

Лабораторная работа №1

Установка и конфигурация операционной системы на виртуальную машину

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Информация

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Цели и задачи

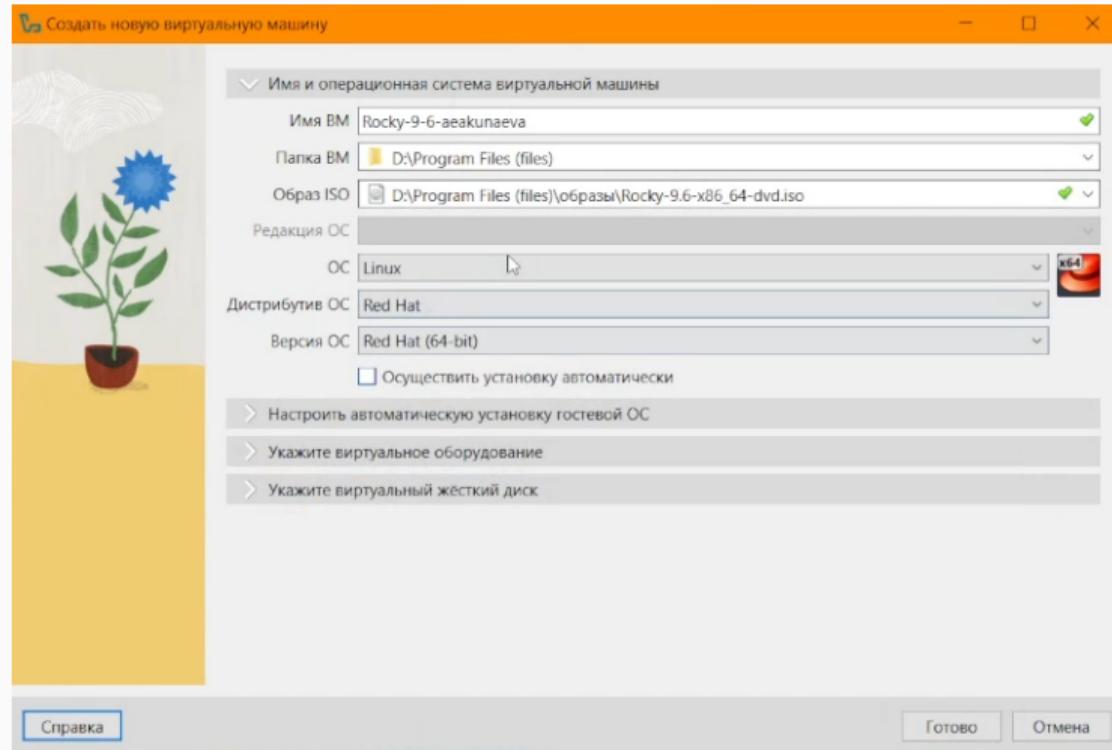
- Целью данной работы является приобретение практических навыков установки операционной системы на виртуальную машину, настройки минимально необходимых для дальнейшей работы сервисов.
- Выполнить домашнюю работу после выполнения лабораторной работы.

Материалы и методы

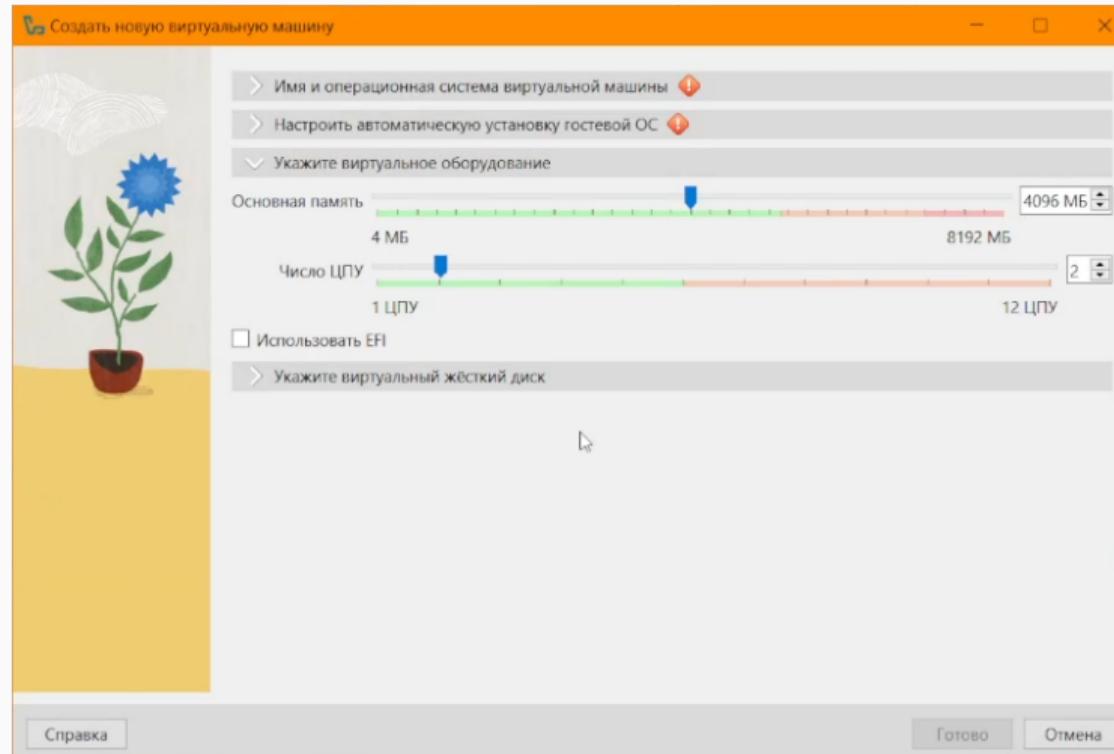
- Linux (дистрибутив Rocky 9.6)
- Linux Fedora Workstation (Markdown)
- Oracle VirtualBox

