

Chapter 2

GETTING YOUR FEET WET

Connections, Providers, Speed, TCP/IP, a (Brief) Client-Server Story, and a Hands-On Tutorial

This chapter is about Internet providers, setting up your connection with an Internet provider, and your speed options for connecting. Along the way we'll tell you a little about network protocols and the client-server story and a bit about the UNIX operating system and what makes UNIX lovers tick.

Then (and only then) we'll start our hands-on festivities with a delightful little ditty we call the MacHTTP Quick Start.

TO SURF AND PROVIDE: THE SERVICE PROVIDER STORY

If you're going to be a WebMaster, the most important person in your life is your Internet service provider. This section will tell you a little about the species, but in a nutshell, here's our advice: Cherish him and treat him right.

On Dealing with UNIX and UNIX Geeks

UNIX is the indecipherable multi-user, multi-tasking, multi-platform operating system that's more or less the standard for the Internet. Most service providers use high-powered computer workstations running the UNIX operating system.

Traditionally, Macintosh users have sneered at UNIX users and vice versa. "UNIX is impossible for mere mortals to use" vs. "The Mac is just a toy." But given the fact



that many of the machines on the Net are running UNIX, it's obvious that we Mac enthusiasts must learn to get along with the UNIX community.

Just between us, the Mac interface is better than UNIX's cryptic commands. And Macs are a zillion times easier to use. The truth is, there's almost nothing you can do with a UNIX box that you can't do just as well or better on a Mac. But you'll never convince a dyed-in-the-wool UNIX geek of that. And chances are good that your service provider is dyed-in-the-wool.

So if your service provider is comfortable with his UNIX command line, don't try to convince him he should be running his site on a Mac. Trust us, you can't.

Follow this simple rule and you'll have a long, mutually beneficial relationship with your provider; disobey it and you'll have a screaming match which neither of you has the slightest possibility of winning.

(Note: Feel free to change "he" to "she.")

The Early Days When Life Was Simple (Not!)

Let's say it right up front: TCP/IP and UNIX are ugly. They're decidedly un-Maclike. In the early days, we mostly got our Internet accounts from UNIX geeks who didn't get it. They figured that us "little computer" users would know how to configure TCP/IP. Wrong! They thought we would be able to write our own modem scripts for our SLIP or PPP software. Wrong again. Many of them didn't even have a Mac in house! It wasn't long before they were swamped with support calls from Mac and PC users.

Things are better these days. Most Internet providers give you a nice, customized Mac installer disk with everything preconfigured for your SLIP or PPP dial-up connection. Just double-click and the installer sets all the IP addressing information in the MacTCP control panel auto-



matically; it prompts you to choose your modem brand and type from a pop-up menu and enter your user ID and password. Then, just click the Connect button and away you surf!

OK, not every Internet provider is that Mac savvy. But things today are much better. Our advice: If your provider can't at least preconfigure your MacTCP and SLIP or PPP software for you, think about finding a different provider.

Your Internet Provider Is Your Friend

Have you ever been over to your Internet provider's offices and seen their hardware? Have you ever met them in person? If not, you should. Have them show you their setup and explain which box does what. Get to know the people who work there. Take a UNIX geek to lunch. Trust us, it'll be worth it someday when you've got major problems on your end.

All kidding aside, we can't stress enough how important it is to be on good terms with your Internet provider or network administrator. There is much they can do to make setting up and running your Web site go even easier; you'll be depending on them for configuring MacTCP, getting a permanent address on the Internet, and maintaining the physical connection between your site and theirs. So be nice.

Believe us, as soon as your network or ISDN connection goes down, you're going to be calling the expert for help. The whole thing is so much easier if that expert is also your friend. We can't begin to emphasize this enough.

A Typical Internet Site

Here's the setup for one of the Internet providers we know in Austin. The machine names and IP numbers have been changed to protect the innocent.

It's not that complicated really. Just gaze at Figure 2.1 and in your mind, add about a ton of wires running all over the place and some guys who seem a little out-there and bug-eyed wild wearing jeans and T-shirts who haven't slept or combed their hair in days because they are setting up so many new accounts. Nice picture, eh?

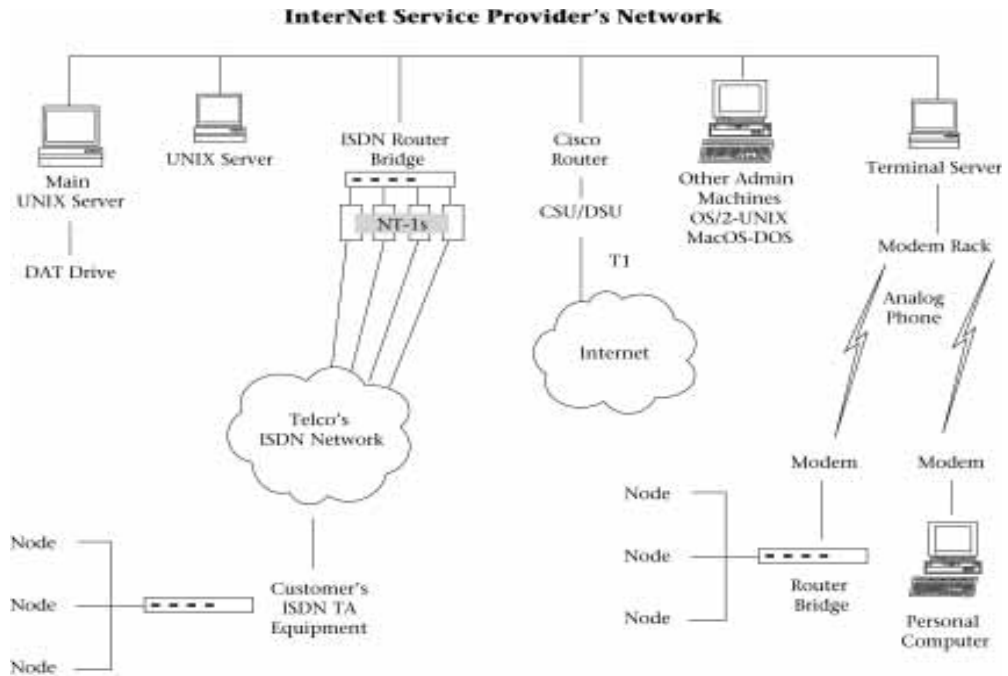


Figure 2.1: Internet Site Layout, Tomorrow's Technologies, Austin, TX, January 1995. © 1995 Tomorrow's Technologies, Inc.

Getting What You Need from Your Internet Provider to Get Started

There are two things you need to get from your Internet provider or network administrator to get your Web page up and running. The first is a dedicated, permanent connection to the Internet; the second is a permanent address on the Internet itself. If you haven't got both, these are two items you must have if you want to run a real full-time Web site. Realistically it takes two to three weeks to get this stuff in place, so read what follows, then contact your Internet provider and get started ASAP.

If you're already connected to the Net full time and have a permanent Internet address, skim the next couple of pages (but don't miss the jokes and secret passwords).



INEXPENSIVE CONNECTION CHOICES

Like we said, if you are serious about setting up a Web site you are going to need to get some sort of dedicated 24-hour connection with your Internet provider. Unless you're doing an in-house Web site for your company and only need the site to be available during specific hours, it's kind of bogus to set up a Web site, announce it to the world, and then not have it available 24 hours a day.

There are a couple of ways to go, and several things to keep in mind when you're deciding what type of connection to get. Basically your connection choices are as follows:

- An analog line using a 14.4 or 28.8 baud modem
- or
- A digital line such as a 56K dedicated line, Frame Relay, ISDN, or a T-1 (faster than that and you're really talking big money).

The cost for a dedicated connection will range from \$75 a month to more than \$5000 per month, depending on which type of line you choose. Prices keep dropping, so ask your Internet provider for the latest rates.

We've included a list of Internet providers by major metropolitan area as an appendix. Better still, you can usually get a current list off the Net itself by posting to a USENET newsgroup for the city you live in; in our case we'd ask in "Austin.general." Post a message something like this:

I'm looking for a local Internet provider who offers ISDN [or whatever type of connection you want] at reasonable rates. I'd appreciate any recommendations. Thanks.

The type of connectivity you go with depends on your need for speed, your budget, and how many "hits" a day you anticipate your site is going to get. We'll talk about your options in depth in a moment.



