

Лабораторная работа №1

Установка и конфигурация ОС на виртуальную машину

Лабси Мохаммед

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Российский университет дружбы народов, Москва, Россия

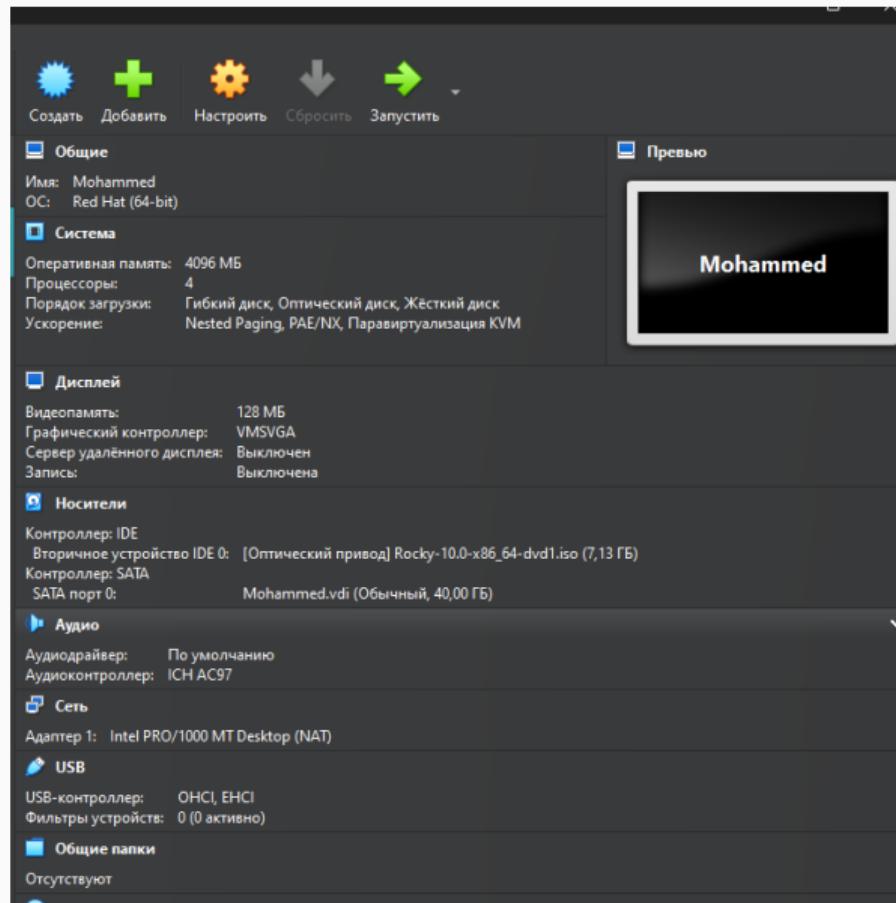
Цель работы

Основная цель

Получение практических навыков установки операционной системы **Rocky Linux** на виртуальную машину и выполнения базовой конфигурации системы.

