

Лабораторная работа №1

Установка и конфигурация операционной системы на виртуальную машину

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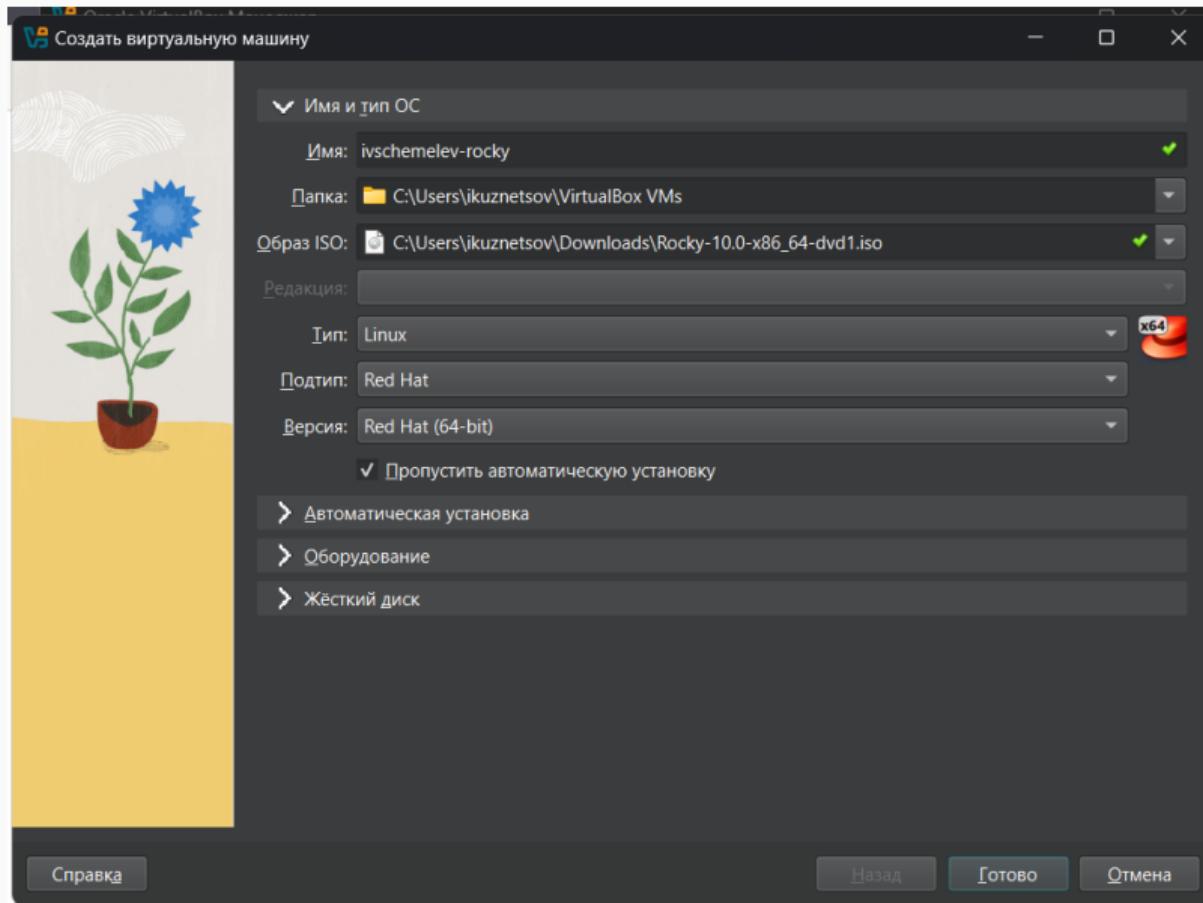
Цель работы

