



Занятие 2.

Администрирование Linux

Задача:

- Изучить работу всех утилит.
- Использовать при работе исключительно терминал.
- Необходимо включить в отчёт скриншоты всех указанных команд и опций в практической работе.

1. Команда `df` в linux

kali [Работает] - Oracle VM VirtualBox

Файл Машина Вид Ввод Устройства Справка

1 2 3 4

12:17

File Actions Edit View Help

(kali@kali)-[~]
\$ df

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
udev	822516	0	822516	0%	/dev
tmpfs	172616	964	171652	1%	/run
/dev/sda1	82083148	14047600	63820000	19%	/
tmpfs	863072	0	863072	0%	/dev/shm
tmpfs	5120	0	5120	0%	/run/lock
tmpfs	172612	76	172536	1%	/run/user/1000
tmpfs	172612	68	172544	1%	/run/user/111

(kali@kali)-[~]
\$ df -h

Filesystem	Size	Used	Avail	Use%	Mounted on
udev	804M	0	804M	0%	/dev
tmpfs	169M	964K	168M	1%	/run
/dev/sda1	79G	14G	61G	19%	/
tmpfs	843M	0	843M	0%	/dev/shm
tmpfs	5.0M	0	5.0M	0%	/run/lock
tmpfs	169M	76K	169M	1%	/run/user/1000
tmpfs	169M	68K	169M	1%	/run/user/111

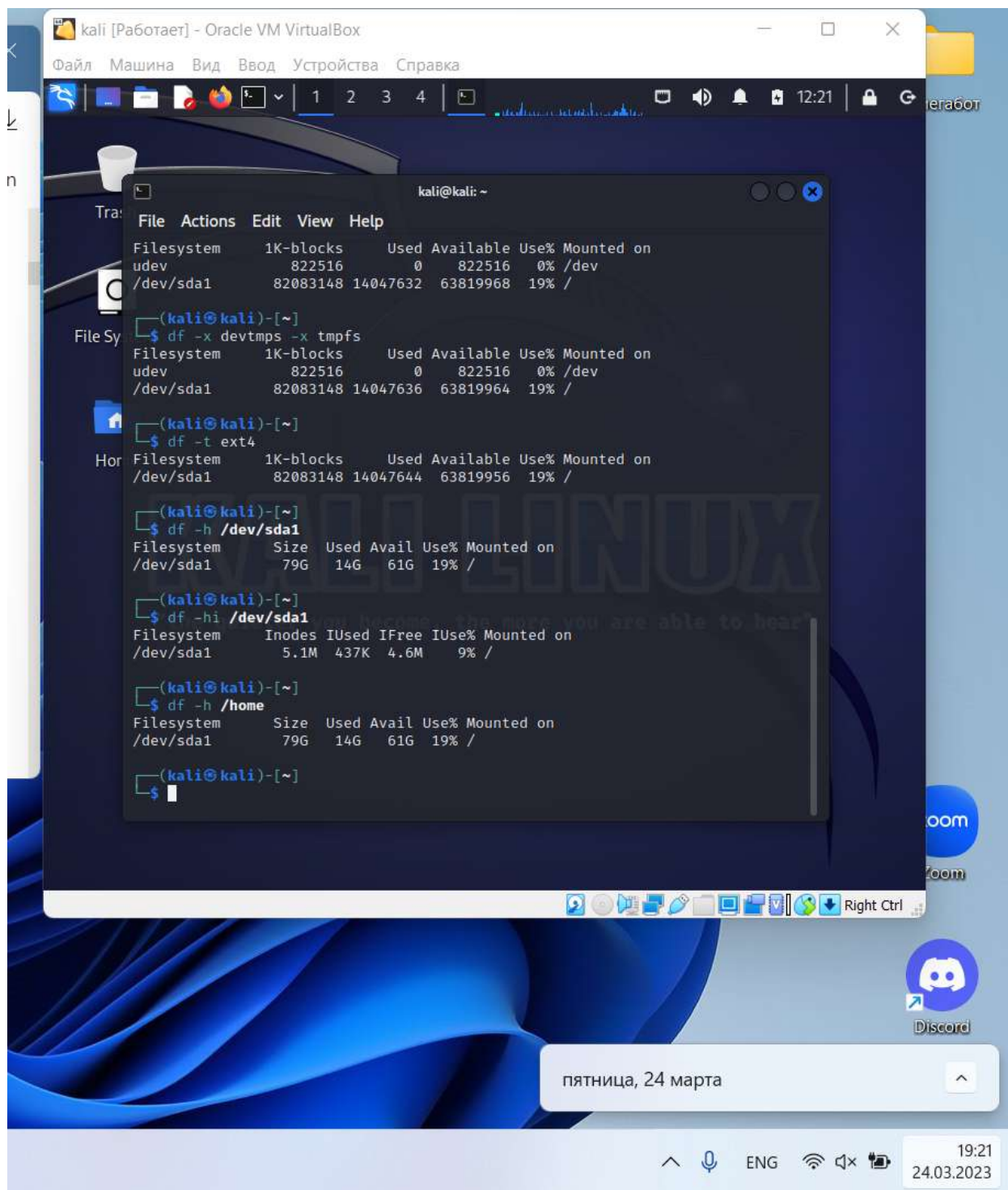
(kali@kali)-[~]
\$ df -a

df: /run/user/1000/doc: Operation not permitted

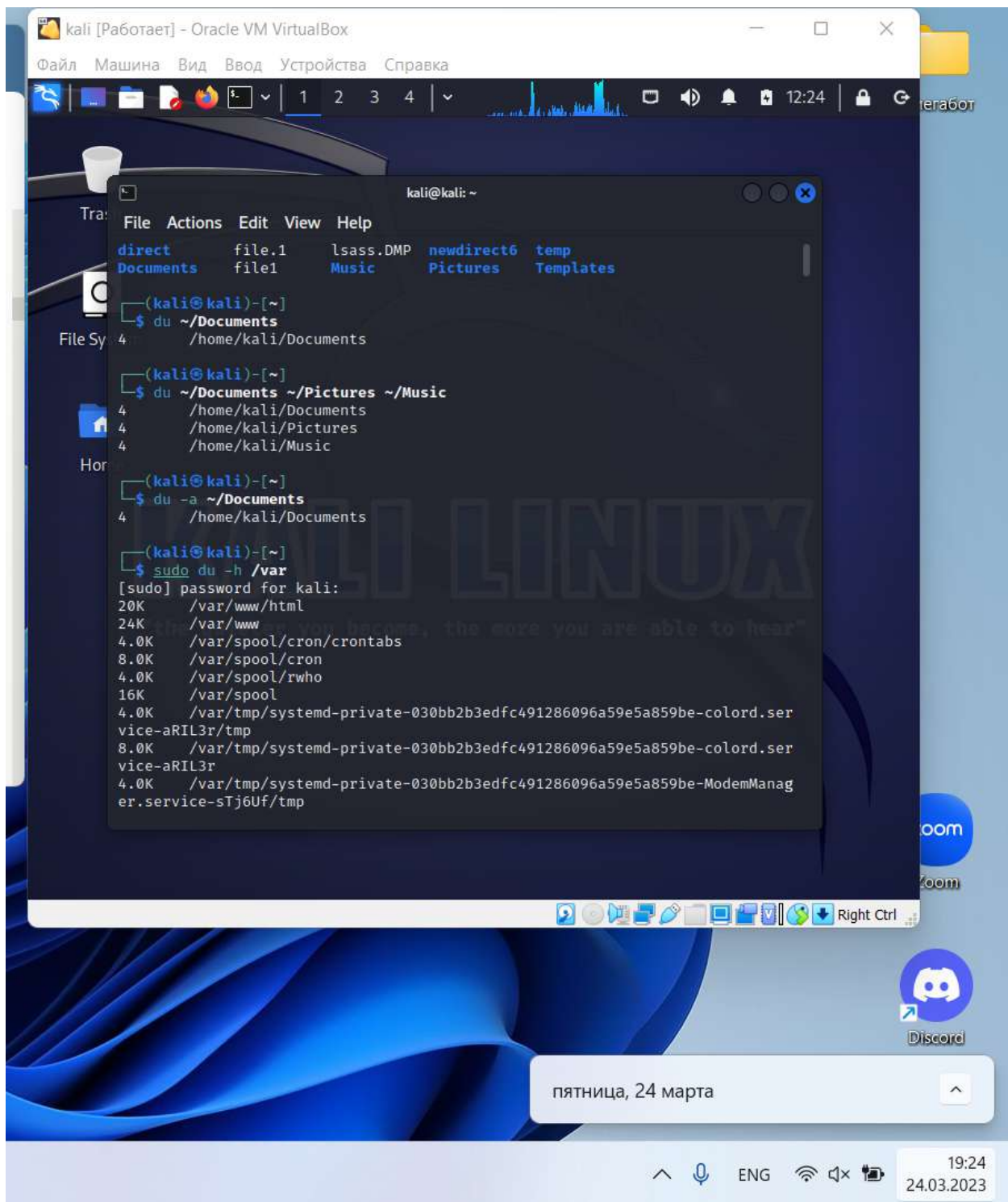
Filesystem	1K-blocks	Used	Available	Use%	Mounted on
sysfs	0	0	0	-	/sys
proc	0	0	0	-	/proc
udev	822516	0	822516	0%	/dev
devpts	0	0	0	-	/dev/pts
tmpfs	172616	944	171672	1%	/run