Ход выполнения работы

Параметры ВМ



Выбор языка установки

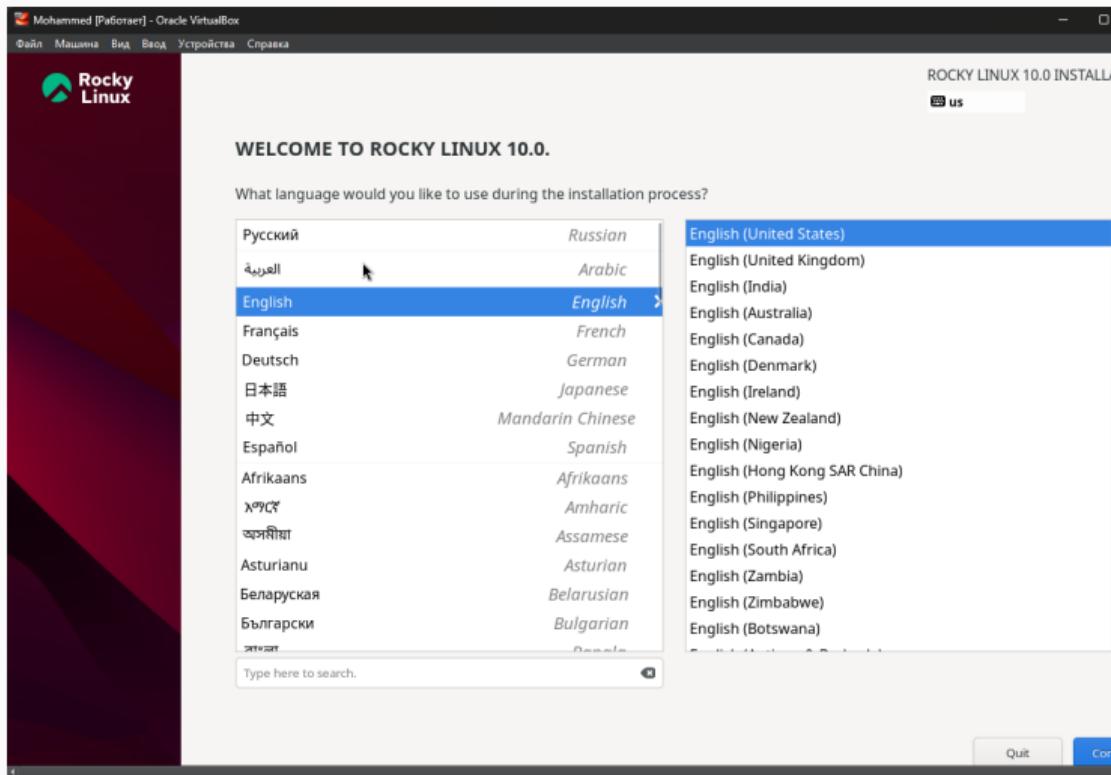


Рис. 2: Выбор языка установки

Базовая среда и компоненты

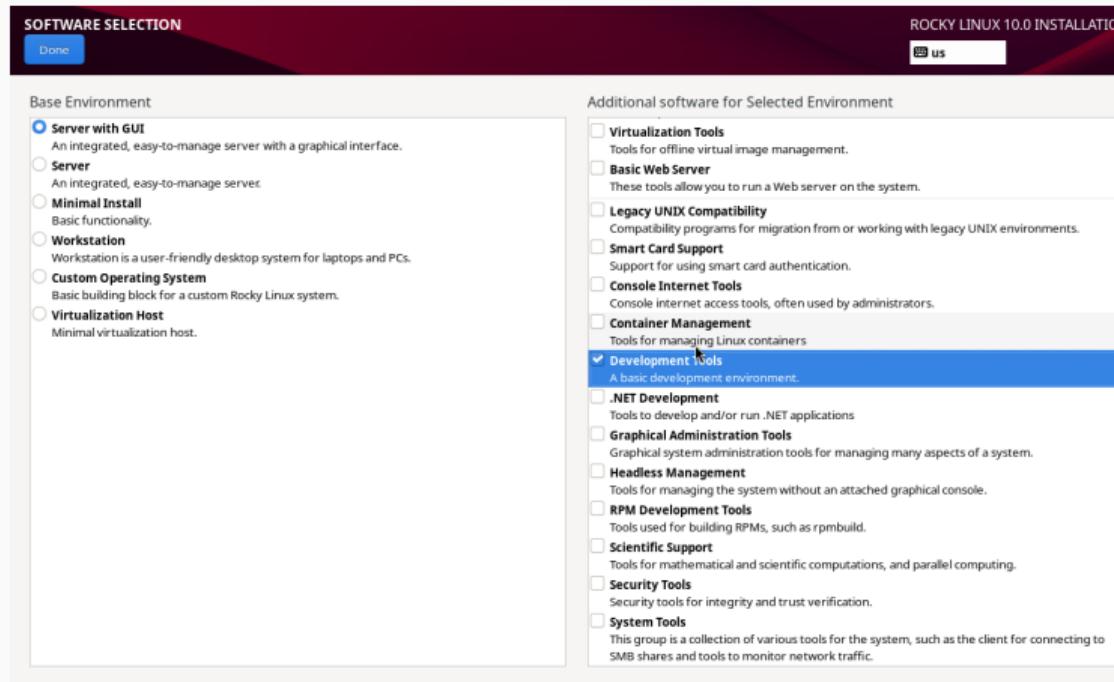


Рис. 4: Выбор ПО

Выбор устройства установки

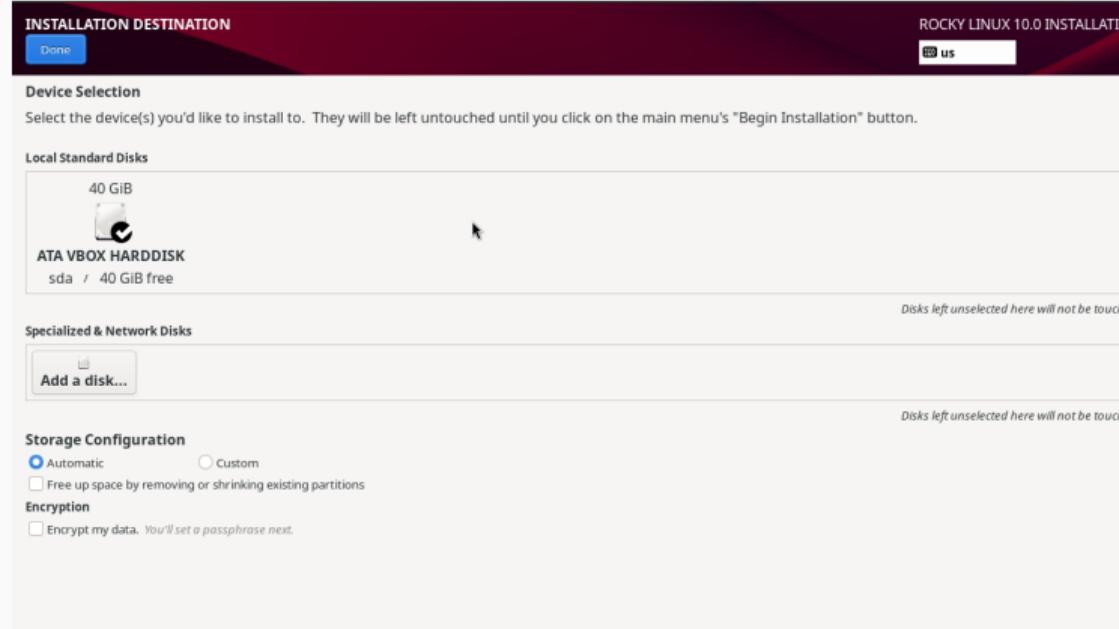


Рис. 5: Выбор диска

Kdump

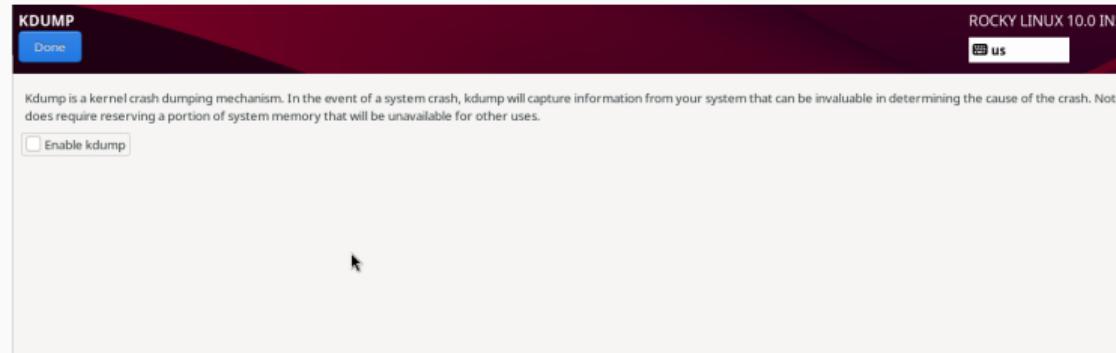


Рис. 6: Настройка Kdump

Сеть и имя узла

