РОССИЙСКИЙ УНИВЕРСИТЕТ ДРУЖБЫ НАРОДОВ
Факультет физико-математических и естественных наук
Кафедра прикладной информатики и теории вероятностей

Отчет по лабораторной работе №1

Дисциплина: Операционные системы

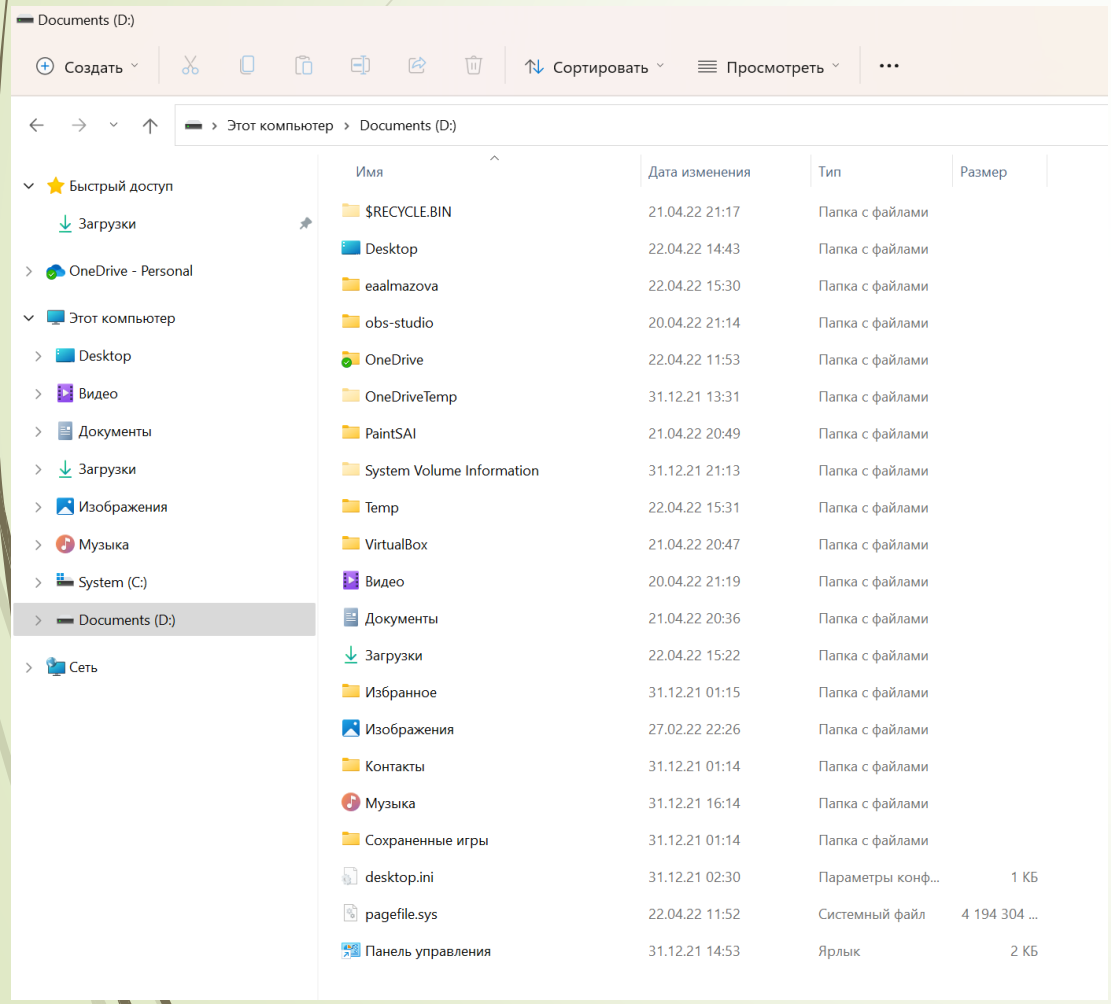
Отчет подготовила
Алмазова Елизавета,
группа НПМбд-01-21

Цель работы и задание

Цель работы: приобретение практических навыков установки операц ионной системы на виртуальную машину, настройки минимально необх одимых для дальнейшей работы сервисов.

Задание: установить операционную систему Fedora на виртуальную машину VirtualBox и выполнить настройку минимально необходимых для дальнейшей работы сервисов.