Выполнение лабораторной работы

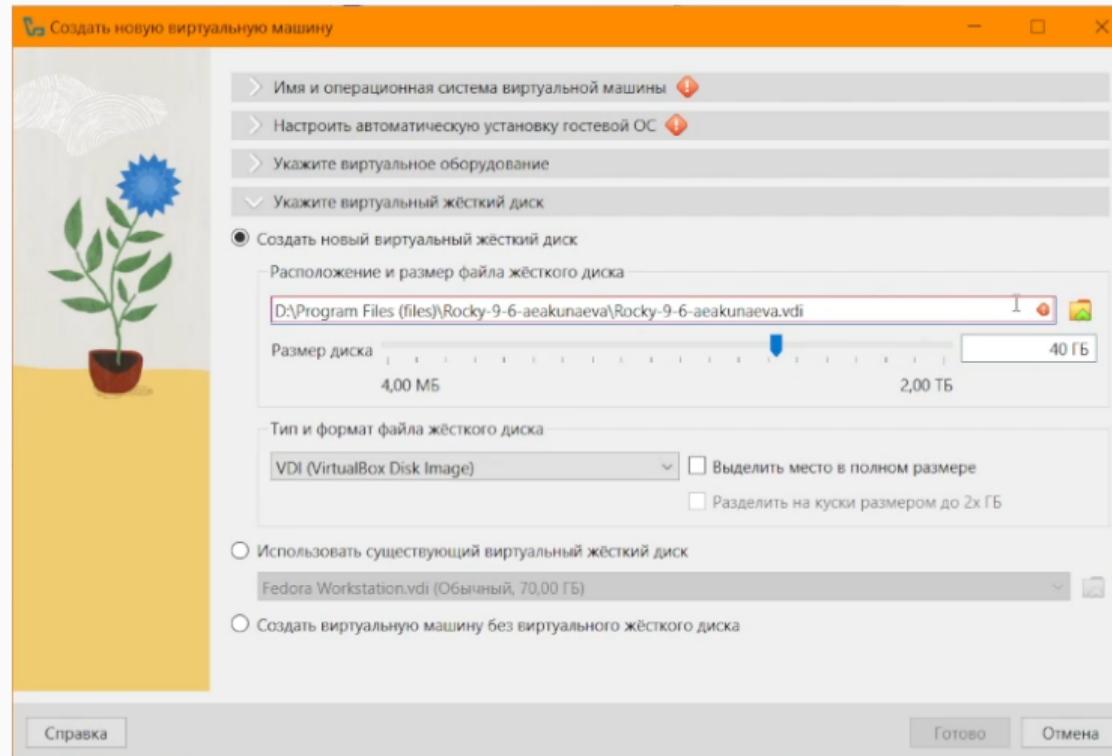
Создание ОС Rocky Linux



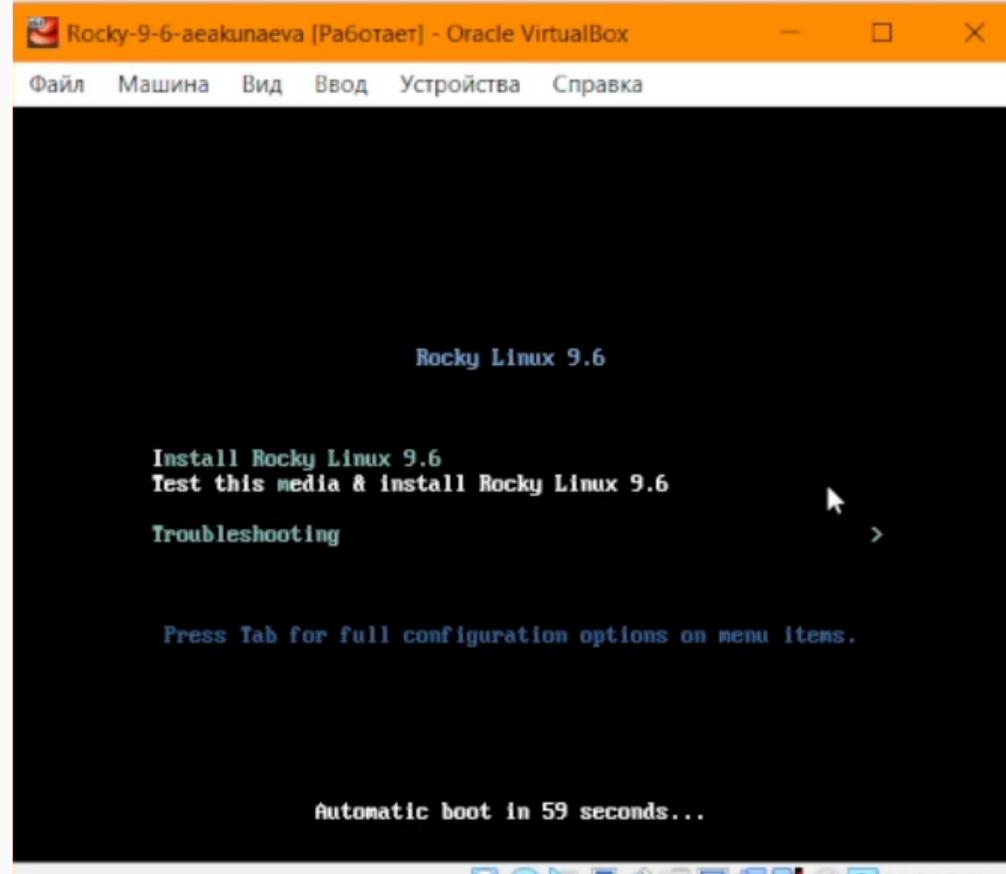
Виртуальное оборудование Rocky Linux



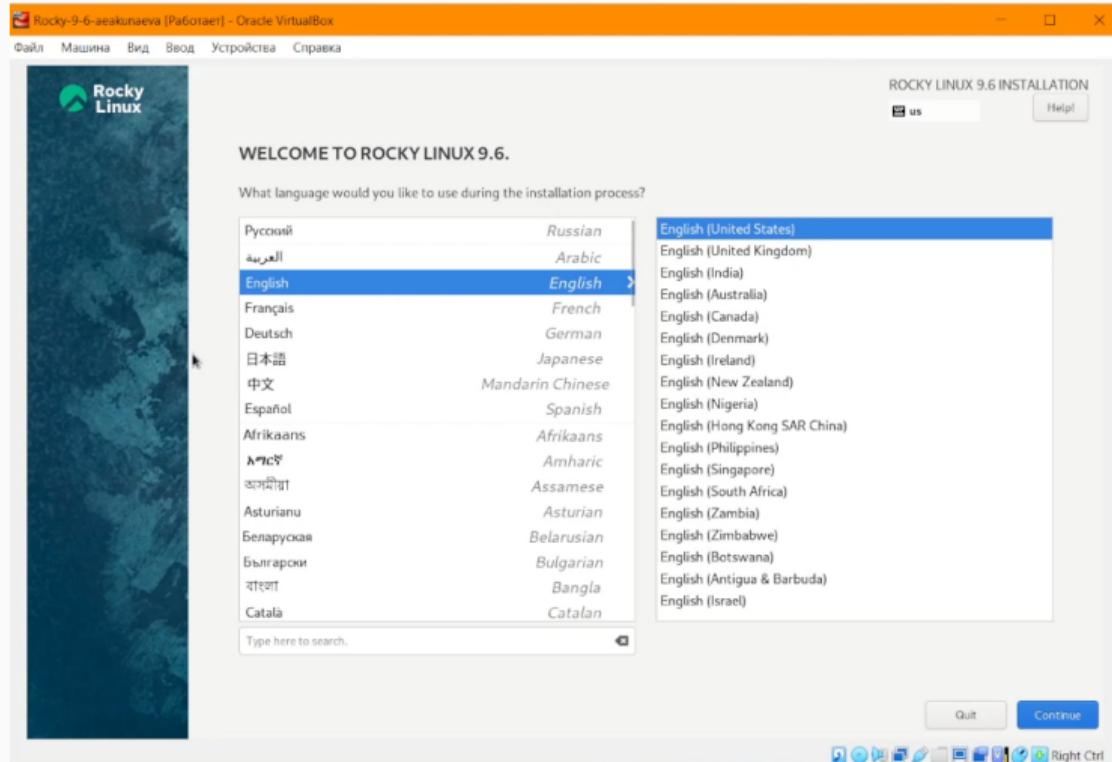