Формулировка цели

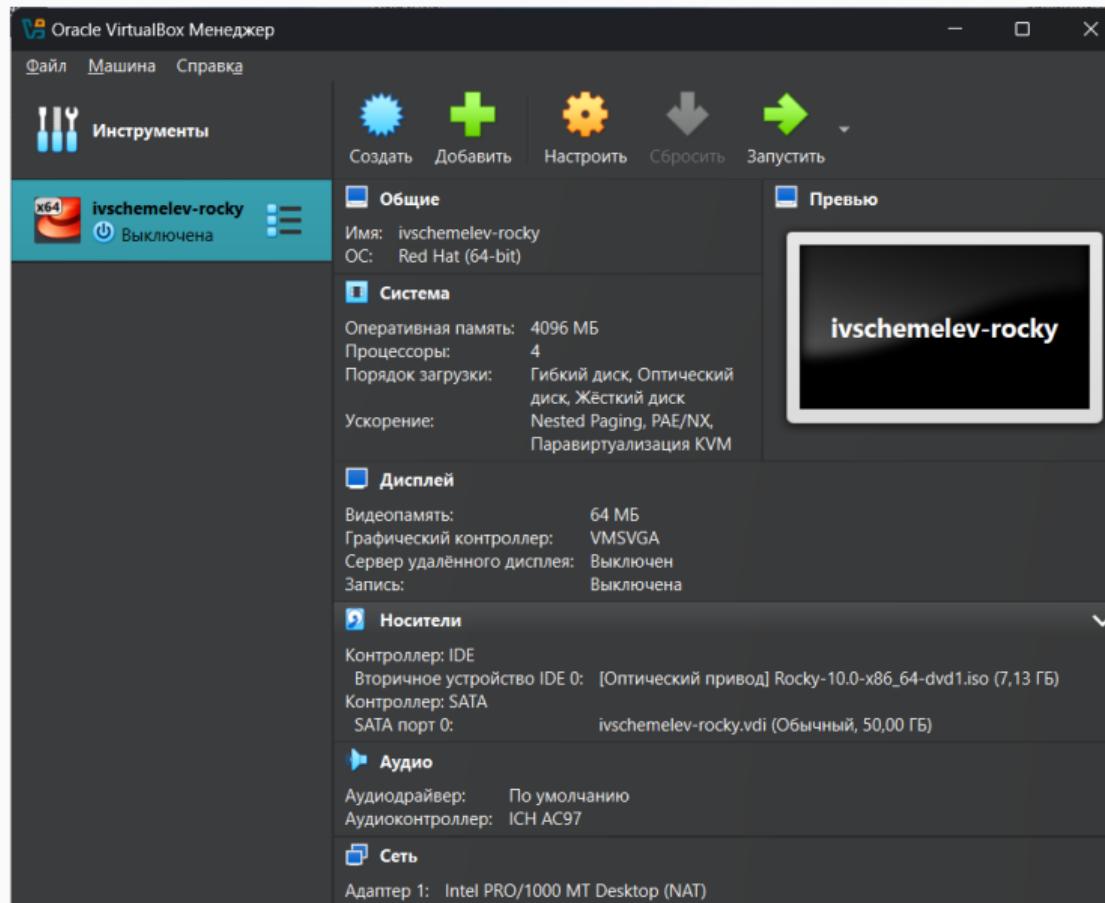
Приобрести практические навыки установки операционной системы на виртуальную машину и настройки минимально необходимых для дальнейшей работы сервисов.