Keep in mind that many people hitting your site will be using a 14.4 or 28.8 modem connection at their end. If there are a lot of people hitting your site simultaneously or if you are serving up large images, you're going to want a faster connection to handle the traffic and maintain performance. Choose a slow connection and people will come to your site, wait around too long for some text or image to load, say "later," and surf away.

It's easy just to click away from a slow site — easier than flipping channels, watching six shows at once, and driving your wife crazy. Tuck this little tidbit away in the back of your mind for now; we'll talk more about it later.

Anyway, the need for speed is something that's hard to predict. We recommend you start out modestly. You can always add bandwidth later. On the other hand, let's get real and stop beating around the bush: Get as much bandwidth as you can possibly afford. Like RAM and hard-disk space, more is always better.

Dedicated Modem

We recommend starting out with a dedicated 28.8 modem connection. Check with your Internet provider to see if they offer it; almost all do these days. You'll need a V.32bis modem, a phone line, and a dedicated SLIP or PPP account with your service provider.

This type of connection is typically the least expensive. Bearing in mind that prices are always changing (usually dropping), V.32bis modems are going for around \$200 as we write this in early 1995. Most Internet providers are offering dedicated 28.8 connections for under \$100 a month. By the way, 28.8 is probably as fast as it's going to get over analog phone lines. For higher performance you'll need to move to digital lines such as ISDN or T-1 (explained in the next section).

To sum up the costs: a V.32bis modem, a standard analog phone line that you don't use for anything else, plus setup and monthly fees you'll pay to your Internet provider. All in all, a dedicated 28.8 connection should cost you a couple of hundred dollars to get up and running, and a couple of hundred a month to maintain.



The Great Debate: SLIP vs. PPP

We recommend that if you are going the dedicated 28.8 modem route, that you stay away from SLIP (Serial Line Interface Protocol) and look for a provider who offers PPP (Point to Point Protocol). You don't need to know much about them but here's what you *do* need to know.

PPP allows multiple protocols concurrently over a dial-up link. You want that. We prefer PPP over SLIP because PPP gives you more flexibility, is more robust, and has more new development being done for it than SLIP. In fact, we'd venture to say, SLIP is becoming less prevalent and is usually more of a nuisance to configure.

So our advice if you don't already have a satisfactory connection is to find a provider who offers dedicated PPP connections for V.32bis modems.

The Importance of a Permanent Address

Macintosh SLIP and PPP implementations (MacSLIP, InterSLIP, and MacPPP) provide equivalent access to the Internet by allowing MacTCP to be used with a modem to turn your Mac into a machine that is "on the Net."

When you connect to go surfing the Net with a SLIP or PPP connection, you receive an "IP address" assigned by the UNIX box at your Internet provider. That address is in effect for the duration of your dial-up session. (Really. You can check it out any time by opening the MacTCP Control Panel during your session and seeing what IP address has been assigned.) Each time you dialed in you may have received a different IP address.

Since in the past you were *surfing* the Net and not serving a Web page on the Net, it didn't really matter whether or not you had a permanent IP address. But now that you are setting up a Web site, you want to have a permanent IP address so people can find you! Your service provider will assign you a permanent address. Just ask.



Two Reasons You Might Park Your Page on Someone Else's Server

Reason 1: If you're short of funds, you may be able to park your Web pages on somebody else's Web server — usually your Internet provider's UNIX box — for a lot less money than any of the solutions in this chapter.

But what fun is that? Part of the joy of WebMastery is to have it there on your desk, to fiddle with endlessly until you get it right. Still, this may be the most practical thing to do until you can afford a full-time connection of your own. Talk to your provider about your options.

Reason 2: At the other end of the spectrum is the problem of having so much traffic on your site that your Mac is overloaded or bandwidth becomes the bottleneck. We should all be so lucky. This means you've become successful! It also means you may have to move your Web pages on to a faster UNIX box and turn the WebMaster role over to a UNIX systems administrator to handle. (Or, of course, learn UNIX yourself...)

For instance, the Apple site at <http://www.apple.com> receives 300,000–400,000 hits a week and sits on a UNIX host computer with a dedicated T-1 connection. There are times when that machine receives 200 simultaneous hits per second! The fastest Power Macintosh can handle that load, but poor old MacTCP just can't keep up.

For what it's worth, the Penthouse WWW site gets 800,000 hits a day. The URL is <http://www.penthouse-mag.com>. Sex sells on the Net too.



(Of course, when Open Transport replaces MacTCP and the Mac OS supports true multi-tasking and several other UNIX-like features (code name: Copeland; available in 1996) you should be able to handle the big-time traffic.)

In the meantime, we hope this is a problem you encounter. It means you're a huge success and can pay a team of UNIX geeks to do it for you while you clip zero-coupon bonds.

OK. Now that that's out of the way, let's look at those aforementioned faster (and more expensive) connections.

ISDN AND OTHER DIGITAL CONNECTIONS

There are a couple of ways to go if you decide to go for a dedicated digital connection instead of the analog modem route. They all work pretty much the same way as far as you are concerned: You've got a Combinet box or router hanging off your network connected to a terminal box. The terminal box in turn is connected to the line from your local phone. Your Internet provider's side of things is set up the same way in reverse. Sometimes they have a lot of money and a setup that can handle multiple types of digital and analog connections from different types of customers.

If you ever want to see every type of router, terminal server, and type of network and digital connectivity on Earth, go to the networking event of the year — Networld+Interop. The big one is held in the Spring in Vegas and is a blast. You'll get an unbelievable dose of media, protocols, Internet, infrastructure, network software, wireless/mobile, multimedia, and carrier/telecommunications. The show is one of the first to have a virtual trade show on the Web at <http://www.interop.com>.

Whether you get a 56K line, ISDN, Frame Relay, fractional T-1, or T-1 (don't worry — all will be explained soon) is a matter of budget, your Internet provider's offerings, and your local phone company's technology. In some parts of the country the local phone companies are pushing Frame Relay, in others it's flat-rate ISDN; it just depends on where you live.



We like ISDN. OK, we're biased. That's what we have. Southwestern Bell has a great deal on ISDN in Austin — installation is cheap (under \$100) and we pay a flat rate of \$50 a month. Your mileage may vary.

Because of its speed, reliability, and cost-effectiveness, many Internet providers are strongly committed to ISDN as the preferred method of connection for customers. In addition, the global Internet community is moving toward a standardized entry-level topology, and ISDN is rapidly emerging as the most universally accepted candidate.

Almost all Internet providers offer ISDN. There's a reason. ISDN operates at 64Kbps or 128Kbps, two to four times faster than a 28.8 modem's highest theoretical connect speed. ISDN is digital, therefore its bandwidth is guaranteed and error-free. Finally, it's relatively easy to set up for both Internet providers and telephone companies.

If you decide on ISDN (or any other type of high-speed digital connection for that matter), get the advice of your Internet provider and telephone company before you do anything. Ask them what you need and how they recommend you go about getting it. You don't even need to know what ISDN stands for. ("Integrated Services Digital Network." There. Did that make you feel better? For what it's worth, many netizens say it stands for "I Still Don't Know.")

ISDN is nothing more than a digital telephone line. You get one by placing an order with your local phone company, assuming they offer ISDN service. Not all do. Yet. Be aware that there are different types of ISDN, ranging from ISDN on demand to bonded ISDN.

The one you care about is Basic Rate Interface ISDN or BRI. BRI is comprised of two "bearer" (B) 64K channels for user data plus one "data-link" (D) 16K channel for control and signaling information. Many Internet providers just set you up on one B channel, which gives you a 64Kbps connection to the Net — about two to four times faster than a 28.8 modem.

Here's where it gets interesting: You can "bond" the other 64K channel with the first to make a 128K connection. And you can just keep on bonding away with ISDN and end up with a PRI (Primary Rate Interface). PRI provides 23 data channels of 64Kbps each operating simultaneously and a 64Kbps signaling channel for communicating over an ISDN Primary Rate Service. By providing digital communication over twenty-three 64Kbps channels, many individual basic rate ISDN channels can be



serviced over a single telephone company connection line. In North America and Japan, PRI consists of 24 channels, usually divided into 23 B channels and one D channel, and runs over the same physical interface as T-1. Elsewhere it's 30 B channels and one D channel. Ask your Internet provider and your phone company; all you need is cash....