Виртуальный жёсткий диск Rocky Linux



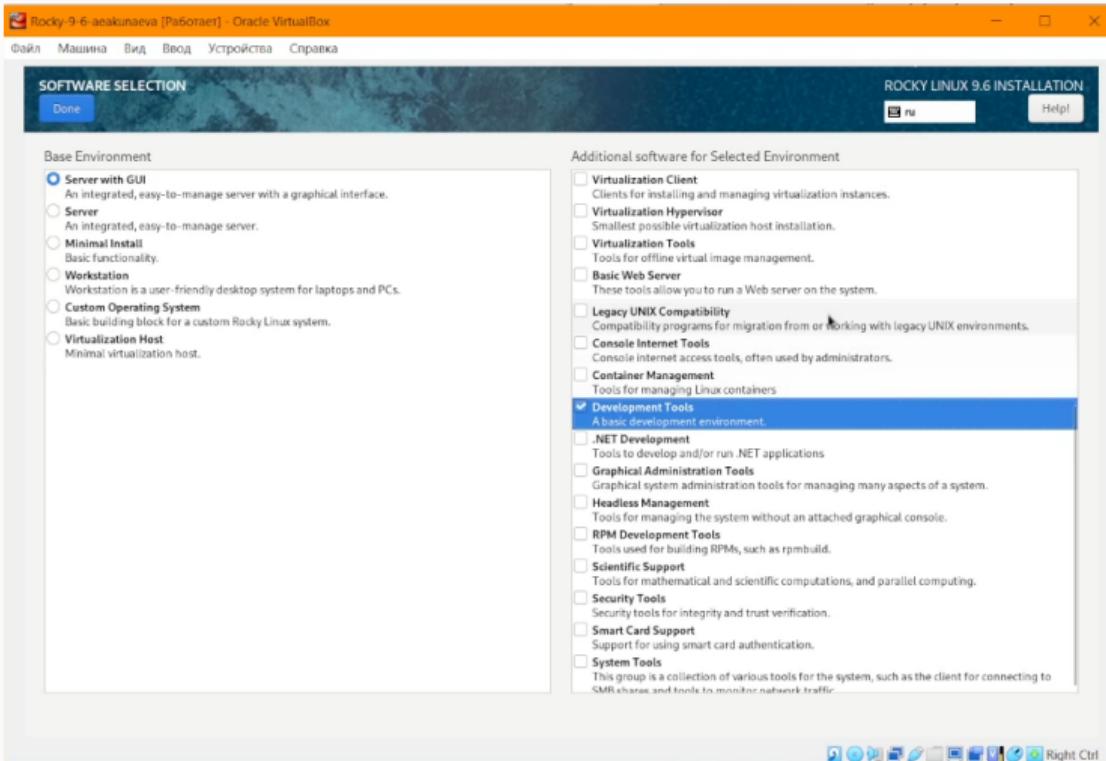
Окно установки Rocky Linux



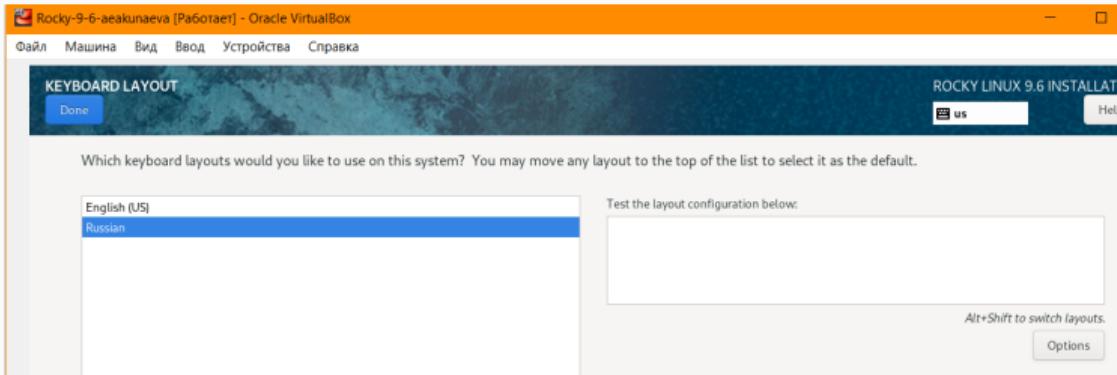
Окно установки Rocky Linux



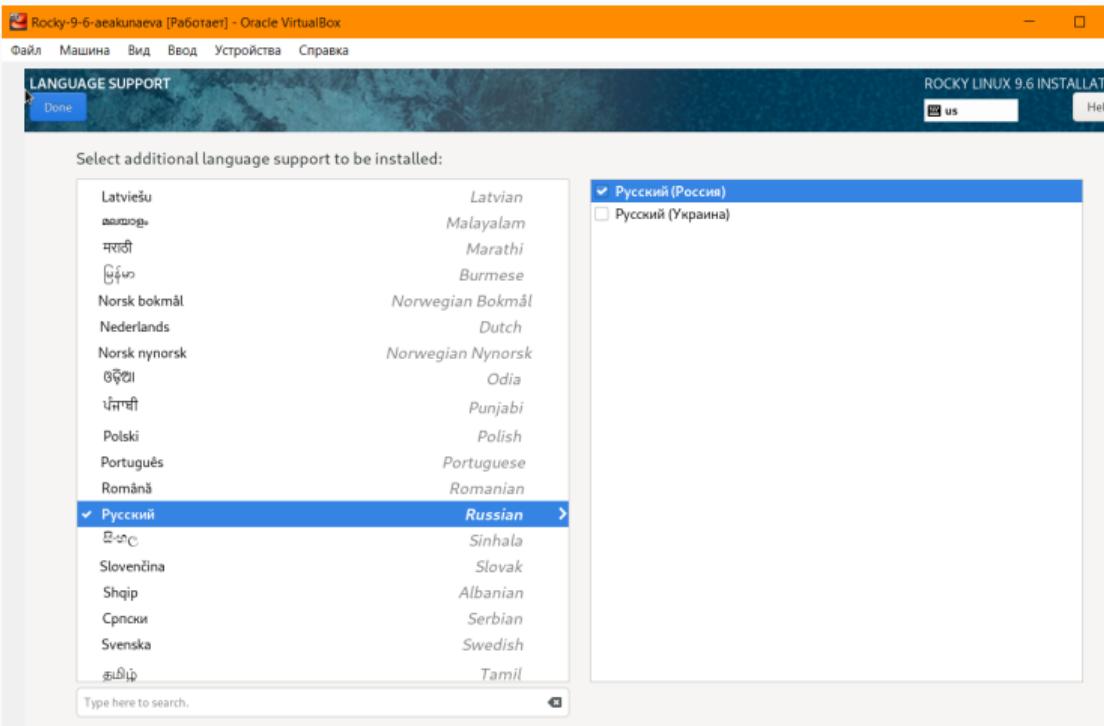
