23 The Internet

Unless you've been hiding in a cave on a mountain top in Tibet, you already know terms such as *World Wide Web* and *Netscape* and *Information Superhighway*, if only from reading the newspaper or watching TV. The Internet may be the most overhyped technology since the videophone debuted at the 1964 World's Fair, but unlike the videophone, millions of people use the Internet every day. (In fact, as you'll read later in this chapter, an Internet technology called CU-SeeMe acts like a videophone.) But in this case, despite the steep learning curve and the barricades to access, the hype actually has a hard time keeping up with the reality.

The Internet is more than just an entertaining place to spend a little time. In the near future, it's likely to become deeply integrated into our day-to-day computer use, so much so that it may eventually become an extended part of most operating systems. Your desktop Mac will become more and more like a single client on the world's largest network, and every distant file on the Internet will be as accessible as any other file in a folder on your Mac.

But we're getting a bit ahead of ourselves! In this chapter we'll stick to the basics, passing along information about what's currently out there and how to get to it.

Our Pledge: The terms *Information Superhighway* and *Cyberspace* will not appear in this chapter.

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Contents

A Quick and Dirty Overview   (JH)

Even more than with other computer technologies, connecting to and using the Internet can overwhelm you with arcane details and obscure terminology. To help you keep the forest in view even as you work among the trees, here's a brief overview of what's involved in getting and keeping connected. And remember to read up on the basics of Telecommunications in Chapter 22.

The Internet is nothing more than a few million computers—at homes, offices, and universities, all connected together over telephone lines and communicating using a variety of different *protocols*, or rules, to transfer text, pictures, files, and even sound. We start off the chapter with the story of the Internet. It's not just an interesting tale—understanding how the Internet evolved and what it's made of will help you better understand how to use it.

Your Mac may already be set to connect to the Internet if you're on a network that's attached to the Net—office workers and university folks should talk to their official computer wranglers for details. If you're lucky, you'll just need to pick up the various Internet applications—see the applications we recommend under each of the subsections of "The Main Features of the Internet" later in this chapter.

But from home, you'll almost certainly connect using a modem—that's called a *dial-up account*—and you'll do that by using the modem to dial up an Internet service provider, or *ISP*. We'll help you choose an ISP in "How to Get There From Here" and in the sidebar "Ten Questions to Ask an ISP."

The Internet communicates through a special Internet protocol known as TCP/IP. Some connections—*PPP* or *SLIP* connections (see "The Net Gets Legs" later in this chapter)—require you to install special TCP/IP software, typically the MacTCP control panel plus either a MacPPP or MacSLIP extension, and these things take careful configuration. Check out "How to Get There From Here" and the sidebar "Setting Up TCP: The Basics." A commercial on-line service such as America Online, on the other hand, offers a simple preconfigured connection without extra control panels or extensions.

Finally, Internet addresses will be a lot easier to understand after you read the sidebar "How to Read a URL."

You may notice that we place Internet addresses throughout this chapter in brackets like so: <http://www.apple.com>. This is to make the beginning and end of each address unambiguous, so, for instance, you'll know that the period which ends the

sentence isn't part of the address—type everything within but not including those brackets. We also usually provide an address to the directory of a downloadable file, rather than to the file itself. Filenames and versions change so often that a pointer to the file itself would be quickly outdated.

Don't worry if all this doesn't make complete sense the first time through. Come back if you get confused. We'll be right here when you need us.

What is it? How Do it Know? (DJS)

The Internet is a 24-hour conference call among every computer in the world that wants to take part. The Internet used to be an exclusive club of smart people using dumb computers but that situation has changed drastically.

In some cases it's been reversed.

One Million B.P.C.

The Internet's roots grew and flourished in the Cold War, B.P.C. (before personal computers). Scientists felt compelled to develop fail-safe telecommunications (in case of a nuclear attack). There were no dial-up connections then; if a computer was turned on, it was on-line. This led to Internet protocol (IP), a common code developed so all computers could recognize all others at any moment. Therefore, all *packets*, or bits of information sent, would find their destinations, even if one packet got there by way of Livermore and Austin while the next packet found its way through Los Alamos by way of Chicago.

Such is the liquid essence of the Internet: push here, it expands there. Defense (military, factory, and of course
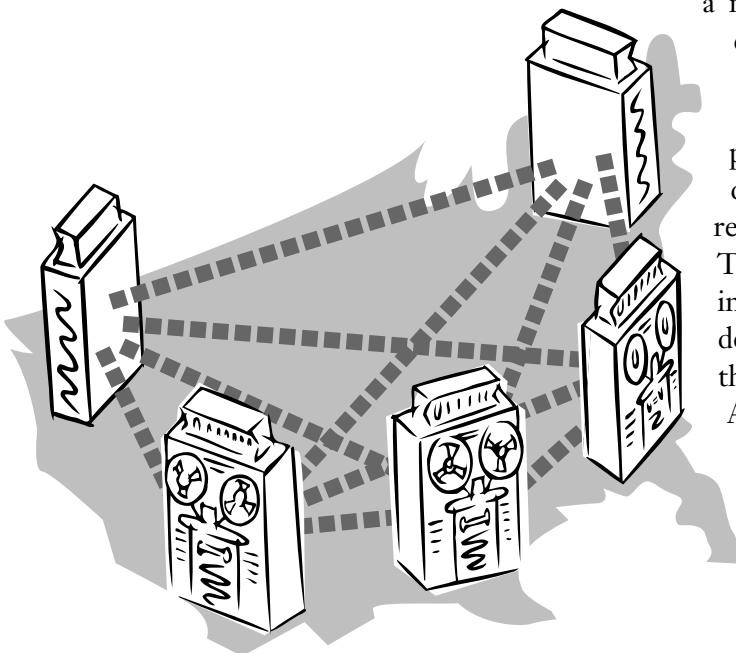
The Internet was designed to survive the loss of individual nodes by spreading out the responsibility for passing the information along to its destination.

university) computers would remain linked—alive!—and chattering under engagement even as unlucky computers took direct nuke hits. (This impenetrability would come back to haunt politicians, but that's another story.) By 1969, the rudiments of today's Internet were in place, wholly owned by the Department of Defense, and known as ARPANET.

IP had no trouble spreading far and wide. By the 1980s, the National Science Foundation responded to the growth of on-line computers by absorbing, upgrading, and expanding the Department of Defense's Internet structure. And NSF permitted initial forays by commercial Internet providers such as FidoNet and DECnet.

However, IP was designed for dumb terminals (keyboards and screens attached to mainframes rather than PCs) using the modest Unix character set. As more types of computer operating systems (or *platforms)* took to the Internet, malleable software innovations appeared to accommodate them.

The Net Gets Legs

It wasn't enough that computers on the Net could "talk" to one another. Tinkerers developed strong, uniform protocols to upload and download files (FTP); a graphical navigation tool for accessing directories among disparate platforms (Gopher); ways to route, reroute, and account for e-mail (SMTP); and word-based, rather than numerical, domain addresses (a private, nonprofit organization, InterNIC, became the clearinghouse).

The new breed of self-booting and frequent-flyer computers needed to log onto the Internet from anywhere. This brought us dial-up connections via *SLIP* (Serial Line Internet Protocol) and *PPP* (Point-to-Point Protocol), a boon for the burgeoning ranks of commercial Internet access providers.

While the Internet was plodding along in relative seclusion from the public eye, a growing number of PC users felt brave enough to try getting a modem to work. Most were unaware of the Internet but knew of proprietary on-line services, the largest being CompuServe. Such services grew at a solid rate by selling access to a wealth of on-line databases and chatty customers. America Online, a bold startup, used aggressive marketing and slick dedicated software to turn on-line services into a consumer product explosion.

Nonetheless, CompuServe and AOL were not "on the Internet" in the strictest sense; the Internet was "free." The borders between proprietary on-line services and the Net began dissolving in the early '90s, however. Everyone with an e-mail address could swap messages inside or outside the traditional Internet.

The Essential—and Essentially Free—Internet Tool Kit

Two reasons to pick up all these recommended utilities and applications: First, they all make life on the Net easier. Second, they're free! Dig in!
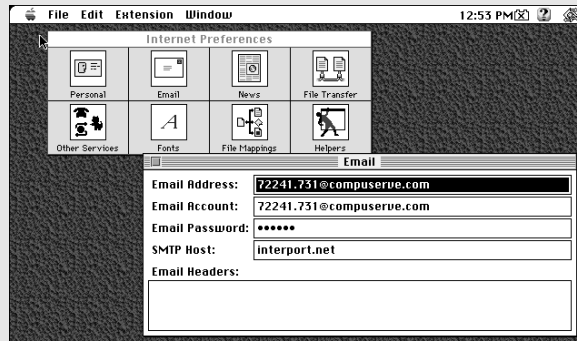
Internet Config by Quinn and Peter N. Lewis (free)
<ftp://ftp.share.com//pub/Internet-configuration/>

Numerous Internet applications demand the same arcane setup info. Internet Config is a single repository of your profile and preferences for the increasing number of applications that look for IC before bothering you. Quinn's Read Me is a stitch, too.

Internet Config lets you configure (almost) all of your Internet tools by filling in the blanks just once.

ICeTEe by Quinn and Peter N. Lewis (free, Bundled with Internet Config)

Command-clicking a URL in most text applications (but not big word processors) will automatically launch or switch to the appropriate Internet tool and take you straight to that address. Neat!

Eudora Light from Qualcomm (free)
<ftp://ftp.qualcomm.com//quest/mac/eudora/Light/>

A well-designed e-mail application that includes supreme interactive help. Learn good e-mail habits such as organizing and trashing messages, and neatly accumulating e-mail addresses. Learn it before buying Eudora Pro or Claris Emailer. You'll make a wiser decision. (Eudora Pro and Claris Emailer are reviewed in Chapter 22.)

Acrobat Reader from Adobe (free)
<http://w1000.mv.us.adobe.com/Acrobat/>

Acrobat displays fully formatted text and graphics that are identical to the original document no matter the platform. Spot Acrobat files by their .pdf (portable document format) tags and huge size—a single page of text can be 150K instead of 2K. (Acrobat files will be fine once we have the bandwidth.) Meanwhile, Acrobat Readers let you read as well as print PDF files, and you will prefer the latter.

StuffIt Expander from Aladdin (free)
<http://www.aladdinsys.com/obstufex.htm>

The Net is going to toss another file format at you: Binhexing, which is tagged .hqx or .bin, turns all sorts of coding into Internet-friendly text characters. Mac files (except raw text) must be encoded to a least-common-denominator form to pass through the Internet.

(DJS/JH)

It's common to get a file that has been stuffed, then binhexed. No matter how it has been encoded, dragging the file's icon onto the StuffIt icon will turn it inside out properly. Amazing beast, this.