Monthly rates for a 64K dedicated ISDN connection vary widely. Just like the example of a dedicated modem connection, you're going to pay for both the phone line — in this case it's a digital one — and for the connection to your Internet provider. Prices on ISDN and other types of digital connections vary widely depending on your location. There are promotional rates, flat rates, measured rates, "on-demand" rates, rates by byte usage, rates, rates, and more rates. You have to be a bean counter to compare offerings and rate packages and figure it all out. Look for something that's simple to understand, and as close to a flat rate as possible — from both phone company and service provider. Figure it's going to run you somewhere between \$250 to \$500 a month for a 64K ISDN connection by the time you're done.

Ask your Internet provider how to get your ISDN line installed. They'll probably know a contact person at the local phone company with whom they have a good relationship or at least took to lunch once.

One last thing: When you're going the ISDN route, it may be better to determine a budget, then leave it up to your Internet provider to tell you what to buy equipment-wise, and what speed connection you can get with that budget.

Typical Monthly Dedicated Rates

The following pages detail the April 1995 rates for UUNET (see coupon at the back of this book). You may not get as good a deal in your neck of the woods; you may do better. As always, your mileage may vary.



UUNET PRICE LIST

AlterDial[®] Dial-up SLIP or PPP Internet Access via High-Speed Modems

Metered Client Cost (3-month commitment required)

- \$30/month basic service fee, including 15 hours of local usage, Internet mail, and USENET news for one user
- \$2.25/hour connection cost to local hub (after first 15 hours),
- \$6/hour surcharge to 800 number (at all times)
- \$10/month optional charge for each additional POP e-mail account
- \$25 one-time start-up fee

Metered LAN Cost

- \$49/month basic service fee
- \$3/hour connection cost to local hub, \$9/hour to 800 number
- \$10/month optional charge each for Internet mail and USENET news via UUCP/TCP
- \$10/month optional charge for each POP account or \$20 per concurrent NNTP session
- \$499 one-time start-up fee

ISDN Workgroup^(SM)

64 Kbps or 128 Kbps Internet Service

For all standard features, including unlimited connect time:

	1 B Channel	2 B Channels
Startup charge	\$395	\$495
Standard monthly charge	\$295	\$495
Monthly charge		
with 12-month commitment	\$280	\$475
Monthly charge		
with 24-month commitment	\$265	\$450

For additional options:

POP accounts: \$10 per month per mailbox

NNTP sessions: \$10 per month per simultaneous session.



Equipment: Ascend Pipeline 50 ISDN Router: \$1050 (when purchased with service)

56K Leased Line Internet Access

Cost: \$795 one-time start-up fee

Monthly service fee: \$695

Monthly service fee with 1-year term commitment:¹ \$645

Monthly service fee with 2-year term commitment:¹ \$595

\$100/month optional charge for a USENET news feed and/or Internet mail via UUCP over TCP. There is no extra charge for Internet mail via SMTP.

¹At the conclusion of the term, pricing will revert to the standard rates in effect. Any customer wishing to cancel service before the completion of the term will be required to pay 75% of the monthly charges for the months remaining on the contract.

56 Kbps Frame Relay Internet Access

\$495 one-time start-up fee

Monthly service fee: \$595

Monthly service fee with 1-year term commitment:¹ \$545

Monthly service fee with 2-year term commitment:¹ \$495

\$100/month optional charge for a USENET news feed and/or Internet mail via UUCP over TCP. There is no extra charge for Internet mail via SMTP.

¹At the conclusion of the term, pricing will revert to the standard rates in effect. Any customer wishing to cancel service before the completion of the term will be required to pay 75% of the monthly charges for the months remaining on the contract.

Fractional T-1 (128 Kbps) Frame Relay Internet Access*

\$3,000 one-time start-up fee

Monthly service fee: \$995

Monthly service fee with 1-year term commitment:¹ \$895

¹At the conclusion of the term, pricing will revert to the standard rates in effect. Any customer wishing to cancel service before the



completion of the term will be required to pay 75% of the monthly charges for the months remaining on the contract.

*Available in selected service areas — please call for details.

T-1 Plus^(SM)

\$5,000 one-time start-up fee

	Burstable Service	Fractional Service
T-1 Usage Level	Monthly Rate	Monthly Rate
0 to 128 Kbps	\$1,250	\$1,100
128 Kbps to 256 Kbps	\$1,750	\$1,600
256 Kbps to 384 Kbps	\$2,200	\$2,050
384 Kbps to 512 Kbps	\$2,500	\$2,350
Over 512 Kbps	\$3,000	N/A

T-1 Term Commitment: Discounted monthly rates with a 1-, 2-, or 3-year commitment. For a 1-year term, a 5% discount; for a 2-year term, a 10% discount; for a 3-year term, a 15% discount.

T-1 Price Protected: \$5,000 startup; \$2,200 monthly. This product “locks” the price of a full T-1 into a rate of \$2,200 for one year. It is intended for those organizations preferring nonvariable rates and is not based on bandwidth utilization.

Optional 56K and T-1 equipment (available only with service):

Cisco 2501 router and 56K CSU/DSU:	\$1,895
Kentrox T-1 CSU/DSU:	\$1,325
Cisco 2501 router:	\$1,595
ATL 56K CSU/DSU:	\$365
Ascend 56K Pipeline LS56 with internal CSU/DSU:	\$1,325
Imatek 56K router with internal CSU/DSU:	\$995

10Plus[®]

\$5,000 one-time start-up fee

Usage Level*	Monthly Usage Charge
0 to 128 Kbps	\$1,500
128 Kbps to 256 Kbps	\$2,000
256 Kbps to 512 Kbps	\$2,500
Over 512 Kbps	\$3,000



* Monthly charges based on typical usage level during the month. Please call for availability and detailed pricing.

Line costs are not included in any service costs; please contact AlterNet Sales for pricing.

UUNET's Web Server Hosting Services

Standard (server connected via T-1 link)

One-time start-up fee: \$400; Monthly charge (1st month): \$300

Monthly charge, after first month:

MB of data retrieved	Monthly cost	Approximate maximum (per day) number of inquiries*
0-250	\$300	2,000
251-500	\$400	4,000
501-1000	\$500	8,000
1001-1500	\$600	12,000
1501-2500	\$750	20,000

Premium (server connected via 10 Mbps link)

One-time start-up fee: \$850; Monthly charge (1st mo.): \$900

Monthly charge, after first month:

MB of data retrieved	Monthly cost	Approximate maximum (per day) number of inquiries*
0-2,500	\$900	20,000
2,501-5,000	\$1,200	40,000
5,001-10,000	\$1,800	80,000
10,001-15,000	\$2,300	125,000
15,001-20,000	\$2,800	150,000
20,001-30,000	\$3,600	250,000
30,001-40,000	\$4,400	300,000
40,001 and up	\$5,400	500,000 and up

* Approximate maximum number of inquiries per day based on a typical mix of text and graphical information on the server. Pages with extensive graphic or multimedia content will consume more bandwidth per inquiry. Please call for details.



UUNET currently offers three security products. The first of these products is the TIS Gauntlet Internet Firewall, the premier price-performance Internet firewall available today. This device uses advanced application proxy technology—the best technology available to protect customer networks from other networks over which they have no control. The second is LanGuardian, an advanced selective IP encryption device. LanGuardian can encrypt data between a range of IP addresses, while allowing data to other IP addresses to pass unencrypted; thus, LanGuardian users can exchange encrypted traffic with other corporate sites (or strategic business partners) while retaining access where desired to other Internet information resources. LanGuardian supports both single-DES and triple-DES encryption for maximum data security. The third service is security consulting. In particular, it is critically important that users of security products have a written security policy to support their use of those products; UUNET can help your customers develop such policies or offer general security consulting and security site audits.

SELECTING YOUR CONNECTION TYPE

There are several different kinds of local access options for physically connecting from your location to AlterNet, and beyond to the Internet. The connection type you select will depend on the type of services you are seeking and on the size of the user base you are trying to serve.

Mail and News Access Only

For occasional Internet users, who only wish to send and receive electronic mail and participate in special-interest newsgroup discussions, a dial-up UUCP connection is all that is needed.

**Indirect IP Access**

A dial-up link to a provider's public-access machine, commonly dubbed a shell account. This account allows you to reach all Internet services that your provider makes available. However, some text and graphical applications, such as Mosaic, may not be used with a shell account. All files are stored on the provider's machine; you will need additional software to download them to your local computer.