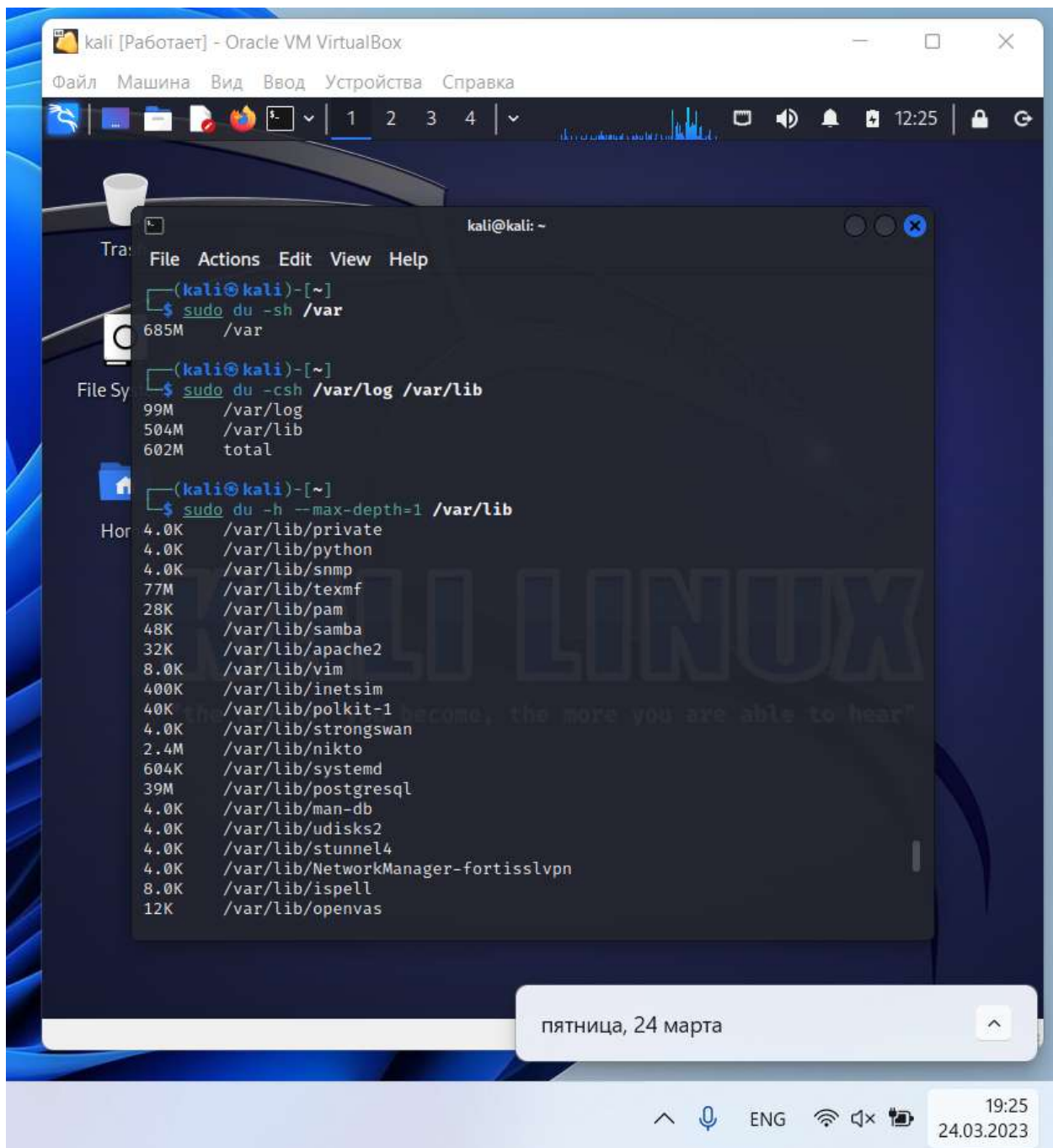
пятница, 24 марта

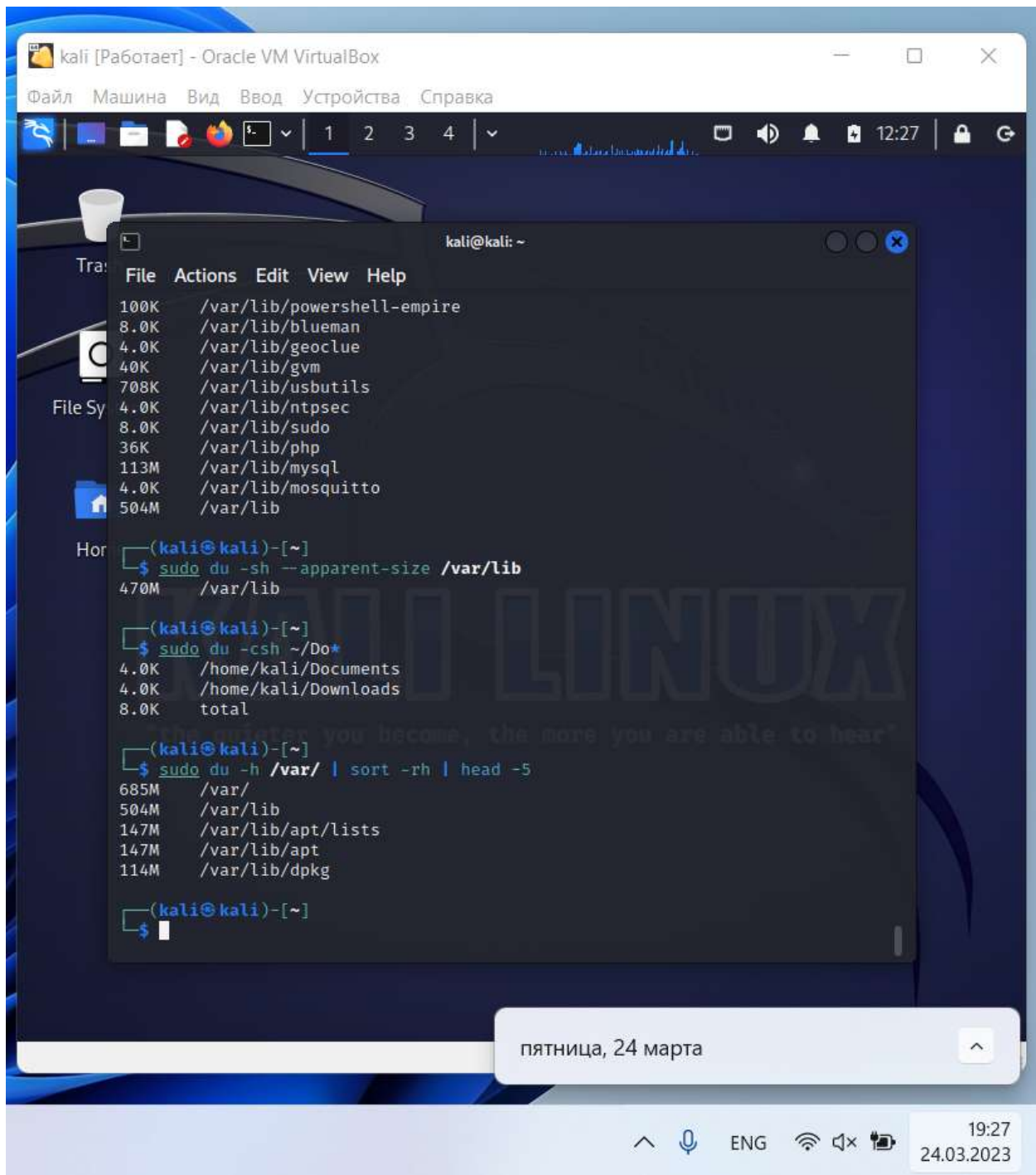
19:17
24.03.2023



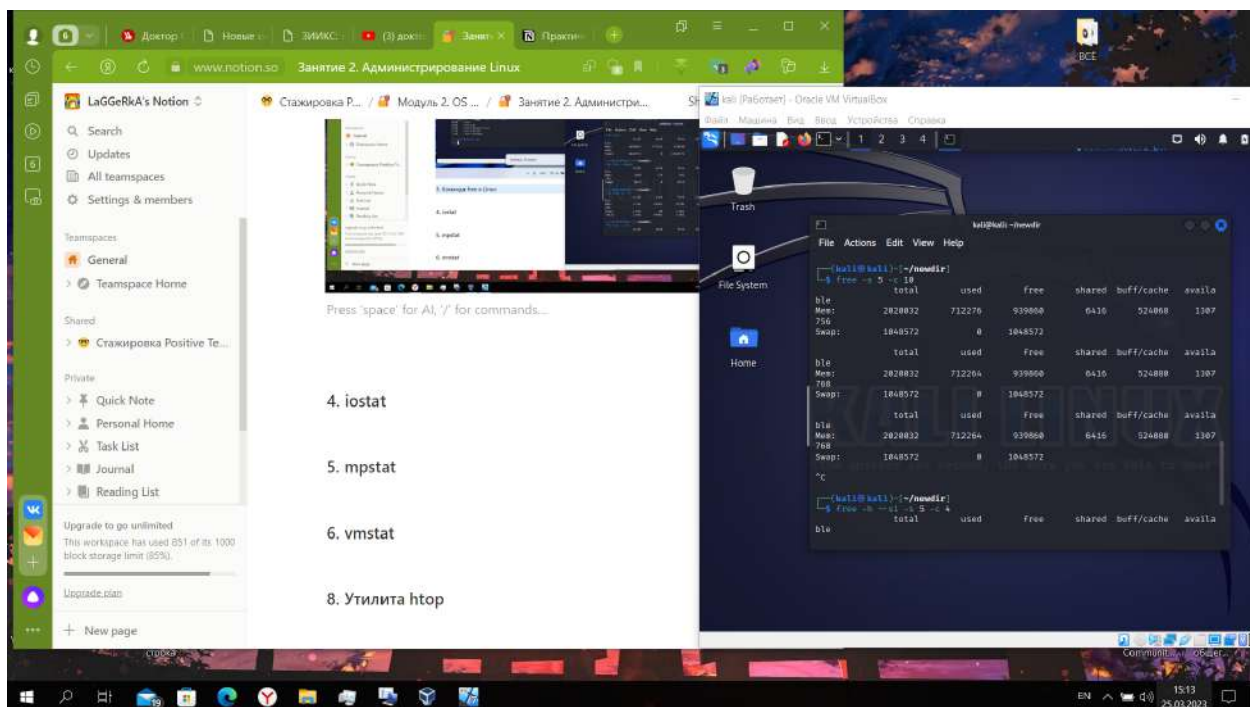
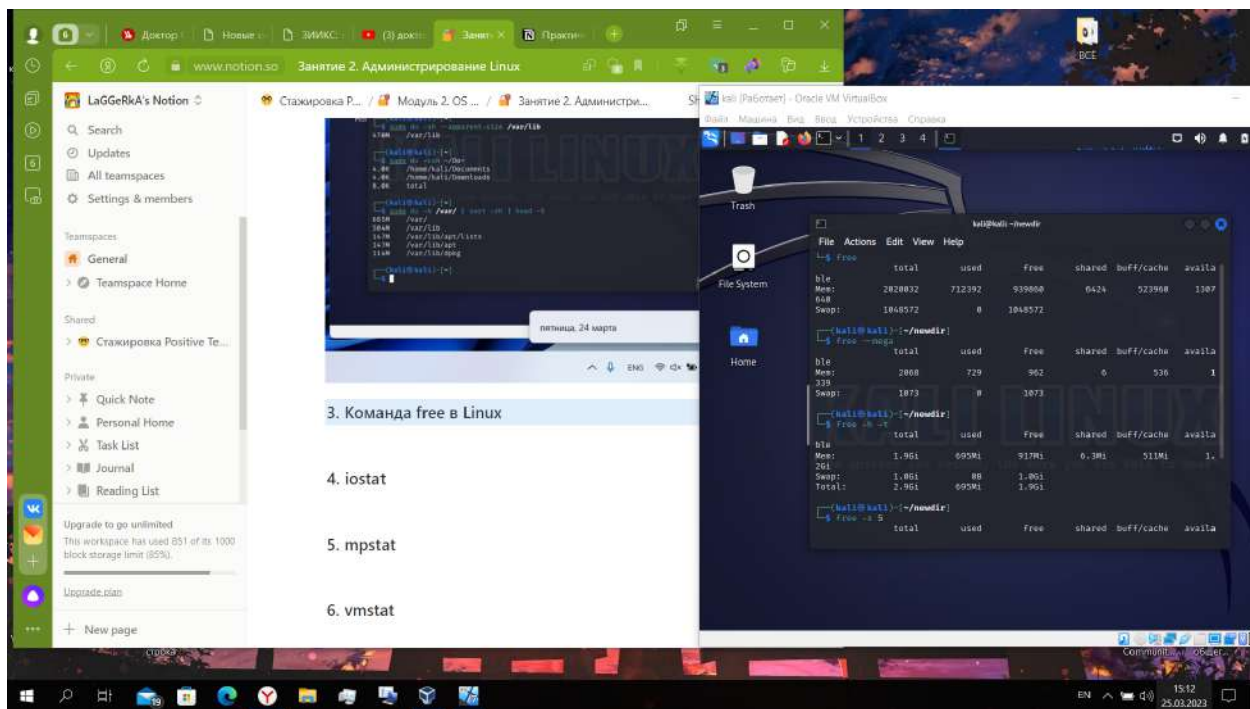
2. Команда du в Linux







3. Команда free в Linux



4. iostat

The screenshot shows a Notion workspace titled "Занятие 2. Администрирование Linux" with a list of tasks: 4. iostat, 5. mpstat, 6. vmstat, and 8. Утилита htop. To the right, a Kali Linux terminal window displays the following commands and output:

```
kali@kali:~$ sudo apt-get install iostat
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
iostat is already the newest version (3.6.1-1).
iostat set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

kali@kali:~$ iostat
Linux 6.1.0-kali5-amd64 (kali) 03/25/2023      _x86_64_      (1 CPU)

avg-cpu:  user   nice   system   iowait  steal   idle   <-->
           0.29    0.00    2.33    0.45    0.00    96.93

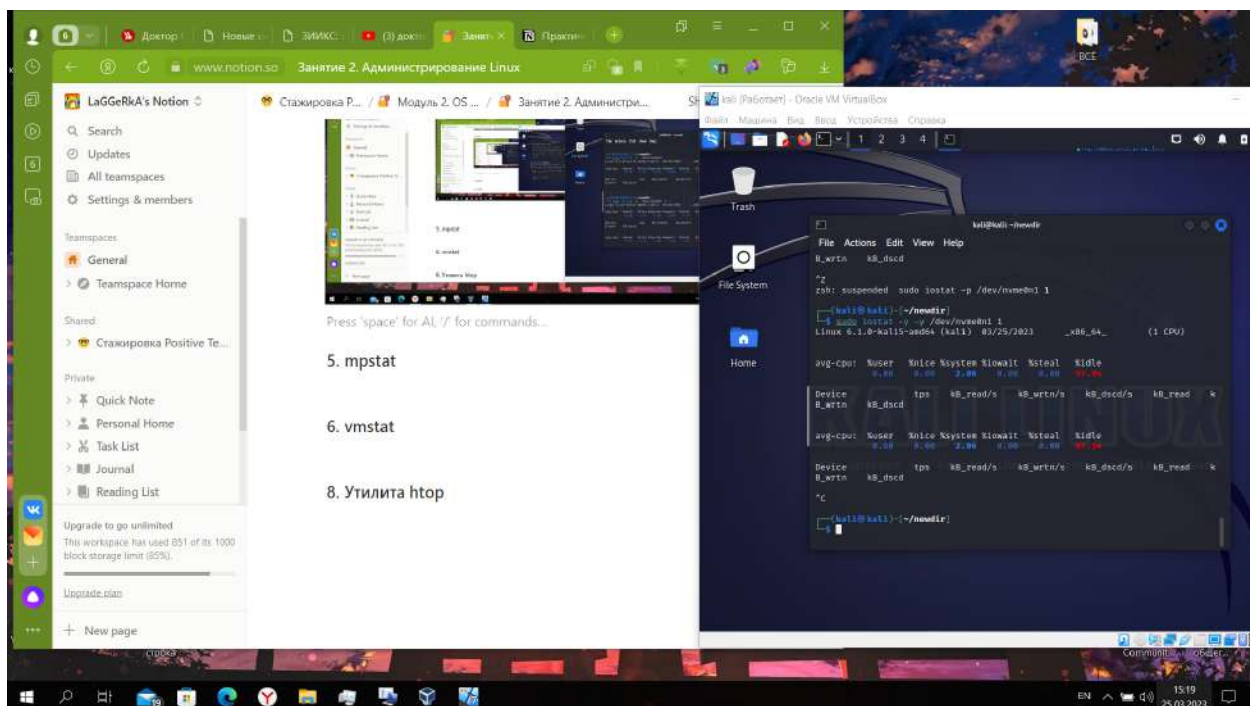
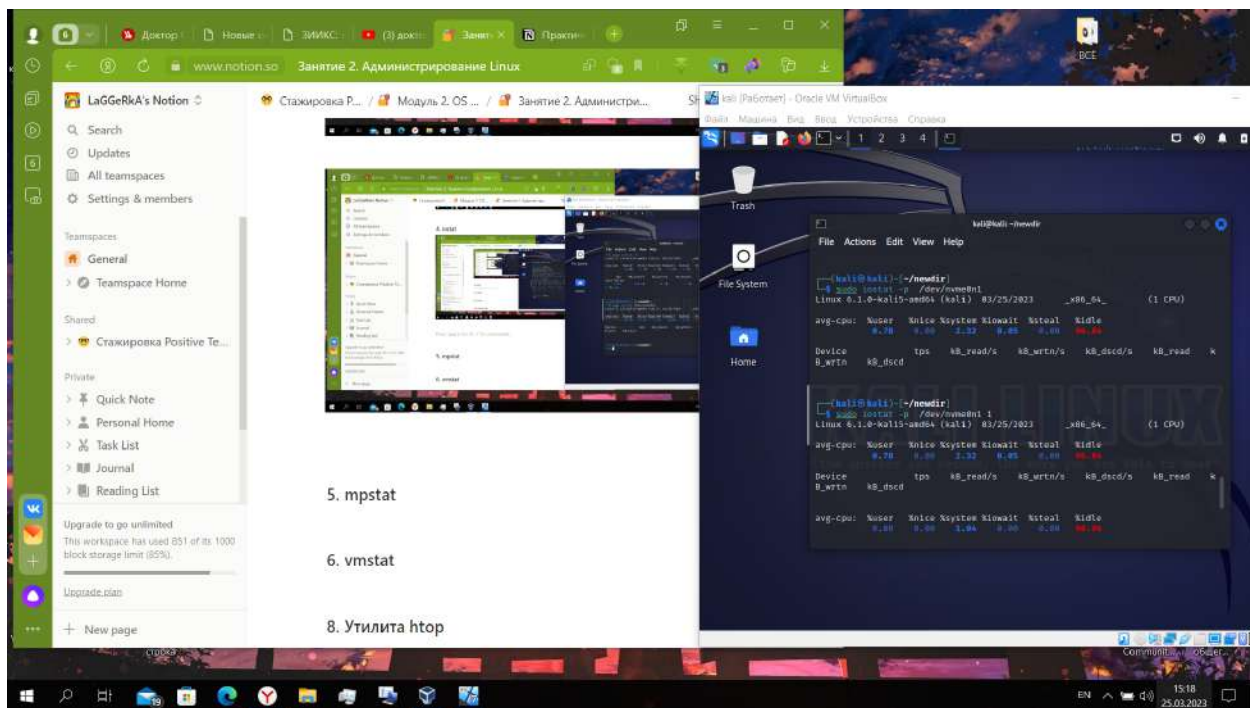
Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
sda                0.00           0.00           0.00           0.00         0.00         0.00
sda1               0.00           0.00           0.00           0.00         0.00         0.00
```

