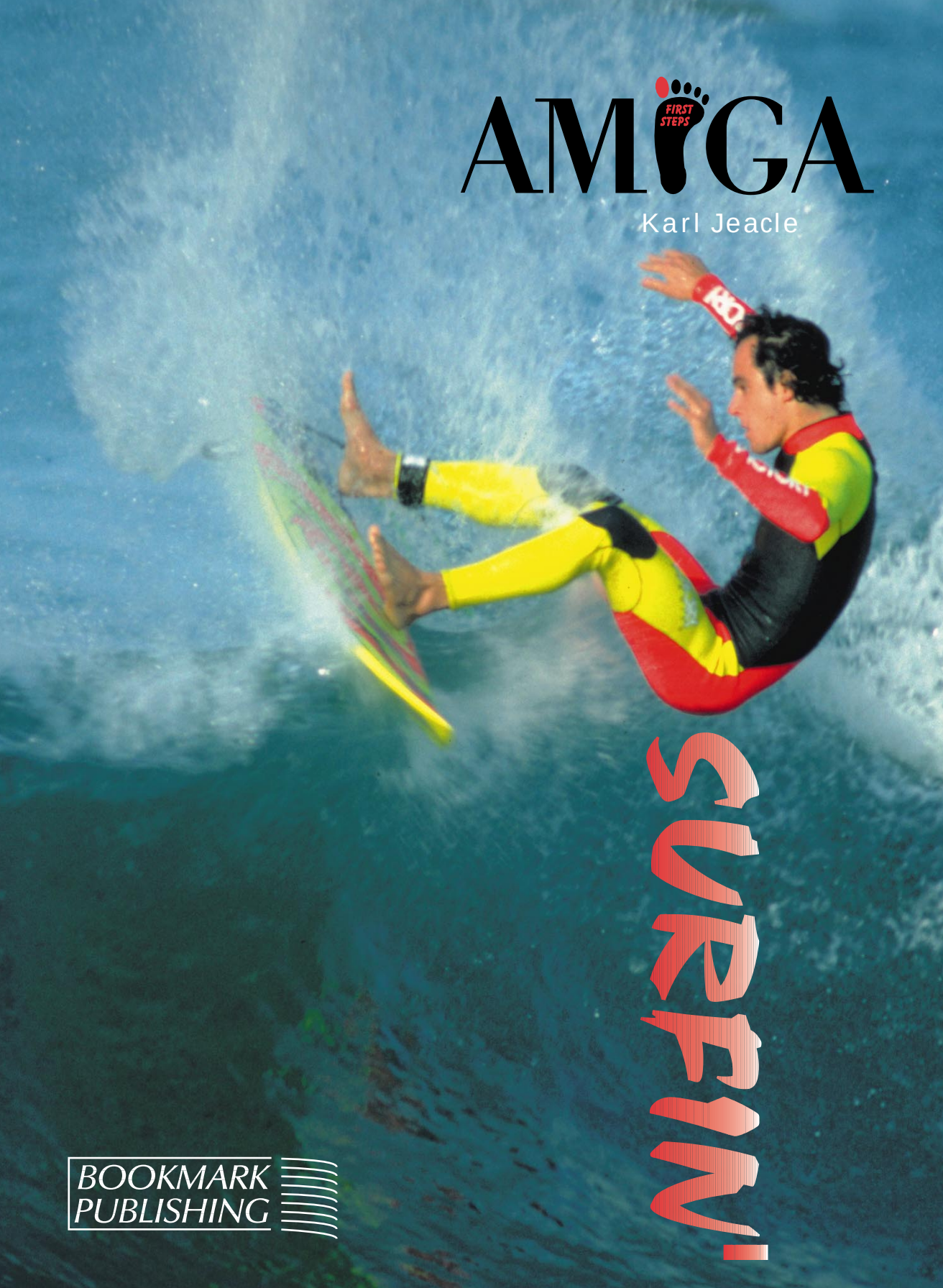

AMIGA

FIRST STEPS

Karl Jeacle

SURFIN'

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First Steps Amiga Surfin'
by Karl Jeacle

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Foreword

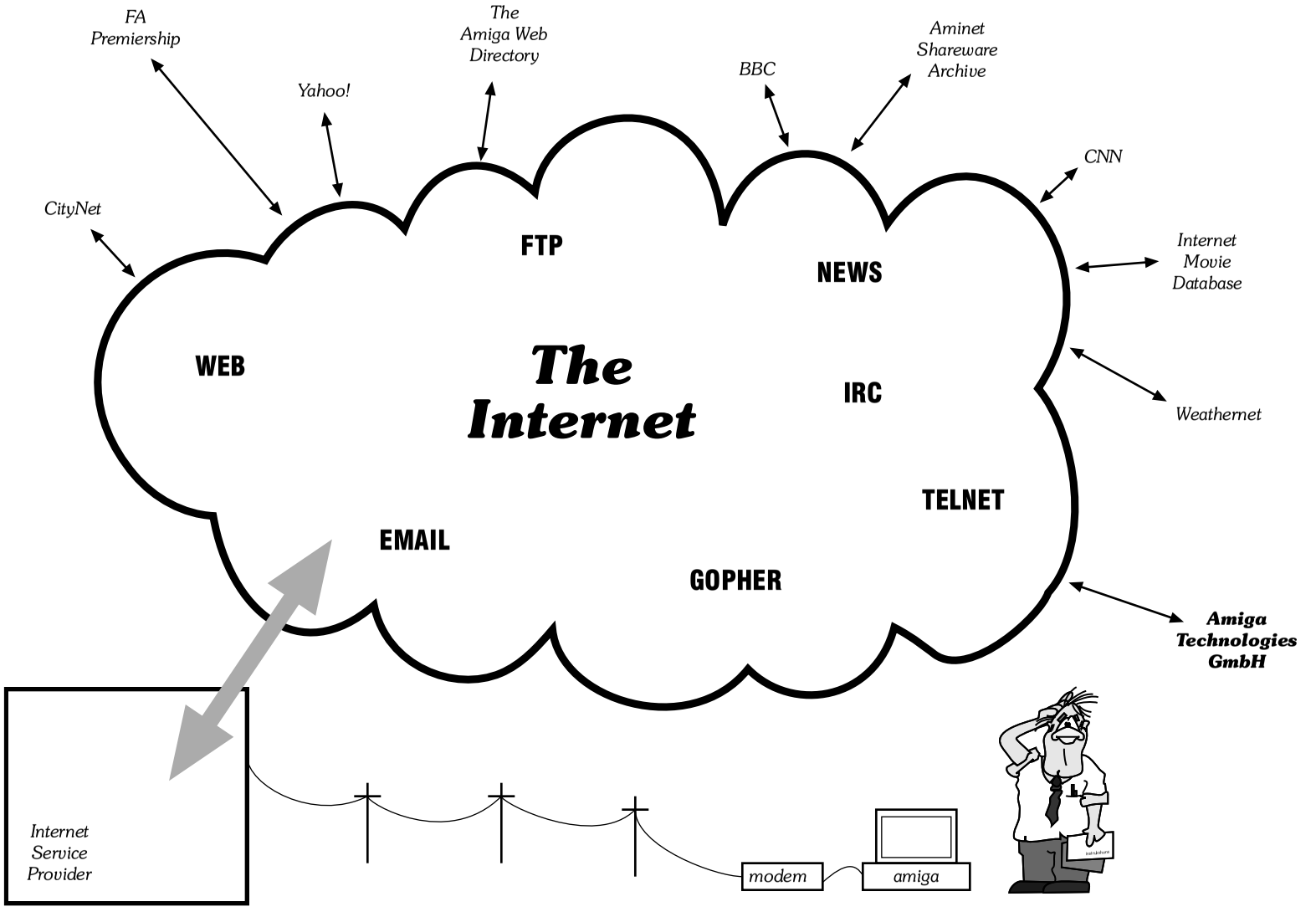
Welcome to the Internet! You've read about it in magazines, you've heard about it on the radio, you've even seen it on television. Well now here's your chance to get connected and experience the Internet for yourself.

This book will help you transform a basic Amiga hooked up to a TV into a powerful Internet workstation! You don't have to be an expert to read this book, we'll take you through the basics of buying the right hardware and software and how to configure them on your Amiga, and then explain how to install the best applications and how to use these valuable Internet tools to your advantage.

People are spending thousands of pounds on expensive PC hardware and software to get connected to the Internet. The Amiga is a perfect low-cost alternative. The higher the specification of your Amiga, the easier it is to use, and the more enjoyable it is to "surf" the Internet, but that doesn't mean you have to spend hundreds of pounds upgrading your Amiga to try out the Internet. An Amiga 1200 with some extra ram and a hard drive is a perfect starter system.

If you've been looking for a way to get started on the Internet but have been baffled by the jargon or just haven't had the time to figure out what you need to get going, then this book will tell you everything you need to know.

Karl Jeacle, May 1996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CNN
CityNet
FTP
NEWS
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WEB
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IRC
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Introduction

So just what is the Internet? Put simply, the Internet is just a lot of computers all around the world which are connected to one another. In the past few years, thanks to increased public exposure, the Internet has experienced explosive growth. The number of computers and people attached almost doubles every few months. What was previously the realm of academics and scientists can now be accessed by everyone.

To join the Internet all you need is your Amiga, a modem and a phone line. Once connected you can send electronic mail messages to any of the millions of Internet users around the world. In a matter of seconds you can transfer files to your Amiga from computers thousands of miles away. Want to get your hands on an update to one of your favourite programs? Just read a review of a neat piece of shareware? You can get it on the Internet. Maybe you're having a technical problem with your computer? Try posting a message to one of the Amiga newsgroups where thousands of Amiga owners can read and respond to your query.

More recently something called the World Wide Web has arrived on the scene. This is like a graphical interface to the Internet. To access it you need something called a Web browser. A Web browser is a bit like AmigaGuide, except it has colour graphics and sound and the links you click on don't just load new files from your hard drive, they load them from other computers across the Internet. You've probably seen Web addresses already, like *http://www.amiga.de/* for example. They're appearing all over the place, and not just in the computer world. All the media giants are "on the Web". Many television adverts and television programmes now have Web addresses associated with them. They tell you that if you want more information then you should check them out "online" on the Web.

Pretty much anything you want to do on the Internet you can do using the World Wide Web. While originally intended for just browsing documents online, it has been adapted to let you send email and transfer files.

Most of those large telephone directory sized Internet books you see on the shelves of your local bookstore are just lists and lists of places to go and things to do on the Web. The irony of this is that you shouldn't have to look in a book to find out what's on the Web. You get the Web to do it for you! We'll show you how.

How to read this book

If you're just starting out with the Internet then you can pretty much read this book from start to finish, perhaps skipping through a couple of chapters until you're next at your Amiga. If you've already got yourself hooked up but are wondering where to go from here, then the chapters on installing and using Amiga networking applications are what you need.

Chapters 1 and 2 explain what you need in terms of hardware and software to get your Amiga up and running on the Internet. This includes advice on buying the right modem, and some hints and tips on how best to configure your modem. We'll also look at what Internet (or TCP/IP) software you'll need along with how to install and configure it on your Amiga.

Chapter 3 has some sound advice on choosing an Internet Service Provider that can meet all your Internet requirements. We'll take a look at how much it costs to get connected and what the running costs are likely to be.

Chapter 4 takes you through 15 essential Internet tools that you should install on your Amiga. These cover all the popular applications that Internet users run, such as email, file transfer, remote login, and multi-user chat programs.

Chapter 5 explores the World Wide Web on your Amiga. We look at the different browser programs available and describe how to get the most out of using the Web.

Chapter 6 takes a more in-depth look at various aspects of surfing, including a tutorial on using HTML tags to create your own Web page.

I'd recommend you read the first two chapters of this book before you next sit down at your Amiga. You'll then be able to make a start on getting your Amiga ready for the Internet. Chapter 3 will tell you how to decide on an Internet Service Provider. Once you've sorted this out and have access to the Internet using your telephone line and new modem, chapters 4 to 6 will help you get the most of out of your Amiga on the net.

That's it. There's no looking back now. Read on. And start surfing!

making the right choices

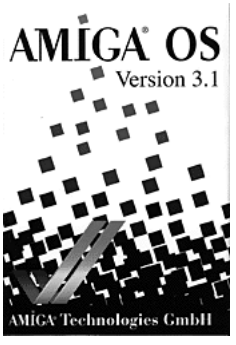
1

- Amiga requirements
- Choosing the right modem
- Fitting the equipment
- Buying the software
- Finding the software

Amiga requirements

In theory just about any Amiga is good enough to get you hooked up to the Internet. In practice a number of factors come into play when making sure your Amiga kit is up to scratch.

Operating system



Many new Internet utilities require version 3.x of the Amiga OS.

The version of AmigaDOS you run is one of the most important factors in determining how suitable your Amiga is for Internet surfing. Many new Amiga Internet programs require at least AmigaDOS 2.04 and some even require the newer version 3.x. If you are thinking about upgrading it is well worth your while going all the way and upgrading to AmigaDOS 3.1, the latest revision of the operating system at the time of writing this book.

If you have an A1200 or A4000 you are already running version 3.x so you have nothing to worry about. Likewise, if you have an A500+, A600, A1500 or A3000 you're running at least version 2.04 of the operating system so most applications should work fine—though, as mentioned above, some very recent applications may require 3.x for optimal use. A500 and A2000 owners should upgrade to at least 2.04 or, if funds allow, version 3.1.

Upgrading your system is simply a case of pulling out an existing rom (read only memory) chip from your Amiga's motherboard and inserting a new one. Of course, to do this you have to open up your Amiga and you will void your warranty if it is still active, so you may prefer to get your local dealer to perform this operation for you.

Lastly, when ordering an upgrade make sure to state clearly what kind of Amiga you have because different Amiga models use different types of rom chips.

Hard drive

Having a hard drive in today's Amiga world is essential. Not just for using the Internet, but for day-to-day tasks. While it is possible to create a floppy-based set of Internet disks, it would really be more trouble than it's worth. There are so many applications available for use on the net, you really need a hard drive to store them.

The size of your hard drive isn't too important. About five megabytes (5Mb) of free disk space should be considered a minimum amount to set aside for your Internet tools, but obviously the more space you have the more tools you can have available at your fingertips, and the more space you have to download new software to your Amiga.

Memory

Your basic Amiga comes with either one or two megabytes of chip ram (graphics memory) on the motherboard. This is sufficient for playing games and running simple applications, but fast ram (expansion memory) is really what you need to get serious with your Amiga. You should try to install four megabytes of fast ram on your system before you start using the Internet. This will allow you to load up the basic communications software and still have enough ram free to run a few of the more popular Internet applications.

You can get away with just the standard chip ram and two megabytes of fast ram, but before long it will all become a bit of a squeeze and you'll find yourself running out of memory or running programs in chip ram, which is

much slower than the sensibly named fast ram. This spells trouble. Basically you can never have enough ram, so four megabytes of fast ram should be a first target to aim for.

Processor

The type of processor and the amount of fast ram in your Amiga will affect how fast your Amiga serial port can talk to your modem. To take full advantage of your modem your serial port should be set to run at a speed higher than the speed the modem is communicating with your Internet Service Provider. So if you have a 14.4K modem you should run the serial port between 19,200 bps (bits per second) and 57,600 bps. If you have a 28.8K modem the range should be between 38,400 and 115,200.

The A500, A500+, A600, A1500 and A2000 all have 68000 processors—not the fastest. The A1200 has a 68020, the A3000 and A4000/030 have a 68030, and the A4000/040 has a 68040. These three chips run a good deal faster than the original 68000 chip, so if you have one of these you won't have any problems.

If you have a 68020 processor or better, and some fast ram in your system, 38,400 bps shouldn't be a problem. If you only have a 68000 processor, running your serial port at 19,200 might be a problem. Upgrading your operating system and reducing the number of colours on the screen can help. There are also a number of replacements for the Amiga serial.device available—these are more efficient than the supplied serial device driver and can help your Amiga run higher serial speeds. Fear not if you don't understand this right now, we'll explain it all later on. What's important to note is that the faster your Amiga, the faster you can run your serial port. And since your serial port is what indirectly connects your Amiga to the outside world, the faster it can go, the faster your Internet connection will be, which in the long run will make surfing much more enjoyable.

The Amiga 1200 is a perfect Internet starter machine.

Graphics

Most Internet applications have no specific graphics requirements, so the Amiga is over-specified in this area. However, the reason the World Wide Web has become so popular is because it has a point-and-click graphical front-end. To display the Web in all its glory you'll need to display 256 colours on the screen at the same time.

Once again, if you have an A1200 or A4000 then the AGA (Advanced Graphics Architecture) chipset in your Amiga is perfect for the job. If you have an older Amiga you have either an ECS or OCS (Enhanced or Original) chipset. While these are great for low-resolution applications with lots of colours, such as games, or for applications which require a static high-colour picture, video work for example, they are not perfectly suited to Web usage. You will be able to use the Web just fine, but will be limited to a small number of colours on screen.

If you have a "big-box" Amiga and have slots available, then, if you can afford it, a graphics card will work wonders for you. If you already have AGA a graphics card might be considered a bit of a luxury, but most of the Amiga graphics cards on the market today offer high-resolution displays with at least 256 colours on screen at the same time. They are also a lot faster than AGA. So if you have an A1500, 2000 or A3000, a graphics card could be a wise investment, while if you have an A4000, then while certainly not essential, a graphics card would be a valuable addition to your Amiga.

Choosing the right modem

Buying a modem is an important part of getting your Amiga on the Internet. A modem is a little box which connects your computer to the telephone system. You connect your Amiga to the modem via your serial port, and then connect the modem into your phone socket with the telephone cable supplied with the modem.

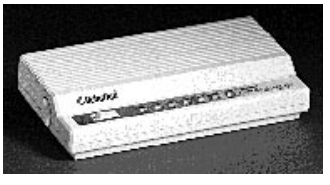
Internal modems are widely used by PCs but should be avoided by Amiga owners.

Modem speed

Serial and modem communication is all about how to get digital information represented by streams of 0s and 1s (called bits) in your computer into a format which can be sent down a telephone line. Modems take these bits from computers and modulate them into analogue signals on a phone line. The modem at the other end demodulates the analogue signal back into a digital signal for the distant computer. Combining the words modulate and demodulate gives us the word modem.

The faster your modem can convert digital bits of information to analogue signals, the faster you can read your email, download files or transfer images on the World Wide Web.

The two most common types of modems on the market today are called V.34 and V.32bis modems. V.34 modems can communicate at speeds of 28,800 bps, or 28.8K for short. V.32bis modems are a little older and slower, operating at 14.4K, exactly half the speed of V.34. Obviously, the faster your modem the better. But price is always an issue and V.34 modems are still a good deal more expensive than V.32bis models, so as with most things Amiga you'll have to let your bank balance decide this one for you.



The US Robotics Sportster is an old favourite with Amiga owners.

You may come across older modems, such as 2,400 bps (V.22bis) models. These modems are slow and you should avoid them. A few years ago these modems were very popular and served their purpose well for connecting to bulletin board systems (BBS) and exchanging text messages, but for today's Internet usage they are totally inadequate. Be safe, buy a V.34 or V.32bis modem.

Modem type

There are three physical types of modem you can buy: internal, external and PCMCIA.

There are only a handful of internal modems available for the Amiga and most of them are quite old and no longer on the market. In the PC world internal modems are popular as they are cheaper to manufacture and fit neatly inside the PC, avoiding cable clutter. It is not possible to use internal PC modems with your Amiga unless you have a specialist card—called the GoldenGate-II—which allows some PC peripherals to be used in Amigas. (Naturally, you also have to have an Amiga with slots in it.) In general, you can forget about internal modems when using Amigas.

The SupraFAXmodem V.34 is another popular choice with Amiga owners.

External modems are the most widespread modems in use today. Because they use a standard serial port they can be connected to almost any type of computer. This is probably the best type of modem to buy if you have an Amiga.

PCMCIA modems are the most expensive of the three types. They are tiny, credit card sized modems which are normally used with portable laptop computers. Only the A600 and A1200 have PCMCIA ports so unless you have one of these, external modems are your best bet. Even if you have an

A600 or A1200, if you want to use a PCMCIA modem you will need special driver software which is not readily available, so it can be quite an expensive route to take.

Serial cables

If you buy a new external modem it will probably come with a modem cable. If it doesn't, make sure to order one with your modem. The Amiga serial port has a 25-pin male D-plug connector. Almost all external modems have a 25-pin female D-plug connector. So you need a 25-pin male-to-female serial cable. These will be available in any computer store. Serial cables are also often referred to as RS-232 or RS-232C cables.

Compatibility

When choosing a modem it is a good idea to find out what kind of modems you'll be ringing up at the other end of the telephone call. Or to put it another way, what kind of modem your Internet Service Provider (ISP) uses. If you use the same type of modem as your ISP you can often save yourself from possible compatibility problems further down the road.

Having said this, most modems these days work reasonably well with each other without many problems. Try talking to some other computer owners—preferably customers of the same ISP as you—and find out their experiences with using different types of modem with Internet providers.

If you don't know where to start when picking a modem, consider the fact that modems made by US Robotics and Supra have been popular with Amiga users for a number of years. Both of these companies make reasonably priced modems suitable for home use.

Buying second-hand

There's nothing wrong with buying a second-hand modem as long as it works! Take someone knowledgeable about modems with you if you intend to buy used, and make sure you see the modem in operation. If possible you should get the seller to dial the number of the ISP you intend to use, and look for proof that the modem will connect properly.

Many computer users are upgrading to V.34 modems so buying a used V.32bis modem to get started can often make a lot of sense. But as mentioned above, don't waste your time buying a cheap V.22bis (2,400 bps) modem, as although it may seem like a great bargain at the time you'll quickly get tired of how slow it is and will then just end up buying another modem.

If you have an Amiga 600 or Amiga 1200 you could use a PCMCIA modem.

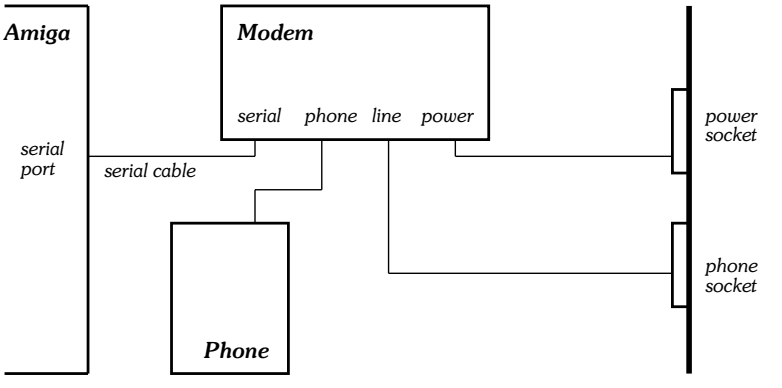
Fitting the equipment

This section looks at what's involved in fitting a modem into your Amiga set-up. Most of this is quite straightforward, except perhaps for the bit on data compression. If you like, you can skip that section without any loss of continuity, it's just included for completeness and for all the techies in the audience.