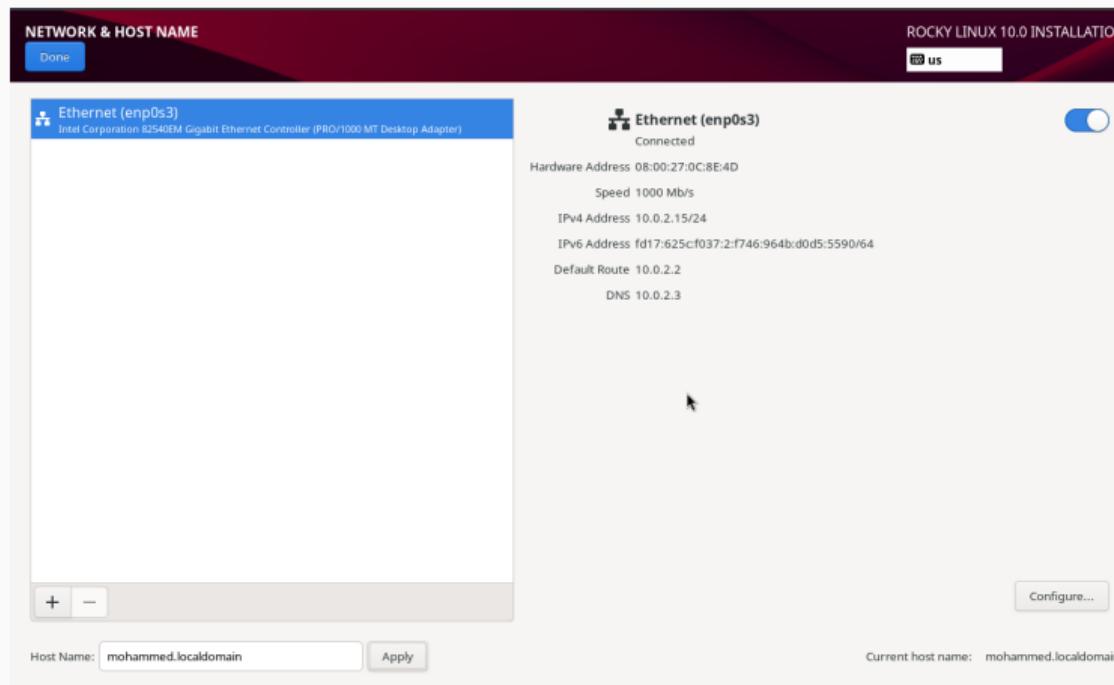


Рис. 7: Настройка сети

Настройка root

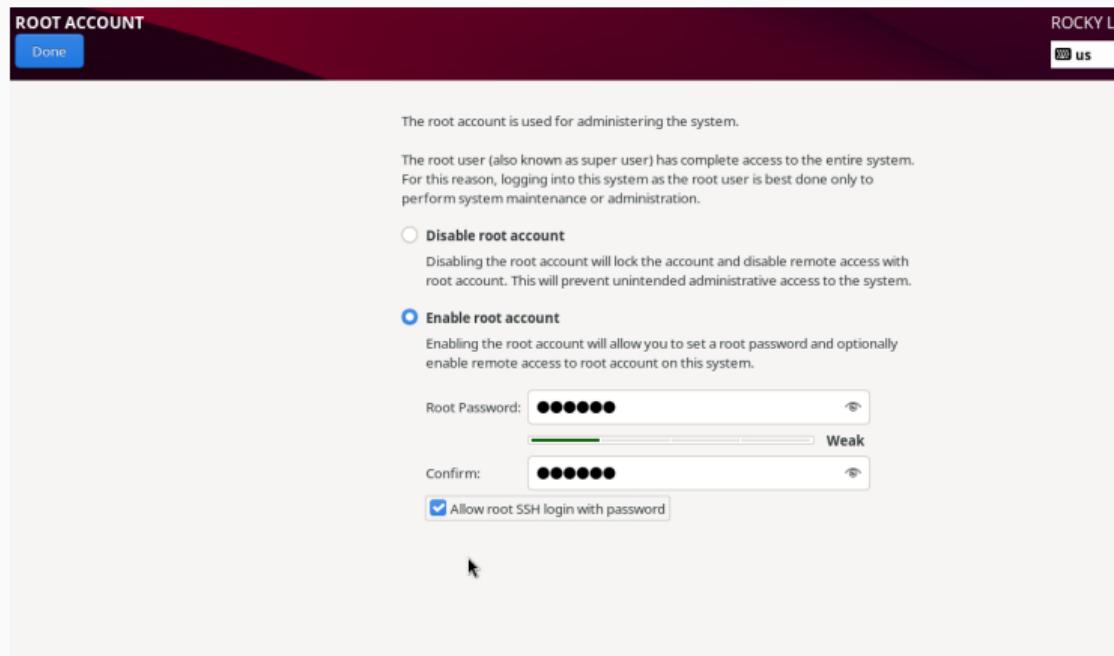


Рис. 8: Настройка root

Создание пользователя

The screenshot shows a 'CREATE USER' dialog box. At the top left is a 'Done' button. On the right side, there are icons for 'ROO' and 'U'. The main area contains the following fields:

- Full name:** mohammed
- User name:** mohammed
- Checkboxes:** Two checkboxes are checked:
 - Add administrative privileges to this user account (wheel group membership)
 - Require a password to use this account
- Password:** A password field containing six dots, with a strength indicator below it showing 'Weak'.
- Confirm password:** A password field containing six dots, with a strength indicator below it showing 'Weak'.
- Advanced...**: A button at the bottom right.

