

The number 7 is an interesting number. Over the ages, it has often been associated with magic and mysticism. This article is appropriately number 7 in the series because it deals with computer magic and a mystical property called virtual reality. Have you heard that term lately? Virtual reality describes a new area in which computer generated images mimic reality. The images turn as you turn, get closer as if you were approaching them, recede as if you were moving away from them, and so on. Just like reality but not real. Virtually real.

Well, this time, we are going to create a virtual disk. For all practical purposes, it acts just like any old garden-variety floppy disk drive. You can copy files to it or from it, or even run programs on it. But it is a virtual disk and doesn't really exist as a physical entity. You can't take the floppy out of it, you can't format a floppy in it, and you can't even do a DISKCOPY of it. Nevertheless, it is one of the most useful tools you can possess, even if you can't see it or get your hands on it!

Let me reflect at the outset that this is not one of those offbeat tools used only by a computer guru, after ferreting out information buried back in the pages of some dusty, little used technical manual. This tool is as basic as a wrench. When hard drives were so expensive that they were out of my reach - even at work - I did ALL of my work every day on a virtual drive. True, I copied my completed work to floppies, and I loaded files needing modification from floppies to my virtual drive, but 100% of my actual work activity was done on a drive that I could not touch or feel or see. My ex-boss, who recently moved to South Carolina, still uses a virtual drive he creates every day by booting with a disk I prepared for him. I tried to buy a hard drive for his computer a couple of years ago, but he wouldn't hear of it. His virtual drive meets all of his word processing needs.

We start with the same scenario as in the last article - you have purchased an XT laptop with 640k of memory but only one 360k, 5-1/4 inch drive. At \$35, it was a steal! You learned how to make image copies of entire disks last time using DISKCOPY.COM. Lets now fiddle with the CONFIG.SYS file on your boot disk to make that magical drive. (If you haven't already done so, now is the time to make an image copy of your original boot disk - then put away the original for safety). We must assume that you have a file on the boot disk named RAMDRIVE.SYS if you are using MS-DOS, or VDISK.SYS if you are using IBM-DOS. Using any ASCII editor, add the following line to your boot disk's CONFIG.SYS file:

```
DEVICE=RAMDRIVE.SYS (or DEVICE=VDISK.SYS for IBM-DOS)
```

Now save the file, and reboot.

Voile! You probably saw the notification flash by on your screen. You now have a C drive with 64k of space!

When RAMDRIVE.SYS is invoked as shown above during the boot process, it instructs DOS to create a drive using the next unused letter (C is the next unused letter, because DOS reserves both A and B for floppy drives, even if you have only a single drive). DOS then sets aside 64k (65,536 bytes) of the 640k CONVENTIONAL memory for use by C. Go ahead, log onto it. Type C: <ENTER>. If the prompt is correctly configured in your AUTOEXEC.BAT file (it should say PROMPT=\$p\$g), DOS will happily echo C:\> on your screen. Try copying a file to it. While logged onto C, type:

```
COPY A: CONFIG.SYS C:
```

Now do a DIR. You will see a copy of the file CONFIG.SYS happily residing on the C drive. How about that! You can just as easily copy files from the virtual drive to floppies.

Now, lets make maximum possible use of the virtual drive. First, lets increase its size a bit. Change the line you typed in your CONFIG.SYS file (on the floppy in A) to read as follows:

```
DEVICE=RAMDRIVE.SYS 128
```

Previously, you told DOS to set up a single virtual drive (Ramdrive), but you did not tell DOS how large you wanted it to be, so DOS assumed you wanted a 64k drive. This time, you have specified its size - 128k. You can make it even larger, but BE CAREFUL. Whatever you set aside for the virtual drive is subtracted from the 640k of DOS memory. Don't even think of making a virtual drive much larger than about 240k, or there may not be enough memory left to run even the smallest program!

Now, for maximum usefulness, you need to modify your AUTOEXEC.BAT file as well. Again, use any ASCII editor. Type the following lines (carefully) at the end of the file:

```
COPY COMMAND.COM C:
SET COMSPEC=C:\COMMAND.COM
```

Here is what the lines do. The first line copies the all-important COMMAND.COM file to the virtual drive. In a nutshell, COMMAND.COM is the traffic cop on the street by the stadium after the game. If he is doing his job, the stadium traffic will clear within a reasonable time. Without him, bedlam. Without COMMAND.COM, your system will hang and a reboot will be the only cure. So, just like the song says, You Gotta Have COMMAND.COM.

Having it is one thing, finding it is another. The job of the second line is to tell DOS where COMMAND.COM resides - on the virtual drive (C), and whenever it is needed, DOS should look for it there. Rest assured that DOS will look for it; parts of COMMAND.COM are loaded from disk more than just once during a computing session. For example, the internal command DIR is responded to by COMMAND.COM, as are COPY, DEL, REN, and a host of others.

There you have it. With these commands in your CONFIG.SYS and AUTOEXEC.BAT files, you can boot your machine, take out the boot disk and put it away, and copy files to your hearts content. Control has transferred from your boot disk to the virtual drive, C. About 48k of the 128k of space on C are occupied by COMMAND.COM, but the rest is yours to use, as you like. For example, you could copy FORMAT.COM (about 33k in DOS 5) from any floppy to C, then log on to C, then give the DOS 5 command FORMAT A:/U to format one or 100 disks in the A drive. My boss's boot disk shoves a complete copy of WordStar onto the virtual drive, along with COMMAND.COM, freeing up both his floppy drives for use as data disks.

So, if you are going to use that "one-lung" machine for packet, fine! Create your own YAPP boot disk that shoves COMMAND.COM and all of the YAPP files onto a virtual drive. I promise you - there is enough memory in a 640k computer to do it - YAPP only takes about 140k of memory when running.

WARNING! Again, a caveat. When the power goes off, the magic disk disappears. Total and irrevocable amnesia. Copy anything new that you want to save to a floppy before you hit that switch, or it is lost forever, with absolutely no hope of recovery. On the other hand, here is an added value. Nothing, not even the fastest hard drive, is faster than a virtual drive (also called a RAM drive). No moving parts - just electrons. The blinding speed will quickly spoil you. 73 for #7!