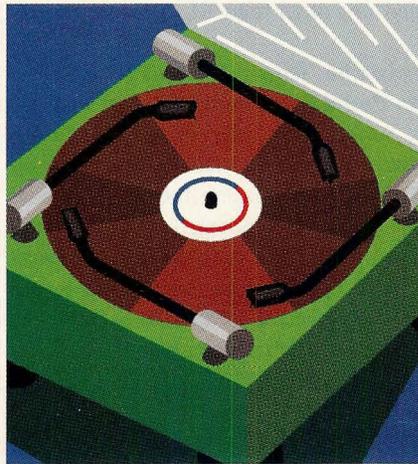# Windows NT

By Douglas A. Hamilton

Make Your System Sing With 4 Operating Systems

YOU CAN INSTALL NT on the same system as DOS, OS/2 1.3 and OS/2 2.0 using OS/2's Boot Manager to choose which system starts up. If you'd like to do so, follow these steps; they should save you about 30 hours of groping in the dark.

I'm not specifying the *only* way to make things work, merely the only way I know about. If things go wrong in the install, it's easy to find yourself staring at a message telling you something like: "DosPathToArcPath reported the following error...," but it's not so easy to figure out what to do next. Lots of things seem to interact, and it wouldn't surprise me if there might be lots of one-off variations on these rules that could also work. The point is, I didn't try every combination. With roughly an hour per attempt, it just *felt* like I had.

Point #1: Use the Graphical Install

There are two basic strategies for installing NT. One is the so-called graphical install and the second is a manual method involving copying the NT distribution tree onto your hard disk, editing the REGISTRY.INI file and going through the triple-boot sequence, whereby the system reboots three times as it builds all its security structures and so on.

Don't use the manual method unless you positively cannot get the graphical install to work. The manual method does not give you any way to set up printers or networks, or any automatic way of trimming out drivers and other fluff you don't need. Since NT is already a big system with a big appetite for RAM, the last thing you need is a bunch of drivers that don't even go with your hardware loaded into precious non-pageable memory.

Also, the manual method seems unreliable. I understand and appreciate that it is more or less what the Microsoft developers are using on their own machines, so there must be a way to make it work. However, on my machine, although the installation seemed to go OK and the system seemed to come up correctly, it was, in fact, broken. For example, opening the command window and typing set | more would hang the window. Based on other experiments, it appeared that critical sections were broken, as if I had half a system built with one variation on the critical section structure and half built another way. Everything seemed to work except for critical sections.

Point #2. Put NT in the First Physical Partition

The release notes tell you this, and they're not kidding. If you have Boot Manager at the start of the drive, or another (hidden) C: partition ahead of the one you're trying to install into, it won't work.

Point #3. OS/2 Boot Manager After NT

I found that if Boot Manager is on the drive (even at the end of the physical volume), install hangs with no warning during the scan it makes of your drives and you have to reach for the BRS.

The trick to getting NT to work with Boot Manager is to put BM on there after you've already done a successful install.

Point #4. Don't Try to Install NT and OS/2 into the Same Partition

I wasted a lot of time installing OS/2 1.3 into a C: partition, installing NT on top of it and then putting Boot Manager back onto the drive. I couldn't make it work. You get the initial greeting from NT's Portable Bootloader, but it does not give its usual menu for selecting NT versus whatever was previously on that partition. It just tries to load NT and then fails. Removing BM made it work again, but, of course, that defeated the purpose.

If you want to use BM, you can put NT and DOS into the same primary partition (installing DOS, then NT), but not NT and OS/2 1.3.

Point #5. Don't Format the Partition with the NT Install Program

My experience was that, even when I specified a FAT format, the partition was not readable from OS/2, and even DOS 5.0 had problems, reporting a garbled partition size. Format the partition first with DOS or OS/2 if you want it readable by anything other than NT.

