

# Лабораторная работа №1

Установка и конфигурация операционной системы на виртуальную машину

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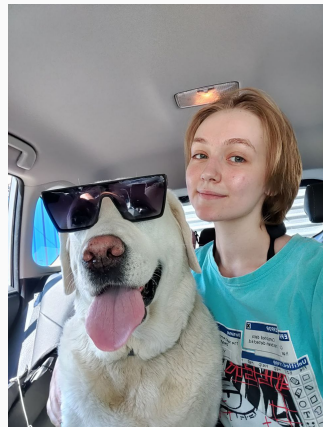
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## Информация

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## Вводная часть

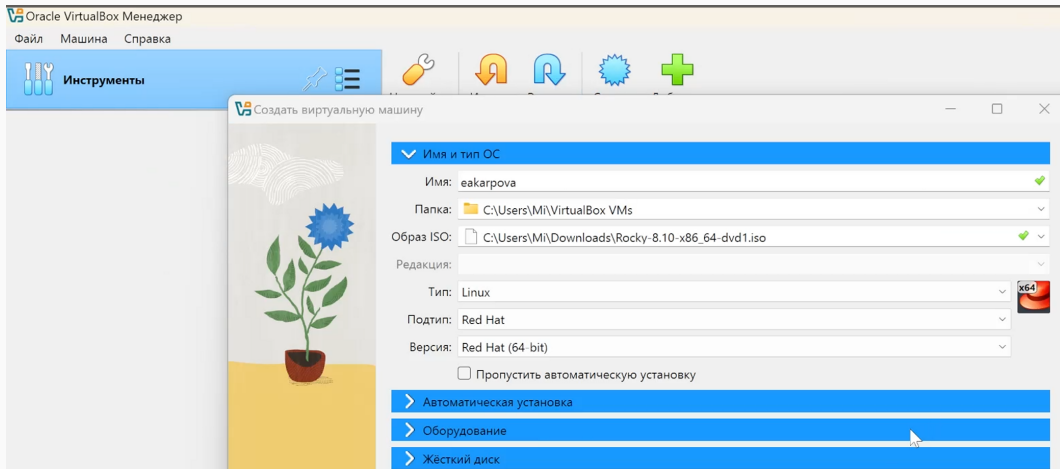
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- Приобрести практические навыки установки операционной системы на VM
- Настройки минимально необходимых сервисов
- Выполнение домашней работы

## Установка и настройка виртуальной машины

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# Создание виртуальной машины





### Жёсткий диск

#### Создать новый виртуальный жёсткий диск

Расположение и размер файла жёсткого диска

C:\Users\Mi\VirtualBox VMs\ekarpova\ekarpova.vdi



4,00 МБ

2,00 ТБ

40,00 ГБ

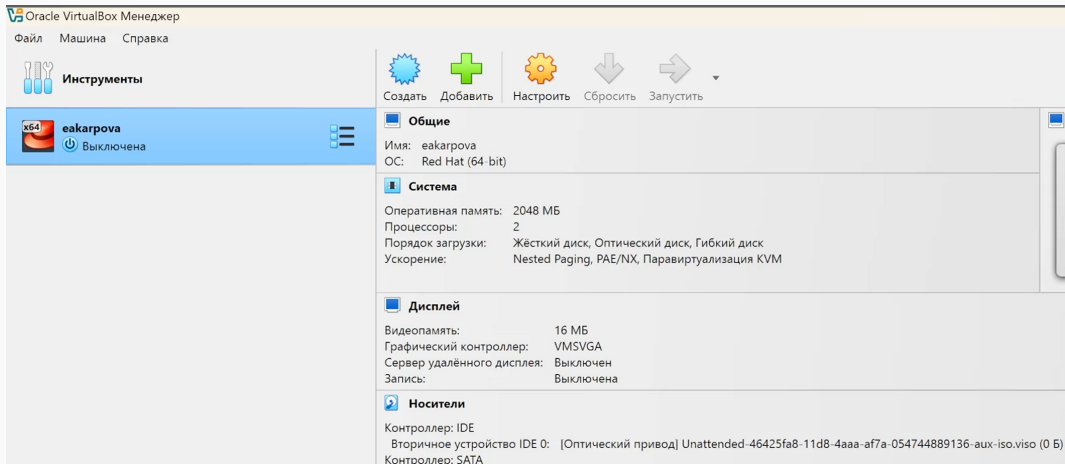
Тип и формат файла жёсткого диска

VDI (VirtualBox Disk Image)