Making the right connection

To connect your Amiga to your modem all you need is a serial cable. This should have been supplied with your modem. The serial cable simply connects the serial port on the back of your Amiga to the serial (or RS-232) port on the back of your modem.

Take a look at the diagram below to see what plugs in where. The modem will have two small, square RJ-11 sockets on the back. The one marked LINE should be connected to the telephone socket on the wall, the other one, marked PHONE, can be used to connect a telephone so that you still have a telephone handset available. But you can't make phone calls when the modem has dialled out and is connected as the phone line coming into your house will be in use.



Different countries have different standards for telephone plugs and sockets. If you find your cables don't match your equipment—which is often the case if you import or buy used—then a trip to your local telephone or electrical store should yield the appropriate set of miniature plastic adaptors which convert between the different styles used.

Choosing the right cable

If you have to buy a cable, or want to make one yourself, make sure it has a 25-pin male connector on one end and a 25-pin female connector on the other end. You should also try to ensure that it's a "full" modem cable that connects pins such as CTS (Clear To Send) and RTS (Ready To Send). Most pre-made cables will have these attributes, you only need to worry about these things if you're making your own cable.

The reason the CTS and RTS signals are important is that your Amiga or modem may not always be ready for the next bit of information being transmitted in either direction. When one device is communicating too quickly, the other device needs to use something called flow control to say "Slow down! You're going too fast!" Two methods used for this are hardware

flow control, also known as CTS/RTS, and software flow control, also known as XON/XOFF.

The hardware method uses the CTS and RTS pins in the serial cable. This is the preferred method. If your modem cable does not have the RTS and CTS pins connected, you can instruct the devices to send special control characters XON and XOFF down the line. These act like stop and go commands.

Data compression and serial port settings

When you've got the modem successfully connected to your Amiga, the next step is to choose what speed to run your serial port at. As discussed earlier, the speed of your Amiga will determine how fast you can run the port. There are a number of serial port speeds to choose from: 19,200, 38,400, 57,600 and 115,200. Remember that this is the speed at which your Amiga is talking to your modem, not the speed at which your modem is communicating with the other modem at the other end of the phone line—that speed will be either 14,400 bps or 28,800 bps depending on what kind of modem you bought.

Type	*Speed*	*Minimum Recommended Serial Speed*	*Optimum Serial Speed*
V.22bis	*2400*	*2400*	*9600*
V.32	*9600*	*9600*	*38400*
V.32bis	*14400*	*19200*	*57600*
V.34	*28800*	*38400*	*115200*

Choosing the correct Amiga serial setting to match your modem. Minimum speed shown will work well in all cases, but maximum performance can be gained if your Amiga can support the optimal speeds and data compression is enabled on your modem.

The reason for the higher Amiga-to-modem speeds is because of something called data compression. V.32bis and V.34 modems use a compression technique called V.42bis. This can squeeze as much as four times the amount of data down the phone line as would be sent if no compression was used. Now, while 4:1 is the theoretical maximum, in practice a compression rate of about 2:1 is more realistic because not all data can be compressed by the same amount. Regular text compresses well and is where you'll get the most benefit from V.42bis, but data which is already compressed, such as GIF or JPEG pictures and LHA archives, will not compress any further.

So in order to make use of compression you need to send data to your modem fast enough for it to have time to compress it before sending it down the phone line at 14,400 or 28,800 bps. Scale 14,400 up by a 4:1 compression ratio and you have 57,600 bps, and 28,800 by 4 is 115,200 bps. Therefore, the fastest you should run a serial port connected to a 14.4K modem is 57,600 bps. If that's too fast, 38,400 bps gives plenty of room for compression to take place. On a 28.8K modem 115,200 bps is the optimum speed, but 57,600 will still work well.

Note that these settings should be configured in your Internet application software, not in the Workbench Serial prefs program. Most applications have their own serial preferences and don't use the system settings. In any case, the Workbench Serial prefs program only goes as high as 19,200 bps. (Its 31,250 option is for MIDI interfaces.)

Lastly, having chosen the correct speed you should set the other serial port settings to 8-N-1. That's 8 data bits, no parity and 1 stop bit. And don't forget to enable CTS/RTS hardware handshaking.

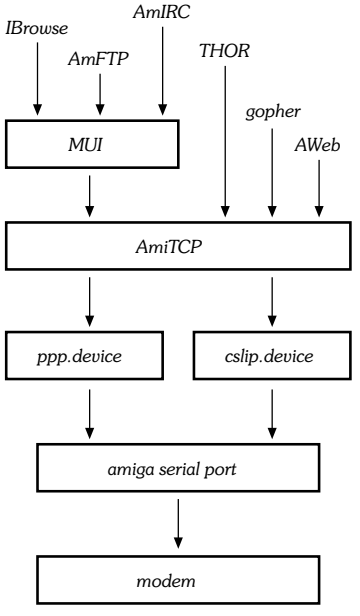
Lost?

If a lot of this section seemed completely meaningless to you, then don't waste any time trying to understand it now. Re-read this chapter in a couple of months after you are online—things will seem a lot clearer then. For now, if you're confused just plug in your modem and remember that when you get around to setting the serial port preferences in your Internet software you should set the speed to be 19,200 if you have a 14.4K modem and 38,400 if you have a 28.8K modem. Everything should work just fine.

Buying the software

In this section we'll look at the different types of Amiga software you'll need to use the Internet. The diagram to the left will give you an idea of all the pieces of software you'll need and how they fit together.

Internet software stack

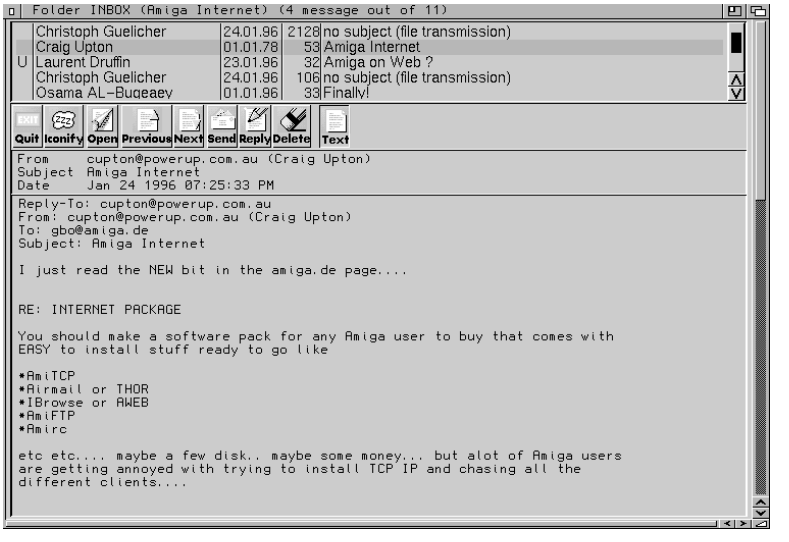


We'll start by looking at the kinds of the applications you can use on the Internet and then work our way "down the stack" to find out what support software you'll need to install on your Amiga before you can start running these applications.

There are literally thousands of things to do and places to go on the Internet. Let's take a quick look at the five most popular Internet applications: email, Usenet news, file transfer, Internet Relay Chat and the World Wide Web.

Email

The most widely used application on the Internet is the simplest: electronic mail. When you sign up with an Internet Service Provider you will be given an email address that looks something like *john@isp.co.uk*. This is a unique address that can be used by anyone in the world with Internet access.



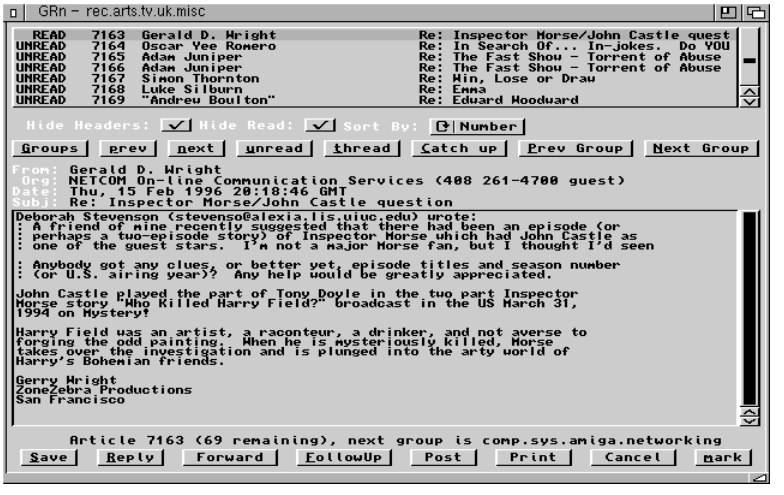
Email is cheap, convenient and above all fast! Once you've made the phone call to your ISP and are online, sending an email to anywhere in the world costs you nothing. Not a sausage.

You can even write all your messages offline and then minimise phone charges by sending off all the pre-written messages together as soon as you get online. Most Internet computer systems are connected by high speed leased lines these days, so as soon as you send the message it usually takes only a couple of minutes to find its way to its destination. Of course, it may be a day or two before the recipient actually checks his or her electronic mailbox!

Usenet news

If you have used a bulletin board system (BBS) before, reading Usenet news can be likened to reading BBS message areas, except that there are several thousand different discussion groups, each dedicated to a particular topic, and participants in these "newsgroups" are not just local callers to a BBS but people all over the world.

If you haven't used a BBS before then perhaps you've used teletext on your television? Usenet news is like teletext except it is regular everyday Internet users who write the pages, and instead of just a few topic areas like news and sport there are thousands of topics areas, each with hundreds of articles or pages.



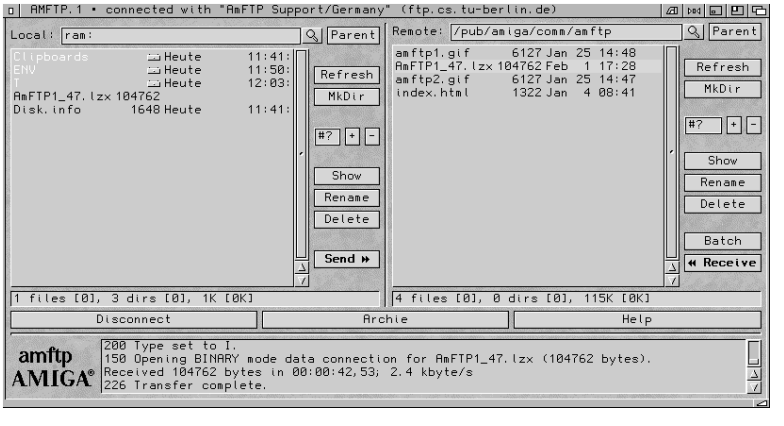
Naturally, being a computer network many of the Usenet newsgroups have a technical content—there are about 20 Amiga specific newsgroups for example—but there are also many non-technical groups.

To the right is a brief cross section of some of the newsgroups you'll find on Usenet. Newsgroups are split into subject hierarchies. The "big seven" are *comp* (computer), *misc* (miscellaneous), *news* (Usenet news administration), *rec* (recreation), *sci* (science), *soc* (social) and *talk*. There is also an alternative (alt) hierarchy which contains all the weird and wonderful stuff you may have heard about.

comp.sys.amiga.graphics
misc.consumers.house
news.newusers.questions
rec.arts.movies
rec.humour
rec.music.misc
rec.sport.soccer
rec.woodworking
sci.med.nutrition
soc.culture.british
soc.singles
talk.religion.misc

File Transfer Protocol

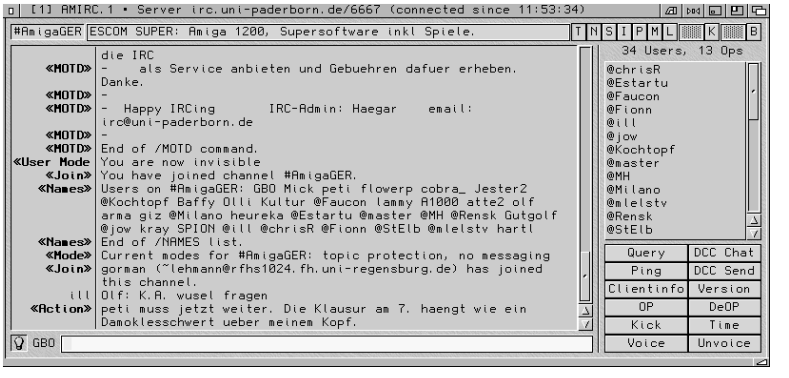
One of the earliest services available on the Internet, and still one of the most useful, is the ability to transfer files. A convention called the File Transfer Protocol (FTP) was developed as a standard for file exchange between computers, regardless of the operating system used on machines. Sites on the Internet which act as file servers and maintain software for users to download are called FTP archives.



You have probably come across the Amiga Aminet CDs. These contain files taken from the Aminet FTP archive on the Internet. There are literally gigabytes (thousands of megabytes) of Amiga files on Aminet. Because of its popularity Aminet is mirrored (duplicated) in different places around the world. When someone uploads a new file to any one of the Aminet sites, the file is copied to all other sites within 24 hours. There are two Aminet mirrors in the United Kingdom.

Internet Relay Chat

You know all those partyline telephone numbers you can ring up? Yes you do—where you can listen to and join in with live discussions? Well, Internet Relay Chat (IRC) is the computer based equivalent. Instead of speaking on the phone you type at your keyboard.



There are hundreds of "channels" active 24 hours a day. You are free to join in these channels at any time and participate. Like Usenet's newsgroups, many IRC channels are dedicated to specific topics, while some are just places to hang out. IRC can be overwhelming to begin with—how do you keep track of all those conversations?—but once you get the hang of it, it can be pretty addictive.

World Wide Web

As mentioned in the introduction to this book, the World Wide Web (WWW) is like a graphical front-end to all the resources on the Internet. As you bring up each Web page on screen you can click on different parts of the screen to find out more information on the current topic or visit another Web site. As you click from place to place, you're moving from Web site to Web site—you're surfing!

To really understand the power of the Web you have to use it yourself. You can look up just about any topic imaginable. From the latest news headlines, to TV show episode guides, to finding out the name of that actor in the movie you can only vaguely remember the name of.

Terminal programs

The most basic type of Internet access you can have would be by simply using a terminal program to dial into a university account or other "shell" account that an ISP might provide. The problem with shell accounts is that they are limited to a text-only display. This works fine for things like email, Usenet news, and even file transfer, but won't work very well for the most popular Internet application, the World Wide Web.

You'll need a terminal program for basic modem configuration, and for calling other systems such as bulletin boards, so even if you have more than a shell

account for Internet access, having a terminal program is basic requirement for getting up and running.

There are many freeware and shareware terminal programs available for the Amiga. Term is a popular freeware program, packed with features. NComm is a good alternative and a lot simpler than Term.

Magic User Interface

An increasing number of public domain and shareware software for the Amiga is making use of a graphical user interface called Magic User Interface, or MUI for short (pronounced "moo-ee"). MUI saves programmers time when building the user interface for the program, and so helps them spend more time concentrating on the application functionality than trying to make it look nice.

Many programmers and users swear by MUI and think it's the greatest thing since sliced bread. Programmers like it because it saves them time and effort, users like it because it allows them to tailor the look and feel of the application user interface to suit their personal preferences.

Opponents of MUI are quick to point out its deficiencies: it's yet another package that you must install on your Amiga; its stability is questionable; it's rather large; and, worst of all, it's slow—very slow.

It's a bit of a religious issue. You either love it or you hate it. In any case, many programs require MUI so you don't have much choice if you want to run those particular applications.

TCP/IP software

What most people actually mean when they say they have an Internet connection is that they have what is called "full Internet access". What this means is that while they are online their computer is directly connected to the Internet. In order to do this you need a piece of software which implements something called a TCP/IP stack.

TCP/IP is the name commonly given to the Internet suite of communication protocols—or in other words, the software that lets all the machines connected to the Internet talk to each other. The name TCP/IP is somewhat of a misnomer as IP (Internet Protocol) is really the basic building block of Internet communications. Built above IP are two protocols, TCP (Transmission Control Protocol), which is a connection oriented protocol, and UDP (User Datagram Protocol), a connectionless protocol. As TCP is the most commonly used protocol, people tend to refer to the whole collection as TCP/IP.

The most simple explanation of TCP and UDP is based on the analogy between the telephone and postal systems. Using TCP is like using the telephone, while UDP is similar to posting a letter. When you open a connection to another machine using TCP it's like dialling someone's telephone number. You have a permanent connection to the other party for the duration of your call. The connection is reliable and all the data gets through in the correct order. It is connection oriented.

Archivers and encoders

You've probably already come across an Amiga program called Lha. It is a compression program that can squeeze whole directories of files into a single file. It is popular on magazine cover disks and is used almost everywhere on the Internet when it comes to Amiga files. You'll need to get a copy of this before you can go anywhere. Without it you won't be able to unpack and install any other software.

If you have an archive called "program.lha", then to unpack the archive you should open an Amiga Shell prompt and type:

```
lha x program.lha
```

Another program which you'll find a need for is uudecode. This is a program which converts binary files into text files. Huh? Why? Well, for a number of reasons you can't send binary files via electronic mail, so if you want to send or receive a picture or program via email you will have to uuencode it first if you're sending, and uudecode it if you're receiving.

To encode a file called "foo.iff" you would type:

```
uuencode >bar.uu foo.iff foo.iff
```

...which would take the binary file called "foo.iff" and turn it into a plain text file called "bar.uu". This file could now be sent via email. To decode this file back to binary you would type:

```
uudecode bar.uu
```

Finding the software

Internet beginners often find themselves in a Catch 22 situation. When they ask an experienced user where to find all this great software, the reply they get is "Oh, it's all on the net". Locating the basic software to get you up and running is the hardest part of starting out on the Internet. There are a number of options open to you.

CD-ROM

If you have a CD-ROM drive on your Amiga then you probably have most of the software you need on one of your CDs. Most Amiga CDs have some sort of networking section on them with a collection of useful utilities. Any recent GoldFish or Aminet CD should have everything you need. The Aminet sets are particularly good value as they contain several gigabytes of recent Amiga software.

Bulletin boards

Since you now have a modem you should look in a magazine or ask around for the name of a local Amiga BBS. Any decent Amiga board will have all the Internet software available for download, usually free of charge. All you need is a piece of terminal software, which you may have got with your modem. (If not, we're back to Catch 22.)

PD distributors

There are lots of public domain and shareware distributors listed in Amiga magazines. They sell disks with popular PD and shareware programs for a nominal copying and distribution fee. This is the easiest way out of the Catch 22 situation.

Use the net

Yes! Seriously! If you are a university student or have access to the Internet at work or through a PC somewhere, then use it to download the software you need. Transfer it back to your Amiga on PC floppy disks.

Ask a friend

Or ask for help at a local user group. In today's world it's hard to find a computer hobbyist who isn't connected in some way or other. If you know someone who owns an Amiga, do everything in your power to get them over to your place for an evening to help you get things going. They've been through it before, so they know all the little problems you'll run into. They will also probably be able to give you advice on the best local Internet Service Providers in your area.

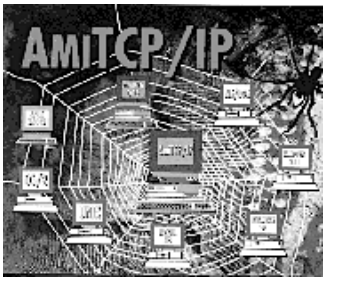
Buy it new!

The AmiTCP/IP package can be bought new. It is quite expensive if you're just starting out, and doesn't offer a lot more than the free demo version, but if you do buy it you will have enough to get online, and you can then use the basic tools supplied with AmiTCP to download all the new software.

All the software mentioned so far is contained on Aminet. For the rest of the book, any time a piece of software is discussed the filename on Aminet will be given. A quick summary of what you'll need so far is show in the table above right. Note that since Aminet is constantly being revised, newer versions of the applications may be uploaded, so the filenames on Aminet may change slightly to reflect this—"ncomm30.lha" for example might become "ncomm31.lha" if the authors update it.

Program	*Filename*	*Directory*
Term	*term_main.lha*	*comm/term*
NComm	*ncomm30.lha*	*comm/term*
MUI	*mui33usr.lha*	*dev/gui*
AmiTCP	*AmiTCPdemo_40.lha*	*comm/tcp*
PPP	*PPP1_45.lha*	*comm/net*
Multilink	*mlink132.lha*	*comm/net*
IPDial	*IPDialv19.lha*	*comm/tcp*
GPDial	*GPDialv1.0.lha*	*comm/tcp*
NetDial	*Netdial4_0.lha*	*comm/tcp*
uudecode	*uucode.lha*	*util/arc*
lha	*lha_e138.run*	*util/arc*

All the software mentioned so far is contained on Aminet.



making the software work

2

- Understanding your modem
- Hayes commands and S-Registers
- Installing Internet software
- AmiTCP step-by-step installation
- PPP step-by-step installation
- Dialscripts
- Testing your connection
- Your first file transfer
- Configuring email and Usenet news

Understanding your modem

Before you install any Internet applications or TCP/IP stacks you need to get the basics working. This means getting your Amiga talking to your modem and your modem happily making phone calls.

There should be a number of status LEDs on the front of your modem. These are handy when trying to get your Amiga and modem working properly. You can tell exactly what state the modem is in by knowing what combinations of LEDs mean what. Here are a few of the most important:

AA (Auto Answer) When the AA light is on your modem will attempt to answer any incoming calls. You can set how many rings the modem will wait before picking up the line.

SD (Send Data) The SD light is active when the modem is sending data down the phone line, and/or it is receiving this or other data from your Amiga.

RD (Receive Data) The SD light is active when the modem is receiving data from the phone line, and/or it is sending this or other data to your Amiga.

TR (Terminal Ready) The TR light should come on as soon as the modem is ready to accept data from a terminal (your Amiga, that is). Depending on how you have configured your modem, this LED may illuminate only when you start a terminal program which "opens" the Amiga serial port.

