

отчёт по лабораторной работе №14

Партиции, файловые системы, монтирование

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1 Цель работы

Получить навыки создания разделов на диске и файловых систем. Получить навыки монтирования файловых систем

2 Задание

1. Добавьте два диска на виртуальной машине (раздел 14.4.1).
2. Продемонстрируйте навыки создания разделов MBR с помощью fdisk (раздел 14.4.2).
3. Продемонстрируйте навыки создания логических разделов с помощью fdisk (раздел 14.4.3).
4. Продемонстрируйте навыки создания раздела подкачки с помощью fdisk (раздел 14.4.4).
5. Продемонстрируйте навыки создания разделов GPT с помощью gdisk (раздел 14.4.5).
6. Продемонстрируйте навыки форматирования файловой системы XFS (раздел 14.4.6).
7. Продемонстрируйте навыки форматирования файловой системы EXT4 (раздел 14.4.7).
8. Продемонстрируйте навыки ручного монтирования файловых систем (раздел 14.4.8).
9. Продемонстрируйте навыки монтирования файловых систем с помощью /etc/fstab (раздел 14.4.9).
10. Выполните задание для самостоятельной работы (раздел 14.5).

3 Выполнение лабораторной работы

3.1 Создание виртуальных носителей

Сначала я добавил два жесткого диска на виртуальную машину (рис. 3.1).

новые диски

Рис. 3.1: новые диски

Потом я открыл терминал и получил полномочия администратора (рис. 3.2).

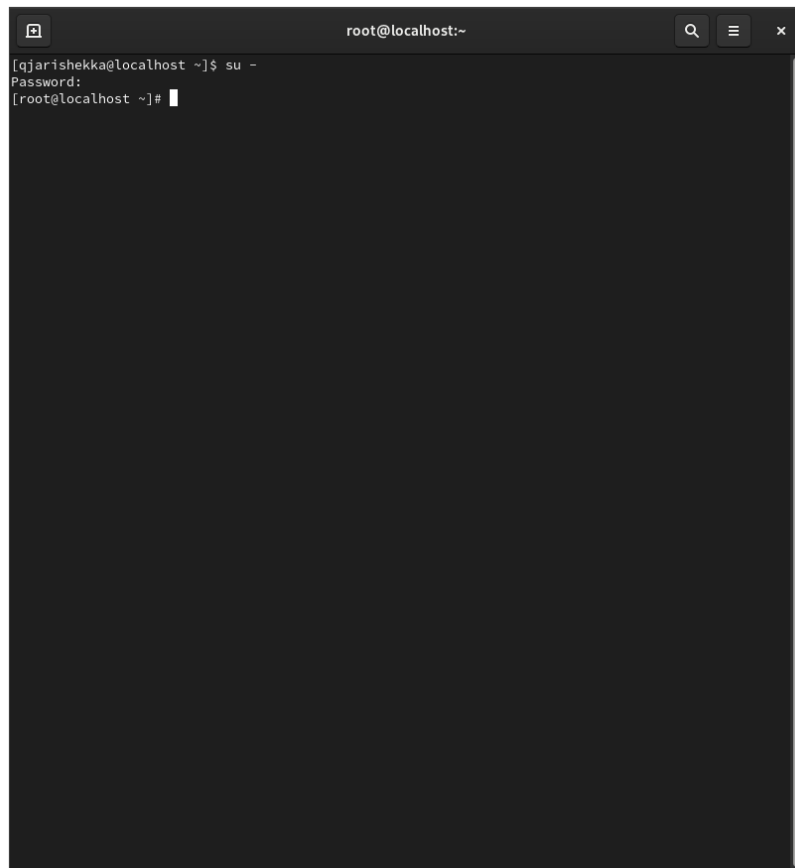


Рис. 3.2: терминал

Дальше я выполнил команду чтобы показывать список дисков в компьютере (рис. 3.3).

```
fdisk --list
```

```
root@localhost:~  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/sdf: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0xe70aalca  
  
Device      Boot Start      End Sectors  Size Id Type  
/dev/sdf1                2048 1048575 1046528   511M fd Linux raid autodetect  
  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-root: 61.23 GiB, 65745715200 bytes, 128409600 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-swap: 7.87 GiB, 8451522560 bytes, 16506880 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-home: 29.89 GiB, 32099008512 bytes, 62693376 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/vgdata-lvdata: 24 MiB, 25165824 bytes, 49152 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
[root@localhost ~]#
```

Рис. 3.3: список дисков

Потом я запустил утилиту `fdisk` чтобы создать новые партии в диске `sdg` (рис. 3.4).

```
fdisk /dev/sdg
```

```
root@localhost:~  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0xe70aa1ca  
  
Device      Boot Start      End Sectors  Size Id Type  
/dev/sdf1    2048 1048575 1046528    511M fd Linux raid autodetect  
  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-root: 61.23 GiB, 65745715200 bytes, 128409600 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-swap: 7.87 GiB, 8451522560 bytes, 16506880 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-home: 29.89 GiB, 32099008512 bytes, 62693376 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/vgdata-lvdata: 24 MiB, 25165824 bytes, 49152 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
[root@localhost ~]# fdisk /dev/sdg  
  
Welcome to fdisk (util-linux 2.37.4).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Device does not contain a recognized partition table.  
Created a new DOS disklabel with disk identifier 0x5763353d.  
  
Command (m for help):
```

Рис. 3.4: утилита fdisk

Потом я использовал клавишу q чтобы уходить оттуда (рис. 3.5).

```
root@localhost:~  
Device      Boot Start    End Sectors  Size Id Type  
/dev/sdf1   2048 1048575 1046528   511M fd Linux raid autodetect  
  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-root: 61.23 GiB, 65745715200 bytes, 128409600 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-swap: 7.87 GiB, 8451522560 bytes, 16506880 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/rl-home: 29.89 GiB, 32099008512 bytes, 62693376 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
  
Disk /dev/mapper/vgdata-lvdata: 24 MiB, 25165824 bytes, 49152 sectors  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
[root@localhost ~]# fdisk /dev/sdg  
  
Welcome to fdisk (util-linux 2.37.4).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Device does not contain a recognized partition table.  
Created a new DOS disklabel with disk identifier 0x5763353d.  
  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
[root@localhost ~]#
```

Рис. 3.5: закрытие утилиты

Дальше я еще раз запустил утилиту fdisk и нажал клавишу m чтобы начинать создать новую партицию (рис. 3.6). потом я нажал p чтобы смотреть список партиций(рис. 3.7), дальше n чтобы добавить новый раздел(рис. 3.8), Потом p чтобы создать основной раздел(рис. 3.9). Потом я настроил раздел, сначала я выбрал номер раздела 1(потом я выбрал первый сектор по умолчанию, последний сектор +100M(рис. 3.10), и потом я нажал t чтобы выбрать тип раздела (в этом случае 83, Linux)(рис. 3.11) Затем я нажал w чтобы сохранил все (рис. 3.12).

```
root@localhost:~  
[root@localhost ~]# fdisk /dev/sdg  
Welcome to fdisk (util-linux 2.37.4).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Command (m for help): m  
Help:  
  
DOS (MBR)  
a toggle a bootable flag  
b edit nested BSD disklabel  
c toggle the dos compatibility flag  
  
Generic  
d delete a partition  
F list free unpartitioned space  
l list known partition types  
n add a new partition  
p print the partition table  
t change a partition type  
v verify the partition table  
i print information about a partition  
  
Misc  
m print this menu  
u change display/entry units  
x extra functionality (experts only)  
  
Script  
I load disk layout from sfdisk script file  
O dump disk layout to sfdisk script file  
  
Save & Exit  
w write table to disk and exit  
q quit without saving changes  
  
Create a new label  
g create a new empty GPT partition table  
G create a new empty SGI (IRIX) partition table  
o create a new empty DOS partition table  
s create a new empty Sun partition table  
  
Command (m for help):
```

Рис. 3.6: fdisk

```
root@localhost:~  
Help:  
  
DOS (MBR)  
a toggle a bootable flag  
b edit nested BSD disklabel  
c toggle the dos compatibility flag  
  
Generic  
d delete a partition  
F list free unpartitioned space  
l list known partition types  
n add a new partition  
p print the partition table  
t change a partition type  
v verify the partition table  
i print information about a partition  
  
Misc  
m print this menu  
u change display/entry units  
x extra functionality (experts only)  
  
Script  
I load disk layout from sfdisk script file  
O dump disk layout to sfdisk script file  
  
Save & Exit  
w write table to disk and exit  
q quit without saving changes  
  
Create a new label  
g create a new empty GPT partition table  
G create a new empty SGI (IRIX) partition table  
o create a new empty DOS partition table  
s create a new empty Sun partition table  
  
Command (m for help): p  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Command (m for help):
```

Рис. 3.7: fdisk

```
root@localhost:~  
a toggle a bootable flag  
b edit nested BSD disklabel  
c toggle the dos compatibility flag  
  
Generic  
d delete a partition  
F list free unpartitioned space  
l list known partition types  
n add a new partition  
p print the partition table  
t change a partition type  
v verify the partition table  
i print information about a partition  
  
Misc  
m print this menu  
u change display/entry units  
x extra functionality (experts only)  
  
Script  
I load disk layout from sfdisk script file  
O dump disk layout to sfdisk script file  
  
Save & Exit  
w write table to disk and exit  
q quit without saving changes  
  
Create a new label  
g create a new empty GPT partition table  
G create a new empty SGI (IRIX) partition table  
o create a new empty DOS partition table  
s create a new empty Sun partition table  
  
Command (m for help): p  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Command (m for help): n  
Partition type  
p primary (0 primary, 0 extended, 4 free)  
e extended (container for logical partitions)  
Select (default p):
```

Рис. 3.8: fdisk

```
root@localhost:~  
b  edit nested BSD disklabel  
c  toggle the dos compatibility flag  
  
Generic  
d  delete a partition  
F  list free unpartitioned space  
l  list known partition types  
n  add a new partition  
p  print the partition table  
t  change a partition type  
v  verify the partition table  
i  print information about a partition  
  
Misc  
m  print this menu  
u  change display/entry units  
x  extra functionality (experts only)  
  
Script  
I  load disk layout from sfdisk script file  
O  dump disk layout to sfdisk script file  
  
Save & Exit  
w  write table to disk and exit  
q  quit without saving changes  
  
Create a new label  
g  create a new empty GPT partition table  
G  create a new empty SGI (IRIX) partition table  
o  create a new empty DOS partition table  
s  create a new empty Sun partition table  
  
Command (m for help): p  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Command (m for help): n  
Partition type  
p  primary (0 primary, 0 extended, 4 free)  
e  extended (container for logical partitions)  
Select (default p): p  
Partition number (1-4, default 1):
```

Рис. 3.9: fdisk


```
root@localhost:~  
l list known partition types  
n add a new partition  
p print the partition table  
t change a partition type  
v verify the partition table  
i print information about a partition  
  
Misc  
m print this menu  
u change display/entry units  
x extra functionality (experts only)  
  
Script  
I load disk layout from sfdisk script file  
O dump disk layout to sfdisk script file  
  
Save & Exit  
w write table to disk and exit  
q quit without saving changes  
  
Create a new label  
g create a new empty GPT partition table  
G create a new empty SGI (IRIX) partition table  
o create a new empty DOS partition table  
s create a new empty Sun partition table  
  
Command (m for help): p  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Command (m for help): n  
Partition type  
p primary (0 primary, 0 extended, 4 free)  
e extended (container for logical partitions)  
Select (default p): p  
Partition number (1-4, default 1):  
First sector (2048-1048575, default 2048):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-1048575, default 1048575): +100M  
  
Created a new partition 1 of type 'Linux' and of size 100 MiB.  
Command (m for help):
```

Рис. 3.10: fdisk

```
root@localhost:~  
i print information about a partition  
  
Misc  
m print this menu  
u change display/entry units  
x extra functionality (experts only)  
  
Script  
I load disk layout from sfdisk script file  
O dump disk layout to sfdisk script file  
  
Save & Exit  
w write table to disk and exit  
q quit without saving changes  
  
Create a new label  
g create a new empty GPT partition table  
G create a new empty SGI (IRIX) partition table  
o create a new empty DOS partition table  
s create a new empty Sun partition table  
  
Command (m for help): p  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBox HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Command (m for help): n  
Partition type  
p primary (0 primary, 0 extended, 4 free)  
e extended (container for logical partitions)  
Select (default p): p  
Partition number (1-4, default 1):  
First sector (2048-1048575, default 2048):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-1048575, default 1048575): +100M  
  
Created a new partition 1 of type 'Linux' and of size 100 MiB.  
  
Command (m for help): t  
Selected partition 1  
Hex code or alias (type L to list all): 83  
Changed type of partition 'Linux' to 'Linux'.  
  
Command (m for help):
```