Ход выполнения работы

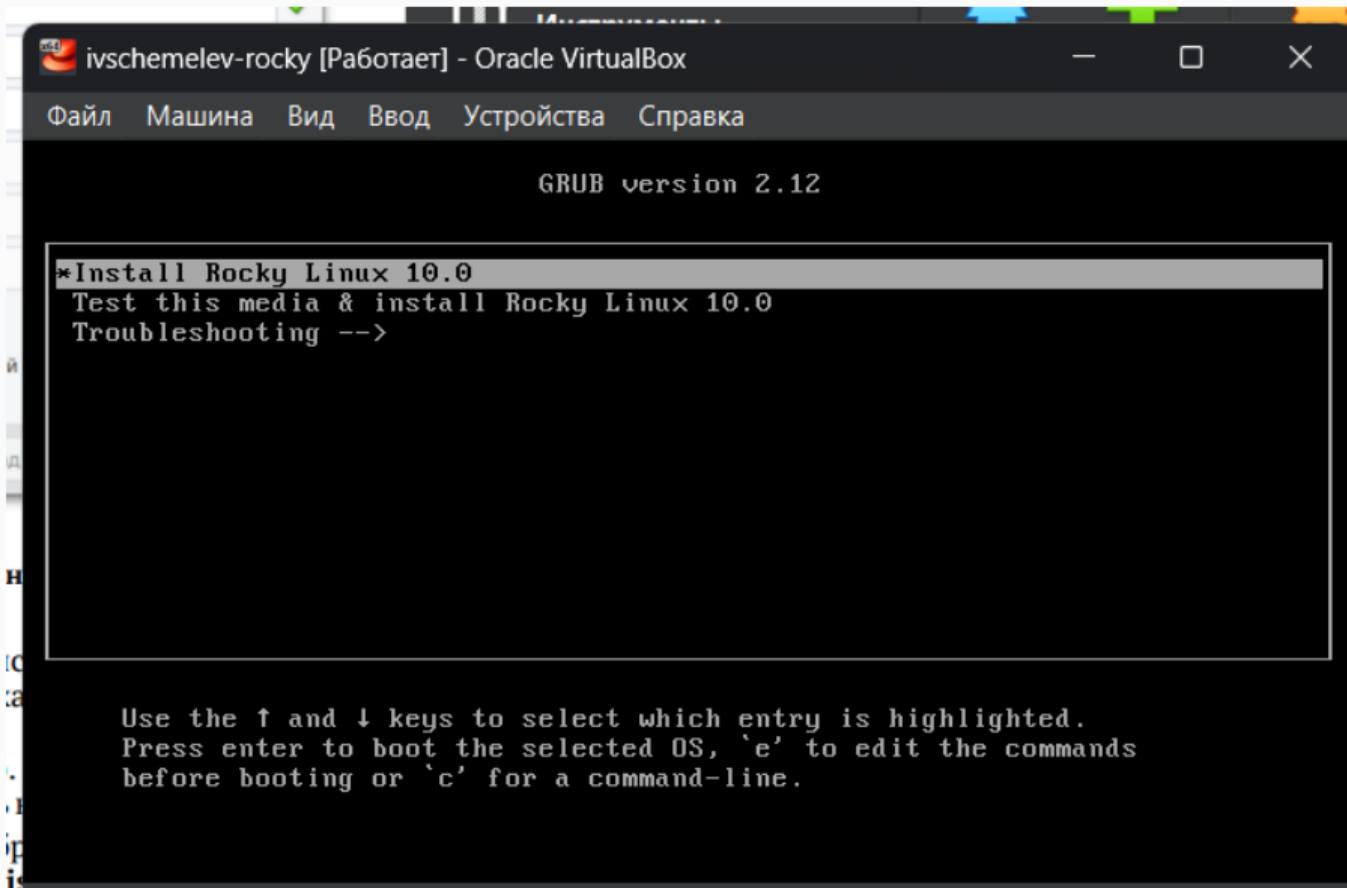
Создание ВМ и выбор ISO-образа



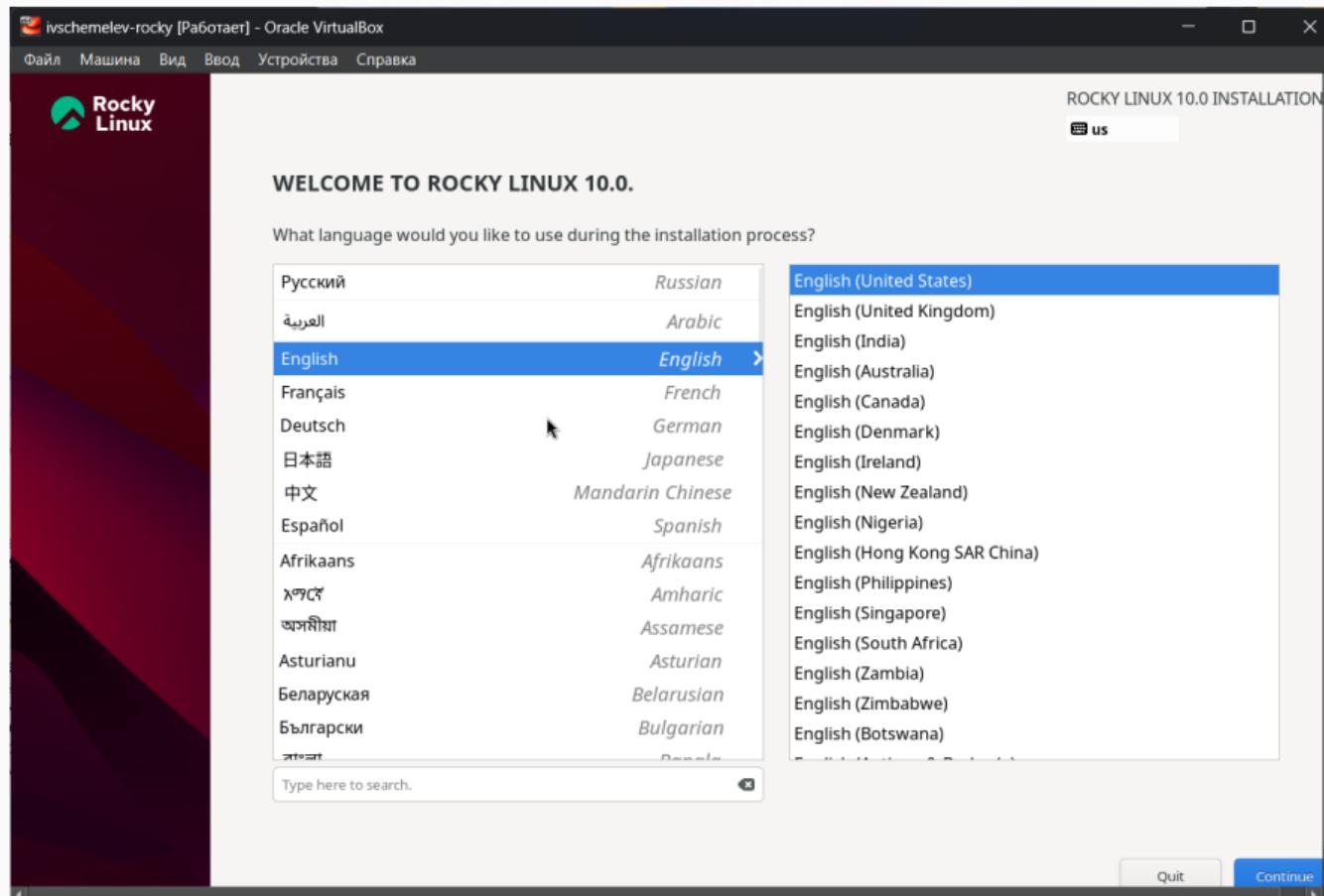
