

Лабораторная работа №1

Основы информационной безопасности

Галиева Аделина Руслановна

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Российский университет дружбы народов, Москва, Россия

Вводная часть

Установка Rocky Linux.

Целью данной работы является приобретение практических навыков установки операционной системы на виртуальную машину, настройки минимально необходимых для дальнейшей работы сервисов.

- Процессор **pandoc** для входного формата Markdown
- Результирующие форматы
 - pdf
 - html
- Автоматизация процесса создания: **Makefile**

Создание презентации

- Pandoc: преобразователь текстовых файлов
- Сайт: <https://pandoc.org/>
- Репозиторий: <https://github.com/jgm/pandoc>

- Использование LaTeX
- Пакет для презентации: beamer
- Тема оформления: **metropolis**


```
slide_level: 2  
aspectratio: 169  
section-titles: true  
theme: metropolis
```

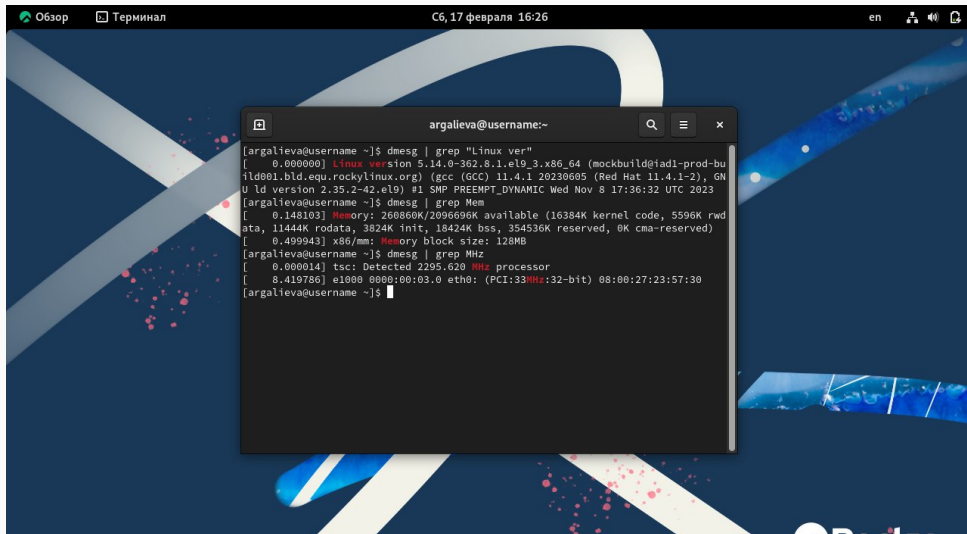
- Используется фреймворк `reveal.js`
- Используется тема `beige`

- Тема задаётся в файле **Makefile**

```
REVEALJS_THEME = beige
```

Содержание исследования

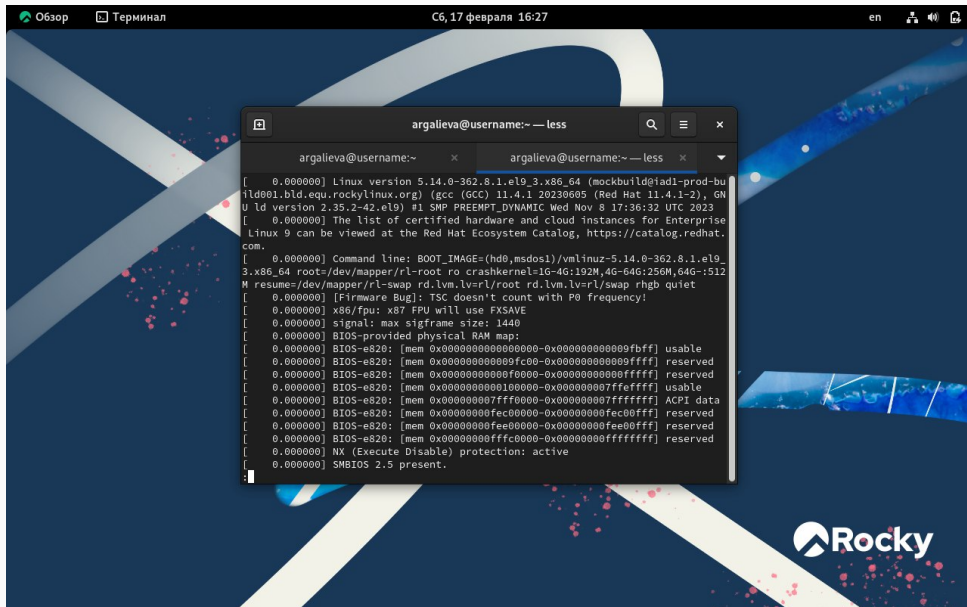
Загружаю установленную систему .