Рис. 3.11: fdisk

```
root@localhost:~  
x  extra functionality (experts only)  
  
Script  
I  load disk layout from sfdisk script file  
O  dump disk layout to sfdisk script file  
  
Save & Exit  
w  write table to disk and exit  
q  quit without saving changes  
  
Create a new label  
g  create a new empty GPT partition table  
G  create a new empty SGI (IRIX) partition table  
o  create a new empty DOS partition table  
s  create a new empty Sun partition table  
  
Command (m for help): p  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Command (m for help): n  
Partition type  
  p  primary (0 primary, 0 extended, 4 free)  
  e  extended (container for logical partitions)  
Select (default p): p  
Partition number (1-4, default 1):  
First sector (2048-1048575, default 2048):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-1048575, default 1048575): +100M  
  
Created a new partition 1 of type 'Linux' and of size 100 MiB.  
  
Command (m for help): t  
Selected partition 1  
Hex code or alias (type L to list all): 83  
Changed type of partition 'Linux' to 'Linux'.  
  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
[root@localhost ~]#
```

Рис. 3.12: fdisk

Дальше я показал таблицу разделов и таблицу разделов диска sdg (рис. 3.13).

```
fdisk -l /dev/sdg  
cat /proc/partitions
```

```
root@localhost:~  
Command (m for help): t  
Selected partition 1  
Hex code or alias (type L to list all): 83  
Changed type of partition 'Linux' to 'Linux'.  
  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
  
[root@localhost ~]# fdisk -l /dev/sdg  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Device      Boot Start    End Sectors  Size Id Type  
/dev/sdg1           2048 206847   204800  100M 83 Linux  
[root@localhost ~]# cat /proc/partitions  
major minor #blocks name  
  
11          0       51648 sr0  
8           32    524288 sdc  
8           33    102400 sdc1  
8           48    524288 sdd  
8           49    523264 sdd1  
8           0   104857600 sda  
8           1    1048576 sda1  
8           2   103808000 sda2  
8           64    524288 sde  
8           65    523264 sde1  
8           16    524288 sdb  
8           17    102400 sdb1  
8           18    102400 sdb2  
8          112    524288 sdh  
8           80    524288 sdf  
8           81    523264 sdf1  
8           96    524288 sdg  
8           97    102400 sdg1  
253          0   64204800 dm-0  
253          1    8253440 dm-1  
253          2   31346688 dm-2  
253          3    24576 dm-3  
[root@localhost ~]#
```

Рис. 3.13: таблица разделов

Потом я записал изменения в таблицу разделов ядра(рис. 3.14).

```
partprobe /dev/sdb
```

```
root@localhost:~  
Command (m for help): t  
Selected partition 1  
Hex code or alias (type L to list all): 83  
Changed type of partition 'Linux' to 'Linux'.  
  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
  
[root@localhost ~]# fdisk -l /dev/sdg  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Device      Boot Start    End Sectors  Size Id Type  
/dev/sdg1           2048 206847   204800  100M 83 Linux  
[root@localhost ~]# cat /proc/partitions  
major minor #blocks name  
  
11          0      51648 sr0  
8           32    524288 sdc  
8           33    102400 sdc1  
8           48    524288 sdd  
8           49    523264 sdd1  
8           0   104857600 sda  
8           1   1048576 sda1  
8           2  103808000 sda2  
8           64    524288 sde  
8           65    523264 sde1  
8           16    524288 sdb  
8           17    102400 sdb1  
8           18    102400 sdb2  
8          112    524288 sdh  
8           80    524288 sdf  
8           81    523264 sdf1  
8           96    524288 sdg  
8           97    102400 sdg1  
253          0   64204800 dm-0  
253          1   8253440 dm-1  
253          2  31346688 dm-2  
253          3    24576 dm-3  
[root@localhost ~]# partprobe /dev/sdg  
[root@localhost ~]#
```

Рис. 3.14: запись изменений

3.2 Создание логических разделов

Потом я запустил еще раз утилиту fdisk (рис. 3.15).

```
fdisk /dev/sdg
```

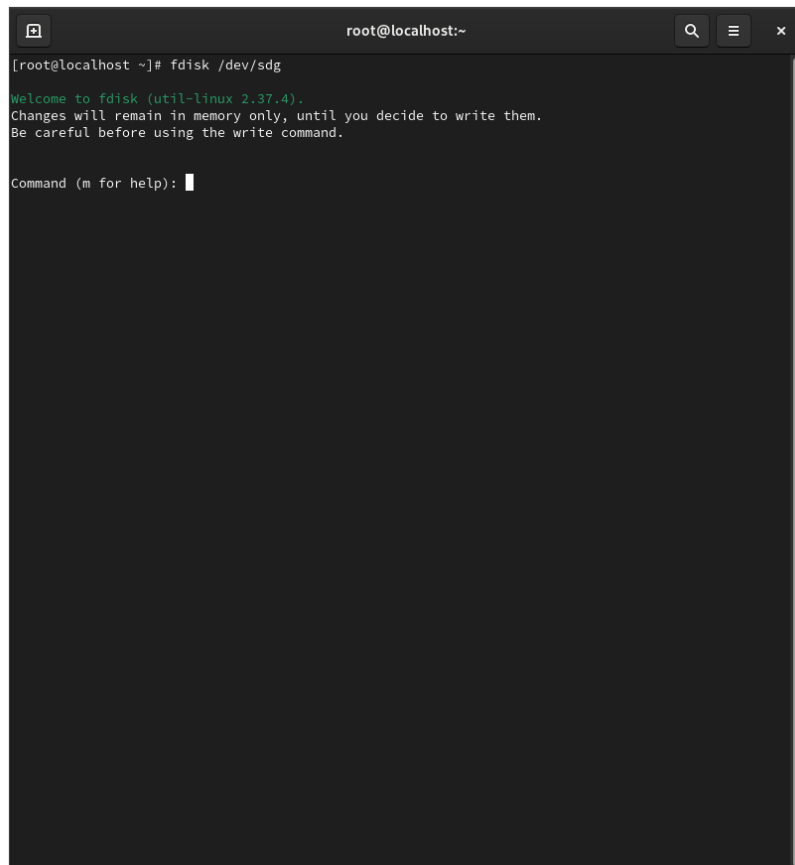
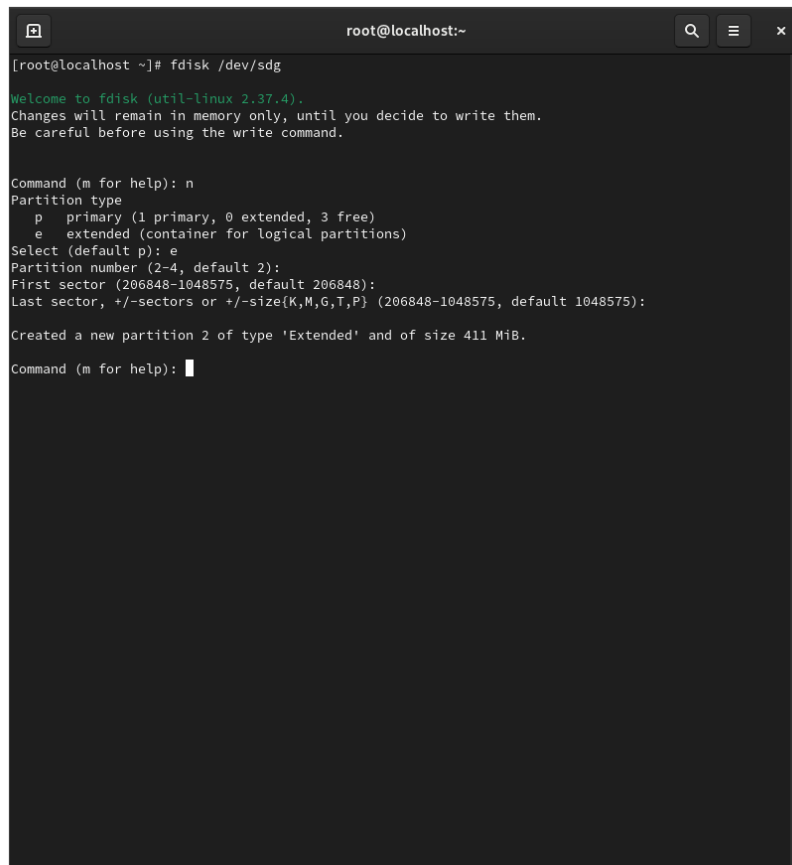


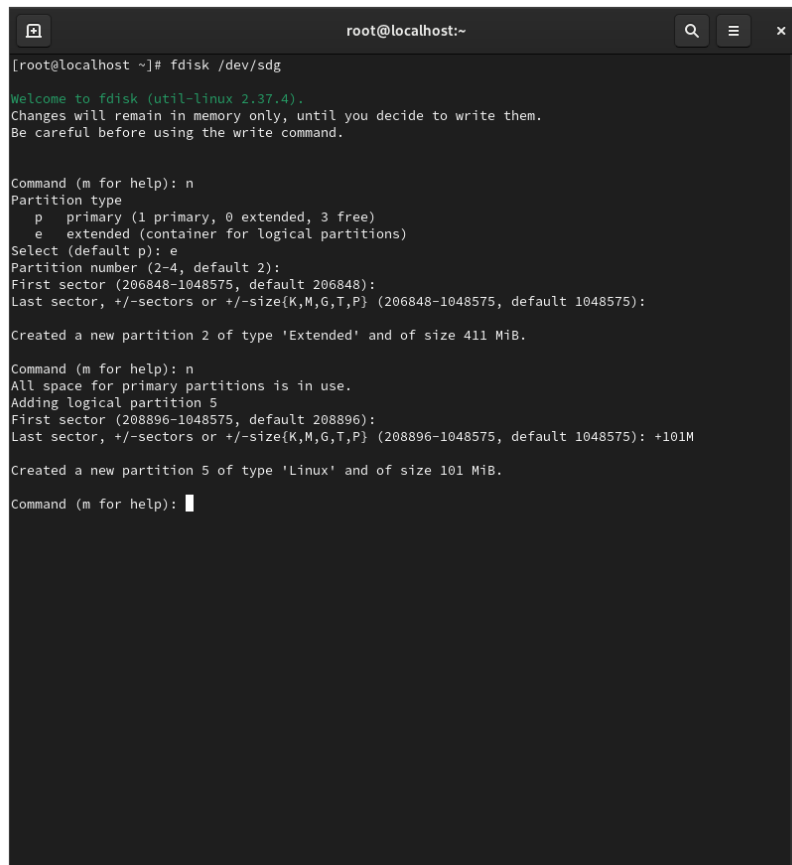
Рис. 3.15: утилита fdisk

Потом я нажал `n` чтобы добавить новый раздел (рис. 3.16). Дальше `e` чтобы создать расширенный раздел. Потом я выбрал все параметры по умолчанию. Затем я еще раз `n` чтобы создал новый раздел. Потом я выбрал все по умолчанию кроме последнего сектора, который я указал `+101M` (рис. 3.17). и Дальше я сохранил все (рис. 3.18).