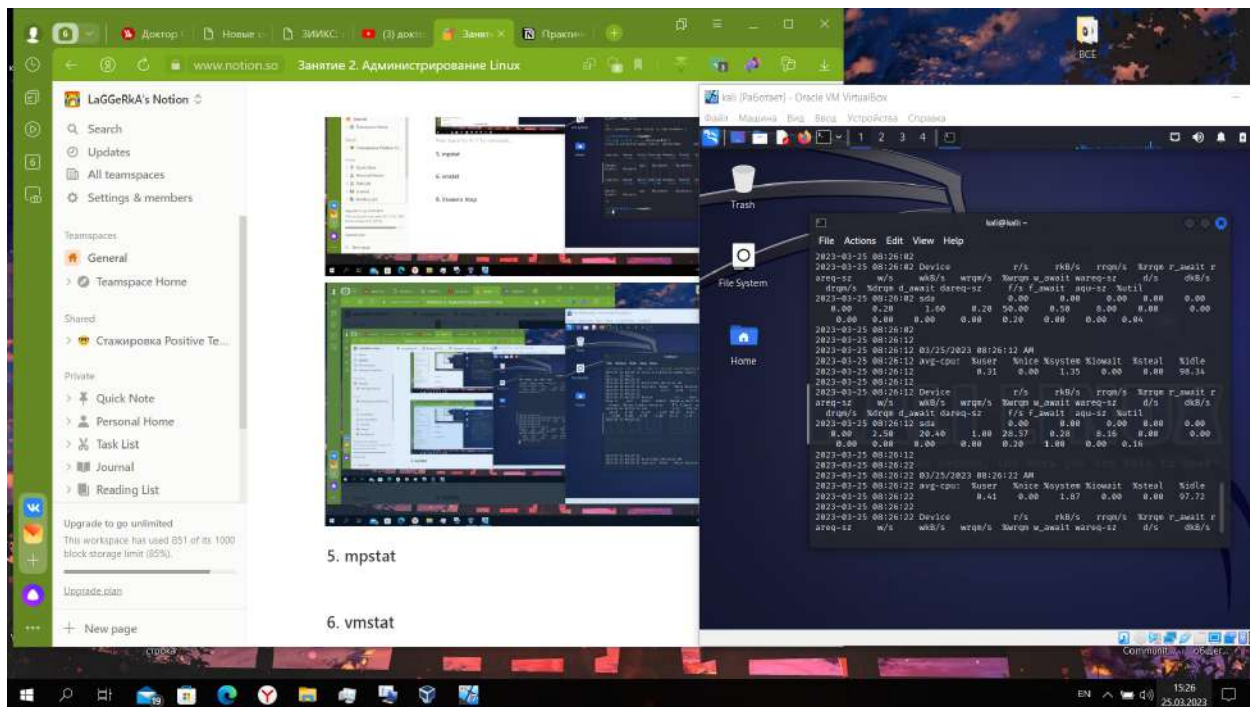
The screenshot shows a Notion workspace titled "Занятие 2. Администрирование Linux" with a list of tasks: 4. iostat, 5. mpstat, and 6. vmstat. To the right, a Kali Linux terminal window displays the following commands and output:

```
kali@kali:~$ sudo iostat -k
Linux 6.1.0-kali5-amd64 (kali) 03/25/2023      _x86_64_      (1 CPU)

avg-cpu:  user   nice   system   iowait  steal   idle   <-->
           0.29    0.00    2.33    0.45    0.00    96.93

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
sda                0.00           0.00           0.00           0.00         0.00         0.00
sda1               0.00           0.00           0.00           0.00         0.00         0.00
```





5. mpstat

The screenshot shows a Kali Linux desktop environment. In the background, a Notion workspace titled "Занятие 2. Администрирование Linux" is visible. In the foreground, a terminal window displays the output of the `mpstat` command. The output shows system statistics for the CPU, including user, nice, system, idle, and iowait percentages, as well as context switches and interrupts.

```
kali@kali:~$ mpstat -A
Linux 6.1.0-kali5-amd64 (kali) 03/25/2023 _x86_64_ (1 CPU)

08:27:33 AM CPU      usr  nice    sys  iowait   irq  soft  steal  guest  agnic
0  0.75%  0.00%  2.26%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%

08:27:33 AM iowait
0  0.75%  0.00%  2.26%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%

08:27:33 AM MODE      usr  nice    sys  iowait   irq  soft  steal  guest  agnic
0  0.75%  0.00%  2.26%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%

08:27:33 AM CPU      intr/s
08:27:33 AM all      302.06%
08:27:33 AM 0        290.77%

08:27:33 AM CPU      0/s    1/s    2/s    3/s    4/s    5/s    6/s    7/s    8/s
19/s   20/s   21/s   22/s   23/s   24/s   25/s   26/s   27/s
19/s   20/s   21/s   22/s   23/s   24/s   25/s   26/s   27/s
0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%
0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%
```

The screenshot shows a Kali Linux desktop environment. In the background, a Notion workspace titled "Занятие 2. Администрирование Linux" is visible. In the foreground, a terminal window displays the output of the `vmstat` command. The output shows system statistics for the CPU, including user, nice, system, idle, and iowait percentages, as well as context switches and interrupts.

```
kali@kali:~$ vmstat
Linux 6.1.0-kali5-amd64 (kali) 03/25/2023 _x86_64_ (1 CPU)

08:28:29 AM rmb  b0  b1  b2  b3  b4  b5  b6  b7  b8  b9  bA  bB  bC  bD  bE  bF
0  0.04%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%

08:28:29 AM rmb  b0  b1  b2  b3  b4  b5  b6  b7  b8  b9  bA  bB  bC  bD  bE  bF
0  0.04%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%  0.00%
```


The screenshot shows a desktop environment with a virtual machine (Oracle VM VirtualBox) running Kali Linux. The VM window displays a terminal with the command 'vmstat' and its output. The output shows system statistics including processes, memory, swap, IO, system, and CPU usage. The desktop also shows a file manager window with a folder named '6. vmstat' and a document titled '6. vmstat.docx'. The taskbar at the bottom shows various application icons and the system clock.

6. vmstat

Press 'space' for AI, '/' for commands...

```

kali@kali:~$ vmstat
procs-----memory-----swap-----io-----system-----cpu-----
 r b swpd free buff cache si so bi bo in out cs us sy id wa st
 1 0      0 938988 34768 496328 0 0 124 14 321 444 1 2 97 0 0

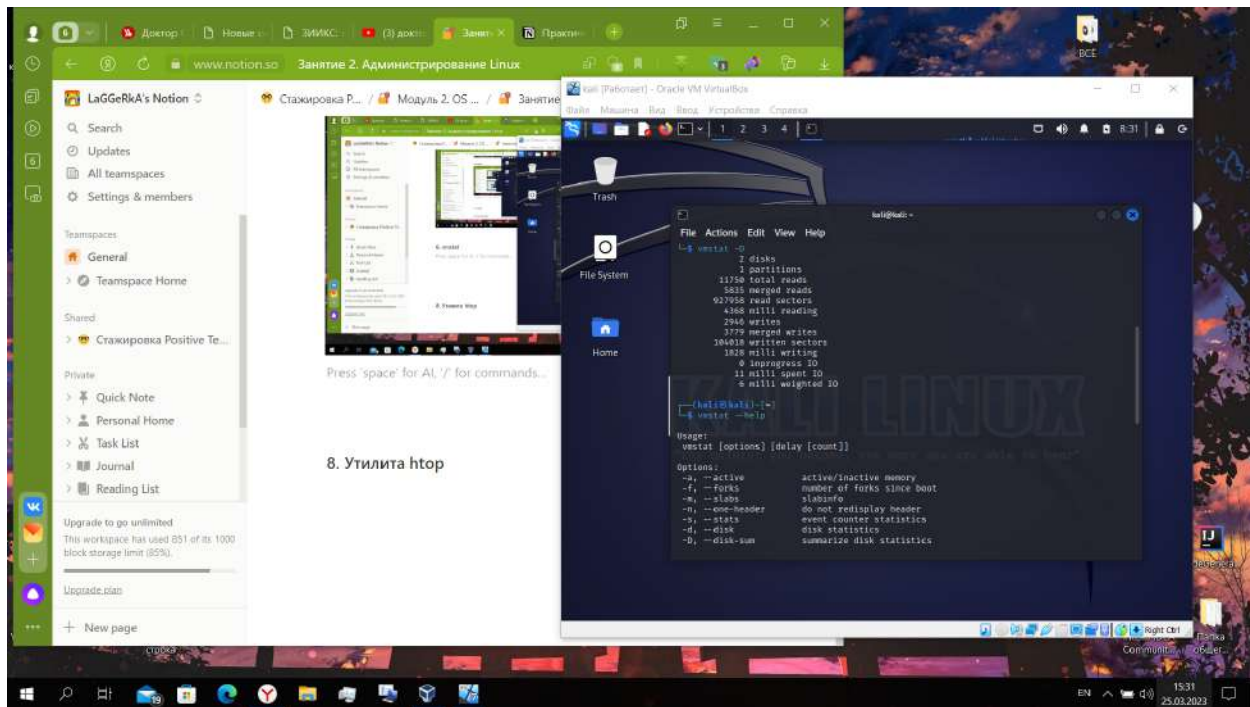
kali@kali:~$ vmstat -a
procs-----memory-----swap-----io-----system-----cpu-----
 r b swpd free inact active si so bi bo in out cs us sy id wa st
 1 0  938988 876264 267102 0 0 123 14 321 443 1 2 97 0 0

kali@kali:~$ vmstat -f
34138 forks

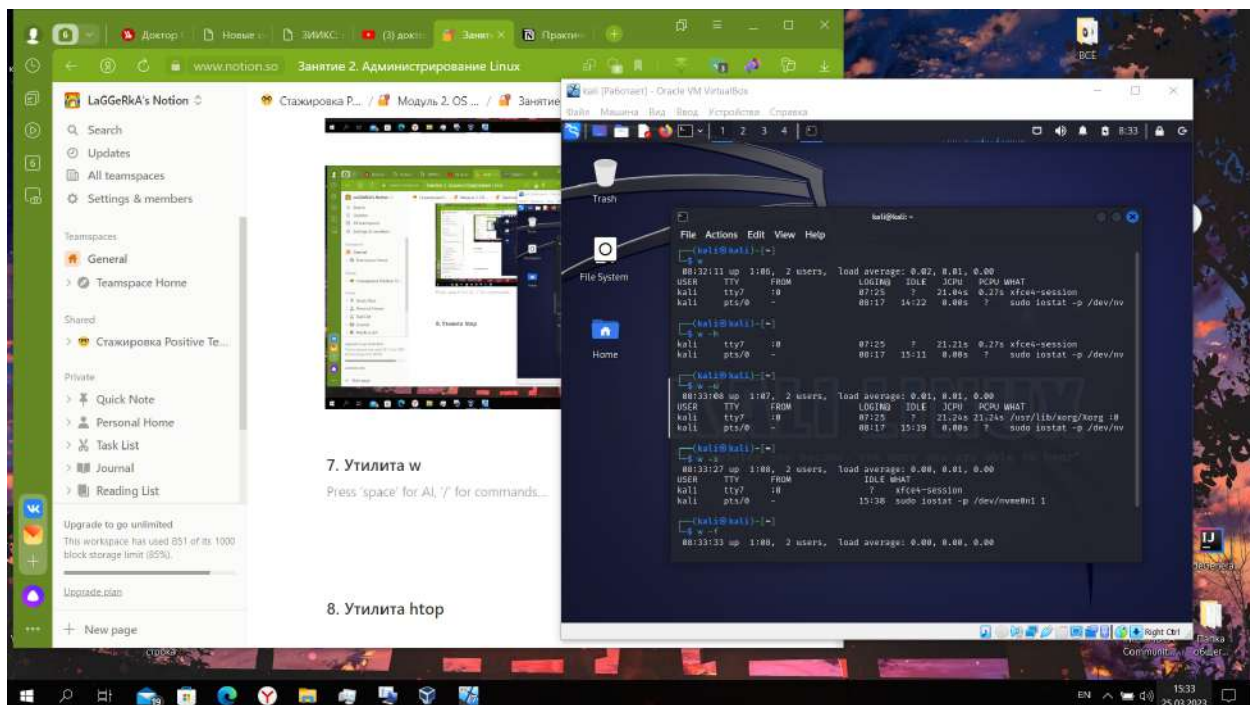
kali@kali:~$ vmstat -d
disk_-----reads-----writes-----io-----
      total merged sectors    bs    total merged sectors    ns    cur    sec
sda  11750  5810  927958  4088  2464  2779 184818 1820  0 11
sda  0 0 0 0 0 0 0 0 0 0

kali@kali:~$ vmstat -D
 2 disks
 3 partitions
11750 total reads
  