Базовые параметры виртуальной машины



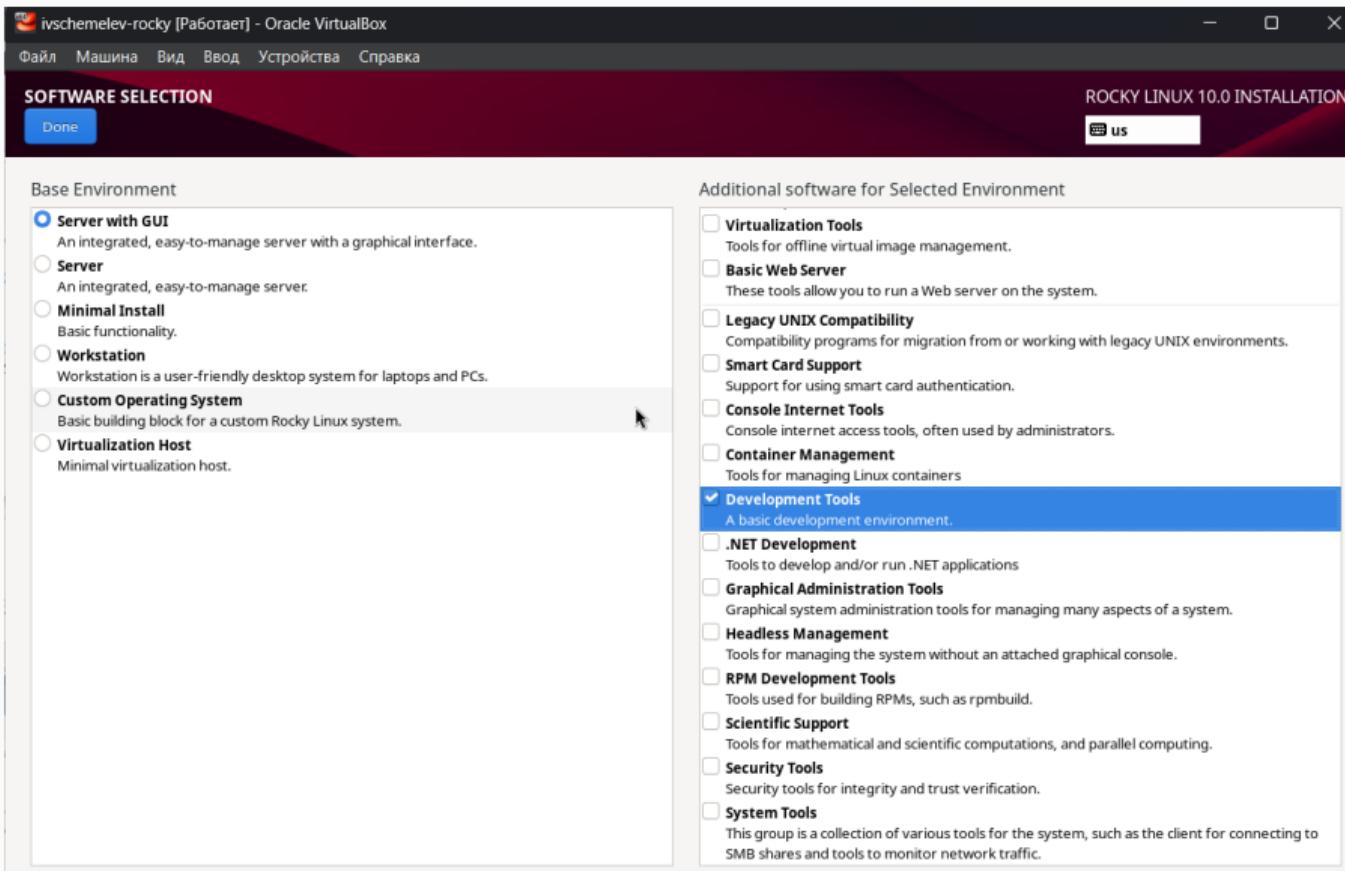
Запуск установщика через GRUB



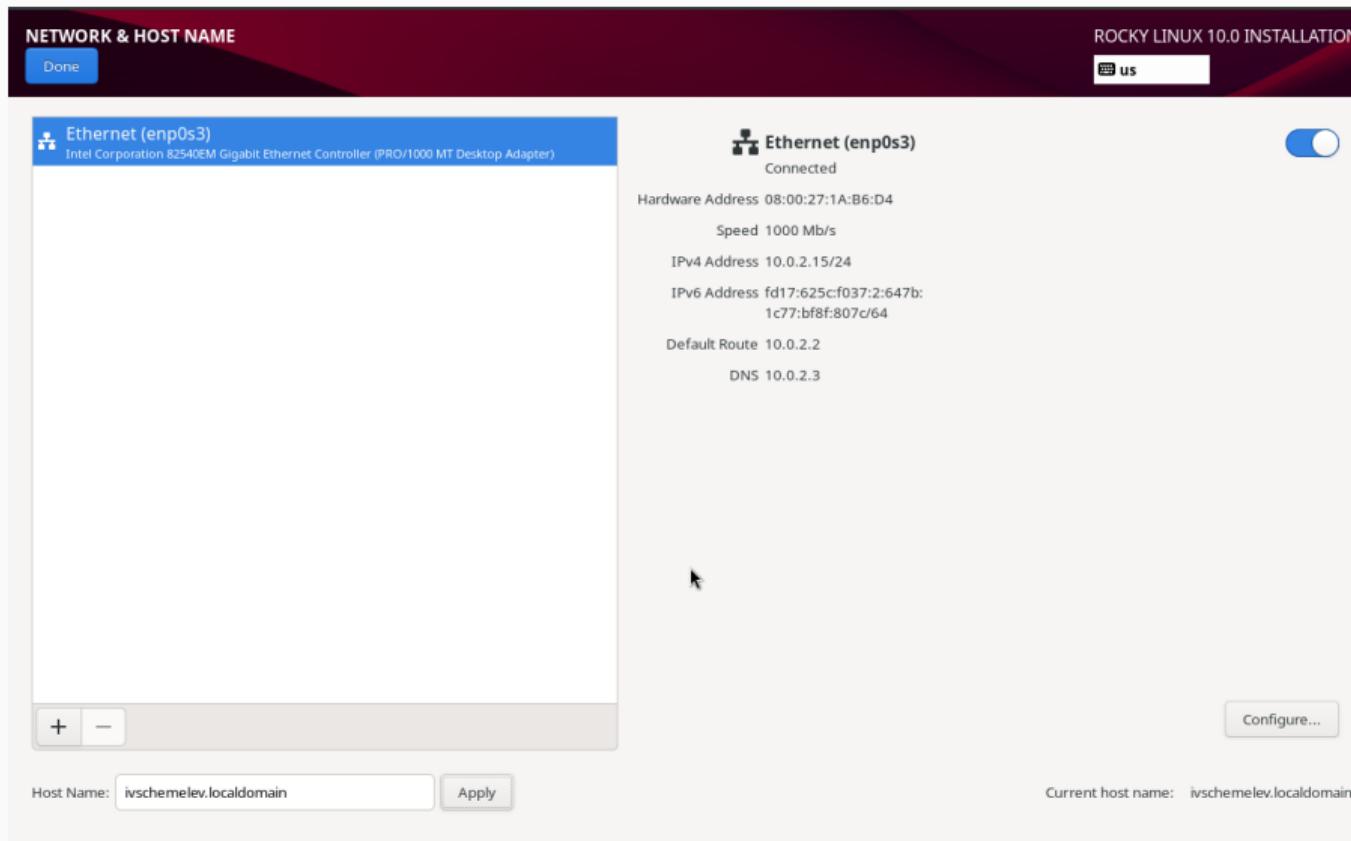
Выбор языка установки



Выбор программного окружения



Настройка сети и имени хоста



Настройка учётной записи root

The root account is used for administering the system.