OH (Off Hook) The OH light comes on when the modem metaphorically takes the telephone handset off the hook—when the modem picks up the line in order to dial out. It should be on for the duration of a call. If the light suddenly goes out, the modem has hung up the line for some reason.

CD (Carrier Detect) The CD light comes on when a connection to another modem has been established and a "carrier signal" is available over which data can be sent and received.

Depending on the model of your modem there may be many more LEDs, or even an LED or LCD display showing the current status of the modem. There is usually some way of telling what speed the modem is set to, or whether it is in fax mode. During a call you should also be able to see what error correction and data compression (if any) protocols are in use by the two modems making the call. Refer to your manual for more details on these.

Making a call

To check if your modem is working correctly you should start a terminal program—NComm and Term are two popular shareware packages—and get your modem to make a telephone call.

When you have loaded your terminal program you should try typing in the command `AT` which tells the modem to stand to ATtention! If you are in luck the modem should respond with "OK", if not skip down to the next section for some advice.

It's always a good idea to reset the modem before you start dialling. To do this type `ATZ`. The modem should once again respond "OK". Next you can try getting the modem to pick up the phone line—use `ATH1`. The OH light

should come on and you should be able to hear a dial tone. To hang up type `ATH0` (that's a zero at the end). If you were able to hear a dial tone then all is well and you can try dialling a number. If not, check the phone line is plugged in correctly, or type `ATM1` followed by `ATL2` to make sure the modem speaker is turned on.

Note that you don't have to pick up the phone line with the `ATH1` command before dialling. The modem will pick up and put down the phone line automatically when it attempts to dial. You should use the ATH commands only to check if a dial tone is present.

To dial a number you can use either `ATDT` or `ATDP`. The `D` stands for dial, the `T` and `P` for tone and pulse. Most new telephone exchanges now use tone dialling but if you are connected to an older exchange you may have to use pulse dialling. Try them both to see which works. Tone dialling is preferable.

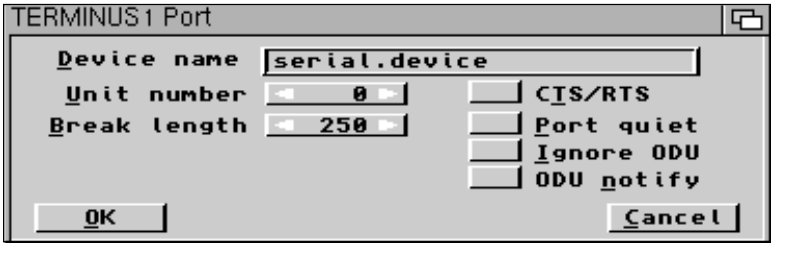
So try a number—`ATDT123456` will dial 123456. Ideally you should try ringing your ISP or a local Bulletin Board System but any number which has a modem at the other end of the line is fine. Bear in mind that if you ring a number that doesn't have a computer and modem attached at the other end you'll hear a muffled "Hello" coming from your modem and the person who has answered your call will get an earful of modem tones! If you don't know any numbers to try out, call yourself to check that the modem dials and test for a busy signal. Or try calling the speaking clock. Really! At least you'll know the modem is making calls correctly.

What if it just doesn't work?

Okay, so you've switched on the modem, loaded your terminal program, but nothing is happening...

If you are typing on your Amiga and nothing is coming out in the terminal window, take a look at the modem TR, SD and RD lights. Is the TR light on? If not, the Amiga serial port is not talking to the modem. If the light is on, check if the SD and RD lights are flickering as you type. If they are, your commands are getting through to the modem and the modem is responding, so your terminal program probably just needs tweaking a little bit. If the TR light is on and SD and RD don't respond when you type, there is a more serious problem. Perhaps a hardware problem such as a faulty cable.

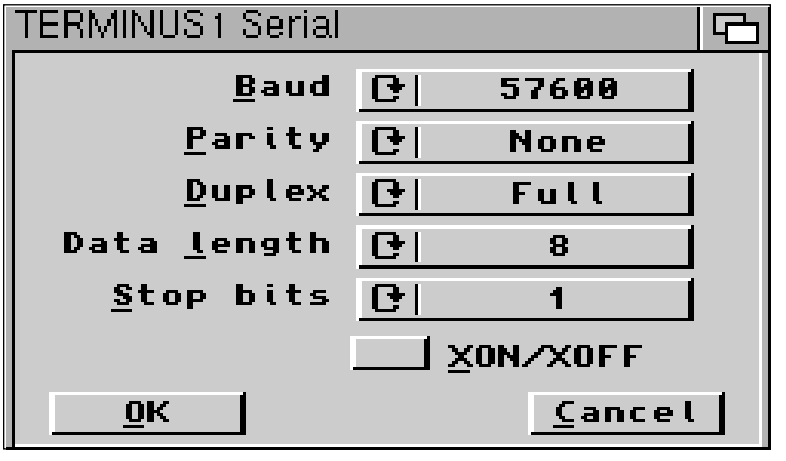
Modems are very fickle. Don't jump to any conclusions about them not working. They are just extremely easy to upset. You should check all the settings in your terminal program. The most important setting, and it is probably set correctly by default, is that your terminal program is talking to the Amiga "serial.device" unit 0 (zero).



After this, check the baud rate or speed at which your Amiga is talking to your modem. We discussed the best speeds to choose earlier in the book.

For testing purposes you can try 2400. Lastly , make sure your serial port settings are N-8-1.

N-8-1 is short for No parity, 8 data bits, 1 stop bit. Basically what this means is that for every eight data bits of data that the modem sends down the line, a single stop bit should be added to the end of the eight data bits, and no parity bit should be added when doing error checks. By convention a start bit is also always added, so for every eight bits of data you send a start bit is inserted before your byte and a stop bit is appended afterwards.



These extra bits are used for clocking information. The two modems don't know whether your eight bits are going to be ones or zeros, but if they can rely on start and stop bits always being present then over long periods of time they will never lose synchronisation with each other. If the two modems lost track of which bits were which and got confused about what was the start of a particular data byte, you would just get complete garbage coming out at both ends.

Hayes commands and S-Registers

The AT commands with which you controlled your modem in the last section are part of the Hayes Command Set. Hayes were one of the first companies to produce modems and the language they used for their modems became a de-facto standard in the modem industry. There are a number of basic Hayes commands which are common to almost all modems, but such is the complexity of today's models that every vendor adds their own set of unique commands to control the enhanced features of their particular modem.

As well as the AT commands your modem has a number of Status or "S" registers which store the current configuration. The contents of these S-Registers can be controlled with an ATS command. To check the current settings on your modem try `AT&V` (or check with your manual for the correct command). You should see something like:

```
TERMINUS1
at
OK
at&v
ACTIVE PROFILE:
B1 E1 L1 M1 N1 Q0 T V1 W0 X4 Y0 %C3 %E0 %G1 -K0 &C1 &D0 &K3 &Q5 &R1 &S0 &X0 &Y0
S00:000 S01:000 S02:043 S03:013 S04:010 S05:008 S06:004 S07:050 S08:004 S09:012
S10:014 S11:050 S12:050 S18:000 S23:190 S25:005 S26:001 S36:007 S37:000 S38:020
S40:104 S41:131 S44:131 S46:138 S48:007 S91:010 S95:000 S109:062 S110:014

STORED PROFILE 0:
B1 E1 L1 M1 N1 Q0 T V1 W0 X4 Y0 %C3 %E0 %G1 -K0 &C1 &D0 &K3 &Q5 &R1 &S0 &X0
S00:000 S02:043 S06:004 S07:050 S08:004 S09:012 S10:014 S11:050 S12:050 S18:000
S23:190 S25:005 S26:001 S36:007 S37:000 S40:104 S41:131 S46:138 S95:000

STORED PROFILE 1:
B0 E0 L2 M1 N0 Q0 T V0 W0 X0 Y0 %C2 %E0 %G0 -K3 &C1 &D2 &K0 &Q4 &R1 &S1 &X0
S00:043 S02:004 S06:050 S07:004 S08:012 S09:014 S10:095 S11:050 S12:000 S18:052
S23:000 S25:001 S26:073 S36:000 S37:020 S40:131 S41:138 S46:007 S95:062

TELEPHONE NUMBERS:
0=                                  1=
2=                                  3=

OK

TERMINUS1                 VT102 LLC 2 FX 8N1 57600  00:00:02   16:02:22
```

At the top of the screen you can see the active settings for this modem. Further down you can see that the modem has two memory banks where it can store alternative settings. It can even store frequently called phone numbers. Let's go through some of the most important AT commands and S-Registers. The commands shown to the right have been tested only on Supra modems but most modern modems should use the same commands. Again, check with your manual for any small differences.

The bottom AT command in that table shows how to set the value in an S-Register. An important S-Register is S0, which determines whether or not the modem will answer incoming calls. Or, to be more precise, how many rings to wait before answering. So to make the modem answer incoming calls after two rings you would type `ATS0=2`. To prevent the modem answering tell it to answer after zero rings—`ATS0=0`.

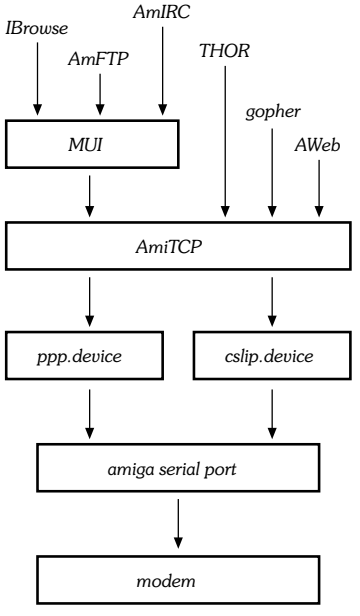
In general, the factory defaults for your modem will probably be adequate for your needs. You may want to adjust one or two settings, but you shouldn't have to spend time learning what each of the Hayes commands does. As long as you know how to reset the modem and make a call, you're all set. If you do make any adjustments to the defaults, make sure to store your settings by issuing the `AT&W` command. Your configuration will then be stored in the modem's NVRAM (permanent memory) and will take effect every time you turn on your modem from cold.

AT&F	Reset to factory defaults (on Supra modems use AT&F2)
ATZ	Reset to last saved settings
AT&W	Store current settings to non-volatile ram (NVRAM)
AT&V	Show current modem settings
ATM0	Turn off speaker
ATM1	Turn on speaker
ATLx	Speaker volume control (x=0-3)
ATDx	Dial phone number x
ATA	Answer incoming call
ATH1	Pick up phone line
ATH0	Hang up phone line
AT&D0	Ignore DTR signal (modem ignores status of Amiga terminal)
AT&D2	Follow DTR signal (hang up on exiting terminal program or reboot)
ATSx=y	Set S-Register x to value y

Installing Internet software

Modem plugged in and working, now's the time to configure and test your Internet connection. We'll go through the different questions AmiTCP will ask you during installation and explain what they mean. Having successfully installed and tested the software, we'll look at how you can now transfer new software to your Amiga over the Internet. And we'll briefly mention some other utilities you might like to install which will make life easier when configuring email and news programs later on.

Internet software stack



Installing AmiTCP

AmiTCP comes in two archives: the user binaries and documentation, and the software development kit (SDK). The documentation is quite extensive and a full description of the AmiTCP programming interface is given in the developer kit. AmiTCP can be found on Aminet in the comm/tcp directory. The user files are in "AmiTCPdemo_40.lha" and the developer files in "ATCP_sdk_40.lha".

The user archive has everything you need to install AmiTCP. A standard Commodore Installer script is provided and after several releases of the software it is now pretty good. It can be quite daunting though, especially if you're not certain what you want—default domains, gateways and nameservers may not mean too much to the new Internet user. You'll probably find yourself installing the package several times over as you figure out exactly what you're doing.

The installer creates all the necessary configuration files for AmiTCP and once you understand the structure of these files you won't need to go near the installer again.

Applications included with AmiTCP are the basic Internet utilities such as Telnet, FTP and Finger. Numerous other tools such as netstat, route, ping, and arp are included for configuring and troubleshooting your IP link. We'll take a look at how to use some of these later on in this chapter.

As well as these standard networking utilities from the Unix world there is an Amiga specific application called NetFS. This allows you to connect two Amigas and share filesystems across that network using AmiTCP.

Configuring AmiTCP can be tricky to get right first time. Most of the defaults given by the Commodore Installer will work just fine, but answer one crucial question incorrectly and you could be tearing your hair out in frustration for hours. Here are the most important things you need to have figured out before installing AmiTCP.

What protocol are you using?

Is it SLIP, CSLIP or PPP? Your ISP will tell you what choices you have. SLIP and CSLIP come bundled with AmiTCP. PPP is available separately and is often the first choice an ISP will give you. I recommend you install and use PPP with AmiTCP. PPP comes with its own built-in dialler so it will automatically call your ISP.

Your IP address

Every computer on the Internet has an IP address. You will either get a static IP address, which is a fixed number assigned to your Amiga for good, or your ISP will use dynamic addressing where a new IP address will be transmitted down the phone line each time you connect to the Internet.

Dynamic addressing is much more convenient for your ISP. It is also easily handled by PPP. If you are using dynamic addressing, enter `0.0.0.0` as your IP address.

Netmask

Check with your ISP but it is most likely that your netmask will be `255.255.255.0`.

Broadcast address

Again, check with your ISP. If you are using static addressing and have an IP address in the form of 1.2.3.4, then your broadcast address will be `1.2.3.255`.

Gateway

The gateway or default route is the address of the machine in your ISP's premises which routes packets to the Internet. When your Amiga has a packet destined for a remote site it needs to send it somewhere, so it sends it to the default route or gateway.

Nameserver

The nameserver is the machine that performs the translations from Internet addresses like *www.broadcom.ie* to the IP numeric equivalent of 192.107.110.20. If your nameserver is incorrectly set you will only be able to use IP addresses in numeric form and will not be able to use the friendlier domain name system (DNS).

Domain name

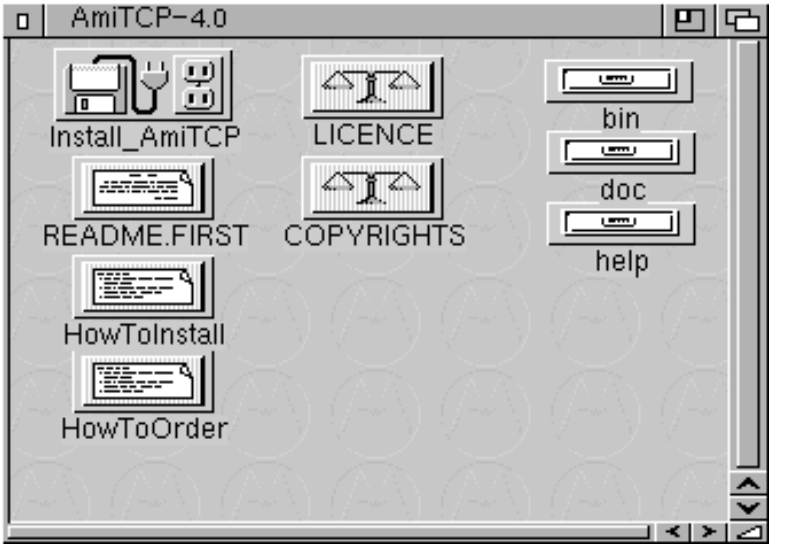
This is usually the same as that of your ISP, so it will be something like *isp.co.uk*. If perhaps you are starting your own company and have arranged with your ISP to get a static IP address and your own domain name, then it might be something like *mycompany.co.uk*.

When you have successfully configured AmiTCP you'll need a way of automating the login process to your ISP. If you are using PPP you can use the built-in PPP dialler program, for which you can write a "chatscript" that tells your Amiga how to dial your ISP's number and enter your username and password. If you don't have PPP then you can either login manually with a terminal program, quit the terminal program and then start AmiTCP, or you can get a separate dialler program whose sole purpose is to log you in to your ISP. (It lets AmiTCP take over from there.) Note that if you are using a terminal program to login to your ISP you should enter the command `AT&D0` to your modem before you dial. This tells your modem not to hang up when you quit the terminal program before starting AmiTCP.

Lastly, to start up AmiTCP and get online type `STARTNET`. When you're all done, and have shut down your applications, you type `STOPNET`. Both commands are actually just script files in the amitcp:bin drawer and can be tailored to perform custom operations at startup or shutdown.

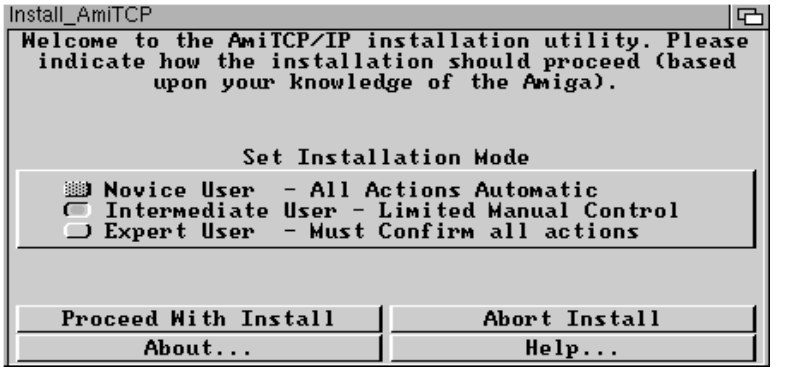
AmiTCP Step-by-Step Installation Guide

The TCP/IP stack is the most complicated piece of software required for Internet access. Unless you have a strong Unix or communications background you'll probably find the installation process somewhat bewildering, so let's go through the AmiTCP installation process step-by-step.



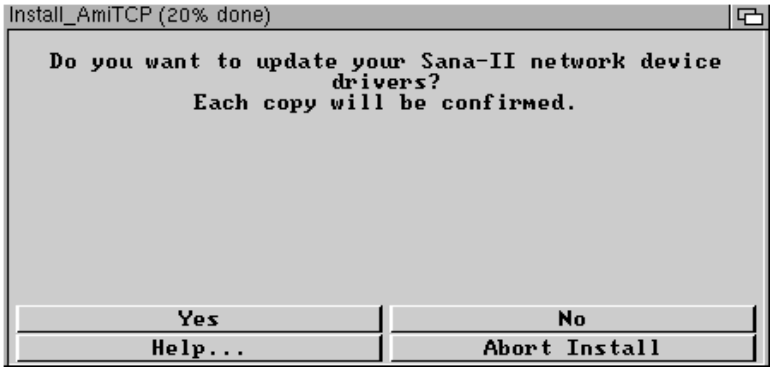
After you have unpacked the AmiTCP demo archive you will find an AmiTCP-4.0 drawer on your system.

AmiTCP comes with a standard Commodore Installer script which helps automate the installation process. Double-click the Install_AmiTCP icon when you're ready to install.



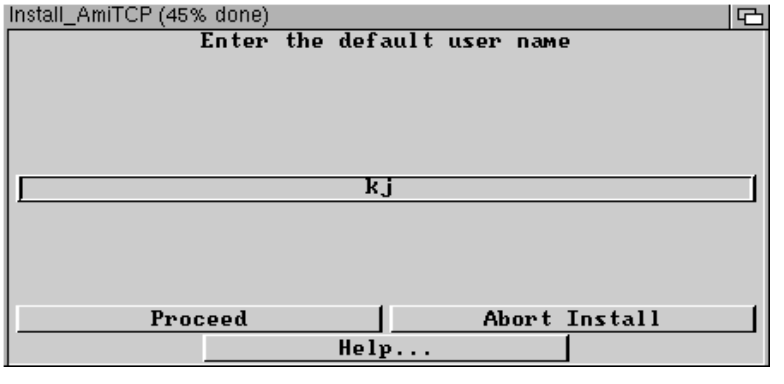
Your first choice, as with all Installer scripts, will be to set the installation mode to Intermediate or Expert. If you want to double-check everything in the installation process then you can choose Expert mode, otherwise you should leave the default Intermediate mode active and click `Proceed`.

Next you will be asked if you want to install for real or whether you just want to have a trial run by pretending to install. Again, leave the default option active and install for real. You will now have to choose where to install AmiTCP on your hard disk. Pick a directory on your system where you plan on keeping all your Internet related programs.

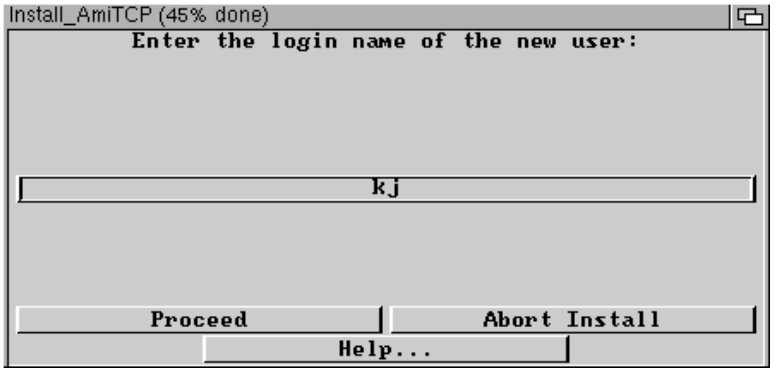


AmiTCP talks to network devices such as modems via Sana-II device drivers. You will be asked if you want to update any devices that you may already have installed on your system. Choose `Yes` and then check that each device AmiTCP attempts to install is newer than any existing version already installed on your system.

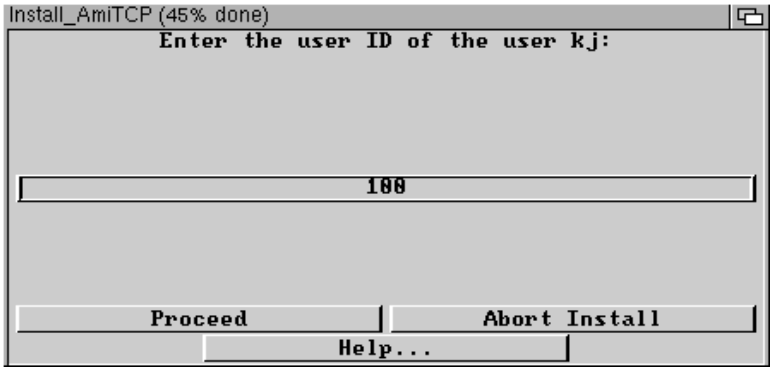
Napsaterm is a small terminal program that comes bundled with AmiTCP. You are given the option to install the fonts that come with Napsaterm. Unless you really have a good reason to do otherwise, you should go ahead and install the fonts.