Point #6. Don't Try to Put NT or its Pagefile onto Anything but C:

Subtle point here: NT always, always, always has to be installed on C:, but you do get options during the install (if you ask for the custom install) to place all the files that go with it (including the pagefile) on other drives. If you want to use Boot Manager, don't do that.

When you're setting up the initial partition for NT, be sure to make it large enough (say 50MB or so) to hold all of NT plus the pagefile. After you have everything (all the other operating systems and BM) installed, you can move the pagefile by using regedit. To get started, though, everything must be on C:.

Point #7. Don't Try Installing if You Have More Than One C: Partition

The OS/2 2.0 FDISK program lets you create multiple primary C: partitions on the same drive, making just one visible at a time. Don't do that until you have already installed NT.
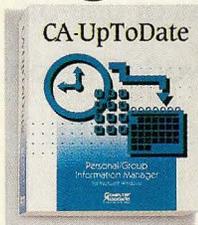
Point #8. Don't Try Installing if You Have Any FAT or Unformatted Partitions That Come After Any HPFS Partitions

I was repartitioning like crazy for NT anyway, I decided to do some other cleanup and get rid of several smaller partitions on which I had various beta
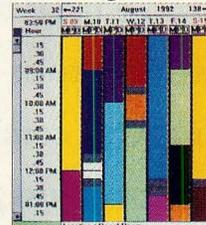
versions of OS/2 2.0. All of them were at the end of the extended partition on my third drive, so I collapsed them into one logical partition but left it unformatted.

I'd go all the way through the entire install process setting up printers and so on and then it would give me a noncritical error claiming that "External library procedure DosPathToArcPath reported the following error: Error reading object directory." You have a choice of whether to continue or simply admit right then and there that you're hosed. Trust me: You're hosed.

It occurred to me that the problem might be because that partition was unformatted, so I booted up the OS/2 install disk and tried formatting. However, it's difficult to get OS/2 to do an HPFS format from the install disk, so I did a FAT format, which produced that same DosPathToArcPath error.

What finally clued me in was booting DOS and using its FDISK to look at my partitions. Although DOS seemed to work OK with that partition arrangement, I noticed that FDISK was claiming I had two G: partitions, one an HPFS partition that it could not read and the second, the FAT partition. Going back to the OS/2 install disk and simply deleting the partition (leaving it as free space) worked.

The bottom line: If you have lots of partitions, be sure that any FAT or unformatted partitions come before any HPFS partitions—otherwise the install will not work.

Summary: Here's What to Do

1. Repartition as necessary to create a 50MB-plus primary C: partition for NT (or DOS plus NT) at the very start of your boot drive.

2. Be sure Boot Manager is nowhere on your system, that there are no other primary partitions on that boot drive and that there are no FAT or unformatted partitions after any HPFS partitions anywhere on your system. We're talking plain vanilla here.

3. Format the C: partition with DOS 5.0 and install DOS.

4. Install NT using the graphical install, putting everything on C:.

5. Boot the OS/2 2.0 install disk and hit Esc to get to the prompt, from which you can use FDISK to create partitions for OS/2 1.3, 2.0 and Boot Manager.

6. Install 1.3 and 2.0 normally.

When you're all done, you'll have a system that will have Boot Manager come up with a menu for choosing NT, 1.3 or 2.0. If you choose NT, you'll then get the NT Portable Bootloader, giving you a choice between DOS and NT. (Actually, the choice will be between NT and the previous OS; fix the message by editing the BOOT.INI file.) ∎
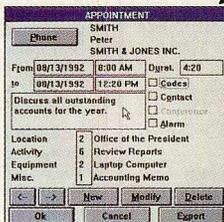

Douglas Hamilton is president of Hamilton Laboratories (Wayland, Mass.) and author of the Hamilton C Shell, an advanced interactive command processor and tools package for OS/2. Reach Douglas on WIX as hamilton or care of the Editor at the address on page 10.