The root user (also known as super user) has complete access to the entire system. For this reason, logging into this system as the root user is best done only to perform system maintenance or administration.

Disable root account

Disabling the root account will lock the account and disable remote access with root account. This will prevent unintended administrative access to the system.

Enable root account

Enabling the root account will allow you to set a root password and optionally enable remote access to root account on this system.

Root Password:



Weak

Confirm:



Allow root SSH login with password

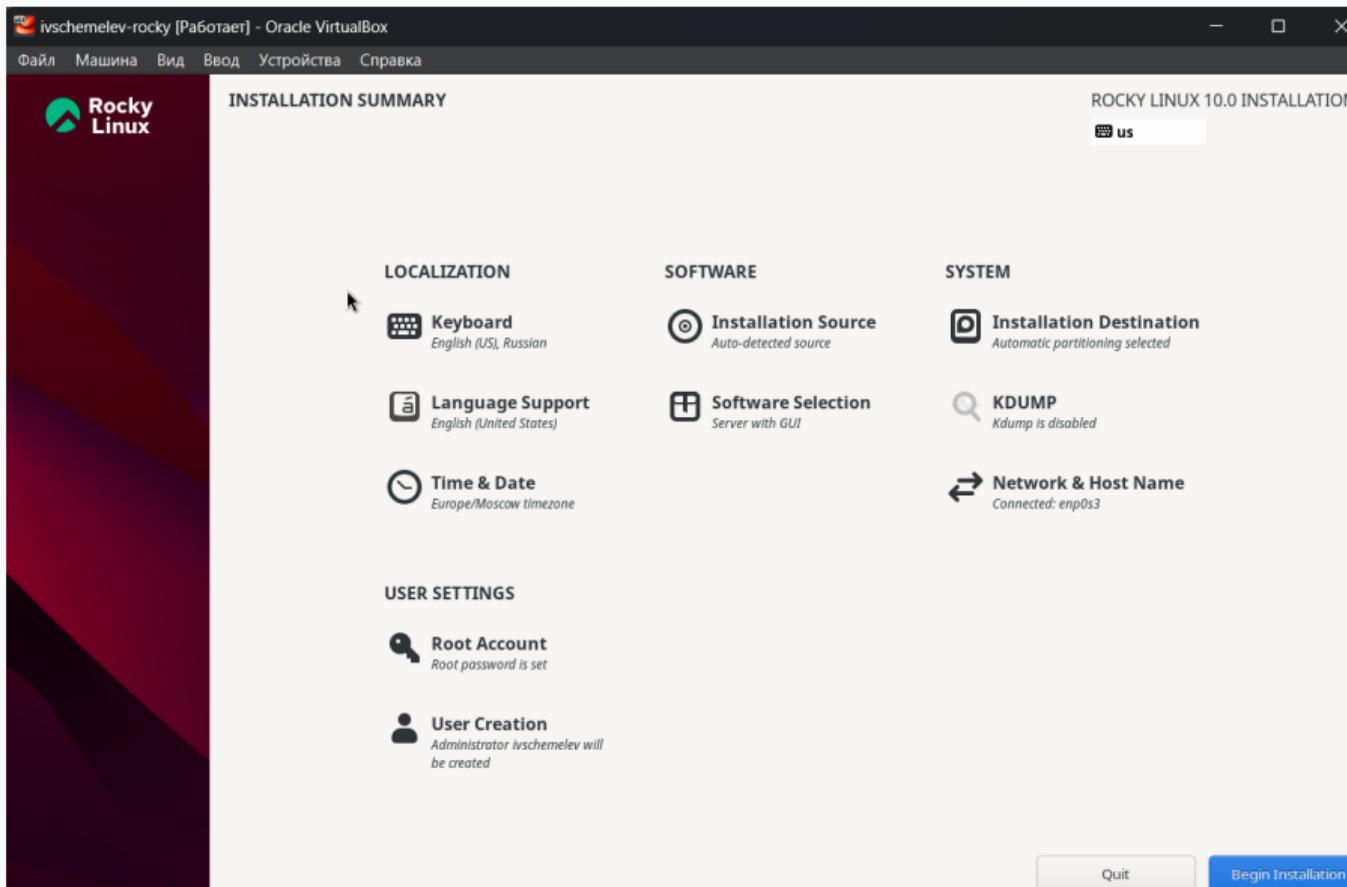
Создание пользователя с правами администратора