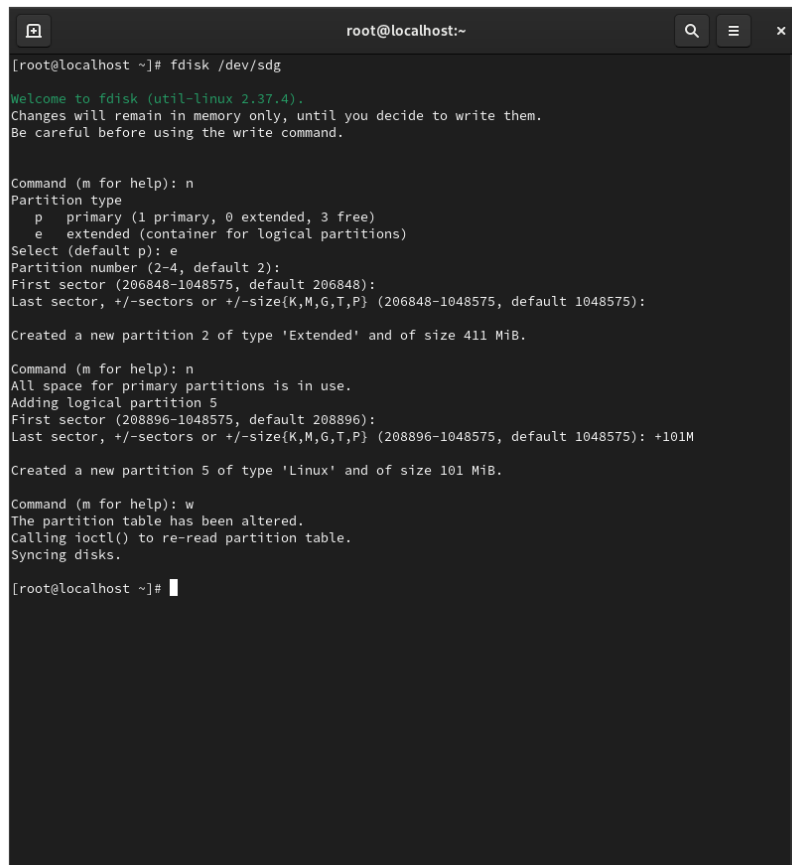
```
root@localhost:~  
[root@localhost ~]# fdisk /dev/sdg  
Welcome to fdisk (util-linux 2.37.4).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Command (m for help): n  
Partition type  
   p   primary (1 primary, 0 extended, 3 free)  
   e   extended (container for logical partitions)  
Select (default p): e  
Partition number (2-4, default 2):  
First sector (206848-1048575, default 206848):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (206848-1048575, default 1048575):  
  
Created a new partition 2 of type 'Extended' and of size 411 MiB.  
Command (m for help):
```

Рис. 3.16: утилита fdisk



```
root@localhost:~  
[root@localhost ~]# fdisk /dev/sdg  
Welcome to fdisk (util-linux 2.37.4).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Command (m for help): n  
Partition type  
   p   primary (1 primary, 0 extended, 3 free)  
   e   extended (container for logical partitions)  
Select (default p): e  
Partition number (2-4, default 2):  
First sector (206848-1048575, default 206848):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (206848-1048575, default 1048575):  
  
Created a new partition 2 of type 'Extended' and of size 411 MiB.  
  
Command (m for help): n  
All space for primary partitions is in use.  
Adding logical partition 5  
First sector (208896-1048575, default 208896):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (208896-1048575, default 1048575): +101M  
  
Created a new partition 5 of type 'Linux' and of size 101 MiB.  
  
Command (m for help):
```

Рис. 3.17: утилита fdisk



```
root@localhost:~  
[root@localhost ~]# fdisk /dev/sdg  
Welcome to fdisk (util-linux 2.37.4).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Command (m for help): n  
Partition type  
   p   primary (1 primary, 0 extended, 3 free)  
   e   extended (container for logical partitions)  
Select (default p): e  
Partition number (2-4, default 2):  
First sector (206848-1048575, default 206848):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (206848-1048575, default 1048575):  
  
Created a new partition 2 of type 'Extended' and of size 411 MiB.  
  
Command (m for help): n  
All space for primary partitions is in use.  
Adding logical partition 5  
First sector (208896-1048575, default 208896):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (208896-1048575, default 1048575): +101M  
  
Created a new partition 5 of type 'Linux' and of size 101 MiB.  
  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
  
[root@localhost ~]#
```

Рис. 3.18: утилита fdisk

Потом я посмотрел список разделов и записал изменения (рис. 3.19).

```
cat /proc/partitions  
fdisk --list /dev/sdg
```

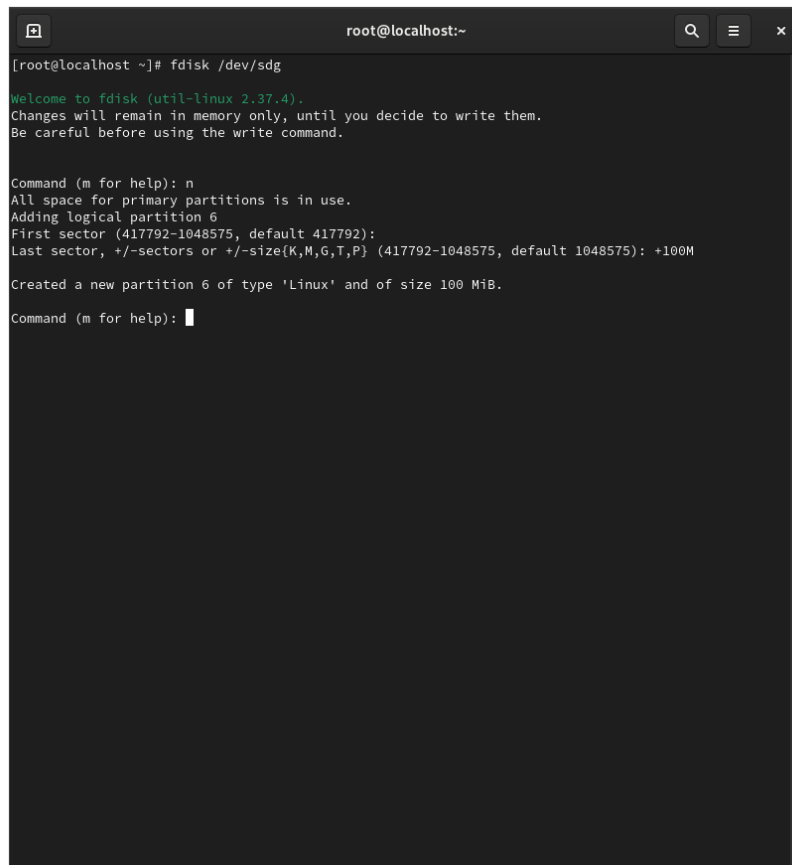
```
root@localhost:~  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
[root@localhost ~]# partprobe /dev/sdg  
[root@localhost ~]# cat /proc/partitions  
major minor #blocks name  
  
11 0 51648 sr0  
8 32 524288 sdc  
8 33 102400 sdc1  
8 48 524288 sdd  
8 49 523264 sdd1  
8 0 104857600 sda  
8 1 1048576 sda1  
8 2 103808000 sda2  
8 64 524288 sde  
8 65 523264 sde1  
8 16 524288 sdb  
8 17 102400 sdb1  
8 18 102400 sdb2  
8 112 524288 sdh  
8 80 524288 sdf  
8 81 523264 sdf1  
8 96 524288 sdg  
8 97 102400 sdg1  
8 98 1 sdg2  
8 101 103424 sdg5  
253 0 64204800 dm-0  
253 1 8253440 dm-1  
253 2 31346688 dm-2  
253 3 24576 dm-3  
[root@localhost ~]# fdisk --list /dev/sdg  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Device Boot Start End Sectors Size Id Type  
/dev/sdg1 2048 206847 204800 100M 83 Linux  
/dev/sdg2 206848 1048575 841728 411M 5 Extended  
/dev/sdg5 208896 415743 206848 101M 83 Linux  
[root@localhost ~]#
```

Рис. 3.19: запись изменений

3.3 Создание раздела подкачки

Потом я еще раз запустил fdisk но используя другой диск (рис. 3.20).

```
fdisk /dev/sdg
```

A terminal window titled 'root@localhost:~' showing the execution of the 'fdisk /dev/sdg' command. The output displays the fdisk welcome message, the command 'n' to create a new partition, and the process of adding logical partition 6 with a size of 100M. The terminal text is as follows:

```
[root@localhost ~]# fdisk /dev/sdg
Welcome to fdisk (util-linux 2.37.4).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): n
All space for primary partitions is in use.
Adding logical partition 6
First sector (417792-1048575, default 417792):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (417792-1048575, default 1048575): +100M

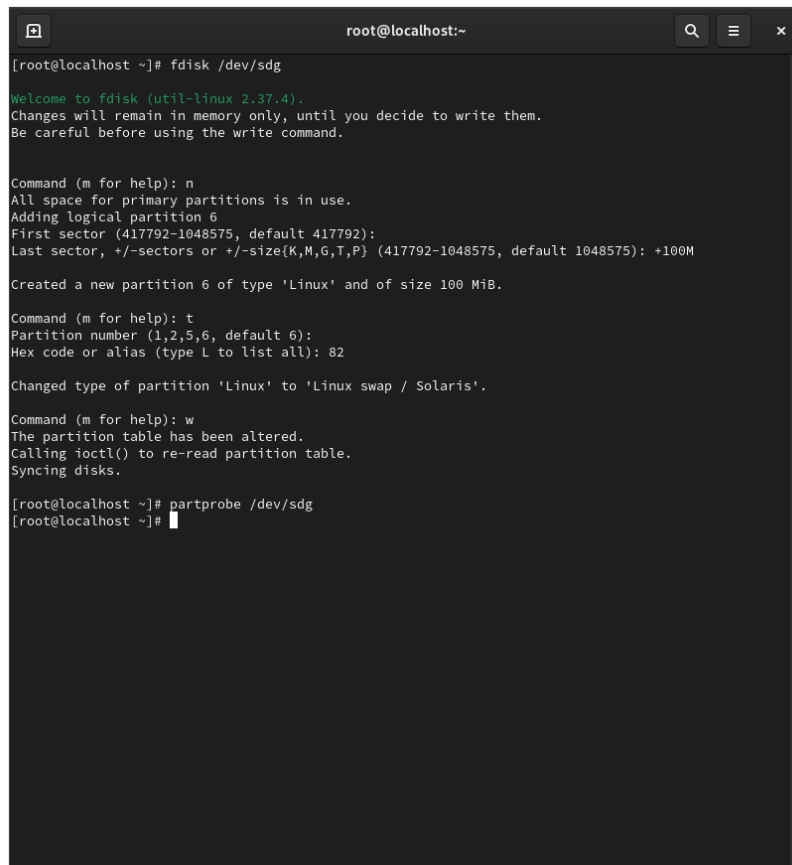
Created a new partition 6 of type 'Linux' and of size 100 MiB.

Command (m for help):
```

Рис. 3.20: fdisk

Потом я добавил другой раздел с размером 100M и типом 82 и записал на таблицу ядра(рис. 3.21).

```
partprobe /dev/sdg
```



```
root@localhost:~  
[root@localhost ~]# fdisk /dev/sdg  
Welcome to fdisk (util-linux 2.37.4).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Command (m for help): n  
All space for primary partitions is in use.  
Adding logical partition 6  
First sector (417792-1048575, default 417792):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (417792-1048575, default 1048575): +100M  
  
Created a new partition 6 of type 'Linux' and of size 100 MiB.  
  
Command (m for help): t  
Partition number (1,2,5,6, default 6):  
Hex code or alias (type L to list all): 82  
  
Changed type of partition 'Linux' to 'Linux swap / Solaris'.  
  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
  
[root@localhost ~]# partprobe /dev/sdg  
[root@localhost ~]#
```

Рис. 3.21: новый раздел

Потом еще раз я посмотрел информацию о добавленных разделах (рис. 3.22).

```
cat /proc/partitions  
fdisk --list /dev/sdg
```

```
root@localhost:~  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
  
[root@localhost ~]# partprobe /dev/sdg  
[root@localhost ~]# cat /proc/partitions  
major minor #blocks name  
  
11      0      51648 sr0  
8       32    524288 sdc  
8       33    102400 sdc1  
8       48    524288 sdd  
8       49    523264 sdd1  
8       0   104857600 sda  
8       1   1048576 sda1  
8       2  103808000 sda2  
8       64    524288 sde  
8       65    523264 sde1  
8       16    524288 sdb  
8       17    102400 sdb1  
8       18    102400 sdb2  
8      112    524288 sdh  
8       80    524288 sdf  
8       81    523264 sdf1  
8       96    524288 sdg  
8       97    102400 sdg1  
8       98         1 sdg2  
8      101   103424 sdg5  
8      102    102400 sdg6  
253     0   64204800 dm-0  
253     1    8253440 dm-1  
253     2   31346688 dm-2  
253     3     24576 dm-3  
  
[root@localhost ~]# fdisk --list /dev/sdg  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Device Boot Start End Sectors Size Id Type  
/dev/sdg1 2048 206847 204800 100M 83 Linux  
/dev/sdg2 206848 1048575 841728 411M 5 Extended  
/dev/sdg5 208896 415743 206848 101M 83 Linux  
/dev/sdg6 417792 622591 204800 100M 82 Linux swap / Solaris  
[root@localhost ~]#
```

