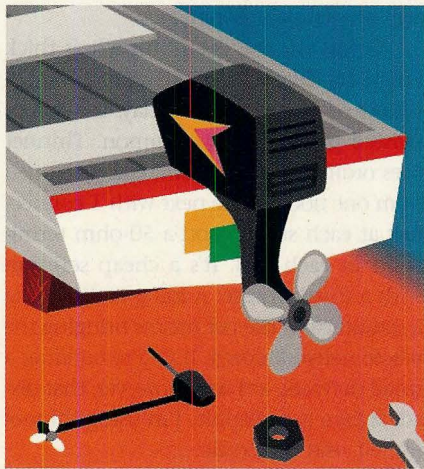


How Much Power Keeps NT Afloat?

TO LISTEN to some of the detractors out there, you'd think you'd need something built from gallium arsenide running at about a gigahertz, coupled with the total RAM chip output of Japan for the calendar year 1992, to run Windows NT.

Not true! Take me, for example. I've been doing development work on NT for a year now using a 16MHz 386 with 12MB of memory. This configuration works just fine, thank you.

Admittedly, a faster processor and more memory would help, and I've begun to think in terms of upgrading to a fast 486 with perhaps 32MB of RAM. But I want to make it clear that the reason is not because it takes that to run NT but rather because: (1) that kind of hardware is becoming affordable; (2) if you have it, NT knows how to put it to good use; and (3) I've become spoiled by a lightning-fast DEC Alpha machine I've had occasion to use recently. Once you find out how much



more productive NT can make you on a really fast machine, it's hard to go back.

So if you're asking what it really takes to run NT, my answer is that it depends on what you want: If you just want to get going with NT and try it out, you don't need much more than many of you already have. I wouldn't try getting by with less than 12MB of memory, but that'd be my only real proviso.

But let's face it: It's fun to dream about fancy hardware, and, sometimes, one of the best things about a new operating system is the excuse it gives to splurge. You might not actually *need* that new motherboard or larger memory module, but, if NT isn't a good excuse, what is?

If NT is your excuse for buying a new system or maybe just a new motherboard, think in terms of a 486/33 or better. Sixteen megabytes of memory is pretty adequate, even for demanding work, but you'd do well to order a configuration in which not every SIMM slot is filled; with the price of memory still falling, you might want to go to 32MB in a year or two, and it is wasteful to have to throw out low-capacity modules to make room for high-capacity ones.

If you have an aging PS/2, there haven't been too many options for upgrading until recently. You couldn't just turn to the ads in one of the trade weeklies and order a new motherboard. (AOX did offer a Micro Channel bus master with a 486, but the cost always seemed too high.) But now, a couple of new choices are available.

For the budget-minded, Cyrix will be offering a clock-doubled i486 clone in a 386-pin-configuration chip; its current product is a daughtercard. Another, possibly better option is from Reply Corp., (408) 942-4804, which has introduced a

series of drop-in replacement motherboards for PS/2s; the cards are actually manufactured by IBM.

Shopping spree #1: CD-ROM

You need access to a CD-ROM drive to install NT, but it does not have to be directly connected to your PC. It can be accessed over a network; installing NT is then done using a DOS .BAT file, rather than by using the boot diskette.

If you haven't bought a CD-ROM drive, Windows NT is a great excuse. Anyone who's gone through any major installation from diskettes will appreciate how wonderful it is to install from CD instead: No diskette swapping, much faster data transfer—in short, a much easier process. And once you've got a CD-ROM drive, the world opens up to all the CD-ROM products that are beginning to appear, such as Microsoft Bookshelf; Compton's Interactive Encyclopedia; and, my favorites, all the low-cost CDs from Walnut Creek CD-ROM, (800) 786-9907 or (510) 947-5996.

When choosing a CD-ROM drive, there are a couple things to consider. First, don't fool around with one of those older proprietary interface units that you might see advertised in mail-order fliers—get a SCSI drive. Second, be aware that there are some new features appearing in the latest generation of drives.