The screenshot shows a user creation interface with the following fields:

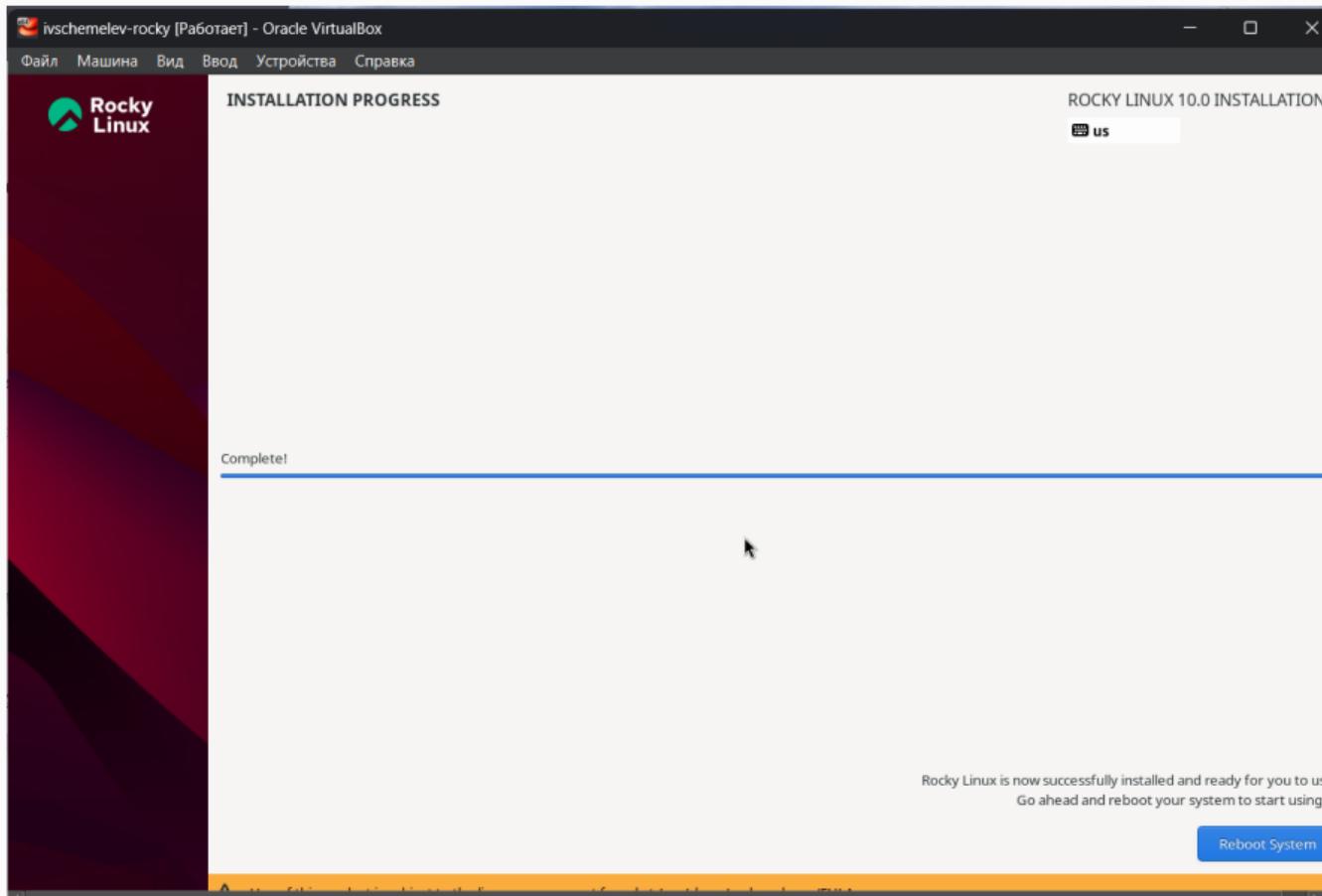
- Full name:** ivschemelev
- User name:** ivschemelev
- Checkboxes:**
 - Add administrative privileges to this user account (wheel group membership)
 - Require a password to use this account
- Password:** A password consisting of five black dots, with an "eye" icon to toggle visibility. Below it, a progress bar is labeled "Weak".
- Confirm password:** A password consisting of five black dots, with an "eye" icon to toggle visibility.
- Advanced...**: A button for advanced password settings.