Рис. 3.22: информация о добавленных разделах

Дальше я отформатировал раздел подкачки (рис. 3.23).

```
mkswap /dev/sdg6
```

```
root@localhost:~  
[root@localhost ~]# partprobe /dev/sdg  
[root@localhost ~]# cat /proc/partitions  
major minor #blocks name  
11 0 51648 sr0  
8 32 524288 sdc  
8 33 102400 sdc1  
8 48 524288 sdd  
8 49 523264 sdd1  
8 0 104857600 sda  
8 1 1048576 sda1  
8 2 103808000 sda2  
8 64 524288 sde  
8 65 523264 sde1  
8 16 524288 sdb  
8 17 102400 sdb1  
8 18 102400 sdb2  
8 112 524288 sdh  
8 80 524288 sdf  
8 81 523264 sdf1  
8 96 524288 sdg  
8 97 102400 sdg1  
8 98 1 sdg2  
8 101 103424 sdg5  
8 102 102400 sdg6  
253 0 64204800 dm-0  
253 1 8253440 dm-1  
253 2 31346688 dm-2  
253 3 24576 dm-3  
[root@localhost ~]# fdisk --list /dev/sdg  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  


| Device    | Boot | Start  | End     | Sectors | Size | Id | Type                 |
|-----------|------|--------|---------|---------|------|----|----------------------|
| /dev/sdg1 |      | 2048   | 206847  | 204800  | 100M | 83 | Linux                |
| /dev/sdg2 |      | 206848 | 1048575 | 841728  | 411M | 5  | Extended             |
| /dev/sdg5 |      | 208896 | 415743  | 206848  | 101M | 83 | Linux                |
| /dev/sdg6 |      | 417792 | 622591  | 204800  | 100M | 82 | Linux swap / Solaris |

  
[root@localhost ~]# mkswap /dev/sdg6  
Setting up swapspace version 1, size = 100 MiB (104853504 bytes)  
no label, UUID=0e6a14a2-0fd5-434a-b810-884d64dc7c9e  
[root@localhost ~]#
```

Рис. 3.23: раздел подкачки

Потом я включил его на выделенное пространство (рис. 3.24).

```
swapon /dev/sdg6
```

```
root@localhost:~  
[root@localhost ~]# partprobe /dev/sdg  
[root@localhost ~]# cat /proc/partitions  
major minor #blocks name  
  
11      0      51648 sr0  
8       32    524288 sdc  
8       33    102400 sdc1  
8       48    524288 sdd  
8       49    523264 sdd1  
8       0   104857600 sda  
8       1    1048576 sda1  
8       2  103808000 sda2  
8       64    524288 sde  
8       65    523264 sde1  
8       16    524288 sdb  
8       17    102400 sdb1  
8       18    102400 sdb2  
8      112    524288 sdh  
8       80    524288 sdf  
8       81    523264 sdf1  
8       96    524288 sdg  
8       97    102400 sdg1  
8       98         1 sdg2  
8      101   103424 sdg5  
8      102    102400 sdg6  
253     0   64204800 dm-0  
253     1   8253440 dm-1  
253     2   31346688 dm-2  
253     3     24576 dm-3  
[root@localhost ~]# fdisk --list /dev/sdg  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Device Boot Start End Sectors Size Id Type  
/dev/sdg1 2048 206847 204800 100M 83 Linux  
/dev/sdg2 206848 1048575 841728 411M 5 Extended  
/dev/sdg5 208896 415743 206848 101M 83 Linux  
/dev/sdg6 417792 622591 204800 100M 82 Linux swap / Solaris  
[root@localhost ~]# mkswap /dev/sdg6  
Setting up swapspace version 1, size = 100 MiB (104853504 bytes)  
no label, UUID=0e6a14a2-0fd5-434a-b810-884d64dc7c9e  
[root@localhost ~]# swapon /dev/sdg6  
[root@localhost ~]#
```

Рис. 3.24: включение вновь выделенного пространства подкачки

Затем я просмотрел размер пространства подкачки (рис. ??).

```
free -m
```

```
root@localhost:~  
11      0      51648 sr0  
8       32     524288 sdc  
8       33     102400 sdc1  
8       48     524288 sdd  
8       49     523264 sdd1  
8       0     104857600 sda  
8       1     1048576 sda1  
8       2     103808000 sda2  
8      64     524288 sde  
8      65     523264 sde1  
8      16     524288 sdb  
8      17     102400 sdb1  
8      18     102400 sdb2  
8     112     524288 sdh  
8      80     524288 sdf  
8      81     523264 sdf1  
8      96     524288 sdg  
8      97     102400 sdg1  
8      98         1 sdg2  
8     101     103424 sdg5  
8     102     102400 sdg6  
253     0     64204800 dm-0  
253     1     8253440 dm-1  
253     2     31346688 dm-2  
253     3         24576 dm-3  
[root@localhost ~]# fdisk --list /dev/sdg  
Disk /dev/sdg: 512 MiB, 536870912 bytes, 1048576 sectors  
Disk model: VBOX HARDDISK  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x5763353d  
  
Device Boot Start End Sectors Size Id Type  
/dev/sdg1 2048 206847 204800 100M 83 Linux  
/dev/sdg2 206848 1048575 841728 411M 5 Extended  
/dev/sdg5 208896 415743 206848 101M 83 Linux  
/dev/sdg6 417792 622591 204800 100M 82 Linux swap / Solaris  
[root@localhost ~]# mkswap /dev/sdg6  
Setting up swapspace version 1, size = 100 MiB (104853504 bytes)  
no label, UUID=0e6a14a2-0fd5-434a-b810-884d64dc7c9e  
[root@localhost ~]# swapon /dev/sdg6  
[root@localhost ~]# free -m  
total used free shared buff/cache available  
Mem: 15735 1892 13075 57 1104 13842  
Swap: 8159 0 8159  
[root@localhost ~]#
```

Рис. 3.25: размер пространства подкачки

3.4 Создание разделов GPT с помощью gdisk

Здесь я использовал другую утилиту gdisk сначала чтобы смотреть информацию (рис. 3.26).

```
gdisk -l /dev/sdh
```



```
root@localhost:~  
[root@localhost ~]# gdisk -l /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
Disk /dev/sdh: 1048576 sectors, 512.0 MiB  
Model: VBOX HARDDISK  
Sector size (logical/physical): 512/512 bytes  
Disk identifier (GUID): 43FDE81A-8496-4287-A8A5-8068A9BE05EE  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 1048509 sectors (512.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
[root@localhost ~]#
```

Рис. 3.26: gdisk

Потом я начал создать другой раздел (рис. 3.27).

```
gdisk /dev/sdh
```

```
root@localhost:~  
[root@localhost ~]# gdisk -l /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
Disk /dev/sdh: 1048576 sectors, 512.0 MiB  
Model: VBOX HARDDISK  
Sector size (logical/physical): 512/512 bytes  
Disk identifier (GUID): 43FDE81A-8496-4287-A8A5-8068A9BE05EE  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 1048509 sectors (512.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
[root@localhost ~]# gdisk /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
Command (? for help):
```

Рис. 3.27: новый раздел

Сначала я нажал **n** чтобы создать новый раздел (рис. 3.28). Потом я выбрал первый сектор по умолчанию и последний сектор +100M (рис. 3.29). Потом я выбрал тип 8300 (рис. 3.30). еще раз нажал **r** чтобы посмотреть список разделов в диске (рис. 3.31). и в конце концов я нажал **w** чтобы сохранить изменения (потом я нажал **y** чтобы подтвердить его) (рис. 3.32).

```
root@localhost:~  
[root@localhost ~]# gdisk -l /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
Disk /dev/sdh: 1048576 sectors, 512.0 MiB  
Model: VBOX HARDDISK  
Sector size (logical/physical): 512/512 bytes  
Disk identifier (GUID): 43FDE81A-8496-4287-A8A5-8068A9BE05EE  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 1048509 sectors (512.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
[root@localhost ~]# gdisk /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
  
Command (? for help): n  
Partition number (1-128, default 1):  
First sector (34-1048542, default = 2048) or {+-}size{KMGTp}: 
```

Рис. 3.28: gdisk

```
root@localhost:~  
[root@localhost ~]# gdisk -l /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
Disk /dev/sdh: 1048576 sectors, 512.0 MiB  
Model: VBOX HARDDISK  
Sector size (logical/physical): 512/512 bytes  
Disk identifier (GUID): 43FDE81A-8496-4287-A8A5-8068A9BE05EE  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 1048509 sectors (512.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
[root@localhost ~]# gdisk /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
  
Command (? for help): n  
Partition number (1-128, default 1):  
First sector (34-1048542, default = 2048) or {+-}size(KMGTP):  
Last sector (2048-1048542, default = 1048542) or {+-}size(KMGTP): +100M  
Current type is 8300 (Linux filesystem)  
Hex code or GUID (L to show codes, Enter = 8300):
```

Рис. 3.29: gdisk

```
root@localhost:~  
[root@localhost ~]# gdisk -l /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
Disk /dev/sdh: 1048576 sectors, 512.0 MiB  
Model: VBOX HARDDISK  
Sector size (logical/physical): 512/512 bytes  
Disk identifier (GUID): 43FDE81A-8496-4287-A8A5-8068A9BE05EE  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 1048509 sectors (512.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
[root@localhost ~]# gdisk /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: not present  
  BSD: not present  
  APM: not present  
  GPT: not present  
  
Creating new GPT entries in memory.  
  
Command (? for help): n  
Partition number (1-128, default 1):  
First sector (34-1048542, default = 2048) or {+-}size(KMGTP):  
Last sector (2048-1048542, default = 1048542) or {+-}size(KMGTP): +100M  
Current type is 8300 (Linux filesystem)  
Hex code or GUID (L to show codes, Enter = 8300): 8300  
Changed type of partition to 'Linux filesystem'  
  
Command (? for help):
```

Рис. 3.30: gdisk

```
root@localhost:~
Partition number (1-128, default 1):
First sector (34-1048542, default = 2048) or {+}-size(KMGTP):
Last sector (2048-1048542, default = 1048542) or {+}-size(KMGTP): +100M
Current type is 8300 (Linux filesystem)
Hex code or GUID (L to show codes, Enter = 8300): 8300
Changed type of partition to 'Linux filesystem'

Command (? for help): l
Type search string, or <Enter> to show all codes:
0700 Microsoft basic data          0701 Microsoft Storage Replica
0702 ArcaOS Type 1                 0c01 Microsoft reserved
2700 Windows RE                   3000 ONIE boot
3001 ONIE config                   3900 Plan 9
4100 PowerPC PReP boot            4200 Windows LDM data
4201 Windows LDM metadata         4202 Windows Storage Spaces
7501 IBM GPFS                     7f00 ChromeOS kernel
7f01 ChromeOS root               7f02 ChromeOS reserved
8200 Linux swap                   8300 Linux filesystem
8301 Linux reserved               8302 Linux /home
8303 Linux x86 root (/)           8304 Linux x86-64 root (/)
8305 Linux ARM64 root (/)         8306 Linux /srv
8307 Linux ARM32 root (/)         8308 Linux dm-crypt
8309 Linux LUKS                   830a Linux IA-64 root (/)
830b Linux x86 root verity        830c Linux x86-64 root verity
830d Linux ARM32 root verity      830e Linux ARM64 root verity
830f Linux IA-64 root verity      8310 Linux /var
8311 Linux /var/tmp               8312 Linux user's home
8313 Linux x86 /usr               8314 Linux x86-64 /usr
8315 Linux ARM32 /usr             8316 Linux ARM64 /usr
8317 Linux IA-64 /usr             8318 Linux x86 /usr verity
Press the <Enter> key to see more codes, q to quit: q

Command (? for help): p
Disk /dev/sdh: 1048576 sectors, 512.0 MiB
Model: VBOX HARDDISK
Sector size (logical/physical): 512/512 bytes
Disk identifier (GUID): 0F31DAE2-649C-494D-BE33-3E88B575EBF9
Partition table holds up to 128 entries
Main partition table begins at sector 2 and ends at sector 33
First usable sector is 34, last usable sector is 1048542
Partitions will be aligned on 2048-sector boundaries
Total free space is 843709 sectors (412.0 MiB)

Number  Start (sector)    End (sector)  Size      Code  Name
   1            2048          206847   100.0 MiB   8300   Linux filesystem

Command (? for help):
```

