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"Join NewNet! We offer the most subscribers!" Occasionally your eye catches an ad that touts a particular online service's large subscriber base as some sort of big deal. Back when the services were little islands unto themselves, this marketing ploy worked: Joining an online service that offered scads o' subscribers meant reaching more scads of discussion groups, conferences, and e-mail boxes.

Today, any service worth its dial tone offers Internet e-mail, discussion groups, and World Wide Web access. The number of subscribers to your particular online service or BBS no longer matters. Actually, less is more, in this case. A larger subscriber base means more callers clamoring to get online at the same time — and possibly a busy signal for *you*.

In spite of the hoards of new computers hooking up to the Net each day, one truth remains constant. (In fact, this truth is what enables all these computers to *join* the network at all.) Every computer on the Internet has a universally recognizable address.

A tisket, a packet

Before I can get into addresses, I have to talk about *packets*. See, every piece of data that passes through the Internet — every file, every message — must first be broken up into smaller chunks called *packets*. (Even your humblest little "Me too" e-mail messages agreeing with your friends on the indisputable superiority of the *old* crayon colors.)

For the budding metrologists among you, each packet measures no more than about 1000 characters. It's done automatically, thankfully — you don't have to even *think* about it.

A computer must be able to yell, "Hey! I'm over here!" to other computers. So a fancy *Internet Protocol (IP)* evolved. IP pushes the packets around according to the universally accepted rules for Internet addresses.

An additional protocol oversees the packets' orderliness: *TCP*, for *Transfer Control Protocol*. TCP dices the packets and numbers them, among other things. Most importantly, TCP ensures that the packets can be reassembled into meaningful data — or e-mail, for this chapter — on the receiving end.

Together, IP and TCP make it possible for computers on the Internet to communicate. Although they're two separate protocols, they work together so often that most people just refer to the whole scheme as *TCP/IP*. And finally, TCP works on top of IP as a layer. That's why you're bound to see the relationship expressed as a *TCP/IP stack*.

And now, a moment of thanks to IP and TCP. They remain the most popular way for computers to send, receive, and forward packets to and fro on the Internet.

To learn more than you ever dreamed possible about TCP, IP, and Internet addresses, check out *MORE Internet For Dummies*, by that most charming siblingesque duo, John Levine and Margaret Levine Young.