Рис. 8: Создание пользователя с административными правами

Проверка сводки параметров и старт установки



Завершение установки и перезагрузка



Установка VirtualBox Guest Additions

```
root@ivschemelev:~#  
root@ivschemelev:~# cd /run/media/ivschemelev/VBox_GAs_7.1.12/  
root@ivschemelev:/run/media/ivschemelev/VBox_GAs_7.1.12# ./VBoxLinuxAdditions.run  
Verifying archive integrity... 100% MD5 checksums are OK. All good.  
Uncompressing VirtualBox 7.1.12 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/recvboxadd quicksetup <version>  
VirtualBox Guest Additions: or  
VirtualBox Guest Additions: /sbin/recvboxadd quicksetup all  
VirtualBox Guest Additions: Building the modules for kernel  
6.12.0-55.12.1.el10_0.x86_64.  
grep: warning: stray \ before /  
grep: warning: stray \ before /  
grep: warning: stray \ before /  
VirtualBox Guest Additions: reloading kernel modules and services  
VirtualBox Guest Additions: kernel modules and services 7.1.12 r169651 reloaded  
VirtualBox Guest Additions: NOTE: you may still consider to re-login if some  
user session specific services (Shared Clipboard, Drag and Drop, Seamless or  
Guest Screen Resize) were not restarted automatically  
root@ivschemelev:/run/media/ivschemelev/VBox_GAs_7.1.12#
```

Анализ загрузки и файловых систем

```
root@ivschemelev:~#  
root@ivschemelev:# dmesg | grep "Linux ver"  
[    0.000000] Linux version 6.12.0-55.12.1.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 2.41-53.el10) #1 SMP PREEMPT_DYNAMIC Fri May 23 17:41:02 UTC 2025  
root@ivschemelev:# dmesg | grep "MHz"  
[    0.000004] tsc: Detected 3187.200 MHz processor  
[ 7.742659] e1000 0000:00:03.0 eth0: (PCI:33MHz:32-bit) 08:00:27:1a:b6:d4  
root@ivschemelev:# dmesg | grep "avail"  
[ 0.004362] On node 0, zone DMA: 1 pages in unavailable ranges  
[ 0.004376] On node 0, zone DMA: 97 pages in unavailable ranges  
[ 0.007746] On node 0, zone Normal: 16 pages in unavailable ranges  
[ 0.008050] [mem 0xe0000000-0xfebfffff] available for PCI devices  
[ 0.154862] Memory: 3961196K/4193848K available (18432K kernel code, 5782K rwdta, 14104K rodata, 4320K init, 6792K bss,  
228112K reserved, 0K cma-reserved)  
root@ivschemelev:# dmesg | grep "Hyper"  
[    0.000000] Hypervisor detected: KVM  
root@ivschemelev:# df -h  


| Filesystem                      | Size | Used | Avail | Use% | Mounted on                                |
|---------------------------------|------|------|-------|------|-------------------------------------------|
| /dev/mapper/rl_ivschemelev-root | 45G  | 5.2G | 40G   | 12%  | /                                         |
| devtmpfs                        | 4.0M | 0    | 4.0M  | 0%   | /dev                                      |
| tmpfs                           | 2.0G | 84K  | 2.0G  | 1%   | /dev/shm                                  |
| tmpfs                           | 782M | 9.3M | 773M  | 2%   | /run                                      |
| tmpfs                           | 1.0M | 0    | 1.0M  | 0%   | /run/credentials/systemd-journald.service |
| /dev/sda2                       | 960M | 283M | 678M  | 30%  | /boot                                     |
| tmpfs                           | 391M | 164K | 391M  | 1%   | /run/user/1000                            |
| /dev/sr0                        | 59M  | 59M  | 0     | 100% | /run/media/ivschemelev/VBox_GAs_7.1.12    |
| tmpfs                           | 391M | 60K  | 391M  | 1%   | /run/user/0                               |

  
root@ivschemelev:~#
```

Рис. 12: Анализ загрузки системы и файловых систем

Итоги работы

Операционная система Rocky Linux 10.0 установлена на виртуальную машину Oracle VirtualBox, выполнена базовая настройка (сеть, root, пользователь с административными правами). Установлены VirtualBox Guest Additions и проведён анализ параметров загрузки системы, что подтверждает корректную установку и готовность системы к дальнейшей эксплуатации.