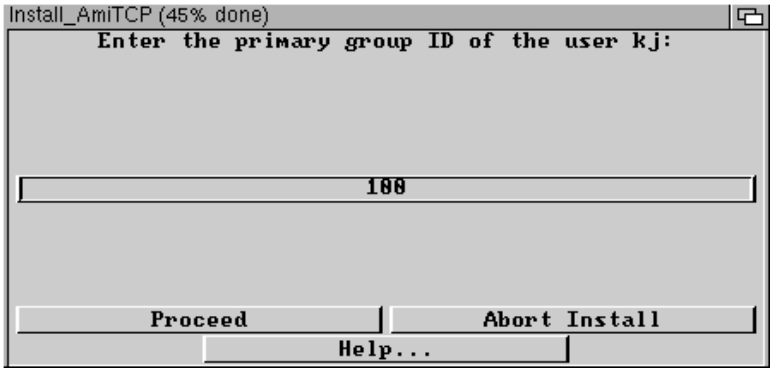


If you have previously installed AmiTCP you will be asked if you want to use settings from that installation. But since this is likely to be your first time installing AmiTCP you can just ignore this and click `No`. AmiTCP will next ask for a default user name. This can be anything you like, but if you want to avoid confusion down the road it makes a lot of sense to use the same login name for AmiTCP that your ISP has given you on their system.



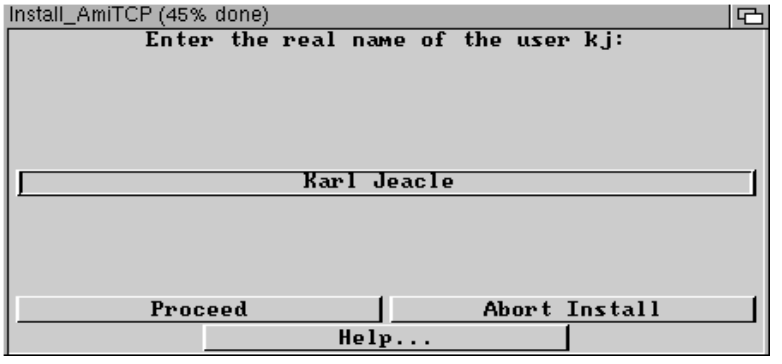
What you just entered was the default user which AmiTCP will login when it starts up. You now have to actually add that user to your system, so just enter your login name again.



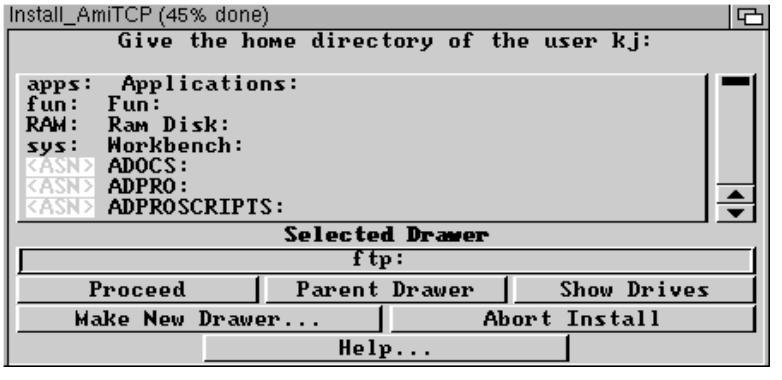


Next you have to enter a User ID (UID) and Group ID (GID). This has its roots in Unix and other multi-user systems. Each user on a networked computer has to have an ID number associated with him or her. Computers like numbers and so a UID is a lot more useful to it than an English word. The GID is supposed to represent the group you belong to. In the real world this might be a number representing departments such as sales, marketing, accounts, engineering and so on. In our simple Amiga world you can just choose the default UID and GID of 100.

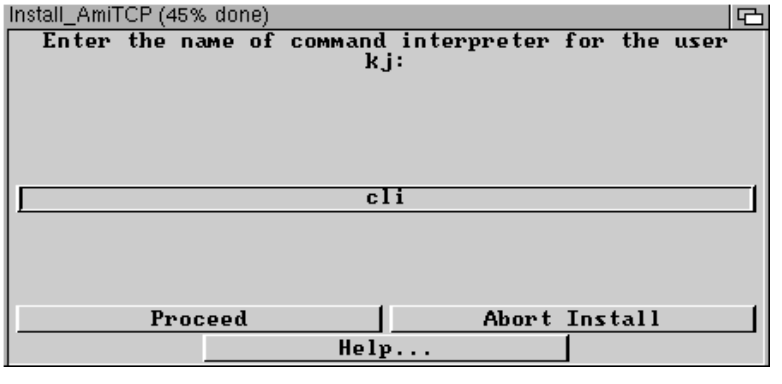
AmiTCP supports UIDs and GIDs so that it can allow you to have multiple user set-ups on your system. You could for example allow friends on the Internet to remotely login and access your Amiga.



After login names, UIDs and GIDs you have to enter your real name.



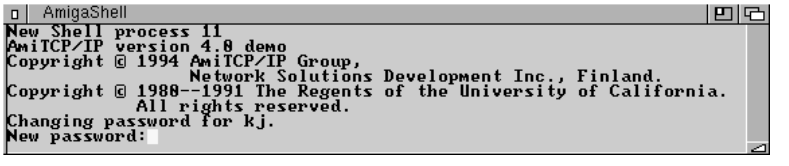
You will need to chose a home directory on your system. This should be a drawer somewhere on your hard disk where you might keep local configuration files for Amiga Internet programs—if you ever connect to your Amiga remotely this will be the default directory you will find yourself in.



If you configure your Amiga to allow yourself to login across the Internet from another computer, you have to have set a command interpreter which will be run for you. The standard Amiga shell can be invoked with the `CLI` command, so you should use this as the AmiTCP user command interpreter.

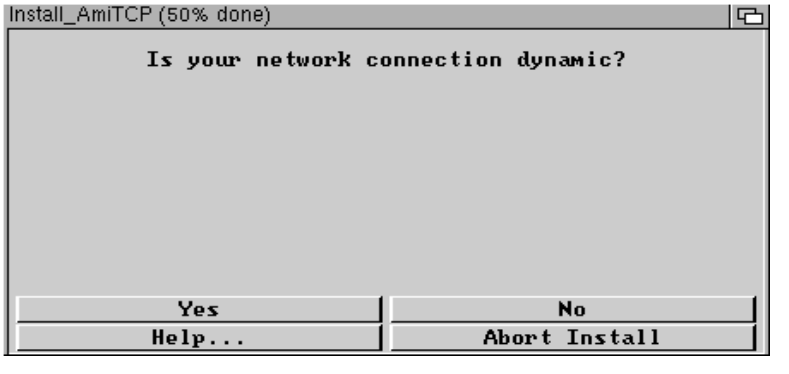
When you have entered all the relevant details for your user account set-up, the installation script will ask you to confirm that everything has been entered correctly. Click `Add` if all is well.

At this point AmiTCP will create the user account. To do this it needs a password, so a new shell window will appear with the AmiTCP login program running, prompting you for a password.



Try to use numbers, symbols or upper case characters in your password. You should make it as difficult to guess as possible. Don't make it too obscure, however, as you may have trouble remembering it yourself!

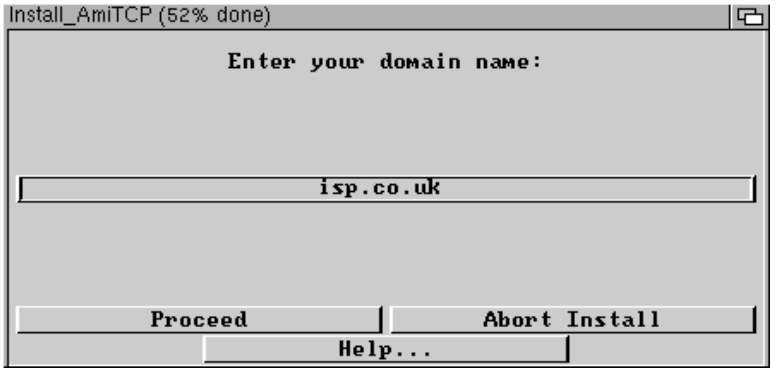
Don't imagine that the password is not important because you are the only person who uses your Amiga. When you are connected to the Internet, if you allow incoming Telnet or FTP sessions your machine could be vulnerable to attack while you are online. Don't be paranoid about this, it's highly unlikely that your machine's security will be compromised, especially when you are a dialup user with a dynamically assigned IP address (more on this later), but just be careful, and pick a sensible password.



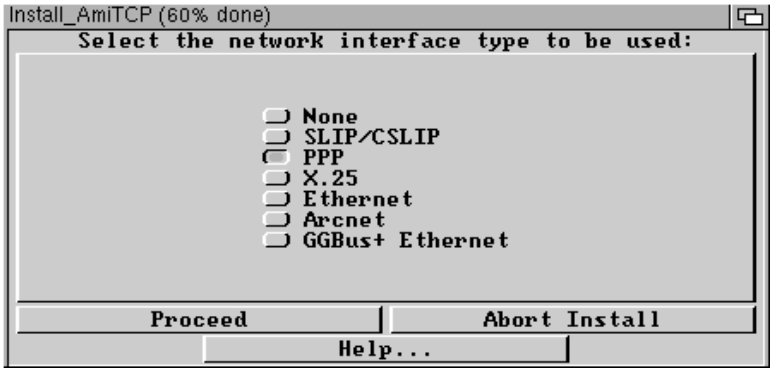
Having fully configured all the login user details, AmiTCP will attempt to configure any network interfaces you have attached. The first thing it needs to know is whether your network connection is static or dynamic.

A static connection means that your Amiga will have a single IP address uniquely assigned to it. These days, for a number of reasons, it's quite unlikely that you will be using a static IP address unless you are connecting to a machine at work or have a particularly friendly ISP. In most cases you will have a dynamic network connection. This means that each time you call your ISP it will allocate you an IP address for your Amiga that will be yours for the duration of that call only. When you hang-up, the IP address will be reused for someone else logging on.

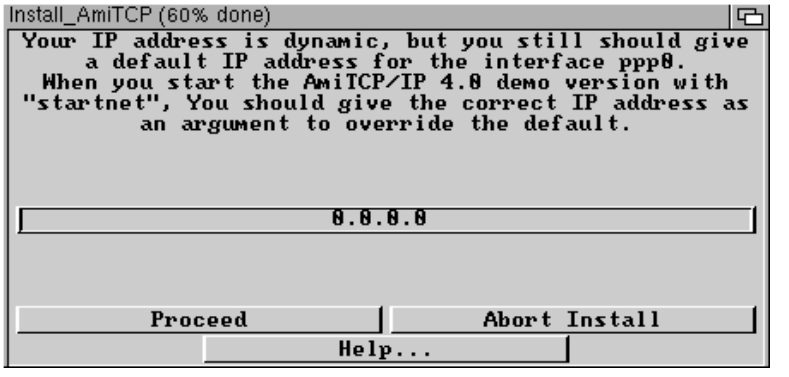
So unless your ISP has given you a specific IP address to use you should click `Yes`—your network connection is dynamic.



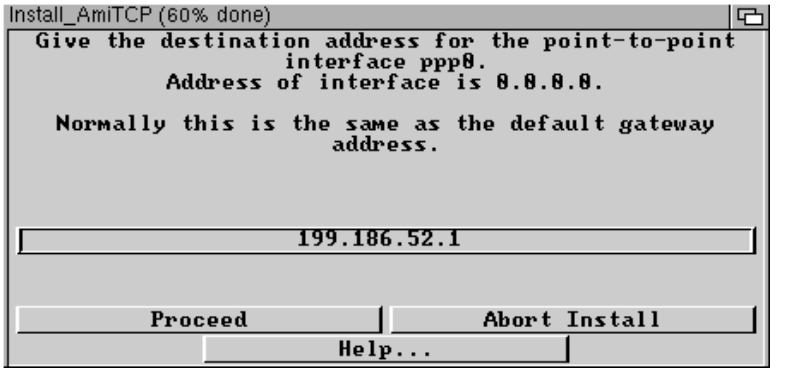
Next you'll have to enter your domain name. This will be something like *isp.co.uk* or if you are connecting to a university account, *blah.ac.uk*. If you know what your email address will be, your domain name is probably everything after the @ in your email address. For example, if your email address is *jbloggs@isp.co.uk* then your domain name is *isp.co.uk*.



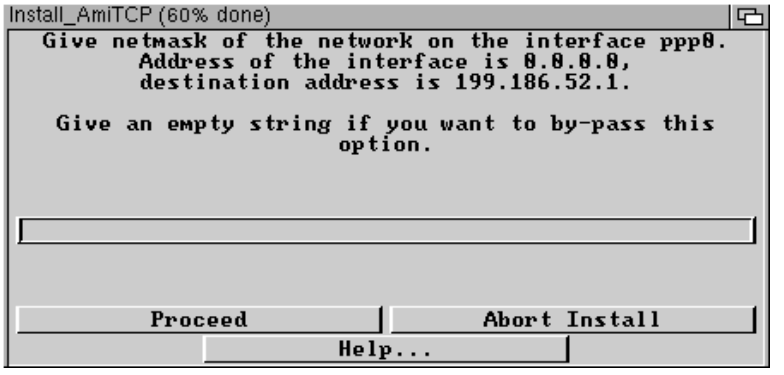
TCP/IP can run over a variety of different network types. It is possible to install Ethernet or Arcnet cards in a number of Amigas and network them together locally. However, if you are simply using a modem to connect to the Internet then you need a piece of software under AmiTCP to talk to your modem. This is usually SLIP, CSLIP or PPP. The most popular these days is PPP, using the aforementioned dynamic addressing. Click on whichever protocol your ISP has told you to use.



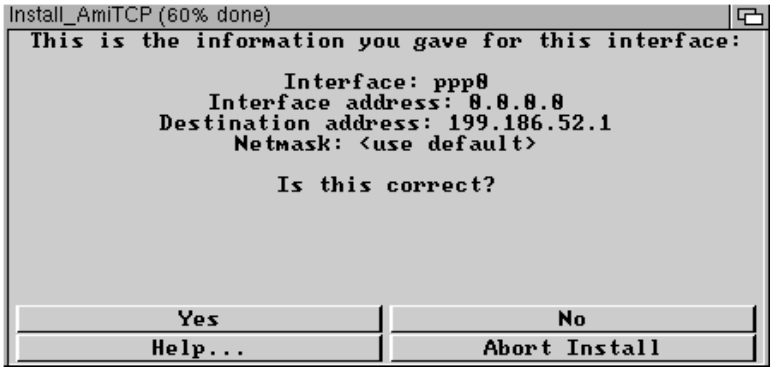
In the likely event that you choose PPP as your network interface, AmiTCP will ask you to confirm that this is indeed that case before going on to ask you your IP address. When using dynamic addressing you can enter the address `0.0.0.0` for the ppp0 interface.



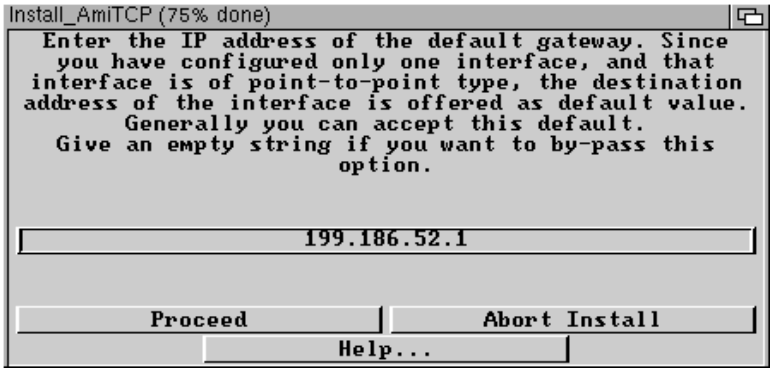
The computer at the other end of the modem will give you your IP address so you can get away without knowing your own address, but in order to communicate with the remote machine it is essential that you have its IP address. Only your ISP can tell you this. As AmiTCP notes, this address is usually the same address as your ISP's default gateway, so use this address if it's the only remote IP address that your ISP has given you. If you are really stuck here and your ISP has told you nothing, try using `0.0.0.0` again—it's possible that the PPP protocol will figure out the relevant IP addresses when it starts up.



With every IP address you must supply a netmask. It's usually quite easy for AmiTCP to figure out this address, so you can leave this option blank. However, if for some reason you have to enter a netmask then check with your ISP, though `255.255.255.0` is a good bet.



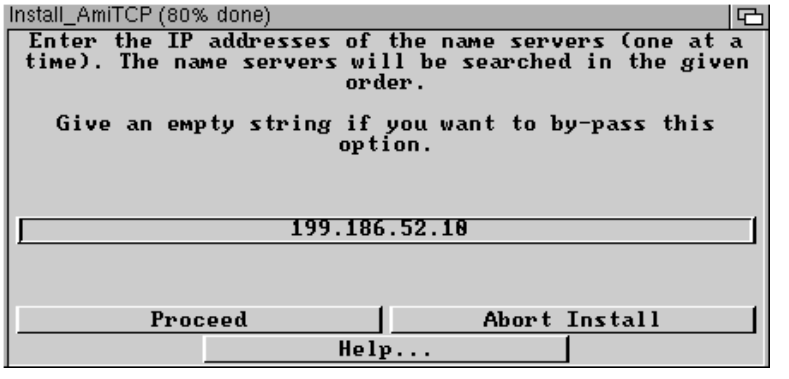
AmiTCP will now present a summary of your answers for this interface. Click `Yes` if you have entered everything correctly.



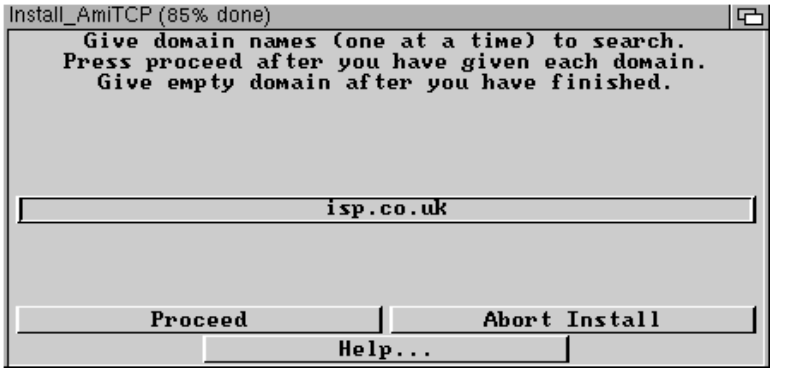
The default gateway is the machine to which your Amiga will forward all Internet destined packets. Because you have a point-to-point link to your ISP, all of your IP packets must go to the machine at the other end of your modem link, so usually this remote machine is the default gateway.

However, it is possible that the default gateway will be a machine somewhere else in your ISP's premises. In this case your ISP will provide you with the two separate IP addresses you require: the remote PPP address, and the default gateway address.

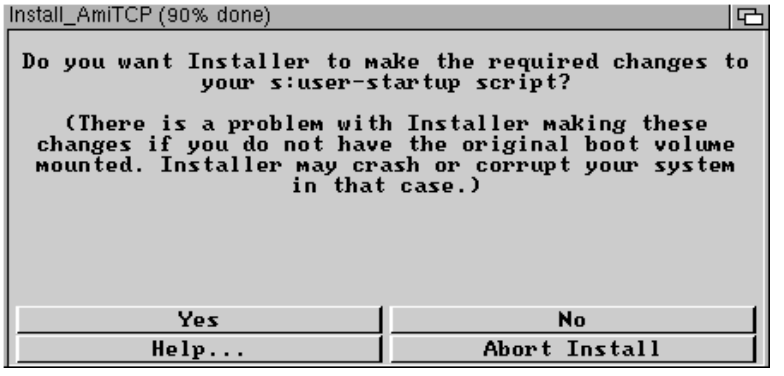
If they have only given you one address you can assume that the machine at the other end of the line is also your default gateway.



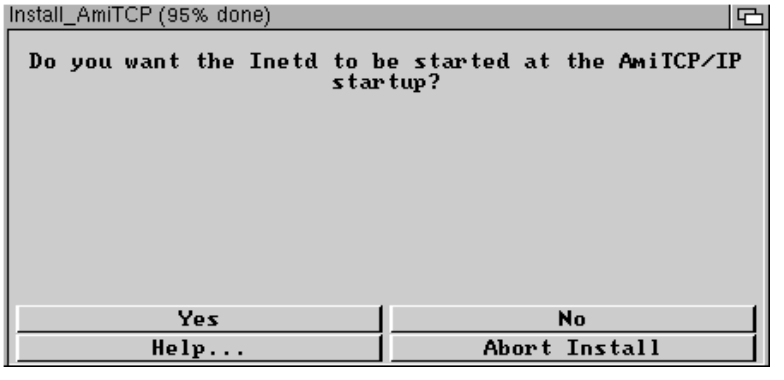
The one other IP address that your ISP should have provided you with is that of its name server or DNS machine. Name servers translate normal English-like hostnames into their numeric IP equivalents. AmiTCP can still work without a DNS server but you won't be able to make a lot of sense of anything without a DNS entry in your AmiTCP configuration files.



You will be offered the chance to enter more than one DNS server address. If you have more than one then by all means enter it here. If you are connected to multiple domains it is possible that you might have to enter more than one DNS server, and you will also have to enter each of the domain names that these DNS servers correspond to. This is not likely to be the case with the average home Internet connection so you can simply enter your single domain name and then leave the next one blank and click `Proceed`.



AmiTCP needs some AmigaDOS Assign commands and path additions to be made before it can run so the installation program asks you if you want it to modify your startup scripts to do this automatically. Click `Yes`.



The Inetd program is a daemon program which runs in the background waiting for incoming connections to your machine. If you want to set up FTP servers or Web servers or other advanced Internet services on your Amiga you may as well have the Inetd program started every time you launch AmiTCP. However, as mentioned earlier, this is where the security risk can lie. I would recommend choosing `No` here. You can add Inetd to your startup scripts at a later date if you like.

No more questions! AmiTCP is now installed on your system. As the requester says, you should reboot your Amiga for all the changes to take effect.

PPP Step-by-Step Installation Guide

AmiTCP requires a Sana-II driver to be installed underneath it to talk to a network device. Your network hardware is your modem and your Sana-II driver can be something called SLIP, CSLIP or PPP.

SLIP means Serial Line Internet Protocol. It was one of the first ways of getting IP to run over a serial line, the same kind of line your modem uses. CSLIP (Compressed SLIP) came next and improved on the speed of SLIP by compressing some of the IP packet headers being sent up and down the line. Both SLIP and CSLIP are commonly used today.

