

fdisk

查看磁盘使用情况和磁盘分区

补充说明

fdisk命令 用于观察硬盘实体使用情况，也可对硬盘分区。它采用传统的问答式界面，而非类似DOS fdisk的cfdisk互动式操作界面，因此在使用上较为不便，但功能却丝毫不打折扣。

语法

```
fdisk(选项)(参数)
```

选项

-b <大小>	扇区大小(512、1024、2048或4096)
-c [=<模式>]	兼容模式□“dos”或“nondos”(默认)
-h	打印此帮助文本
-u [=<单位>]	显示单位□“cylinders”(柱面)或“sectors”(扇区，默认)
-v	打印程序版本
-C <数字>	指定柱面数
-H <数字>	指定磁头数
-S <数字>	指定每个磁道的扇区数

参数

设备文件：指定要进行分区或者显示分区的硬盘设备文件。

实例

首先选择要进行操作的磁盘：

```
[root@localhost ~]# fdisk /dev/sdb
```

输入m列出可以执行的命令：

```
command (m for help): m
Command action
  a  toggle a bootable flag
  b  edit bsd disklabel
  c  toggle the dos compatibility flag
  d  delete a partition
  l  list known partition types
  m  print this menu
  n  add a new partition
  o  create a new empty DOS partition table
  p  print the partition table
  q  quit without saving changes
  s  create a new empty Sun disklabel
  t  change a partition's system id
  u  change display/entry units
```

```
v   verify the partition table
w   write table to disk and exit
x   extra functionality (experts only)
```

输入p列出磁盘目前的分区情况：

```
Command (m for help): p
```

```
Disk /dev/sdb: 3221 MB, 3221225472 bytes
255 heads, 63 sectors/track, 391 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sdb1		1	1	8001	8e	Linux LVM
/dev/sdb2		2	26	200812+	83	Linux

输入d然后选择分区，删除现有分区：

```
Command (m for help): d
Partition number (1-4): 1
```

```
Command (m for help): d
Selected partition 2
```

查看分区情况，确认分区已经删除：

```
Command (m for help): print
```

```
Disk /dev/sdb: 3221 MB, 3221225472 bytes
255 heads, 63 sectors/track, 391 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
```

Device	Boot	Start	End	Blocks	Id	System
--------	------	-------	-----	--------	----	--------

```
Command (m for help):
```

输入n建立新的磁盘分区，首先建立两个主磁盘分区：

```
Command (m for help): n
```

```
Command action
```

```
  e   extended
```

```
  p   primary partition (1-4)
```

```
p    //建立主分区
```

```
Partition number (1-4): 1    //分区号
```

```
First cylinder (1-391, default 1):    //分区起始位置
```

```
Using default value 1
```

```
last cylinder or +size or +sizeM or +sizeK (1-391, default 391): 100    //分区
结束位置，单位为扇区
```

```
Command (m for help): n    //再建立一个分区
```

```
Command action
```

```

    e   extended
    p   primary partition (1-4)
p
Partition number (1-4): 2  //分区号为2
First cylinder (101-391, default 101):
Using default value 101
Last cylinder or +size or +sizeM or +sizeK (101-391, default 391): +200M  //
分区结束位置, 单位为M

```

确认分区建立成功：

```

Command (m for help): p

Disk /dev/sdb: 3221 MB, 3221225472 bytes
255 heads, 63 sectors/track, 391 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1            1          100       803218+   83   Linux
/dev/sdb2          101          125       200812+   83   Linux

```

再建立一个逻辑分区：

```

Command (m for help): n
Command action
    e   extended
    p   primary partition (1-4)
e  //选择扩展分区
Partition number (1-4): 3
First cylinder (126-391, default 126):
Using default value 126
Last cylinder or +size or +sizeM or +sizeK (126-391, default 391):
Using default value 391

```

确认扩展分区建立成功：

```

Command (m for help): p

Disk /dev/sdb: 3221 MB, 3221225472 bytes
255 heads, 63 sectors/track, 391 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1            1          100       803218+   83   Linux
/dev/sdb2          101          125       200812+   83   Linux
/dev/sdb3          126          391      2136645    5   Extended

```

在扩展分区上建立两个逻辑分区：