```

8. Утилита http



7. Утилита w

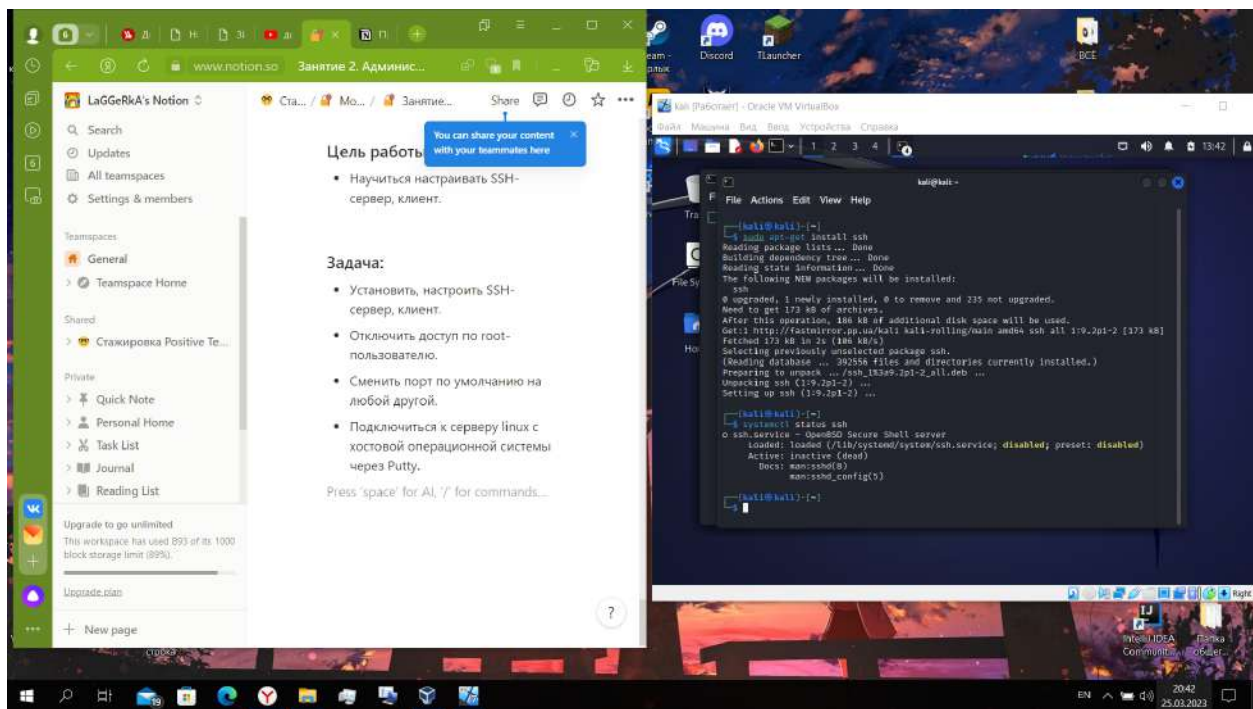


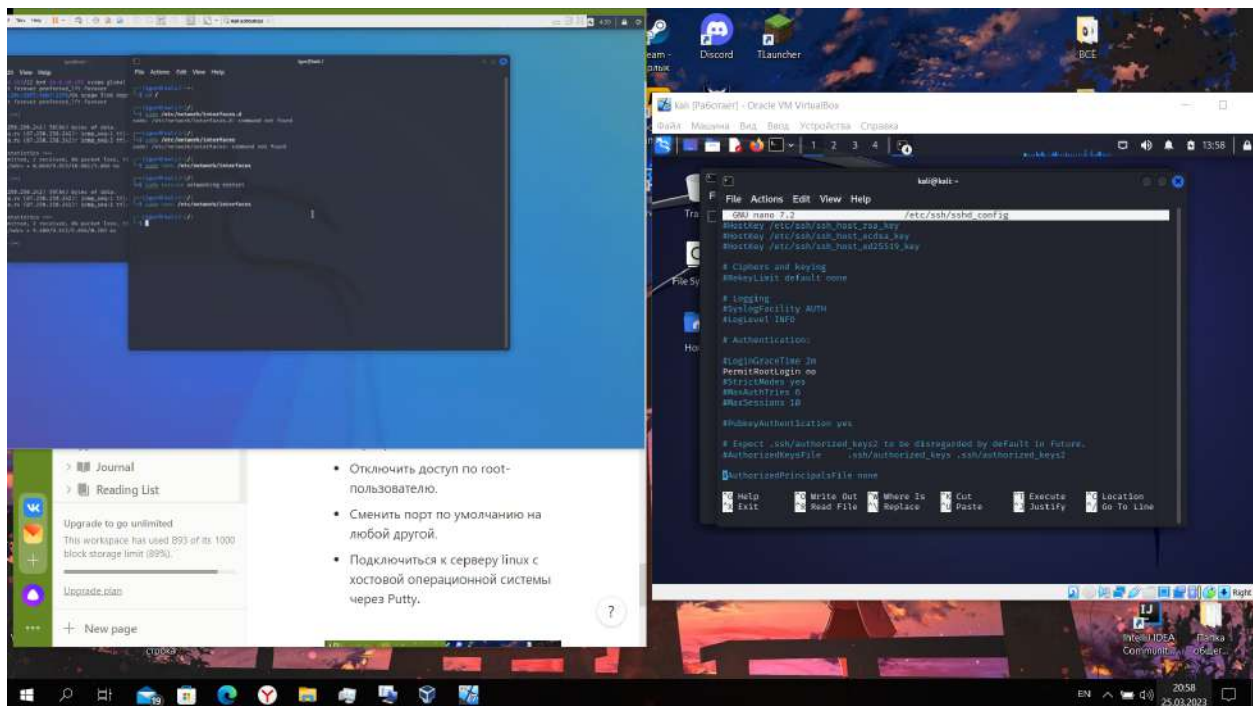
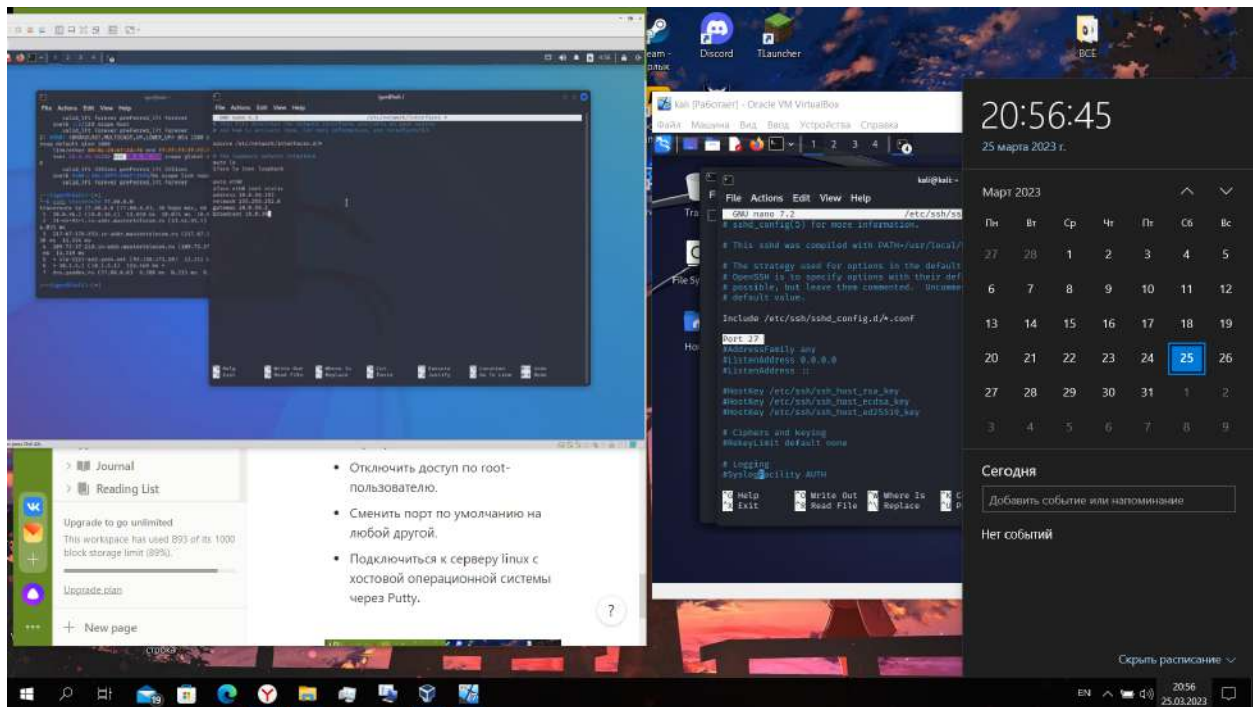
Цель работы:

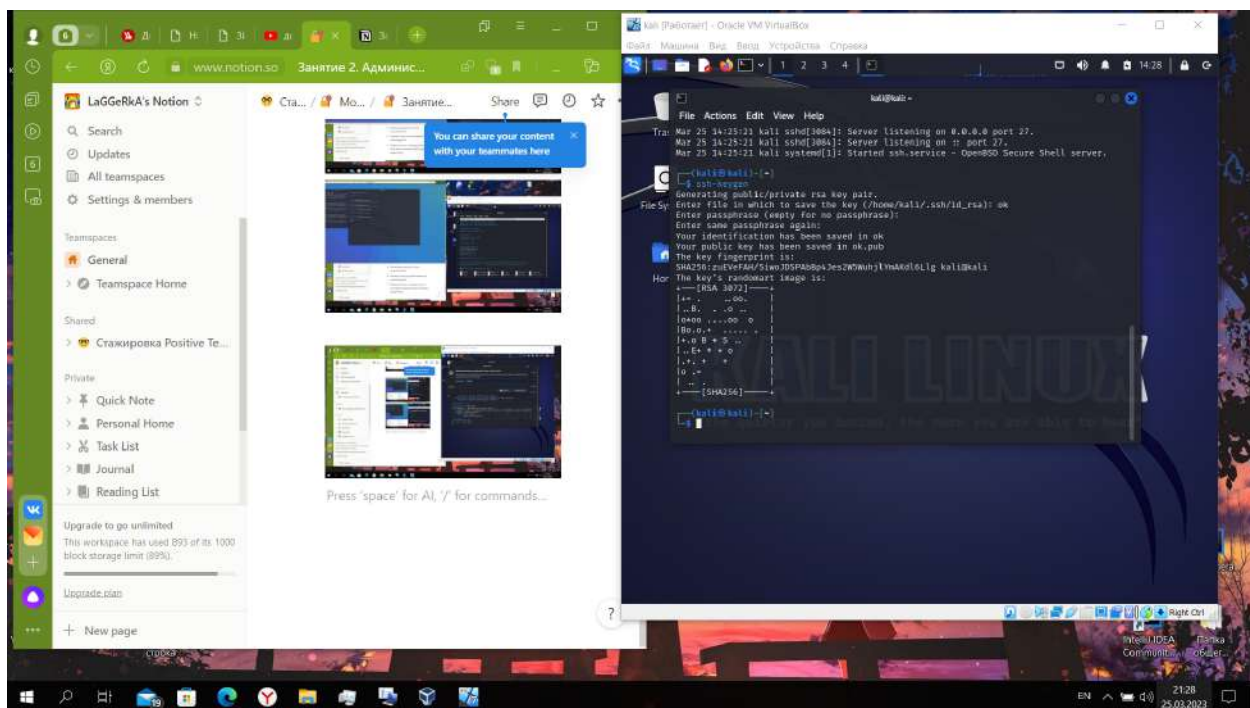
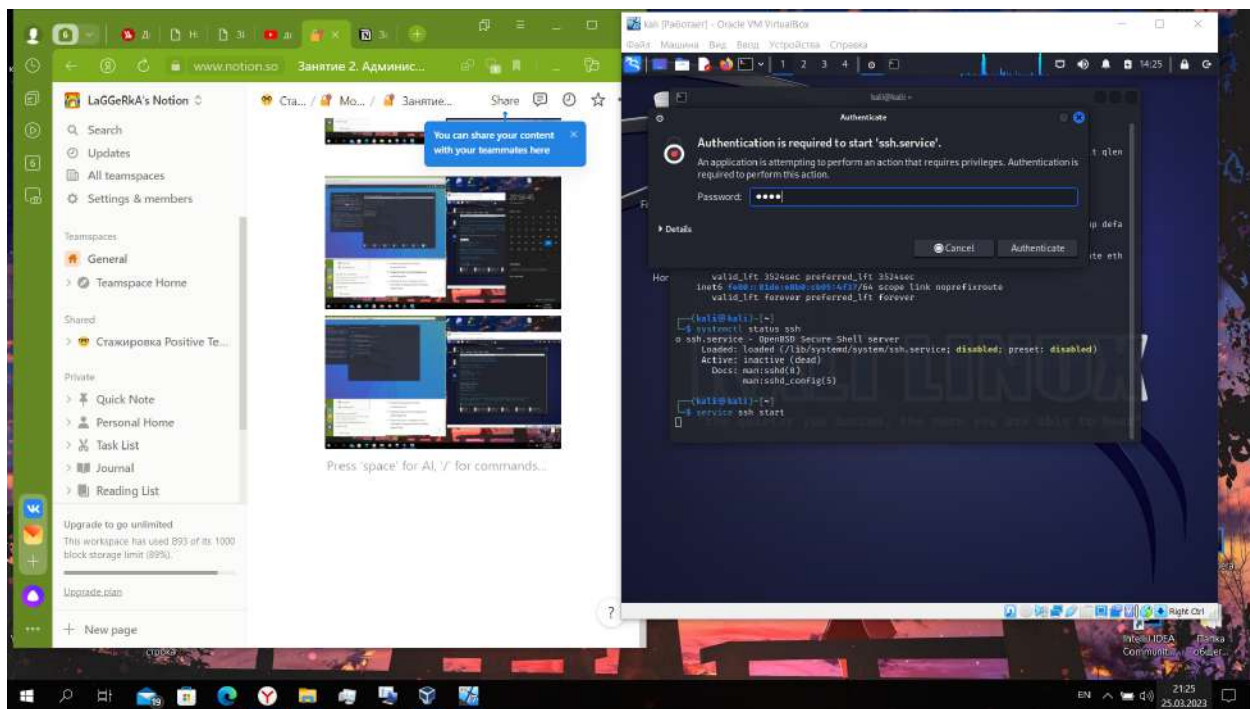
- Научиться настраивать SSH-сервер, клиент.

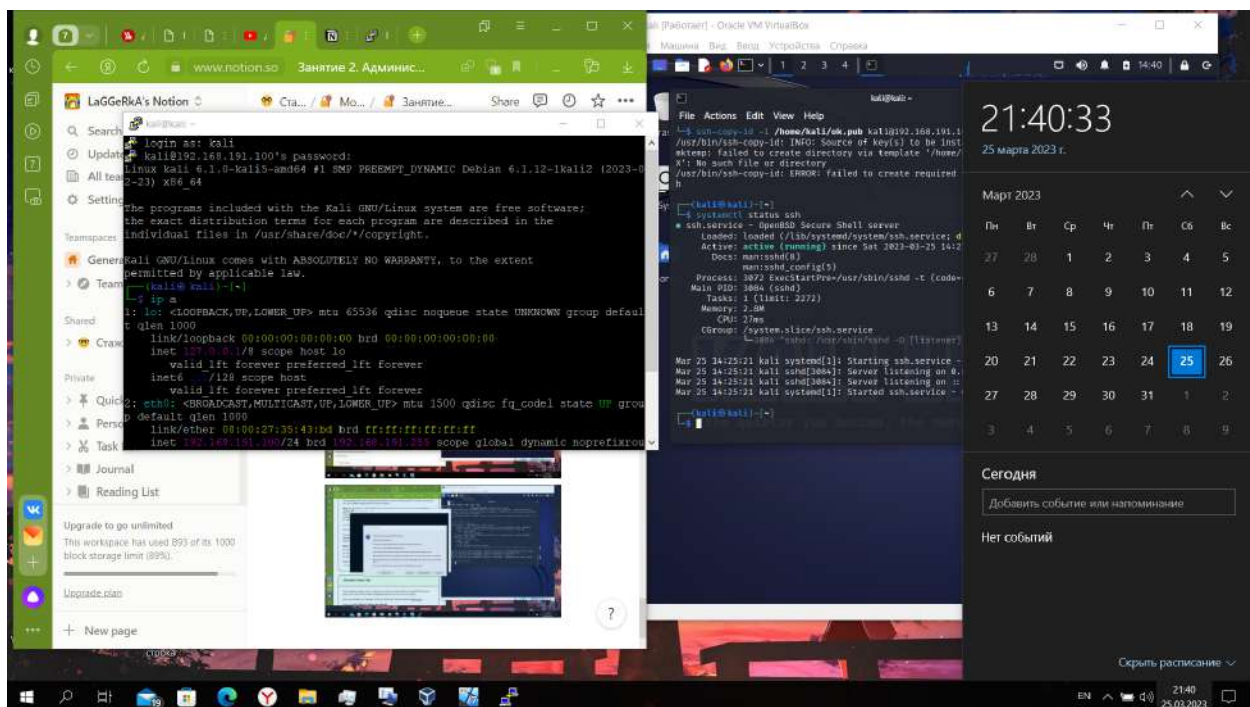
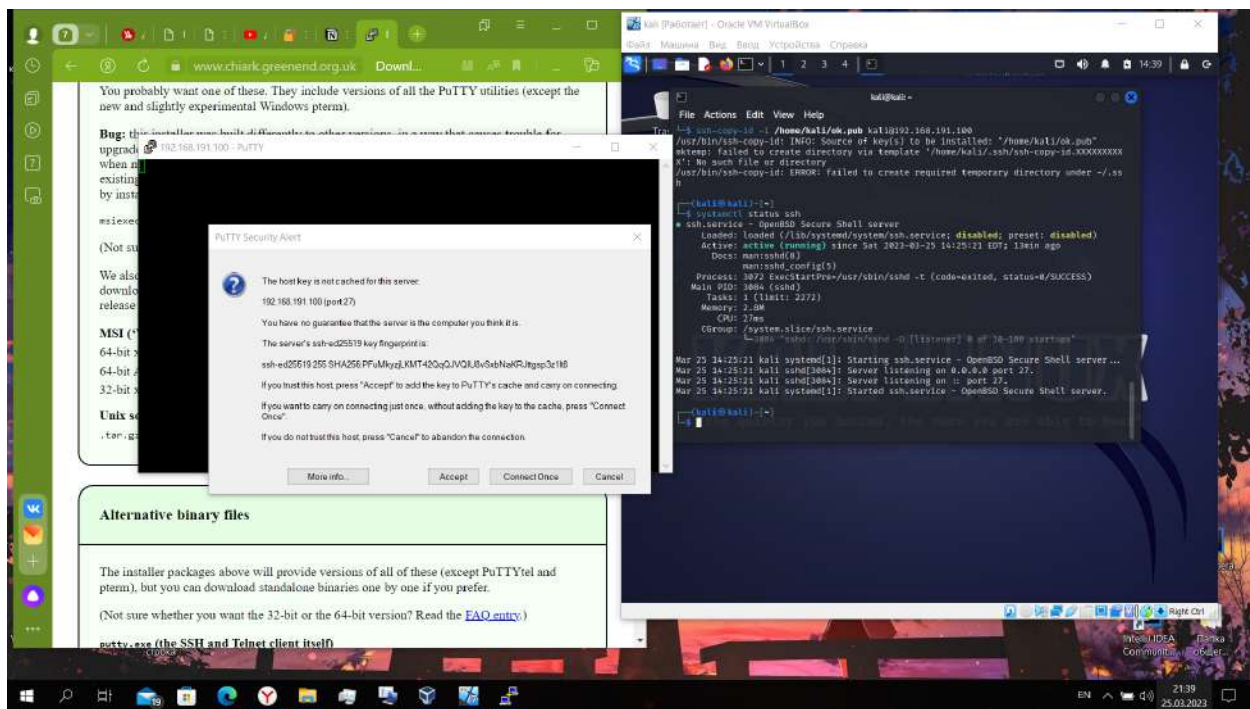
Задача:

- Установить, настроить SSH-сервер, клиент.
- Отключить доступ по root-пользователю.
- Сменить порт по умолчанию на любой другой.
- Подключиться к серверу linux с хостовой операционной системы через Putty.