The most recent protocol to be used to get IP running over serial lines is the Point-to-Point Protocol. PPP is smarter than SLIP and CSLIP in a number of ways, but really all you need to worry about is that PPP should be installed along with AmiTCP in order to get your Amiga talking to your modem and hence your ISP.

Holger Kruse has written a shareware version of PPP for the Amiga. It is available on Aminet as "comm/net/PPP1_45.lha". When you unpack the archive you will find the following files...

```
Output Window
LhA Evaluation V1.38 - Copyright (c) 1991,92 Stefan Boberg.
All rights reserved. Not for commercial use.

Listing of archive 'PPP1_45.lha':
Original  Packed Ratio   Date     Time    Name
-------- ------- ----- --------- -------- -------------
   11416    6971 38.9% 12-Feb-96 11:40:56 PPP/bin/PPPInfo
    9684    6047 37.5% 12-Feb-96 11:40:58 PPP/bin/PPPLog
   13240    8414 36.4% 12-Feb-96 11:41:04 PPP/bin/PPPLQR
   10892    6658 38.8% 12-Feb-96 11:40:58 PPP/bin/PPPStats
     654     349 46.6% 15-Jan-96 08:49:08 PPP/COPYRIGHT
   41216   22799 44.6% 09-Mar-96 09:32:36 PPP/devs/ppp.device.000.eval
   39324   22325 43.2% 09-Mar-96 09:32:38 PPP/devs/ppp.device.020.eval
      36      36  0.0% 15-Jan-96 08:45:10 PPP/env/SANA2/ppp0.config
     925     651 29.6% 09-Mar-96 09:35:28 PPP/FILES
   97443   31658 67.5% 09-Mar-96 09:32:18 PPP/PPP.guide
    1805     730 59.5% 15-Jan-96 08:48:30 PPP/REGISTRATION
-------- ------- ----- --------- --------
  226635  106638 52.9% 24-Mar-96 02:06:00   11 files

Operation successful.
```

The files in the bin directory are just used for getting information on the PPP link while it is running. Don't worry about these. The important files are in devs and env. There are two copies of the "ppp.device" file which AmiTCP will try to open when it starts up—one for all Amigas, one for Amigas with at least a 68020 processor. You need only one of these files. The "ppp0.config" file is where your PPP settings will be stored. Lastly, the "PPP.guide" file is a comprehensive online AmigaGuide help file which explains in detail how to install PPP. Let's go through the steps involved in installing PPP once the AmiTCP demo is on your system.

PPP Installation for AmiTCP 4.0 demo

First, make sure that you followed all the instructions given in the previous section when installing AmiTCP—that is, you should have chosen `PPP` as your network interface and entered `0.0.0.0` as your IP address if using a dynamic connection.

To install PPP itself you must choose one of the files "ppp.device.000.eval" or "ppp.device.020.eval" and copy it to your devs:networks directory, renaming it to just "ppp.device". If you have an A1200 or A4000 you can use the 020 version.

If you want to use the PPP status programs copy the files in the PPP bin directory into the AmiTCP:bin directory. This is where all the AmiTCP binaries are held so it's a pretty good choice for where to keep the PPP files.

Next create a configuration file for PPP. It should be a text file containing a single line. The Configuration section of "PPP.guide" goes through all the options possible, but a good start is...

Change 19200 to be the highest value at which you can run your serial port (this was discussed a few chapters back).

7WIRE means that your modem and cable supports hardware handshaking and ATH will ensure that your modem hangs up the phone line when you stop AmiTCP running.

The DIALSCRIPT option points to a file which contains commands which will automate the login process to your ISP (see below).

```
serial.device 0 19200 0.0.0.0 7WIRE ATH CD DIALSCRIPT=amitcp:chatscript
```

Your IP address.

CD means that PPP will dial your ISP only if the modem is not already online. This is useful after a crash or reset, where the modem is still connected but you have to restart AmiTCP/PPP.

Save this single line file to both "envarc:sana2/ppp0.config" and "env:sana2/ppp0.config".

Now you must modify the AmiTCP startnet and stopnet scripts to use PPP.

For AmiTCP:bin/startnet you should:

- Delete the first few lines that start with `.key`, `.bra`, `.ket`, `.def`.
- Add to the beginning of the file the line:
  `online devs:networks/ppp.device 0`
- Change the line starting with `AmiTCP:bin/ifconfig ppp0` to:
  `AmiTCP:bin/ifconfig ppp0 $ppp0iplocal $ppp0ipremote`
- Change the line starting with `AmiTCP:bin/route add` to:
  `AmiTCP:bin/route add $ppp0iplocal localhost`
- After that line, add the line:
  `AmiTCP:bin/route add default $ppp0ipremote`

For AmiTCP:bin/stopnet you should:

- Add the following line to the end of the file:
  `offline ppp.device 0`

And lastly...

- You must insert this line somewhere in the "AmiTCP:db/interfaces" file:
  `ppp0 DEV=DEVS:networks/ppp.device UNIT=0 IPTYPE=33 NOARP P2P`

Dialscripts

If you want PPP to automatically make a phone call to your ISP every time you run the AmiTCP startnet command, make sure you have the `DIALSCRIPT=amitcp:chatscript` option in your "ppp0.config" file as shown in the previous section. PPP has a built-in dialler which can be configured to automatically make a phone call, type in your username, your password, wait for your ISP to respond and then start PPP itself. To use this feature you should carefully read the Dialing section in the PPP manual, but to get you going let's create a simple chatscript.

Use your favourite text editor again to create the file "amitcp:chatscript". The file should look something like this:

```
ECHO ON
TIMEOUT 3000
SEND "ATZ"
WAIT "OK"
SEND "ATDT123456"
WAIT "CONNECT"
WAIT "ogin"
SEND "kj"
WAIT "assword"
SEND "secret"
WAIT "PPP"
```

This chatscript first tells PPP to echo what's happening to a console window, and then to allow 60 seconds (one second = 50 ticks) for a connection to be made. After these first two lines there is a sequence of `SEND` and `WAIT` commands. Initially we send `ATZ` to our modem, which should reset it. We wait for an `OK` back from the modem.

Next we dial our ISP's phone number, `123456` in this example. We wait for the phone call to be made and for the modems to handshake. If a connection is established between our modem and the ISP modem, our modem will return `CONNECT`.

This is where things start to vary greatly from ISP to ISP. In our example we are instantly presented with `login:` and `password:` prompts to which we enter our username `kj` and password `secret` respectively. Lastly we wait for our ISP to say something like `Okay, PPP is ready...` and our last line will catch the PPP in this message and tell AmiTCP to startup.

Your ISP will do something very similar to this, but it will probably have a slightly different login process. For example it might ask you for `Username:` rather than `login:`. Or after you enter your password it might require you to send a command such as `cslip` or `ppp` to start whatever type of connection you require.

If your ISP has not told you exactly what the login process is you can use a basic terminal program (NComm or Term for example) to dial your ISP directly and login manually. By noting everything that your ISP sends down the line, and the order in which you must answer login questions, you should have all the information necessary to create your own custom chatscript.

Testing your connection

When you have finished installing AmiTCP and have rebooted your system the first thing you should do is test that your installation is working properly. When you type in `startnet`, if all the software is installed your modem should dial your ISP and login. Assuming no obvious error messages appear, you can test if everything is working properly by using ping.

The ping program is a simple tool that bounces Internet packets off a specified machine. So to test if your Amiga has TCP/IP installed correctly you should type `ping localhost`. (The machine you are using, your Amiga, is the localhost.) If everything is working you should see something like this:

```
Ram Disk:>ping localhost
PING localhost (127.0.0.1): 56 data bytes
64 bytes from 127.0.0.1: icmp_seq=0 ttl=255 time=2 ms
64 bytes from 127.0.0.1: icmp_seq=1 ttl=255 time=2 ms
64 bytes from 127.0.0.1: icmp_seq=2 ttl=255 time=2 ms
64 bytes from 127.0.0.1: icmp_seq=3 ttl=255 time=2 ms
64 bytes from 127.0.0.1: icmp_seq=4 ttl=255 time=2 ms
64 bytes from 127.0.0.1: icmp_seq=5 ttl=255 time=2 ms
64 bytes from 127.0.0.1: icmp_seq=6 ttl=255 time=2 ms
64 bytes from 127.0.0.1: icmp_seq=7 ttl=255 time=2 ms
— localhost ping statistics —
8 packets transmitted, 8 packets received, 0% packet loss
round-trip min/avg/max = 2/2/2 ms
Ram Disk:>
```

In this and all subsequent online examples in this section, **bold type** is used to denote commands you must type at the prompt.

The next thing you should try is contacting a machine at the other end of the phone line—at your ISP's premises in other words. The gateway machine you entered during installation is a good choice. When you ping this address (you can use the numeric format: `ping 1.2.3.4` for example) you should see output similar to the first ping. This time, however, the number of milliseconds on the right-hand side of the output (`time=`) should be much higher. This is because each packet is now being sent down the phone line to your ISP and is then coming back again.

If pinging both your own machine and your ISP's gateway works, it is very likely that everything is working perfectly. A couple of other places you might like to ping are *ftp.eu.net* and *ftp.uu.net*. These are the addresses of large sites in Europe and the United States—if you can ping these, not only are you connected to your ISP but you have a full Internet connection to the world!

Another useful tool supplied with AmiTCP is traceroute. This traces the path an Internet packet will take from your Amiga to a specified destination machine. So if you type in `traceroute ftp.uu.net` you should see something like:

```
Ram Disk:>traceroute ftp.uu.net
traceroute to ftp.uu.net (192.48.96.9), 30 hops max, 38 byte packets
 1  portmaster.broadcom.ie (192.107.110.252)  152 ms  140 ms  194 ms
 2  * boing.broadcom.ie (192.107.110.250)  205 ms  137 ms
 3  Dublin9.Ieunet.ie (193.120.8.17)  252 ms  262 ms  208 ms
 4  Dublin.IE.EU.net (192.111.39.2)  226 ms  398 ms  148 ms
 5  Dublin11.IE.EU.net (193.120.242.34)  365 ms  325 ms  170 ms
 6  Amsterdam2.NL.EU.net (134.222.16.1)  307 ms  287 ms  298 ms
 7  Amsterdam5.NL.EU.net (134.222.85.5)  240 ms  193 ms  179 ms
 8  Vienna2.VA.US.EU.net (134.222.228.18)  349 ms  343 ms  357 ms
 9  Vienna1.VA.Alter.Net (192.41.177.249)  286 ms  289 ms  309 ms
10  Hssi1/0.GW2.FFX1.Alter.Net (137.39.100.70)  514 ms  283 ms  298 ms
11  UUNET2-GW.UU.NET (137.39.12.34)  394 ms  293 ms  348 ms
12  ftp.uu.net (192.48.96.9)  327 ms  288 ms  370 ms
Ram Disk:>
```

The above is the route from my Amiga at home to *ftp.uu.net*. The Internet has such a large and complex network topology that your route to the same

machine will probably look completely different, so don't worry if it's not identical to mine. In general, the fewer hosts that appear in the traceroute output the better as it means that IP packets don't have to travel as far from your Amiga to their destination—so it's faster, in other words.

There is a certain amount of magic about the ping and traceroute utilities. Although they are incredibly simple and are quite old tools, you can't help but watch the lights on your modem flash as you do a ping command to a machine on the other side of the world and watch open-mouthed as an IP packet travels so far and back again in well under a second.

Your first file transfer

The amount of Amiga related software readily available on the Internet is one of the main reasons many people get connected. Let's go through the steps involved in transferring a file from an Amiga FTP site to your Amiga.

The first thing you need to know is the address of the FTP archive. The Aminet collection can be found at the sites shown below.

LOCATION	*NAME*	*IP ADDRESS*	*PATH*	*FILES*
USA (MO)	ftp.wustl.edu	128.252.135.4	pub/aminet/	ALL
USA (WI)	ftp.netnet.net	198.70.64.3	pub/aminet/	ALL
Australia	ftp.livewire.com.au	203.16.26.3	pub/aminet/	ALL
Scandinavia	ftp.luth.se	130.240.18.2	pub/aminet/	ALL
Switzerland	ftp.eunet.ch	146.228.10.16	pub/aminet/	ALL
Switzerland	ftp.math.ethz.ch	129.132.104.6	pub/aminet/	1000
Germany	kelly.uni-paderborn.de	131.234.128.206	pub/aminet/	ALL
Germany	ftp.uni-paderborn.de	131.234.2.42	pub/aminet/	ALL
Germany	ftp.uni-erlangen.de	131.188.3.2	pub/aminet/	7000
Germany	ftp.cs.tu-berlin.de	130.149.17.7	pub/aminet/	6000
Germany	ftp.uni-trier.de	136.199.8.81	pub/aminet/	4500
Germany	ftp.uni-stuttgart.de	129.69.18.15	cd aminet	4000
Germany	ftp.tu-chemnitz.de	192.108.33.193	pub/aminet/	4000
Germany	ftp.fh-augsburg.de	141.82.16.242	pub/aminet/	3000
Germany	ftp.uni-oldenburg.de	134.106.40.9	pub/aminet/	2500
Germany	ftp.uni-bremen.de	134.102.228.2	pub/aminet/	2000
Germany	ftp.uni-kl.de	131.246.9.95	pub/aminet/	1500
Germany	ftp.uni-siegen.de	141.99.128.1	pub/aminet/	1500
Germany	ftp.rz.uni-wuerzburg.de	132.187.1.2	pub/aminet/	700
France	ftp.cnam.fr	163.173.128.15	pub/aminet/	8000
Portugal	ftp.ua.pt	193.136.80.6	pub/aminet/	2000
UK	ftp.doc.ic.ac.uk	155.198.1.40	pub/aminet/	ALL
UK	micros.hensa.ac.uk	148.88.8.84	pub/aminet/	8500

The ncftp application is supplied with AmiTCP. It is a reasonably smart text-based FTP client. We'll use it to transfer the file "uucode.lha" from an Aminet site—let's use *src.doc.ic.ac.uk*. Open a Shell prompt on the Amiga and type `ncftp src.doc.ic.ac.uk`. The following will appear on your screen:

```
Ram Disk:>ncftp src.doc.ic.ac.uk
Guest login ok, send your complete e-mail address as password.
                The Archive  —  SunSITE Northern Europe
                ========================================
  SunSITE Northern Europe is located at the Department of Computing,
  Imperial College, London and is running on a SPARCserver 1000 (with
  8 CPUs and 61 GB of RAID5 disk space) kindly donated by Sun Microsystems.
  Local time is Fri Feb 16 20:07:32 1996, you are user number 348 (max 450)
  Please read the README files for more information (e.g. what a .gz file
  is, extensions to ftp, etc).  Note that if ftp hangs or dies, try
  putting a hyphen at the start of your password. Another useful feature
  is the  ls -sf:package  command which does a quick scan of The
  Archive looking for something called 'package'.  Finally please note
  that *ALL* transfers are logged and any misuse will be acted upon.
DISCLAIMER: Neither Imperial College nor Sun Microsystems are liable
  for any use, storage or transmission of any files stored on this
  archive.
  Please email suggestions and questions to  wizards@doc.ic.ac.uk
NOTE::
::::::  PLEASE use hostname sunsite.doc.ic.ac.uk to access here.
::::::  If you cannot then use the IP address: 193.63.255.1
Please read the file README
 it was last modified on Wed Dec 13 23:00:20 1995 - 65 days ago
Guest login ok, access restrictions apply.
Logged into phoenix.doc.ic.ac.uk.
1.8.3 (August 27, 1994)
phoenix.doc.ic.ac.uk:/
ncftp>
```

Okay, you're now logged on to the FTP server. By default ncftp uses anonymous login which means that you will login to the server as an anonymous user without a specific user account and password. Most FTP sites use this system, with the login name being `ftp` or `anonymous` and the password being your email address—*jbloggs@isp.co.uk* for example.

The next thing you should do is tell the FTP program that you want to transfer binary files as well as text files. You can do this by typing either `bin` or `type image`. After this you can change directory on the FTP server to where the Aminet collection of files are stored:

```
ncftp>bin
phoenix.doc.ic.ac.uk:/
ncftp>cd pub/aminet
Please read the file README
 it was last modified on Sat Feb 10 12:28:00 1996 - 6 days ago
phoenix.doc.ic.ac.uk:/pub/aminet
ncftp>
```

Next let's see what directories are on offer by simply typing `dir`:

```
ncftp>dir
total 2727
drwxr-xr-x  21 2989     ext          1024 Feb 16 14:44 .
drwxr-xr-x   8 root     root          512 Jan 20 16:30 ..
-r---r---r---   1 2989     ext           113 Dec  6 18:15 .names
-rw-r---r---   1 2989     ext          4383 Feb 12 06:18 CHARTS
-rw-r---r---   1 2989     ext       1891675 Feb 16 14:43 INDEX
-rw-r---r---   1 2989     ext        766383 Feb 16 14:44 INDEX.Z
-rw-r---r---   1 2989     ext          1037 Feb 13 00:04 MOTD
-rw-r---r---   1 2989     ext         19158 Feb 10 12:28 README
-rw-r---r---   1 2989     ext         10302 Feb 16 14:37 RECENT
-rw-r---r---   1 2989     ext          6039 Feb 16 14:37 RECENT.Z
-rw-r---r---   1 2989     ext          7405 Feb 16 15:05 TREE
drwxr-xr-x   8 2989     ext           512 Feb 10 02:00 biz
drwxr-xr-x  21 2989     ext           512 Jan 21 14:00 comm
drwxr-xr-x  21 2989     ext           512 Jan 15 06:56 demo
drwxr-xr-x  17 2989     ext           512 Dec 13 08:13 dev
drwxr-xr-x   9 2989     ext           512 Dec 13 08:14 disk
drwxr-xr-x  10 2989     ext           512 Jan 27 02:00 docs
drwxr-xr-x   3 2989     ext           512 Dec 13 08:18 fish
drwxr-xr-x  14 2989     ext           512 Dec 13 08:14 game
drwxr-xr-x  13 2989     ext           512 Jan 21 14:09 gfx
drwxr-xr-x   5 2989     ext           512 Dec 13 08:18 hard
drwxr-xr-x   9 2989     ext           512 Oct 27 05:15 info
drwxr-xr-x  11 2989     ext           512 Feb 10 14:00 misc
drwxr-xr-x  48 2989     ext          1024 Jan 30 14:00 mods
drwxr-xr-x   6 2989     ext           512 Dec 13 08:18 mus
drwx-wx-wx   2 2989     ext          1024 Feb 16 17:00 new
drwxr-xr-x  23 2989     ext           512 Dec 13 08:22 pix
drwxr-xr-x   2 2989     ext         39424 Feb 16 15:05 recent
drwxr-xr-x  10 2989     ext           512 Dec 13 08:17 text
drwxr-xr-x  25 2989     ext           512 Dec 13 08:16 util
phoenix.doc.ic.ac.uk:/pub/aminet
ncftp>
```

We know from the previous section that "uucode.lha" is in the util/arc directory, so let's change to that directory:

```
ncftp>cd util/arc
util/arc - Archivers
phoenix.doc.ic.ac.uk:/pub/aminet/util/arc
ncftp>
```

We could get another directory listing here, but that would be a very long list of files and we already know the exact name of the file we want, so we'll just initiate the transfer:

```
ncftp>get uucode.lha
uucode.lha: ..........
uucode.lha: 15894 bytes received in 32.95 seconds, 482.40 Bytes/sec.
phoenix.doc.ic.ac.uk:/pub/aminet/util/arc
ncftp>
```

Okay! It's arrived! We can close down the connection to the file server now by typing the `bye` command:

```
ncftp>bye
Ram Disk:>
```

The "uucode.lha" file is now on the Amiga. Let's test the archive with the Lha program (which we will have put in our C directory):

```
Ram Disk:>lha t uucode.lha
LhA Evaluation V1.38 - Copyright (c) 1991,92 Stefan Boberg.
All rights reserved. Not for commercial use.
Testing integrity of archive 'uucode.lha':
    Testing: (   15272/   15272)  uudecode
    Testing: (   12448/   12448)  uuencode
    Testing: (    3018/    3018)  uuencode.man
3 files tested, all files OK.
Operation successful.
Ram Disk:>
```

Everything is fine. To install the program we simply move to a free directory on our hard disk and extract the package:

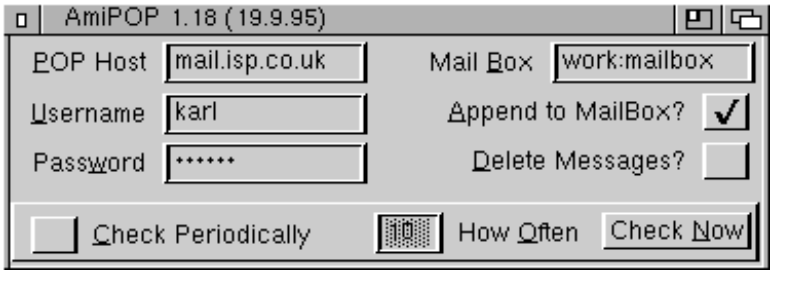
```
Ram Disk:>mkdir work:uucode
Ram Disk:>cd work:uucode
Work:uucode>lha x ram:uucode.lha
LhA Evaluation V1.38 - Copyright (c) 1991,92 Stefan Boberg.
All rights reserved. Not for commercial use.
Extracting from archive 'ram:uucode.lha':
 Extracting: (   15272/   15272)  uudecode
 Extracting: (   12448/   12448)  uuencode
 Extracting: (    3018/    3018)  uuencode.man
3 files extracted, all files OK.
Operation successful.
Work:uucode>delete ram:uucode.lha
Work:uucode>
```

And that's it. The uuencode and uudecode programs are now installed in our Work:uucode directory.

Configuring email and Usenet news

Depending on how your Internet provider supplies you with email and Usenet news, two packages that you might need are "AmiPOP118.lha" (comm/net) and "IU-14-amitcp.lha" (comm/tcp).

A popular way for ISPs to provide email is to use something called the Post Office Protocol (POP). POP is just a way of connecting to an ISP machine to check if it has received any new mail sent to your email address. If your ISP uses POP they will give you the name of a machine in their building called the POP server. You can then use a program like AmiPOP to pick up your mail from this POP server.



When you use AmiPOP to connect to the POP server it will transfer any new messages for you from the POP server to your Amiga hard disk. The requester illustrated above shows how simple AmiPOP is to configure. All you need is the name of your ISP's POP machine, along with your POP username and password. You can then specify a mailbox file anywhere on your Amiga hard disk. This is where your email will be stored on your Amiga.