Ход работы. Создание каталога для виртуальных машин



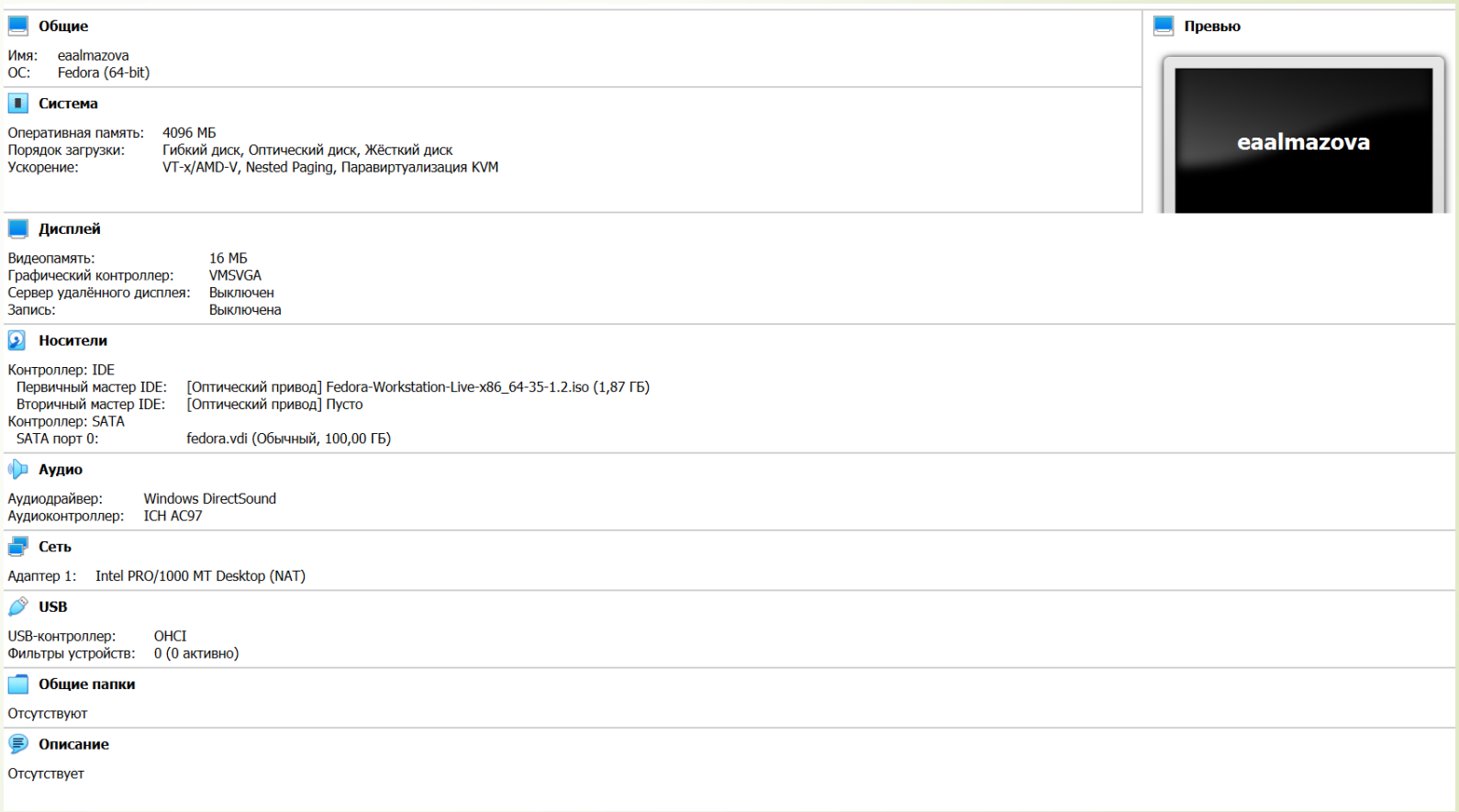
Создала папку eaalmazova на диске D: для дальнейшего расположения виртуальных машин.

Ход работы. Создание виртуальной машины

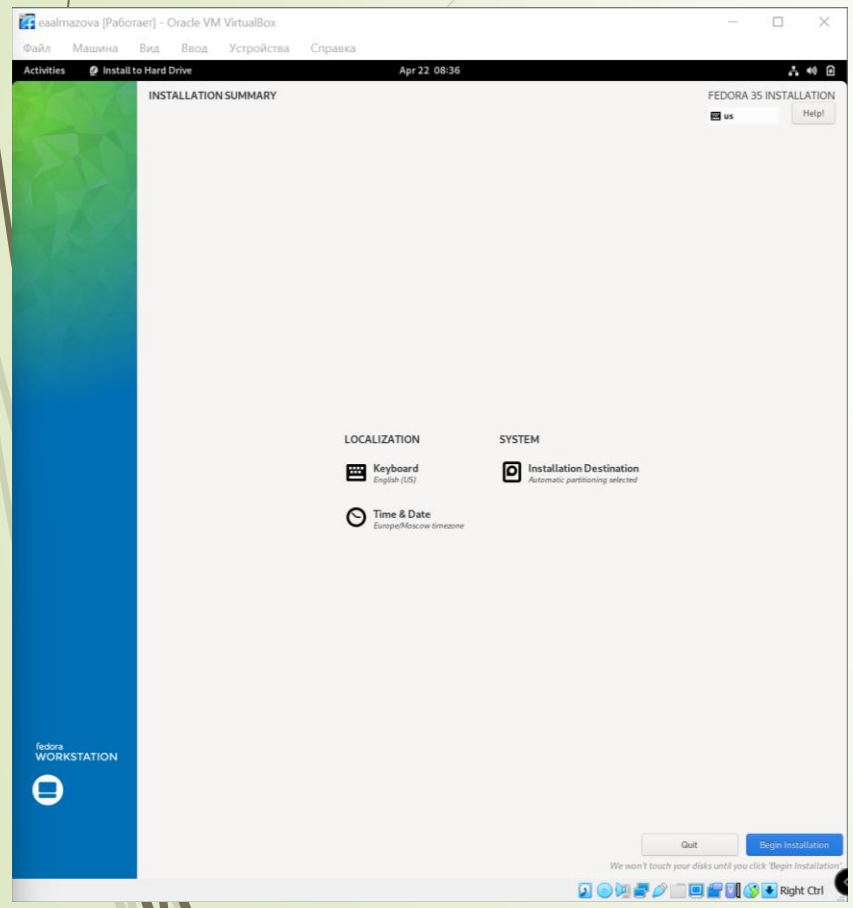
В приложении VirtualBox я создала виртуальную машину eaalmazova с характеристиками:

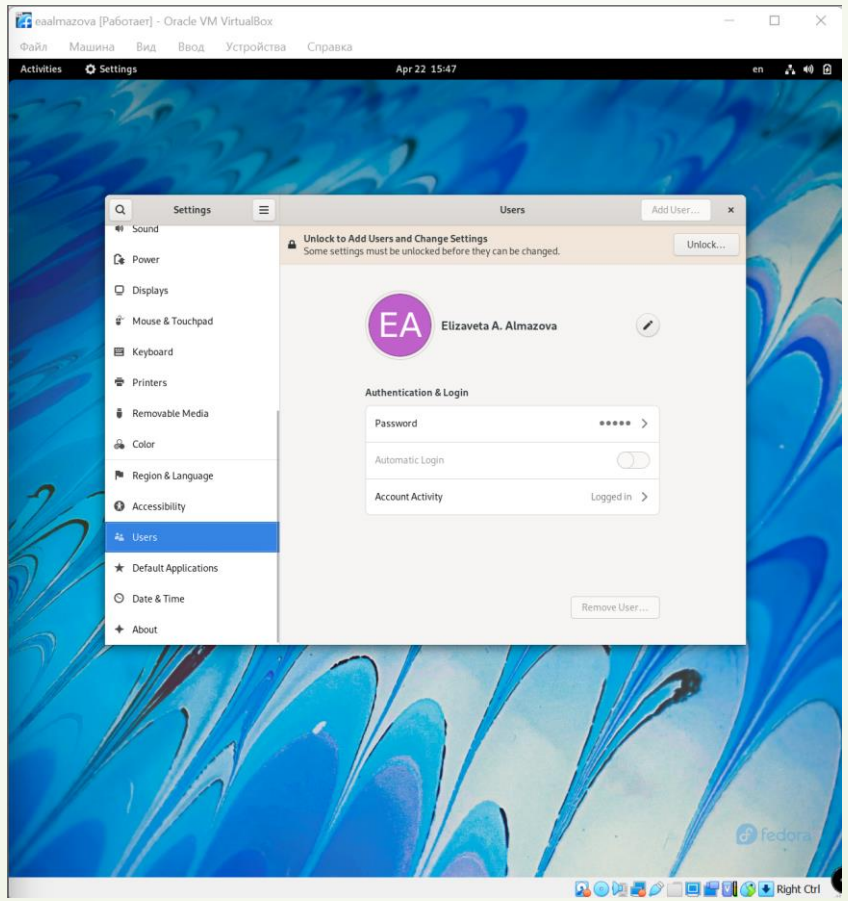
- Тип ОС – Linux, Fedora(64 bit);
- Основная память – 4 ГБ;
- Жесткий диск – загрузочный, VDI, динамический виртуальный диск;
- Размер диска – 100 Гб.

Добавила новый привод оптических дисков, выбрав скачанный образ диска.