Macintosh Drag-and-Drop from Apple (free)
<ftp://sam.austin.apple.com/Apple.Support.Area/Apple.Software.Updates/US/Macintosh/
       System/Other_System/>
(You need this extension if you have System 7.1. System 7.5 has Drag-and-Drop built-in.)

My editor asked me to include a URL manager, but those I've seen are too huge and convoluted considering the simplicity of the problem. The idea of URL storage is to eliminate typing; a single error and the destination's a goner. Drag-and-Drop not only eliminates typing, it turns the formerly miraculous Copy-Click-Paste into a single swipe of the mouse. Netscape Navigator and Microsoft Internet Explorer effectively store most URLs as bookmarks. After that, Drag-and-Drop plus a list manager is the answer: Stickies, Note Pad, and Scrapbook support it. Most new applications do, too.

Tex-Edit Plus by Tom Bender ($10)
<http://hyperarchive.lcs.mit.edu/HyperArchive/Archive/text/>

A jewel of a text-wrangler. A good portion of Net surfing is saving text for off-line reading. A lot of that text ends up ugly. Tex-Ed contains a huge, savvy assortment of one-pass tweaks that straighten out and further format text. It supports system-wide Drag-and-Drop, shows PICTs, and is fast as all get-out.

MacWeather 2 by Chris Kidwell ($10)
<http://hyperarchive.lcs.mit.edu/HyperArchive/Archive/comm/tcp/>

Okay, less than essential but a delight. Nothing to talk about? Flying somewhere? MacWeather logs onto a server that displays the latest weather information from hundreds of cities.

MacTCP Switcher by John Norstad (free)
<ftp://mirror.apple.com/mirrors/Info-Mac.Archive/
       comm/tcp/conn>

Say you're home from the office and your PowerBook needs to switch to different TCP/IP settings? This utility makes it a snap, but unless you're using Open Transport (Apple's newest networking/communications architecture), you'll need to restart between switches.
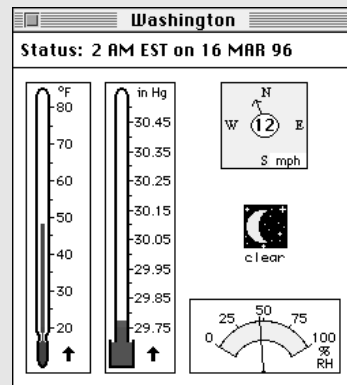
MacWeather can serve as your own little Internet Weather Channel.

How to Read a URL (JH)

Before you dig any deeper into this chapter, you'll need to know a little about Internet addresses, known as *URLs*, for *Uniform Resource Locators*. Most people pronounce it "You Are Ell," though some folks pronounce it "Earl" (which is why otherwise literate people may sometimes write "an URL"). Every accessible resource on the Net has its own unique URL, and you can learn a bit about what a URL points to by reading it piece by piece. This is a distinctly useful talent.

URLs are divided into three parts. First comes the *protocol*, a few letters that specify both the resource at the address as well as the tool that will reach it. After a separator—either // or the "at" sign (@)—comes the *domain*, which spells out the host computer or network on which the resource is located. Finally, beginning with a slash, you'll find the *file path* through the machine's hierarchy of directories all the way down to the resource itself.

E-mail—Look for the @

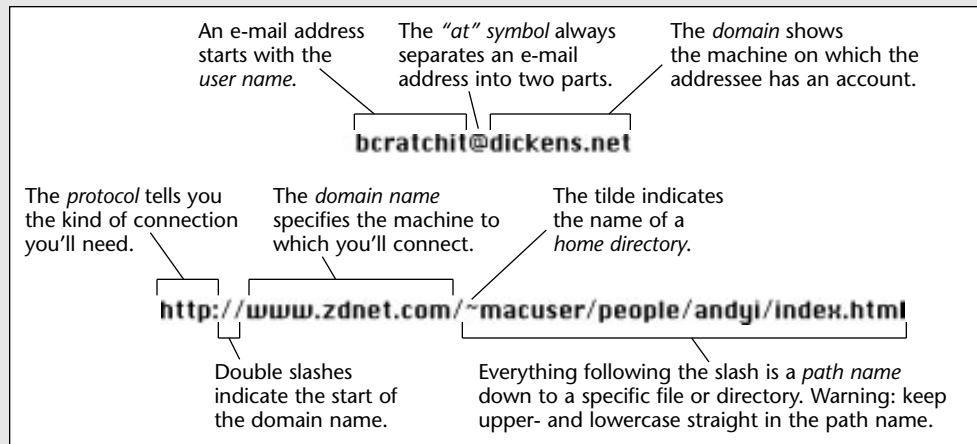If the separator is an @, it's an e-mail address.

Every Internet e-mail address begins with the addressee's user name, the unique name assigned at the service or company. For example, Bob Cratchit may have picked his own user name, "bcratchit," on his Internet service provider, Dickens Internet Services. On the other hand, his office network at Scrooge, Inc., may have assigned him the user name "bobc".

The portion following the @ separator is the host on which that user has an e-mail account, known as the *domain*. The domain breaks down into *subdomains*, specifying first the organization or company, then typically the machine, and then a final three-letter *domain type* : "com" indicates a commercial organization; "net," an Internet service provider; "gov," a U.S. government site; "edu," an educational institution, such as a college or university; "org," a nonprofit organization; and "mil," for the military. (You can find a guide to country codes at <http://ics.uci.edu/WebSoft/wwwstat/country-codes.txt>.) Thus Tiny Tim's e-mail address at Oxford University may be ttim@oxford.edu.

Domains aren't picked just willy-nilly—a host must purchase and register a domain with an organization known as InterNIC <http://www.internic.net>. If you'd just love to have ebeneezer@scrooge.com as your e-mail address, don't print up your business cards just yet. Someone else may already have registered the domain name "Scrooge."

You can e-mail someone from anywhere in the on-line universe by addressing a message to: username@service.xxx. Thus write to Bob Cratchit at bcratchit@dickens.net or bobc@scrooge.com. You must know Cratchit's *exact* user name and the exact name of his service. One little typo and your message will bounce back to you undelivered or disappear into the ether forever. Thus, your friend Tiny Tim may have an account on America Online, but simply guessing at his e-mail address, ttim@aol.com, will probably miss the mark.

Now let's say that, by coincidence, someone else also picked the user name "bobc." That creates no confusion so long as he's on a different service, because his e-mail address

An e-mail address starts with the *user name*.

The *"at" symbol* always separates an e-mail address into two parts.

The *domain* shows the machine on which the addressee has an account.

bcratchit@dickens.net

The *protocol* tells you the kind of connection you'll need.

The *domain name* specifies the machine to which you'll connect.

The tilde indicates the name of a *home directory*.

http://www.zdnet.com/~macuser/people/andyi/index.html

Double slashes indicate the start of the domain name.

Everything following the slash is a *path name* down to a specific file or directory. Warning: keep upper- and lowercase straight in the path name.

Anatomy of two URLs.

remains unique: If Bob's provider is Heaven Connections, Inc., his address is the unique bobc@heavens.net. And no service will allow two users to pick identical user names.

Two notes: You needn't worry about uppercase and lowercase in e-mail addresses. BCratchit@scrooge.com and bcratchit@Scrooge.COM are considered identical in e-mail addresses. And, a space in an on-line service's user name ("bob cratchit" on America Online) is simply dropped for Internet purposes ("bobcratchit").

Other Internet URLs—Look for the //

If the URL is separated by a double slash (//), then the leading protocol tells you what sort of address it is: "http:" indicates a World Wide Web page; "ftp:" is an FTP site from which you can download a file; "gopher:" is a Gopher site, and "wais:" is a searchable text database called WAIS, for *Wide Area Information Services*. (See "The Main Features of the Internet," later in this chapter for details on these Internet services.) Web site domains usually begin with "www" such as: <http://www.peachpit.com>. Similarly, FTP sites usually begin with "ftp." Many Web browsers will understand a URL which is missing the protocol "ftp://" or "http://" so long as the domain begins with "ftp." or "www," but that's an exception. As with e-mail addresses, a single typo in a URL and you're nowhere.

Finally, slashes after the domain are used to show the path down through various directories (such as the Mac's folders) to the location of the file. Thus if you FTP to the address <ftp://ftp.acns.nwu.edu/pub/newswatcher/> you'll see a list of all the files that reside inside the "newswatcher" directory, which is in the "pub" (for public) directory at the Northwestern University FTP site. When you see a *tilde* (~) at the beginning of a Web URL path, you've spotted the Unix identifier for the home directory of the account. While case, upper or lower, doesn't matter on most of the URL, it *does* matter in the path name. That's the first thing to examine when you get a "404 Not Found" error in your Web browser.

HOT TIP

Web Feat

In Internet circles the popularity of the Mac-like graphical, hyperlinked interface led to a 1989 paper by Tim Berners-Lee at CERN, a physics lab in Switzerland. He proposed an astonishingly simple technique for displaying and navigating through information in similar style on each and every screen, no matter the platform, called *HTTP* (Hypertext Transfer Protocol). *[Read a history of the World Wide Web at <http://www.w3.org/hypertext/WWW/History.html>.—JH]*

HTTP's cleverness is in the way its priorities are aligned. The easy part—sending minimal text—is handled over slowpoke phone lines. The heavy lifting—drawing pictures, formatting text, playing sounds, *ad nauseam*—is handled locally, by the client's speedy computer. By 1991, HTTP was appearing on the Net and the World Wide Web was born.

The World Wide Web's ease of use gave birth to the Brave New Internet: a burgeoning consumer product that no one quite knows what to do with, which is why they're doing everything.

Timing was right. The national news media, enchanted by the Web (and investing heavily in its future), made the Internet, apparently, the story of the decade. Consumers paying $1,500 for home computers, complete with modems, demanded to be "on the Internet." Now-has-been Delphi, then American Online, and a slower-reacting CompuServe, responded with kludgey additions to their software to allow "real" Internet access.

The Body Electric

The Web allows all but the most mentally infirm to cruise the nether regions of the Internet world with nothing but mouse clicks. Today's Web browsers are sophisticated enough to handle numerous Net functions—FTP downloads, e-mail, newsgroup reading, Gophering—in one package. (Don't fret—we define these terms later.)

New technologies such as Java and Shockwave are creating an industry of software that not only takes a Web page from a server to your screen—it shoves a Web page in your face with animations and interactions that have yet to be imagined.

We're back in familiar territory, really. Like all wildly popular software packages, Net browsers are becoming infested with feature-itis. Meanwhile, modern personal computers are suddenly being asked to behave more like the dumb terminals of 1969. They'll just sit there to collect information from all over the world, although the color is better. Well, there's one important new wrinkle: Distant computers now ask for your credit card number.

How to Get There From Here

Champing at the bit to get started? You've got a bit of work to do first. Take a deep breath.