Full Dial-up IP Access

Your computer becomes an official Internet host, with its own domain name, Internet address, and the ability to use the complete range of IP services with a standard modem. AlterNet's AlterDial(R) and ISDN Workgroup(SM) dial-up services are perfect for users and organizations who want full Internet access without the expense of a full-time dedicated link.

Full Dedicated IP Access

Full-time, full-service IP connectivity (mail, news, FTP, Telnet, Gopher, WAIS, WWW, Archie, Veronica, Mosaic, etc.) over a dedicated digital telephone line. Speeds range from 14.4 Kbps to T-1 (1.5 Mbps) and up. You choose the appropriate speed based on the number of users and the amount of traffic you expect.

ALTERNET'S FAMILY OF PRODUCTS

PHONESHOME is a cost-effective way to stay in touch while traveling. All across the continental US, you can dial in to one of UUNET's local-access numbers and work on your Internet hosts quickly and inexpensively.

AlterNet's UUCP services offer you reliable Internet mail and USENET news across the US and around the world. In addition to UUNET's mail and news ser-



vices, UUCP offers proxy Internet file-transfer capabilities and access to our extensive on-line software and documentation archives.

AlterDial gives you direct TCP/IP access to the Internet and AlterNet's network. AlterDial provides unrestricted commercial access to Internet services such as mail, news, Telnet, FTP, Gopher, WAIS, Mosaic, the World Wide Web, and more. AlterDial customers can receive their own domain name and multiple POP mailboxes.

ISDN Workgroup service is designed for business LANs that need high-speed dialup access to the Internet. Connection speeds match those of digital leased lines (approximately four times faster than analog lines), at a cost which can be considerably lower.

56 Kbps service offers mid-sized businesses full access to the Internet, via either leased lines or Frame Relay technology. Frame Relay offers higher performance than "full-time" dialup access, at a lower cost than traditional leased-line solutions.

T-1 Plus is targeted toward subscribers with a variety of throughput requirements. You may choose from either the Burstable Service, which allows you to periodically "burst" up to the full 1.5 Mbps, or the Fractional Service, which permits speeds up to the upper limit of the tier you choose.

UUNET's 10Plus service offers extremely high throughput Internet access to customers with demanding bandwidth requirements. UUNET's 10 Mbps access offers the simplicity of a physical Ethernet interface, with prices usually associated with traditional T-1 access. You pay only for the bandwidth that you use on a sustained basis 95% of the month, as determined by traffic samples taken over UUNET's network every five minutes throughout the day.



UUNET'S WEB SERVER SERVICES

UUNET's Web server hosting services provide you with an easy and affordable way to establish and maintain your company's presence on the World Wide Web. You may choose from the Standard service, which places your information on a server connected to our 45 Mbps ATM backbone at T-1 (1.544 Mbps) speed; or the Premium service, in which your information is stored on a server connected to our backbone via a 10 Mbps link. Both options offer you 24-hours-a-day, 7-days-a-week monitoring, and reliable, fast access to your corporate information by anyone on the Internet. UUNET can also develop your Web server content, providing a fully integrated service. Please call for details.

UUNET. The Internet Business Solution.
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For a Single Mac (Not on a Network)

If your site is just a single Mac that's not on a network, we like the Planet ISDN card. It's pricey, at \$950, but from what we've looked at and heard from our service provider friends, the Planet ISDN seems to be the one that is most compatible with the different flavors of ISDN-capable boxes Internet providers have at their end. But don't just run out and order one; as always, ask the advice of your service provider before you buy anything. Because sooner or later (we hope sooner), some company is going to come out with an ISDN board priced around \$400 and sew up the whole ISDN market.

At the current prices for ISDN cards like the Planet ISDN, you may be better off with something like a Combinet box or a router from Network Express, which is what you use to set up a local-area network (LAN) on the Internet. Remember, an ISDN card will only allow one machine to be connected at a time. That leaves no room for growth if you decide later you'd like to add multiple Web servers or an FTP server, or if you want to use another Mac to surf around the Net over that nice high-speed connection you're paying so dearly for.

For a LAN (Local-Area Network)

If you are on a LAN, your Internet provider will probably connect your network to theirs using a router box that works with ISDN. Go with their equipment recommendation. The cost at your end will run somewhere between \$750 and \$1500 for all the hardware, and another \$50 to \$150 a month for the ISDN line.

Your network administrator (that may be you, so pay attention) and Internet provider need to put their heads together and address the security issues that a LAN connection to the Net has the potential to create. There are issues you definitely need to consider. The main one, of course, is that you don't want outside traffic having access to your whole network. Your Internet provider can best recommend what "firewalls" can be put in place to restrict inbound access to your network to just the machine that is the Web server. They can also restrict outbound traffic for you so that other users on the LAN aren't just goofing off surfing the Net all day. If you are going to connect a LAN to the Internet you need



to spend time looking at security issues that are beyond the scope of this book. You can learn more about the “firewall” world by reading *Firewalls and Internet Security* by William R. Cheswick and Steven M. Bellovin. It’s published by Addison Wesley and goes for about \$25. Firewalls are an arcane study in and of themselves.

What You Need to Know If You ARE Firewalled

Here’s the deal. If the LAN you are on is “firewalled” from the Internet, get your network administrator and Internet provider to set your Web server up outside the firewall. Just remember, that makes it a sacrificial lamb. So don’t keep company secrets on your Web server. And always, always have at least one backup of your entire server, so that you can restore it after a catastrophe.

There is a very big advantage to having your LAN connected to the Internet. Besides letting multiple users surf the Net over the same connection to the Internet, you can run multiple Web servers, FTP servers, and so on, all on different machines on your local network, and all connected to the Internet with one device.

If your LAN is already on the Net, just ask your network administrator to assign you a permanent IP address (and while you’re at it, a host machine name for the Mac you’ll be using as a Web server) and you’re in business!

Look Ma! No SLIP or PPP From Home Either!

Here’s a cool trick we recently came across — a way of giving remote users access to the Internet via your network. All the remote user needs on his or her machine is MacTCP, the AppleTalk Remote Access (ARA) Client, and any Internet apps they want to run.



On your LAN you need TCP/IP, some spare IP addresses, a dedicated connection to the Internet, the ARA Personal Server, a modem and phone line to answer the incoming ARA Client, and the Apple IP Gateway software.

You dial in from home and connect to the network at your office using the ARA Client. (Remember, ARA is AppleTalk.) With the ARA connection established, you fire up one of your Net apps such as Netscape, TurboGopher, or Fetch. (Remember, Net apps like these use TCP/IP.)

The first thing that happens is that the Apple IP Gateway software recognizes that you are sending IP packets “encapsulated” inside the AppleTalk connection you have established with ARA. It then automatically assigns an IP address to your Mac at home — just like when you dial into your Internet provider with SLIP or PPP and establish an IP session on the Net for the duration of the call.

Once the IP address is assigned, the Net app’s IP pack shoots over the LAN at the office and out onto the Internet through the LAN’s dedicated connection to the Net.

Cool, huh?

No SLIP or PPP at all. Later in the book we’ll show you something even cooler you can do along these lines using a box from Tribe Computer. But we couldn’t stop ourselves from interrupting and telling you about this nifty trick right now.



Unless you are a serious telecommunications enthusiast or are the type who needs to know everything about everything before moving forward, leave the configuration of any digital connection to the Internet, such as ISDN, to your Internet provider and your local phone company. Let them have the joy of getting it all set up and running. It's their responsibility anyway. You can always come back when the dust settles and learn more.

By the way, an excellent resource on the Net for info on ISDN is at Dan Kegel's ISDN page at <http://alumni.caltech.edu:80/~dank/isdn/>. Everything under the sun about ISDN is there. Knock yourself out.

IP EVERYWHERE: UNDERSTANDING NETWORK PROTOCOLS

Besides the physical network or modem connection with your Internet provider, you need a permanent address on the Internet. (Remember a few pages ago we told you to get started on it ASAP?) If you don't already have one, it's time to get a domain name and IP address.

Getting Your Domain Name and Permanent IP Address

To be a Web site — or any other type of server on the Internet — you have to have a permanent IP address. You should also have a domain name, though strictly speaking, it's not mandatory. An IP address is a number — 204.96.111.158. A domain name is a name, like “outer.net” or “webmastermac.com.”