Ход работы. Настройка установки ОС и создание учетной записи



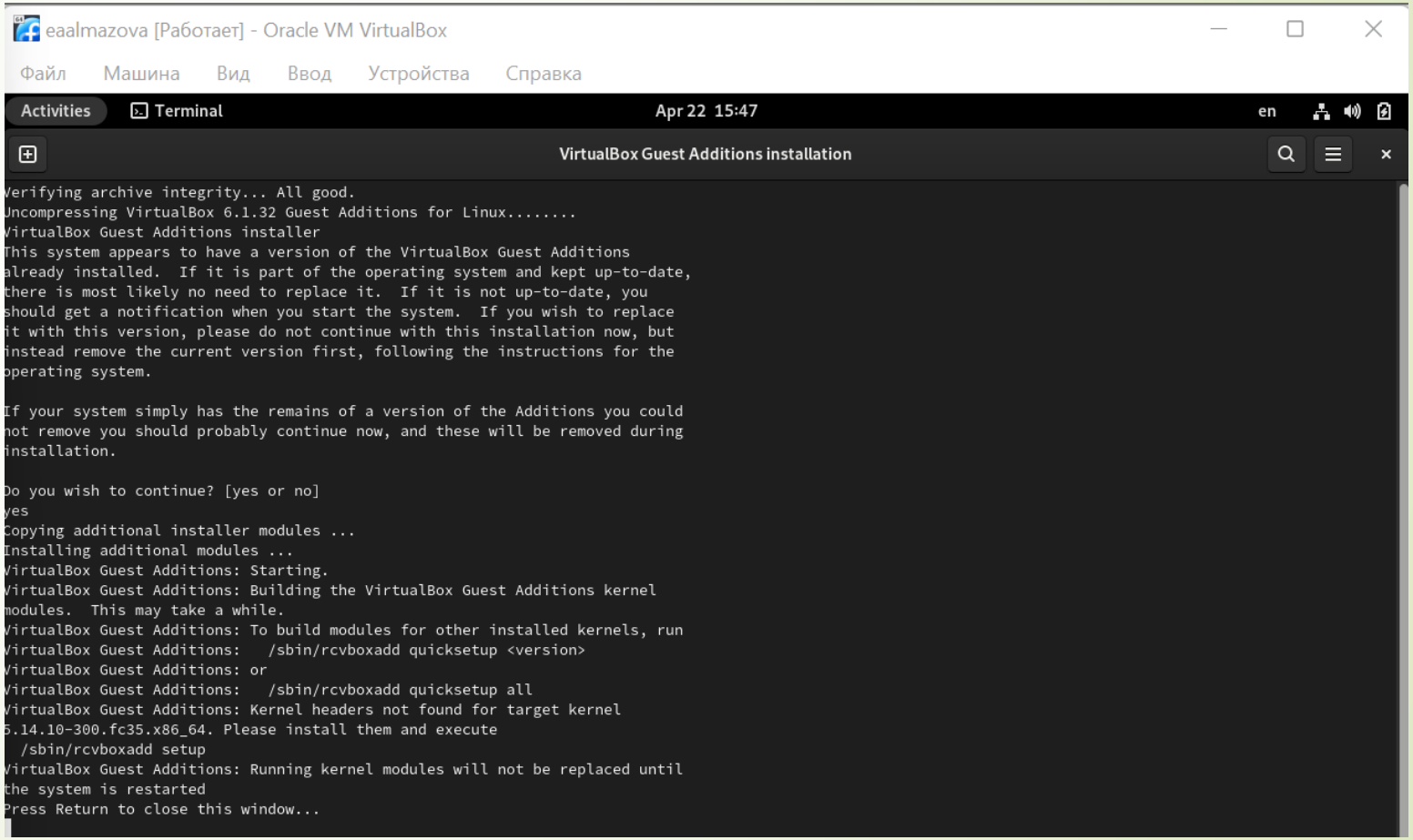


Выбрала часовой пояс (Москва), английскую раскладку и оставила место установки ОС без изменений.

Перезапустила ВМ, вручную отключила оптический диск, установила имя и пароль пользователя.

Ход работы. Подключение образа диска дополнений гостевой ОС

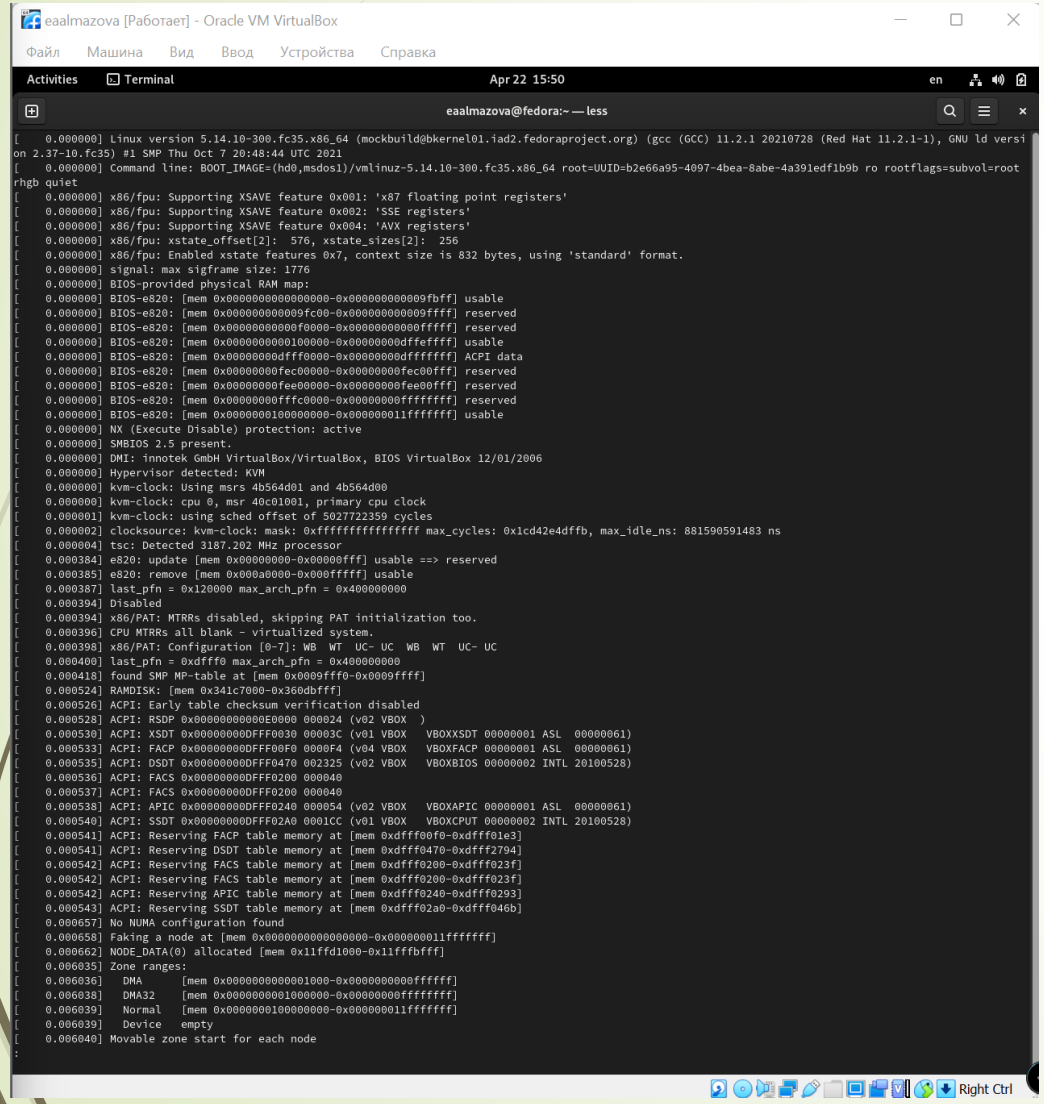
В меню Устройства ВМ подключила образ диска дополнений гостевой ОС. Ввела пароль пользователя root. После окончания установки перезапустила ВМ.



Вывод

В ходе выполнения данной лабораторной работы я узнала, что такое виртуальная машина и как она работает, получила практические навыки установки операционной системы Fedora на виртуальную машину, настройки минимально необходимых для дальнейшей работы сервисов.