Get Thee Wired   (JO)

It's relatively easy to get connected (or "wired" in Internet-speak) to the Internet—you just have to decide which kind of access is best for your needs—and your pocketbook. The good and bad news is that, for most folks, there are quite a few options; deciding which is best for you may involve some trial and error. The problem with writing about this topic is that the options change almost daily, so what you read now is bound to have been eclipsed by something new and different—and maybe even better. Nonetheless, we'll stick to the basics to give you essential information that will apply no matter what changes sweep the field.

Ultimate Multitasking   (JH)

One of the beautiful aspects of connecting to the Internet over a TCP/IP connection is that it allows you to run several different applications, connecting to completely different services, all at once. If you're already familiar with bulletin boards or one of the commercial services, you know that you're almost always limited to doing one thing at a time. All telecommunications can be tied up, for example, by a single long download. Not so on the Internet.

A TCP/IP connection becomes the pipeline for several different connections, though you'll need a fast modem to make the best use of it. Over my 28.8-kbps PPP connection to my local provider, I use Fetch, for example, to download a large file while simultaneously browsing my favorite Web sites with Netscape Navigator. And when I tire of waiting for a large graphic to display in the Navigator browser window, I switch to NewsWatcher to read articles in my favorite newsgroups.

I've also logged onto CompuServe over my PPP connection with CompuServe Information Manager (using the Apple Communications Toolbox Telnet tool) and, as CIM downloaded large files, I logged onto CompuServe a second time with SITcomm to do a little sysop work in the forum I run. The possibilities are mind-boggling. Log onto AOL and CompuServe at the same time; open two or three windows in your Web browser to create no-waiting browsing; or have Claris Emailer check all your services for mail in the background while you browse the Web. If you have two monitors, I guarantee telecommunications heaven.

Of course all that activity will slow down your downloads, but you might prefer to check your e-mail at the expense of a quick download. Once you get used to this kind of freedom, you'll be frustrated with anything less.

Regardless of the mode you choose, some basics are common to all. To connect from your home you'll need a modem, some additional software, and an account with an Internet service provider (ISP), which can take the form of a local provider or the Internet access provided by one of the large commercial services.

Using the Internet is akin to using a commercial on-line service such as America Online or CompuServe, so many of the same ground rules apply. For example, if you plan to spend a lot of time on-line, you should investigate adding a second phone line so that you don't tie up your main phone line (let's be hip and call it your *voice line*)

Setting Up TCP: The Basics (SB)

Internet pros *really* know about this subject. Unlike most Mac installations, which are truly "plug 'n play," setting up a SLIP or PPP TCP/IP connection is "plug 'n pray." Simple setups almost always work best, so type in as little data as your ISP suggests you can get away with. Adding data just adds to the chances of failure.

Use your software's installer—don't drag bits yourself. With Apple's new Open Transport networking and communications architecture, lots of small bits need to be placed in the right place (shades of Windows). Even the old standby (and soon to go away) MacTCP should be installed via a scripted installer.

There is one way around TCP/IP, sort of. You can avoid dealing with it (and SLIP or PPP) by using an ISP that gives you proprietary software that buries the protocol stuff, and still works. The trouble is you're locked into that particular provider and that particular software with its limited capabilities.
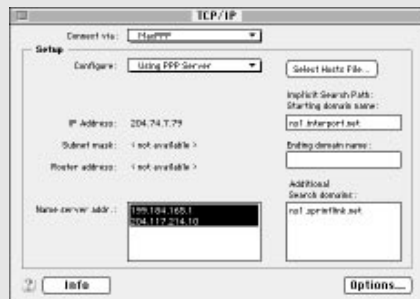
The configuration looks daunting, but your ISP will give you detailed instructions on exactly what to fill in where. Your control panel may look different. This one is part of Apple's Open Transport. Notice how much simpler it appears than the MacTCP control panel you may have worked with.

To do the TCP/IP setup yourself, you'll need a crib sheet from your ISP. On it you should find your *dial-in number* (don't hesitate to ask for a list of numbers; the one the ISP selects may not be optimal), a *router address* (which is a bunch of numbers such as 192.204.28.8), a *nameserver address* or two (same kind of numbers), and a *domain name* like peachpit.com. Be sure you've been set up with "dynamic server addressing." Some ISPs may suggest "manual addressing." It's faster connecting, but ultimately will fail you as traffic builds.

[While you have all that info in front of you, grab a copy of Internet Config and fill in all the blanks. That will save you from having to type in info every time you configure a new Internet application. See the sidebar "The Essential Internet Tool Kit" earlier in this chapter for more on Internet Config.—JH]

while you're cruising the Internet. You should also consider investing in the fastest modem you can afford. (A 28.8 kbps, or V.34, modem is *highly* recommended if you plan on accessing the Web.) See Chapter 22, for more information on the basics of getting connected.

Communication over the Internet is based on a protocol called *TCP/IP*. To use TCP/IP you'll need to install either MacTCP or Open Transport TCP/IP, both of which are included with System 7.5 or later. If you have the choice of using Open Transport, which became nearly universally available with the release of System 7.5.3, use it. It simplifies things to some extent and many connections seem to run faster.

You will also need an additional extension that allows you to use PPP or SLIP protocols. (These are two means of using TCP/IP over a dial-up connection. PPP is a bit better and has more or less become the de facto standard.) A service provider may provide you with the PPP or SLIP extension, but they're also available via on-line services and included with Internet starter kits. Check out the sidebar "Setting Up TCP: The Basics" for advice on setting up the TCP software.

Internet Service Providers

The Internet service provider market is probably one of the most volatile markets in existence. Everyone from garage-based small companies to multinational cable and telephone companies are clamoring for your business. At this writing, pundits are declaring that the small local ISPs are endangered by AT&T's entry into the ISP business. In fact, nearly everyone with any sort of connection to your home is struggling for a way to offer connection to the Internet, including, in the next year or two, television cable companies. (See the sidebar "Once and Future Telecom Technologies" in Chapter 22.)

There are literally hundreds of ISPs in existence today, and the list keeps growing. An ISP provides your conduit to the Internet. Fee structures are usually similar to those of commercial on-line services, but they're frequently cheaper. You can usually opt to pay a flat monthly fee or pay by the hour for connect time. You'll typically pay $20 to $35 a month for anything from 20 hours to unlimited access, or a smaller monthly base fee, perhaps $5, and an additional hourly fee in the $2 to $3 range. Because there are many vendors competing for your business, shop around to get the cheapest, yet most reliable, service provider (see the sidebar "Ten Questions to Ask an ISP"). Some ISPs offer attractive bundles that feature unlimited connect time if you are willing to pay up-front monthly, quarterly, or annual fees. *[AT&T's announcement that it wants to be a super-ISP caused one of my local ISPs to announce a $90-per-year rate for an unlimited dial-up PPP or SLIP account. That's $7.50 a month and ain't competition wonderful?—SB]*

Ten Questions to Ask an ISP (SB)

Unless your company or school provides free Internet access, the most important factor in efficiently and effectively using the Net is finding the best possible Internet service provider. When picking an ISP, you need to get the right answers to several questions. Here are the top 10 questions (plus a bonus) and some answers.

1. What's the monthly cost? $20/month for unlimited hours is fair. Hourly connect time charges should be considered only if there isn't an unlimited hours ISP local to you.

2. Does the ISP provide at least 5MB of memory for a personal home page?

   [In my experience, 5MB is generous. 2MB seems to be typical.—JH] [It is also worth finding out who manages your Web pages. Can you upload changes directly, or does someone on the ISP staff publish them after you have copied them to the server?—JO]

3. What is the server software? It's likely to be some flavor of Unix, but you might get lucky and find an ISP running a Mac-based operation. If you plan an elaborate Web site, running it on a Mac-based server will be very beneficial.

4. What are the technical support hours and policies? Are there specialists in Mac technical support?

5. Who supplies the software, and can generic tools such as Eudora, NewsWatcher, and Netscape Navigator be used, or are you restricted to proprietary software? Although using the generic tools is slightly more difficult, they offer many more options and the ability to quickly stay on top of the technology as it advances.

6. Are there dial-in locations that are local calls for me? Is 800-number service or some low-cost method available for checking in while traveling? How many dial-in numbers are there?

7. Does the news feed get all Usenet groups and does it ever "miss" messages? Most ISPs miss some; you want to miss as few as possible. *[I've also noticed that some ISPs try to play censor and refuse to carry certain newsgroups. If you want them all, make sure the provider doesn't censor any.—JO]*

8. Do all call-in nodes support V.34 modems at 28.8 kbps? You don't want anything else, even if you currently have a slower modem.

9. Can you run CGI scripts—scripts which run on the server to enable more powerful capabilities such as forms—and, if so, in what language? The programming language PERL is ideal on Unix-based servers.

10. Is there a trial period? What happens if you sign up and get solid busy signals from dawn to midnight?

Bonus: Are ISDN connections available, and what do they cost? Even if you don't have ISDN now, ask about this; it'll tell you how the ISP views the future.

The easiest way to get a list of providers in your area is to get a copy of Peter Kaminski's PDIAL list which contains a list of dial-up access providers by state. (Send e-mail to <kaminski@netcom> with the word "PDIAL" in the message body.) You can also browse through the racks of your favorite bookstore where there are apt to be quite a few titles devoted to the Internet, many of which include a massive list of ISPs in an appendix.*[Also check your local newspaper. Every one has a technology section at least one day a week and every ISP worth considering will have at least a classified ad in that section.—SB]* Get an e-mail address for each ISP in your local calling area and do a mass mailing requesting information from each provider on rates. Be sure to ask about startup or setup fees.

You can also buy prepackaged Internet connectivity kits, such as Software Ventures' **Internet Valet** ($50) or Adam Engst's **Internet Starter Kit** ($35). (See "Everything You Need to Get on the Internet. Really?" later in this chapter.) These kits include the software and startup account information you need to get on-line with relative ease.

Using a large, nationwide ISP such as Netcom or EarthLink rather than a local provider has its pluses and minuses. You should expect to get better customer support and reliable performance from a national ISP, but you may have to make a long-distance call to connect to the service, which can quickly add to the cost. Luckily, the number of *POPs* (local telephone call *points of presence*) for large service providers is growing. This means that if you are located near a metropolitan area, you should be able to connect via a local telephone call.

Using a Commercial Service to Access the Internet

Major on-line services such as CompuServe and America Online can also be considered ISPs. If you already have an account on one of these services, you can already access the Internet. Though the Web is probably the hottest Internet-based service, you can also use FTP, Gopher, Usenet newsgroups, and Telnet as well.

America Online has a well-developed Internet interface that is accessible directly with the America Online client software and its companion Web browser. At press time, AOL planned to offer you a choice of Netscape Navigator or Microsoft's Internet Explorer, a major plus since AOL's original Web browser was buggy and lacked many useful features. From America Online's main menu, you can easily connect to the Internet to use Gopher, WAIS, FTP, Telnet, Usenet, or browse the Web.