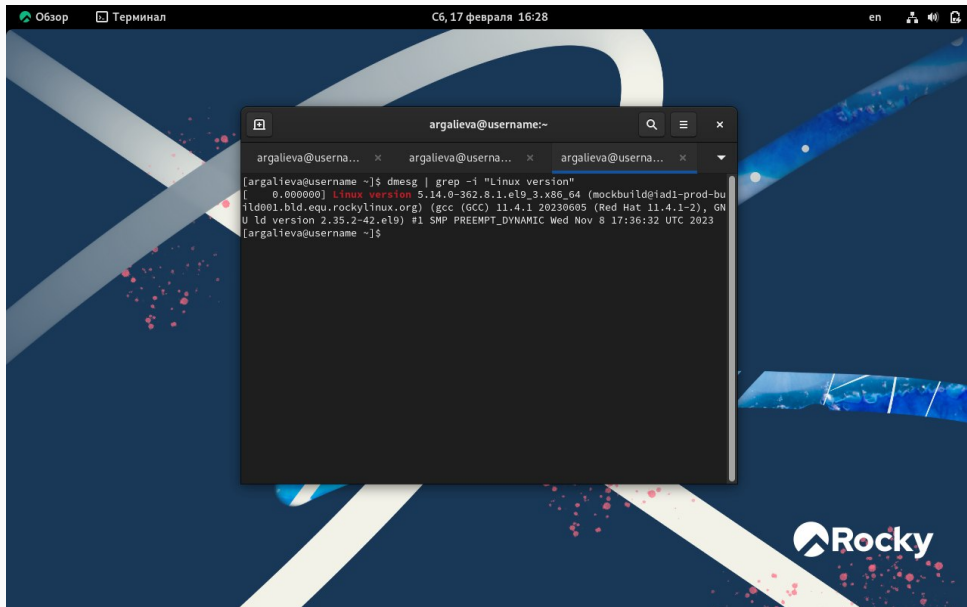
The screenshot shows a Linux desktop environment with a dark blue background featuring abstract white and red patterns. At the top, a taskbar contains icons for 'Обзор' (Overview), 'Терминал' (Terminal), and system status indicators on the right showing 'en', network, and volume. A terminal window titled 'argalieva@username:~' is open in the center. The terminal displays the output of three 'dmesg | grep' commands. The first command shows the Linux version (5.14.0-362.8.1.el9_3.x86_64) and GCC version (11.4.1). The second command shows memory statistics (260860K/2096696K available). The third command shows the detected processor frequency (2295.620 MHz).

```
[argalieva@username ~]$ dmesg | grep "Linux ver"
[ 0.000000] Linux version 5.14.0-362.8.1.el9_3.x86_64 (mockbuild@iad1-prod-bu
ild001.bld.equ.rockylinux.org) (gcc (GCC) 11.4.1 20230605 (Red Hat 11.4.1-2), GN
U ld version 2.35.2-42.el9) #1 SMP PREEMPT_DYNAMIC Wed Nov 8 17:36:32 UTC 2023
[argalieva@username ~]$ dmesg | grep Mem
[ 0.148103] Memory: 260860K/2096696K available (16384K kernel code, 5596K rwd
ata, 11444K rodata, 3824K init, 18424K bss, 354536K reserved, 0K cma-reserved)
[ 0.499943] x86/mm: Memory block size: 128MB
[argalieva@username ~]$ dmesg | grep MHz
[ 0.000014] tsc: Detected 2295.620 MHz processor
[ 8.419786] e1000 0000:00:03:0 eth0: (PCI:33MHz:32-bit) 08:00:27:23:57:30
[argalieva@username ~]$
```