Домашнее задание

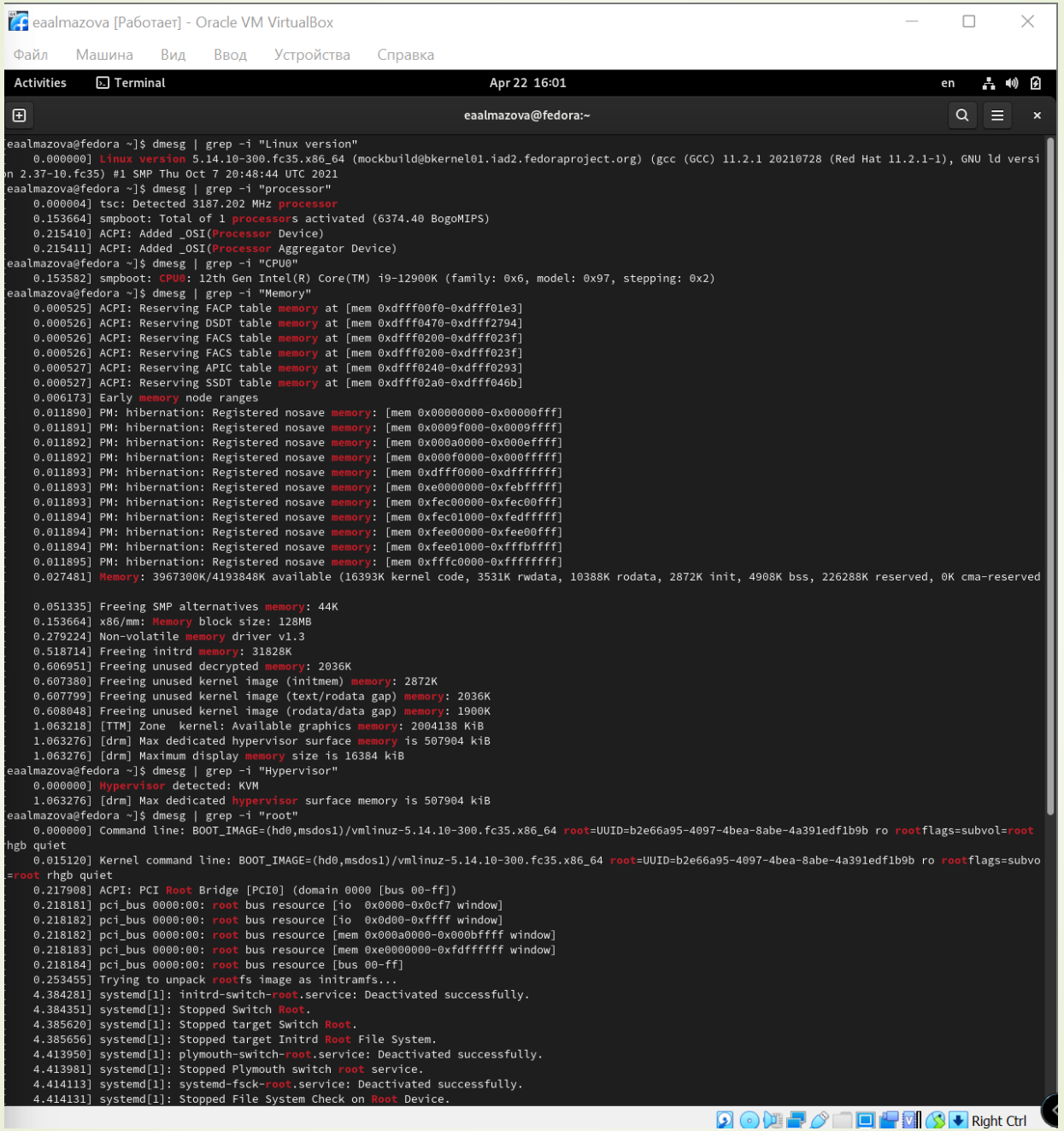


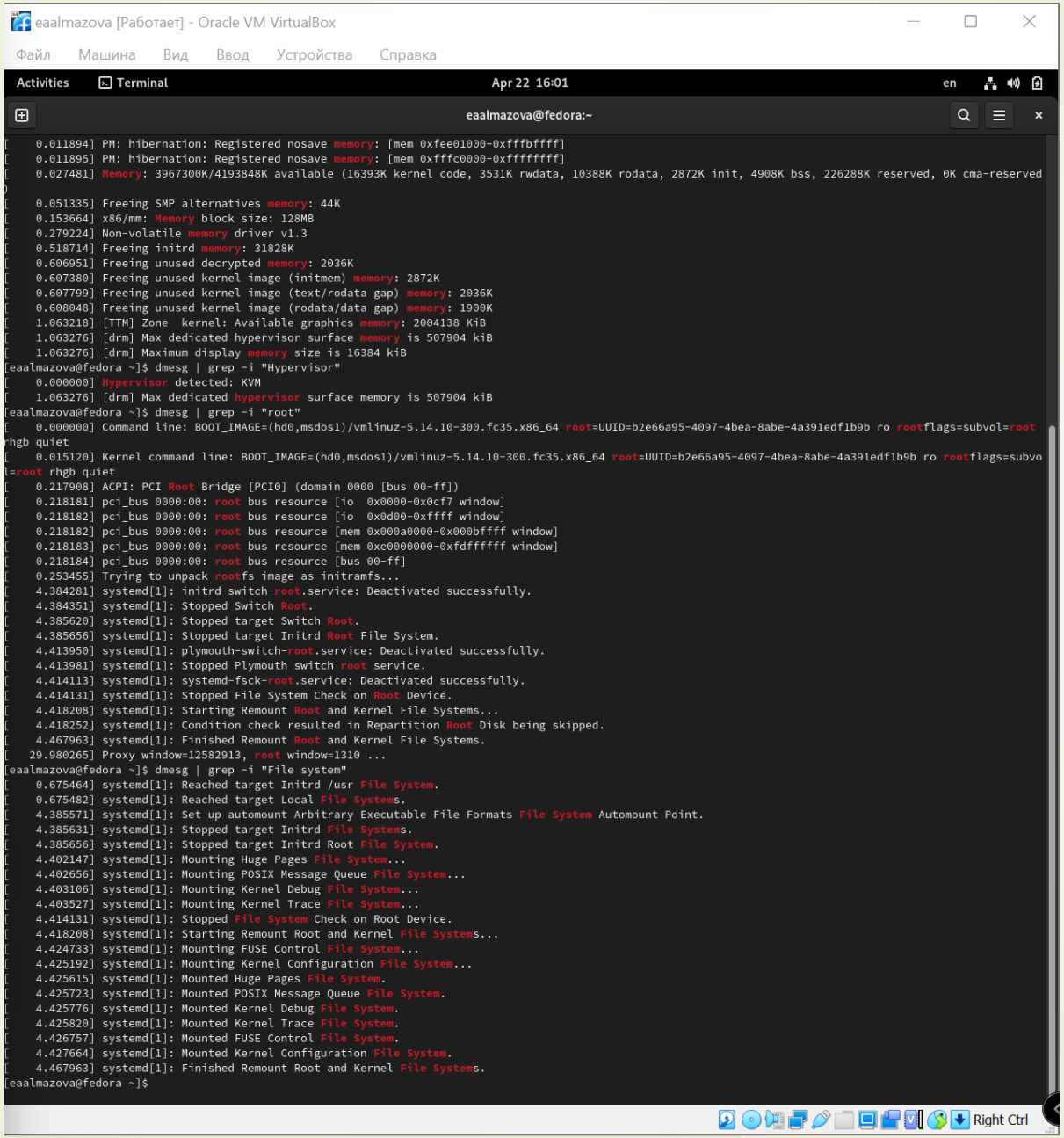
Я открыла терминал и проанализировала последовательность загрузки системы, выполнив команду dmesg. Я просмотрела вывод этой команды с помощью команды dmesg | less.

Домашнее задание

Использовав поиск с помощью grep (команда dmesg | grep –i “<запрос>”), я получила следующую информацию:

- Версия ядра Linux (“Linux version”);
- Частота процессора (“processor”);
- Модель процессора (“CPU0”);
- Объем доступной оперативной памяти (“Memory”);
- Тип обнаруженного гипервизора (“Hypervisor”);
- Тип файловой системы корневого раздела (“root”, “File system”, “mount”);
- Последовательность монтирования файловых систем (“File system”, “mount”).