One such feature is support for multi-session recordings, otherwise known as Photo CD. If you try to read a Photo CD on an older drive, you'll see only the first set of pictures, not everything on the CD. I'm not that excited yet about Photo CD. Toshiba and other manufacturers are offering ROM upgrades to their older drives in case you decide down the road that you want this feature.

A more interesting feature is double-speed data transfer. This doubles the data rate by doubling the rotation speed when reading data; on audio tracks, the drive settles back to the standard rate. That's a nice feature, particularly since it's transparent to the software. There are no upgrade options for this feature.

Spree #2: Networking

For many of you, NT may be the first time you really get serious about networking—as it was for me. Since networking is

bundled into NT and installs effortlessly with the rest of the system, it's definitely worth trying out. If you've previously depended on a sneaker net (exchanging diskettes), you'll find the way networking makes files on a remote machine appear local almost magical.

Except in some true-blue IBM shops, where Token Ring is used, the natural choice is Ethernet, but you'll still have decisions to make. Ethernet comes in three varieties: thick (10Base5), thin (10Base2) and twisted pair (10BaseT).

Almost no one is still installing thick Ethernet—that's the kind with the thick yellow or orange cable. Today, thinnet or twisted pair are most common. Thinnet uses ordinary coaxial cable daisy-chained from one node to the next with T connectors at each station and a 50-ohm terminator at each end. It's a cheap solution with a disadvantage: Adding or removing a station from the net means bringing the whole network down. If you're building a small network, as I was, however, that disadvantage is negligible. I'm using thinnet myself, and it's terrific.

The other choice is twisted pair. This uses ordinary telephone wire to carry the signals with star-configuration hubs joining the workstations together. Large companies love twisted pair because they can use the existing wiring in their buildings and because they can reconfigure their networks without bringing them down. The disadvantage is the cost of the hubs: Figure on several hundred dollars for a unit capable of talking to six or eight workstations.

If you have a Micro Channel or EISA machine, you may be tempted to consider a 32-bit network card. That's probably overkill except for servers or fast machines from which you really expect to pound on the network. My advice is to stick with a 16-bit card and buy your sweetheart a good dinner with the money you save.

Most network cards these days come with a thick AUI Ethernet connector and either a thinnet or a twisted-pair connector. If yours came only with a thick connector (a DB-15), you'll also need a media access unit, or MAU. My own Olivetti Mips machine came only with a thick connector, so I went with a MAU from IMC Networks, (714) 724-1070. Another

company offering similar products is Milan Technology, (408) 752-2770.

When you install NT, you'll be given choices of several different software protocols to be used with your Ethernet. If all your stations are running NT or Windows for Workgroups or LAN Manager on DOS or OS/2, the natural choice is the default NetBIOS on NetBEUI. If you're connecting to some UNIX machines, you might choose TCP/IP instead, though you may find the network administration to be more involved.

Spree #3: Hard disks

If NT is the excuse you've been waiting for to add a hard disk, SCSI is clearly the way to go. A few years ago, a common complaint was that SCSI was a standard that wasn't: Every vendor seemed to have its own idea of what SCSI meant. Today, things are quite different. Almost any good SCSI controller will talk to any good SCSI hard disk without a problem.

SCSI has a couple of nice features: One is that it can be used to talk to other devices, such as CD-ROM and tape drives; another is that you can attach external devices—if you've run out of drive bays, you can buy a small external enclosure.

In terms of the hard disk itself, what I find useful is to shop around to get a feel for the incremental price per megabyte as you compare hard disks of increasing capacity. Generally, that incremental price declines for a while as you move from the low end toward the middle of the line (currently around 650MB), where the manufacturing efficiencies are greatest, and then it rises again as you begin looking at new, exotic technologies.

Well, we can all dream, can't we? Sadly, there's usually a spouse or a budget-minded supervisor admonishing, "Yes, I know you *want* all this stuff, but do you really *need* it?" What a shame to admit that you don't; NT will run just fine with a lot less. ■

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 and Windows NT. Reach Douglas on WIX as hamilton or care of Editor at the address on page 16.