1. Анализирую последовательность загрузки системы



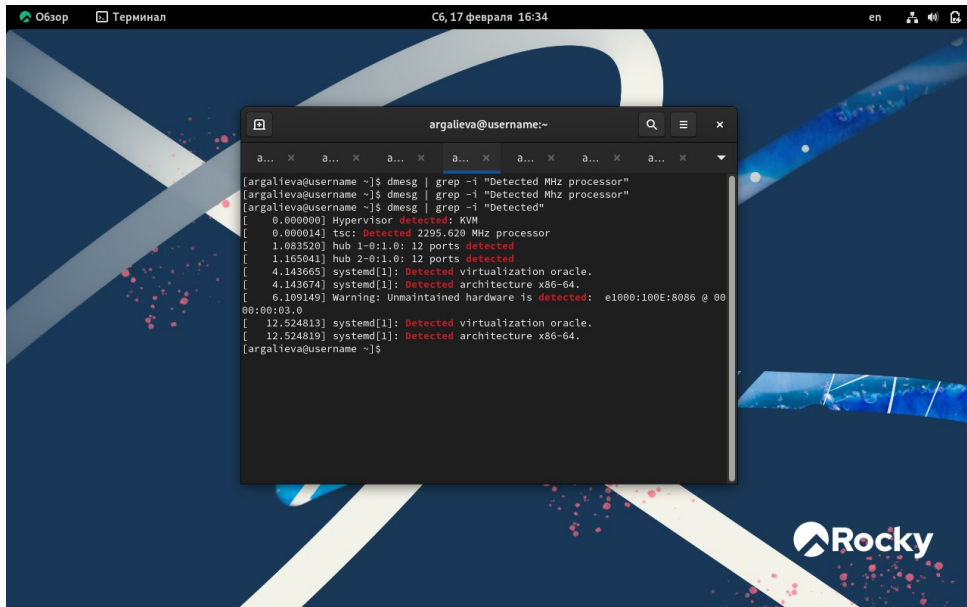
2. Версия ядра .



The screenshot shows a Linux desktop environment with a dark blue background featuring abstract white and red patterns. In the top-left corner, there is a taskbar with icons for 'Обзор' (Overview) and 'Терминал' (Terminal). The top-right corner displays the date and time 'Сб, 17 февраля 16:28' and the language 'en'. A terminal window is open in the center, titled 'argalieva@username:~'. The terminal shows the command `dmesg | grep -i "Linux version"` and its output, which includes the Linux version `5.14.0-362.8.1.el9_3.x86_64` and other system details like the compiler `gcc (GCC) 11.4.1` and the kernel build date `Wed Nov 8 17:36:32 UTC 2023`. The Rocky Linux logo is visible in the bottom-right corner of the desktop background.

```
[argalieva@username ~]$ dmesg | grep -i "Linux version"
[    0.000000] Linux version 5.14.0-362.8.1.el9_3.x86_64 (mockbuild@iad1-prod-bu
ild001.bld.equ.rockylinux.org) (gcc (GCC) 11.4.1 20230605 (Red Hat 11.4.1-2), GN
U ld version 2.35.2-42.el9) #1 SMP PREEMPT_DYNAMIC Wed Nov 8 17:36:32 UTC 2023
[argalieva@username ~]$
```

3. Частота процессора .