eaalmazova [Работает] - Oracle VM VirtualBox
Файл Машина Вид Ввод Устройства Справка
Activities Terminal Apr 22 16:01 en
eaalmazova@fedora:~
eaalmazova@fedora ~]$ dmesg | grep -i "Linux version"
0.000000] Linux version 5.14.10-300.fc35.x86_64 (mockbuild@bkernel01.iad2.fedoraproject.org) (gcc (GCC) 11.2.1 20210728 (Red Hat 11.2.1-1), GNU ld versi
n 2.37-10.fc35) #1 SMP Thu Oct 7 20:48:44 UTC 2021
eaalmazova@fedora ~]$ dmesg | grep -i "processor"
0.000004] tsc: Detected 3187.202 MHz processor
0.153664] smpboot: Total of 1 processors activated (6374.40 BogoMIPS)
0.215410] ACPI: Added _OSI(Processor Device)
0.215411] ACPI: Added _OSI(Processor Aggregator Device)
eaalmazova@fedora ~]$ dmesg | grep -i "CPU0"
0.153582] smpboot: CPU0: 12th Gen Intel(R) Core(TM) i9-12900K (family: 0x6, model: 0x97, stepping: 0x2)
eaalmazova@fedora ~]$ dmesg | grep -i "Memory"
0.000525] ACPI: Reserving FACP table memory at [mem 0xdfff00f0-0xdfff01e3]
0.000526] ACPI: Reserving DSDT table memory at [mem 0xdfff0470-0xdfff2794]
0.000526] ACPI: Reserving FACS table memory at [mem 0xdfff0200-0xdfff023f]
0.000526] ACPI: Reserving FACS table memory at [mem 0xdfff0200-0xdfff023f]
0.000527] ACPI: Reserving APIC table memory at [mem 0xdfff0240-0xdfff0293]
0.000527] ACPI: Reserving SSDT table memory at [mem 0xdfff02a0-0xdfff046b]
0.006173] Early memory node ranges
0.011890] PM: hibernation: Registered nosave memory: [mem 0x00000000-0x00000fff]
0.011891] PM: hibernation: Registered nosave memory: [mem 0x0009f000-0x0009ffff]
0.011892] PM: hibernation: Registered nosave memory: [mem 0x000a0000-0x000effff]
0.011892] PM: hibernation: Registered nosave memory: [mem 0x000f0000-0x000fffff]
0.011893] PM: hibernation: Registered nosave memory: [mem 0xdfff0000-0xdfffffff]
0.011893] PM: hibernation: Registered nosave memory: [mem 0xe0000000-0xfebfffff]
0.011893] PM: hibernation: Registered nosave memory: [mem 0xfec00000-0xfec00fff]
0.011894] PM: hibernation: Registered nosave memory: [mem 0xfec01000-0xfedfffff]
0.011894] PM: hibernation: Registered nosave memory: [mem 0xfee00000-0xfee00fff]
0.011894] PM: hibernation: Registered nosave memory: [mem 0xfee01000-0xfffbffff]
0.011895] PM: hibernation: Registered nosave memory: [mem 0xfffc0000-0xffffffff]
0.027481] Memory: 3967300K/4193848K available (16393K kernel code, 3531K rwdata, 10388K rodata, 2872K init, 4908K bss, 226288K reserved, 0K cma-reserved
0.051335] Freeing SMP alternatives memory: 44K
0.153664] x86/mm: Memory block size: 128MB
0.279224] Non-volatile memory driver v1.3
0.518714] Freeing initrd memory: 31828K
0.606951] Freeing unused decrypted memory: 2036K
0.607380] Freeing unused kernel image (initmem) memory: 2872K
0.607799] Freeing unused kernel image (text/rodata gap) memory: 2036K
0.608048] Freeing unused kernel image (rodata/data gap) memory: 1900K
1.063218] [TTM] Zone kernel: Available graphics memory: 2004138 KiB
1.063276] [drm] Max dedicated hypervisor surface memory is 507904 kiB
1.063276] [drm] Maximum display memory size is 16384 kiB
eaalmazova@fedora ~]$ dmesg | grep -i "Hypervisor"
0.000000] Hypervisor detected: KVM
1.063276] [drm] Max dedicated hypervisor surface memory is 507904 kiB
eaalmazova@fedora ~]$ dmesg | grep -i "root"
0.000000] Command line: BOOT_IMAGE=(hd0,msdos1)/vmlinuz-5.14.10-300.fc35.x86_64 root=UUID=b2e66a95-4097-4bea-8abe-4a391edf1b9b ro rootflags=subvol=root
hgb quiet
0.015120] Kernel command line: BOOT_IMAGE=(hd0,msdos1)/vmlinuz-5.14.10-300.fc35.x86_64 root=UUID=b2e66a95-4097-4bea-8abe-4a391edf1b9b ro rootflags=subvo
=root rhgb quiet
0.217908] ACPI: PCI Root Bridge [PCI0] (domain 0000 [bus 00-ff])
0.218181] pci_bus 0000:00: root bus resource [io 0x0000-0x0cf7 window]
0.218182] pci_bus 0000:00: root bus resource [io 0x0d00-0xffff window]