Рис. 3.31: gdisk

```
root@localhost:~  
Type search string, or <Enter> to show all codes:  
0700 Microsoft basic data          0701 Microsoft Storage Replica  
0702 ArcaOS Type 1                 0c01 Microsoft reserved  
2700 Windows RE                   3000 ONIE boot  
3001 ONIE config                   3900 Plan 9  
4100 PowerPC PReP boot             4200 Windows LDM data  
4201 Windows LDM metadata          4202 Windows Storage Spaces  
7501 IBM GPFS                      7f00 ChromeOS kernel  
7f01 ChromeOS root                 7f02 ChromeOS reserved  
8200 Linux swap                   8300 Linux filesystem  
8301 Linux reserved                8302 Linux /home  
8303 Linux x86 root (/)            8304 Linux x86-64 root (/)  
8305 Linux ARM64 root (/)          8306 Linux /srv  
8307 Linux ARM32 root (/)          8308 Linux dm-crypt  
8309 Linux LUKS                    830a Linux IA-64 root (/)  
830b Linux x86 root verity          830c Linux x86-64 root verity  
830d Linux ARM32 root verity        830e Linux ARM64 root verity  
830f Linux IA-64 root verity        8310 Linux /var  
8311 Linux /var/tmp                 8312 Linux user's home  
8313 Linux x86 /usr                 8314 Linux x86-64 /usr  
8315 Linux ARM32 /usr               8316 Linux ARM64 /usr  
8317 Linux IA-64 /usr               8318 Linux x86 /usr verity  
Press the <Enter> key to see more codes, q to quit: q  
  
Command (? for help): p  
Disk /dev/sdh: 1048576 sectors, 512.0 MiB  
Model: VBOX HARDDISK  
Sector size (logical/physical): 512/512 bytes  
Disk identifier (GUID): 0F31DAE2-649C-494D-BE33-3E88B575EBF9  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 843709 sectors (412.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
-----  -  
1         2048              206847      100.0 MiB   8300   Linux filesystem  
  
Command (? for help): w  
  
Final checks complete. About to write GPT data. THIS WILL OVERWRITE EXISTING  
PARTITIONS!!  
  
Do you want to proceed? (Y/N): Y  
OK; writing new GUID partition table (GPT) to /dev/sdh.  
The operation has completed successfully.  
[root@localhost ~]#
```

Рис. 3.32: gdisk

Затем я обновил таблицу разделов (рис. 3.33).

```
partprobe /dev/sdh
```

```
root@localhost:~  
0700 Microsoft basic data  
0702 ArcaOS Type 1  
2700 Windows RE  
3001 ONIE config  
4100 PowerPC PreP boot  
4201 Windows LDM metadata  
7501 IBM GPFS  
7f01 ChromeOS root  
8200 Linux swap  
8301 Linux reserved  
8303 Linux x86 root (/)  
8305 Linux ARM64 root (/)  
8307 Linux ARM32 root (/)  
8309 Linux LUKS  
830b Linux x86 root verity  
830d Linux ARM32 root verity  
830f Linux IA-64 root verity  
8311 Linux /var/tmp  
8313 Linux x86 /usr  
8315 Linux ARM32 /usr  
8317 Linux IA-64 /usr  
0701 Microsoft Storage Replica  
0c01 Microsoft reserved  
3000 ONIE boot  
3900 Plan 9  
4200 Windows LDM data  
4202 Windows Storage Spaces  
7f00 ChromeOS kernel  
7f02 ChromeOS reserved  
8300 Linux filesystem  
8302 Linux /home  
8304 Linux x86-64 root (/)  
8306 Linux /srv  
8308 Linux dm-crypt  
830a Linux IA-64 root (/)  
830c Linux x86-64 root verity  
830e Linux ARM64 root verity  
8310 Linux /var  
8312 Linux user's home  
8314 Linux x86-64 /usr  
8316 Linux ARM64 /usr  
8318 Linux x86 /usr verity  
Press the <Enter> key to see more codes, q to quit: q  
  
Command (? for help): p  
Disk /dev/sdh: 1048576 sectors, 512.0 MiB  
Model: VBOX HARDDISK  
Sector size (logical/physical): 512/512 bytes  
Disk identifier (GUID): 0F31DAE2-649C-494D-BE33-3E88B575EBF9  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 843709 sectors (412.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
-----  
1        2048              206847      100.0 MiB   8300   Linux filesystem  
  
Command (? for help): w  
  
Final checks complete. About to write GPT data. THIS WILL OVERWRITE EXISTING  
PARTITIONS!!  
  
Do you want to proceed? (Y/N): Y  
OK; writing new GUID partition table (GPT) to /dev/sdh.  
The operation has completed successfully.  
[root@localhost ~]# partprobe /dev/sdh  
[root@localhost ~]#
```

Рис. 3.33: таблица разделов ядра

Потом я просмотрел информацию о добавленных разделах (рис. 3.34).

```
cat /proc/partitions  
gdisk -l /dev/sdc
```




```
root@localhost:~  
Partition table holds up to 128 entries  
Main partition table begins at sector 2 and ends at sector 33  
First usable sector is 34, last usable sector is 1048542  
Partitions will be aligned on 2048-sector boundaries  
Total free space is 843709 sectors (412.0 MiB)  
  
Number  Start (sector)    End (sector)  Size      Code  Name  
-----  
1       2048                  206847       100.0 MiB  8300   Linux filesystem  
  
Command (? for help): w  
  
Final checks complete. About to write GPT data. THIS WILL OVERWRITE EXISTING  
PARTITIONS!!  
  
Do you want to proceed? (Y/N): Y  
OK; writing new GUID partition table (GPT) to /dev/sdh.  
The operation has completed successfully.  
[root@localhost ~]# partprobe /dev/sdh  
[root@localhost ~]# cat /proc/partitions  
major minor  #blocks  name  
  
11        0       51648  sr0  
8         32      524288  sdc  
8         33     102400  sdc1  
8         48      524288  sdd  
8         49     523264  sdd1  
8         0     104857600  sda  
8         1      1048576  sda1  
8         2     103808000  sda2  
8         64      524288  sde  
8         65     523264  sde1  
8         16      524288  sdb  
8         17     102400  sdb1  
8         18     102400  sdb2  
8        112      524288  sdh  
8        113     102400  sdh1  
8         80      524288  sdf  
8         81     523264  sdf1  
8         96      524288  sdg  
8         97     102400  sdg1  
8         98          1  sdg2  
8        101     103424  sdg5  
8        102     102400  sdg6  
253        0     64204800  dm-0  
253        1      8253440  dm-1  
253        2     31346688  dm-2  
253        3      24576  dm-3  
[root@localhost ~]#
```

Рис. 3.34: информация

3.5 Форматирование файловой системы XFS

Затем я создал файловую систему xfs (рис. 3.35).

```
mkfs.xfs /dev/sdg1
```

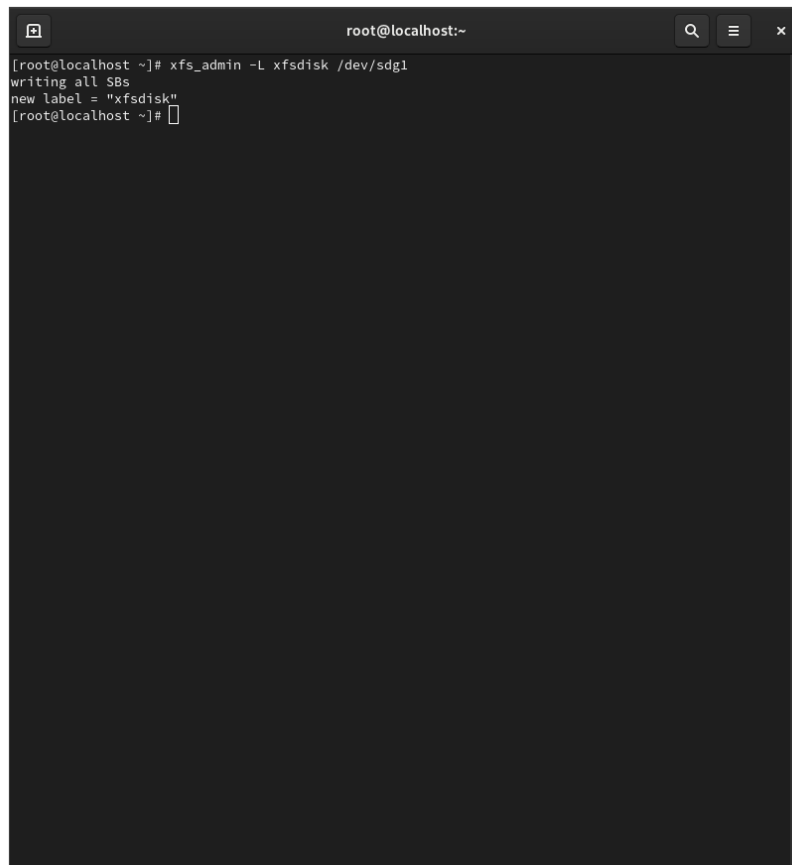
A terminal window titled 'root@localhost:~' with search, menu, and close icons in the title bar. The terminal shows the command '[root@localhost ~]# mkfs.xfs /dev/sdg1' and its output. The output includes a warning about filesystem size and a deprecation notice, followed by a detailed list of filesystem parameters in a key-value format.

```
[root@localhost ~]# mkfs.xfs /dev/sdg1
Filesystem should be larger than 300MB.
Log size should be at least 64MB.
Support for filesystems like this one is deprecated and they will not be supported in future releases.
meta-data=/dev/sdg1            isize=512    agcount=4, agsize=6400 blks
=                               sectsz=512   attr=2, projid32bit=1
=                               crc=1        finobt=1, sparse=1, rmapbt=0
=                               reflink=1    bigtime=1 inobtcount=1 nrext64=0
data      =                    bsize=4096    blocks=25600, imaxpct=25
=                               sunit=0       swidth=0 blks
naming    =version 2           bsize=4096  ascii-ci=0, ftype=1
log       =internal log       bsize=4096  blocks=1368, version=2
=                               sectsz=512   sunit=0 blks, lazy-count=1
realtime  =none                extsz=4096   blocks=0, rtextents=0
[root@localhost ~]#
```

Рис. 3.35: файтовая система xfs

Потом я установил метки файловой системы в xfsdisk (рис. 3.36).

```
xfs_admin -L xfsdisk /dev/sdg1
```

A terminal window titled 'root@localhost:~' with search, menu, and close icons. It shows the command '[root@localhost ~]# xfs_admin -L xfsdisk /dev/sdg1' and its output: 'writing all SBs' and 'new label = "xfsdisk"'. The prompt '[root@localhost ~]#' is followed by a cursor.

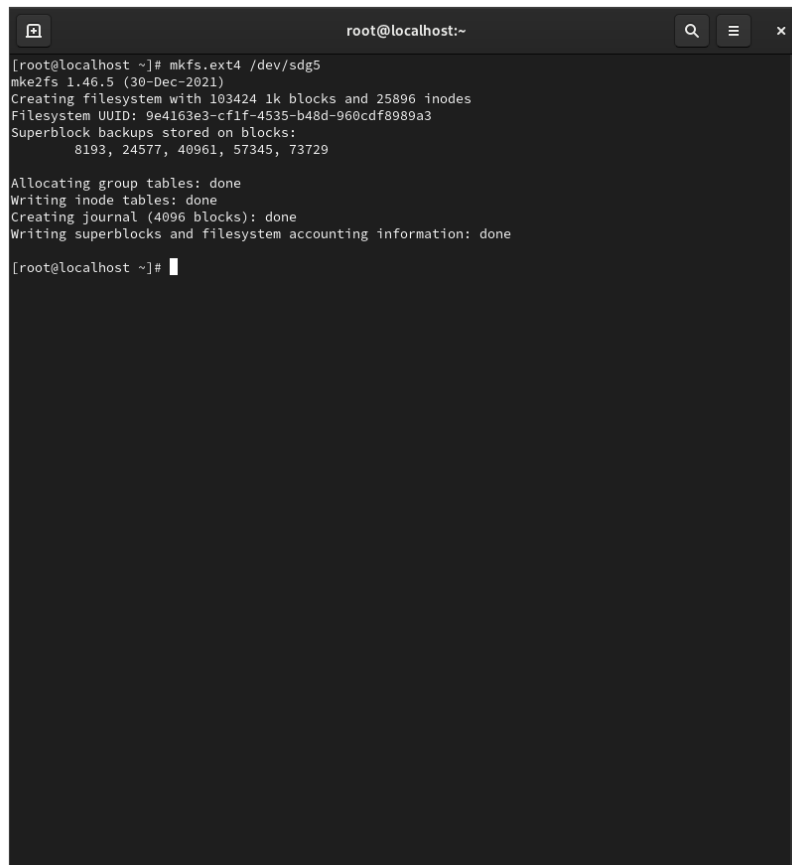
```
[root@localhost ~]# xfs_admin -L xfsdisk /dev/sdg1
writing all SBs
new label = "xfsdisk"
[root@localhost ~]#
```