The InetUtils set of programs are a little more complicated. In general, POP is used for receiving email, while a system called the Simple Mail Transfer Protocol (SMTP) is used for sending email. InetUtils provides a program called SMTPpost which can be used to connect to an ISP SMTP server machine and which will then take the email message from your Amiga and deliver it over the Internet.

InetUtils also comes with programs to transfer Usenet news articles from a Network News Transfer Protocol (NNTP) machine. The NNTP machine in your ISP is simply the machine that stores all the articles in the Usenet discussion groups.

Most Amiga email programs require the AmiPOP program for collecting new mail messages and SMTPpost to send outgoing mail. This lets the programmers of the email applications spend all their time on the usability of the email program itself rather than on how to send and receive messages.

setting the right service

3

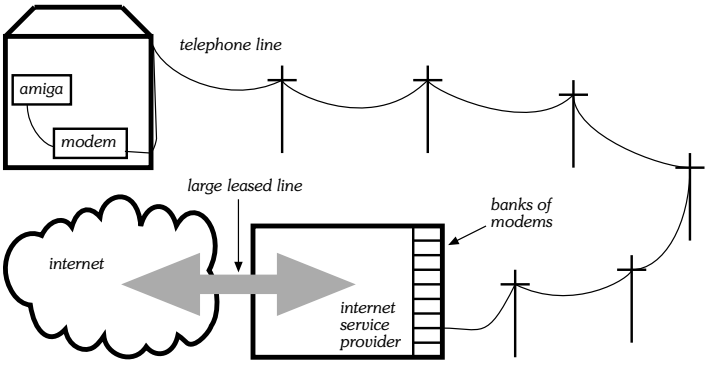
- Joining the Internet
- How much will it cost?
- How does it work?
- Getting Internet streetwise

Joining the Internet

In this chapter we'll take a look at some of the issues you might want to consider before making any final decisions on who should provide you with an Internet connection. We'll work out how much it is going to cost you to use the Internet, and we'll go behind the scenes with a brief look at how the Internet works and how to get streetwise using the net. We'll finish the chapter with the obligatory Internet history lesson.

Choosing the right Internet Service Provider

To get connected to the Internet you'll need an Internet Service Provider (ISP). ISPs are companies with large dedicated leased lines connected to the Internet, and banks of modems which subscribers can dial into in order to get on to the Internet. A leased line is a permanent connection between two networks; one network doesn't have to dial the other as the line between them is always open.



Picking the right ISP for you isn't always an easy task. If you live in a built-up urban area it is likely that there are several different providers only a local phone call away. The further away from a major city you live, the more limited your choice in Internet access will be.

Let's take a look at some of the issues which you must consider when choosing an ISP that's right for you.

Telephone costs

A large telephone bill is always something you can do without. You should look for an ISP that has a Point Of Presence (POP) which you can access for the price of a local phone call. To meet this requirement most large ISPs are trying to open as many POPs around the country as possible. (There are two POP acronyms, Point Of Presence and Post Office Protocol, so the term Point Of Presence may well change to get rid of any possible confusion.)

Calling an ISP with your modem will cost exactly the same as it would for you to talk to them on the phone for that period of time. So figure out how much time you can afford to spend online running up your phone bill.

Subscription fees

Subscription fees vary from provider to provider depending on the type of service you want. There is usually a one-off connection charge and then a monthly rental fee of at least £10 per month. As well as this you might have to pay extra if you want access to a Unix-style shell account, or if you want to have your own home page on the World Wide Web.

Online charges

Online charges are becoming less common among Internet Service Providers, but still common practice among the large online services such as BIX or CompuServe is to charge you per minute or hour of online time on the system. This is still the case with a number of systems so it is something you should ask any potential ISP.

Technical support

If things aren't working out for you, who can you call? Is a hotline technical support number available? Are they knowledgable about Amiga computers or do they support only one or two platforms?

Modems

A common complaint with ISPs is that they never have enough phone lines or modems. So when you try to connect to the Internet at peak times, all you get is a busy signal when you ring their phone number. ISPs will usually quote a "modem ratio" which tells you the ratio of customers to modems installed. The lower this ratio is, the better. For example, a ratio of 10:1 would mean that the ISP has 10 customers for every modem installed. In other words, they don't expect more than 10% of their subscribers to be using the system at any one time. An ISP with high modem ratios might offer cheaper access but unless you plan to use the system at some obscure hour of the day, you may encounter the dreaded busy tone.

Access

This usually isn't a big issue. You need to check whether you are being offered full Internet access or just shell access. Assuming you get full access, then what protocols to they run? Do they allow standard SLIP/PPP access so that any type of computer can connect, or must you use some kind of proprietary front-end software which requires a PC or Macintosh?

Email address

If you are going to be using this provider for any length of time, you will start to make contacts on the Internet and will swap your email address with people you meet. You should check what form of email address you will be supplied with. Will it be something sensible like *jbloggs@isp.co.uk* or will it be some form of numeric email address as used by providers like CompuServe? Check if you can pick your own email address, and even your own domain name.

Newsgroups

There are literally thousands of Usenet newsgroups available, with discussions on every topic imaginable. Because there is such a large volume of traffic on these groups, some providers only provide a small subset of the total newsgroups available. Worse still, some providers censor groups which contain material they find offensive or unacceptable. Make sure that your provider has no restrictive policies on newsgroups and is open to requests to receive new groups.

Personal Web page

Once you get yourself fully connected and have spent time surfing the 'net, you may want to create your own personalised World Wide Web home page. Find out if this is possible and if there are disk usage charges on how much information your Web page(s) can use on the ISP's machines.

How much will it cost?

A common concern people have about connecting to the Internet is the effect it will have on their phone bill. Fortunately, you can use the Internet for hours at a time without running up a huge bill. Just because you may be connected to a computer in Australia doesn't mean you're making a long-distance phone call.

To connect to the Internet you make a phone call to the nearest local network which has an Internet connection, and you access other Internet sites via the local network's international connections. Companies which allow you to connect to their networks in this way are called Internet Service Providers (ISP). With any luck there'll be an ISP a local phone call away. This is discussed in more detail in the next section. What is important to note now is that the time you spend on the Internet will probably cost you no more than the cost of a phone call to a friend down the road.

To be more specific on costing, the average connection fee from an ISP should be somewhere between £15 and £25. This is a one-off charge. Rental on the account varies widely, but you should expect to pay between £10 and £15 per month.

After these fixed ISP charges you will have to estimate how much time you will spend online. Making calls during off-peak hours (evenings and weekends) is what you should be aiming to do. Try to figure out how many hours a week you intend to spend online. Give yourself an allocation of hours per week and try to stick to that figure. You can then budget in advance for what you can afford.

A word of warning. The worst thing you can possibly do is fall into the trap of "I've been online for so long it's going to be a huge phone bill anyway..." and stay online for hours and hours. If you lose track of how much time you are spending online, and deliberately avoid calculating how much you're spending, the massive phone bill you dreaded will be inevitable. You have been warned!

And another thing. If you are not paying for the phone bill yourself, make sure you let whoever is paying know well in advance of the amount of time you intend to spend online.

Internet Service Providers (UK and Ireland)

Listed to the left is a small selection of Internet Service Providers in the British Isles. Bear in mind that there may be local providers in your area who can offer you a better deal than the larger ISPs. As with Amiga software, seek out local advice where possible.

United Kingdom

BBC Networking Club
Tel: 0181 576 7799
Email: info@bbcnc.org.uk

CityScape
Tel: 01223 566950
Email: sales@cityscape.co.uk

CIX
Tel: 0181 296 9666
Email: sales@cix.compulink.co.uk

Demon
Tel: 0181 371 1234
Email: sales@demon.net

EUnet GB
Tel: 01227 266466
Email: sales@britain.eu.net

Pipex
Tel: 01223 250120
Email: sales@pipex.net

Ireland

Indigo
Tel: 1-850-463436
Email: sales@indigo.ie

Ireland On-Line
Tel: (01) 8551739
Email: info@iol.ie

How does it work?

Computers on the Internet use IP (Internet Protocol) packets to send data from machine to machine. An important part of how this works is the addressing scheme used, which allows packets to be delivered to their intended destination.

Every machine connected to the Internet, even your Amiga, is assigned an IP address. This typically looks something like `123.456.78.9`—four numbers separated by dots. A rough analogy to how these numbers work is the country and city codes in telephone numbers. The first two sets of numbers might represent a particular company, the third number a particular department, and the last number a specific machine. Communications equipment in the Internet can decipher these numbers at great speed and so figure out what to do with an IP packet, even if there are hundreds of thousands passing by every second.

Because people are better at remembering sensible sounding names instead of meaningless lists of numbers, the Domain Name System (DNS) was created. This translates machine names to IP addresses. For example, the IP address of Amiga Technologies GmbH World Wide Web server is `194.162.2.4`, but its DNS name is *www.amiga.de*, somewhat easier to remember.

The *de* stands for Deutschland and is the DNS country code for Germany. Other codes are *uk* for the United Kingdom, *fr* for France and *ie* for Ireland. Chapter 6 contains a list of some of the more popular domain name country codes you'll encounter on your Internet travels.

The DNS system is used for almost all naming on the Internet, so email addresses will be of the form *username@domain.name*. World Wide Web servers and file servers will usually be *www.domain.name* and *ftp.domain.name*. For example, a popular site in the UK that keeps many Amiga programs online is called *ftp.doc.ic.ac.uk*. This is the FTP server in the Department of Computing in Imperial College, part of the Academic Community in the UK.

Who's in charge?

One of the amazing things about the Internet is its organisational structure—it doesn't really have one! It is no longer true to say that the Internet is an anarchy. in fact maybe it never was one, but what is most definitely true is its democratic, decentralised and distributed organisation.

No one person or company owns the Internet. The Internet wouldn't exist if it wasn't for all its users. Its name comes from the term "inter-network", what you do when you create a network between two or more computers. Because no one owns or runs the Internet, a very loose, decentralised and hence democratic structure has evolved for its operation. One network chooses to connect to another to exchange data. Each of these might then connect to other systems, which in turn are again connected to many more networks. This has been happening over the last two decades and has grown to be what we today call the Internet.

Regional bodies exist all over the world who coordinate their local part of the Internet. Cooperation between these bodies creates a sort of uniform feel to the Internet, so no matter where you live in the world, once you get yourself connected you feel right at home.

Getting Internet streetwise

Over the years a whole new culture has evolved on the Internet. You hear people taking about being "net.citizens", living in cyberspace and having more virtual friends than real-world friends. Most major cities now have at least one CyberCafe, a place where people go to hang out, surf the net and, of course, have a coffee. This cultural side of the Internet can often be as bewildering and difficult to understand as the technical issues involved in getting connected. Let's take a look at a few of thing you need to know to get streetwise on the net.

Netiquette

Because of the liberal nature of the Internet, proper network etiquette is considered very important. There are a number of dos and don'ts which should be adhered to, especially when using email or news services. A good place to start is the Usenet newsgroup *news.newusers.questions*. You should find a message posted monthly there called "Emily Postnews answers your questions on Netiquette".

Sometimes it's the simplest things that annoy people the most. For example, when writing an email or news posting use the normal mixture of upper case and lower case letters. Don't use all capitals as people will think you are SHOUTING.

If you have a "signature" attached to your messages where you put your name and contact details, keep it simple. Traditionally, four lines has been the upper limit on the size of a signature. Some people use 10-15 lines and draw little keyboard character pictures in their signatures. Please don't do this. So unpopular is it that there is a whole newsgroup (*alt.fan.warlord*) devoted to slagging people who do do it.

If you fail to heed netiquette, if you disagree strongly with popular opinion or make personal attacks on people, then you run the risk of being "flamed" by other users. Flaming someone usually entails posting a message to a public forum attacking the views of the original poster. People who frequently flame others are known as "flamers".

Smileys

Since emotion is very difficult to get across when communicating with someone using just a keyboard, something called a smiley is often used. The most common smiley is :-) and if you turn the page on its side, clockwise, you'll see why. This denotes humour, jest, a joke, something tongue in cheek. If you want to denote sadness you use :-(

Smiling	:-)
Frowning	:-(
Laughing	:-D
Crying	:'-(
Winking	;-)
Shocked	:-o
Angelic	O:-)
Devilish	}:>

Some of the more popular smileys can be seen to the left. This list is for your information only. I don't recommend you use them all. In fact, I would suggest you use them sparingly. It can be very annoying when people finish every sentence with a smiley. Whole books have been written containing nothing but lists of smileys, yet 90% of Internet users really only know the most simple smileys, and there are often different explanations and opinions as to what exactly a certain smiley means. So once again, keep it simple.

FAQs

A frustrating aspect of the Internet can be trying to locate a particular piece of information. The system is so large and unwieldy, it's often the case that you know the information must be out there somewhere, but how on earth do you go about finding it?

A common mistake beginners make is to ask what old-timers call a frequently asked question (FAQ). This irritates many existing net users since every month in Usenet newsgroups a list of frequently asked questions (and answers) about a particular topic area is posted. So before you send out a message which will be read by hundreds of thousands of users around the world, check if there's a FAQ for the topic—both your question and the list of answers are called FAQs. A good place to find a list of FAQs is the *rtfm.mit.edu* FTP site.

TLAs

"Eh? *rtfm.mit.edu*? What on earth is that?" I hear you cry. Well, unfortunately the jargon comes with the territory. After a while you get the hang of it and the acronyms, especially three letter acronyms (TLAs), start to sink in. Just to clarify the above name: *edu* stands for educational institution; *mit* stands for the Massachusetts Institute of Technology; and *rtfm*... well, RTFM is an age old Internet acronym—it means "read the f'ing manual" and is usually aimed at newcomers who have just asked an FAQ. Some popular acronyms are shown to the right.

BTW	By the way
FUBAR	F'ed up beyond all recognition
IMO	In my opinion
IMHO	In my humble opinion
IMNSHO	In my not so humble opinion
NRN	No response necessary
OTOH	On the other hand
ROTFL	Rolling on the floor laughing
RTFM	Read the f'ing manual
TLA	Three letter acronym

foobar

One final piece of Internet folklore which is worth mentioning is the word "foobar". People use this as a throw-away word when explaining something, often splitting it in half. For example: "If we have two Amigas, one called foo and the other called bar..." Foobar is derived from the word "fubar", which is the term Internet pioneers used to use for something that was "f'ed up beyond all recognition".

The obligatory history lesson

About 25 years ago the Internet was born as a US Defence Department computer network called ARPAnet. The Advanced Research Projects Agency network was designed to support military research. Key features of the system were to withstand network outages (caused by bombs) and allow any two computers on the network to communicate as peers. They designed an Internet Protocol (IP) packet that would carry a chunk of data with enough addressing information to correctly get the packet to its final destination regardless of any network failures and without knowing in advance the route it would take.

Ten years later, universities started to install high-speed workstations and local area networks running Ethernet. Most of these came with the Berkeley Unix operating system which supported IP networking. Campus-wide networks were built that communicated internally using IP.

By the late 1980s the US Government's National Science Foundation created the NSFNET. This was a network of 56K bps leased lines connecting five supercomputer centres across the United States. The idea was to allow as many academic institutions nationwide to have access to the world's fastest computers. Regional networks were built around the five centres, and since both NSFNET and the universities were using the IP networking protocol, any computer could communicate with any other computer by forwarding the packets appropriately through the network.

The network proved a great success and over the last 10 years has been constantly upgraded and improved to help form an important part of the Internet's backbone. With today's commercial exploitation and increased traffic, many new Internet backbone links run at a minimum speed of 45M bps—that's 45 million bits per second, more than 800 times the speed of the original NSFNET.

running the best software

4

- Electronic mail
- Usenet news
- File transfers
- Internet Relay Chat
- Gopher
- Aminet tools
- Conferencing

Electronic mail

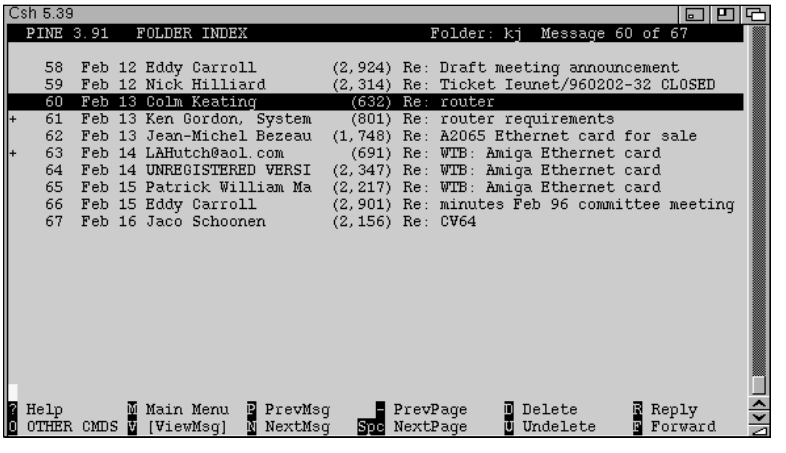
Almost all of the applications in this chapter require AmigaDOS 2.04 or higher, and naturally all of them need TCP/IP software such as AmiTCP or Inet225. Most applications were specifically written for AmiTCP.

Email is the number one application you will want to have installed when you get online. There are three kinds of mailers you will find for the Amiga, and we look at one of each below. The first is the straight Amiga port of a popular Unix application which usually runs in an Amiga CLI/Shell window. The second is the out-and-out Amiga application, complete with GUI front-end, and the third is somewhere in the middle—a popular Unix program ported to the Amiga but making use of some Amiga specific features.

Keep in mind that these mail program are just "agents" for reading and writing to a mail file or folder. They do not actually deliver or receive email. You will need InetUtils and AmiPOP to perform those tasks.

AmigaPINE

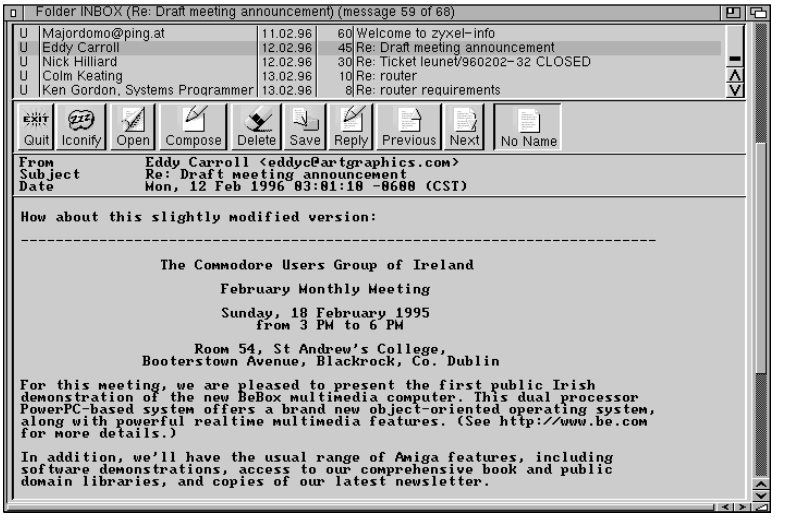
Description
An Amiga port of a popular Unix email program
Author
Jeff Shepherd
Price
Freely distributable
Location
comm/mail/pine391a_base.lha
comm/mail/pine391a_all.lha
Requirements
ixemul.library (dev/gcc/ixemul-41.1.lha)



PINE is one of the more recent Unix electronic mail programs. It is quite a powerful application but unless you have used it before on a Unix system it may not be your number one choice of Amiga mailer. Because it is a straight port from the Unix version, you need to have a copy of "ixemul.library" in your LIBS: directory. If you do not have this on your system already, then it too is available on Aminet.

Voodoo

Description
An email program with multimedia (MIME) functionality
Author
Osma Ahvenlampi
Price
Shareware (US$35)
Location
comm/mail/Voodoo-1.209.lha
Requirements
AmigaDOS 3.x



Voodoo is the complete opposite of AmigaPINE. It is a 100% Amiga specific program and is probably the best Amiga mail reader at present. Amiga Technologies have included it as their mailer of choice in the A1200 Surfer pack.

Voodoo comes with a standard Commodore Installer script so is easy to install and configure. It supports the Internet MIME (essentially multimedia) extensions, and has a highly configurable ARexx interface. Because it makes use of DataTypes to display different data formats such as pictures and sounds, Voodoo requires AmigaDOS 3.x to run.

AmigaELM

Description
An Amiga port of a popular Unix email program
Author
Andreas M. Kirchwitz
Price
Shareware (US$20)
Location
comm/mail/AmigaElm-v8.lha
Requirements
No additional software needed

```
Mailbox is 'uumail:kj' with 67 messages, page 1 of 3 [ELM8, SCREEN AmigaElm.1]

        1    Feb 16  Jaco Schoonen         (32)   Re: CV64
        2    Feb 15  Eddy Carroll          (46)   Re: minutes Feb 96 committee m
        3    Feb 15  Patrick William Mack  (37)   Re: WTB: Amiga Ethernet card
        4    Feb 14  UNREGISTERED VERSION  (45)   Re: WTB: Amiga Ethernet card
        5    Feb 14  LAHutch@aol.com       (9)    Re: WTB: Amiga Ethernet card
        6    Feb 13  Jean-Michel Bezeau    (31)   Re: A2065 Ethernet card for  .
        7    Feb 13  Ken Gordon, Systems   (8)    Re: router requirements
        8    Feb 13  Colm Keating          (10)   Re: router
        9    Feb 12  Nick Hilliard         (30)   Re: Ticket Ieunet/960202-32 CL
        10   Feb 12  Eddy Carroll          (45)   Re: Draft meeting announcement
        11   Feb 11  Majordomo@ping.at     (60)   Welcome to zyxel-info
        12   Feb 09  Tommy Rolfs           (28)   Re: dad's 500
        13   Feb 9   Christian Murphy      (32)   Re: favour
        14   Feb 8   Eddy Carroll          (37)   Re: bye bye IE
        15   Feb 8   Eddy Carroll          (44)   Re: bye bye IE
        16   Feb 8   Ieunet.ie Ieunet Mai  (43)   Failed mail  (msg.aa16155)
        17   Feb 07  KJeacle               (46)   Printing: Manual feed problems
        18   Feb 05  Alan Judge            (246)  EUnet Ireland now carrying de.
        19   Feb 5   Barry Schofield       (33)   Re: postage/payment
        20   Jan 31  Benjamin Kenobi       (57)   Re: cv64 fix
        21   Jan 21  Eddy Carroll          (22)   CUGI members mailing list?
        22   Jan 18  lbs                   (77)   Ang.: The DSC switch.
        23   Jan 19  David Hayes           (3)    Ang.: The DSC switch.
        24   Jan 17  David Hayes           (11)   PROSPECT Infrastructure
        25   Jan 16  I. Busse              (19)   Re: WP2/3: GWD Input
        26   Jan 16  David Hayes           (3)    Re: WP2/3: GWD Input
        27   Jan 16  I. Busse              (81)   Re: WP2/3: GWD Input
        28   Jan 16  David Hayes           (3)    Re: WP2/3: GWD Input
        29   Jan 15  D.Lewis@cs.ucl.ac.uk  (55)   Re: WP2/3: GWD Input
        30   Jan 16  David Hayes           (3)    Re: WP2/3: GWD Input
        31   Jan 16  Eddy Carroll          (92)   Re: newsletter (fwd)
        32   Jan 11  wburns@VNET.IBM.COM   (20)   hello again.
        33   Jan 8   Mickey Tseng          (34)   Re: FW: setting 2864I's own nu

        !=shell, |=pipe, /=search, +, -, <, >, ?, help, <n>=set current
c)hange folder, C)opy, d)elete, e)dit, f)orward, g)roup reply, ^G)oto last msg,
  m)ail, o)ptions, p)rint, q)uit, r)eply, s)ave, u)ndelete, w)rite, or e(x)it

Command:
```

AmigaELM is a popular choice of mailer on the Amiga. ELM on Unix is quite a simple program to use and the Amiga version is quite a faithful port but enhances ELM by using custom Amiga screens, menu-driven commands and hypertext help online.