0.218182] pci_bus 0000:00: root bus resource [mem 0x000a0000-0x000bffff window]
0.218183] pci_bus 0000:00: root bus resource [mem 0xe0000000-0xfdffffff window]
0.218184] pci_bus 0000:00: root bus resource [bus 00-ff]
0.253455] Trying to unpack rootfs image as initramfs...
4.384281] systemd[1]: initrd-switch-root.service: Deactivated successfully.
4.384351] systemd[1]: Stopped Switch Root.
4.385620] systemd[1]: Stopped target Switch Root.
4.385656] systemd[1]: Stopped target Initrd Root File System.
4.413950] systemd[1]: plymouth-switch-root.service: Deactivated successfully.
4.413981] systemd[1]: Stopped Plymouth switch root service.
4.414113] systemd[1]: systemd-fsck-root.service: Deactivated successfully.
4.414131] systemd[1]: Stopped File System Check on Root Device.
Right Ctrl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Файл Машина Вид Ввод Устройства Справка
Activities Terminal Apr 22 16:01 en
eaalmazova@fedora:~
[0.011894] PM: hibernation: Registered nosave memory: [mem 0xfee01000-0xfffbffff]
[0.011895] PM: hibernation: Registered nosave memory: [mem 0xfffc0000-0xffffffff]
[0.027481] Memory: 3967300K/4193848K available (16393K kernel code, 3531K rwdata, 10388K rodata, 2872K init, 4908K bss, 226288K reserved, 0K cma-reserved)
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[0.000000] Command line: BOOT_IMAGE=(hd0,msdos1)/vmlinuz-5.14.10-300.fc35.x86_64 root=UUID=b2e66a95-4097-4bea-8abe-4a391edf1b9b ro rootflags=subvol=root rhgb quiet
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[0.218182] pci_bus 0000:00: root bus resource [io 0x0d00-0xffff window]
[0.218182] pci_bus 0000:00: root bus resource [mem 0x000a0000-0x000bffff window]
[0.218183] pci_bus 0000:00: root bus resource [mem 0xe0000000-0xfdffffff window]
[0.218184] pci_bus 0000:00: root bus resource [bus 00-ff]
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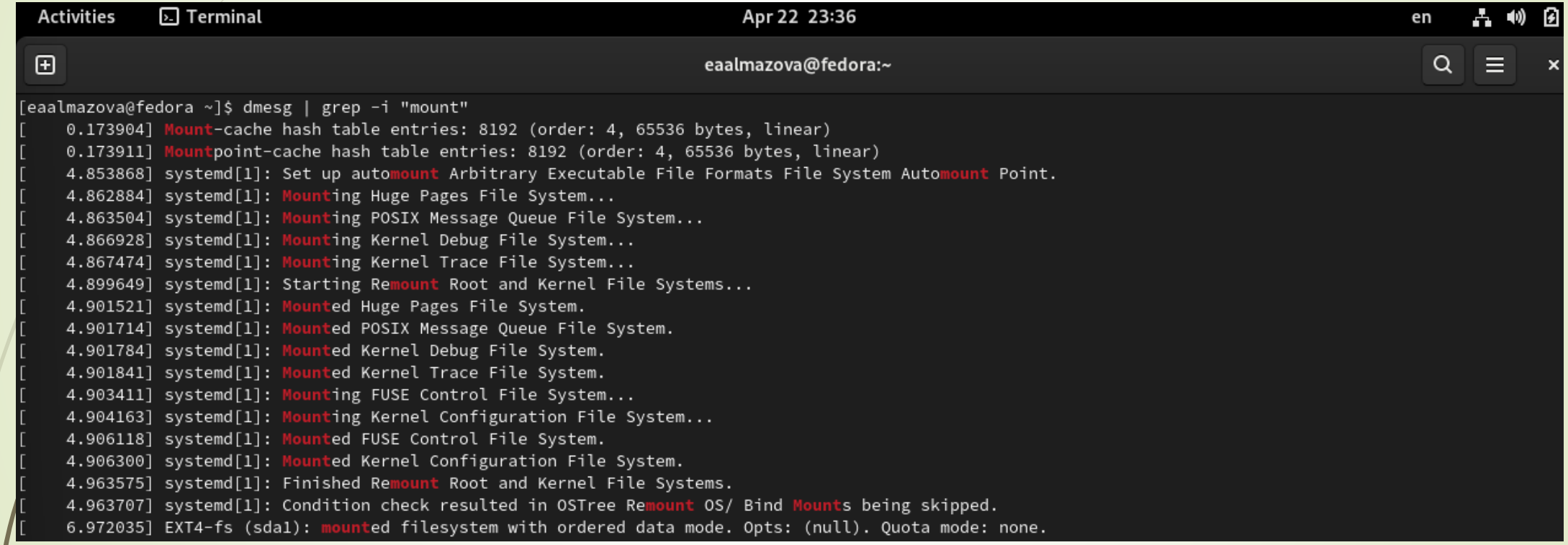
[4.413981] systemd[1]: Stopped Plymouth switch root service.
[4.414113] systemd[1]: systemd-fsck-root.service: Deactivated successfully.
[4.414131] systemd[1]: Stopped File System Check on Root Device.
[4.418208] systemd[1]: Starting Remount Root and Kernel File Systems...
[4.418252] systemd[1]: Condition check resulted in Repartition Root Disk being skipped.
[4.467963] systemd[1]: Finished Remount Root and Kernel File Systems.
[29.980265] Proxy window=12582913, root window=1310 ...
[eaalmazova@fedora ~]$ dmesg | grep -i "File system"
[0.675464] systemd[1]: Reached target Initrd /usr File System.
[0.675482] systemd[1]: Reached target Local File Systems.
[4.385571] systemd[1]: Set up automount Arbitrary Executable File Formats File System Automount Point.
[4.385631] systemd[1]: Stopped target Initrd File Systems.
[4.385656] systemd[1]: Stopped target Initrd Root File System.
[4.402147] systemd[1]: Mounting Huge Pages File System...
[4.402656] systemd[1]: Mounting POSIX Message Queue File System...
[4.403106] systemd[1]: Mounting Kernel Debug File System...
[4.403527] systemd[1]: Mounting Kernel Trace File System...
[4.414131] systemd[1]: Stopped File System Check on Root Device.
[4.418208] systemd[1]: Starting Remount Root and Kernel File Systems...
[4.424733] systemd[1]: Mounting FUSE Control File System...
[4.425192] systemd[1]: Mounting Kernel Configuration File System...
[4.425615] systemd[1]: Mounted Huge Pages File System.
[4.425723] systemd[1]: Mounted POSIX Message Queue File System.
[4.425776] systemd[1]: Mounted Kernel Debug File System.
[4.425820] systemd[1]: Mounted Kernel Trace File System.
[4.426757] systemd[1]: Mounted FUSE Control File System.
[4.427664] systemd[1]: Mounted Kernel Configuration File System.
[4.467963] systemd[1]: Finished Remount Root and Kernel File Systems.
[eaalmazova@fedora ~]$
Right Ctrl