Настройка Rocky Linux: оборудование

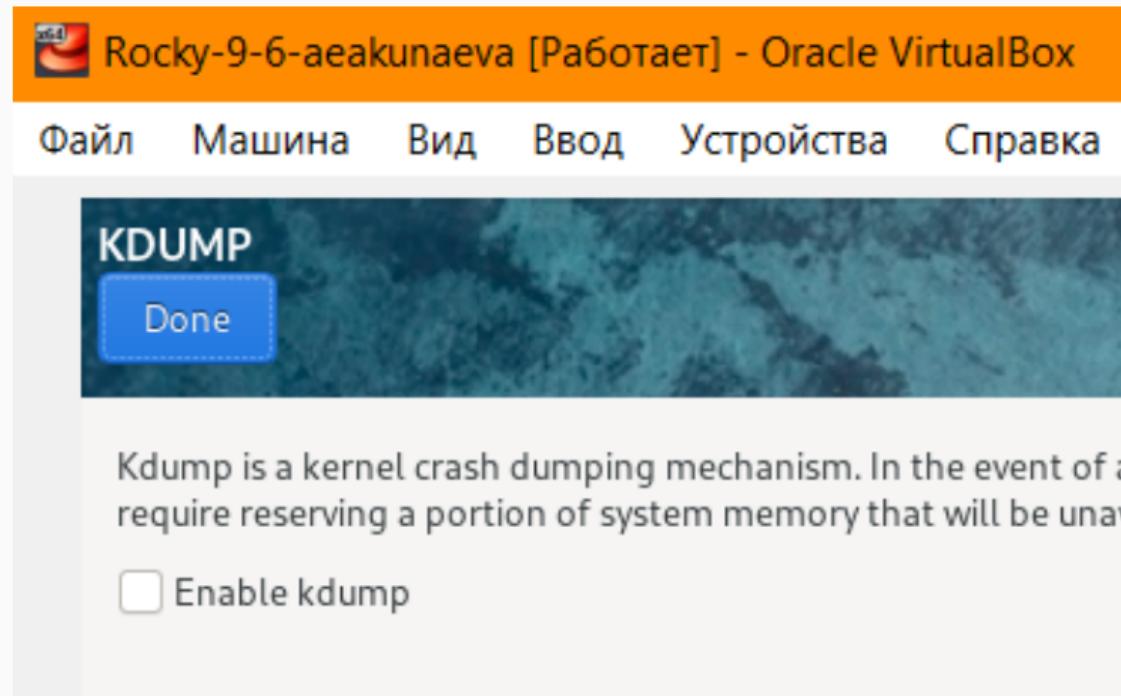


Настройка Rocky Linux: раскладка клавиатуры

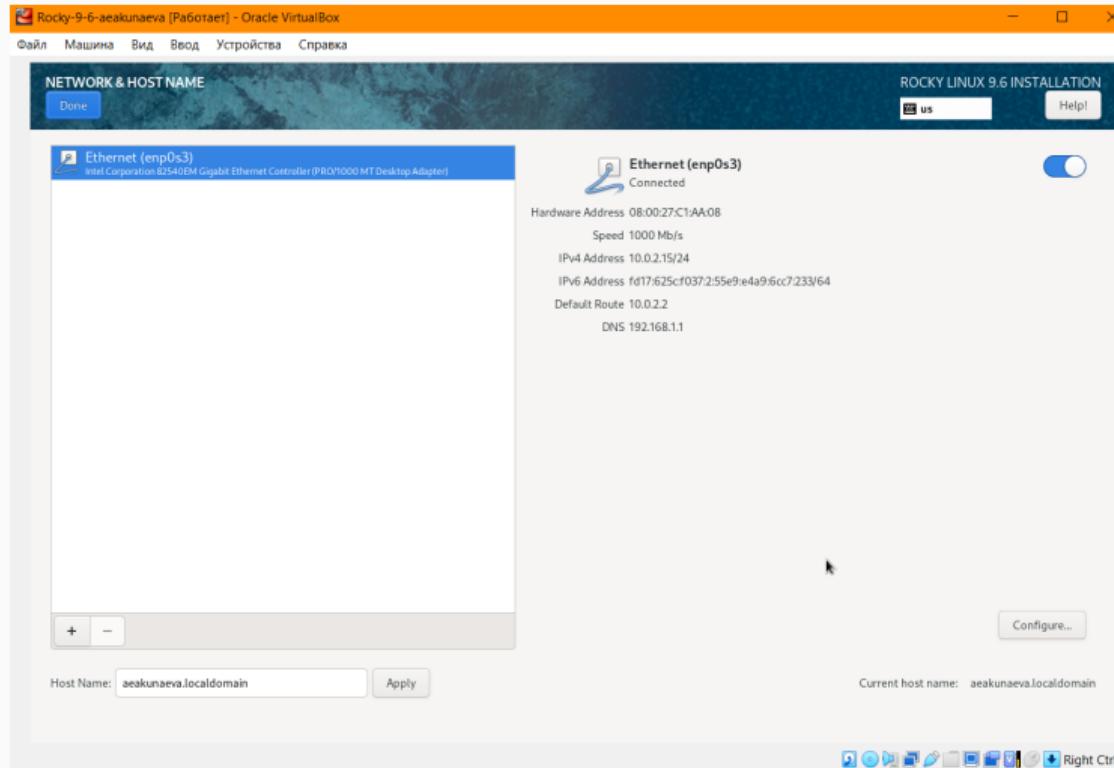


Настройка Rocky Linux: поддержка языков

