Mounting Filesystems

coursera.org/learn/linux-tools-for-developers/supplement/jcCxU/mounting-filesystems

In UNIX-like operating systems, all files are arranged in one big filesystem tree rooted at /. Many different partitions on many different devices may be coalesced together by mounting partitions on various mount points, or directories in the tree.

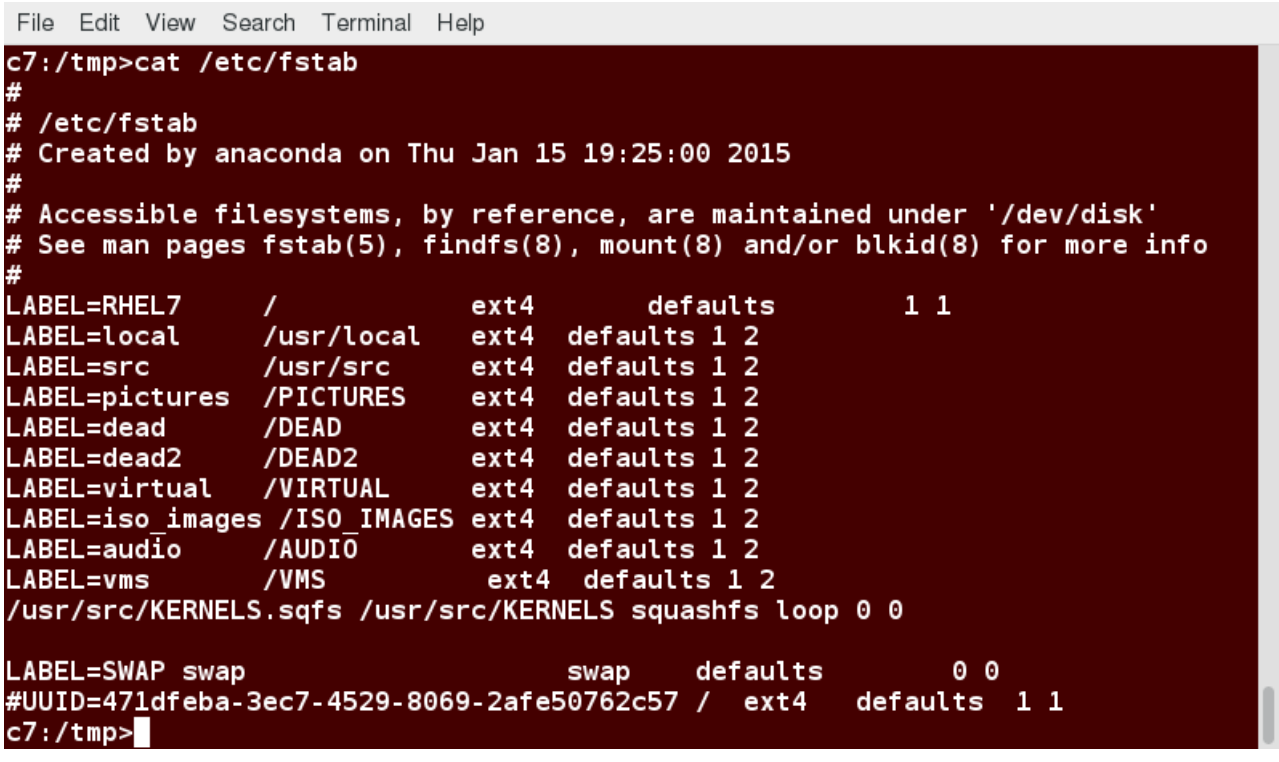
The full form of the **mount** command is:

```
$ sudo mount [-t type] [-o options] device dir
```

In most cases, the filesystem type can be deduced automatically from the first few bytes of the partition, and default options can be used, so it can be as simple as:

```
$ sudo mount /dev/sda8 /usr/local
```

Most filesystems need to be loaded at boot and the information required to specify mount points, options, devices, etc., is specified in **/etc/fstab**:



Note that in this example, most of the filesystems are mounted by **label**; it is also possible to mount by device name or **UUID**; the following are all equivalent:

```
$ sudo mount /dev/sda2   /boot

$ sudo mount LABEL=boot  /boot

$ sudo mount    -L boot  /boot

$ sudo mount UUID=26d58ee2-9d20-4dc7-b6ab-aa87c3cfb69a /boot

$ sudo mount   -U 26d58ee2-9d20-4dc7-b6ab-aa87c3cfb69a /boot
```

The list of currently mounted filesystems can be seen with:

```
$ sudo mount

/dev/sda5 on / type ext3 (rw)

proc on /proc type proc (rw)

sysfs on /sys type sysfs (rw)

devpts on /dev/pts type devpts (rw,gid=5,mode=620)

/dev/sda6 on /RHEL6-32 type ext3 (rw)

/dev/mapper/VGN-local on /usr/local type ext4 (rw)

/dev/mapper/VGN-tmp on /tmp type ext4 (rw)

/dev/mapper/VGN-src on /usr/src type ext4 (rw)

/dev/mapper/VGN-virtual on /VIRTUAL type ext4 (rw)

/dev/mapper/VGN-beagle on /BEAGLE type ext4 (rw)

tmpfs on /dev/shm type tmpfs (rw)

debugfs on /sys/kernel/debug type debugfs (rw)

/dev/sda1 on /c type fuseblk (rw,allow_other,default_permissions,blksize=4096)

/usr/local/teaching/FTP/LFT on /var/ftp/pub2 type none (rw,bind)

/ISO_IMAGES/CENTOS/CentOS-5.5-x86_64-bin-DVD-1of2.iso on /var/ftp/pub

                        type iso9660 (rw,loop=/dev/loop0)

sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw)

/dev/sda2 on /boot type ext3 (rw)
```

If a directory is used as a mount point, its previous contents are hidden under the newly mounted filesystem. A given partition can be mounted in more than one place and changes are effective in all locations.

You can also mount NFS (Network File Systems) as in:

```
$ sudo mount 192.168.1.100:/var/ftp/pub /mnt
```