Лабораторная работа №1

Установка и конфигурация операционной системы на виртуальную машину

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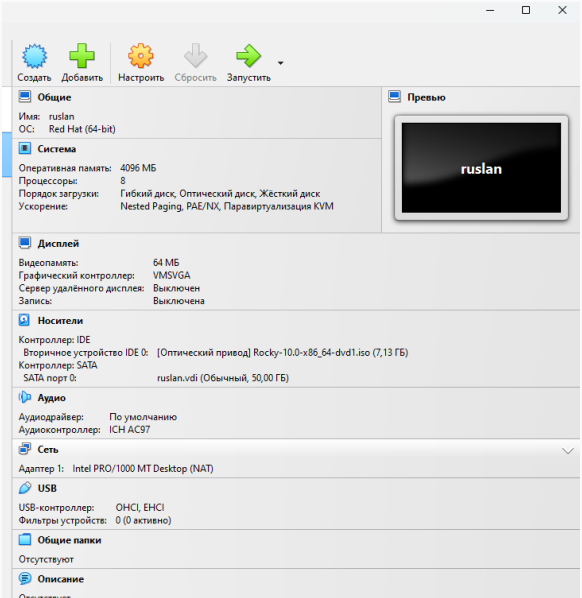
Цель работы

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

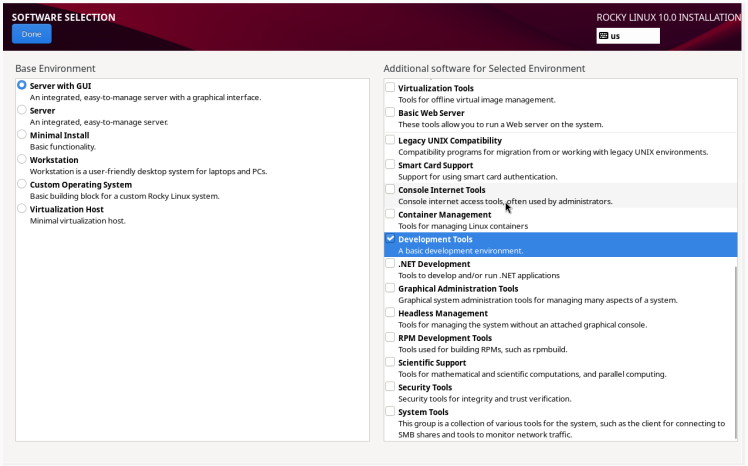


Рис. 2: Software Selection

Разметка диска

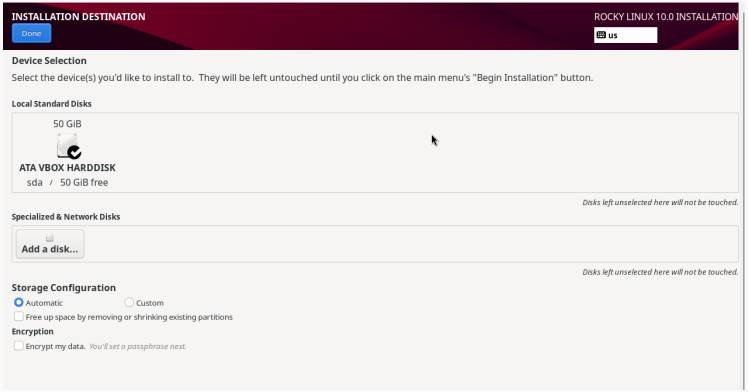


Рис. 3: Installation Destination

Настройка сети

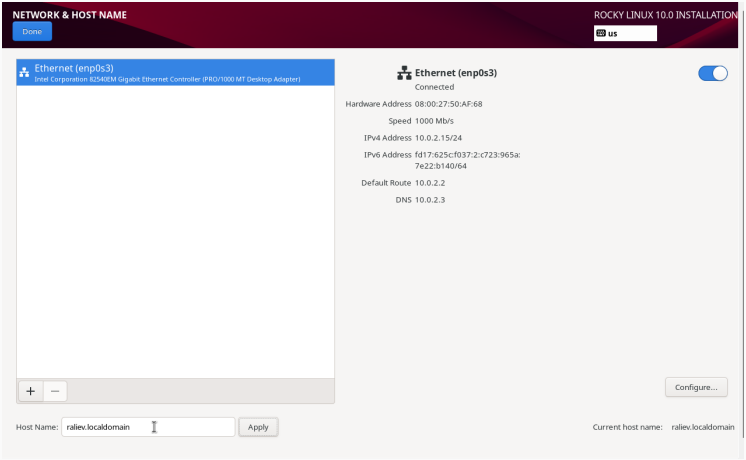
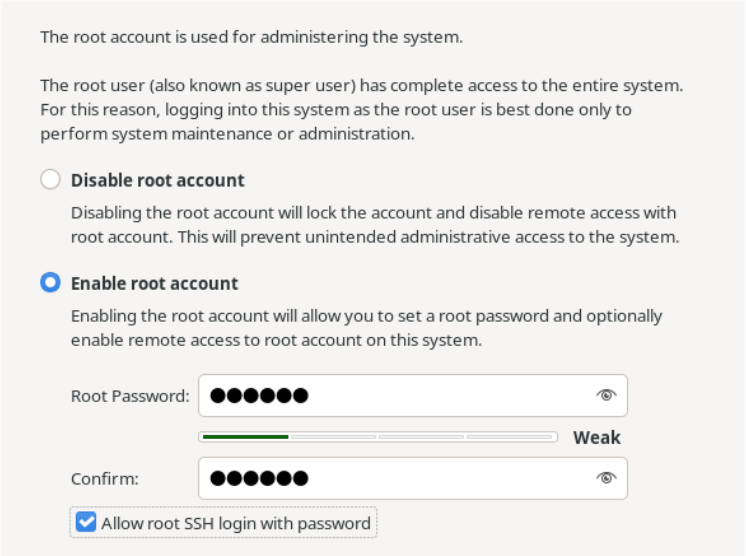