Рис. 9: Создание пользователя

Процесс установки

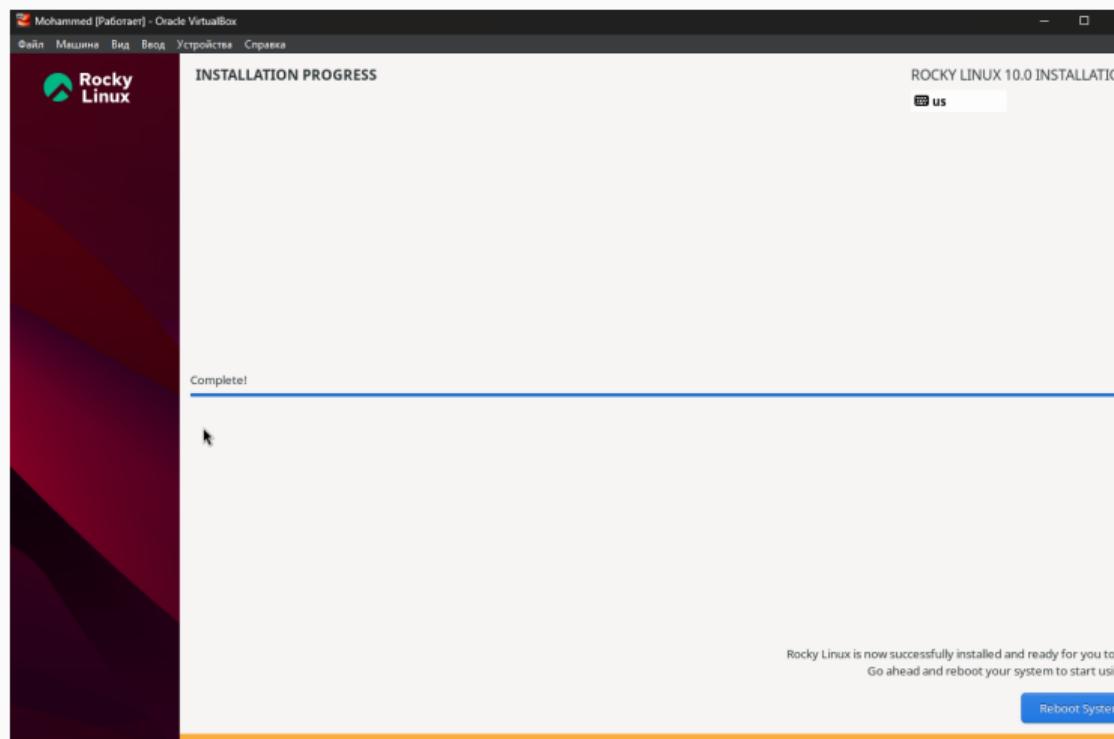
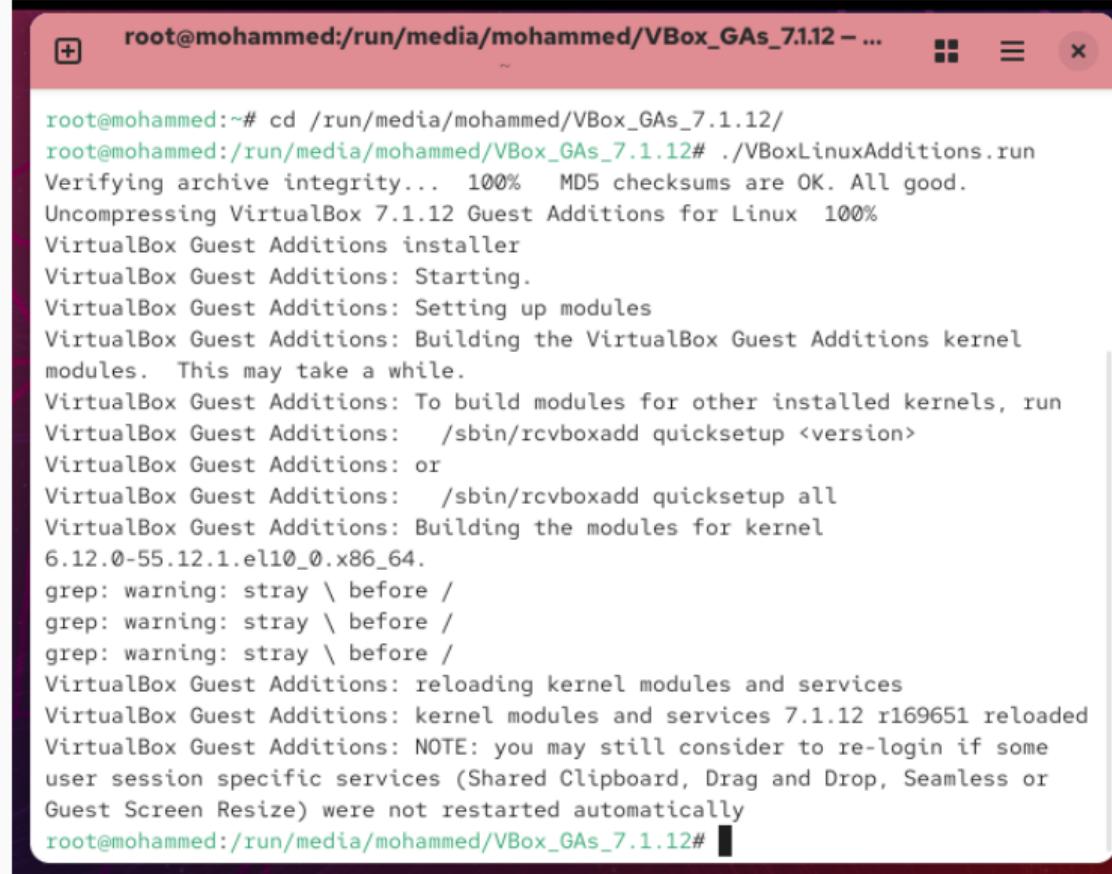


Рис. 10: Завершение установки

Установка Guest Additions



A screenshot of a terminal window titled "root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12 - ...". The terminal is displaying the output of a command to install VirtualBox Guest Additions. The text shows the process of verifying the archive integrity, decompressing the installer, starting the VirtualBox Guest Additions installer, setting up modules, building kernel modules, and reloading kernel modules and services. It also includes a note about user session specific services.

```
root@mohammed:~# cd /run/media/mohammed/VBox_GAs_7.1.12/
root@mohammed:/run/media/mohammed/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/rcvboxadd quicksetup <version>
VirtualBox Guest Additions: or
VirtualBox Guest Additions: /sbin/rcvboxadd 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@mohammed:/run/media/mohammed/VBox_GAs_7.1.12#
```