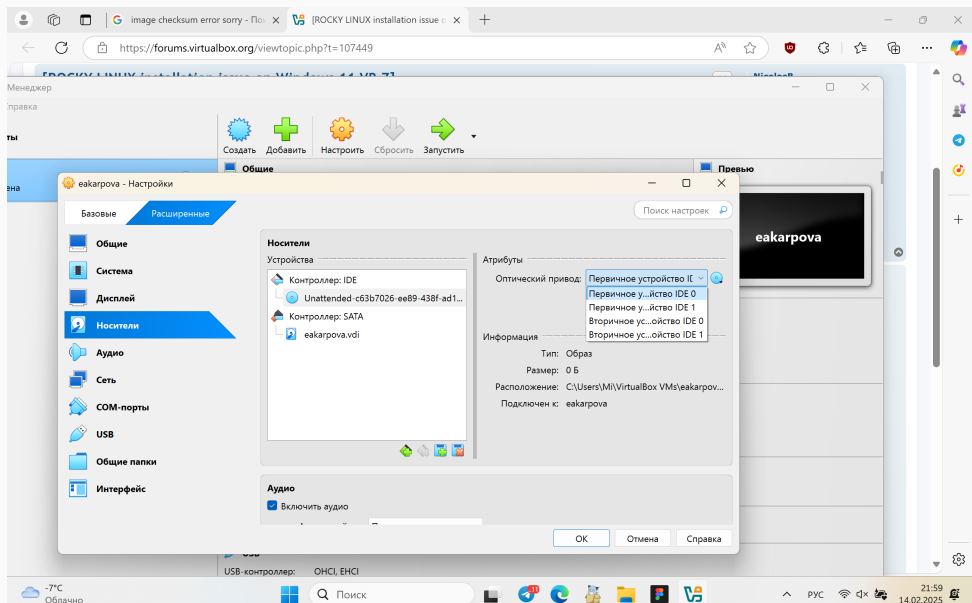


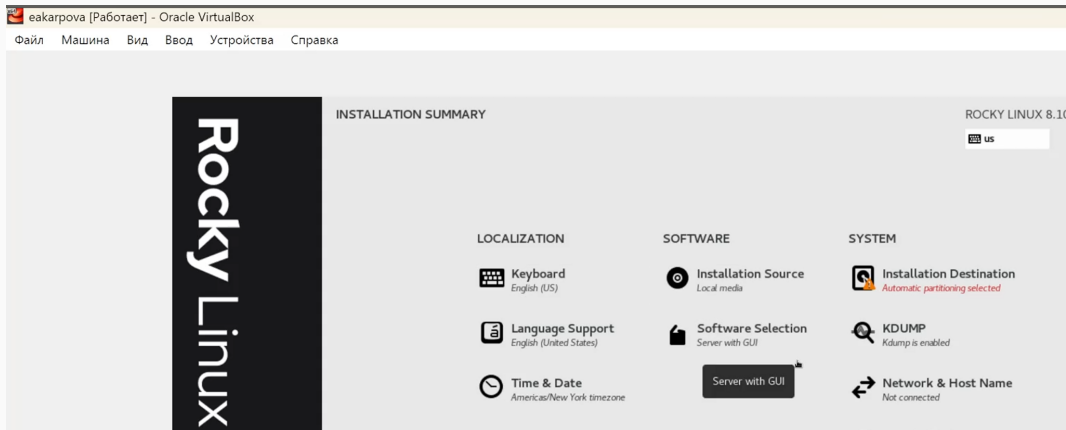
Выделить место в полном размере

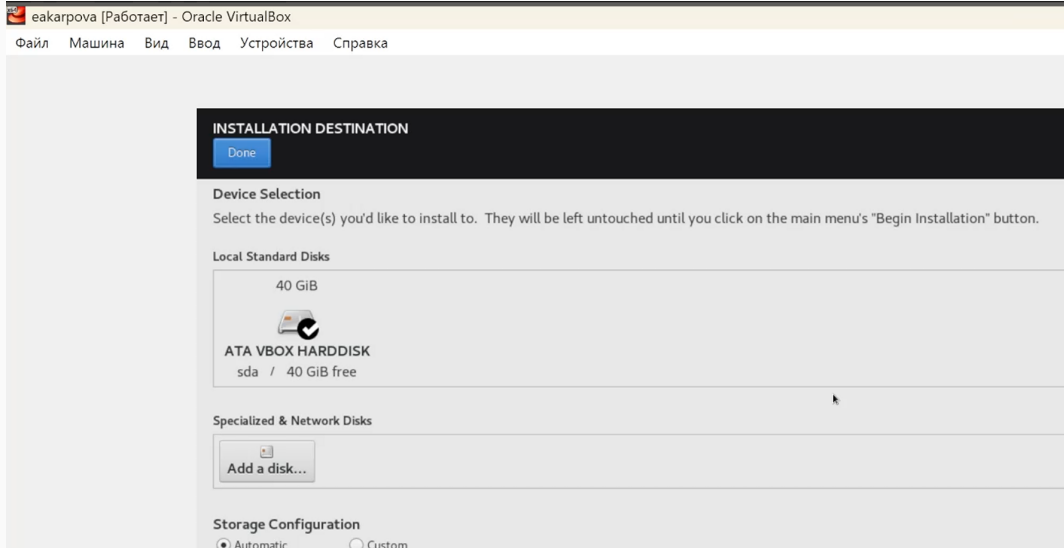
# Окно с созданной VM



# Добавление образа ОС







**SOFTWARE SELECTION**

Done

ROCKY LINUX 8.10 INSTA

us

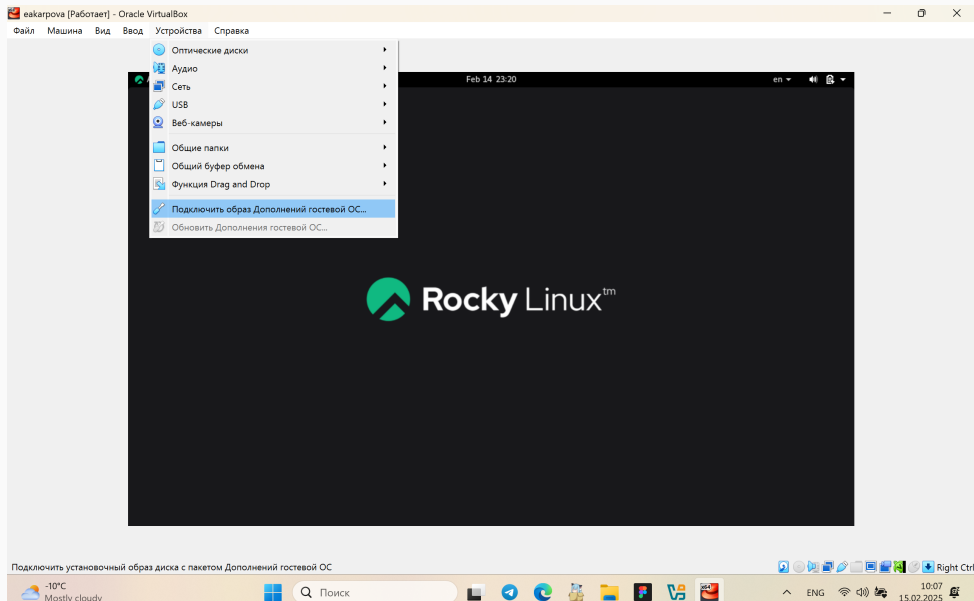
**Base Environment**

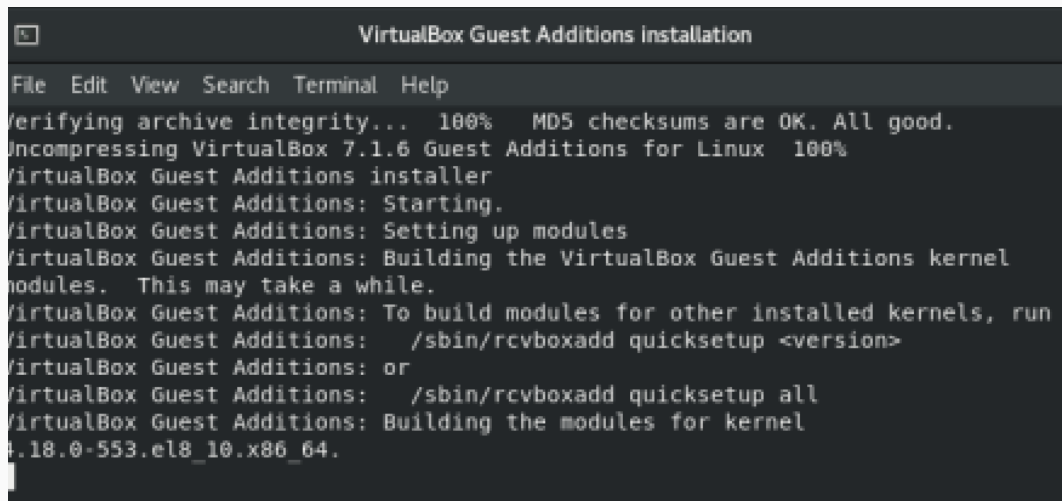
- ☒ **Server with GUI**  
An integrated, easy-to-manage server with a graphical interface.
- ☐ **Server**  
An integrated, easy-to-manage server.
- ☐ **Minimal Install**  
Basic functionality.
- ☐ **Workstation**  
Workstation is a user-friendly desktop system for laptops and PCs.
- ☐ **Custom Operating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

**Additional software for Selected Environment**

- ☐ **Network Servers**  
These packages include network-based servers such as DHCP, Kerberos and NIS.
- ☐ **Performance Tools**  
Tools for diagnosing system and application-level performance problems.
- ☐ **Remote Desktop Clients**
- ☐ **Remote Management for Linux**  
Remote management interface for Rocky Linux.
- ☐ **Virtualization Client**  