America Online provides adequate access to the Internet if your needs are fairly casual. It's best suited to those who already have an AOL account and expect to use AOL's content as much as the Internet. As a conduit to the Internet, AOL is typically

slower than a local ISP because you must use AOL's integrated Internet access tools rather than other best-of-breed applications. For example, AOL's Usenet news reader software limits your ability to read large news messages and download entire threads. For serious news reading, there are better MacTCP alternatives, such as NewsWatcher. (See "Usenet Newsgroups," later in this chapter.) But a benefit of AOL's approach is that it's all integrated into one package.

CompuServe's approach at this writing is not as cohesive as AOL's. You must make a separate PPP connection if you want to browse the Web, which involves setting up your TCP and PPP software and launching individual Internet applications—in that way, CompuServe is acting like a local ISP, though Telnet, FTP, and Usenet newsgroups are all accessible directly from within the CompuServe Information Manager. Again, this approach is less integrated, takes more work to set up, but ultimately provides the flexibility of a local ISP. In addition, because CompuServe has local dial-up numbers across the world, you'll be able to access the Internet with a local call as you travel, something a local ISP can't provide.

Other Means of Access

There are some other alternatives that may also be available to you. Many large companies and organizations are directly connected to the Internet via leased lines. In these cases, you can typically access the Internet, in all of its glory, from your desk via a local area network (LAN). In this case, your computer operations or information services staff plays the role of service provider. See them to get your workstation set up for Internet access.

You may also be able to access the Internet from home by way of such a network link. To do this, you will need Apple Remote Access to connect to your organization's network and then to the Internet. Many universities also provide access to students and faculty, and again, you'll have to talk to the information services folks for access info.

These methods, though a bit more complicated to configure, have the obvious benefit of eliminating the costs of an ISP.

"Everything You Need to Get on the Internet." Really? (DJS)

"Everything you need to get on the Internet." This lovely promise is rampant but, at this writing, only one kit keeps it in spirit if not in fact.

Unless you buy the Internet Valet, you must:

- Find a reputable ISP with a local number.

- Learn if the dial-up connection is SLIP or PPP.
  [Virtually all dial-up connections these days can handle PPP or SLIP: it's up to you on your end. PPP is more robust as a connection method; I've found SLIP software much steadier and more freeze-free.—SB]

- Obtain detailed instructions, including user name and password, for setting up connective software.

That said, behold three kits that are worthy of your cash for reasons that vary:

You Want to Get on, Right Now!

Internet Valet ($50; Software Ventures) is the only kit (at this writing) that can get you on the Internet right away. I went from shrink-wrap to PSINet's home page in 15 minutes. Valet heroically configured PPP and other onerous stuff. All I did was fill in a few blanks about who I am. You'll need a credit card number.

Valet installs three floppies' worth of tried-and-true Internet software including the essential MacTCP control panel, a handsome Enhanced Mosaic Web browser, Eudora for e-mail, clients for both FTP and Gopher, a news reader, and more. It organizes them on a small clickable palette, too.

The only catch is PSINet, a quality nationwide ISP, may not be a local call. If you live in a metropolitan area, PSINet probably is. If not, the Valet is still a decent kit that only needs SLIP software if that's what your ISP demands.

You Have a Provider and Want the Best

Apple's **Internet Connection Kit** ($99) comes with Netscape, Claris Emailer Lite, the amalgam of client software (FTP, Gopher, et al), and bonuses such as RealAudio, Acrobat Reader, a QuickTime movie player, and more. (It takes ten floppies to hold this kit; thankfully it comes with a CD-ROM, too.) No SLIP, however.

Like Valet, ICK organizes all its goodies on a palette, configures PPP, and handles messy signup chores if you have a credit card number.

Alas, ICK's palette is the clunkier Launcher palette that no one, but no one, uses. The kit tries to marry you to an Internet service provider via an 800 number but I could not get it to connect using two different computers.

These are minor complaints in the long run. For all the software you get and all the downloading it saves, the Internet Connection Kit is a deal.

Another point in the Apple kit's favor: As I type, Apple is releasing Open Transport 1.1—a version that works! Open Transport is taking over networking and telecom duties in the Mac OS, especially in the realm of PowerPCs. MacTCP is replaced with the TCP/IP control panel. It's a safe bet that future releases of ICK will keep users abreast of recently released network and telecom software.

Internet Search
(JH)

The Internet has no central directory of resources or addresses. Instead, you'll mostly rely on two kinds of help. The first is a *search engine:* Type in a keyword or words and the engine will return the names and locations of all the sites on which those words appear. Each of the various search engines boasts of how many millions of pages are in its index, but just as important is the intelligence of the search engine itself. We've listed many below so you can sample them all to find one that suits your preferences.

The other way of locating an Internet resource is through a *directory*, a selective hierarchical listing of resources, resembling a vast table of contents to the Internet. The benefit is that you don't have to wade through every little useless home page containing your keywords. Of course that can also be a drawback, especially if it means you miss interesting but minor sites not included in the directories.

Excite provides a powerful search engine. Note the advertisement at the bottom of the page. These ads are why the search engines are free.

Search Engines
One of the best search engines is Digital Equipment Corporation's Alta Vista <http://www.altavista.digital.com>.
Other excellent search sites are Lycos <http://www.lycos.com>,
Infoseek <http://www.infoseek.com>, and Excite <http://www.excite.com>.

GOOD FEATURE

You Want to Roll Your Own

Adam Engst's supreme book-and-disk package, **The Internet Starter Kit** ($35, Hayden Books), is a pure roll-your-own proposition, the best value if you need MacTCP 2.0.6 going in. If you want to learn all about the Internet too, there's no contest.

The single floppy contains a complete suite of Net-cruising shareware including both SLIP and PPP extensions. Included bookmark files point to lots more Net tools for easy download using the included FTP tool Anarchie. (The cost of these shareware tools is not included in the purchase price, so you should pay the shareware fees if you use them.)

Yes, *The Internet Starter Kit* comes with a "free trial" Internet connection to a Seattle-area provider. That's an expensive call unless you happen to live in Seattle.

A roundup of several search sites is kept at Netscape's Web site
<http://home.netscape.com/home/Internet-search.html>,
at W3 Search Engines <http://cuiwww.unige.ch/meta-index.html>,
and at All-in-One Search Page <http://www.albany.net/~wcross/all1srch.html>.

For a *really* comprehensive search, MetaCrawler
<http://www.cs.washington.edu/research/projects/metacrawler/www/index.html>
plugs keywords into several of the best search engines and returns results from all. The same
principle is behind SavvySearch <http://www.cs.colostate.edu/~dreiling/smartform.html>.

And finally, the best *directory* of search engines is at Yahoo!
<http://www.yahoo.com/Computers_and_
        Internet/Internet/World_Wide_Web/
        Searching_the_Web>,
(which also offers a good search engine itself).

Directories
The father of all directories is Yahoo!
<http://www.yahoo.com>, and another excellent
directory is Magellan
<http://www.mckinley.com>, which includes professionally written reviews of Web sites.

The White Pages
To search for people on the Internet, see "E-Mail"
later in this chapter.

Yahoo! locates thousands of Web sites by leading you through a hierarchical listing by subject. It's searchable as well.

GOOD FEATURE

There's no complaining about Valet and Apple manuals; both are clear and concise. *The Internet Starter Kit*, on the other hand, is a whopping 600-plus pages of facts, discussions, history, side trips, and obscure technical points. Run into a uuencode glitch, lately? It's in the hefty index.

[As we went to press, CompuServe's Spry/Internet division was slated to release a Mac version of its "Internet in a Box." For details, check <http://www.spry.com>.—JH]

[EarthLink, another metro-based ISP, now touts its quick-connect kit. You can download it from <ftp://ftp.earthlink.net/total_access/mac/tamcv110.bin> or call 800/ 395-8425.—DJS]

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The Main Features of the Internet

Internet access can be neatly divided into a few basic areas, each based on the particular thing you want to do on the Net: send and receive e-mail, join public discussions, download files, or browse the World Wide Web. Each different kind of activity comes with its own protocols and its own tools.

You can search the White Pages at Switchboard for names, phone numbers, and home addresses, but you won't find a whole lot of e-mail addresses.

E-Mail

E-mail on the Internet works much like it does on the commercial services—be sure to read "E-mail" in Chapter 22 for the details. But you don't need a commercial on-line service to send and receive e-mail. Every Internet service provider will set you up with an e-mail account. Your user name plus the ISP's address serves as your e-mail address: user name@service.provider.etc (see the sidebar "How to Read a URL" earlier in this chapter).

There's no true "White Pages" for e-mail addresses, but point your Web browser to Four11 <http://www.Four11.com/> for a fairly big list, or Netfind <http://www.nova.edu/Inter-Links/netfind.html> if you have a last name and a domain. For true White and Yellow Pages, try Switchboard <http://www.switchboard.com>, which offers millions of names, phone numbers, and home addresses, but fewer e-mail addresses.

We reviewed e-mail management software in the previous chapter (see "E-Mail Managers").

And now a word from our sponsor... At the time of this writing, a new concept in e-mail was being unveiled—*free* e-mail. (Can we coin the phrase *free-mail*?) Okay, fee-free but not string-free—It's *sponsored* e-mail. At this writing, two companies have begun offering e-mail accounts on their proprietary (so far Windows-only) software with no monthly charges. The software you use to compose, send, and receive your mail displays an advertisement. If you'd rather ignore a plug for pimple cream than pay a monthly fee, keep your eyes peeled for Mac versions of this service. Check with Juno <http://www.juno.com/> and Freemark <http://www.freemark.com/>. If you're now paying an on-line service only to use its e-mail services, consider these. On the other hand, if you use any other services of your current provider, there's little incentive to try these.

[Another interesting concept is the "permanent" e-mail address. As ISPs come and go, many of us switch. But that means a new address with many attendant hassles. A group called PO Box offers addresses that can be aliased to whatever your current real address is. It's cheap, and it works. Check out <http://www.pobox.com>.—SB]

And while we're on the subject of e-mail, take a moment to subscribe to Adam and Tonya Engst's terrific Macintosh newsletter, *TidBITS*, e-mailed weekly. It's considered essential reading for nearly everyone who worked on this book. Drop a message to <info@tidbits.com>.

The World Wide Web

For years, the Internet was little more than text, text, and more text. Then just a couple of years ago the World Wide Web changed everything. It was as if the telegram had been followed directly by the invention of glossy color magazines. And because it's so simple to compose a home page, a personal Web site, the content has grown tremendously fast (see "Your First Home Page" later in this chapter). Imagine what cable TV would be like if every person with a video camera could schedule a TV show—that's the Web in a nutshell.

There's still plenty of text, of course, but the Web presents it in formatted *pages*, literally resembling a magazine page, with color illustrations, backgrounds, and even animation and sound (though for the most part, sound involves downloading the sound sample and playing it with a *helper* application). The Web's most revolutionary innovation, however, is its use of *hyperlinks*—click on highlighted text or pictures and you're whisked off to some spot on that page or elsewhere on the Web. It feels as if the entire Web is just one enormous, if slow, multimedia magazine.