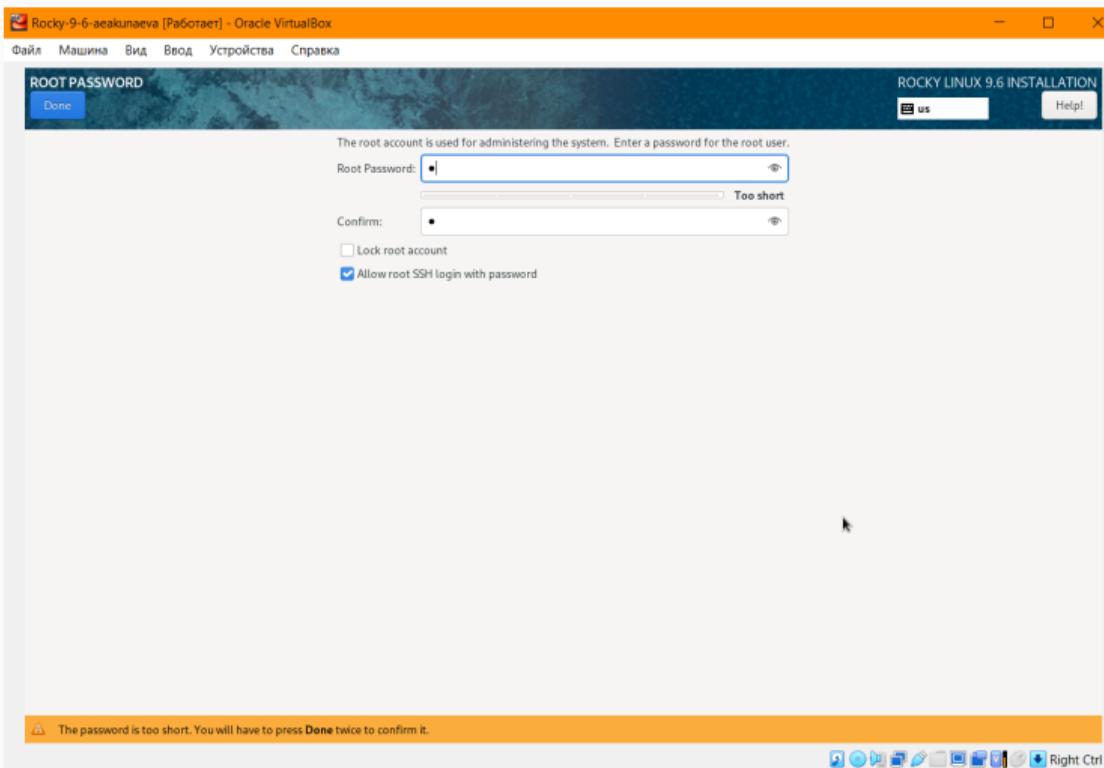




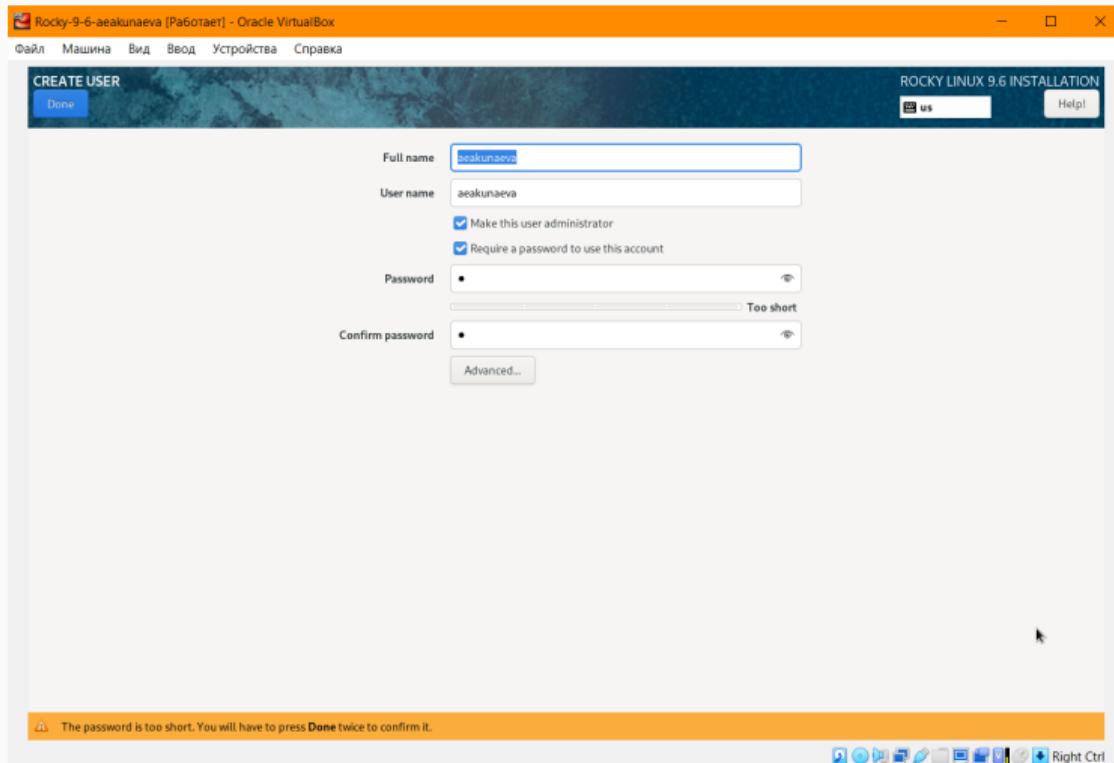
Настройка Rocky Linux: настройка сети



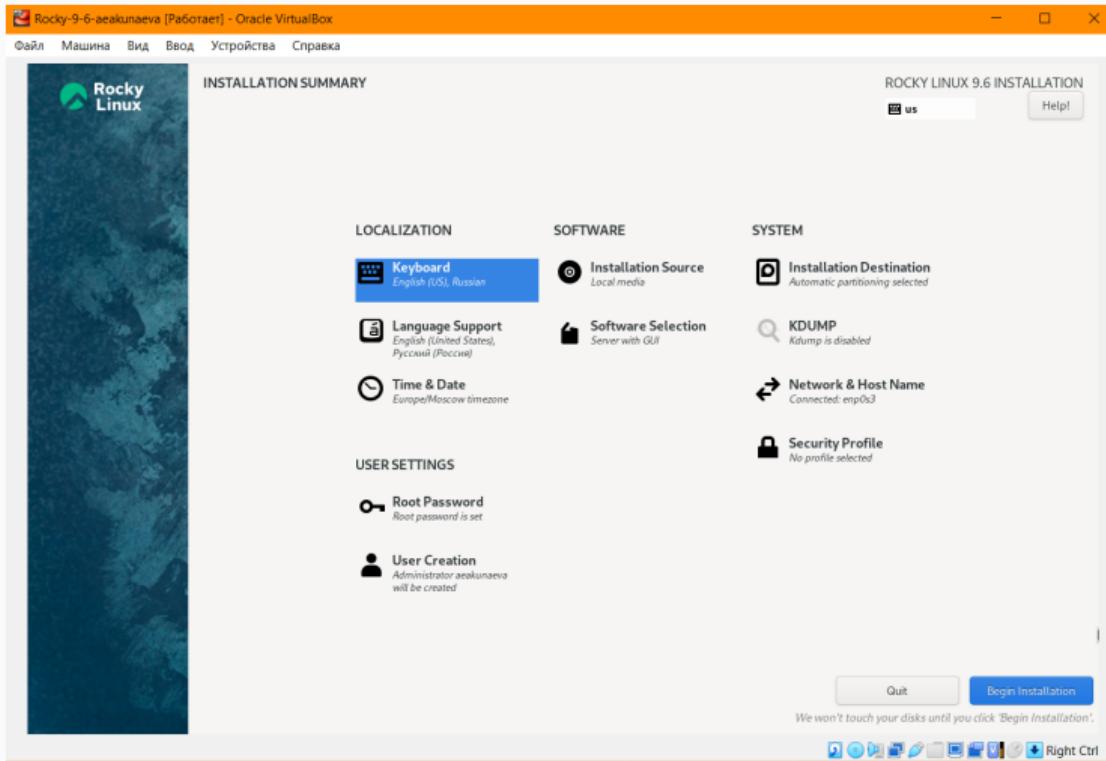
Настройка Rocky Linux: добавление пароля root



