

Re: having trouble mounting disk image on loopback device

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- *From:* Douglas Mayne <doug@xxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Mon, 10 Jul 2006 07:46:23 -0600
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On Sun, 09 Jul 2006 23:30:17 -0700, iforone wrote:

Douglas Mayne wrote:

On Sun, 09 Jul 2006 18:13:42 -0700, jasonmbowen wrote:

Here is the output I'm getting when trying to mount a disk image created by dd that has been associate with /dev/loop0

```
root@ubuntu:~# losetup -d /dev/loop0
root@ubuntu:~# losetup /dev/loop0 ./hdd.dd
root@ubuntu:~# fdisk -l /dev/loop0
```

```
Disk /dev/loop0: 4303 MB, 4303290368 bytes
255 heads, 63 sectors/track, 523 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
```

```
Device Boot Start End Blocks Id System
/dev/loop0p1 1 280 2249068+ 83 Linux
/dev/loop0p2 281 523 1951897+ b W95 FAT32
root@ubuntu:~# mount -r -t ext3 /dev/loop1 /mnt/ext3
```

FWIW, the syntax isn't the same as /etc/fstab reads
Not sure if you did that just to 'distinguish' between the 2 for us...

```
mount: wrong fs type, bad option, bad superblock on
/dev/loop1,
missing codepage or other error
(could this be the IDE device where you in fact use
ide-scsi so that sr0 or sda or so is needed?)
In some cases useful info is found in syslog - try
dmesg | tail or so
```

Re: having trouble mounting disk image on loopback device

I have another image created with dd that I got off a DVD that came with the book I'm going through and I get the same problem with it.
I'm at a loss as to why this is happening.

Caveat: I have never tried this with a real disk, that is, starting with a dd image taken from a physical disk.

I agree with the other response that images of partitions are easily mountable using loopbacks. I think that an entire disk image is also possible, but it is more tricky. To do it, you need to use losetup using the offset option to indicate the start of each partition. This is a useful command for getting the correct values for the offset:

```
# fdisk -lu /dev/loop0
```

Normally, fdisk specifies cylinders, but the start sector is more useful in this case. To get the correct value multiply by 512 to get the byte offset.

To verify this could work, I setup a test file of 100M with two partitions, approximately 50M each. Here is the resulting partition table on the "loopback disk" that I tested:

```
# losetup /dev/loop0 test.file  
# fdisk -lu /dev/loop0
```

```
Disk /dev/loop0: 102 MB, 102400000 bytes  
255 heads, 63 sectors/track, 12 cylinders, total 200000 sectors  
Units = sectors of 1 * 512 = 512 bytes
```

```
Device Boot Start End Blocks Id System  
/dev/loop0p1 63 96389 48163+ 83 Linux  
/dev/loop0p2 96390 192779 48195 83 Linux
```

Therefore, to mount each partition, I used these commands:
losetup -o 32256 /dev/loop1 test.file

```
losetup -o 32256 /dev/loop1 test.file  
mount /dev/loop1 /mnt/vhda1
```

```
losetup -o 49351690 /dev/loop2 test.file
```

```
losetup -o 49351680 /dev/loop2 test.file  
mount /dev/loop2 /mnt/vhda2
```

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Final Notes:

Sectors on hard disks were originally addressed by CHS (cylinder, head, sector), but now LBA is used. LBA should be compatible with this method, but I am not positive. I'll watch this thread to see if this is refuted.

I assume these images could be used with VMWare as a "flat" disk.

—

Douglas Mayne

Hi Doug;

I think I learned a little while back that one "mounts" filesystems, (partitions, not devices) — hence if one device contains many *different* filesystem types (ext3, vfat, reiserfs), normally, one mount command will not suffice...For that matter, even if they are of the same FS type – I think)

Do I misunderstand ?

On a real hard disk, there are separate devices for partitions. In my way of thinking, devices are mounted. I think about it this way:

1. A device and and mount point are linked together by the mount command.
2. At a minimum, these conditions must be met for a mount command to succeed:
 - a. The device must exist
 - b. The mount point must exist
 - c. The device must contain a filesystem recognizable by the kernel.

There are other considerations (such as user permissions, etc.), but I think the above is the fundamental. It is also possible to write directly to the device without using a filesystem and without mounting it (raw I/O). But you are correct– when a device is mounted, it implies the a filesystem is being used, not raw I/O to the device, so it could be just a matter of how to visualize the work done by the mount command.

I believe your 'offset' option can be of use here, but not sure how to actually implement it...so

Regards

Re: having trouble mounting disk image on loopback device

I forgot to show the mount command after using losetup. I also made a typo for one of the offset values. I have fixed both errors above.

Other mount options can be specified for the filesystem, etc. can be used. The simple form usually works for me because mount can usually determine the filesystem type before mounting it.

--

Douglas Mayne

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