All this is accessed by a Web *browser*, an application which efficiently scoops up the text from Web pages and then reads special tags embedded within the text to do all

the heavy duty formatting locally, on your Mac. That's how attractively formatted Web pages appear much more quickly than if a fully formatted page had to be downloaded from scratch through your modem. All sorts of extra attractions—sound, QuickTime movies, animations—are downloaded and either passed off to helper applications or displayed right on the page with various plug-ins.

The Web has grown incredibly fast, and there are now hundreds of thousands of sites to visit. If you imagine the commercial services as big shiny malls, offering a carefully selected array of services, the Web is the

There are three kinds of clickable hyperlinked spots on this Web page: the highlighted words (underlined), the magazine cover (which would be outlined in the highlight color if this were a color illustration), and the six icons below the banner, which comprise a map of clickable areas. Each hyperlink takes you to another place in this Web site.

world's largest parking-lot flea market. The U.S. Postal Service, Time/Warner, and Apple Computer are literally right next door to the home page of the 11-year-old with scanned photos of his Star Trek models.

Because it's so easy and inexpensive to put up your own home page on the Web (see "Your First Home Page" later in this chapter), the Web is a showcase for every genius and every crackpot-with-a-vision. There's almost no passing fad, cult interest, or obscure object of desire that doesn't have at least one multimedia altar on the Web. (Proof? "Mr. Neff's Mambo Karaoke Steakhouse" at <http://www.teleport.com/~zoetek/ mambo_karaoke/entrance.html>, "I Just Want To Be Friends" at

Andy Ihnatko's Colossal Waste of Bandwidth.

<http://www.phantom.com/~joelogon/platonic.html>, and a personal favorite, "Andy Ihnatko's Colossal Waste of Bandwidth" at <http://www.zdnet.com/~macuser/people/andyi/>.)

The Web is without question the killer app of the Internet. Go forth and browse.

Terrific Destinations on the Internet

The Philadelphia Inquirer and the Daily News (SB)
<http://www.phillynews.com>

Much to my horror and amazement, I now start each day by reading my local papers, *The Philadelphia Inquirer* and the *Daily News* on-line. Although their on-line personas still show signs of experimentation (and some real howlers), they use a model that works. Each article is represented by a head (or maybe a graphic), the lead paragraph or two, and a link that simply says "… more." I rapidly scan whole sections, more efficiently than I can scan the pages of the hard copy versions and read only what I want. That's how most of us actually read newspapers. Ads are spaced throughout, but are not overwhelming; you need to expand the ad position holder graphics to see the full ads or link to the Web site of the advertiser. There's also an interactive crossword, really great customizable comics, and a super restaurant database with searching capability. It's really nice having the future of news now.

The Philadelphia Inquirer is remarkably easy to browse.

Andy Ihnatko's Colossal Waste of Bandwidth (JH)
<http://www.zdnet.com/~macuser/people/andyi/>

There are two types of humor on the Web. There's the post-modern/ironic/winking kind which worships PEZ or karaoke with a straight face. And there are the jokes pages, which usually make me feel like I'm visiting somebody's Uncle Ike, who still regrets he never took his Elks Lodge standup act to the Catskills instead of marrying Aunt Linda. Andy Ihnatko's Web site falls into the third category.

Like all personal home pages, there's not a detail of Andy's life that isn't up for scrutiny: The odometer on Andy's 1982 Plymouth Grand Fury reaches 100,000 miles, and here's the picture to prove it; The Clint Howard Project is a nearly complete database of Clint Howard's major and cameo appearances in big and little films; plus, of course, here's Andy's take on all things Macintosh and Internet. Is this the most self-indulgent home page ever or the most crafty spoof of home pages yet?

Some Web sites evoke a smile and a knowing nod; some evoke a grimace. Andy's site makes me laugh so hard my wife looks up from her book to ask me what's so funny.

Terrific Destinations on the Internet (continued)

MacInTouch   (JH)

<http://www.macintouch.com>

Ric Ford writes the indispensable MacInTouch column for *MacWEEK* magazine, but at the MacInTouch Web site, Ric doesn't reprint the column. Instead, he goes *MacWEEK* one better

Ric Ford's MacInTouch offers a daily dose of well-linked hard-core Mac news and tips.

and offers a nearly daily update of essential Mac info, guiding Mac users to Apple and third-party resources and software found all over the Internet and beyond. There's no better place to get up-to-the-minute details on system software updates, bugs, and every other kind of Mac info. There aren't any heavy graphics to slow you down, and Ric provides hyperlinks directly to the resources—a click will download the software MacInTouch points to.

MacInTouch also maintains vast quantities of essential information, including the finest rundown of bugs, problems, and incompatibilities anywhere, and a choice list of links to Internet Mac file libraries, Apple sites, and other resources.

MacInTouch should be on every Mac user's daily must-visit list.

The New York Times <http://www.nytimes.com/>   (DJS)
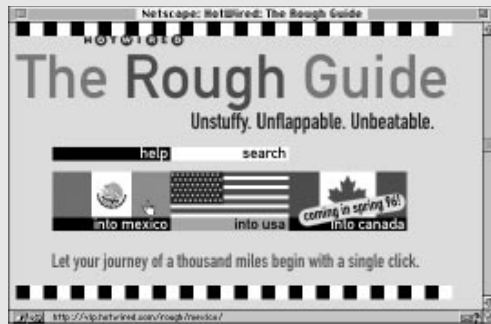**and HotWired** <http://www.hotwired.com/>

The New York Times went all Webby just before deadline. Nonetheless, its site looks thorough,

especially its edgy CyberTimes coverage. 'Tis a future to behold. *[CyberTimes is on my daily visit list.—JH]*

Nonetheless, I'll stick with HotWired as my favorite Net site. Downside: It's as gaudy as its print cousin *Wired*, too ostentatious in its attempt to be leading-edge, with-it, hep-to-the-jive.

Once you're familiar with the site, however, you can customize your opening HotWired page. Art, fads, movies, books and Net culture!—there's little that HotWired misses.

The New York Times' CyberTimes includes articles on the Internet not printed in the daily paper version.

HotWired's newest travel offering.

HotWired contains the magic ingredient: content. The writing is uniformly to the point. Its collective voice is a prototypical mixture of literacy, iconoclasm, and snottiness that seems to be becoming the standard tone of Net prose.

HotWired's political reporting is already outstripping all but the best daily papers. And it's murdering TV news coverage, no contest. The best thing about HotWired: It proves we should eliminate TV and not look back.

(JO)

Switchboard <www.switchboard.com>
and MapQuest <http://www.mapquest.com>

Do you ever wish you had a phone book for the entire U.S.? How about one that also had e-mail addresses? Switchboard is a White and Yellow Pages directory for the U.S. that quickly searches and finds telephone numbers and addresses, including electronic mail and home page addresses for anyone who has taken the time to update their entry. Once you've registered, you can update your own entry, control access to your entry (i.e. make it unlisted), or add other affiliated entries (i.e. for your family members).

Plug in your starting and ending points, and MapQuest's TripQuest calculates the exact instructions for your trip. The Internet increasingly offers more and more free and useful services such as this one.

An interesting twist is the ability to allow people to send you electronic mail without knowing your e-mail address. Coordinate, the Banyan, Inc. subsidiary that runs this page/service, calls this feature "knock-knock."

Once you have located someone's phone number and address, how would you like directions and a map to get there? Another Web site, MapQuest, is an interactive atlas that has street-level detail for the entire U.S. If you know someone's address, you can have MapQuest create a detailed street map and a set of instructions on how to get there. Or, say you're looking for hotels and restaurants near an attraction you're planning to visit. MapQuest can create a map that points out these places.

GOOD FEATURE

Browser wars. There are two good choices for a Web browser. Ever since it overtook the original free browser, Mosaic, **Netscape Navigator** <http://home.netscape.com/> has had a near-total lock on the market. It's well designed, feature-rich, and free (for educational and nonprofit use). But most significantly, Navigator has always supported many nonstandard Web styles.

At one point Navigator was the only browser to display formatted tables on a page, centered text, and *frames*—independent windows within the main browser window— among other things. Web page authors, eager to make pages more interesting and attractive, made full use of the Navigator nonstandard standards, often displaying a notice, "This page best viewed with Netscape Navigator!" At the same time, because only Navigator could display such features, it became a virtual requirement for visiting the cutting-edge sites. And that's how most folks came to abandon other browsers for Navigator.

At this writing, Navigator's most serious competition is from software giant Microsoft. After ignoring the Internet for a long time, the company is in hot pursuit of the browser market with its free **Internet Explorer** <http://www.microsoft.com/>. Based on the original Web browser, Mosaic, Microsoft's product is a fine alternative to Navigator, generally less buggy, but not quite up to Navigator's feature set.

Although both America Online and CompuServe offer Netscape Navigator as an alternative browser for access to the Web from within their services, Microsoft's Internet Explorer is the primary browser for each.
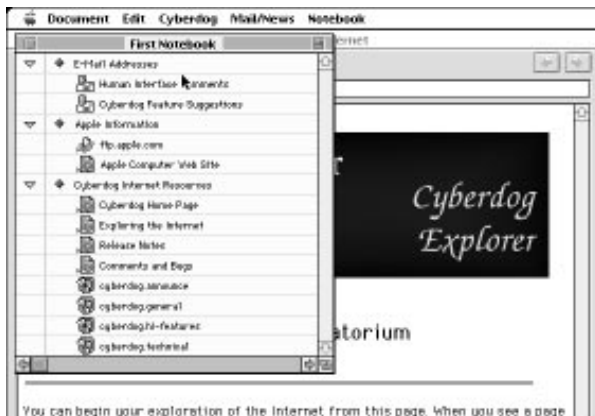
Apple's Cyberdog is a showcase of the OpenDoc technology.

And, finally, you should keep your eyes on the progress of Apple's suite of Internet tools, code-named **Cyberdog**, developed to demonstrate OpenDoc, Apple's component software technology. Where Netscape Navigator and Internet Explorer accept plug-in components for viewing specialized Web features, CyberDog is nothing *but* components. To change the feature set, Apple promises, you need only replace a component.

For the latest scoop on the browser wars, see Dave Garaffa's site <http://www.ski.mskcc.org/browserwatch/index.html>.

"We're Sorry, but the Number You Have Dialed Is Not in Service at This Time ..."

Here are some common Internet error messages and a bit of explanation to help you cure them:

The dreaded 404 Not Found Error—it's not as hopeless as you might think.

Web Browser

404 Not Found—Your URL got you as far as the right host computer, but the document you asked for isn't there. First check your typing. Remember to keep your upper- and lowercase straight, be sure you've spotted and included the tilde (~) you find in many addresses, and check for typos. Sadly, magazines routinely misprint URLs. Write a letter to the editor. You might also try deleting everything following the final slash and try again. If you're lucky, you'll find a list of documents to choose from. Finally, of course, it's possible that the page you want is simply gone: removed or renamed.