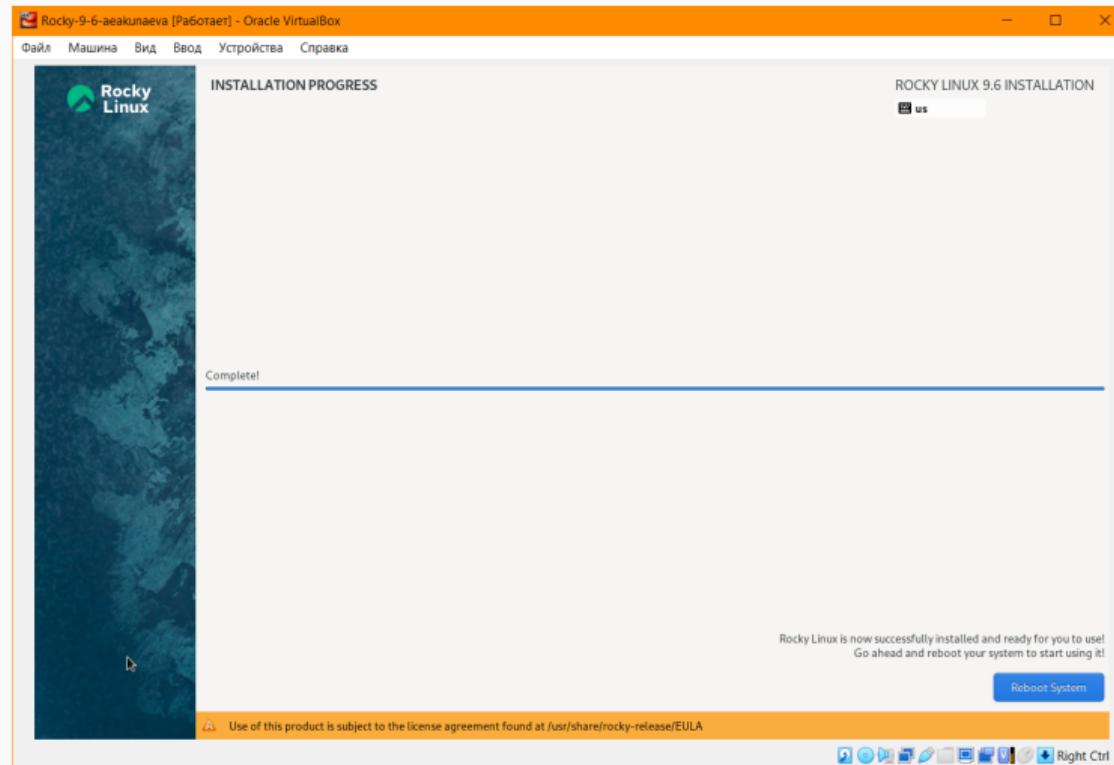
Настройка Rocky Linux: добавление администратора