Because most humans don't deal well with numbers, the Internet uses names as “aliases” for the numbers. That way you can type the name of a site instead of trying to remember the number. You can, of course, use the IP number instead, but let's face it, <http://www.info.apple.com> is easier to remember than <http://204.96.4.2> for most people.



URLs

You know what URL stands for, right? If you've ever surfed, you've seen URLs. But sometimes you see something over and over but still aren't sure what it means.

URL stands for Universal Resource Locator. It's pronounced You-Are-Ell, not EARL. OK?

Web browsers navigate using URLs. You can always tell from the URL what type of site it is. For example, if the URL starts with "**telnet://**", as in **telnet://inter-nic.net**, you can tell it's a Telnet site. If the URL starts with "**ftp://**", as in **ftp://apple.com**, it is an FTP site. If it starts with "**http://**", it's a Web server.

A Detour into DNS

The Internet keeps track of all the domain names and associated IP numbers with DNS, the Domain Name System. DNS was developed by Sun Microsystems in the early 1980s and is a vital part of the Internet. The World Wide Web is heavily dependent on a fully functioning Domain Name System. In a nutshell, DNS is a hierarchical distributed database system that lets Internet providers (also known as "hosts") keep track of IP addresses and host names in "Host Tables." The Host Table "resolves" a domain name into an IP number to be transmitted over the Internet.

Because there are so many IP addresses and domain names on the Internet, it's impractical for a provider's Host Table to keep a list of all of them. DNS deals with this by distributing the names up and over the Net chain from host site to host site. This, coupled with a system of "look-ups" when a host site or provider is unable to resolve a domain name into an IP number, makes the whole addressing scheme over the Internet function smoothly.

There's obviously more to how DNS actually works, but that should hold you. If you're really interested, you can talk about it over that lunch you are going to have with your service provider.



Before You Request...

One thing you should do before requesting a domain name and IP number from your Internet provider is Telnet to the InterNIC and search the “Whois” database to see if the domain name you want is available. If you’ve never done this, here’s how:

After making a connection to the Internet if necessary, Telnet to **internic.net**. When you get there you’ll see a menu that looks like Figure 2.3.

```
outer.net 1
*****
* -- InterNIC Registration Services Center --
*
* For gopher, type:          GOPHER <return> ** DISABLED **
* For wais, type:           WAIS <search string> <return>
* For the *original* whois type: WHOIS [search string] <return>
* For referral whois type:  RWHOIS [search string] <return>
*
* For user assistance call (703) 742-4777 or (619) 455-4600
* Questions/Updates on the whois database to HOSTMASTER@internic.net
* Please report system problems to ACTION@internic.net
*****
Please be advised that use constitutes consent to monitoring
(Elec Comm Priv Act, 18 USC 2701-2711)

6/1/94
We are offering an experimental distributed whois service called referral
whois (RWhois). To find out more, look for RWhois documents, a sample
client and server under:
gopher: (rs.internic.net) InterNIC Registration Services ->
        InterNIC Registration Archives -> pub -> rwhois
anonymous ftp: (rs.internic.net) /pub/rwhois
Cmdinter Ver 1.3 Sat Jan 21 21:38:11 1995 EST
[vt100] InterNIC > █
```

Figure 2.2: The InterNIC “Whois” Menu, January 1995.

You don’t have to select anything from the choices presented. The prompt has you at the right place to begin with. Just type the domain name you are interested in having to see if it is available, as shown in Figure 2.3.



```

outer.net 3
*****
* -- InterNIC Registration Services Center --
*
* For gopher, type:          GOPHER <return> ** DISABLED **
* For wais, type:           WAIS <search string> <return>
* For the *original* whois type:  WHOIS [search string] <return>
* For referral whois type:     RWHOIS [search string] <return>
*
* For user assistance call (703) 742-4777 or (619) 455-4600
# Questions/Updates on the whois database to HOSTMASTER@internic.net
* Please report system problems to ACTION@internic.net
*****
Please be advised that use constitutes consent to monitoring
(Elec Comm Priv Act, 18 USC 2701-2711)

6/1/94
We are offering an experimental distributed whois service called referral
whois (RWhois). To find out more, look for RWhois documents, a sample
client and server under:
gopher: (rs.internic.net) InterNIC Registration Services ->
        InterNIC Registration Archives -> pub -> rwhois
anonymous ftp: (rs.internic.net) /pub/rwhois
Cmdinter Ver 1.3 Sat Jan 21 21:40:00 1995 EST
[vt100] InterNIC > whois cyber.com

```

Figure 2.3: The InterNIC “Whois” Search, January 1995.

If you typed **cyber.com**, you got back the information shown in Figure 2.4.

```

outer.net 3
[vt100] InterNIC > whois cyber.com
Connecting to the rs Database . . . . .
Connected to the rs Database
Cybersoft (CYBER1-DOM)
  210 West 12th Avenue
  Conshohocken, PA 19428

  Domain Name: CYBER.COM

  Administrative Contact:
    Schoffstall, Martin L. (MS9) schoff@PSI.COM
    703-904-4100
  Technical Contact, Zone Contact:
    Network Information and Support Center (PSI-NISC) hostinfo@psi.com
    (518) 283-8860

  Record last updated on 26-Aug-92.

  Domain servers in listed order:

  NS.PSI.NET          192.33.4.10
  NS2.PSI.NET         192.35.82.2

Whois:

```

Figure 2.4: The InterNIC “Whois” Results, January 1995.



Bummer. Try again — you need to be just a little more original. Remember that you’re probably going to be a .com (pronounced “dot com”), which means you’re a commercial organization. Here are some other common “dot” codes:

- .edu = educational
- .org = nonprofit organization
- .net = Internet providers
- .gov = government
- .mil = millionaires (and military)

What’s the InterNIC? Here’s What “They” Say

The InterNIC is a collaborative project of three organizations that work together to offer the Internet community a full scope of network information services. These services include providing information about accessing and using the Internet, assistance in locating resources on the network, and registering network components for Internet connectivity. The overall goal of the InterNIC is to make networking and networked information more easily accessible to researchers, educators, and the general public.

The InterNIC name signifies the cooperation between Network Information Centers, or NICs. The entire Internet community, in fact, is brimming with cooperative ventures, resource sharing, and collaborations. It is fitting, then, that the InterNIC is managed by three organizations operating under one umbrella.

General Atomics in San Diego, California, manages Information Services, providing the Scout Report, net-happenings, NSF Network News, InterNIC, InfoGuide, InterNIC Briefcase, Reference Desk, seminars and other services that respond to the needs of the scientific and education community.

Phone: +1-619-455-4600

Fax: +1-619-455-4640

eMail: refdesk@is.internic.net



AT&T in South Plainfield, New Jersey, manages Directory and Database Services, providing the Directory of Directories, Directory Services, Database Services, and a help desk to assist both people making use of their services and additional support organizations who want to know more about offering these services to their own audiences.

Phone: +1-908-668-6587

Fax: +1-908-668-3763

eMail: **admin@ds.internic.net**

Network Solutions, Inc., in Herndon, Virginia, manages Registration Services, providing Internet Protocol (IP) address allocation, domain registration, Autonomous System Number (ASN) assignment, and inverse addresses.

Phone: +1-703-742-4777

Fax: +1-703-742-4811

eMail: **hostmaster@rs.internic.net**

For general information about the InterNIC, please send mail to info@internic.net.

Source: InterNIC Home Page
<http://www.internic.net/>

Once you've found a domain name you like that isn't already taken, call or eMail your Internet provider and get it registered. They should only charge you about \$25 to \$50 for this, if anything. Keep in mind that just because your search at the InterNIC didn't show that your domain name wasn't already taken, it doesn't guarantee that it's available. You're probably OK, but don't run off and spend money or time getting new business cards printed with that URL until you get a confirmation that the name is actually still available.

There is usually a big queue at the InterNIC. The name you like may be tucked in the queue somewhere and someone may get it before you. The last time we checked, the backlog at the InterNIC was over 3000 names, and the wait to get registered was over two weeks. (You can probably get it done sooner if your Internet provider is on a first-name basis with someone at the InterNIC.)



You can download the application from the InterNIC and apply yourself by going to the InterNIC registration services off the InterNIC Home Page at <http://www.internic.net>. But why bother? Your Internet provider has the same form and theirs is probably even easier to fill out. Unless they are charging extra to fill it out, have them do it; you've got enough work ahead of you. Do check out the InterNIC Home Page though. There's a ton of interesting Net info there.