403 Forbidden (or Access Denied)—You don't have the password or other permission to go to this document. If that makes no sense, check your URL for typos.

503 Service Unavailable—Too busy! Try again or wait until a less busy time of day—between 9:00 p.m. and 7:00 a.m. Pacific time.

File Contains No Data—You might be led to believe that the Web page turned out to be blank, but try this trick: Add :80 just before the first pathname slash, like so:

    http://www.sophia.com:80/just/testing.html

E-Mail

Most e-mail errors, such as all addressing errors, result from a typo in the address. Examine the header of the bounced mail. You can sometimes decode the error message. "Host unknown" suggests there's no host computer of the name you specified in the address domain. Other error messages will tell you that there's no user by that user name on the machine you've reached.

It's especially frustrating to get e-mail returned when you've simply replied to a message and there's no chance for a typo. The problem in this case probably lies at the other end—for any number of reasons the recipient's network refused the mail. There's little to do if you can't contact the recipient some other way. Try resending in a few days or weeks.

FTP

Invalid host—You've either mistyped the FTP site's URL or the site is down and can't respond. Check the URL and try again. You can also try getting another machine to check the FTP site for you. Send e-mail to <dns@grasp.insa-lyon.fr> and in the body put only the message `ip site name` (where "site name" is the name of the FTP site you can't con- tact). An automatic response will be returned with the numeric address of the site. No response means no such site.

HOT TIP

Usenet Newsgroups

In Chapter 22, we discussed on-line discussion forums. *Usenet newsgroups* are the Internet's discussion forums, despite the misleading word "news" and the fact that posted messages are confusingly called *articles*. At last count there were something like 16,000 newsgroups—and it's still growing—so you can imagine that you can easily find some incredibly obscure topics: how about alt.fan.karl-malden.nose? (Don't be surprised if you can't find that particular group. Minor groups come and go.)

You don't need a full Internet connection to participate in newsgroups. Even smaller bulletin boards often offer access to some subset of the groups. To search the contents of all newsgroups, use a Web search site such as Infoseek (see the sidebar, "Internet Search" earlier in this chapter).

HOT TIP

Because most newsgroups aren't supervised, discussions on the commercial services are usually more focused and civil. Pick your newsgroups carefully if you're easily offended. And because millions of users have access to the groups, groups usually lack the intimate feel of the best forums on the commercial services. You aren't nearly as likely to make friends, for example, on newsgroups.

You're also likely to be bombarded with completely inappropriate messages in a newsgroup. *Spamming* is the unseemly practice of saturating many newsgroups with a message inappropriate for the topics, and commercial spamming is becoming very common. Some of the more common spams include ads for services resembling the 900-number phone sex lines. Forewarned is forearmed.

BAD FEATURE

The newsgroup address can tell you a bit about what you'll find there. The address is organized into hierarchies, from the broadest to the most specific, separated by periods. The first part specifies the general category. The most common are "alt." (the alternative—often wilder and weirder—groups), "biz." (business), "comp." (computers), "k12." (kindergarten through 12th grade), "misc." (miscellaneous), "rec." (hobbies and recreation), "sci." (science), "soc." (social, cultural, religious), and "talk." (controversial topics). There are many others, including geographical address, such as "ca." for California and "ba." for Bay Area.
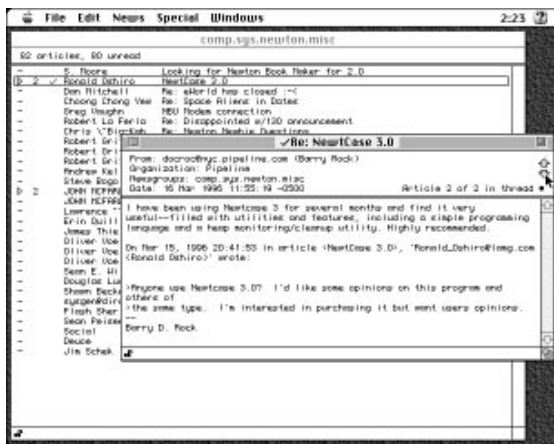
Read the remainder of the address for a clue about the specific contents of the newsgroup: comp.newton.misc contains miscellaneous discussions about the Newton MessagePad; any group name ending with ".binaries" includes *uuencoded* (specially coded for transmission over the Internet) images, sounds, or even applications. (Your news reader or StuffIt Expander can decode these for you.)

Play by the rules. Almost every newsgroup posts a current *FAQ*, a *Frequently Asked Questions* document, which contains guidelines and rules for the newsgroup, and often a FAQ covering the subject of the group as well. (A list of FAQs is kept at <http://www.cis.ohio-state.edu/hypertext/faq/usenet/>.) Read the FAQ before posting messages or risk looking like a newbie.

It's important to remember the global nature of newsgroups. Unless you post an article in a local group ("ba." groups, for instance, are related to the San Francisco Bay Area), don't post messages—er, articles—of purely local concern. Your offer to sell your car will bring a rain of derision down on you. It's also considered good form to set the preference in your news reader application to reply in e-mail to the sender as well as to the entire newsgroup, because many folks don't catch the reply posted to the group. (But don't do this on the commercial services' forums.) Finally, don't post a test message to any group except test groups like alt.test or misc.test.

NewsWatcher makes reading newsgroups really easy.

I read the news today, oh boy. There are a few fine news readers, but the best is John Norstad's free **NewsWatcher**. NewsWatcher is beautifully implemented, and so simple to use that you probably won't need to crack open the instructions. NewsWatcher's only serious disadvantage is that it doesn't let you read and reply off-line. One clue: John has implemented Drag and Drop very nicely—make use of it. You can find NewsWatcher at <http://hyperarchive.lcs.mit.edu/ HyperArchive/Archive/ comm/tcp/>.

A commercial news reader, **NewsHopper**, ($60, Landware) has one big advantage: It allows off-line reading. Download the articles you'd like to read and browse through them at your leisure after disconnecting from the Internet. You can find a demo version of NewsHopper at <http://www.demon.co.uk/sw15>, which is fully functional except that you're limited to reading just five groups and the demo is not a native PowerPC application.

MacSoup is another off-line reader ($20 shareware, Stefan Kurth) <http://www.inx.de/~stk/macsoup.html>.

For the terminally lazy, a browser such as Netscape Navigator will read newsgroups too, though without the bells and whistles of the best stand-alone readers.

Hot New Internet Technologies

The Internet is fertile ground for new technologies. Here's a rundown of just a few of the latest and hottest.

Java

The hot Web technology of the moment promises to turn the Web from glossy magazine to interactive TV. A Java-enhanced Web browser downloads tiny platform-independent applications associated with Web pages. These *applets* can do amazing things on the Web page. For instance? Time will tell. At this writing, cool-but-forgettable demos of the technology abound. Play Tetris, do a crossword puzzle, gaze at 3-D modeling, or read a live stock ticker tape. Visit the Web site Gamelan <http://www.gamelan.com> for samples.

A game of Tetris—er, Quatris—played live over the Internet (including sound effects) with the help of the Netscape Navigator Shockwave plug-in.

Shockwave for Director

Macromedia Director creates multimedia for the Mac, and Macromedia's free AfterBurner software will convert and compress those files so you can add them to Web pages. Drop the free Shockwave plug-in into your browser and you can experience slick interactive animation over the Web. Visit Macromedia's Web site at <http://www.Macromedia.com>.
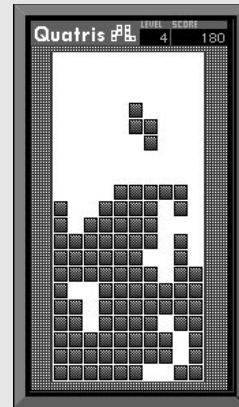
Amber

All we have at this writing is the code name, but Amber is the next generation of Acrobat (see the sidebar "The Essential—and Essentially Free—Internet Tool Kit," earlier in this chapter for info about Acrobat). The Amber plug-in for Netscape will let you display Adobe PDF pages from within the browser as well as download individual pages rather than entire documents. Visit the Amber Web site at <http://w1000.mv.us.adobe.com/Amber/>.

RealAudio

Radio over the Internet, piped live into your Mac. No more waiting through a five minute download just to hear a single 20-second sound sample. From a growing list of RealAudio Web sites you can listen to sports and concert coverage, news broadcasts, and rebroadcasts of archived speeches and music. Don't expect FM-quality sound—the fi isn't yet hi—but version 2 improved on the original release greatly. The RealAudio client software for listening is free. Visit the RealAudio Web site at <http://www.realaudio.com/>.

[Xing Technology (<http://www.xingtech.com/>) offers a similar application, Streamworks. View live movies in real time with audio. It's hungry for bandwidth and jumpy at 28.8 kbps, but the fact that you can watch and listen to multiplexed audio and video makes TV over the Internet pretty darn close.—JO]

NetPhone

Electric Magic Company's **NetPhone** ($60) turns your microphone-equipped Mac into a telephone and the Internet into your long-distance provider. You can make long-distance phone calls to anywhere in the world over your TCP/IP Internet connection, though the sound is less than telephone quality, and you must call a similarly-equipped Mac running NetPhone. Visit the Electric Magic Web site at <http://www.emagic.com/>. Several other companies promise similar applications. Check Trel's Commercial Internet Products site (<http://www.lpac.ac.uk/Trel/1Phone_products.html>) for a current list of other Internet phone products.

CU-SeeMe

CU-SeeMe is not a hot new technology. It's a hot *old* technology, developed in 1992 at Cornell University. CU-SeeMe is video-conferencing over the Internet—videophone!—using an inexpensive Mac video camera such as the $100 Connectix QuickCam ([see Chapter 6](#) for more details) and the video digitizing capabilities of an AV Mac or a video digitizing card. You'll actually see live pictures of everyone in the conference, though it's more like a slide show than

The CU-SeeMe Welcome page shows off some samples of the sorts of images you can see, though honestly, they're often a bit less clear.

video. Visit Cornell University's Web site at <http://cu-seeme.cornell.edu/>.

VRML (Virtual Reality Modeling Language)

This programming language can set the user down in a 3-D environment. Many Mac VRML browsers or viewers are in the works. Visit the following Web site for more information: <http://rosebud.sdsc.edu/SDSC/Partners/vrml/software/browsers.html>

Other Innovations

The Internet also has lots of smaller tricks up its sleeve. MVP Solutions's **Talker** <http://www.mvpsolutions.com/> uses a Netscape plug-in and Apple's Plain Talk extension to read Web pages aloud through your Mac's speaker. **Emblaze Creator** by GEO Interactive Media Group promises full-screen color animation via a free Netscape plug-in <http://www.geo.co.il>. The list goes on and on …

FTP

Not surprisingly, the Internet offers the universe's largest collection of software, available for download by a process known as *FTP*, which stands for *file transfer protocol*, a set of rules dating back to the early days of the Internet. You can FTP files from thousands of sites all around the Internet, most of them universities, which make software libraries available to the general public.

