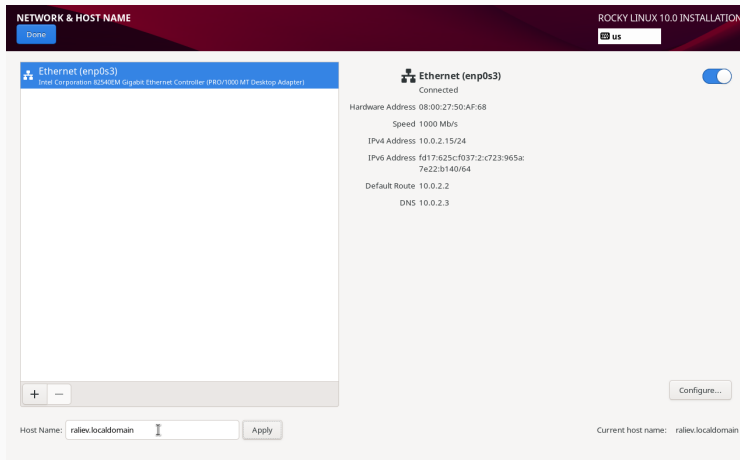


Рис. 4: Network & Host Name

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:

●●●●●●



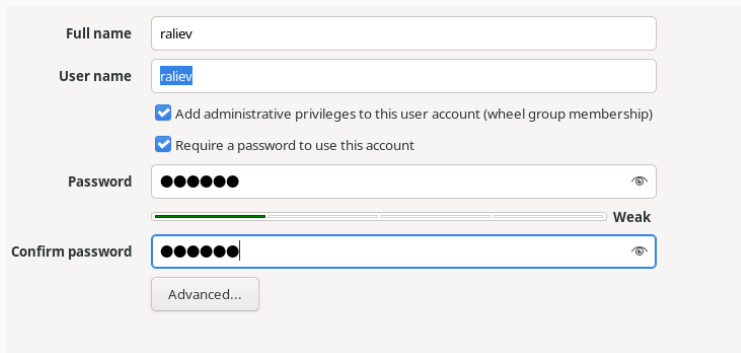
Weak

Confirm:

●●●●●●



Allow root SSH login with password



The image shows a user creation form with the following fields and options:

- Full name:** A text input field containing the value "raliev".
- User name:** A text input field containing the value "raliev".
- Options:** Two checked checkboxes:
 - ☒ Add administrative privileges to this user account (wheel group membership)
 - ☒ Require a password to use this account
- Password:** A password input field with six black dots. To the right of the field is an eye icon. Below the field is a strength indicator bar that is mostly green, followed by the word "Weak".
- Confirm password:** A password input field with six black dots and a cursor at the end. To the right of the field is an eye icon.
- Advanced...:** A button located below the confirm password field.

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

USER SETTINGS

 **Root Account**
Root password is set

 **User Creation**
Administrator relief will be created

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

Рис. 7: Installation Summary

Завершение установки

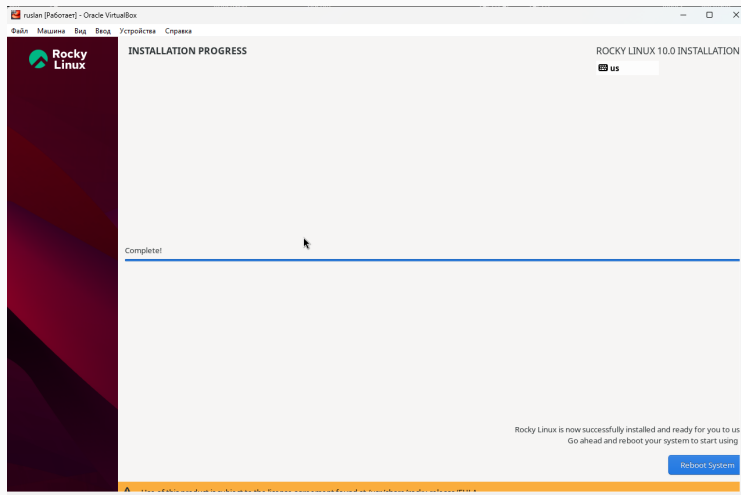


Рис. 8: Installation Complete

```
root@raliev: ~  
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

```
root@raliev:~# 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_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 rwdatas, 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

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.