

Re: Windows multiboot (aaargh!)

Source: <http://linux.derkeiler.com/Mailing-Lists/Debian/2003-09/2372.html>

From: cr (cr_at_orcon.net.nz)

Date: 09/15/03

To: debian-user@lists.debian.org

Date: Mon, 15 Sep 2003 21:49:58 +1200

On Monday 15 September 2003 09:20, Pigeon wrote:

> On Sun, Sep 14, 2003 at 09:23:47PM +1200, cr wrote:

>> On Sunday 14 September 2003 12:39, Pigeon wrote:

>>> On Sat, Sep 13, 2003 at 04:33:22PM +1200, cr wrote:

>>

>> *It'd be nice to have a self-contained floppy with just the basic*

>> *componenets needed to boot a Linux system, so there's room to add a few*

>> *utilties of ones choice. I've done that with my DOS floppy. But*

>> *reading the HOWTOs, it seems that creating a Linux boot disk is a rather*

>> *more complex procedure.*

>

> *And the kernel takes up half the disk, so there's less space for the*

> *utils.*

Yes, quite, but I really only wanted to put cfdisk on it. Never mind.

Since I'm now only using fdisk as a means of hiding and unhiding partitions from DOS, I guess it should manage that okay.

> *CD-ROMs are easier, it seems (if the box can boot them) – I've even*

> *made a bootable Linux CD in Windoze – a mate was playing with his new*

> *Nero and wanted to try out the facility for making bootable CDs, so we*

> *fed it a Linux boot floppy to get its boot image from and it worked*

> *fine!*

>

>> *I guess the workaround is to use one of the pre-made disks like tomsrtbt,*

>> *and just put my own utilities on a floppy that I can mount afterwards.*

>> *At least, unlike DOS-booted-from-a-floppy, I imagine the Linux rescue*

>> *systems don't constantly nag you to "Insert disk with COMMAND.COM in*

>> *Drive A:" or whatever the Linux equivalent would be ;)*

>>

>> *Umm, just tried, with Leka's system running and a DOS floppy in the*

>> *drive. mount -t msdos /dev/fd0 /floppy*

>> *mounting /dev/fd0 on /floppy failed: no such device*

>> *But it's got a /dev/fd0 there, I checked. I'm probably forgetting*

>> *something important. Ah well, fdisk it is ;)*

>

> *My shot in the dark would be to wonder if, to save space, this floppy*

Debian-User: Re: Windows multiboot (aaargh!)

> uses an old/small version of mount that reports "no such device" where
> one would expect "mount point xxx does not exist", and there's no
> /floppy?

Thought of that. Made a /floppy. Still no change.

> > > For a boot floppy with cfdisk on it I use the resc1440.bin boot floppy
> > > image off the Debian Slink installation CD. Unlike the Woody boot
> > > image, it doesn't require a root filesystem supplied from another disk.
> >
> > I had a look on my various Linux CD's, and a look at Debian.org, but I
> > couldn't find it. OTOH I may have missed it. I'll try putting cfdisk
> > on a floppy and running it from that, after booting with a rescue disk.
>
> I'd have thought it'd be in the archives somewhere, but maybe you have
> to download the .iso and pull it out of that... I could always email
> you a copy. Would you object to receiving a 1.4 meg email?

I think it would clog my mailbox, actually. Thanks for the offer. But
the rescue disks I've got seem to do what I need for now.

>
> > > This is most unexpected... I grabbed a spare PC and HD from my latest
> > > dumpster-diving expedition and experimented. The HD was only 2 gig, so
> > > I reduced all the partition sizes by a third. Got the same result...
> > > FDISK showing partitions swapped, and the second partition starts
> > > "trying to recover allocation unit xxx" part way through where $x \geq$
> > > 25000 or so.
> >
> > Umm, but does this weird behaviour start at the same distance into the
> > physical drive, or the same distance into the second partition, or the
> > same percentage in?
>
> The same (more or less) number of allocation units into the second
> partition. Not that it really matters, I think; it's a symptom of DOS
> misbehaving, not the drive, and the important consideration seems to
> be whether it happens rather than the precise details of how it
> happens, unless we intend to hack DOS to cure it :-)