A typical FTP directory, as seen in a Web browser window. Click on "Up to a higher level directory" to go back up the hierarchy.

You can access public FTP sites on which you have no account by means of *anonymous FTP*—use "anonymous" as your user name and your e-mail address as your password. Then just supply the URL—the host name and the path to the file you're seeking. If you're not allowed in, try this trick: Use "anonymous" for your user name, and the "at" sign (@) for your e-mail address.

After the software takes you to the FTP site, don't worry if you don't immediately spot the file. Most FTP sites are organized in nested *directories*, similar to the Mac's folders, enabling you to navigate up and down the hierarchy to look for files. Clicking on a period takes you to the *root* or top directory, and clicking on a double period takes you up one level higher in the hierarchy. Feel free to poke around. Look for directories named "pub" (for public), "incoming," and of course "Mac." Look for files titled "readme" for useful information.
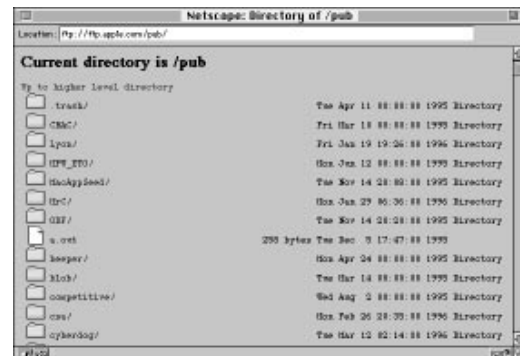
FTP Etiquette: It's common courtesy to limit your downloading to off hours—evenings, and weekends as measured locally at the FTP site. Try to use a local site. And, when possible, download from a *mirror* site, a less busy copy of the original site.

Help for serious downloaders. Several utilities are available to ease the process of searching for and downloading software. Most Web browsers allow you to FTP files—

Fetch, a download utility, displays lots of information on the progress of a download.

just pop the FTP address into the URL text box—but a dedicated utility is much easier and faster. My favorite by far is the shareware c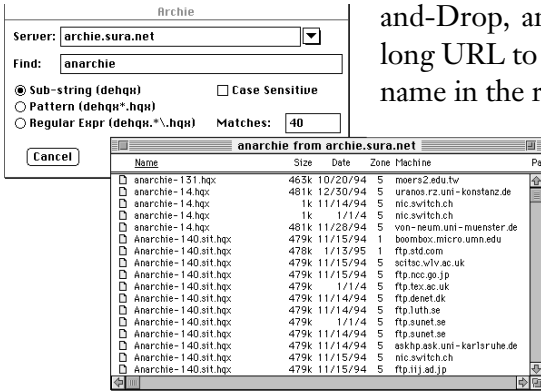lassic **Fetch** ($25) <ftp.dartmouth.edu/pub/software/mac/>, which is extremely easy to use. Fetch displays lots of information in a friendly way, so you know just what's happening (though don't take its estimate of remaining download time too seriously). It makes terrific use of Drag-

Anarchie locates files on anonymous FTP servers all over the world. It'll also download any of them on command.

and-Drop, and I often find it's smarter than me—drag a long URL to its dialog box and it splits it up to put the path name in the right text box. Fetch can also do almost all the uploading and maintenance work for maintaining a Web page.

Where in the World Is carmen.sgo? *Archie* is the name of the special databases that keep track of the locations of files on Internet sites all around the world. These databases reside on a few publicly accessible servers. While you can search an Archie server manually (ugh!), there's one terrific utility that automates the process: Peter Lewis's **Anarchie** ($10) <ftp://ftp.share.com//pub/peterlewis/anarchie-160.sit.bin>. Anarchie not only searches Archie servers for files, but lets you download the file once you've found it. *[I Command-clicked on an FTP site's directory window title. I gasped. Sure enough, the remote directory path flopped down just like the Mac's window titles do. Anarchie makes FTP uploads and downloads a matter of dragging icons the way we've always used the Finder. A smart, deep, and fast program.—DJS]*
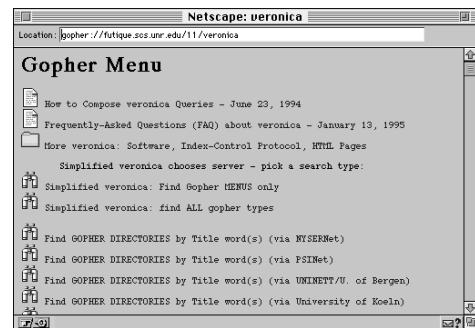
All the Rest

There are plenty of other things you can do on the Internet, but because they're less commonly used, we'll just give them a quick glance. Turn to the Read Me file or manual included with each of the tools' software for more details and instructions.

Gopher. Before the World Wide Web, people moved through hierarchical menus of resources by way of *Gopher*, a slick and still very useful method of creating a directory of resources. Your Web browser makes a fine Gopher application,

Before there was a World Wide Web, there was Gopher, a slick way to present a directory of resources on the Internet.

though the old standby Turbo Gopher <ftp://ftp.aloha.net/pub/Mac/> is fine. For a sample, visit the "mother of all Gophers" at <gopher://gopher.umn.edu>. You can also use keywords to search all Gopher databases using an application called Veronica <gopher://futique.scs.unr.edu/11/veronica>. (If you think it's a coincidence that there are Internet tools called Archie and Veronica, think again.)

MUDs. A *MUD* (*Multi-User Dimension* or *Dungeon*) is what you get if you cross Dungeons and Dragons with the old text-only adventure games—role-playing virtual worlds which can be dragon-filled adventures or simulations of small fantastic towns. MUDs typically have elaborate social structures and an open-ended user-created structure. Some people become so obsessed that real life takes a back seat. Info on MUDs is available in the alt.mud and rec.games.mud newsgroups.

Internet Relay Chat. In the last chapter we introduced the concept of live conversations known as chat. The Internet version is *Internet Relay Chat*, or *IRC*, in which live conversations take place over *channels*. Unlike chat on the commercial services, IRC is often thrilling for immediate news of world-shaking events. Eyewitness accounts of the Oklahoma City bombing and the Gulf War were first transmitted over IRC. Homer is software for IRC <ftp://ftp.aloha.net/pub/Mac/> and as a bonus, it converts text to sound!

GOOD FEATURE

Telnet. Telnet is a primitive but sometimes necessary method of remotely logging onto another computer. Telnet will usually plop you at the remote computer's command-line prompt, at which point you'll need to enter a user name and password, but from there you can, for instance, join in a MUD, search for resources, or use a few Unix commands to maintain your Web pages. Check out NCSA Telnet <ftp://ftp.aloha.net/pub/Mac/>.

Your First Home Page

The Web is stuffed to the gills with *home pages*, personal Web sites set up by individuals and dedicated to personal obsessions, a favorite cause, or sometimes almost nothing at all. Creating a home page is easy. No, really. Not "easy" like AppleScript or HyperCard programming. Easy.

A page on the Web is written in *HTML*, *Hypertext Markup Language*, but it's not a programming language. It's called a markup language because it's just a set of short tags (such as <i>) inserted into the text of a page so a Web browser can understand how to display the styled, formatted text, graphics, and sound.

The <i> tag, for instance, tells a browser that the text following it should be displayed in italics. A matching closing tag, in this case </i>, tells the browser to end the italics style. Once you learn a couple of dozen or so markup tags, you know enough to make your first simple home page. You can do all the writing in any word processor (though later in this section we'll recommend some applications to automate some of the process). And you can prepare your first page in just an hour or two—then the fun is

The advanced page layout used by HotWired's webmasters takes some painstaking and creative use of HTML.

enhancing your page with more advanced formatting.

Don't worry about memorizing everything at first. Read this section, follow the instructions for setting up and viewing the template, and then use these instructions again as a reference for more creative enhancements. Copy the template, inserting your own content. Study the way the tags affect what's displayed in your browser.

It's usually considered fair game to find a Web page you admire, save the HTML source code with your browser's Save As Source command, and steal the author's ideas for layout—but certainly not the text or images! Examine the tags used to format the page, and copy what you like. I learned a lot of tricks by examining the behind-the-scenes HTML work of sites such as HotWired <http://www.hotwired.com/>. HotWired's webmasters really know how to use HTML tags to do new, unsupported tricks.

When you finish a page, you can upload it, plus any graphics and sounds you've linked on the page, to a provider who gives you home page space, such as AOL and many ISPs. Each service offers specific instructions on how to upload the files.

Okay, let's go!

My Incredibly Interesting Home Page

Start with a blank document in your favorite word processor, and title it "index.html"—that's the title of the default document, the page that will be displayed first to a visitor, on most Web servers. Be sure to save the file in plain text format. Launch your Web browser and use the browser's Open Local or Open File command to open the file you're working on. Then switch to the browser as you work to see how your document looks: Save your document in the word processor, switch to the browser, and click the browser's Reload button.

Important note: Forget your desktop publishing training—don't use "curly quotes" anywhere in your HTML document. Stick to straight quotes only!

Markup Tags

All HTML *markup tags* are encased in brackets <like so>. Many of the tags you'll be using simply turn text formatting on and off. To make a passage bold, for instance, place the bold tag just before the start of the boldface text. A tag to turn off formatting is identical except for a slash. To end the boldface, simply add this closing tag: . It would look like this.

That's how you'll specify *italics* (<i> and </i>), **bold** (and), centered paragraphs (<center> and </center>), and other simple formatting. The following table shows the common formatting tags. You can find a terrific guide to HTML tags at <http://home.mcom.com/assist/net_sites/index.html>.

HOT TIP

Every HTML document begins with the opening tag <html>. Much like yourself, your document will be divided into a head and a body. Start the head with the <head> tag, then specify <title>The Home Page Window Title</title>. That will appear as the title of the window in the browser, not as a title in the text of the page.

Close the head </head> and open the body <body>, where you'll be putting the content of your page. At the end be sure to close the body with </body> and close the entire document with </html>. Confused yet? See "The Official Macintosh Bible Home Page Template" to see how these first tags are placed.

You can specify six levels of headers (though only the first three look good in my opinion). Headers open with the <h1> through <h6> tags and close with matching </h1> through </h6> tags. A level-one or level-two header belongs right at the top of the body; levels three and four make good section headers.

A Sampling of Useful HTML Tags
These tags are among the most useful.
Heading 1
Heading 2
Heading 3
New line
Paragraph<p>
Horizontal rule <hr size=xx width=xx>
Anchor <A href="http://xx">hyperlinked text</A>
Image <img src="xx.gif">
Unordered list
List items
Close unordered list

A browser will ignore normal paragraph breaks completely. You'll have to specify every simple line break <br> and paragraph <p>.