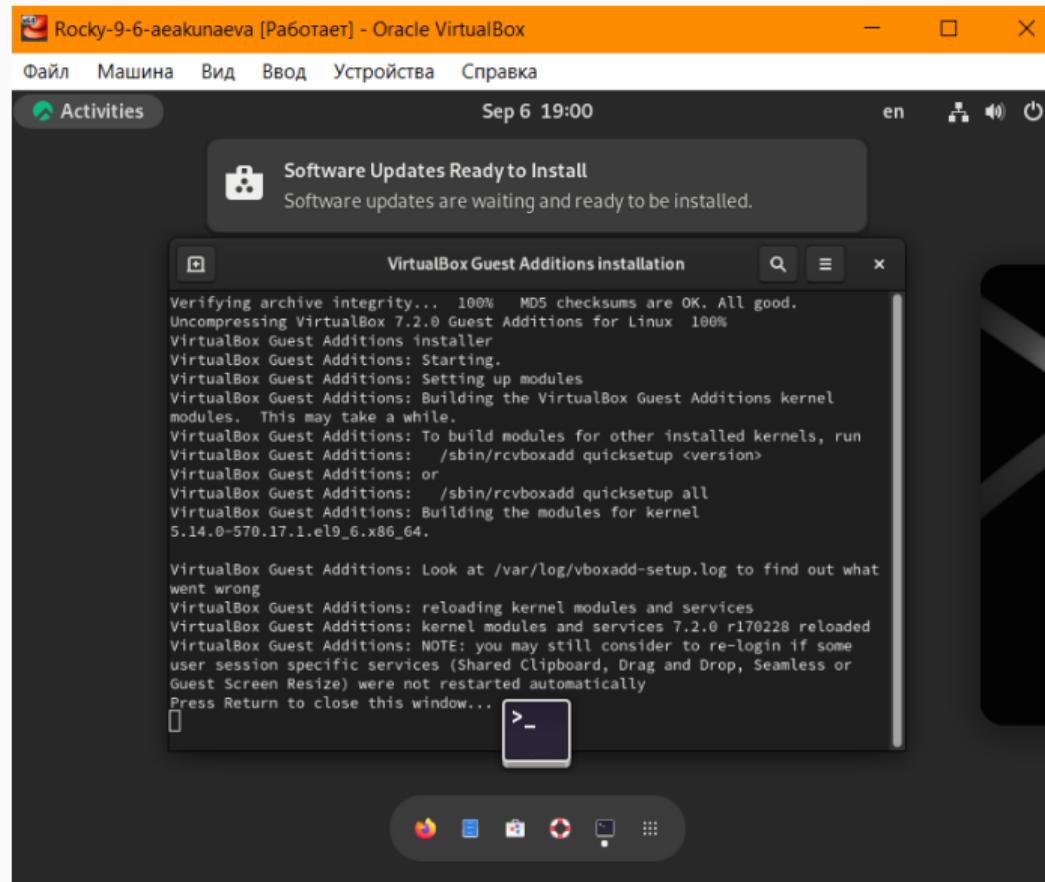
Завершение настройки Rocky Linux



Завершение установки Rocky Linux



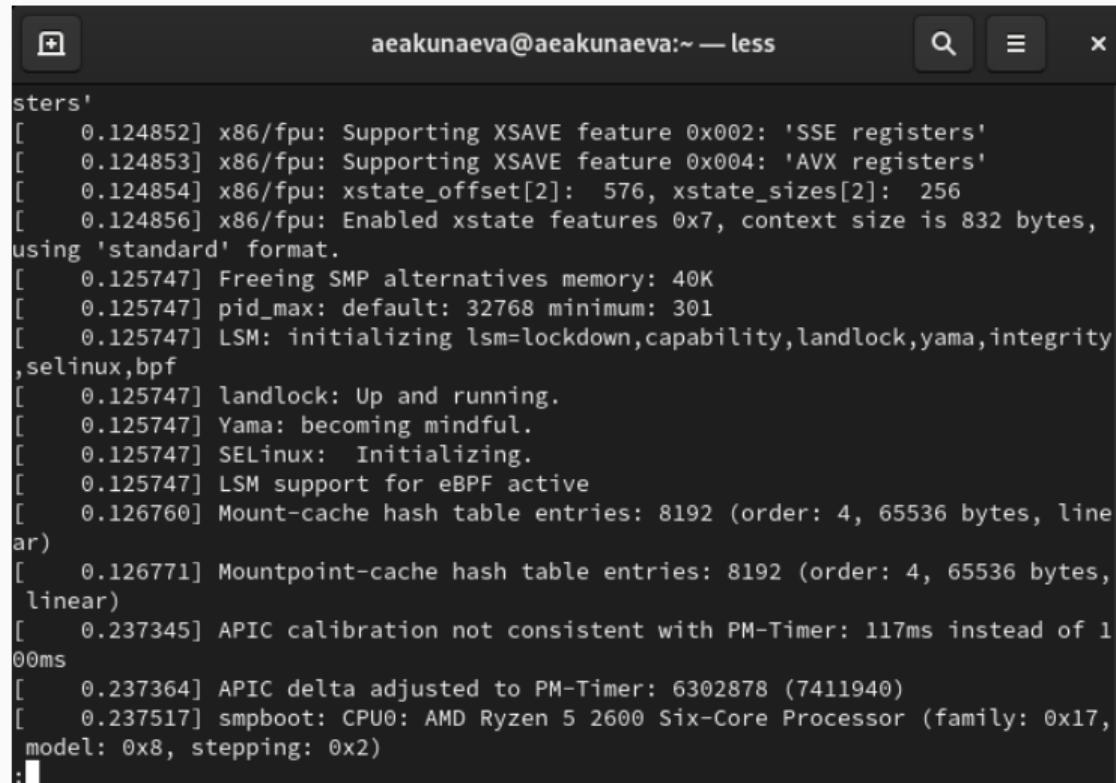
Подключение образа диска дополнений гостевой ОС



Выполнение домашней работы

Использование команды dmesg | less

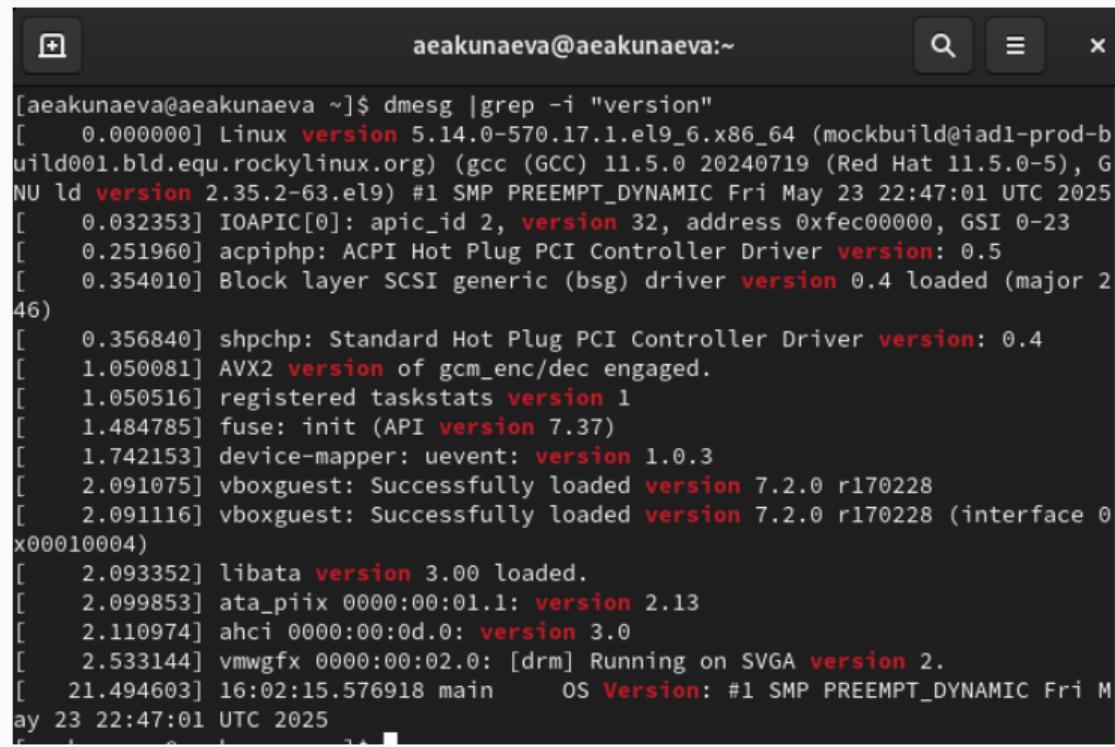
dmesg | less



```
sters'
[ 0.124852] x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
[ 0.124853] x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
[ 0.124854] x86/fpu: xstate_offset[2]: 576, xstate_sizes[2]: 256
[ 0.124856] x86/fpu: Enabled xstate features 0x7, context size is 832 bytes,
using 'standard' format.
[ 0.125747] Freeing SMP alternatives memory: 40K
[ 0.125747] pid_max: default: 32768 minimum: 301
[ 0.125747] LSM: initializing lsm=lockdown,capability,landlock,yama,integrity
,selinux,bpf
[ 0.125747] landlock: Up and running.
[ 0.125747] Yama: becoming mindful.
[ 0.125747] SELinux: Initializing.
[ 0.125747] LSM support for eBPF active
[ 0.126760] Mount-cache hash table entries: 8192 (order: 4, 65536 bytes, line
ar)
[ 0.126771] Mountpoint-cache hash table entries: 8192 (order: 4, 65536 bytes,
linear)
[ 0.237345] APIC calibration not consistent with PM-Timer: 117ms instead of 1
00ms
[ 0.237364] APIC delta adjusted to PM-Timer: 6302878 (7411940)
[ 0.237517] smpboot: CPU0: AMD Ryzen 5 2600 Six-Core Processor (family: 0x17,
model: 0x8, stepping: 0x2)
```

Нахождение версии ядра Linux при помощи dmesg | grep -i

```
dmesg | grep -i "version"
```



```
[aeakunaeva@aeakunaeva ~]$ dmesg |grep -i "version"
[    0.000000] Linux version 5.14.0-570.17.1.el9_6.x86_64 (mockbuild@iad1-prod-build001.bld.equ.rockylinux.org) (gcc (GCC) 11.5.0 20240719 (Red Hat 11.5.0-5), G
NU ld version 2.35.2-63.el9 #1 SMP PREEMPT_DYNAMIC Fri May 23 22:47:01 UTC 2025
[    0.032353] IOAPIC[0]: apic_id 2, version 32, address 0xfec00000, GSI 0-23
[    0.251960] acpiphp: ACPI Hot Plug PCI Controller Driver version: 0.5
[    0.354010] Block layer SCSI generic (bsg) driver version 0.4 loaded (major 2
46)
[    0.356840] shpchp: Standard Hot Plug PCI Controller Driver version: 0.4
[    1.050081] AVX2 version of gcm_enc/dec engaged.
[    1.050516] registered taskstats version 1
[    1.484785] fuse: init (API version 7.37)
[    1.742153] device-mapper: uevent: version 1.0.3
[    2.091075] vboxguest: Successfully loaded version 7.2.0 r170228
[    2.091116] vboxguest: Successfully loaded version 7.2.0 r170228 (interface 0
x00010004)
[    2.093352] libata version 3.00 loaded.
[    2.099853] ata_piix 0000:00:01.1: version 2.13
[    2.110974] ahci 0000:00:0d.0: version 3.0
[    2.533144] vmwgfx 0000:00:02.0: [drm] Running on SVGA version 2.
[   21.494603] 16:02:15.576918 main      OS Version: #1 SMP PREEMPT_DYNAMIC Fri M
ay 23 22:47:01 UTC 2025
```