How Not to Make Big Bucks...

Do everyone a favor: Don't try to register domain names for big companies like Coke, McDonalds, or Circuit City. It won't fly, and they won't pay you big bucks for it someday.

The InterNIC is wise to this and doesn't dig it. They can spot those bogus applications a mile away. Besides, don't you have any better ideas for your creativity? Knuckleheads who do those kinds of things on the Net are wasting bandwidth and making it take longer for anyone else to get a domain name. Besides, that kind of stuff will almost certainly get you mailbombed by the UNIX cybergods if they find out.

Here's a nifty tip. You don't have to wait for your domain name to come through to turn on your Web site. Your Internet provider or network provider can give you a permanent IP number from their set, and then you can turn your Web site on for all the world to see (assuming you have your connection in place and something to show).

When the domain name finally comes through from the InterNIC, your provider will associate it with the IP number they gave you earlier, put it in their Host Table, and it will automatically get distributed through the entire DNS system of the Internet in the course of a few days. (See! Now you know why we included that seemingly incongruous section on DNS a few pages back.)

If you are part of an organization that already has a domain name set up, you can contact your network administrator or Internet provider



and obtain a host name (as well as an IP number) for the Mac you will be using as a Web server. That would be everything you need — you lucky dog. If you're in this boat, you can make your request for a permanent IP number and host name for your machine in a single call.

Now What?

Assuming you're connected, took our tip, went ahead and got a permanent IP number and have put in your application for a domain name ASAP as we suggested, what do you do next? Learn to set up MacHTTP, of course!

MACHHTTP: A FIRST LOOK

Now we're going to show you how to get MacHTTP up and running and be a network of one — and you don't even need a connection to the Internet. If you already have a dial-up SLIP or PPP account, we'll even show you what you can do with the IP number off the MacTCP Control Panel, the one we told you about before that is assigned automatically by your Internet provider during a connection. With that number, you can be a Web site on the Net, at least for as long as your current connection remains open. Of course, no one will know unless you call them up, tell them the IP number, and tell them to point their browser at that IP address. This Web site won't have a domain name yet, and if you end this connection, when you reconnect you may not have the same IP number. But you can definitely call your friends and have them check out your site with their Web browser.

But that's just an added thrill. This section is designed to put you ahead of the game, so that when you've got your dedicated connection and permanent IP and domain name, you'll have some idea of what it takes to get a Web site up and running.

MacHTTP: Your First Time

It's time to jump in and fire up MacHTTP. Make sure you are not connected to the Internet for this, at least for now. The approach we're going to take is just to build a Web page quickly. We'll go back and tweak



it and add the bells and whistles and show you how to “turn it on” for the general public in upcoming chapters.

At the end of this tutorial, you’ll have set up your Mac as a WWW server. OK, here’s what you need.

System Requirements

To set your Mac up as a WWW site you’ll need the following:

- at least 8 megs of RAM
- System 7.x
- a 68030-based Mac or better
- MacTCP
- AppleScript

MacHTTP runs fine with all versions of System 7, including 7.5. The version of MacHTTP included with this book is fat binary and runs on any 680x0 Mac and is also accelerated for the Power Macintosh.

You’ll also need MacTCP installed on your machine. MacTCP 2.04 comes with System 7.5; we’ve included an updater that converts that version into version 2.06 on the CD that came with this book (be sure to read its “readme” file so you understand why some people never read “readme” files.)

If you are running an earlier version than System 7.5, it’s time to upgrade. While you’re at it, buy Bob’s other book, *Macintosh System 7.5 for Dummies*. Yes, this is a shameless plug but that book is at least a zillion times better than the Apple documentation. System 7.5 only costs \$99 on the street, and it’s even cheaper if you belong to any Mac user group. *Macintosh System 7.5 for Dummies* is published by IDG and is \$20.

You can get by with System 7.1 and find some ancient FTP site that still has version 1.something-old and download MacTCP for free. We’re not even going to tell you where to begin looking, though, because we don’t want to help you do the wrong thing. But if you insist on running anything earlier than System 7.5, you’re also going to want to dig up a copy of the new Thread Manager so your Web server can run faster and handle multiple requests from Web browsers more effectively.

Lastly, you’ll need AppleScript installed on your Mac if you want to do some of the advanced stuff like forms and clickable GIFs that we’ll talk about in upcoming chapters and appendices. Chuck Shotton got



Apple to let him bundle AppleScript with MacHTTP 2.0. It also comes with System 7.5.

MacTCP, Thread Manager, and AppleScript all come with System 7.5; if you're going to be a WebMaster, that's reason enough to upgrade. So get with the program. Join a Mac user group if you need the bargain price (not a bad idea anyway).

MacHTTP Quick Start: The Movie

If you haven't already done so, insert the CD that came with this book and copy the file **MacHTTP.sit** to your hard drive. You'll need about 4MB of free disk space. Double-click **MacHTTP.sit** on your hard drive to expand it; a folder will be created on your hard disk called "MacHTTP 2.0". Everything you need is in this folder. Open up the folder "MacHTTP 2.0". It will look like Figure 2.5.

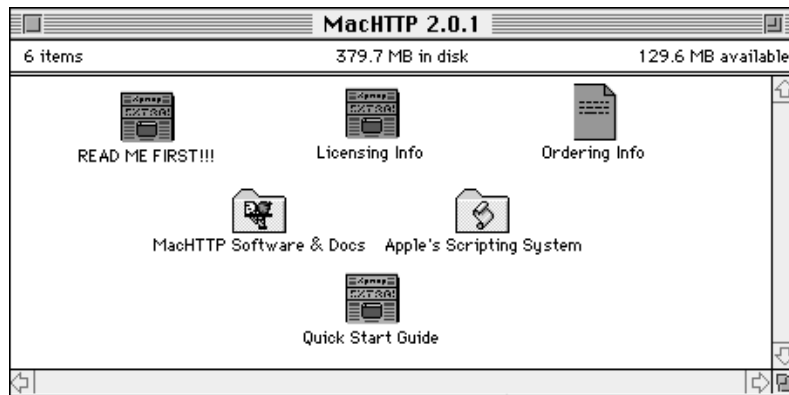


Figure 2.5: MacHTTP 2.0 Folder, January 1995.

You can read the MacHTTP Quick Start Guide if you want, but hey, that's why you bought this book, right?

Do read the "READ ME FIRST!!!" file for the license info on MacHTTP. The deal in a nutshell is that if you're not affiliated with any commercial, government, or educational organization and are running your WWW site for "free," then there's nothing you have to do except read the license info before you fire up MacHTTP. If you're subject to the



license, do the right thing and pay for the license by the end of the 30-day evaluation period. Chuck Shotton has done an awesome job with MacHTTP. Pay him if you're supposed to. It's peanuts for what you get.

Next, move the entire folder called "MacHTTP Software & Docs" to the root level of your hard drive. Forget about the "Apple's Scripting System" folder for now. We'll come back to it later.

Setting the IP Address

You configure your IP network connection to the Internet using the MacTCP Control Panel. Knowing some things about TCP/IP and the MacTCP Control Panel may earn you some points with your Internet provider, though it probably won't get you a break on your monthly fees. (Service provision isn't the high-margin business it was in the early days.)

Open the MacTCP Control Panel. It will look like Figure 2.6 if you don't already have a permanent address.

We need to do a little configuring of MacTCP. Before you do anything — jot down everything you have already configured with MacTCP so that you can always get back to it if you need to.

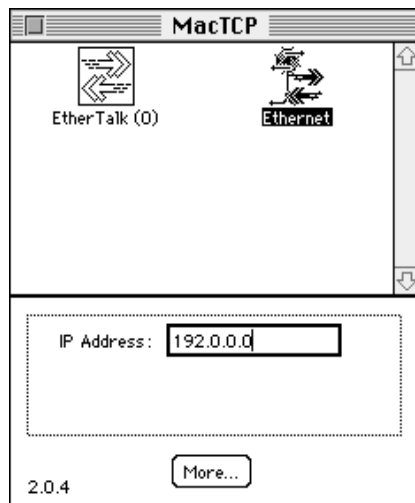


Figure 2.6: MacTCP Control Panel—IP Address Without Net Connection.



Click on “More...”. You should see the dialog box shown in Figure 2.7.