One of the more useful tags <hr> inserts a line across the page, known in publishing as a *horizontal rule*. Some browsers, such as Netscape Navigator, know how to read the width and thickness of the rule, specified in pixels <hr size=xx width=xx>. Examine some of the illustrations of Web pages in this chapter for useful horizontal rules.

The Official Macintosh Bible Home Page Template

Copy this template for the beginnings of
your first page, fill in your own content,
open in your browser, and then expand on it
as you learn more HTML.

<HTML>
<HEAD>
<TITLE>The Home Page Template</TITLE>
</HEAD>

<BODY>
<A name="top">
<H2>Your Macintosh Bible Home Page
Template!</H2>

*Here's how the Official Macintosh Bible Home Page
Template will look through the eyes of Netscape
Navigator.*

The difference between a break tag "br" and a paragraph tag "p" is the space after the line
break. The break tag simply starts a new line, like so
while the paragraph tag keeps a
blank line between paragraphs, making clear paragraph breaks.

Notice that the return inserted in the original text after the previous sentence was ignored
by the browser.<p> The "p" tag inserted before this sentence makes it a paragraph set off by
a blank line.

<A name="middle">
<hr>
<h3>Middle of the Page</h3>

You can jump directly to a spot in the middle of a page specified by a "name" anchor.
Create a link pointing to a name anchor, like so: `mypages/text.html#info`. This is espe-
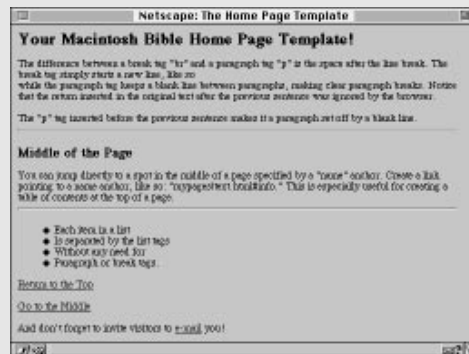cially useful for creating a table of contents at the top of a page.

<hr>

Each item in a list
 Is separated by the list tags
 Without any need for
 Paragraph or break tags.

<A HREF="index.html#top">Return to the Top</A><p>
<A HREF="index.html#middle">Go to the Middle</A><p>
And don't forget to invite visitors to <A href="mailto:72241.731@compuserve.com">
e-mail</A> you!
</BODY>
</HTML>

Tags can also set up several kinds of lists, the most useful being the unordered (that is, unnumbered) list. Each list entry is preceded by the tag <li> (for list item—and there's no closing tag for list items), and the entire list must be surrounded by the opening tag <ul> (for unordered list) and matching closing tag . No paragraph breaks are needed—the <li> tags take care of them.

Now you know enough to put a bare-bones text page on the Web. Next, let's create some links.

Linking Logs

Some tags specify hypertext *links*—colored or underlined text or graphics which, when clicked on, will take you immediately to another document or picture, or even download a file such as a sound. Many people use links to create a page of favorite Cool Sites elsewhere on the Web.

To turn any text into a link, surround it with special *anchor* tags:
<A href="http://www.zdnet.com/~macuser/people/andyi/">Colossal Waste!</A>.
The text between the opening and closing tags will be highlighted, and clicking on that text will send the visitor to the URL specified between the quotation marks.

To display a graphic, you'll need an *image* tag, which displays the graphic located at the URL specified by a *source* attribute, like so:
```
<img src="graphics/baaroom.gif">.
```
Here, the source portion, src="graphics/baaroom.gif", tells the browser where to find the graphic "baaroom.gif," in this case in a local subdirectory titled "graphics." You must include the exact path name and the exact title of the document.

You can add a couple of more useful attributes to the image anchor:
<img width=484 height=479 src="graphics/baaroom.gif" alt="Music for Bang
  Baaroom and Harp">.

Specifying the exact pixel height and width of the graphic will let some smart browsers automatically set aside that space for the graphic and then go ahead and fill in the text on the page. That way a visitor can read the text without first waiting for the graphic to download. Please make use of this attribute!

You'll also notice the "alt" tag, which tells the browser what text to display if the graphic can't be shown. This is useful for some text-only browsers, or in case your link to the graphic is broken for some reason.

Study this example to see how to make a hyperlinked graphic image:
<A href="http://www.zdnet.com/~macuser/people/andyi/">
  <img src="graphics/baaroom.gif"></A>.
See the anchor tags surrounding the image tag?

HTML Troubleshooting in 50 Words or Less

The best HTML troubleshooting tip I can offer is that, when things look screwy, double check to be sure you've included a matching closing tag for every opening tag. If you've forgotten to close a bold tag, for example, the rest of the page will be bold!

HOT TIP

Internet Tips   (JH)

Because it's tough to gracefully surf the Internet with seaweed all tangled in your toes, we've provided some ideas to consider for maximizing your surfing pleasure.

HOT TIPS

Netscape

Real estate. Give yourself a larger Web browser window. Many browsers allow you to disable the toolbars and other doohickeys that clutter the window frame. In Netscape Navigator, for instance, turn off Show Toolbar and Show Directory under the Options menu. Study up—you can substitute command keys for most toolbar buttons and make your switch to a larger window permanent. Leave Show Location turned on, though—it's just too useful.

Real estate, part two. Remember that you can open more than one window in Netscape Navigator. If you're waiting for enormous graphics or a huge page to load in one window, press ⌃⌘N for a new window, where you can go exploring elsewhere rather than twiddle your thumbs. Switch back and forth between windows as needed.

In one picture we illustrate three tips! The foreground window displays more of the Web page because the toolbars have been turned off. We're about to search for some shareware while the window in the background continues to download some heavy graphics.

HOT TIPS

Professional Help for Budding Webmasters

Once you get your HTML sea legs, you'll want to begin investigating applications, add-on utilities, and books that help automate HTML coding.

Guidance of the Web, by the Web, for the Web (JH)
Netscape offers pointers to lots of HTML and Web page authoring sites at <http://home.netscape.com/assist/net_sites/index.html>. And HotWired lists an essential tool kit of Web tools at <http://www.hotwired.com/surf/special/toolkit/toolkit.html>.

The Software (JH)
One of the best shareware HTML editors is **HTML Pro** by Niklas Frykholm ($5). You might also consider the HTML writing add-ons in **Microsoft Word 6.0.1** and **WordPerfect 3.5** or Lindsay Davies's $120 set of BBEdit **HTML Extensions** <http://www.barebones.com>. **Netscape Navigator Gold 2** for Macintosh <http://home.netscape.com> includes page authoring extensions. And SoftQuad's **HoTMetaL Pro** ($195) <http://www.sq.com> adds spell checking and tools for working with images and graphics.

The most serious HTML tool is Adobe's **SiteMill** ($600), and its little sister **PageMill** ($100). PageMill smoothes the hassles and drudgery of simple HTML coding, and allows for instantaneous switching to viewer mode, so there's no need to switch back and forth to a Web browser. Adding images to a page is positively easy. While version 1 was directed strictly at novice page authors, version 2, due out as we go to press, promises to be a much more powerful and complete tool, offering support for tables, search and replace, Drag-and-Drop sound importing and conversion, and spell checking.

Adobe SiteMill does PageMill one better—it manages all the documents of an entire Web site, taking over such drudgery as updating all the hypertext references throughout your site when you change the name of one document or move it to a new location. SiteMill is a serious and useful tool, and for the price, it's obviously aimed at professional webmasters.
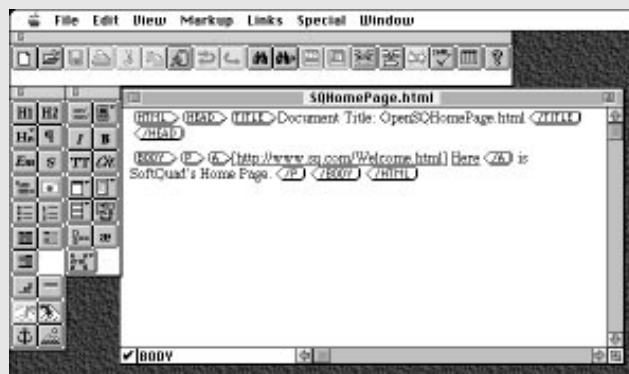
The commercial HTML editor HoTMetaL Pro adds niceties such as a spelling checker.

World Wide Web Weaver is an inexpensive and powerful HTML editor.

[PageMill 1 is junk and will lead you seriously astray. Yeah, you can do a fast home page (five minutes or less) but the HTML created is bad, and not particularly portable. The program fails to use or even allow important tags, and when you open a well-coded page in it, it instantly changes all the good code to its own poor, sometimes buggy HTML, with no option thank you. Version 2 has been announced, but wasn't shipping when I wrote this. If the press release doesn't exaggerate, then PageMill 2 will be a great and useful tool. Much better now, and still great even when PageMill 2 shows, is the cheaper **World Wide Web Weaver** *($50) <http://www.northnet.org/best/Web.Weaver/WWWW.html>.—SB]*

At this writing, Microsoft was slated to release a Mac version of **FrontPage** ($700) which will allow both WYSIWYG Web page editing and Web site management. Keep your eye out for news.

The Best Web Page Book (SB)

Creating a personal home page on the Web is a snap. Anyone can do it. Not everyone can do a great page though. The language of pages, HTML, isn't difficult, but there are too many tricks to just fly by the seat of your pants. Book publishers have noticed that and there are dozens of titles that help you with your own pages. Most are average, some are useless, and *The Web Page Design Cookbook* by Horton, Taylor, Ignacio, and Hoft (ISBN 0-471-13039-7; $34.95 with CD-ROM; John Wiley & Sons) is just wonderful. It's readable, you will learn from it (even if that's not your goal), and it has a CD-ROM of templates, samples, and goodies that every Web page designer should use.

Other Tips

HOT TIPS

Target practice. Web page authors: This sly trick will help keep visitors from wandering off exploring the links on your page, never to return. Insert the "target= window" tag (Netscape Navigator 2 and later only) inside your pointer anchors like so:

```
<A target=window
href="http://www.macintouch.com">MacInTouch</a>.
```

Your visitors will visit the pointed-to site in a new window, with your original page still waiting patiently in the background.

Internet shareware database. It keeps getting more and more difficult to get useful results from Archie servers, the databases that track the location of all the software on the Internet. They're either too busy or the search just doesn't turn up anything useful. To locate shareware on the Internet, try this neat new alternative. The commercial Web site c/net offers a massive searchable database of shareware, including abstracts of each piece of software and the sites that carry it <http://www.shareware.com/>.

Forgo the graphics. Though the graphics are nice, sometimes you just need to get around the Web fast. Use the option in your Web browser to turn off the loading of graphics, which will instead show you the text quickly with just a small place holder for missing graphics. Click on any of the place holders to load individual graphics anytime you like.

Turning off graphics. The small page symbols represent the spots where graphics were to be loaded.