Clients for installing and managing virtualization instances.
- ☐ **Virtualization Hypervisor**  
Smallest possible virtualization host installation.
- ☐ **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.
- ☐ **Container Management**  
Tools for managing Linux containers
- ☒ **Development Tools**  
A basic development environment.

# Образ диска дополнений





```
VirtualBox Guest Additions Installation
File Edit View Search Terminal Help
Verifying archive integrity... 100% MD5 checksums are OK. All good.
Uncompressing VirtualBox 7.1.6 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
4.18.0-553.el8_10.x86_64.
```



## Домашнее задание

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```
[eakarpova@eakarpova ~]$ dmesg
[    0.000000] Linux version 4.18.0-553.el8_10.x86_64 (mockbuild@iad1-prod-build
001.bld.equ.rockylinux.org) (gcc version 8.5.0 20210514 (Red Hat 8.5.0-22) (GCC)
) #1 SMP Fri May 24 13:05:10 UTC 2024
[    0.000000] Command line: BOOT_IMAGE=(hd0,msdos1)/vmlinuz-4.18.0-553.el8_10.x
86_64 root=/dev/mapper/rl_eakarpova-root ro resume=/dev/mapper/rl_eakarpova-swap
rd.lvm.lv=rl_eakarpova/root rd.lvm.lv=rl_eakarpova/swap rhgb quiet
[    0.000000] [Firmware Bug]: TSC doesn't count with P0 frequency!
[    0.000000] x86/fpu: x87 FPU will use FXSAVE
[    0.000000] signal: max sigframe size: 1440
[    0.000000] BIOS-provided physical RAM map:
[    0.000000] BIOS-e820: [mem 0x0000000000000000-0x0000000000009fbff] usable
[    0.000000] BIOS-e820: [mem 0x0000000000009fc00-0x0000000000009ffff] reserved
[    0.000000] BIOS-e820: [mem 0x000000000000f0000-0x000000000000ffffff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000000100000-0x000000000007ffeffff] usable
[    0.000000] BIOS-e820: [mem 0x000000000007fff0000-0x000000000007fffffff] ACPI data
[    0.000000] BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
[    0.000000] NX (Execute Disable) protection: active
[    0.000000] SMBIOS 2.5 present.
[    0.000000] DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/20
06
[    0.000000] Hypervisor detected: KVM
```

```
[eakarpova@eakarpova ~]$ dmesg | grep -i "mhz processor"  
[    0.000000] tsc: Detected 3193.912 MHz processor  
[eakarpova@eakarpova ~]$
```

Рис. 2: dmesg | grep -i "mhz processor"