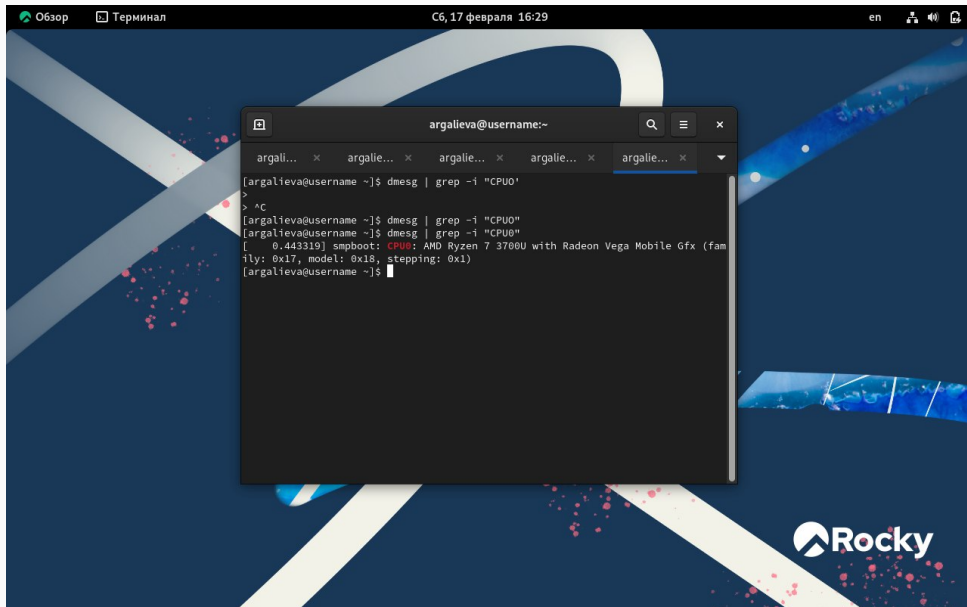


The screenshot shows a desktop environment with a dark blue background featuring abstract white and red patterns. In the top-left corner, there are icons for 'Обзор' (Overview) and 'Терминал' (Terminal). The top-center displays the date and time: 'Сб, 17 февраля 16:34'. The top-right corner shows the language 'en' and system status icons. A terminal window is open in the center, titled 'argalieva@username:~'. The terminal shows the following commands and output:

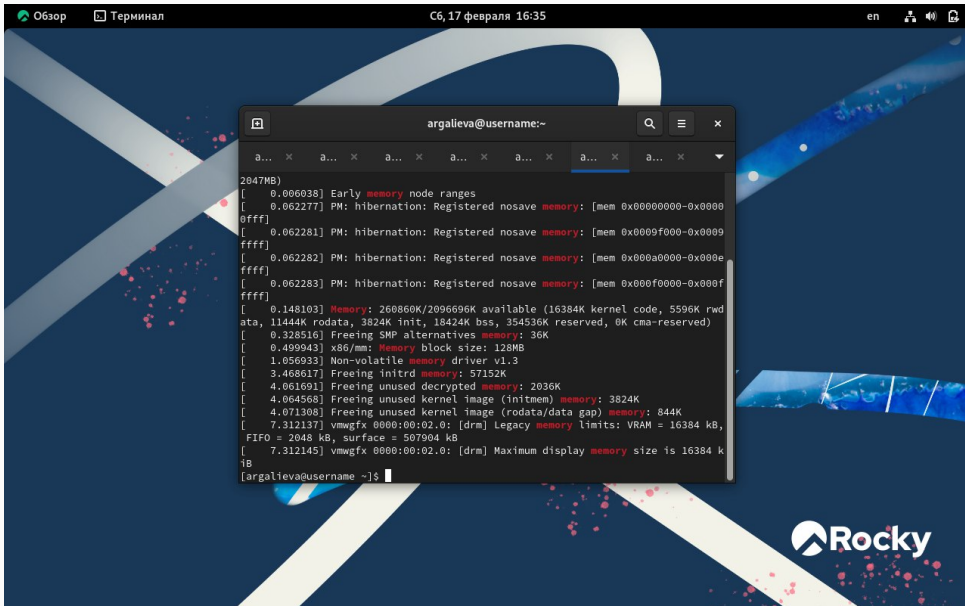
```
[argalieva@username ~]$ dmesg | grep -i "Detected Mhz processor"
[argalieva@username ~]$ dmesg | grep -i "Detected Mhz processor"
[argalieva@username ~]$ dmesg | grep -i "Detected"
[ 0.000000] Hypervisor detected: KVM
[ 0.000014] tsc: Detected 2295.620 MHz processor
[ 1.083520] hub 1-0:1.0: 12 ports detected
[ 1.165041] hub 2-0:1.0: 12 ports detected
[ 4.143665] systemd[1]: Detected virtualization oracle.
[ 4.143674] systemd[1]: Detected architecture x86-64.
[ 6.109149] Warning: Unmaintained hardware is detected: e1000:100E:8086 @ 00
00:00:03.0
[ 12.524813] systemd[1]: Detected virtualization oracle.
[ 12.524819] systemd[1]: Detected architecture x86-64.
[argalieva@username ~]$
```

The Rocky Linux logo is visible in the bottom-right corner of the desktop background.

4. Модель процессора .



5. Объем доступной оперативной памяти.

