

Отчёт к лабораторной работе №1

Основы администрирования операционных систем

Борисенкова София Павловна

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1 Цель работы

Целью данной работы является приобретение практических навыков установки операционной системы на виртуальную машину VirtualBox.

2 Последовательность выполнения работы

Для создания виртуальной машины используем графический интерфейс. при создании заполняем необходимые данные: имя виртуальной машины Rocky2, тип операционной системы — RedHat.

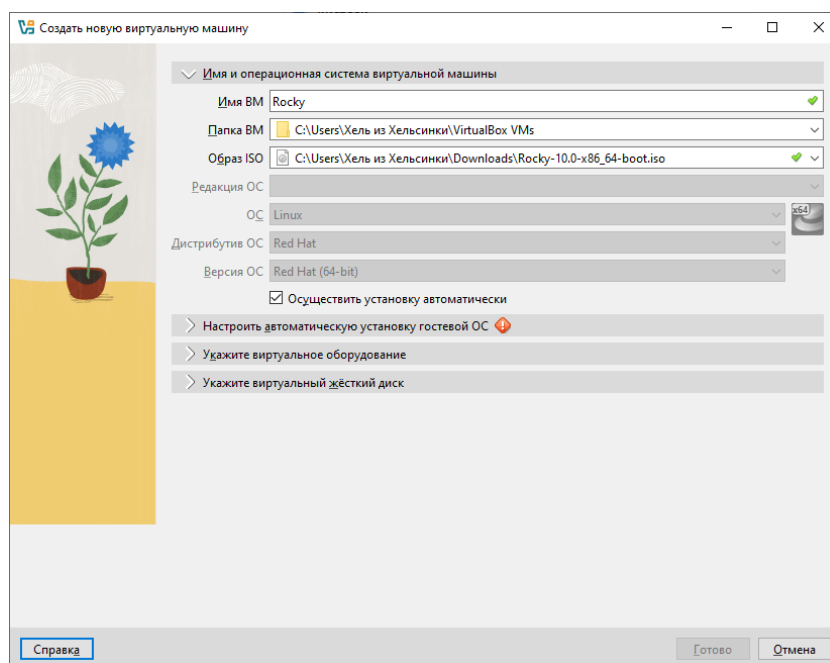


Рис. 2.1: Настройка имени

Настроим параметры установки гостевой ОС

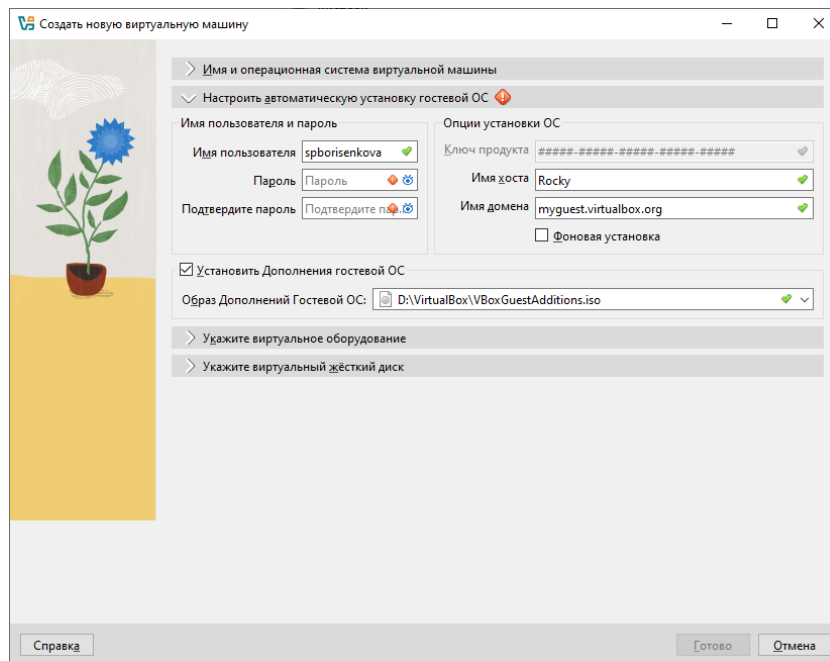


Рис. 2.2: Настройка оборудования

Сразу обозначим настройки оборудования: Основная память 4098 МБ и 2 ЦП процессора