Использование dmesg

```
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12# dmesg | grep -i "Linux version"
[    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 202
5
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12# dmesg | grep -i "MHz"
[    0.000003] tsc: Detected 3187.196 MHz processor
[    9.516160] e1000 0000:00:03.0 eth0: (PCI:33MHz:32-bit) 08:00:27:0c:8e:4d
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12# dmesg | grep -i "avail"
[    0.004020] On node 0, zone DMA: 1 pages in unavailable ranges
[    0.004034] On node 0, zone DMA: 97 pages in unavailable ranges
[    0.007437] On node 0, zone Normal: 16 pages in unavailable ranges
[    0.007682] [mem 0xe0000000-0xebffff] available for PCI devices
[    0.154265] Memory: 3961196K/4193848K available (18432K kernel code, 5782K rwdta, 14104K rodata, 4320K init, 6792K
bss, 228116K reserved, 0K cma-reserved)
[    0.863589] vmmgfx 0000:00:02.0: [drm] Available shader model: Legacy.
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12# dmesg | grep -i "Hyper"
[    0.000000] Hypervisor detected: KVM
[    0.862423] vmmgfx 0000:00:02.0: [drm] *ERROR* vmmgfx seems to be running on an unsupported hypervisor.
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12#
```

Рис. 12: Вывод dmesg

Файловые системы

```
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12# 
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12# mount
/dev/mapper/r1_vbox-root on / type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
devtmpfs on /dev type devtmpfs (rw,nosuid,seclabel,size=4096k,nr_inodes=495716,mode=755,inode64)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev,seclabel,inode64)
devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,seclabel,gid=5,mode=620,ptmxmode=000)
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime,seclabel)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
cgroup2 on /sys/fs/cgroup type cgroup2 (rw,nosuid,nodev,noexec,relatime,seclabel,nsdelegate,memory_recursiveprot)
pstree on /sys/fs/pstree type pstree (rw,nosuid,nodev,noexec,relatime,seclabel)
bpf on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)
configfs on /sys/kernel/config type configfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
tmpfs on /run type tmpfs (rw,nosuid,nodev,seclabel,size=800560k,nr_inodes=819200,mode=755,inode64)
selinuxfs on /sys/fs/selinux type selinuxfs (rw,nosuid,noexec,relatime)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=36,pgrp=1,timeo=0,minproto=5,maxproto=5,direct,pipe_ino=1909)
hugetlbfss on /dev/hugepages type hugetlbfss (rw,nosuid,nodev,relatime,seclabel,pagesize=2M)
debugfs on /sys/kernel/debug type debugfs (rw,nosuid,nodev,noexec,relatime,seclabel)
mqqueue on /dev/mqueue type mqqueue (rw,nosuid,nodev,noexec,relatime,seclabel)
tracefs on /sys/kernel/tracing type tracefs (rw,nosuid,nodev,noexec,relatime,seclabel)
tmpfs on /run/credentials/systemd-journal.service type tmpfs (ro,nosuid,nodev,noexec,relatime,nosymfollow,seclabel,size=1024k,nr_inodes=1024,mode=700,inode64,noswap)
fusectl on /sys/fs/fuse/connections type fusectl (rw,nosuid,nodev,noexec,relatime)
/dev/sda2 on /boot type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=400280k,nr_inodes=100070,mode=700,uid=1000,gid=1000,inode64)
gvfsd-fuse on /run/user/1000/gvfs type fuse.gvfsd-fuse (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)
portal on /run/user/1000/doc type fuse.portal (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)
/dev/sr0 on /run/media/mohammed/VBox_GAs_7.1.12 type iso9660 (ro,nosuid,nodev,relatime,nojoliet,check=s,map=n,blocksize=2048,uid=1000,gid=1000,dmode=500,fmode=400,iocharset=utf8,uhelper=udisks2)
tmpfs on /run/user/0 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=400280k,nr_inodes=100070,mode=700,inode64)
root@mohammed:/run/media/mohammed/VBox_GAs_7.1.12# 
```

Рис. 13: Вывод mount

Заключение

Итоги работы

В ходе лабораторной работы была установлена и настроена ОС **Rocky Linux** на виртуальной машине. Освоены базовые этапы установки, конфигурации системы, установки дополнений гостевой ОС и анализа загрузки Linux.