

# **Презентация лабораторной работы №14**

Партиции, файловые системы, монтирование

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# **Лабораторная работа**

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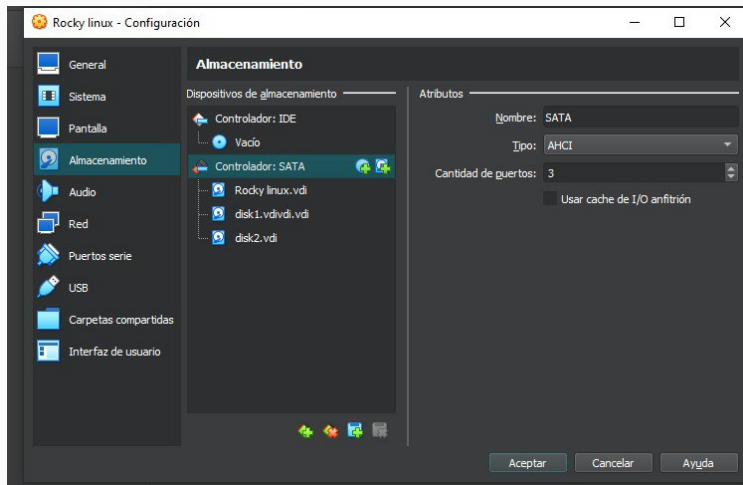
# **Последовательность выполнения работы**

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# **Создание виртуальных носителей**

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# Создание виртуальных носителей



# Создание виртуальных носителей

```
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):
```

# Создание виртуальных носителей

```
root@localhost:~  
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 ~]# 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 ~]#
```

# Создание виртуальных носителей

```
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/sdgl    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 ~]#
```



## **Создание логических разделов**

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# Создание логических разделов

```
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 ~]# partprobe /dev/sdg  
[root@localhost ~]#
```

# Создание логических разделов

```
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 ~]#
```

## **Создание раздела подкачки**

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# Создание раздела подкачки

```
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 ~]#
```

# Создание раздела подкачки

```
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     10485760 sda  
8       1     1048576 sda1  
8       2     10380800 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 ~]#
```

# Создание раздела подкачки

```
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    20480    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 ~]#
```

## **Создание разделов GPT с помощью gdisk**

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# Создание разделов GPT с помощью 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-A8A5-8068A98E05EE  
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):
```

# Создание разделов GPT с помощью gdisk

```
root@localhost:~  
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 ~]# partprobe /dev/sdh  
[root@localhost ~]#
```

# Создание разделов GPT с помощью gdisk

```
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 ~]#
```

# Создание разделов GPT с помощью gdisk

```
root@localhost:~  
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 ~]# gdisk -l /dev/sdh  
GPT fdisk (gdisk) version 1.0.7  
  
Partition table scan:  
  MBR: protective  
  BSD: not present  
  APM: not present  
  GPT: present  
  
Found valid GPT with protective MBR; using GPT.  
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 43  
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  
[root@localhost ~]#
```

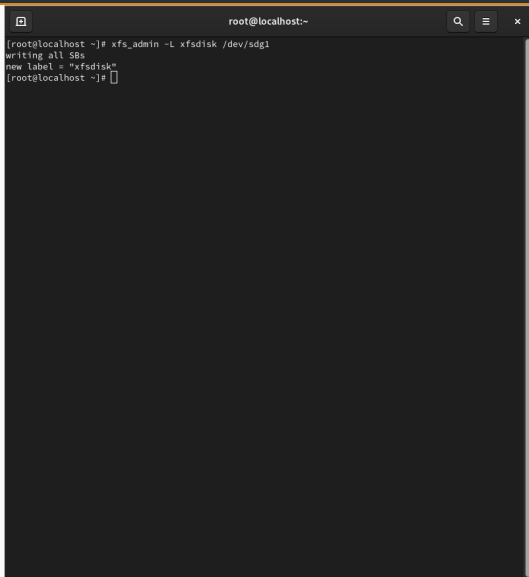
# **Форматирование файловой системы XFS**

---

# Форматирование файловой системы XFS

```
root@localhost:~  
[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 ~]#
```

# Форматирование файловой системы XFS



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

# **Форматирование файловой системы EXT4**

---



# Форматирование файловой системы EXT4

```
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-960cdf88989a3  
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 ~]#
```

# **Ручное монтирование файловых систем**

---

# Ручное монтирование файловых систем

```
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=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)  
)  
/dev/sdg5 on /mnt/tmp type ext4 (rw,relatime,seclabel)  
[root@localhost ~]#
```

# Ручное монтирование файловых систем

```
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,pgrpr=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/sdal 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/qjarishekkha/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=u disks2)  
portal on /run/user/1000/doc type fuse.portal (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)  
)  
(root@localhost ~)#
```

## **Монтирование разделов с помощью /etc/fstab**

---

# Монтирование разделов с помощью /etc/fstab

```
root@localhost:~  
[root@localhost ~]# mkdir -p /mnt/data  
[root@localhost ~]# blkid  
/dev/mapper/rl-swap: UUID="cabcca34-9967-4bb0-bdb7-3299002b939f" TYPE="swap"  
/dev/sdf1: PARTUUID="e70aalca-01"  
/dev/sdd1: PARTUUID="c0406718-01"  
/dev/sdb2: UUID="mSTNkB-opA1-VHKF-BZk5-oN7P-rjBN-2qMn8R" TYPE="LVM2_member" PARTUUID="3adbd53e-02"  
/dev/sdb1: UUID="d6Cjch-6ROH-svdN-EeMb-lkZb-CAHT-eYIuSA" 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="FOFH8B-8IES-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 ~]#
```

# Монтирование разделов с помощью /etc/fstab

```
root@localhost:~  
#  
# /etc/fstab  
# Created by anaconda on Sun Dec  8 13:20:15 2024  
#  
# Accessible filesystems, by reference, are maintained under '/dev/disk/'.  
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.  
#  
# After editing this file, run 'systemctl daemon-reload' to update systemd  
# units generated from this file.  
#  
/dev/mapper/rl-root / xfs defaults 0 0  
UUID=d1e66ae9-c017-4d3f-9dd7-ce647b15ba1b /boot xfs defaults xfs 0 0  
/dev/mapper/rl-home /home xfs defaults 0 0  
/dev/mapper/rl-swap none swap defaults 0 0  
UUID=17a18f71-7487-496a-baaa-0bca8d9c6758 /mnt/data xfs defaults 1 2  
/dev/vgdata/lvdata /mnt/data ext4 defaults 1 2  
UUID=04f7c901-f4b9-4eb7-9f9d-99fffe729f21 /mnt/data xfs defaults 1 2
```

# Монтирование разделов с помощью /etc/fstab

```
root@localhost:~  
[root@localhost ~]# mkdir -p /mnt/data  
[root@localhost ~]# blkid  
/dev/mapper/rl-swap: UUID="cabcca34-9967-4bb0-bdb7-3299002b939f" TYPE="swap"  
/dev/sdf1: PARTUUID="e70aa1ca-01"  
/dev/sdd1: PARTUUID="c0406718-01"  
/dev/sdb2: UUID="mSTNKB-opA1-VHKF-BZk5-oN7P-rjBN-2qMn8R" TYPE="LVM2_member" PARTUUID="3adbd53e-02"  
/dev/sdb1: UUID="d6Cjch-6ROH-svdN-EeMb-1kZb-CAHT-eYiuSA" 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/sdb2: UUID="FOFH8B-8IES-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 ~]# 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 ~]#
```