Obtain Address:

Manually
 Server
 Dynamically

Routing Information:
Gateway Address:

IP Address:

Class: Address: 192.0.0.0
 Subnet Mask: 255.255.255.0

	Net	Subnet	Node
Bits:	24	0	8
Net:	<input type="text" value="12582912"/>	<input type="checkbox"/> Lock	<input type="checkbox"/> Lock
Subnet:	<input type="text" value="0"/>	<input type="checkbox"/> Lock	<input type="checkbox"/> Lock
Node:	<input type="text" value="0"/>	<input type="checkbox"/> Lock	<input type="checkbox"/> Lock

Domain Name Server Information:

Domain	IP Address	Default
<input type="text"/>	<input type="text"/>	<input checked="" type="radio"/>

OK Cancel

Figure 2.7: MacTCP Control Panel Configured for Manual Addressing without Net Connection.

Set all the settings in your own MacTCP panel just as you see them above. You’re going to modify and fill in many of these later when you use a permanent IP address — not now, though. Just set “Obtain Address” to “Server” and “Class” to “C.”

Close the window and you’re back at Figure 2.6. Type in the IP number: 192.1.1.1 in place of 192.0.0.0 (or whatever else may be there).

Select either LocalTalk or EtherTalk depending on your network, close MacTCP, and restart your Mac.

Now go back and open the MacHTTP 2.0 folder. It will look like Figure 2.8.

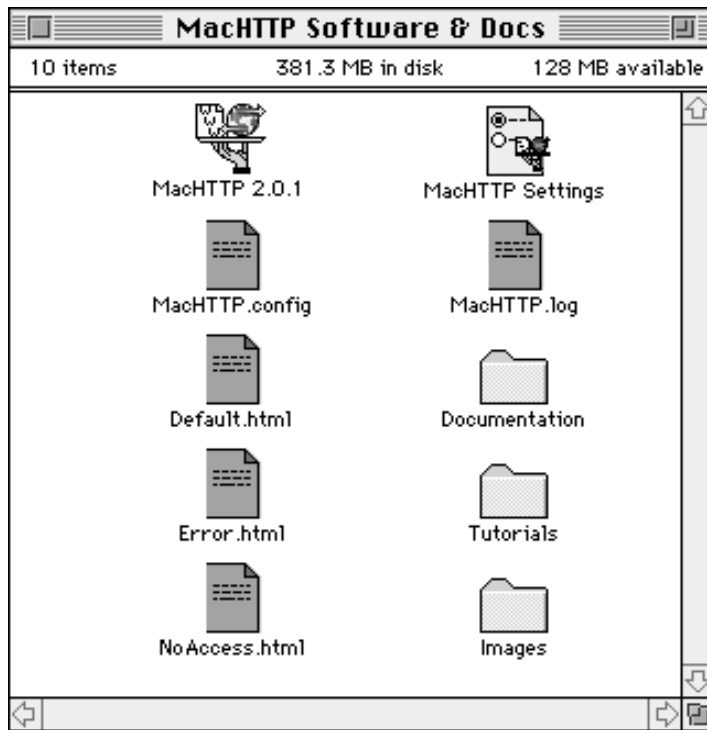


Figure 2.8: MacHTTP 2.0 Folder Contents.

Double-click the MacHTTP icon to launch your private Web server. You'll see the window shown in Figure 2.9.

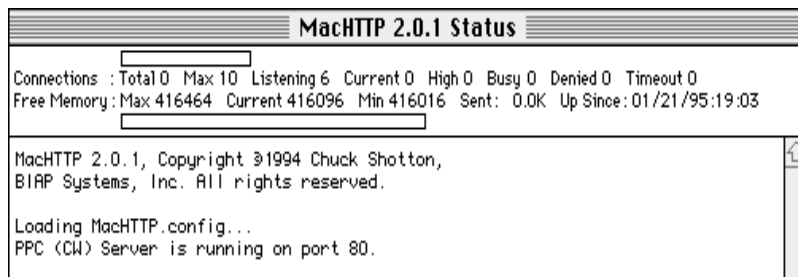


Figure 2.9: MacHTTP Status Window.



Congratulations!

You are now your own Web site on a TCP/IP network of one. Pretty easy, huh? Feel like you missed something? You didn't. It's just that simple. Try that on a PC or a UNIX server! Ha!

But don't run off shooting eMail to everyone you know and posting the location of your WWW site all over the Net. At least not yet. To start with, you're not connected to the Net. Further, you don't have a permanent IP address that works outside your little world. In other words, you still have a few housekeeping chores to do. But it was time to get your Web site up and running, and with those last few steps, you've done just that. Give yourself a hand.

Let's see what your Web site looks like and then we'll start some lightweight fine-tuning. Launch your favorite WWW browser, and go to the URL address of your brand-new WWW site. If you're using Netscape, that would be Command-L, then type **http://192.1.1.1** and press Return (Figure 2.10).

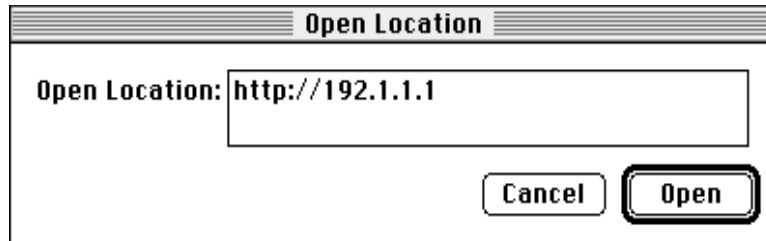


Figure 2.10: Netscape Go To URL Window.

Cool, huh? The MacHTTP default Home Page that Chuck Shotton put together loads right up. Which means that you've built a home page, more or less! Take a bow, then take a look at the MacHTTP window and see the fruit of your labors (Figure 2.11).

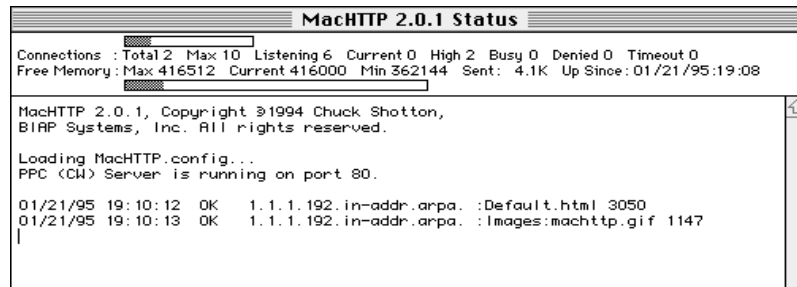


Figure 2.11: MacHTTP Window with Client.

More About Configuring MacHTTP

Now let's delve a little deeper and configure MacHTTP a little bit. Quit MacHTTP for the moment and open the file **MacHTTP.config**, which you'll find in the "MacHTTP Software" folder. This file is a big long text file (you can open it with SimpleText) and it starts off something like:

```
#MacHTTP Configuration file, v. 2.0.1
#
#The format of this file is free form, with a few exceptions. Lines not
#starting with a recognized keyword are ignored.
#Note, all entries are converted to upper case by MacHTTP, so the config file
#isn't case sensitive, with the exception of Mac file types and creators
#below.
#
#Note that any text styles like bold or underline in this file are purely
#cosmetic and are only intended to make the file easier to read. The styles
#are not required.
#Legal config file keywords will appear as BOLD text if this file is viewed
#with SimpleText or TeachText.
#
# The version number below must match MacHTTP's version number
VERSION 2.0.1
```



```
#####
# "Special" Files
#
#The following line defines the default file type if a suffix match isn't
#found. The syntax is: DEFAULT <default transfer type> <default MIME type>
#DEFAULT TEXT text/html
#
#The following lines specify where to find HTML files for error messages, the
#default home (or index) page, the name of the log file, and the message
#returned for security violations. Any of these three file directives point
#to a HTML document, script, or CGI application.
#
#NOTE!!! INDEX must be a simple file name, not a path like the other files.
INDEX Default.html
ERROR :Error.html
NOACCESS :NoAccess.html
```

There's a lot more to the file itself and the best thing to do at this stage is take a look at it or even print it so that it's in front of you for editing as we go.

If you've never seen anything like this in your life, don't be intimidated. It looks more complicated than it is. Most of it is very straightforward. Basically, the **MacHTTP.config** file tells MacHTTP how to behave, what to listen for, and how to respond to requests from WWW browsers such as Netscape, MacWeb, Mosaic, and others. In client-server speak, the browsers are the clients and MacHTTP is the server.