Рис. 3.36: метки файловой системы в xfsdisk

3.6 Форматирование файловой системы EXT4

здесь я создал файловую систему EXT4 (рис. 3.37).

```
mkfs.ext4 /dev/sdg5
```

A terminal window titled 'root@localhost:~' with search, menu, and close icons in the title bar. The terminal shows the execution of 'mkfs.ext4 /dev/sdg5' and the output of 'mke2fs 1.46.5 (30-Dec-2021)'. The output details the creation of a filesystem with 103424 1k blocks and 25896 inodes, a UUID of 9e4163e3-cf1f-4535-b48d-960cdf8989a3, and superblock backups at specific block numbers. It also shows the completion of group tables, inode tables, journal creation, and superblock writing.

```
[root@localhost ~]# mkfs.ext4 /dev/sdg5
mke2fs 1.46.5 (30-Dec-2021)
Creating filesystem with 103424 1k blocks and 25896 inodes
Filesystem UUID: 9e4163e3-cf1f-4535-b48d-960cdf8989a3
Superblock backups stored on blocks:
    8193, 24577, 40961, 57345, 73729

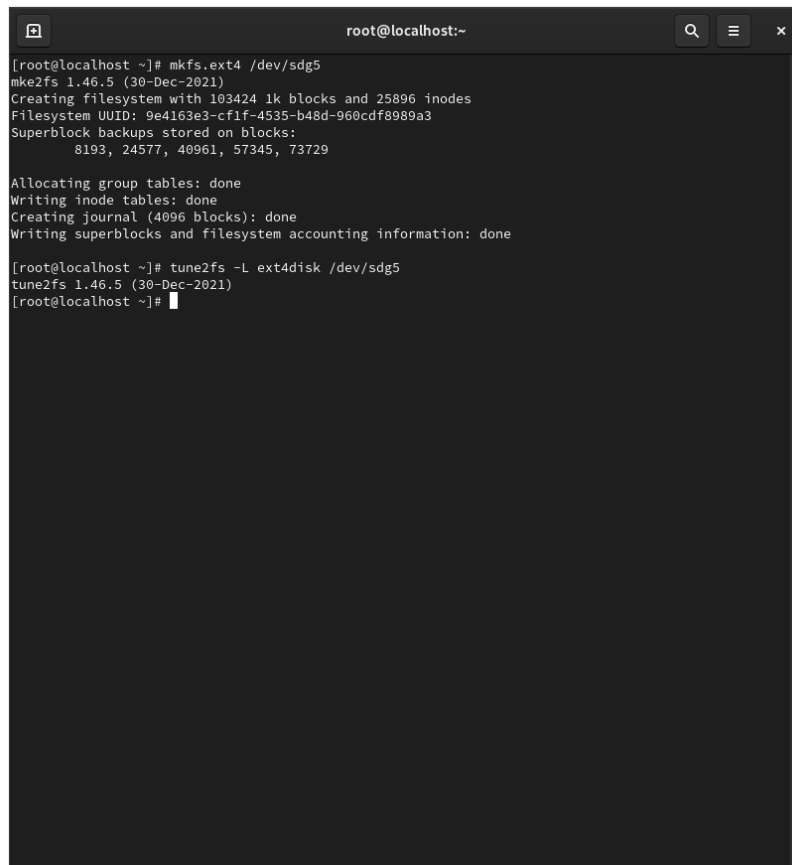
Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

[root@localhost ~]#
```

Рис. 3.37: файловая система EXT4

потом я установил метки файловой системы в ext4disk (рис. 3.38).

```
tune2fs -L ext4disk /dev/sdb5
```

A terminal window titled 'root@localhost:~' with search, menu, and close icons in the title bar. The terminal shows the execution of 'mkfs.ext4 /dev/sdg5', which creates an ext4 filesystem with 103424 1k blocks and 25896 inodes. It displays the filesystem UUID, superblock backup locations, and completion status for group tables, inode tables, journal, and superblocks. Then, 'tune2fs -L ext4disk /dev/sdg5' is run to set a label, and 'tune2fs' is run again without arguments.

```
[root@localhost ~]# mkfs.ext4 /dev/sdg5
mke2fs 1.46.5 (30-Dec-2021)
Creating filesystem with 103424 1k blocks and 25896 inodes
Filesystem UUID: 9e4163e3-cf1f-4535-b48d-960cdf8989a3
Superblock backups stored on blocks:
    8193, 24577, 40961, 57345, 73729

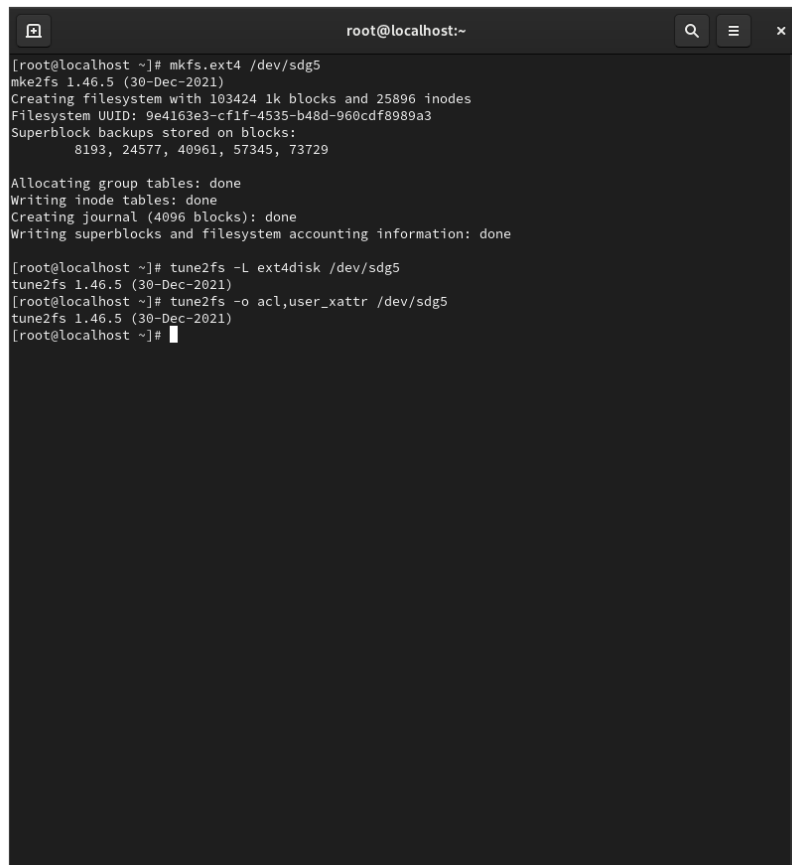
Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

[root@localhost ~]# tune2fs -L ext4disk /dev/sdg5
tune2fs 1.46.5 (30-Dec-2021)
[root@localhost ~]#
```

Рис. 3.38: метки файловой системы в ext4disk

и дальше установил параметры монтирования по умолчанию (рис. 3.39).

```
tune2fs -o acl,user_xattr /dev/sdg5
```



```
root@localhost:~  
[root@localhost ~]# mkfs.ext4 /dev/sdg5  
mke2fs 1.46.5 (30-Dec-2021)  
Creating filesystem with 103424 1k blocks and 25896 inodes  
Filesystem UUID: 9e4163e3-cf1f-4535-b48d-960cdf8989a3  
Superblock backups stored on blocks:  
      8193, 24577, 40961, 57345, 73729  
  
Allocating group tables: done  
Writing inode tables: done  
Creating journal (4096 blocks): done  
Writing superblocks and filesystem accounting information: done  
  
[root@localhost ~]# tune2fs -L ext4disk /dev/sdg5  
tune2fs 1.46.5 (30-Dec-2021)  
[root@localhost ~]# tune2fs -o acl,user_xattr /dev/sdg5  
tune2fs 1.46.5 (30-Dec-2021)  
[root@localhost ~]#
```

Рис. 3.39: параметры монтирования

3.7 Ручное монтирование файловых систем

сначала я создал каталог /mnt/tmp (рис. 3.40).

```
mkdir -p /mnt/tmp
```

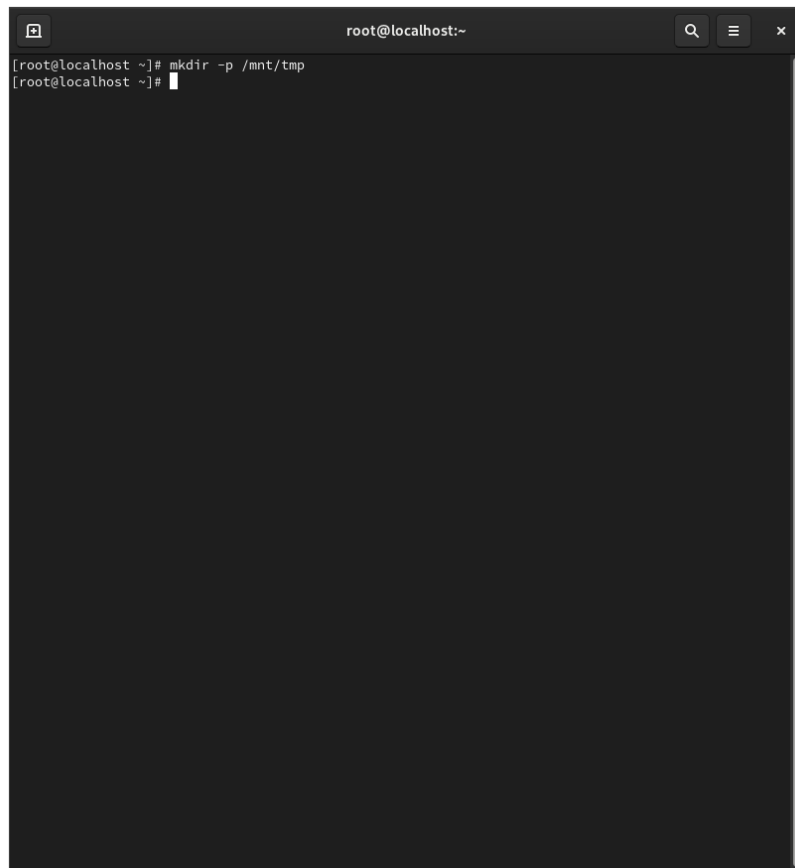
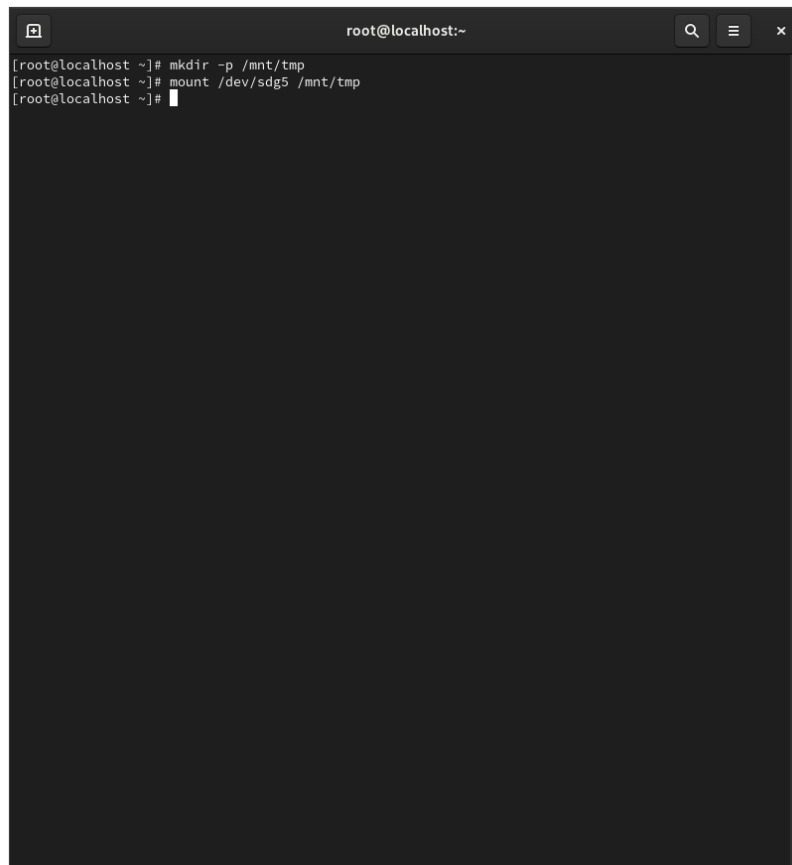


Рис. 3.40: каталог /mnt/tmp

Потом я смонтировал файловую систему (рис. 3.41).

```
mount /dev/sdg5 /mnt/tmp
```

A terminal window titled 'root@localhost:~' with search, menu, and close icons in the title bar. The terminal shows three lines of text: '[root@localhost ~]# mkdir -p /mnt/tmp', '[root@localhost ~]# mount /dev/sdg5 /mnt/tmp', and '[root@localhost ~]#'. A cursor is visible at the end of the third line.

```
root@localhost:~
[root@localhost ~]# mkdir -p /mnt/tmp
[root@localhost ~]# mount /dev/sdg5 /mnt/tmp
[root@localhost ~]#
```

Рис. 3.41: монтирование файловой системы

потом я проверил все (рис. 3.42).

