

Re: FIXMBR redux

Source:

<http://www.tech-archive.net/Archive/WinXP/microsoft.public.windowsxp.basics/2004-06/0360.html>

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Michael Solomon (MS-MVP Windows Shell/User) said in
news:OFO3iJCSEHA.1160@TK2MSFTNGP09.phx.gbl:

> *I need to understand what you've stated as I have Drive Image 2002 as
> well.*
>
> *If Drive Image 2002 doesn't include the contents of the MBR, would
> that not make image restoration useless as it would not produce a
> bootable drive? Since I've used Drive Image 2002 through several
> betas wherein I deleted my system partition and restored the image
> created with Drive Image and had a bootable system upon completion of
> the restore process, I'd like to know how that is possible. In fact,
> as a part of the DI 2002 restore routine, you must first delete the
> partition.*

As an example, at one time I used to use BootMagic to multiboot between Windows 98 and Windows NT4 (later replaced with a fresh install of Windows 2000). When I restored the disk image saved onto CD-R on a new hard drive, I had problems. Don't remember if it was because the MBR had not yet been written or if because it was the standard bootstrap code. In any case, the replacement MBR bootstrap code from BootMagic was not there. However, as part of using BootMagic, it lets you create a recovery floppy where it stores the old MBR (which wasn't really useful). What you do to recover is use FDISK to make the partition active that contains the install of BootMagic (which requires installation on a non-NTFS partition) where you can run it to again replace the standard MBR bootstrap program with BootMagic's. If I had use mbrutil to save the MBR along with my image files then I could've booted using a DOS-bootable floppy and ran mbrutil from there to restore a saved copy of the MBR that previously contained the BootMagic bootstrap program. Because BootMagic installs only in a non-NTFS partition (mine was FAT32 for the Windows 98 partition), and because I could use FDISK to make that partition active to run BootMagic from there to rewrite the MBR bootstrap code, or by using BootMagic's rescue diskette, I was able to get the MBR back the way it was. I don't remember if I had to run FDISK /MBR at that time but suspect that I did to start the boot process (to get the FAT32 partition booted).

FDISK /MBR or FIXMBR usually work okay or well enough to get you started along the path to recovery, but it can cause problems. If you are infected with a boot sector virus, it may move the partition tables within the MBR area. FDISK /MBR and FIXMBR only know how to overwrite the 460-byte bootstrap code area of the MBR and where to expect the partition table to begin, so if the partition table got moved then the standard bootstrap code won't know where to find the partition table. So using FDISK /MBR or FIXMBR is not always a fix for what ails ya.

But there is also a danger in backing up the MBR. This backup probably includes all of sector 0 instead of just the first 460 bytes for the bootstrap code. That means the backup includes a copy of your partition table at that time. If you later resize, move, or otherwise change your partitions, the copy saved in your backup copy of the MBR won't be correct anymore. So you restoring the MBR will overwrite the partition table which will probably result in none of your partitions being accessible anymore. The mbrutil from Powerquest appears to save all of sector 0 in an MBR backup (and obviously all of sector 0 in a track 0 backup). The only option I see is to let it restore ALL of sector 0 (or track 0). So you really don't want to just do an MBR backup when you create disk (er, partition) images but you want to maintain a separate MBR backup floppy where you save the MBR anytime you have something usurp the bootstrap code OR change your partition table.

I think the MBRtool lets you write only to the bootstrap code area of the MBR but I also think it only writes the standard bootstrap code and not the bootstrap code from your backup copy of the MBR. Admittedly I am not familiar with MBRtool (got it but haven't used it yet) so one of its many options or features described at http://www.diydatarecovery.nl/~tkuurstra/MBRtool_manual.htm might actually let you restore just the first 460 bytes of the MBR in order to restore just the original bootstrap program. I just use Powerquest's mbrutil anytime something overwrites the bootstrap code (like a disk overlay manager, Goback, multiboot managers, security products, etc.) or when the partition table changes (resize, move, delete, add, or whatever). Since you can filename for the backup output, you can save multiple copies and give a descriptive name to clue you in as to what was different about the MBR and why you backed it up, or put it into its own folder and add a descriptive .txt file.