```
[eakarpova@eakarpova ~]$ dmesg | grep -i "cpu"
[    0.000000] CPU MTRRs all blank - virtualized system.
[    0.000000] ACPI: SSDT 0x000000007FFF02A0 00036C (v01 VBOX   VBOXCPU 00000000
2 INTL 20100528)
[    0.000000] smpboot: Allowing 2 CPUs, 0 hotplug CPUs
[    0.000000] setup_percpu: NR_CPUS:8192 nr_cpumask_bits:2 nr_cpu_ids:2 nr_node
_ids:1
[    0.000000] percpu: Embedded 63 pages/cpu s221184 r8192 d28672 u1048576
[    0.000000] pcpu-alloc: s221184 r8192 d28672 u1048576 alloc=1*2097152
[    0.000000] pcpu-alloc: [0] 0 1
[    0.000000] SLUB: HWalign=64, Order=0-3, MinObjects=0, CPUs=2, Nodes=1
[    0.000000] rcu: RCU restricting CPUs from NR_CPUS=8192 to nr_cpu_ids=2.
[    0.000000] rcu: Adjusting geometry for rcu_fanout_leaf=16, nr_cpu_ids=2
[    0.000000] random: crng done (trusting CPU's manufacturer)
[    0.125199] smpboot: CPU0: AMD Ryzen 7 6800H with Radeon Graphics (family: 0x
19, model: 0x44, stepping: 0x1)
[    0.127271] smp: Bringing up secondary CPUs ...
[    0.127830] .... node #0, CPUs:      #1
[    0.131000] TSC synchronization [CPU#0 -> CPU#1]:
[    0.131000] Measured 93216 cycles TSC warp between CPUs, turning off TSC clac
k.
[    0.131081] smp: Brought up 1 node, 2 CPUs
```

```

[eakarpova@eakarpova ~]$ dmesg | grep -i "memory"
[ 0.000000] ACPI: Reserving FACP table memory at [mem 0x7fff00f0-0x7fff01e3]
[ 0.000000] ACPI: Reserving DSDT table memory at [mem 0x7fff0610-0x7fff2962]
[ 0.000000] ACPI: Reserving FACS table memory at [mem 0x7fff0200-0x7fff023f]
[ 0.000000] ACPI: Reserving FACS table memory at [mem 0x7fff0200-0x7fff023f]
[ 0.000000] ACPI: Reserving APIC table memory at [mem 0x7fff0240-0x7fff029b]
[ 0.000000] ACPI: Reserving SSDT table memory at [mem 0x7fff02a0-0x7fff060b]
[ 0.000000] Early memory node ranges
[ 0.000000] PM: Registered nosave memory: [mem 0x00000000-0x00000fff]
[ 0.000000] PM: Registered nosave memory: [mem 0x0009f000-0x0009ffff]
[ 0.000000] PM: Registered nosave memory: [mem 0x000a0000-0x000effff]
[ 0.000000] PM: Registered nosave memory: [mem 0x000f0000-0x000fffff]
[ 0.000000] Memory: 261120K/2096696K available (14339K kernel code, 5957K rwd
ata, 8568K rodata, 2820K init, 13792K bss, 139744K reserved, 0K cma-reserved)
[ 0.019754] Freeing SMP alternatives memory: 36K
[ 0.135261] x86/mm: Memory block size: 128MB
[ 0.816056] Freeing initrd memory: 52288K
[ 0.920751] Non-volatile memory driver v1.3
[ 1.203382] Freeing unused decrypted memory: 2028K
[ 1.203773] Freeing unused kernel image (initmem) memory: 2820K
[ 1.210361] Freeing unused kernel image (text/rodata gap) memory: 2016K
[ 1.211018] Freeing unused kernel image (rodata/data gap) memory: 1672K
[ 2.290133] vmwgfx 0000:00:02.0: [drm] Legacy memory limits: VRAM = 16384 kB,
FIFO = 2048 kB, surface = 507904 kB

```

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10  
[eakarpova@eakarpova ~]$ dmesg | grep -i "hypervisor"  
[    0.000000] Hypervisor detected: KVM  
[    2.289801] vmwgfx 0000:00:02.0: [drm] *ERROR* vmwgfx seems to be running  
an unsupported hypervisor.  
[eakarpova@eakarpova ~]$ dmesg | grep -i "filesystem"  
[    3.636233] XFS (dm-0): Mounting V5 Filesystem  
[    6.585021] XFS (sda1): Mounting V5 Filesystem
```

В ходе лабораторной работы я приобрела практические навыки установки операционной системы на виртуальную машину, настройки минимально необходимых для дальнейшей работы сервисов