Рис. 4: Network & Host Name

Root-аккаунт



Создание пользователя

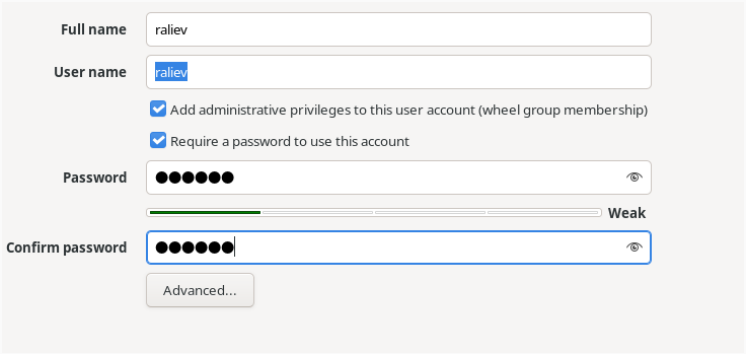


Рис. 6: User Creation

Installation Summary

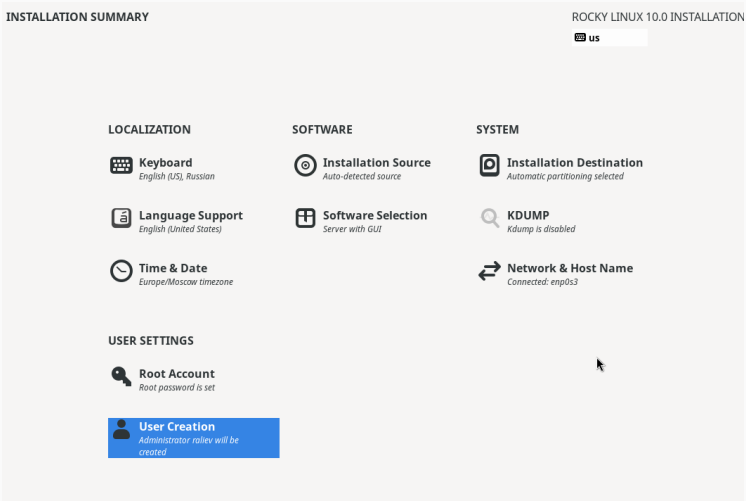


Рис. 7: Installation Summary

Завершение установки

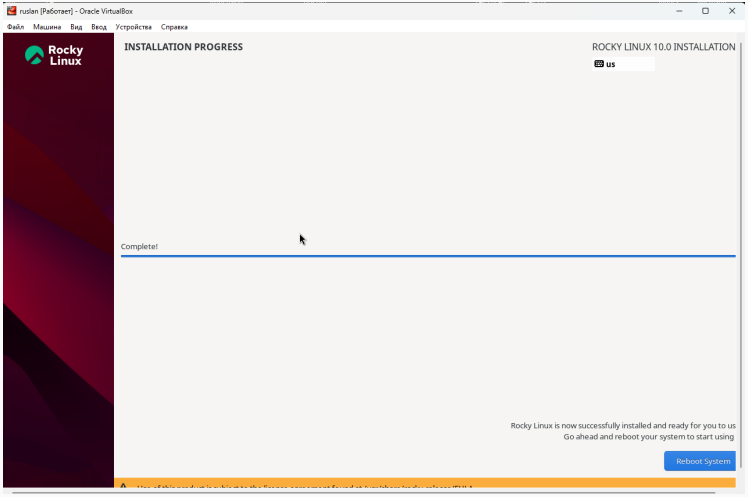


Рис. 8: Installation Complete

Guest Additions

```
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

Анализ загрузки

```
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_DYNAMIC 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 rwdata, 14104K rodata, 4320K 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.