Agreed, entirely. Just note it as another bug in DOS.... :)

> > > Conclusion: DOS can't cope with the presence of non-DOS extended
> > > partitions. How dead and chewed.
> > >
> > > So it seems that the options are something like:
> > >
> > > - don't have a Linux partition on that drive at all
> > > - don't have your second DOS partition, so there can be room for the
> > > ext2 partition to be a primary partition
> > > - have two extended partitions, both DOS, and use umsdos in one of them
> >

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- > > *Let me see – umsdos (and support for it is in my kernel, I just checked)*
- > > *will allow long filenames to be used *and* DOS can still read it, is that*
- > > *right?*
- >
- > *That is my understanding, although I've never used it myself.*
- > *Presumably under DOS you see something like pairs of files, possibly*
- > *with odd names, with the data in one and the Linux attributes and long*
- > *name etc. in the other.*

Rather like CD's and Windows 95 et al, I imagine. Not that I'm very familiar with them.

- > > *I was intending to use the Linux partition as temporary space for mkisofs*
- > > *to put CD images for cdrecord to write to CD. It's handy to reserve a*
- > > *spare space of the right size that won't get imperceptibly filled up. I*
- > > *suppose the question now is whether mkisofs and cdrecord can work with*
- > > *umsdos. If not, no disaster, I'll just have to find 800MB somewhere else*
- > > *on the system.*
- >
- > *If that's all you're going to use it for, you might as well leave it*
- > *as FAT. I don't see any reason why that would interfere with cdrecord,*
- > *and if you're only ever going to have one large temporary file on*
- > *there the limitations of FAT don't really matter. Plus you could use*
- > *it for the same purpose in Windoze should the need arise.*

Yes, that has since occurred to me.

- >
- > > *I thought DOS could only handle partitions of up to ~500MB (512? 528?).*
- > > *I must be wrong, it happily formatted 600MB, at least for partition 3.*
- >
- > *That's a BIOS limit to do with old BIOSes that don't do CHS*
- > *translation [properly]. DOS's limits are at 2 gigs for a partition and*
- > *8 gigs for a drive.*

OK. Right. For once, DOS is innocent :)

- > > *But anyway, this is the revised scheme:*
- > > *1 Pri DOS 500MB Bootable DOS6.22*
- > > *2 Pri DOS 600MB W95*
- > > *3 Pri DOS 600MB W98*
- > > *4 Extended 5 DOS 500MB*
- > > *6 DOS 800MB*
- > >
- > > *I'll see how it goes.*
- > >
- > > *3 may get converted to FAT32 later.*
- >
- > *Should go OK, I'd think... that worked OK for me.*

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Well, DOS created and formatted all those quite happily, which seems to confirm the theory that a non-DOS partition in the extended partition causes DOS to suffer strange errors.

Not only DOS has glitches... I just tried (for the first time) booting off the hard drive rather than floppy, and now I remember I had GRUB on it when it was a Linux drive... so GRUB's still in the MBR. Since the rest of the disk has gone, GRUB promptly stalls when trying to load Stage 1.5...

I guess I need to take GRUB off the MBR so it'll boot DOS so I can carry on with the install (makes a dive for the GRUB HOWTOs....)

> > > *It also seems I'd misremembered how the drive letters get allocated;
> > > as you found out, the bootable primary partition is C:, the extended
> > > DOS partition(s) come next and after them the other primary DOS
> > > partitions.*
> >
> > *Does that sound like it spells 'kludge' ? ;)*
> > *There's actually a file in the Microsoft Knowledge Base that explains how
> > letters are assigned... if you have multi drives and multi partitions
> > it gets fiendishly complicated.*
>
> *Yeah. I remember bits of it that I've learnt by experience... I've had
> a Windoze system with a spare drive in it just to create/delete dummy
> partitions on so I can keep the important drive letters where I want
> them.*

I guess the trick is just to keep in mind, when setting DOS/Win paths, that swapping drives round can upset them.

cr

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