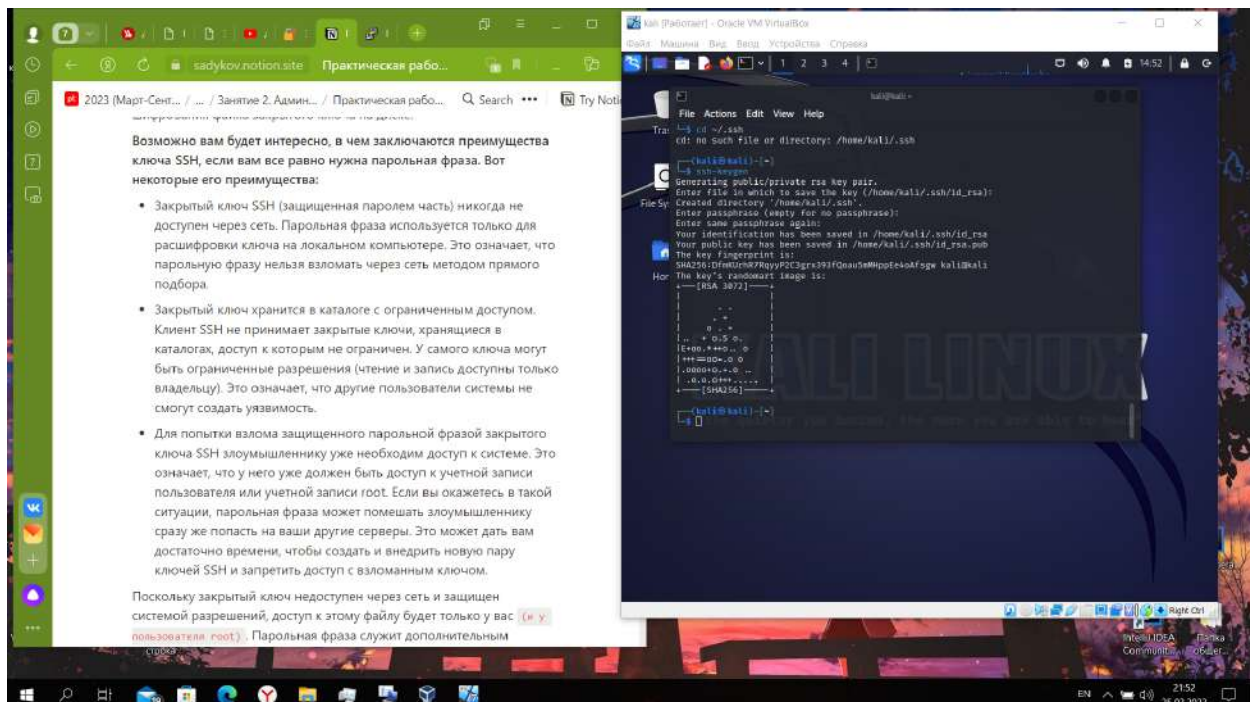
Практическая работа "Установка и настройка SSH-authorized_keys"

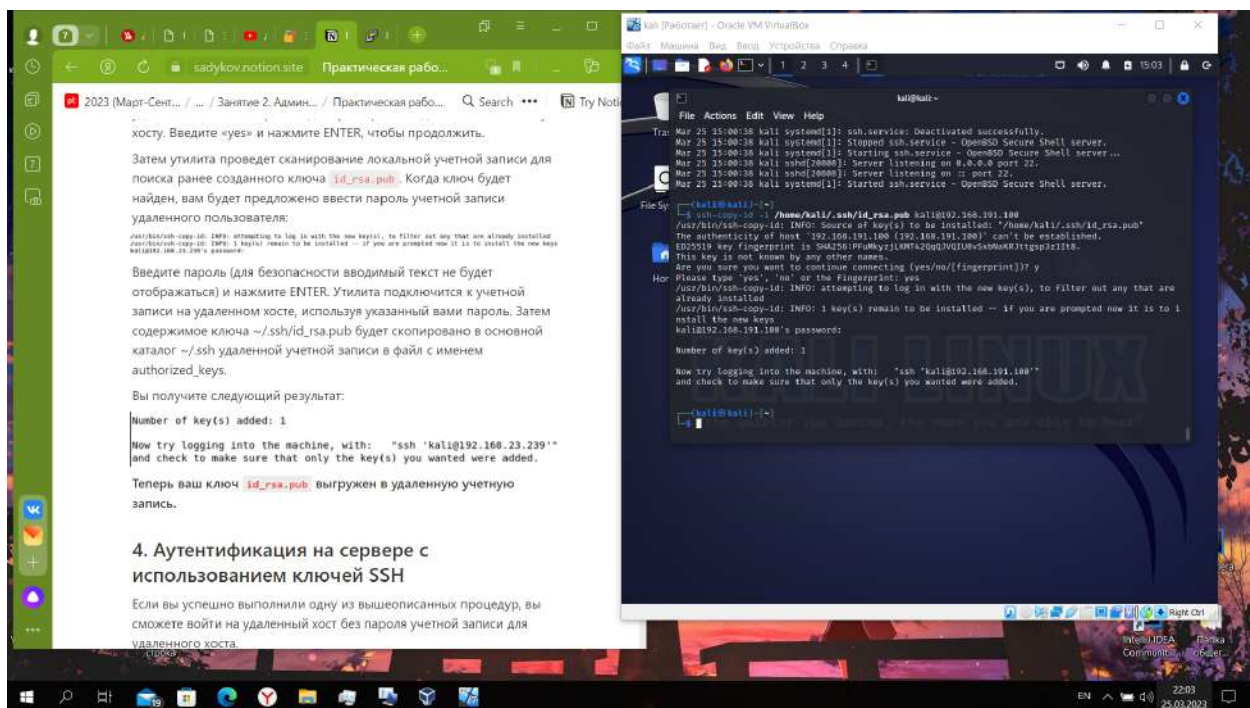
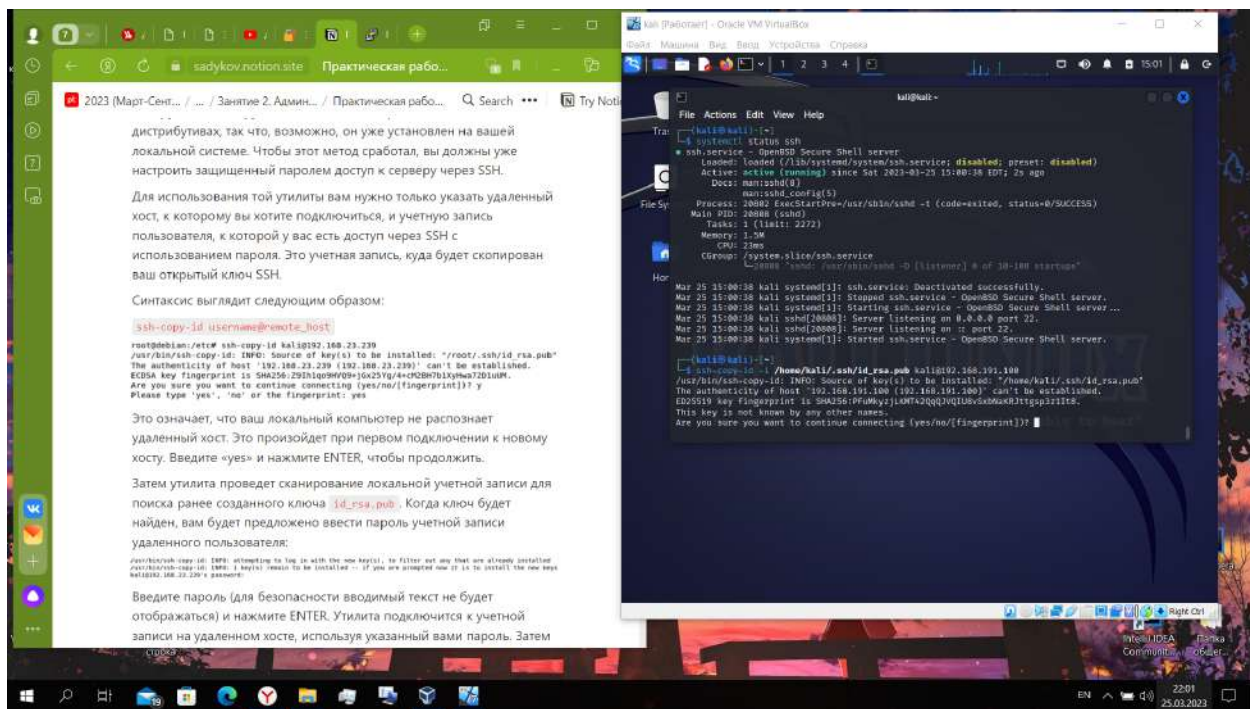
Цель работы:

- научиться настраивать SSH-authorized_keys.
- научиться работать с ключами SSH.

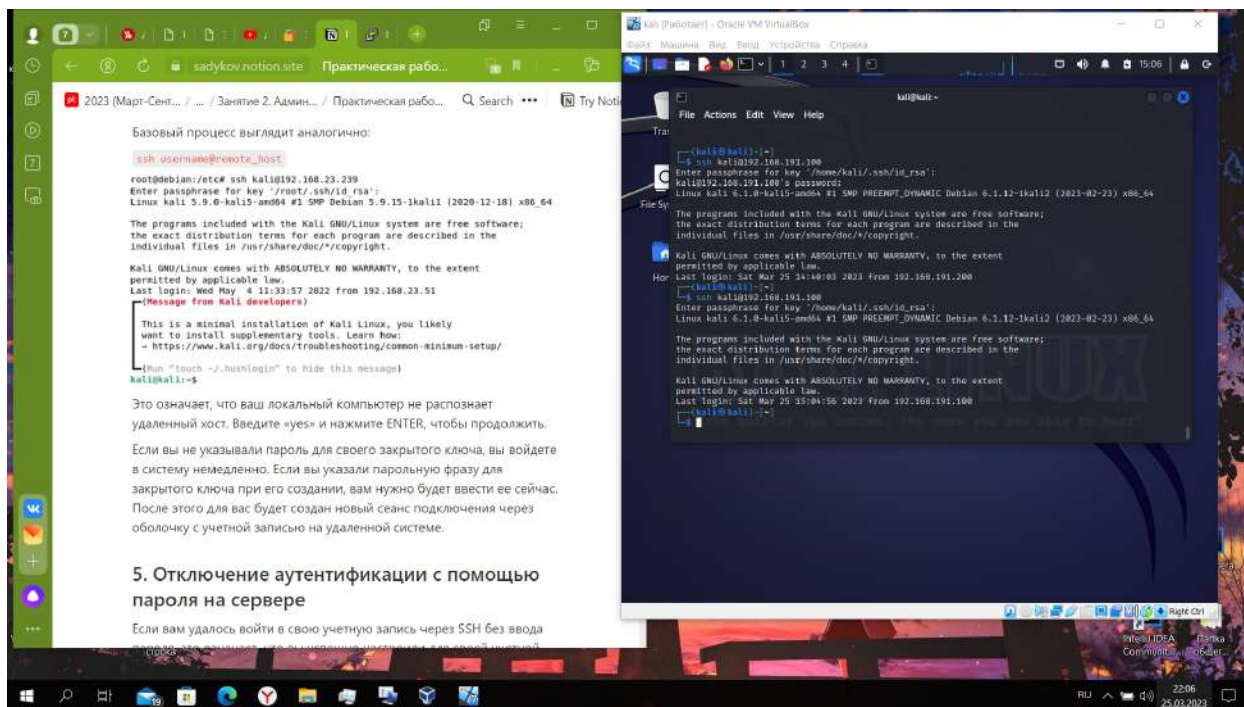
Задача:

- Разобраться как работает доступ по ключам.
- Организовать аутентификацию к серверу linux через ключи.
- Организовать аутентификацию к серверу linux через ключи без пароля.