Like Voodoo, AmigaELM supports MIME, but it is not as seamless as Voodoo's implementation. Installation is not as simple as Voodoo, but once you have set the HOME environment variable to point to your ELM installation, configuration is straightforward.

Usenet news

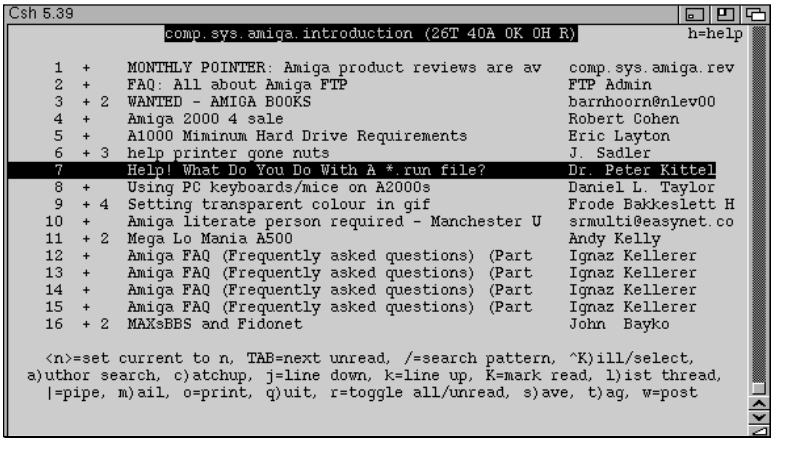
Usenet isn't the biggest crowd-puller on the Internet any more, but in years gone by it is what really made it all worthwhile—hundreds of thousands of users all contributing to hundreds of discussion groups, collectively providing an incredible resource of information on any technical subject.

With the advent of the Web, Usenet doesn't quite have the same impact as it used to, but it's been steadily growing in size with the Internet, and there is now genuine diversity in what is being discussed. It's not just which jumper setting toggles which bit on the X391Jb4 ESDI controller any more, but also what happened to Mulder in last week's X-Files.

Because of the complexity involved in some of the popular Unix news readers, Amiga ports have not been as common as with email readers. Another reason is that, despite what the old-timers on the Internet might claim, Usenet lends itself well to a graphical front-end. With lots of discussions on lots of different topics it's nice to point and click to decide what you're going to read.

Tin

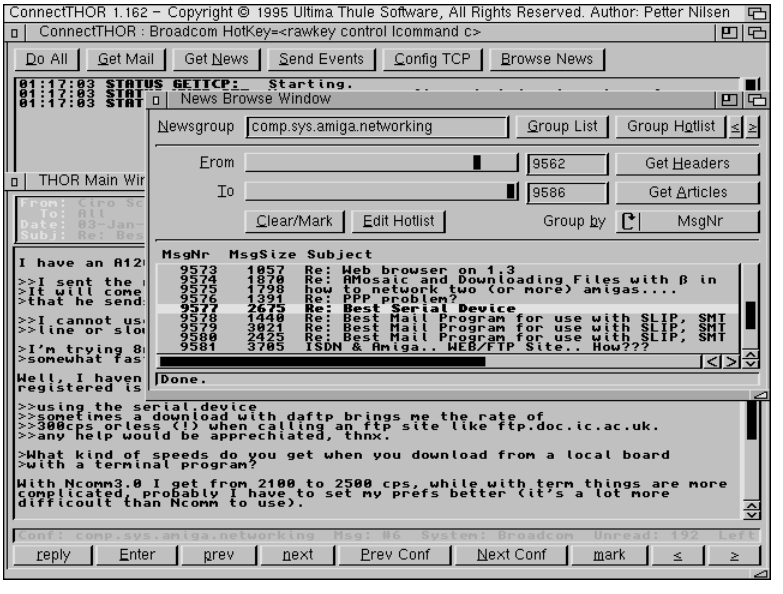
Description
An Amiga port of a popular Unix news program
Author
Mark Tomlinson
Price
Freely distributable
Location
comm/news/tin130gamma.lha
Requirements
No additional software needed



A favourite Unix port. Tin is quite easy to use, but like PINE it runs completely in a Shell/CLI window—not exactly pushing your Amiga to the limit. Still, if you like basic interfaces or have used Tin before, it's being going for so long in the Unix world now that you can't really argue with it when it comes to functionality.

THOR

Description
A powerful email and news reader
Author
Ultima Thule Software
Price
30-day evaluation shareware (£22)
Location
comm/mail/thor222_main.lha
comm/mail/thor222_inet.lha
Requirements
Several THOR modules are available which determine what systems THOR will be used for—BBS or Internet that is. All available in the comm/mail directory.



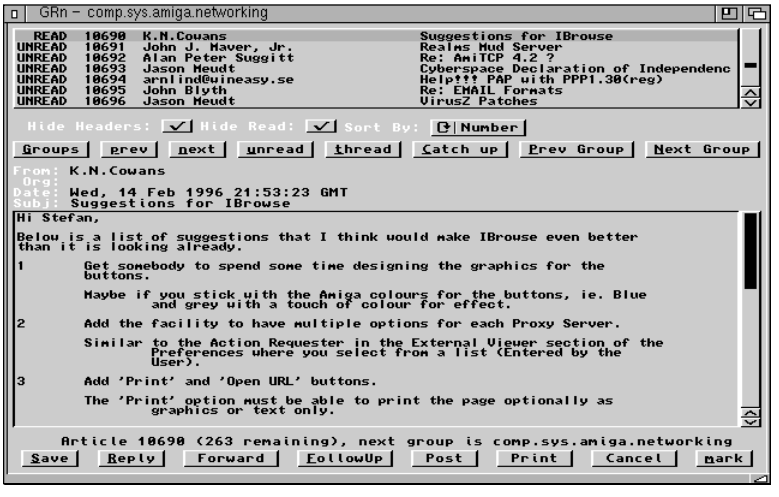
THOR is a big program. It was originally used just for offline reading of bulletin board system messages, but has been extended through various modules to handle just about any form of electronic messaging. This includes not only Usenet news but also regular email.

THOR is a self-contained program. After AmiTCP provides you with your Internet connection, THOR is a one-stop-shop. You don't need any AmiPOP, InetUtils or any other utilities on your system. You can read mail and news from within the one program. Since it is a genuine Amiga program you could argue that it is easier to use than the average Unix port. But it is so big that it can be a little daunting.

It would be a mistake not to give THOR a try. Some swear by it, some swear at it, but it's definitely one of the best known Amiga Internet applications.

GRn

Description
News reader with point-and-click interface
Authors
Michael H. Schwartz, Michael B. Smith
Price
Freely distributable
Location
comm/news/GRn-2.1a.lha
Requirements
No additional software needed



GRn was one of the first Amiga news readers available. It was originally designed for use with UUCP (Unix-to-Unix Copy Program), not for direct Internet connections. It now supports online reading of Usenet news using NNTP, but because of its origins it is quite a difficult package to install. As a beginner, you may find yourself tearing out your hair.

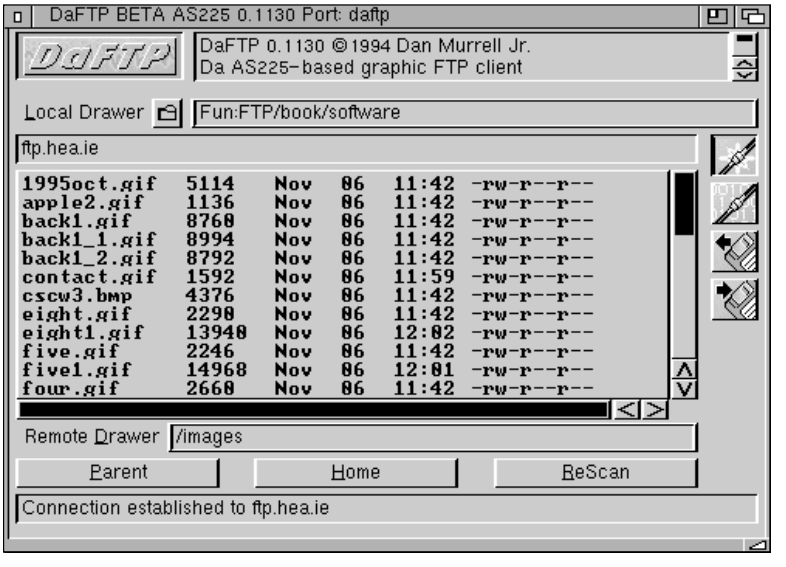
GRn isn't a bad news reader but it's hard to compete with some of the newer more user-friendly applications that are becoming available. Don't ignore GRn, but don't try installing it on Day One. Wait till you've a bit of experience under your belt.

File transfer

One of the best reasons for getting on the net is to take advantage of the thousands of files available for download. Choosing an FTP client that makes life easy is a good idea. The ncftp program supplied with AmiTCP is more than adequate, but it is completely text-based. Fortunately, Amiga users are spoilt for choice when it comes to graphical FTP clients. We'll look at just three, but there are quite a few more available.

DaFTP

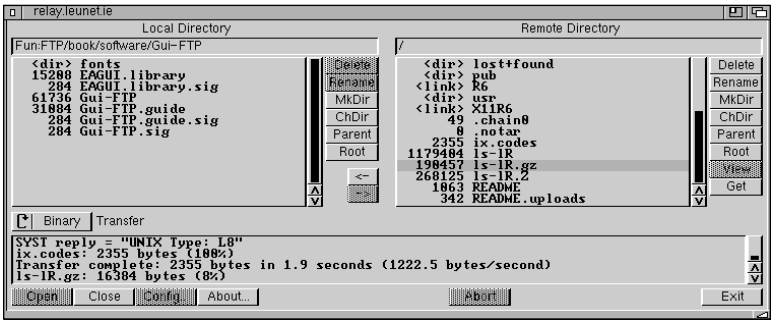
Description
File transfer program with GUI front-end
Author
Dan Murrell Jr.
Price
Freely distributable
Location
Currently in beta-testing: http://artech.warped.com/~danimal/DaFTP.html
Requirements
No additional software needed



DaFTP is a perfect example of what you can expect from a well written graphical FTP client. Virtually no installation is required, you just unpack the archive and run the program. Simple menu options and clear buttons make it a cinch to use. Pull down a menu to open a connection, click on the Local Drawer button to choose where you want to store downloaded files, and away you go. Check it out!

Gui-FTP

Description
File transfer program with GUI front-end
Author
Kevin Preece
Price
Freely distributable
Location
comm/tcp/Gui-FTP.lha
Requirements
No additional software needed

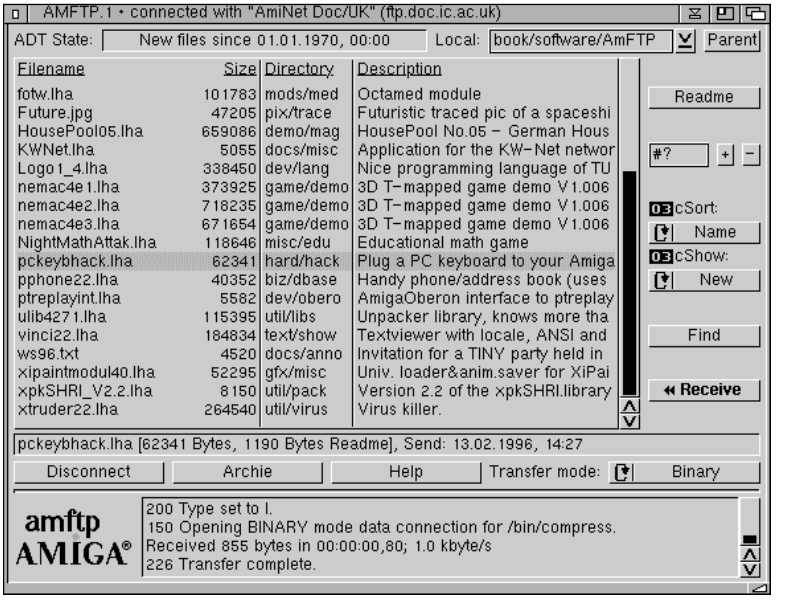


Another excellent program, Gui-FTP is very similar to DaFTP but provides a neat split window interface where you can see the contents of both local and remote file systems. Uploading and downloading files is then just a matter of clicking on the arrow pointing in the direction you want the file to move. A status window at the bottom shows exactly what's going on. This window is handy as it lets you see everything that you would normally see when using a conventional text FTP client such as ncftp.

Gui-FTP probably has the edge over DaFTP if you are transferring a lot of files back and forth between two systems and not just downloading all the time.

AmFTP

Description
GUI based FTP client
Authors
Oliver Wagner, Mathias Mischler
Price
Shareware (DM30)
Location
comm/tcp/AmFTP152.lha
Requirements
Magic User Interface (MUI)



AmFTP is the FTP client which has been chosen by Amiga Technologies for their A1200 Surfer pack. As well as all the features offered by the above mentioned FTP clients, AmFTP offers ADT (Aminet Download Tool) support. What this means is that not only can AmFTP be used with regular FTP sites, but when it is used with an Aminet archive you can browse the archive in "Aminet style" by checking out the most recent uploads along with one-line or optional full-page descriptions.

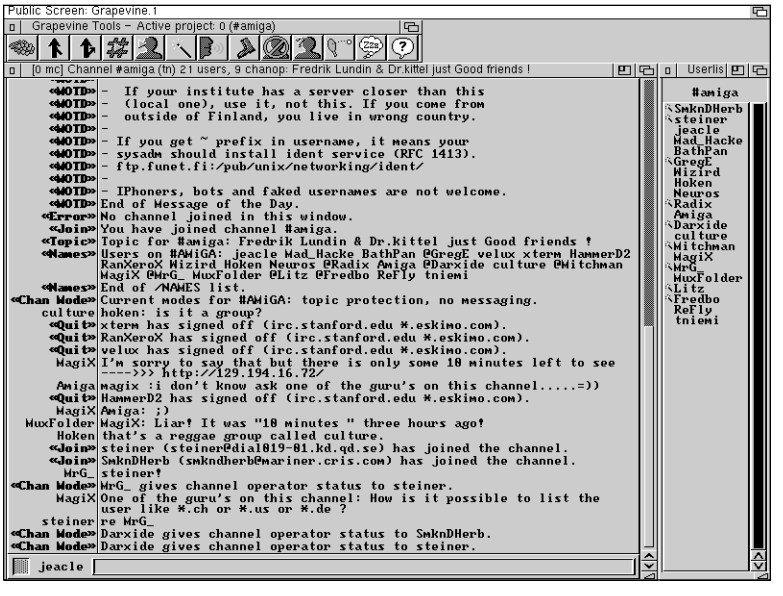
Both DaFTP and Gui-FTP are hard acts to follow, but AmFTP is one seriously cool piece of software. Lots of nifty features combined with the genuine Amiga logo at the bottom of the screen make it simply irresistible.

Internet Relay Chat

IRC is a 24-hour online electronic partyline, except the conversations are not all quite as inane as you might get on a real telephone. There are lots of interesting topics discussed, and there are often "interviews" held over IRC. There was even a performance of Shakespeare's Hamlet on an IRC channel once. Users around the world played out different characters by typing in their lines at the appropriate moment. They called it "Hamnet".

Grapevine

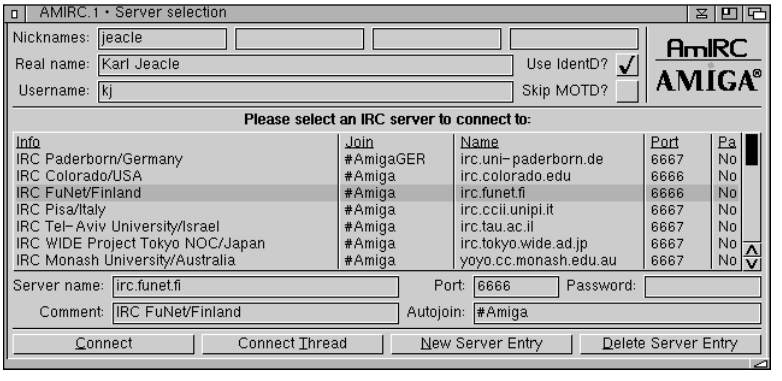
Description
Internet Relay Chat client
Author
Brian J. Cerveny
Price
Shareware (US$25)
Location
comm/net/grapevine.lha
Requirements
No additional software needed



Grapevine has been called "The best IRC client on any platform" by a number of experienced Amiga Internet users. It was one of the first major Internet applications available for the Amiga and it did such a good job of being an IRC client that until recently there was no competition whatsoever.

AmIRC

Description
Internet Relay Chat client
Author
Oliver Wagner
Price
Shareware (US$25)
Location
comm/tcp/AmIRC.lha
Requirements
Magic User Interface (MUI)



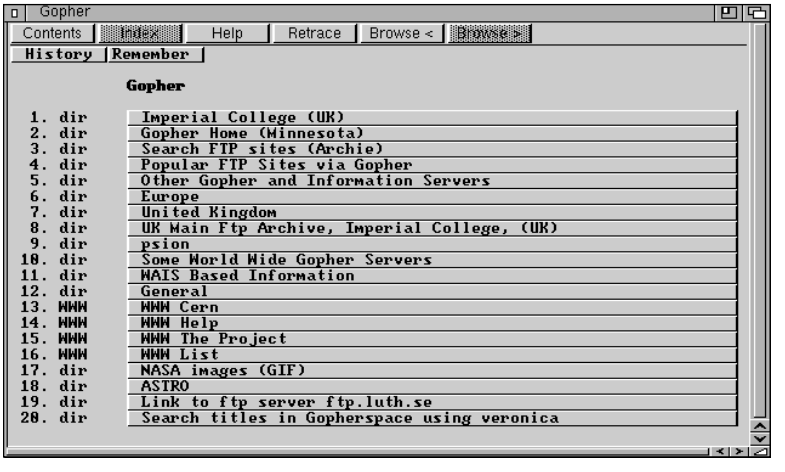
AmIRC is the aforementioned competition to Grapevine. As with the other "Am" applications, it is the Amiga Technologies choice for inclusion in the A1200 Surfer pack. Both Grapevine and IRC are excellent IRC clients so it's really a matter of personal preference as to which one you choose. Try them both before making any final decision.

Gopher

Before the days of the World Wide Web, gopher had its 15 minutes of fame by being a sort of networked equivalent of the AmigaGuide hypertext browser. Gopher is a purely text-based system which entails a series of menu selections. Each choice on a menu leads you to another series of choices which eventually lead you to the item of information you are looking for.

Gopher

Description
A Gopher client that uses AmigaGuide for its front-end
Author
Graham Walter
Price
Freely distributable
Location
comm/tcp/gopher.lha
Requirements
No additional software needed



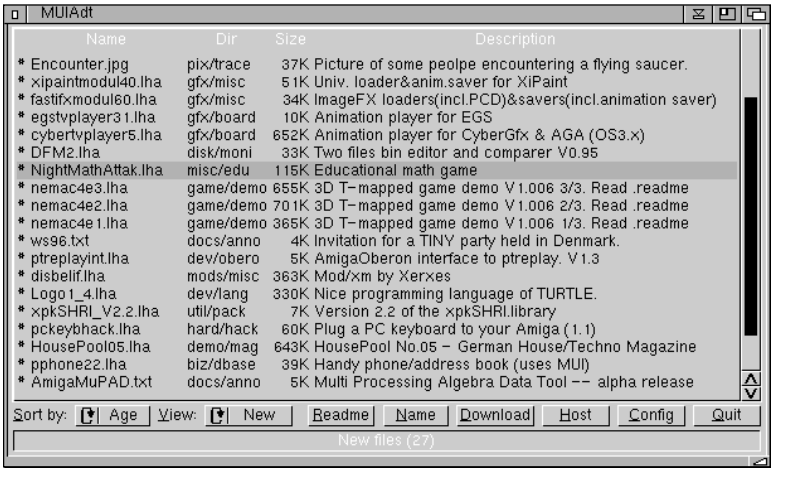
This gopher client uses AmigaGuide to display its menu options, and it works quite well. Gopher clients are in short supply simply because everyone uses the Web these days, and many Web browsers now incorporate gopher client functionality.

Aminet tools

The Aminet collection of Amiga FTP archives is where you'll go every time you're looking for a piece of Amiga shareware. Because of the frequency of these visits some file transfer tools are available which present a more customised interface to the Aminet archives than a normal FTP program.

MuiADT

Description
A download tool for Aminet
Author
Jem Atahan
Price
Public Domain
Location
comm/tcp/MUIAdt.lha
Requirements
Magic User Interface (MUI)
A "Unix-like" compress program



MuiADT is an Amiga version of the Unix Aminet Download Tool written by the founder of the Aminet archives. Aminet is like any other FTP archive, but it has quite a strict directory structure so it is pretty clear where files should be placed. Also, all uploads must be supplied with a "README" file. Every night an index of the files on Aminet is created, along with lists of the most recent or new uploads.

MuiADT takes advantage of this by downloading these lists and presenting them as the interface to the archive instead of just a directory full of filenames. You can scroll up and down through the list of new files since your last visit, and double-click on a file to get a copy of the "README" file on screen.

