

## No. 89. The Windows 98 Startup Disk

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Last month's column introduced the concept of a bootable CD-ROM disk, and I mentioned that you needed to create a startup **floppy** disk before you could prepare a bootable CD-ROM. This month we will explore why you need that floppy and how to prepare it, even if you do not intend to prepare bootable CD-ROMs. Furthermore, I will provide you with a few hints on how to do some things that are not covered in the Windows literature. We will assume you are using the upgraded Windows program that Microsoft should have given to its customers free – Windows 98. They should have given it to us free because it is mainly an upgrade to correct bugs in Windows 95, rather than being anything really new. However, that is a different soapbox topic.

What exactly is a Win98 Startup Disk? It is nothing more than a bootable disk that will let you access your computer system when the usual methods fail. It is intended to get your machine going in case the files on the hard drive have become so corrupted or infected with a virus that your machine will not start. It contains those files necessary to boot your machine to DOS 7, the DOS version that underlies both Win95 and 98. In DOS days, we called the Startup Disk a Boot Disk, System Disk or Rescue Disk.

If you do find yourself in the position of having a system that will not start properly, a Startup Disk is an absolute necessity. It will enable you to recover from your predicament. No one should be without one. It is an item you should prepare and hope you never need to use it.

To make a standard Win98 Startup Disk, you will need a 1.44 Mb floppy as well as your Win98 CD-ROM. Click **Start, Settings, Control Panel, Add/Remove Programs** and click the **Startup Disk** tab. Click the **Create Disk** button. Windows will want the Win98 CD-ROM in the CD-ROM drive and a floppy in the A: drive. Most of the time will be spent formatting the floppy, with less time devoted to copying files to it from the CD-ROM. When the process is finished, the A: drive light will go out and the Startup Disk has been created. Close all windows and remove the floppy long enough to label it. Put it back in the A: drive so that you can examine it with Explorer, or better yet, from an MS-DOS Prompt.

The finished floppy contains 24 files, listed below, although you may see only 21. Three files are hidden from your view, unless you have instructed Windows to show all files. Furthermore, the extensions (.SYS, .CAB, .EXE and the like) may not show if you have not instructed Win to

*ASPI2DOS.SYS	COMMAND.COM	*FLASHPT.SYS
*ASPI4DOS.SYS	CONFIG.SYS	HIMEM.SYS
*ASPI8DOS.SYS	DRVSPACE.BIN	<b>IO.SYS</b>
*ASPI8U2.SYS	EBD.CAB	<b>MSDOS.SYS</b>
*ASPICD.SYS	<b>EBD.SYS</b>	*OAKCDROM.SYS
AUTOEXEC.BAT	EXTRACT.EXE	RAMDRIVE.SYS
*BTCDROM.SYS	FDISK.EXE	README.TXT
*BTDOSM.SYS	FINDRAMD.EXE	SETRAMD.BAT

Files shown in boldface are hidden. \* Indicates CD-ROM driver

show extensions (you should!). IO.SYS is the kingpin – the only file that actually boots the system. Fully nine of the remaining files are device drivers (\* in the table) for various brands and models of CD-ROM drives. Probably over 95% of all CD-ROM drives on the market today can be set up by one of these nine files. Most important, the files set up the drive for use right from DOS.

You do not need to enter Windows to read data from a CD with this startup disk, which is a valuable feature, indeed.

So what else does this disk do? Notice the file that has a .CAB extension. That is just like a ZIP file – it contains a dozen files within it. The list is shown below:

ATTRIB.EXE	HELP.BAT
CHKDSK.EXE	MSCDEX.EXE
DEBUG.EXE	RESTART.COM
EDIT.COM	SCANDISK.EXE
EXT.EXE	SCANDISK.INI
FORMAT.COM	SYS.COM

By the way, the EDIT.COM file is a sort of handy text editor. Unlike previous versions of EDIT.COM, this one is stand-alone and does not need QBASIC to be present. You might want to have that file around for other purposes. Toward that end, copy EBD.CAB and EXTRACT.EXE to an empty subdirectory on your hard drive. Then give the command EXTRACT\_EBD.CAB\_\*. (underscores represent spaces) and the files will be extracted. You can copy EDIT.COM to any floppy and have a nice text editor handy.

Well, how can all those files be available? If extracted from the .CAB file, they take up far too much space (almost 400,000 bytes) to exist on the Startup Disk, which only has 250,368 bytes of free space. Well, Microsoft has used an old technique to get by this problem. When booting from the Startup Disk, the AUTOEXEC.BAT and CONFIG.SYS files have been written to create a ramdrive. A ramdrive is a portion of memory that is set up to act exactly like a hard drive. The files set up a small (2-Mb) hard drive in memory and extract all the files in the cabinet (EBD.CAB) to it. It works like a charm, though you should realize that when the power is turned off, the ramdrive and all its contents go poof! Nevertheless, while the power is on, it works beautifully, and is MUCH faster than any physical hard drive since there are no mechanical parts that need to move. The drive letter of this pseudo-hard drive depends upon your system and its condition, but you can test it by booting with the Startup Disk and then looking for a new drive letter with the files listed above on it. On my system, which normally has a C:, D:, E: and F: plus two CD-ROM drives G: and H:, the ramdrive became new hard drive G:, pushing the CD-ROM drives to H: and I:. If a hard drive has completely failed, the ramdrive may well wind up as the C: drive.

There you have it. A Startup Disk that has all the tools you need to fix problems when they occur. I have not told you how to use all the tools, but that is the subject for a complete course in Troubleshooting and Repair. There are good books on the subject, though, and if you study them, you can fix many problems yourself. That will have to do for now, until someone comes out with an operating system that can diagnose and repair its own ills (that WILL happen in the future). Until then, Happy Computing!