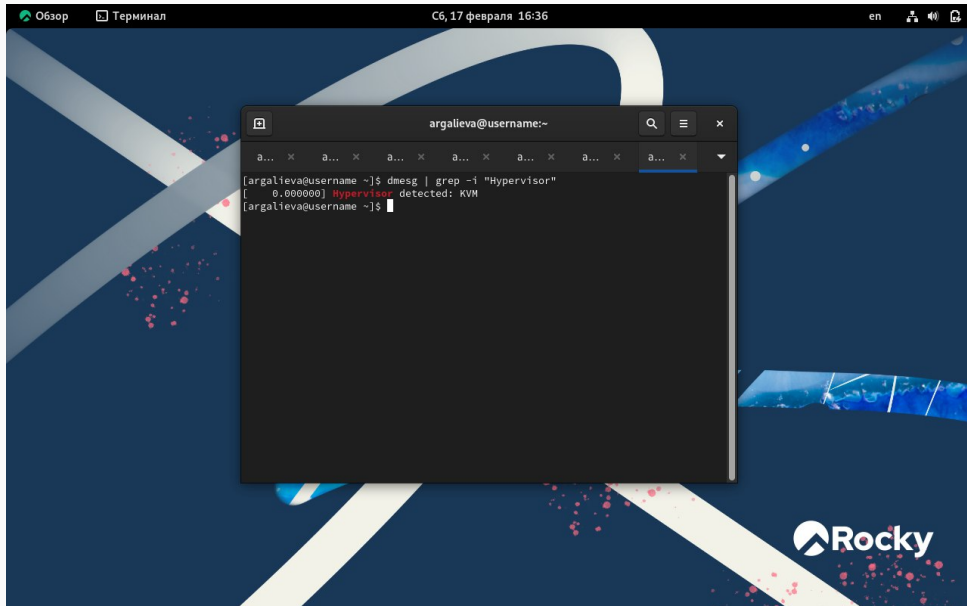


The screenshot shows a terminal window titled "argalieva@username:~" with a search icon, menu icon, and close button. The terminal output displays various memory-related messages and statistics. The background of the desktop is a blue and white abstract pattern with the Rocky Linux logo in the bottom right corner.

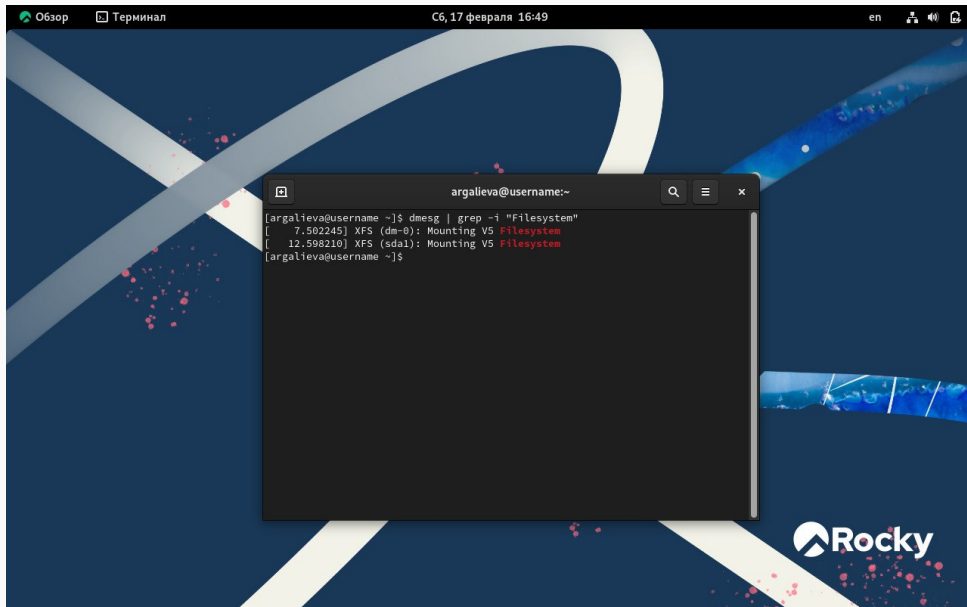
```
Обзор Терминал C6, 17 февраля 16:35 en

2047MB)
[ 0.006038] Early memory node ranges
[ 0.062277] PM: hibernation: Registered nosave memory: [mem 0x00000000-0x0000
0fff]
[ 0.062281] PM: hibernation: Registered nosave memory: [mem 0x0009f000-0x0009
ffff]
[ 0.062282] PM: hibernation: Registered nosave memory: [mem 0x000a0000-0x000e
ffff]
[ 0.062283] PM: hibernation: Registered nosave memory: [mem 0x000f0000-0x000f
ffff]
[ 0.148103] Memory: 260860K/2096696K available (16384K kernel code, 5596K rwd
ata, 11444K rodata, 3824K init, 18424K bss, 354536K reserved, 0K cma-reserved)
[ 0.328516] Freeing SMP alternatives memory: 36K
[ 0.499943] x86/mm: Memory block size: 128MB
[ 1.056933] Non-volatile memory driver v1.3
[ 3.468617] Freeing initrd memory: 57152K
[ 4.061691] Freeing unused decrypted memory: 2036K
[ 4.064568] Freeing unused kernel image (initmem) memory: 3824K
[ 4.071308] Freeing unused kernel image (rodata/data gap) memory: 844K
[ 7.312137] vmwgfx 0000:00:02.0: [drm] Legacy memory limits: VRAM = 16384 kB,
FIFO = 2048 kB, surface = 507904 kB
[ 7.312145] vmwgfx 0000:00:02.0: [drm] Maximum display memory size is 16384 k
iB
[argalieva@username ~]$
```