```

Command (m for help): n
Command action

```

```
l    logical (5 or over)
p    primary partition (1-4)
l //选择逻辑分区
First cylinder (126-391, default 126):
Using default value 126
Last cylinder or +size or +sizeM or +sizeK (126-391, default 391): +400M

Command (m for help): n
Command action
l    logical (5 or over)
p    primary partition (1-4)
l
First cylinder (176-391, default 176):
Using default value 176
Last cylinder or +size or +sizeM or +sizeK (176-391, default 391):
Using default value 391
```

确认逻辑分区建立成功：

```
Command (m for help): p

Disk /dev/sdb: 3221 MB, 3221225472 bytes
255 heads, 63 sectors/track, 391 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1             1          100       803218+   83  Linux
/dev/sdb2          101          125       200812+   83  Linux
/dev/sdb3           126          391      2136645    5  Extended
/dev/sdb5           126          175       401593+   83  Linux
/dev/sdb6           176          391      1734988+   83  Linux

Command (m for help):
```

从上面的结果我们可以看到，在硬盘sdb我们建立了2个主分区[sdb1][sdb2]1个扩展分区[sdb3]2个逻辑分区[sdb5][sdb6]

注意：主分区和扩展分区的磁盘号位1-4，也就是说最多有4个主分区或者扩展分区，逻辑分区开始的磁盘号为5，因此在这个实验中试没有sdb4的。

最后对分区操作进行保存：

```
Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
```

建立好分区之后我们还需要对分区进行格式化才能在系统中使用磁盘。

在sdb1上建立ext2分区：

```
[root@localhost ~]# mkfs.ext2 /dev/sdb1
mke2fs 1.39 (29-May-2006)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
100576 inodes, 200804 blocks
10040 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=209715200
7 block groups
32768 blocks per group, 32768 fragments per group
14368 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840

Writing inode tables: done
Writing superblocks and filesystem accounting information: done

This filesystem will be automatically checked every 32 mounts or
180 days, whichever comes first.  Use tune2fs -c or -i to override.
```

在sdb6上建立ext3分区：

```
[root@localhost ~]# mkfs.ext3 /dev/sdb6
mke2fs 1.39 (29-May-2006)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
217280 inodes, 433747 blocks
21687 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=444596224
14 block groups
32768 blocks per group, 32768 fragments per group
15520 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912

Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

This filesystem will be automatically checked every 32 mounts or
180 days, whichever comes first.  Use tune2fs -c or -i to override.
[root@localhost ~]#
```

建立两个目录/oracle和/web，将新建好的两个分区挂载到系统：

```
[root@localhost ~]# mkdir /oracle
[root@localhost ~]# mkdir /web
[root@localhost ~]# mount /dev/sdb1 /oracle
[root@localhost ~]# mount /dev/sdb6 /web
```

查看分区挂载情况：

```
[root@localhost ~]# df -h
文件系统      容量 已用 可用 已用% 挂载点
/dev/mapper/VolGroup00-LogVol00
                6.7G  2.8G  3.6G   44% /
/dev/sda1        99M   12M   82M   13% /boot
tmpfs            125M    0   125M    0% /dev/shm
/dev/sdb1        773M  808K   733M    1% /oracle
/dev/sdb6        1.7G   35M   1.6G    3% /web
```

如果需要每次开机自动挂载则需要修改/etc/fstab文件，加入两行配置：

```
[root@localhost ~]# vim /etc/fstab

/dev/VolGroup00/LogVol00 /                ext3    defaults        1 1
LABEL=/boot             /boot      ext3    defaults        1 2
tmpfs                    /dev/shm   tmpfs    defaults        0 0
devpts                   /dev/pts   devpts   gid=5,mode=620  0 0
sysfs                    /sys       sysfs    defaults        0 0
proc                    /proc      proc     defaults        0 0
/dev/VolGroup00/LogVol01 swap              swap     defaults        0 0
/dev/sdb1                /oracle    ext2     defaults        0 0
/dev/sdb6                /web       ext3     defaults        0 0
```

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