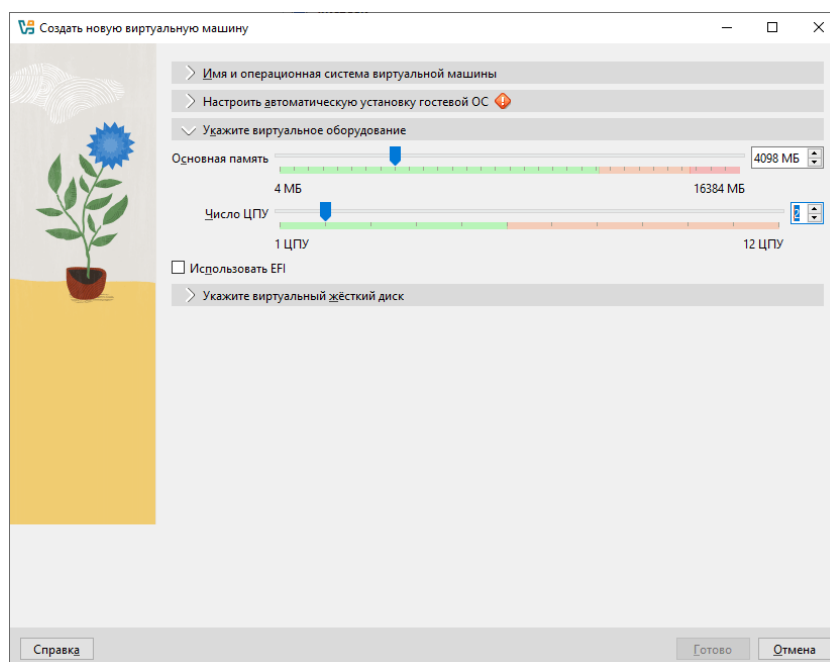


Рис. 2.3: Настройка оборудования

Задайте конфигурацию жёсткого диска — загрузочный, VDI (VirtualBox Disk Image), динамический виртуальный диск.

Задайте размер диска — 40 ГБ.

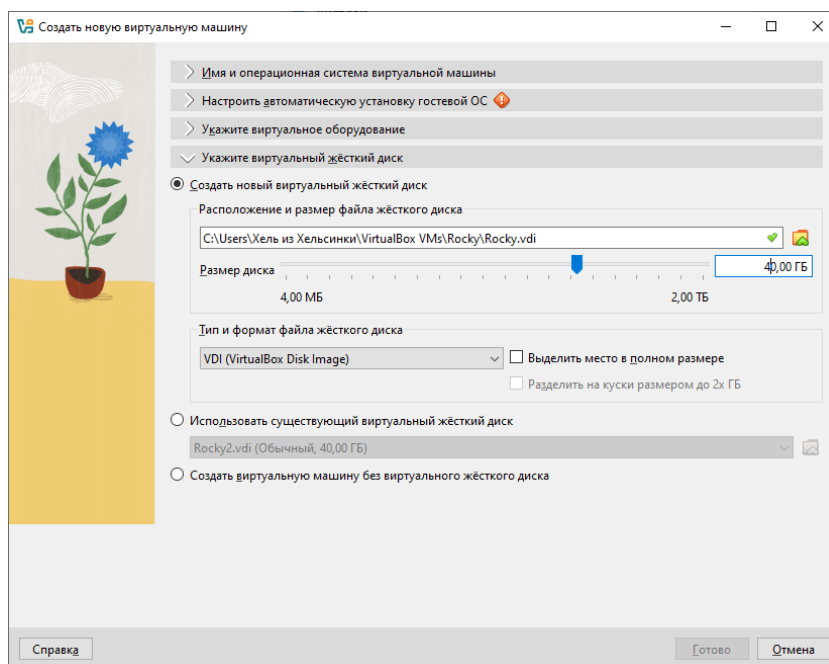


Рис. 2.4: Настройки виртуального жёсткого диска

Теперь запускаем виртуальную машину и устанавливаем Rocky

После установки входим в ОС под заданной учётной записью и откроем терминал.