Выгрузка открытого ключа в удалённый аккаунт



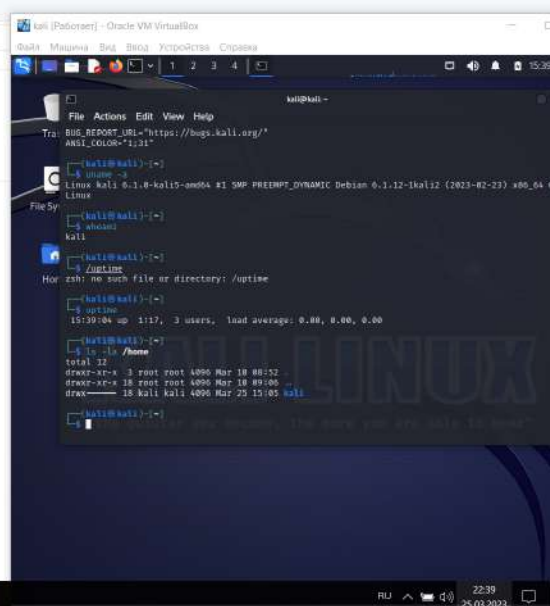
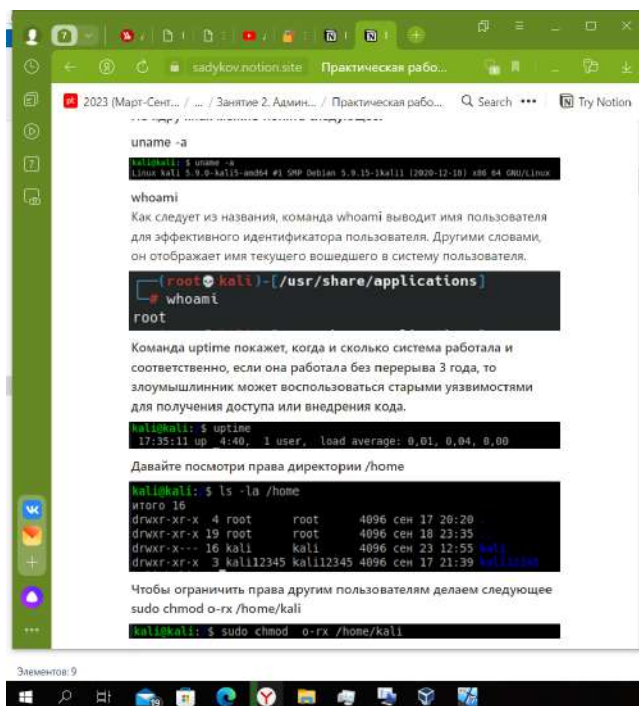
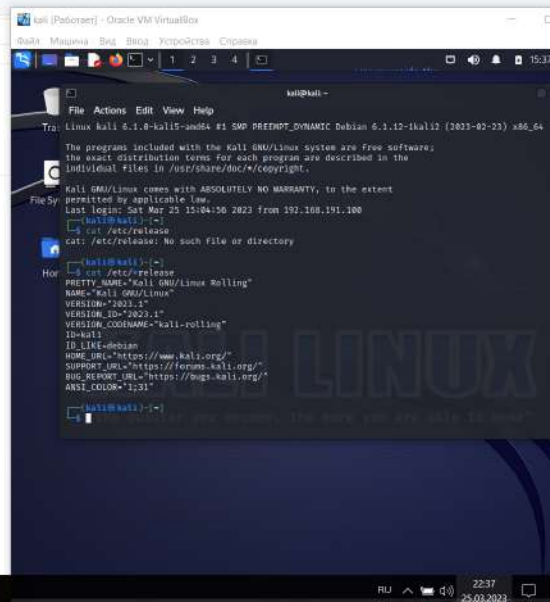
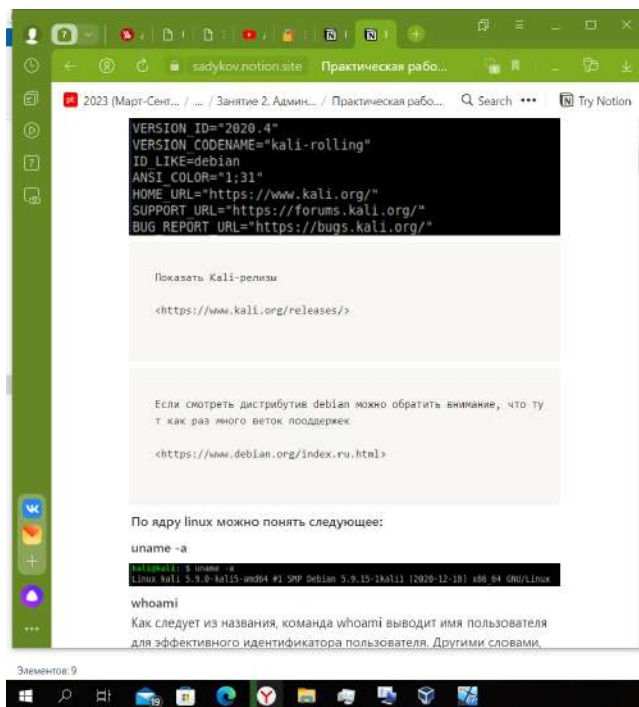
Практическая работа "Сбор информации о Linux и WGET"

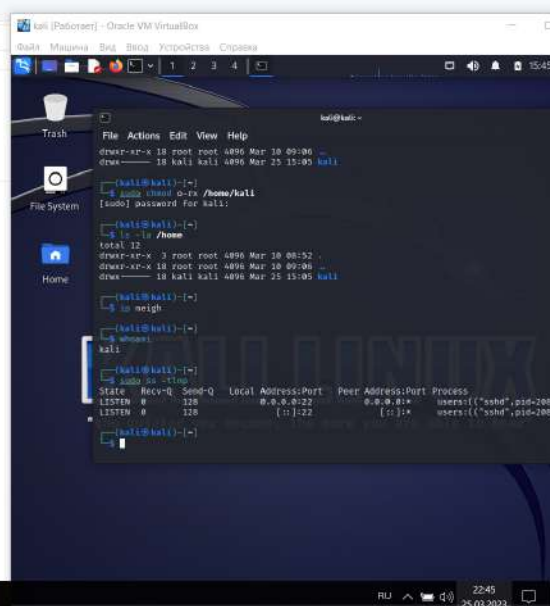
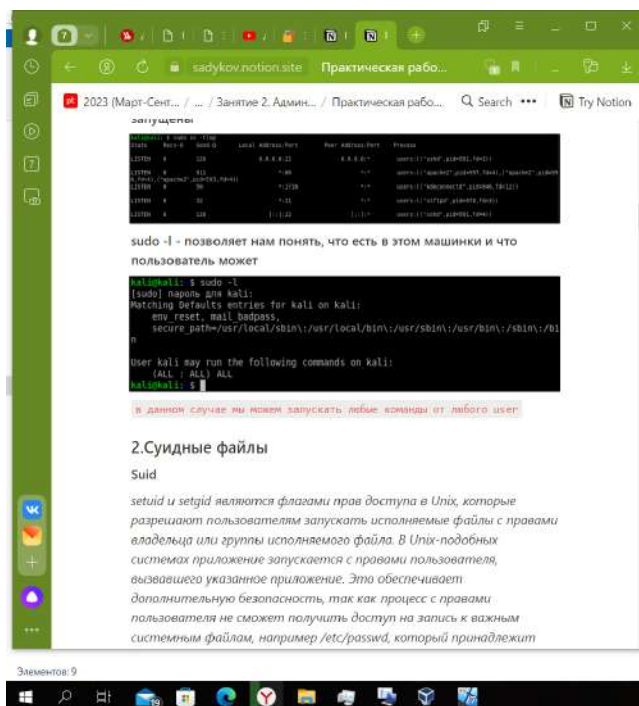
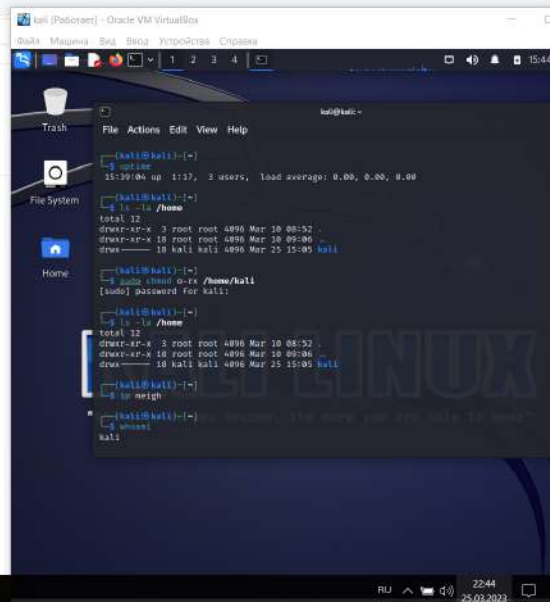
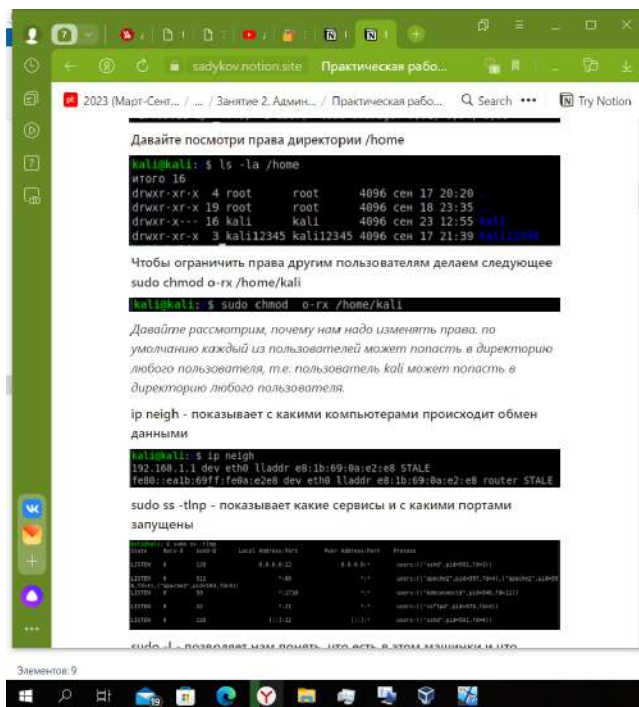
Цель работы:

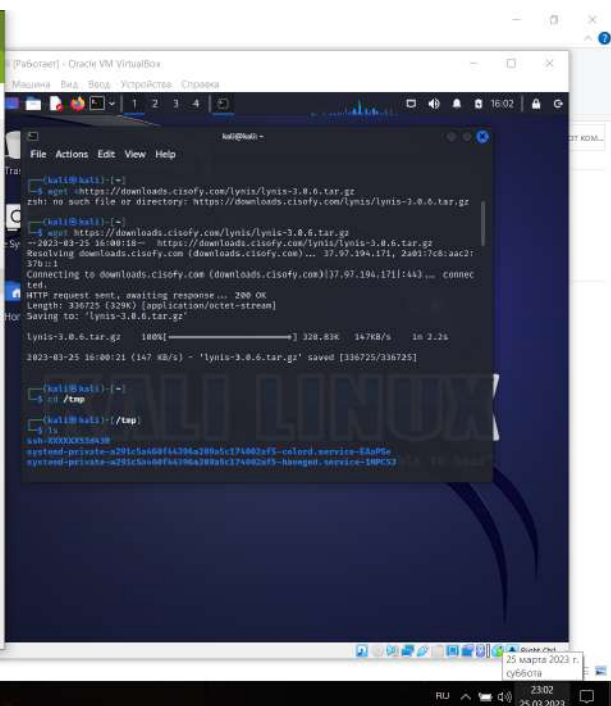
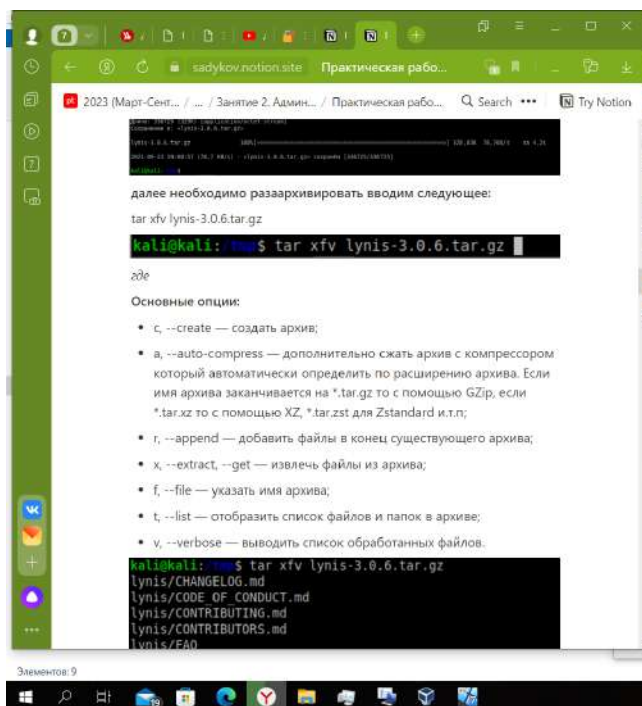
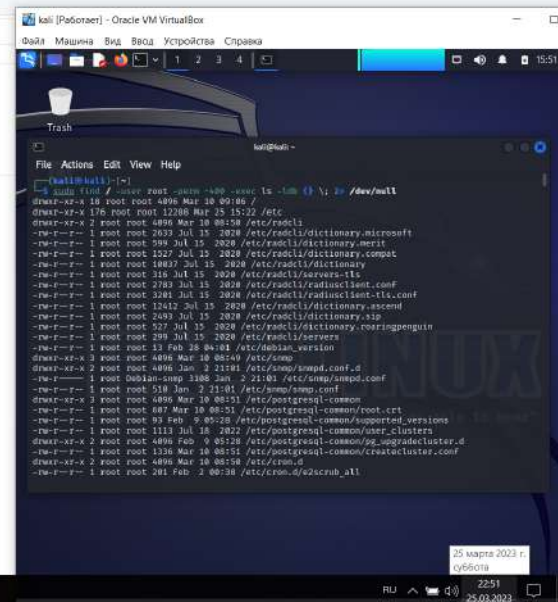
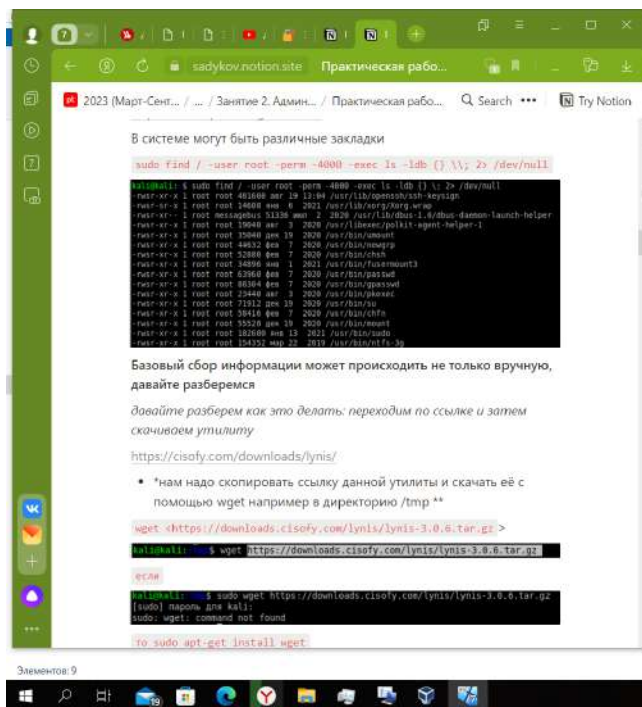
- Научиться базовому сбору информации о Linux системах.