Activities
Terminal
Apr 22 23:36
en
eaalmazova@fedora:~
[eaalmazova@fedora ~]$ dmesg | grep -i "mount"
[0.173904] Mount-cache hash table entries: 8192 (order: 4, 65536 bytes, linear)
[0.173911] Mountpoint-cache hash table entries: 8192 (order: 4, 65536 bytes, linear)
[4.853868] systemd[1]: Set up automount Arbitrary Executable File Formats File System Automount Point.
[4.862884] systemd[1]: Mounting Huge Pages File System...
[4.863504] systemd[1]: Mounting POSIX Message Queue File System...
[4.866928] systemd[1]: Mounting Kernel Debug File System...
[4.867474] systemd[1]: Mounting Kernel Trace File System...
[4.899649] systemd[1]: Starting Remount Root and Kernel File Systems...
[4.901521] systemd[1]: Mounted Huge Pages File System.
[4.901714] systemd[1]: Mounted POSIX Message Queue File System.
[4.901784] systemd[1]: Mounted Kernel Debug File System.
[4.901841] systemd[1]: Mounted Kernel Trace File System.
[4.903411] systemd[1]: Mounting FUSE Control File System...
[4.904163] systemd[1]: Mounting Kernel Configuration File System...
[4.906118] systemd[1]: Mounted FUSE Control File System.
[4.906300] systemd[1]: Mounted Kernel Configuration File System.
[4.963575] systemd[1]: Finished Remount Root and Kernel File Systems.
[4.963707] systemd[1]: Condition check resulted in OSTree Remount OS/ Bind Mounts being skipped.
[6.972035] EXT4-fs (sda1): mounted filesystem with ordered data mode. Opts: (null). Quota mode: none.

Спасибо за внимание!