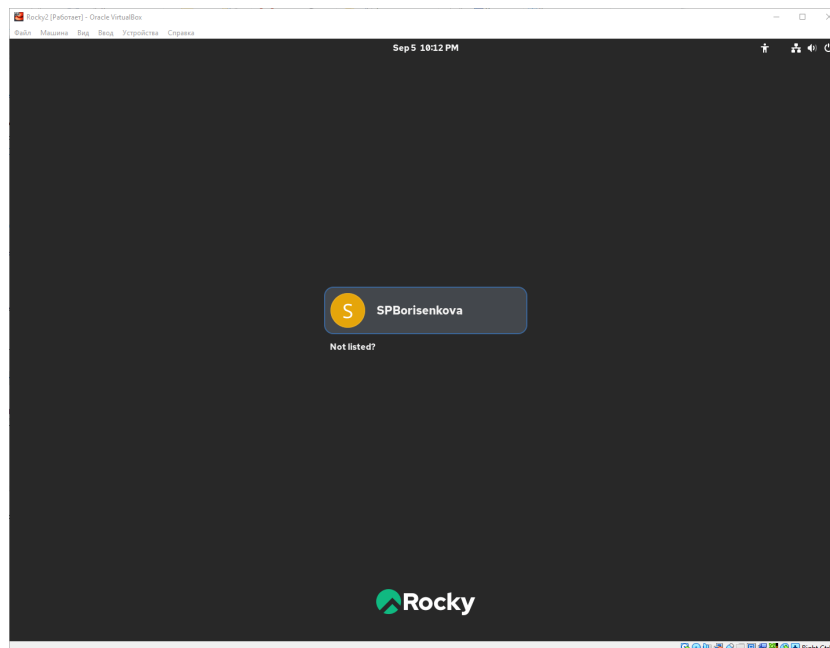


Рис. 2.5: вход в ОС

2.1 Домашнее задание

1. Рассмотрим вывод команды и проанализируем последовательность загрузки системы `dmesg | less` или `dmesg | grep -i "то, что ищем"`
2. Получаем следующую информацию (на скриншотах):
 - версия ядра
 - частота процессора
 - модель процессора
 - объём доступной оперативной памяти
 - тип обнаруженного гипервизора
 - тип файловой системы корневого раздела
 - последовательность монтирования файловых систем

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Rocky2 [Работа] - Oracle VirtualBox
Файл Машина Вид Ввод Устройство Справка