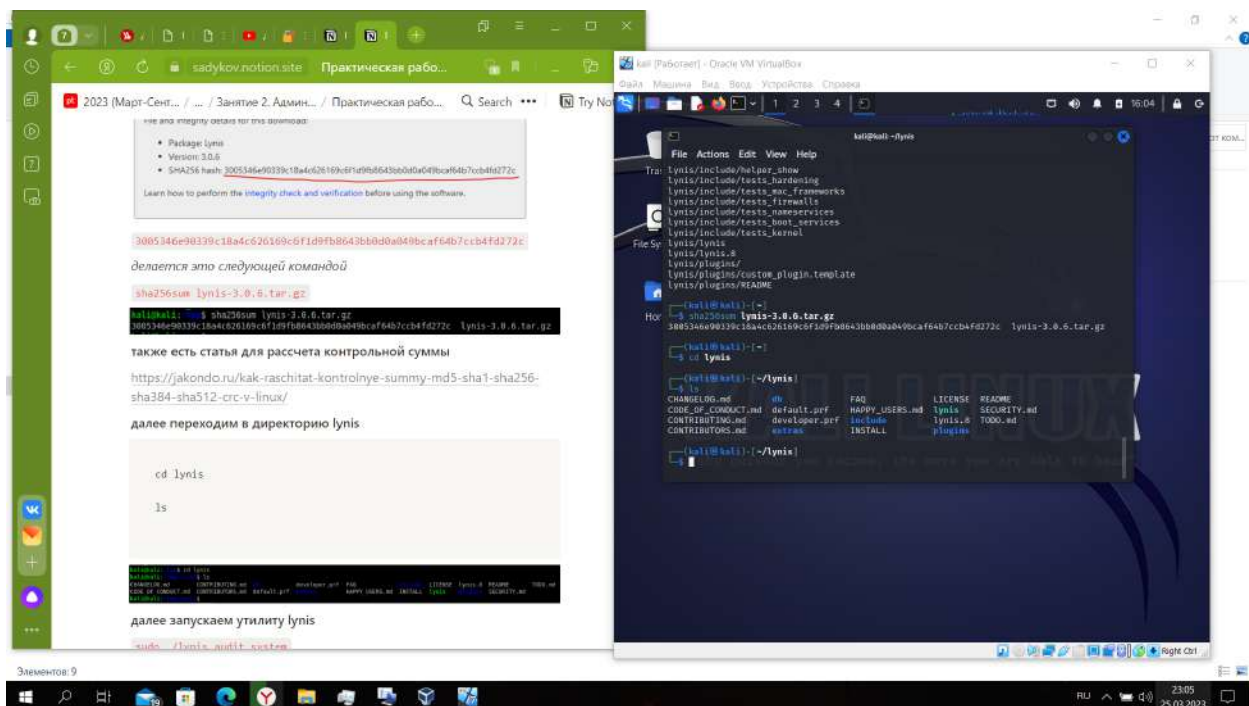
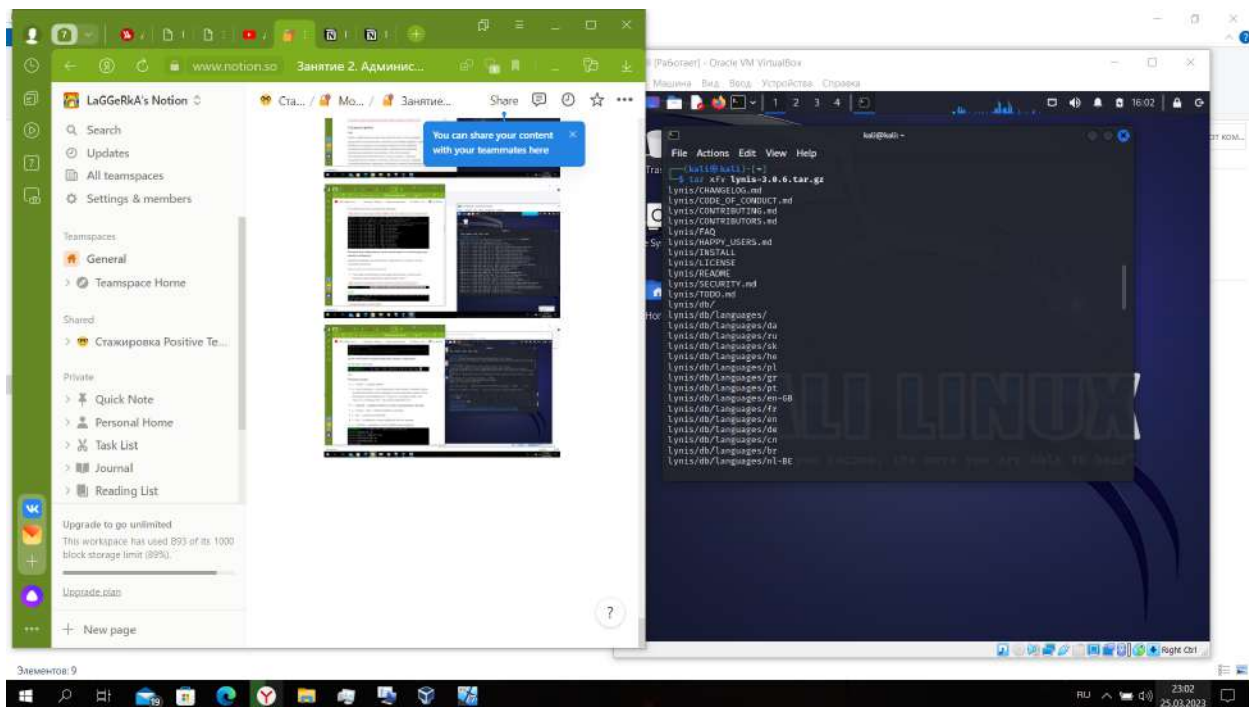
Задача:

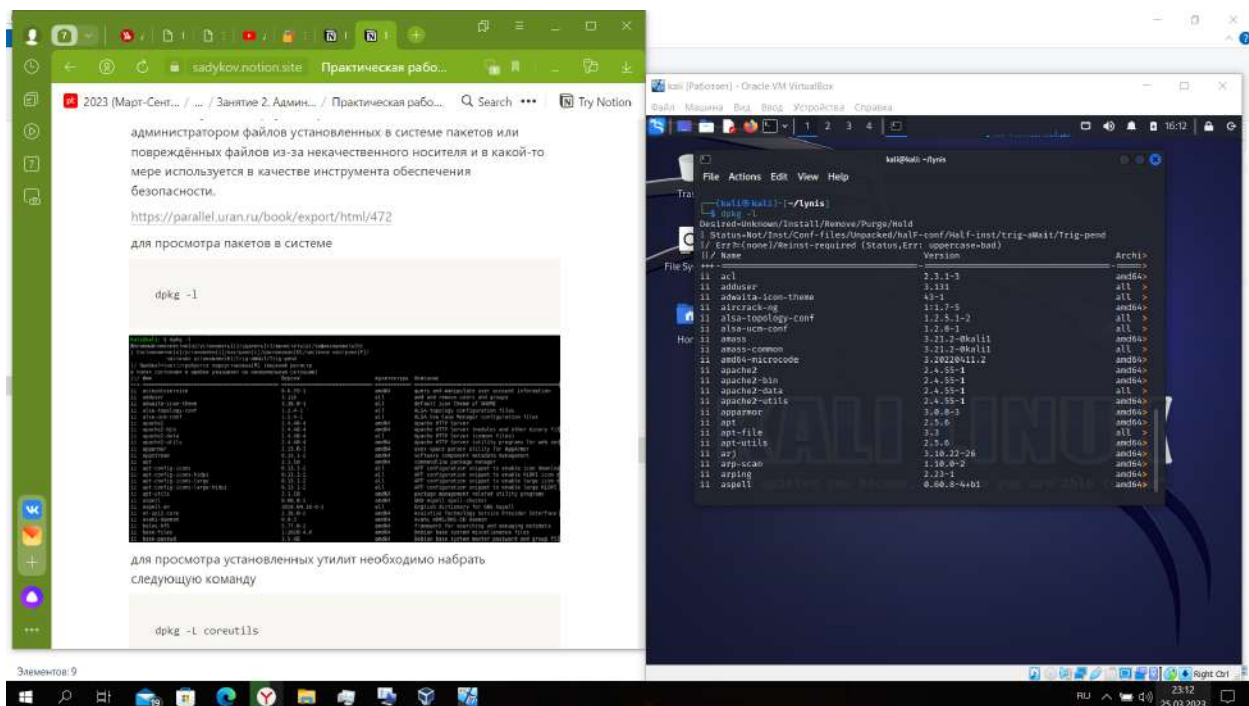
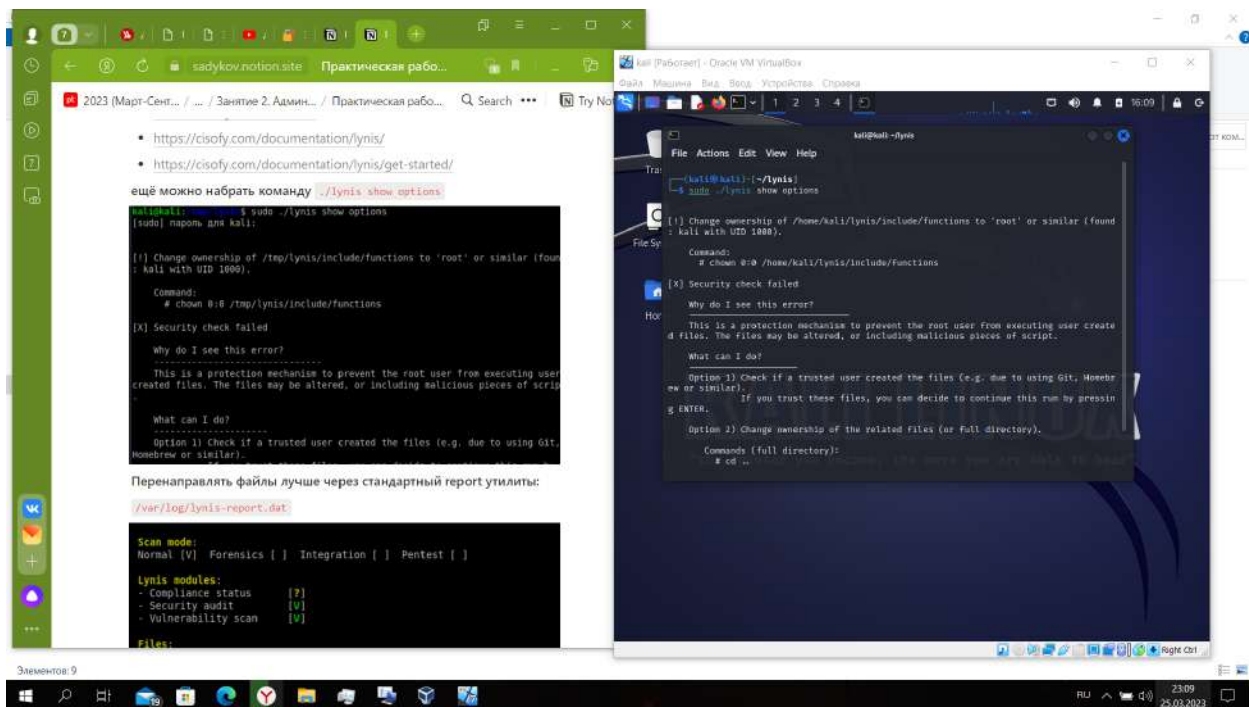
- Научиться скачивать файлы с помощью утилиты wget.
- Научиться проверять пакеты на целостность.

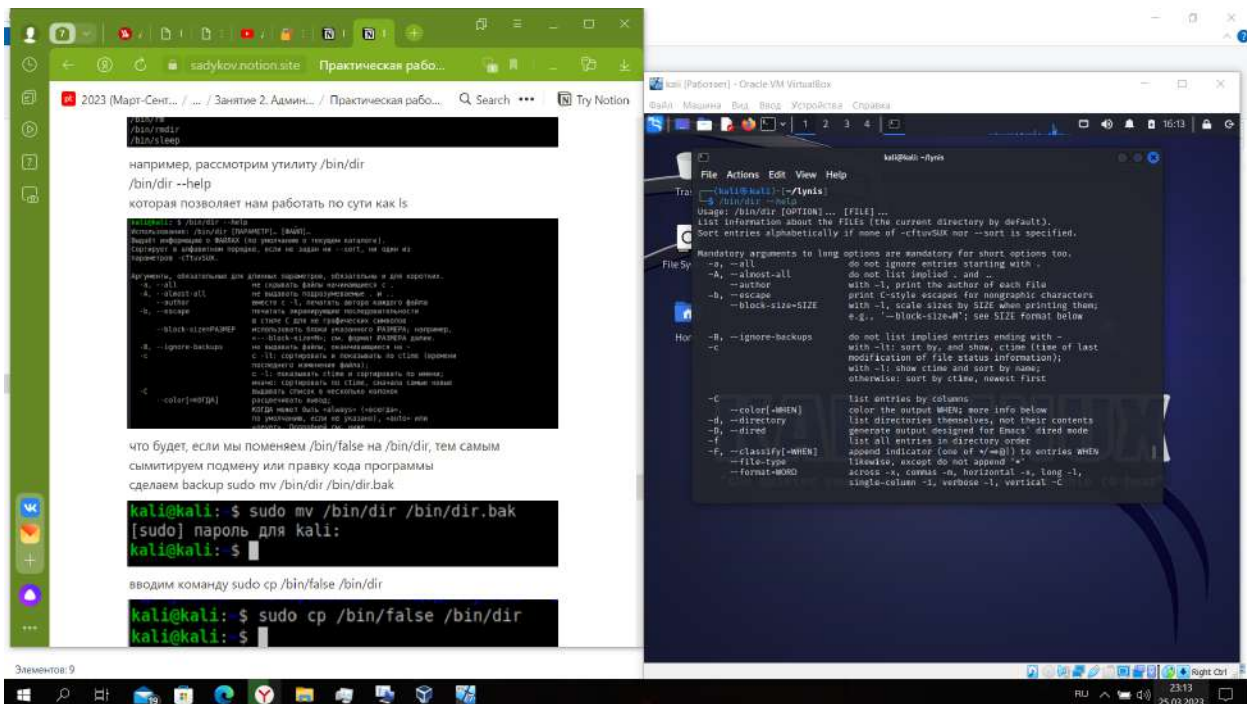
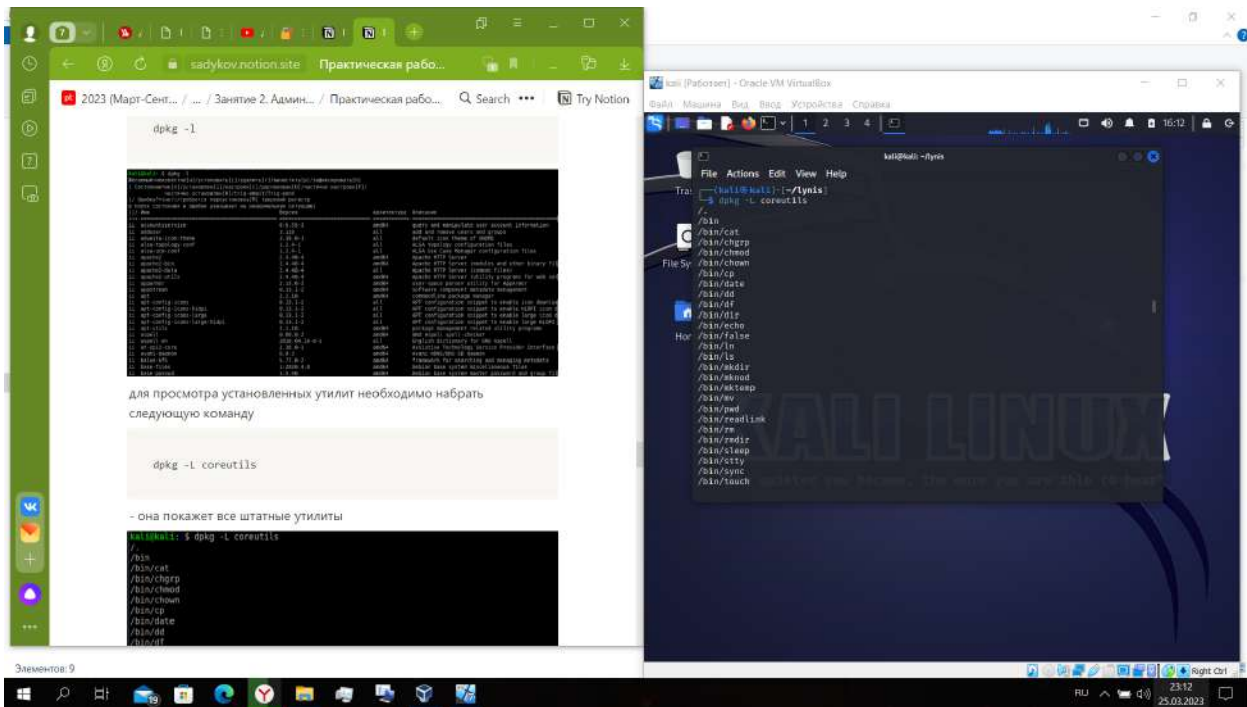