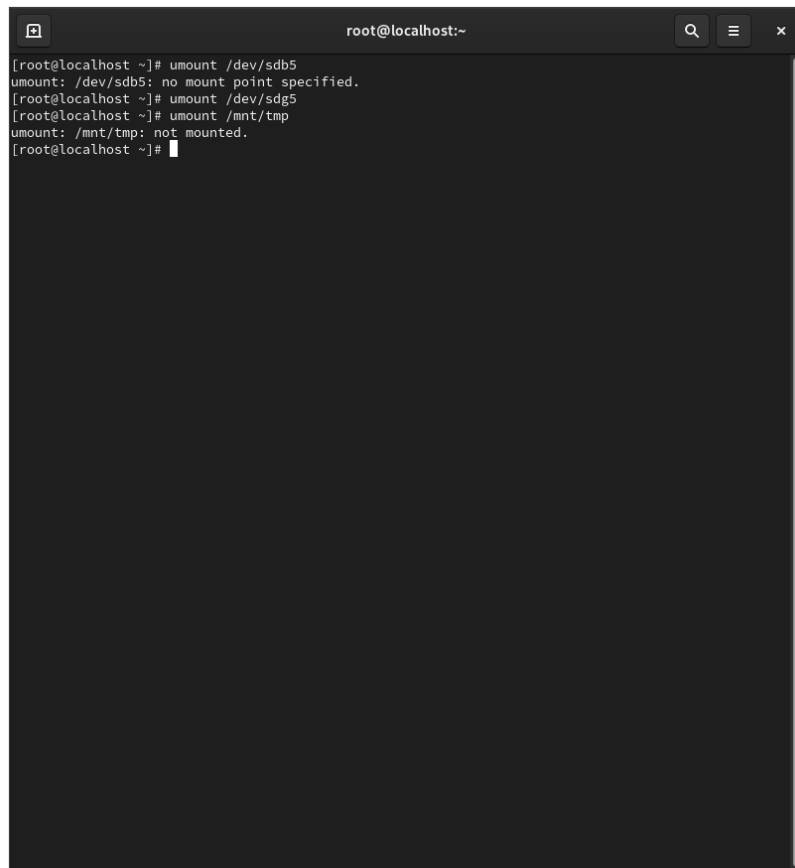
mount


```
root@localhost:~  
[root@localhost ~]# mkdir -p /mnt/tmp  
[root@localhost ~]# mount /dev/sdg5 /mnt/tmp  
[root@localhost ~]# mount  
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)  
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime,seclabel)  
devtmpfs on /dev type devtmpfs (rw,nosuid,seclabel,size=4096k,nr_inodes=2006233,mode=755,inode64)  
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)  
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)  
tmpfs on /run type tmpfs (rw,nosuid,nodev,seclabel,size=322544k,nr_inodes=819200,mode=755,inode64)  
)  
cgroup2 on /sys/fs/cgroup type cgroup2 (rw,nosuid,nodev,noexec,relatime,seclabel,nsdelegate,memory_recursiveprot)  
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime,seclabel)  
bpf on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)  
/dev/mapper/rl-root on / type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)  
selinuxfs on /sys/fs/selinux type selinuxfs (rw,nosuid,noexec,relatime)  
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=29,pgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=1442)  
mqueue on /dev/mqueue type mqueue (rw,nosuid,nodev,noexec,relatime,seclabel)  
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,seclabel,pagesize=2M)  
debugfs on /sys/kernel/debug type debugfs (rw,nosuid,nodev,noexec,relatime,seclabel)  
tracefs on /sys/kernel/tracing type tracefs (rw,nosuid,nodev,noexec,relatime,seclabel)  
fusectl on /sys/fs/fuse/connections type fusectl (rw,nosuid,nodev,noexec,relatime)  
configfs on /sys/kernel/config type configfs (rw,nosuid,nodev,noexec,relatime)  
none on /run/credentials/systemd-sysctl.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)  
none on /run/credentials/systemd-tmpfiles-setup-dev.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)  
/dev/sda1 on /boot type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)  
/dev/mapper/rl-home on /home type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)  
/dev/mapper/vgdata-lvdata on /mnt/data type ext4 (rw,relatime,seclabel)  
none on /run/credentials/systemd-tmpfiles-setup.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)  
tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=1611268k,nr_inodes=402817,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)  
/dev/sr0 on /run/media/qjarishekk/VBox_GAs_7.0.18 type iso9660 (ro,nosuid,nodev,relatime,nojoliet,check=s,map=n,blocksize=2048,uid=1000,gid=1000,dmode=500,fmode=400,uhelper=udisks2)  
portal on /run/user/1000/doc type fuse.portal (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)  
)  
/dev/sdg5 on /mnt/tmp type ext4 (rw,relatime,seclabel)  
[root@localhost ~]#
```

Рис. 3.42: проверка

Потом я отмонтировал его (рис. 3.43).

```
umount /dev/sdg5
```

A terminal window titled 'root@localhost:~' with search, menu, and close buttons. It shows the following commands and outputs:

```
[root@localhost ~]# umount /dev/sdb5
umount: /dev/sdb5: no mount point specified.
[root@localhost ~]# umount /dev/sdg5
[root@localhost ~]# umount /mnt/tmp
umount: /mnt/tmp: not mounted.
[root@localhost ~]#
```

Рис. 3.43: отмонтирование

Потом я еще раз проверил все (рис. 3.44).

mount

```
root@localhost:~  
[root@localhost ~]# umount /dev/sdb5  
umount: /dev/sdb5: no mount point specified.  
[root@localhost ~]# umount /dev/sdg5  
[root@localhost ~]# umount /mnt/tmp  
umount: /mnt/tmp: not mounted.  
[root@localhost ~]# mount  
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)  
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime,seclabel)  
devtmpfs on /dev type devtmpfs (rw,nosuid,seclabel,size=4096k,nr_inodes=2006233,mode=755,inode64)  
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)  
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)  
tmpfs on /run type tmpfs (rw,nosuid,nodev,seclabel,size=3222544k,nr_inodes=819200,mode=755,inode64)  
cgroup2 on /sys/fs/cgroup type cgroup2 (rw,nosuid,nodev,noexec,relatime,seclabel,nsdelegate,memory_recursiveprot)  
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime,seclabel)  
bpf on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)  
/dev/mapper/rl-root on / type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)  
selinuxfs on /sys/fs/selinux type selinuxfs (rw,nosuid,noexec,relatime)  
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=29,pgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=1442)  
mqueue on /dev/mqueue type mqueue (rw,nosuid,nodev,noexec,relatime,seclabel)  
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,seclabel,pagesize=2M)  
debugfs on /sys/kernel/debug type debugfs (rw,nosuid,nodev,noexec,relatime,seclabel)  
tracefs on /sys/kernel/tracing type tracefs (rw,nosuid,nodev,noexec,relatime,seclabel)  
fusectl on /sys/fs/fuse/connections type fusectl (rw,nosuid,nodev,noexec,relatime)  
configfs on /sys/kernel/config type configfs (rw,nosuid,nodev,noexec,relatime)  
none on /run/credentials/systemd-sysctl.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)  
none on /run/credentials/systemd-tmpfiles-setup-dev.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)  
/dev/sda1 on /boot type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)  
/dev/mapper/rl-home on /home type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)  
/dev/mapper/vgdata-lvdata on /mnt/data type ext4 (rw,relatime,seclabel)  
none on /run/credentials/systemd-tmpfiles-setup.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)  
tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=1611268k,nr_inodes=402817,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)  
/dev/sr0 on /run/media/qjarishekk/VBox_GAs_7.0.18 type iso9660 (ro,nosuid,nodev,relatime,nojoliet,check=s,map=n,blocksize=2048,uid=1000,gid=1000,dmode=500,fmode=400,uhelper=udisks2)  
portal on /run/user/1000/doc type fuse.portal (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)  
[root@localhost ~]#
```

Рис. 3.44: проверка

3.8 Монтирование разделов с помощью /etc/fstab

В этой части сначала я создал каталог /mnt/data (рис. 3.45).

```
mkdir -p /mnt/data
```

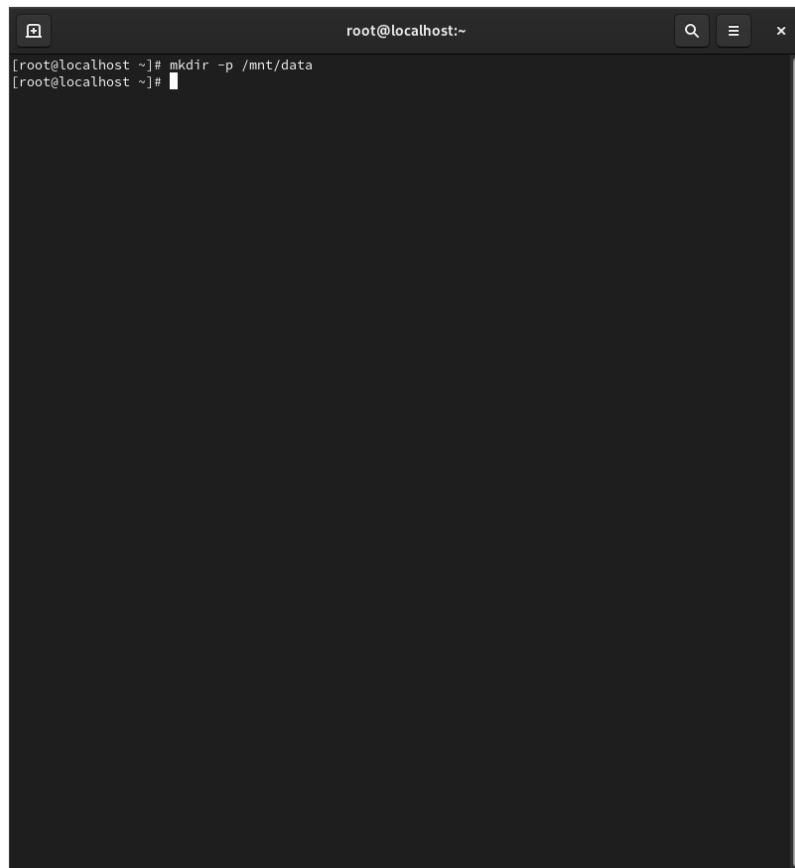


Рис. 3.45: каталог /mnt/data

Потом я посмотрел информацию об идентификаторах блочных устройств (рис. 3.46).