[ 0.000000] Linux version 6.12.0-55.27.1.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 2.4
1-53.el10) #1 SMP PREEMPT_DYNAMIC Fri Aug 15 18:09:35 UTC 2025
[ 0.000000] Command line: BOOT_IMAGE=(hd0,gpt2)/vmlinuz-6.12.0-55.27.1.el10_0.x86_64 root=/dev/mapper/rl-root ro crashkernel=2G-64G:256M,64G-:512M resume=UUID=3fc22dbc-6b67-4
970-9a25-6492405d8668 rd.lvm.lv=rl/root rd.lvm.lv=rl/swap rhgb quiet
[ 0.000000] BIOS-provided physical RAM map:
[ 0.000000] BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
[ 0.000000] BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
[ 0.000000] BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
[ 0.000000] BIOS-e820: [mem 0x0000000000100000-0x00000000000dffff] usable
[ 0.000000] BIOS-e820: [mem 0x0000000000dffff000-0x0000000000dfffffff] ACPI data
[ 0.000000] BIOS-e820: [mem 0x000000000fec0000-0x000000000fec0fff] reserved
[ 0.000000] BIOS-e820: [mem 0x000000000fec0000-0x000000000fec0fff] reserved
[ 0.000000] BIOS-e820: [mem 0x000000000fff0000-0x000000000fffffff] reserved
[ 0.000000] BIOS-e820: [mem 0x0000000010000000-0x0000000011fffffff] usable
[ 0.000000] NX (Execute Disable) protection: active
[ 0.000000] APIC: Static calls initialized
[ 0.000000] SMBIOS 2.5 present.
[ 0.000000] DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
[ 0.000000] DMI: Memory slots populated: 0/0
[ 0.000000] Hypervisor detected: KVM
[ 0.000000] kvm-clock: Using msrs 4b564d01 and 4b564d00
[ 0.000000] kvm-clock: using sched offset of 6947353879 cycles
[ 0.000000] clocksource: kvm-clock: mask: 0xffffffffffffffff max_cycles: 0x1cd42e4dffb, max_idle_ns: 881590591483 ns
[ 0.000000] tsc: Detected 3192.010 MHz processor
[ 0.002089] e820: update [mem 0x00000000-0x00000fff] usable ==> reserved
[ 0.002093] e820: remove [mem 0x000a0000-0x000fffff] usable
[ 0.002097] last_pfn = 0x120000 max_arch_pfn = 0x400000000
[ 0.002115] MTRR map: 3 entries (3 fixed + 0 variable; max 19), built from 8 variable MTRRs
[ 0.002118] x86/PAT: Configuration [0-7]: WB WC UC- UC WB WP UC- WT
[ 0.002138] CPU MTRRs all blank - virtualized system.
[ 0.002142] last_pfn = 0xe0000 max_arch_pfn = 0x400000000
[ 0.012927] found SMP MP-table at [mem 0x0009fbf0-0x0009fbff]
[ 0.013195] RAMDISK: [mem 0x33e47000-0x35f1bfff]
[ 0.013200] ACPI: Early table checksum verification disabled
[ 0.013204] ACPI: RSDP 0x00000000000E0000 000024 (v02 VBOX )
[ 0.013208] ACPI: XSDT 0x0000000000FF0030 00003C (v01 VBOX VBOXXSDT 00000001 ASL 00000061)
[ 0.013214] ACPI: FACP 0x0000000000FF00F0 0000F4 (v04 VBOX VBOXFACP 00000001 ASL 00000061)
[ 0.013219] ACPI: DSDT 0x0000000000FF02F0 002353 (v02 VBOX VBOXBIOS 00000002 VBOX 000298F4)
[ 0.013222] ACPI: FACS 0x0000000000FF0200 000040
[ 0.013225] ACPI: FACS 0x0000000000FF0200 000040
[ 0.013227] ACPI: APIC 0x0000000000FF0240 00005C (v02 VBOX VBOXAPIC 00000001 ASL 00000061)
[ 0.013230] ACPI: SSDT 0x0000000000FF02A0 000045 (v01 VBOX VBOXCPU0 00000002 VBOX 000298F4)
[ 0.013232] ACPI: Reserving FACP table memory at [mem 0xdfff00f0-0xdfff01e3]
[ 0.013233] ACPI: Reserving DSDT table memory at [mem 0xdfff02f0-0xdfff2642]
[ 0.013234] ACPI: Reserving FACS table memory at [mem 0xdfff0200-0xdfff023f]
[ 0.013234] ACPI: Reserving FACS table memory at [mem 0xdfff0200-0xdfff023f]
[ 0.013235] ACPI: Reserving APIC table memory at [mem 0xdfff0240-0xdfff029b]
[ 0.013235] ACPI: Reserving SSDT table memory at [mem 0xdfff02a0-0xdfff02e4]
[ 0.014500] No NUMA configuration found
[ 0.014503] Faking a node at [mem 0x0000000000000000-0x000000011fffffff]
[ 0.014512] NODE_DATA(0) allocated [mem 0x11ffd0cc0-0x11ffffbfff]
[ 0.015263] crashkernel reserved: 0x00000000cfc00000 - 0x00000000df000000 (256 MB)
[ 0.015439] Zone ranges:
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{#fig:006wic

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Rocky2 [Работает] - Oracle VirtualBox
Файл Машина Вид Ввод Устройство Справка