Most of the lines in the config file are comments. Those are the ones that begin with a # symbol. As you can see, the config file is chock-full of comments. The comment lines describe what the configuration options are and what will happen if you edit them. The whole thing is way easier than it could be and is nothing like the relative nightmare you get if you had to do this on a PC or UNIX box. Believe us, we've done it. We're going to walk you through the whole thing in a couple of chapters. (Chuck may even crush the last vestige of text configuration and turn all of what appears in the config file into pop-down choices from the menu bar. Chuck lives to crush vestiges.)

At this stage, our advice is just to use the config file as it came. We'll wait until later chapters to edit **MacHTTP.config**. There are many other fine-tuning adjustments to the **MacHTTP.config** file that can be made to optimize performance and implement security features. We'll take those up in a few chapters too.



If You Already Have an IP Address....

If you already have an IP number from your Internet provider or network administrator and your machine is already on the Net, all you have to do is enter the right settings in the MacTCP Control Panel and then fire up MacHTTP as described above. You'll need to plug in the following info into the MacTCP Control Panel:

- Obtain address (select manual)
- Gateway address (goes in Routing Information box)
- IP address (set to Class C — leave the rest as is)
- Domain Name Server Information (ask your Internet provider or network administrator)

When you're done it should look like Figure 2.12.

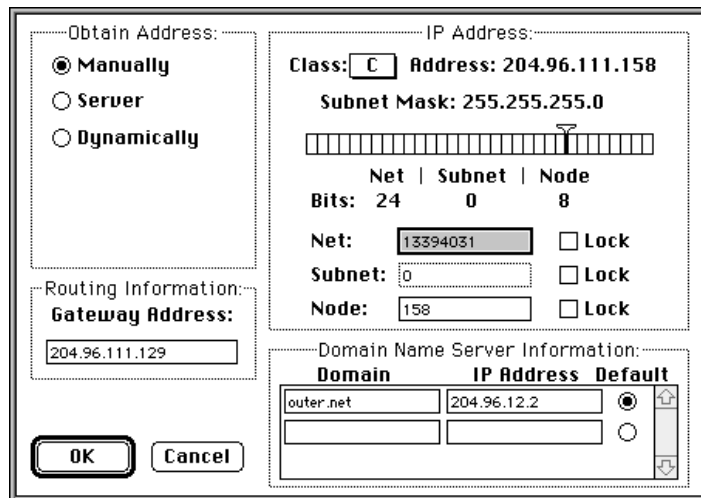


Figure 2.12: MacTCP Control Panel Configuration with Live Net Connection.



The last step you need to do to configure MacTCP is to close the window you have just set and fill in the rest of MacTCP on the first and smaller MacTCP panel — the one you see when you first open MacTCP. Select your network connection and enter the IP address of your machine. When that's all done it will look like Figure 2.13.

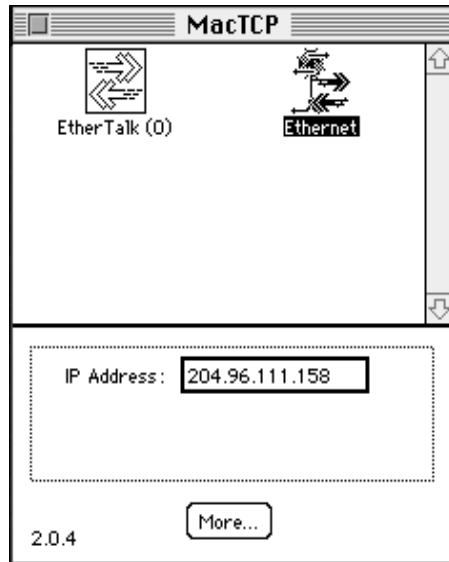


Figure 2.13: MacTCP Control Panel IP address and Network Type with Live Network Connection.

That's it. Launch MacHTTP. Fire up Netscape or Mosaic and load the URL of your Web server just like in the previous example.

If you have a SLIP or PPP dial-up connection and are still waiting to get your IP address, you too can tell your friends to come take a look — at least you can as long as you maintain that connection. Just open up MacTCP when you're dialed in with SLIP or PPP and jot down the IP number. It's the one that appears in the first of the two MacTCP Control Panel slots (as in Figure 2.12). Launch MacHTTP. Fire up Netscape or Mosaic and load the URL of your temporary Web server. Then call everyone you know who surfs the Net and tell them to come visit quick.



A Final Note about MacTCP

MacTCP works. It may, however, be the worst example ever of an interface from Apple.

It is unclear to the uninitiated how to configure MacTCP. We've never seen any published documentation. The "Obtain Address" portion of the Control Panel — with its Manual, Server, and Dynamically radio buttons — is completely nuts, not to mention counter-intuitive. The reality is that you either obtain an address by manually putting it in (once you've been told what it is) or it is assigned dynamically (and automatically) by the Internet provider's server or by an in-house network server running something like the Apple IP Gateway software. There is never a time when you select the "Dynamically" radio button.

And why two panels to begin with? And what about that bar that moves back and forth in the IP Address portion? How are you supposed to figure that one out on your own? And have you looked at the numbers in the three boxes labeled net, subnet, and node? How are you supposed to know what the heck these do?! Actually, Carl told us that they are decimal representations of the binary subnetting. There, now you know.

We hate messing around with MacTCP. Eudora has a clever error message that says something like, "That pesky MacTCP is acting up again." We know what it means!

EVERYTHING YOU NEED TO KNOW ABOUT CLIENT-SERVER ARCHITECTURE

We almost forgot. We promised an overview of the client-server thing. Let's recap: You have your Web server up, even if you're just a "network of one" for now. That was no big deal, right? In fact it was easy. So now we'll step back and take a bird's-eye look at what we've done so far.

You've got MacTCP, MacHTTP, and your Web browser of choice, all humming along perfectly. Let's finish with a bang, with a diagram that explains these elements and brings the whole client-server story into focus (Figure 2.14). Why are we doing this? Because they say a picture is worth a thousand words and neither of us feels like writing another thousand words about something as boring as client-server architecture.

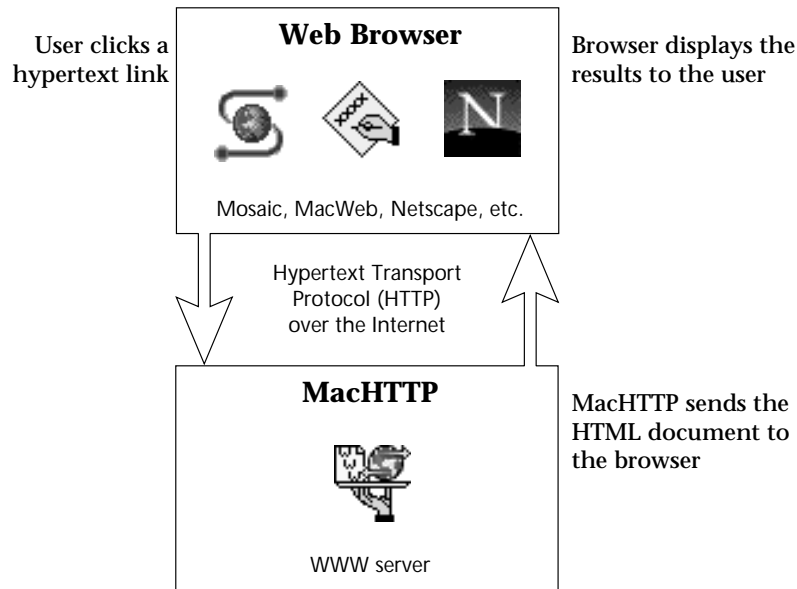


Figure 2.14: The Client-Server Story.

WRAP IT UP

It's a wrap. You've now learned all you need to know about getting connected. Don't forget our most important advice: Go with what your Internet provider recommends given your budget.

You now know how to configure MacTCP (let's hope you never have to look at it again) and bring a Web page up using MacHTTP. That's enough left-hemisphere behavior for one sitting.

If you want to take a break, you're excused. Go surf the Net for a while. Better yet, go outside and take a walk. In the next chapter you're going to learn everything you need to know about HyperText Markup Language, or HTML. So we suggest a long walk and something creative. This next section is a little bit technical. On the other hand, you have us, your hapless authors, who can make even HTML exciting!

So take that break, then turn the page.