blkid

```
root@localhost:~  
[root@localhost ~]# mkdir -p /mnt/data  
[root@localhost ~]# blkid  
/dev/mapper/r1-swap: UUID="cabcca34-9967-4bb0-bdb7-329902b939f" TYPE="swap"  
/dev/sdf1: PARTUUID="e70aa1ca-01"  
/dev/sdd1: PARTUUID="c0406718-01"  
/dev/sdb2: UUID="mSTNk8-opA1-VHKF-BZk5-oN7P-rjbN-2gMn8R" TYPE="LVM2_member" PARTUUID="3adbd53e-02"  
/dev/sdb1: UUID="d6Cjch-6ROH-svdN-EeMb-lkZb-cAht-eY1uSA" TYPE="LVM2_member" PARTUUID="3adbd53e-01"  
/dev/sr0: UUID="2024-05-02-09-22-15-23" LABEL="VBox_GAs_7.0.18" TYPE="iso9660"  
/dev/mapper/r1-home: UUID="61db2b2d-4bf6-44b2-a924-40dba4e87d86" TYPE="xfs"  
/dev/sdg5: LABEL="ext4disk" UUID="9e4163e3-cf1f-4535-b48d-960cdf8989a3" TYPE="ext4" PARTUUID="5763353d-05"  
/dev/sdg1: LABEL="xfsdisk" UUID="04f7c901-f4b9-4eb7-9f9d-99fffe729f21" TYPE="xfs" PARTUUID="5763353d-01"  
/dev/sdg6: UUID="0e6a14a2-0fd5-434a-b810-884d64dc7c9e" TYPE="swap" PARTUUID="5763353d-06"  
/dev/mapper/r1-root: UUID="5e0e7f90-31ec-497d-a4ea-cfeba043d199" TYPE="xfs"  
/dev/sde1: PARTUUID="c2b837bd-01"  
/dev/sdc1: PARTLABEL="Linux filesystem" PARTUUID="6f22acb2-2bfe-4491-a85c-1daafb5641cd"  
/dev/sda2: UUID="F0fMB8-BIE5-rv7H-Qon6-8R6Z-w7Lb-jHqiUU" TYPE="LVM2_member" PARTUUID="994c1c60-02"  
/dev/sda1: LABEL="xfsdisk" UUID="d1e66ae9-c017-4d3f-9dd7-ce647b15ba1b" TYPE="xfs" PARTUUID="994c1c60-01"  
/dev/mapper/vgdata-lvdata: UUID="ae6468ae-d1d2-49dd-a439-d26d7e7dce07" TYPE="ext4"  
/dev/sdh1: PARTLABEL="Linux filesystem" PARTUUID="90a0c434-de10-4b8b-9d74-62189389cf54"  
[root@localhost ~]#
```

Рис. 3.46: информация об идентификаторах блочных устройств

Потом я получил UUID раздела и скопировал код (рис. 3.47).

```
blkid /dev/sdg1
```

```
root@localhost:~  
[root@localhost ~]# mkdir -p /mnt/data  
[root@localhost ~]# blkid  
/dev/mapper/r1-swap: UUID="cabcca34-9967-4bb0-bdb7-329902b939f" TYPE="swap"  
/dev/sdf1: PARTUUID="e70aa1ca-01"  
/dev/sdd1: PARTUUID="c0406718-01"  
/dev/sdb2: UUID="mSTNk8-opA1-VHKF-BZk5-oN7P-rjBN-2gMn8R" TYPE="LVM2_member" PARTUUID="3adbd53e-02"  
/dev/sdb1: UUID="d6Cjch-6ROH-svdN-EeMb-lkZb-cAHT-eY1uSA" TYPE="LVM2_member" PARTUUID="3adbd53e-01"  
/dev/sr0: UUID="2024-05-02-09-22-15-23" LABEL="VBox_GAS_7.0.18" TYPE="iso9660"  
/dev/mapper/r1-home: UUID="61db2b2d-4bf6-44b2-a924-40dba4e87d86" TYPE="xfs"  
/dev/sdg5: LABEL="ext4disk" UUID="9e4163e3-cf1f-4535-b48d-960cdf8989a3" TYPE="ext4" PARTUUID="5763353d-05"  
/dev/sdg1: LABEL="xfsdisk" UUID="04f7c901-f4b9-4eb7-9f9d-99fffe729f21" TYPE="xfs" PARTUUID="5763353d-01"  
/dev/sdg6: UUID="0e6a14a2-0fd5-434a-b810-884d64dc7c9e" TYPE="swap" PARTUUID="5763353d-06"  
/dev/mapper/r1-root: UUID="5e0e7f90-31ec-497d-a4ea-cfeba043d199" TYPE="xfs"  
/dev/sde1: PARTUUID="c2b837bd-01"  
/dev/sdc1: PARTLABEL="Linux filesystem" PARTUUID="6f22acb2-2bfe-4491-a85c-1daafb5641cd"  
/dev/sda2: UUID="F0FM8B-BIE5-rv7H-Qon6-8R6Z-w7Lb-jHQiUU" TYPE="LVM2_member" PARTUUID="994c1c60-02"  
/dev/sda1: LABEL="xfsdisk" UUID="d1e66ae9-c017-4d3f-9dd7-ce647b15ba1b" TYPE="xfs" PARTUUID="994c1c60-01"  
/dev/mapper/vgdata-lvdata: UUID="ae6468ae-d1d2-49dd-a439-d26d7e7dce07" TYPE="ext4"  
/dev/sdh1: PARTLABEL="Linux filesystem" PARTUUID="90a0c434-de10-4b8b-9d74-62189389cf54"  
[root@localhost ~]# blkid /dev/sdg1  
/dev/sdg1: LABEL="xfsdisk" UUID="04f7c901-f4b9-4eb7-9f9d-99fffe729f21" TYPE="xfs" PARTUUID="5763353d-01"  
[root@localhost ~]#
```

Рис. 3.47: UUID

Дальше я открыл файл /etc/fstab и там я написал следующую строку (рис. 3.48).

```
vim /etc/fstab
```

```
UUID=значение_идентификатора /mnt/data xfs defaults 1 2
```



```
root@localhost:~  
[root@localhost ~]# mkdir -p /mnt/data  
[root@localhost ~]# blkid  
/dev/mapper/r1-swap: UUID="cabcca34-9967-4bb0-bdb7-329902b939f" TYPE="swap"  
/dev/sdf1: PARTUUID="e70aa1ca-01"  
/dev/sdd1: PARTUUID="c0406718-01"  
/dev/sdb2: UUID="mSTNk8-opA1-VHKF-BZk5-oN7P-rjBN-2gMn8R" TYPE="LVM2_member" PARTUUID="3adbd53e-02"  
/dev/sdb1: UUID="d6Cjch-6ROH-svdN-EeMb-lkZb-cAHT-eY1uSA" TYPE="LVM2_member" PARTUUID="3adbd53e-01"  
/dev/sr0: UUID="2024-05-02-09-22-15-23" LABEL="VBox_Gas_7.0.18" TYPE="iso9660"  
/dev/mapper/r1-home: UUID="61db2b2d-4bf6-44b2-a924-40dba4e87d86" TYPE="xfs"  
/dev/sdg5: LABEL="ext4disk" UUID="9e4163e3-cf1f-4535-b48d-960cdf8989a3" TYPE="ext4" PARTUUID="5763353d-05"  
/dev/sdg1: LABEL="xfsdisk" UUID="04f7c901-f4b9-4eb7-9f9d-99fffe729f21" TYPE="xfs" PARTUUID="5763353d-01"  
/dev/sdg6: UUID="0e6a14a2-0fd5-434a-b810-884d64dc7c9e" TYPE="swap" PARTUUID="5763353d-06"  
/dev/mapper/r1-root: UUID="5e0e7f90-31ec-497d-a4ea-cfeba043d199" TYPE="xfs"  
/dev/sde1: PARTUUID="c2b837bd-01"  
/dev/sdc1: PARTLABEL="Linux filesystem" PARTUUID="6f22acb2-2bfe-4491-a85c-1daafb5641cd"  
/dev/sda2: UUID="F0FM8B-BIE5-rv7H-Qon6-8R6Z-w7Lb-jHqiUU" TYPE="LVM2_member" PARTUUID="994c1c60-02"  
/dev/sda1: LABEL="xfsdisk" UUID="d1e66ae9-c017-4d3f-9dd7-ce647b15ba1b" TYPE="xfs" PARTUUID="994c1c60-01"  
/dev/mapper/vgdata-lvdata: UUID="ae6468ae-d1d2-49dd-a439-d26d7e7dce07" TYPE="ext4"  
/dev/sdh1: PARTLABEL="Linux filesystem" PARTUUID="90a0c434-de10-4b8b-9d74-62189389cf54"  
[root@localhost ~]# blkid /dev/sdg1  
/dev/sdg1: LABEL="xfsdisk" UUID="04f7c901-f4b9-4eb7-9f9d-99fffe729f21" TYPE="xfs" PARTUUID="5763353d-01"  
[root@localhost ~]# vim /etc/fstab  
[root@localhost ~]# mount -a  
mount: (hint) your fstab has been modified, but systemd still uses  
the old version; use 'systemctl daemon-reload' to reload.  
[root@localhost ~]# systemctl daemon-reload  
[root@localhost ~]# mount -a  
[root@localhost ~]#
```

Рис. 3.49: mount

в конце концов я проверил все изменения еще раз (рис. 3.50).

df -h


```
root@localhost:~  
[root@localhost ~]# mkdir -p /mnt/data  
[root@localhost ~]# blkid  
/dev/mapper/rl-swap: UUID="cabcca34-9967-4bb0-bdb7-329902b939f" TYPE="swap"  
/dev/sdf1: PARTUUID="e70aa1ca-01"  
/dev/sdd1: PARTUUID="c0406718-01"  
/dev/sdb2: UUID="mSTNk8-opA1-VHKF-BZk5-oN7P-rjBN-2gMn8R" TYPE="LVM2_member" PARTUUID="3adbd53e-02"  
/dev/sdb1: UUID="d6Cjch-6ROH-svdN-EeMb-lkZb-cAht-eY1uSA" TYPE="LVM2_member" PARTUUID="3adbd53e-01"  
/dev/sr0: UUID="2024-05-02-09-22-15-23" LABEL="VBox_GAs_7.0.18" TYPE="iso9660"  
/dev/mapper/rl-home: UUID="61db2b2d-4bf6-44b2-a924-40dba4e87d86" TYPE="xfs"  
/dev/sdg5: LABEL="ext4disk" UUID="9e4163e3-cf1f-4535-b48d-960cdf8989a3" TYPE="ext4" PARTUUID="5763353d-05"  
/dev/sdg1: LABEL="xfsdisk" UUID="04f7c901-f4b9-4eb7-9f9d-99fffe729f21" TYPE="xfs" PARTUUID="5763353d-01"  
/dev/sdg6: UUID="0e6a14a2-0fd5-434a-b810-884d64dc7c9e" TYPE="swap" PARTUUID="5763353d-06"  
/dev/mapper/rl-root: UUID="5e0e7f90-31ec-497d-a4ea-cfeba043d199" TYPE="xfs"  
/dev/sde1: PARTUUID="c2b837bd-01"  
/dev/sdc1: PARTLABEL="Linux filesystem" PARTUUID="6f22acb2-2bfe-4491-a85c-1daafb5641cd"  
/dev/sda2: UUID="FOFMBB-BIE5-rv7H-Qon6-8RGZ-w7Lb-jHQiUU" TYPE="LVM2_member" PARTUUID="994c1c60-02"  
/dev/sda1: LABEL="xfsdisk" UUID="d1e66ae9-c017-4d3f-9dd7-ce647b15ba1b" TYPE="xfs" PARTUUID="994c1c60-01"  
/dev/mapper/vgdata-lvdata: UUID="ae6468ae-d1d2-49dd-a439-d26d7e7dce07" TYPE="ext4"  
/dev/sdh1: PARTLABEL="Linux filesystem" PARTUUID="90a0c434-de10-4b8b-9d74-62189389cf54"  
[root@localhost ~]# blkid /dev/sdg1  
/dev/sdg1: LABEL="xfsdisk" UUID="04f7c901-f4b9-4eb7-9f9d-99fffe729f21" TYPE="xfs" PARTUUID="5763353d-01"  
[root@localhost ~]# vim /etc/fstab  
[root@localhost ~]# mount -a  
mount: (hint) your fstab has been modified, but systemd still uses  
the old version; use 'systemctl daemon-reload' to reload.  
[root@localhost ~]# systemctl daemon-reload  
[root@localhost ~]# mount -a  
[root@localhost ~]# df -h  
Filesystem      Size  Used Avail Use% Mounted on  
devtmpfs        4.0M   0   4.0M   0% /dev  
tmpfs           7.7G   0   7.7G   0% /dev/shm  
tmpfs           3.1G  9.3M   3.1G   1% /run  
/dev/mapper/rl-root 62G  5.5G   56G   9% /  
/dev/sda1       960M  567M  394M  60% /boot  
/dev/mapper/rl-home 30G   17G   14G  56% /home  
/dev/sdg1       95M   6.0M   89M   7% /mnt/data  
tmpfs           1.6G  112K   1.6G   1% /run/user/1000  
/dev/sr0        51M   51M    0 100% /run/media/qjarishekk/VBox_GAs_7.0.18  
[root@localhost ~]#
```

Рис. 3.50: Название

4 Выводы

в этой лабораторной работы я смотрел все команды и утилиты чтобы создать новые разделы в диске и как монтировать их чтобы его использование

Список литературы