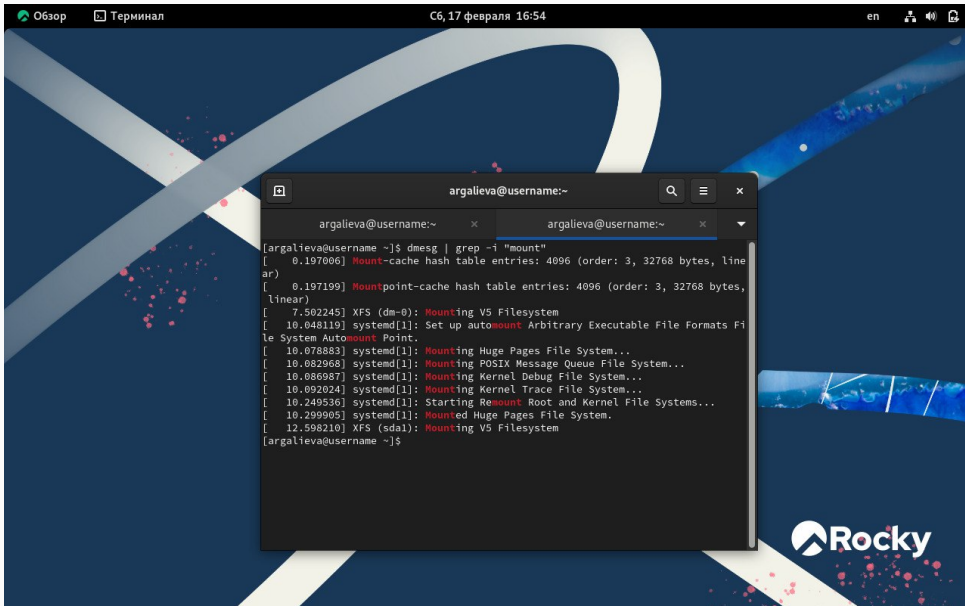
6. Тип обнаруженного гипервизора.



7. Тип файловой системы корневого раздела.



8. Последовательность монтирования файловых систем.



The screenshot shows a desktop environment with a dark blue background featuring a large white 'X' and a blue nebula-like pattern. In the bottom right corner, the 'Rocky' logo is visible. A terminal window is open in the center, displaying the output of the command `dmesg | grep -i "mount"`. The terminal title bar reads 'argalieva@username:~'. The output shows a sequence of mount events:

```
argalieva@username:~$ dmesg | grep -i "mount"
[ 0.197006] Mount-cache hash table entries: 4096 (order: 3, 32768 bytes, linear)
[ 0.197199] Mountpoint-cache hash table entries: 4096 (order: 3, 32768 bytes, linear)
[ 7.502245] XFS (dm-0): Mounting V5 Filesystem
[ 10.048119] systemd[1]: Set up automount Arbitrary Executable File Formats File System Automount Point.
[ 10.078883] systemd[1]: Mounting Huge Pages File System...
[ 10.082968] systemd[1]: Mounting POSIX Message Queue File System...
[ 10.086987] systemd[1]: Mounting Kernel Debug File System...
[ 10.092024] systemd[1]: Mounting Kernel Trace File System...
[ 10.249536] systemd[1]: Starting Remount Root and Kernel File Systems...
[ 10.299905] systemd[1]: Mounted Huge Pages File System.
[ 12.598210] XFS (sda1): Mounting V5 Filesystem
argalieva@username:~$
```

В ходе выполнения лабораторной работы я установила Rocky Linux.

Я приобрела практические навыки установки и конфигурации операционной системы на виртуальную машину.