[ 0.766224] rcu:      Max phase no-delay instances is 400.
[ 0.766450] Timer migration: 1 hierarchy levels; 8 children per group; 1 crossnode level
[ 0.767200] NMI watchdog: Perf NMI watchdog permanently disabled
[ 0.767365] smp: Bringing up secondary CPUs ...
[ 0.768309] smpboot: x86: Booting SMP configuration:
[ 0.768310] .... node #0, CPUs:      #1
[ 0.775683] smp: Brought up 1 node, 2 CPUs
[ 0.775688] smpboot: Total of 2 processors activated (12768.04 BogoMIPS)
[ 0.780136] node 0 deferred pages initialised in 2ms
[ 0.781337] Memory: 3697092K/4193848K available (18432K kernel code, 5782K rdata, 14108K rodata, 4324K init, 6784K bss, 492844K reserved, 0K cma-reserved)
[ 0.782117] devtmpfs: initialized
[ 0.782228] x86/mm: Memory block size: 128MB
[ 0.783234] clocksource: jiffies: mask: 0xffffffff max_cycles: 0xffffffff, max_idle_ns: 1911260446275000 ns
[ 0.783234] futex hash table entries: 512 (order: 3, 32768 bytes, linear)
[ 0.783430] pinctrl core: initialized pinctrl subsystem
[ 0.784554] NET: Registered PF_NETLINK/PF_ROUTE protocol family
[ 0.784779] DMA: preallocated 512 KiB GFP_KERNEL pool for atomic allocations
[ 0.784804] DMA: preallocated 512 KiB GFP_KERNEL pool for atomic allocations
[ 0.784826] DMA: preallocated 512 KiB GFP_KERNEL pool for atomic allocations
[ 0.784857] audit: initializing netlink subsys (disabled)
[ 0.785236] thermal_sys: Registered thermal governor 'fair_share'
[ 0.785238] thermal_sys: Registered thermal governor 'step_wise'
[ 0.785238] thermal_sys: Registered thermal governor 'user_space'
[ 0.785347] audit: type=2000 audit(1757090341.578:1): state=initialized audit_enabled=0 res=1
[ 0.786069] cpuidle: using governor menu
[ 0.786228] acpihp: ACPI Hot Plug PCI Controller Driver version: 0.5
[ 0.787298] PCI: Using configuration type 1 for base access
[ 0.789119] kprobes: kprobe jump-optimization is enabled. All kprobes are optimized if possible.
[ 0.794432] HugeTLB: registered 2.00 MiB page size, pre-allocated 0 pages
[ 0.794436] HugeTLB: 28 KiB vmemmap can be freed for a 2.00 MiB page
[ 0.797185] cryptd: max_cpu_qlen set to 1000
[ 0.800591] ACPI: Added _OSI(Module Device)
[ 0.800594] ACPI: Added _OSI(Processor Device)
[ 0.800595] ACPI: Added _OSI(3.0 _SCP Extensions)
[ 0.800596] ACPI: Added _OSI(Processor Aggregator Device)
[ 0.801415] ACPI: 2 ACPI AML tables successfully acquired and loaded
[ 0.808154] ACPI: Interpreter enabled
[ 0.808163] ACPI: PM: (supports S0 S5)
[ 0.808165] ACPI: Using IOAPIC for interrupt routing
[ 0.809261] PCI: Using host bridge windows from ACPI; if necessary, use "pci=nocrs" and report a bug
[ 0.809263] PCI: Using E820 reservations for host bridge windows
[ 0.809391] ACPI: Enabled 2 GPEs in block 00 to 07
[ 0.825490] ACPI: PCI Root Bridge [PCI0] (domain 0000 [bus 00-ff])
[ 0.825498] acpi PNP0A03:00: _OSC: OS supports [ASPM ClockPM Segments MSI EDR HPX-Type3]
[ 0.825500] acpi PNP0A03:00: _OSC: not requesting OS control; OS requires [ExtendedConfig ASPM ClockPM MSI]
[ 0.826523] acpi PNP0A03:00: fail to add MMCONFIG information, can't access extended configuration space under this bridge
[ 0.828034] PCI host bridge to bus 0000:00
[ 0.828038] pci_bus 0000:00: root bus resource [io 0x0000-0x0cf7 window]
[ 0.828039] pci_bus 0000:00: root bus resource [io 0x0d00-0xffff window]
[ 0.828041] pci_bus 0000:00: root bus resource [mem 0x000a0000-0x000bffff window]
[ 0.828042] pci_bus 0000:00: root bus resource [mem 0xe0000000-0xfdfdfdf window]
[ 0.828043] pci_bus 0000:00: root bus resource [bus 00-ff]
[ 0.828443] pci 0000:00:00.0: [8086:1237] type 00 class 0x060000 conventional PCI endpoint
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