Нахождение частоты процессора при помощи dmesg | grep -i

```
dmesg | grep -i "processor"
```

```
[aeakunaeva@aeakunaeva ~]$ dmesg |grep -i "processor"
[    0.000032] tsc: Detected 3393.628 MHz processor
[    0.237517] smpboot: CPU0: AMD Ryzen 5 2600 Six-Core Processor (family: 0x17,
model: 0x8, stepping: 0x2)
[    0.245808] smpboot: Total of 2 processors activated (13574.51 BogoMIPS)
[    0.261893] ACPI: Added _OSI(Processor Device)
[    0.261897] ACPI: Added _OSI(Processor Aggregator Device)
[aeakunaeva@aeakunaeva ~]$
```

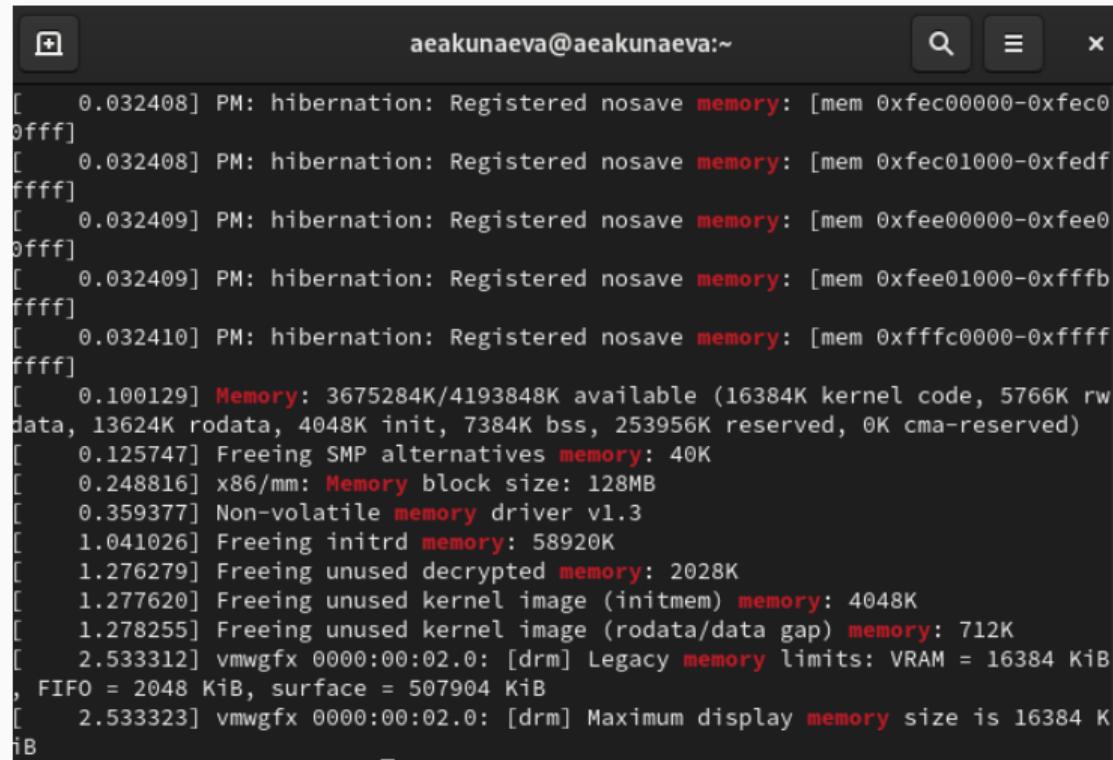
Нахождение модели процессора при помощи dmesg | grep -i

```
dmesg | grep -i "CPU0"
```

```
[aeakunaeva@aeakunaeva ~]$ dmesg |grep -i "CPU0"  
[    0.237517] smpboot: CPU0: AMD Ryzen 5 2600 Six-Core Processor (family: 0x17,  
model: 0x8, stepping: 0x2)
```

Нахождение доступной оперативной памяти при помощи dmesg | grep -i "memory"

```
dmesg | grep -i "memory"
```



The screenshot shows a terminal window with the title bar "aeakunaeva@aeakunaeva:~". The window contains the output of the command "dmesg | grep -i 'memory'". The output lists various memory-related messages from the kernel log. Several lines mention "memory" in red, indicating it is being searched for. Other lines provide details about memory usage, such as available memory and freed memory.

```
[ 0.032408] PM: hibernation: Registered nosave memory: [mem 0xfc00000-0xfc00ffff]
[ 0.032408] PM: hibernation: Registered nosave memory: [mem 0xfc01000-0xfc0fedffff]
[ 0.032409] PM: hibernation: Registered nosave memory: [mem 0xee00000-0xee00ffff]
[ 0.032409] PM: hibernation: Registered nosave memory: [mem 0xee01000-0xfffffbffff]
[ 0.032410] PM: hibernation: Registered nosave memory: [mem 0xfc00000-0xfffffcffff]
[ 0.100129] Memory: 3675284K/4193848K available (16384K kernel code, 5766K rw data, 13624K rodata, 4048K init, 7384K bss, 253956K reserved, 0K cma-reserved)
[ 0.125747] Freeing SMP alternatives memory: 40K
[ 0.248816] x86/mm: Memory block size: 128MB
[ 0.359377] Non-volatile memory driver v1.3
[ 1.041026] Freeing initrd memory: 58920K
[ 1.276279] Freeing unused decrypted memory: 2028K
[ 1.277620] Freeing unused kernel image (initmem) memory: 4048K
[ 1.278255] Freeing unused kernel image (rodata/data gap) memory: 712K
[ 2.533312] vmwgfx 0000:00:02.0: [drm] Legacy memory limits: VRAM = 16384 KiB , FIFO = 2048 KiB, surface = 507904 KiB
[ 2.533323] vmwgfx 0000:00:02.0: [drm] Maximum display memory size is 16384 KiB
```

Нахождение типа обнаруженного гипервизора при помощи dmesg | grep -i

```
dmesg | grep -i "hypervisor"
```

```
[aeakunaeva@aeakunaeva ~]$ dmesg |grep -i "hypervisor"
[    0.000000] Hypervisor detected: KVM
[   2.533155] vmwgfx 0000:00:02.0: [drm] *ERROR* vmwgfx seems to be running on
an unsupported hypervisor.
```

Нахождение информации о файловых системах при помощи dmesg | grep -i

```
dmesg | grep -i "filesystem"
```

```
[aeakunaeva@aeakunaeva ~]$ dmesg |grep -i "filesystem"
[    3.346618] XFS (dm-0): Mounting V5 Filesystem 41c3393a-58bf-4486-a6eb-2155f7
10615a
[   16.216333] XFS (sda1): Mounting V5 Filesystem 25a77cb0-b697-4d7d-8545-944e2e
52929c
```

Выводы

Выводы

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