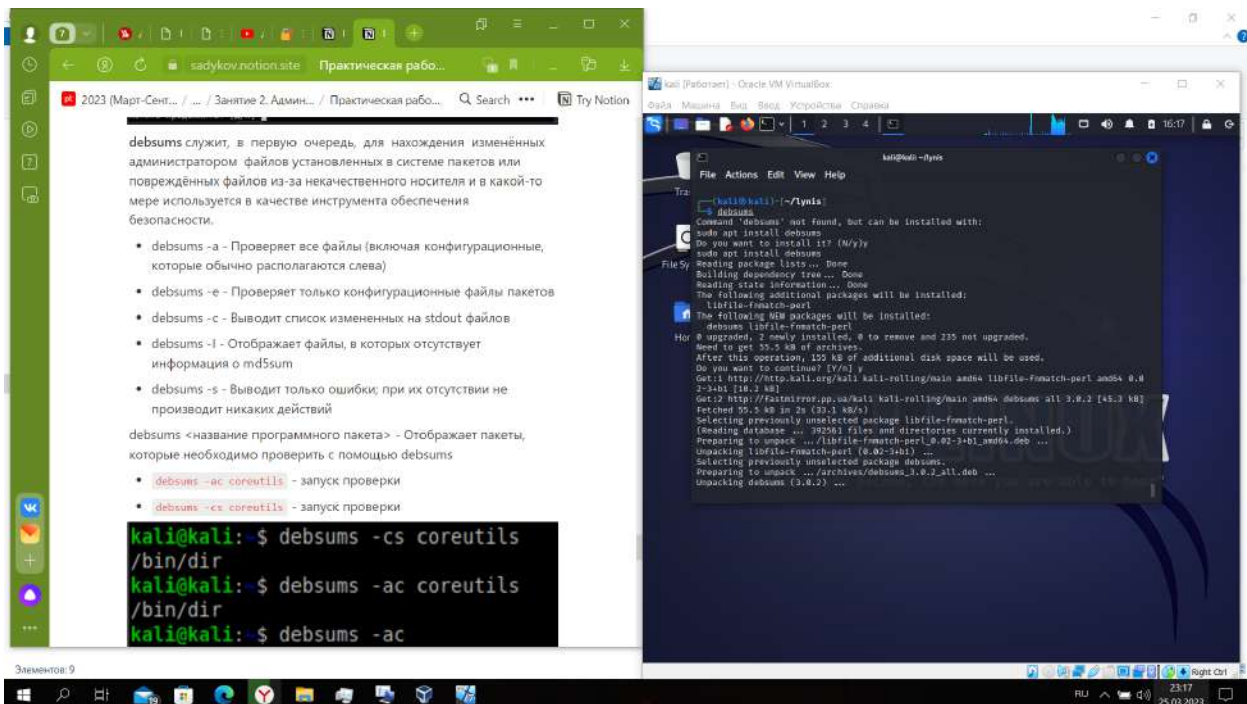
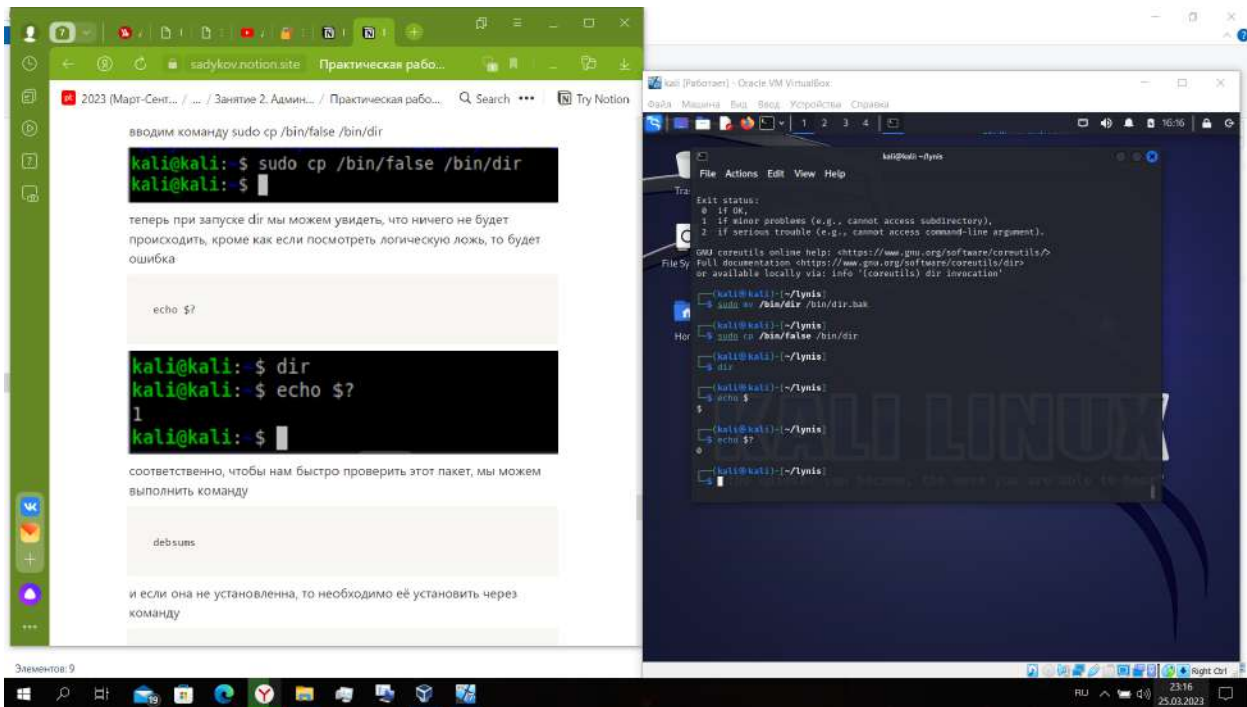


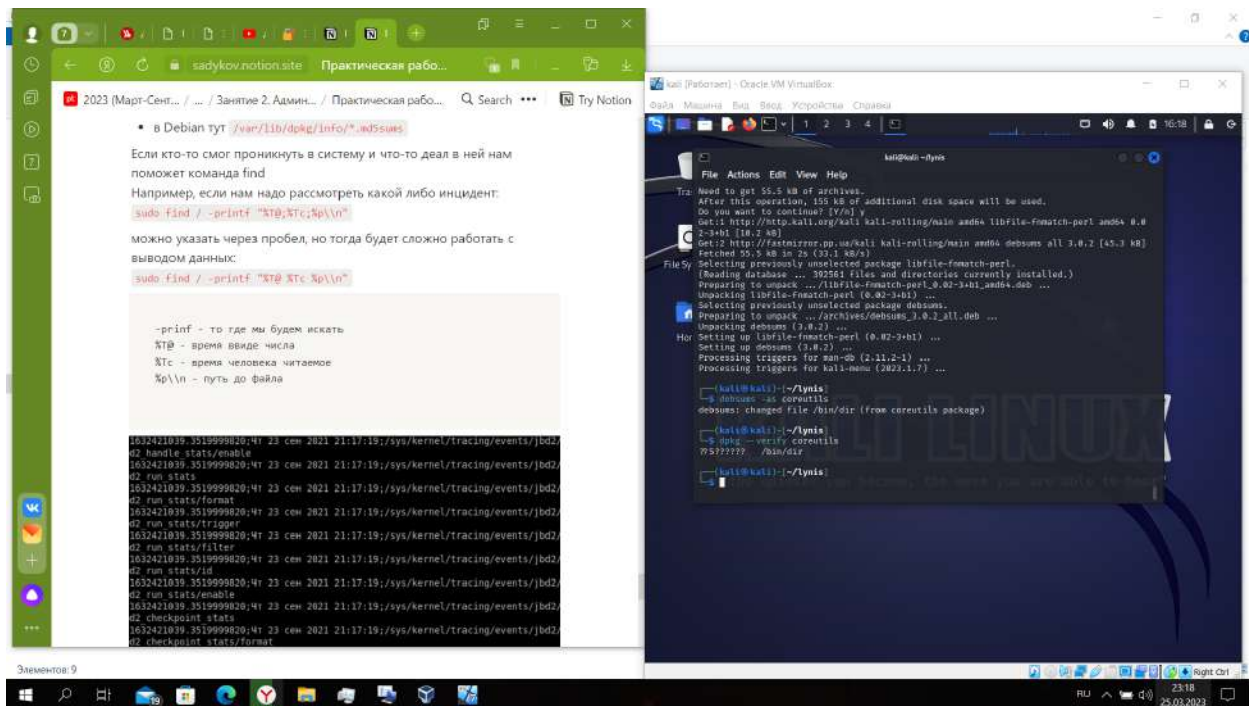
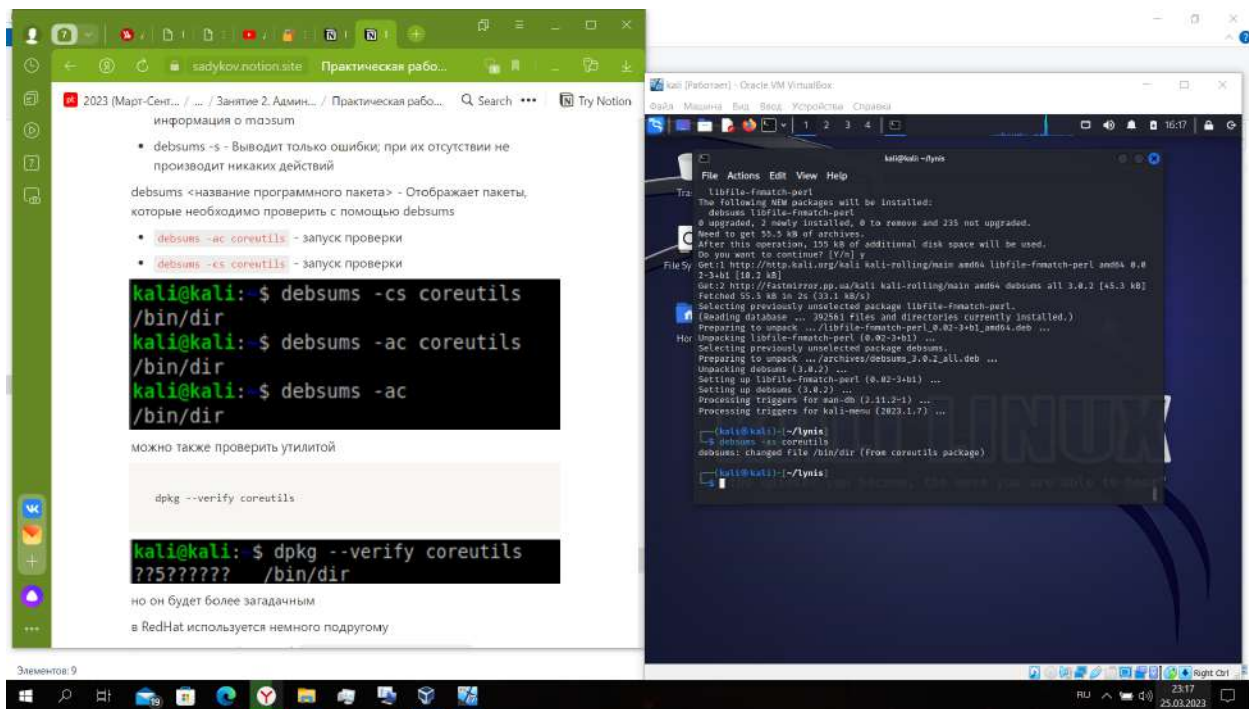


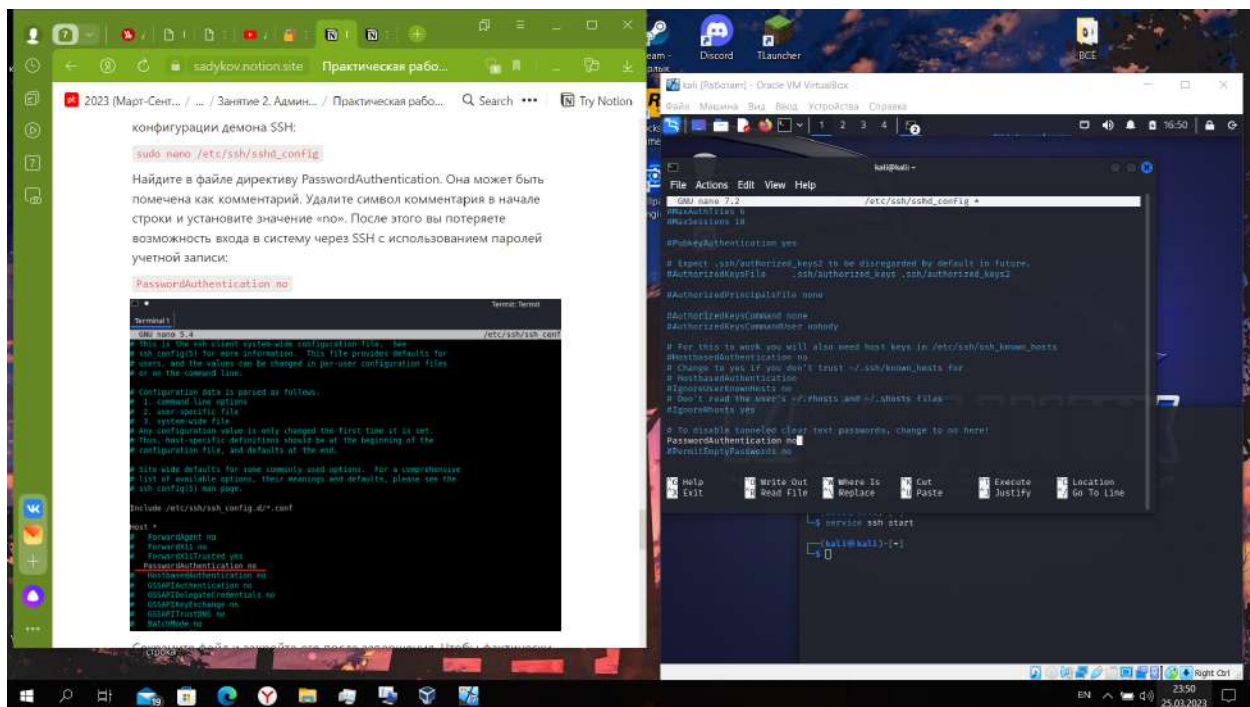












Последние 2 скриншота - вход в ssh-сессии, изменение конфигурационного файла.

Практическая работа "Переменные окружения в Linux .bashrc, .bash_profile и .bash_login"

Цель работы:

- Научиться работать с переменным окружением в linux.

Задача:

- Научиться работать с .bashrc, .bash_profile и .bash_login.