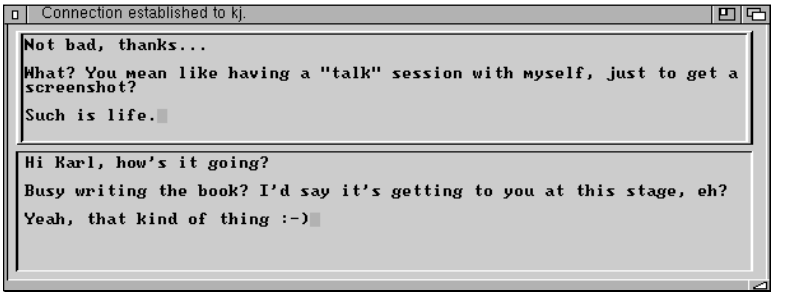
If you are not using the excellent AmFTP program for FTP (which includes ADT support) then MUIAdt will be a worthwhile addition to your collection of Internet applications.

Conferencing

The last two application we'll look at are for live person-to-person communications. Unfortunately, neither is in particularly widespread use, at least not among Amiga owners, so you may be better off sticking to regular email or meeting up on IRC for most communications.

AmiTALK

Description
The popular Unix "talk" utility for the Amiga
Author
Brian Gunn
Price
Freely distributable, donations accepted
Location
comm/tcp/AmiTALK155.lha
Requirements
No additional software needed



AmiTALK is a neat Amiga version of the Unix "talk" program. You simply issue a talk command, such as `talk user@machine.co.uk` and AmiTALK will attempt to make a connection to the remote machine. The problem with the talk system is that there are a number of variants of it, so you can never be quite sure which system the remote party might be using. But if the system does work AmiTALK pops up a split screen window and lets you type in one half while watching what the other party is typing in the other half.

AmiTALK comes with a "daemon" program which sits listening for incoming talk requests from other machines. The most likely reason for talk not to work is if the talk daemon is not installed correctly at one end of the call.

ACUSeeMe

Description
Internet video conferencing program
Author
Berend Ozceri
Price
Freely distributable
Location
comm/tcp/acuseeme2_02.lha
Requirements
Magic User Interface (MUI)

CU-SeeMe originally came from New York's Cornell University and was a Macintosh network project whose aim was to build a very low-cost video conferencing system designed to work with as little bandwidth as a 14.4K bps modem. The system works by using servers called "reflectors" which generally run on large Unix-based machines. These reflectors accept connections across the Internet from transmitters and receivers—or "lurkers" as they are known. When you run ACU-SeeMe you can connect to a reflector on the Internet as a receiver, and receive any video or audio packets being transmitted by anyone else connected to that reflector.

Some reflectors are dedicated to certain types of transmission. For example, NASA have a number of reflectors which broadcast live events such as Space Shuttle launches. All you need to view these on your Amiga is ACU-SeeMe.

the world wide web

5

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The World Wide Web

Most, if not all, of the recent media hype surrounding the Internet can be explained by one thing: the World Wide Web. Also known simply as The Web, W3, or WWW (pronounced "wuh-wuh-wuh"), the World Wide Web has taken the Internet by storm and has brought a simple point-and-click interface to a complex technology that was once the realm of universities and research labs.

Anything you want to access on the Internet can be found on the Web. Used properly, it's an amazing resource. There is an incredibly diverse set of information available, and most of it now is in no way computer or technology oriented. Some recent personal examples:

• I was talking with a friend about Olympic and world records for the long jump and triple jump. We weren't too sure of the distances involved. A quick search on the Web yielded a site dedicated to athletic track and field world records. Record performances for the last 10-15 years were all available online, with information on the athletes in question.

• I had just finished watching a movie on TV and one of the actresses looked very familiar but I couldn't remember where I'd seen her before. Since the movie wasn't a big-name movie, by the time I sat down at my Amiga I wasn't even 100% sure of the film name let alone the name of the actress. By using the Internet movie database I quickly found the film, the actress, and then a complete list of all movies she had made to date.

• There was a documentary on DeLorean cars on TV. "What a cool car!" I thought. "I wonder how much they cost?" A search on the Internet turned up a list of WWW sites dedicated to DeLorean cars. I found out all kinds of information, including that the average second-hand price of a DeLorean car is $15,000.

So exactly what is it?

Formally, the Web can be described as a hypermedia document system—a hypertext system, that is, which supports links not just to text but to other media types such as still images, video and audio. Furthermore, the Web is distributed. Unlike conventional hypertext systems, where links point to local documents, Web documents can contain links which point to objects residing on remote machines.

Try imagining an enhanced version of AmigaGuide. Make the text a little richer using a variety of different sized fonts. Next embed images within the document text. Then network a few Amigas together on the Internet, each with their own AmigaGuide files. Place a few special links in these files which make them point to the AmigaGuide files on the other networked machines. Now, by using your new AmigaGuide browser on one machine you can click on what looks like just another link and transparently view a page stored on a different machine. And by clicking on a link contained in that page, you retrieve a page from yet another machine.

Link enough of these together and eventually you'll give rise to a Web effect all over the world—a World Wide Web.

History

WWW was originally conceived in 1989 by Dr. Tim Berners-Lee as a means of sharing information between high energy physicists working at CERN in Geneva. Since then it has spread to millions of users throughout the world, due in no short way to the Mosaic program.

Mosaic was created by the NCSA (National Center for Supercomputing Applications) Software Development Group at the University of Illinois. Over the last couple of years they have created versions of Mosaic for the X Window System, Windows and the Macintosh.

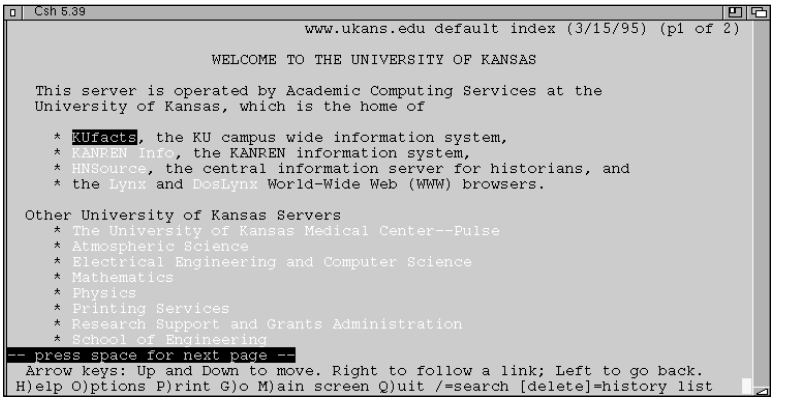
Although based on NCSA Mosaic, Mosaic for the Amiga—AMosaic—has no formal link with NCSA. For quite some time AMosaic was the only Web browser available for the Amiga, but this monopoly couldn't last and now a number of excellent alternatives have become available.

The Browsers

At the time of writing there are five well-known Amiga browsers either available or about to become available. By the time you read this book, all of the browsers discussed below will be readily available and there will no doubt be an even larger number of Web browsers for Amiga users to choose from.

ALynx

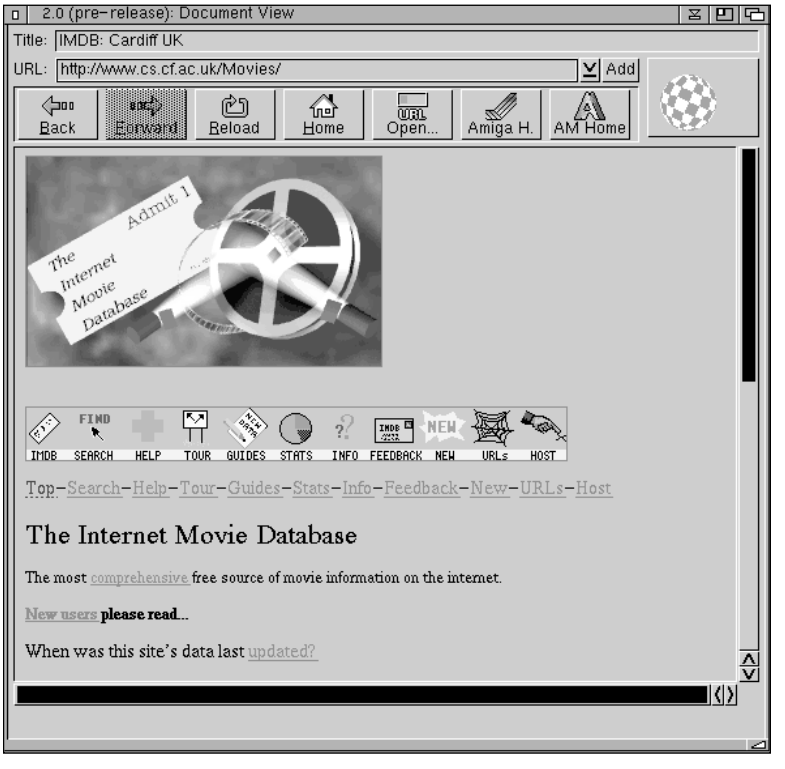
Description
A simple text-based Web browser
Author
P. Marquardt
Price
Freely distributable
Location
comm/net/ALynx.lha
Requirements
No additional software needed



A port of the Unix Lynx program, ALynx is really only useful if there is some reason why you can't run one of the graphical browsers. Because it is a text-based browser you are able to get only a rough representation of what is available on Web pages. Some Web sites which use large graphics for all their menus will be unusable with ALynx. It's handy to have installed, just in case you want to check a Web page quickly without using one of the graphical browsers, but not really of much use otherwise.

AMosaic

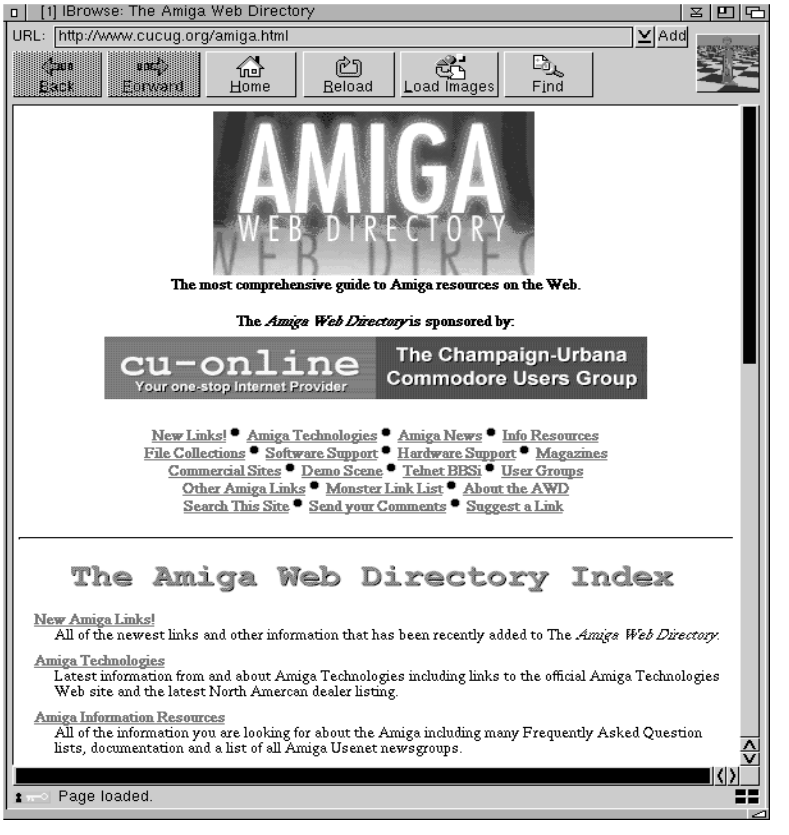
Description
The first widely used Amiga Web browser
Authors
Michael Fisher, Michael Witbrock, Michael Meyer
Price
Freely distributable
Location
ftp.omnipresence.com: pub/amiga/amosaic/AMosaic20Prerelease3_AmiTCP.lha
Requirements
Magic User Interface (MUI)
GIF DataType



AMosaic has gone through several releases and for a long time was the only graphical browser available on the Amiga. Most bugs have been ironed out, but it is still not completely perfect. Since it requires MUI it can be a little slow on low-end Amigas, but on the plus side it supports forms (text input on Web pages) and can use NNTP to read Usenet news from a news server. It is a reasonable Web browser but unlikely to be updated in the future.

IBrowse

Description
A "next-generation" Web browser
Author
Stefan Burstroem, published by HiSoft Systems
Price
£29.95
Location
ftp.omnipresence.com: pub/amiga/ibrowse/IBrowseDemoR5.lha
Requirements
Magic User Interface (supplied with full version)

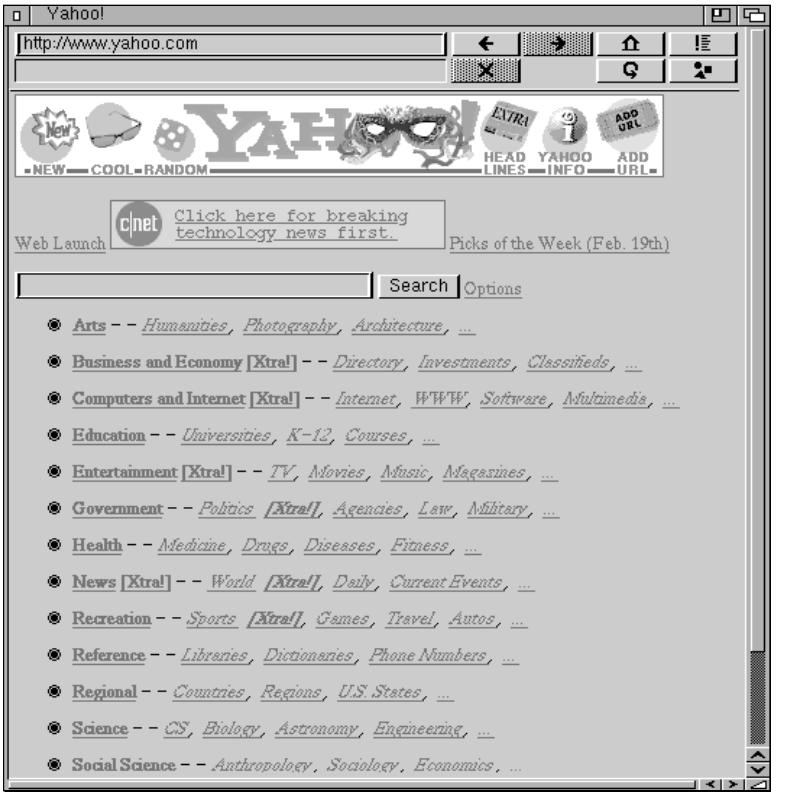


From the same people who developed AMosaic, IBrowse is a very attractive Web browser. By using MUI and some other tricks it is highly customisable and can be tailored to suit personal preferences quite easily. Its goal appears to be the equivalent of Netscape (a popular PC/Unix Web browser) on the Amiga. It supports many Netscape-type features, such as backgrounds and progressive inline image decoding.

Because of its emphasis on supporting Netscape-like features, IBrowse is a good choice if you want to view Web sites which were developed to look best when viewed using Netscape. Opponents of IBrowse have argued that its use of MUI makes it far too slow and that too much effort has gone into supporting Netscape enhancements instead of standardised HTML tags and commands. However, it is a high quality Web browser and is definitely worth installing.

AWeb

Description
A totally new, fast, standards-compliant Web browser
Author
Yvon Rozijn
Price
Registered freeware, £25 buys extra features
Location
comm/tcp/AWeb.lha
Requirements
A GIF DataType for viewing images



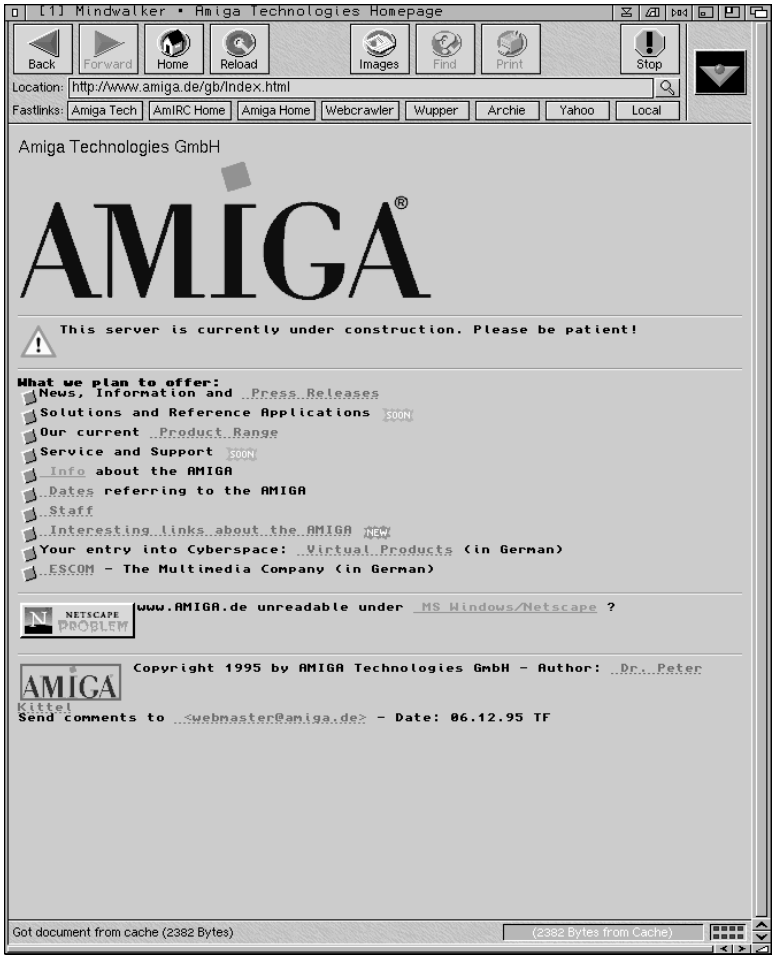
AWeb is a new browser that is currently in beta-testing. There has been quite a debate on the Internet among Amiga users as to whether or not AWeb is better than IBrowse. By the time you read this both IBrowse and AWeb should be in widespread use and you will be able to try them both out to choose a personal favourite.

The big win for AWeb over IBrowse is its size and speed. It is a smaller and faster Web browser than IBrowse and it does not use MUI. On a basic Amiga system it will appear to run significantly faster than the other available browsers. If you own a high-end Amiga with a graphics card there won't be as much of a difference, but it'll still be worth checking out.

AWeb places more emphasis on support for HTML standards than Netscape enhancements so is preferred over IBrowse by many Internet puritans. Another excellent Web browser, it is a good choice for low-end systems.

Mindwalker

Description
The official Amiga Technologies Web browser
Author
Amiga Technologies GmbH
Price
To be announced
Location
To be announced
Requirements
Magic User Interface (MUI)



Mindwalker is the Web browser which Amiga Technologies are distributing with the A1200 Surfer pack. As it uses MUI it should be similar in speed to AMosaic and IBrowse.

HTML

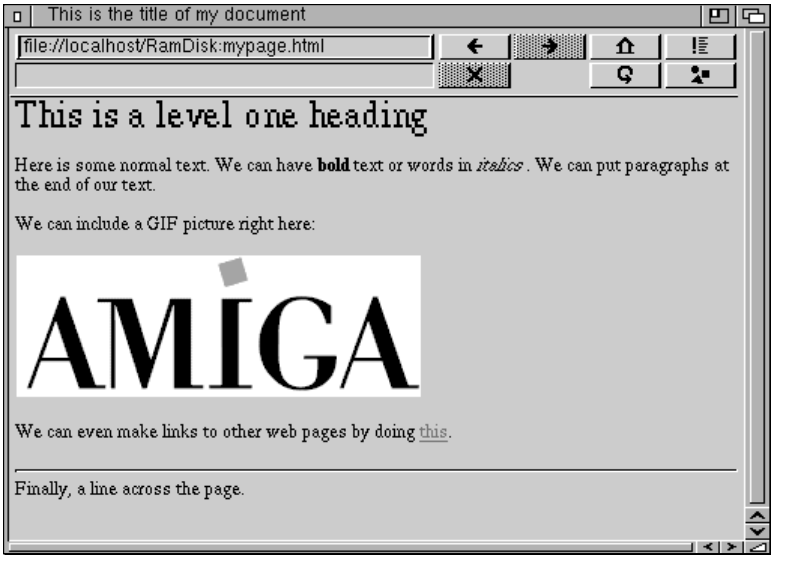
The language used to write a page of Web data is called HTML—the HyperText Markup Language. It is essentially a collection of styles used to define the various components of a Web document. In use it's quite similar to typesetting languages such as TeX or LaTeX. Here's a small example:

```
<HTML>
<HEAD><TITLE>This is the title of my document</TITLE></HEAD>
<BODY>
<H1>This is a level one heading</H1>
Here is some normal text. We can have <B>bold</B> text or
words in <I>italics</I>. We can put paragraphs at the end
of our text.<P>
We can include a GIF picture right here:
<P>
<IMG SRC="amiga.gif">
<P>
We can even make links to other web pages by doing
<A HREF="page.html">this</A>.
<P>
<HR> Finally, a line across the page.
</BODY>
</HTML>
```

This looks a lot more complicated than it actually is. HTML is just ordinary text with embedded formatting commands called "tags". Tags use the angle brackets < and > to differentiate themselves from normal text.

If a tag has a "/" in it, then it is marking the end of a tag's usage. So for example, HTML documents should start with the tag `<HTML>` and end with the tag `</HTML>`.

The next two tags a document should have are `<HEAD>` and `<BODY>`. These, along with `</HEAD>` and `</BODY>`, are used to say what text will go in the header of the Web browser page, and what text will be in the body of the page. In our sample HTML file, the only text we have for the header of the page is the name of the document, which should be displayed in the titlebar of the Web browser, and so we use the `<TITLE>` tag.



Within the body of our text we use `<I>` to denote italicised text, `<B>` for bold text, `<P>` to get a paragraph break, and `<HR>` to draw a line ("horizontal rule") across the page.

The two most important tags on the page are the `<IMG>` and `<A>` tags. To insert an image into a Web page we use the `<IMG>` tag. It's as simple as that. The `SRC=` in the tag specifies the source or filename of the image. The most common format for Web pictures is the GIF image, although slowly JPEGs are become more widespread. Trying to use Amiga IFFs is not a good idea as most systems on the Internet don't support the IFF format. GIFs are quicker to create and quicker to display than JPEG images, but they are limited to 256 colours and are larger in filesize than their JPEG equivalents.

The `<A>` tag is the anchor tag. This is the most important tag of all as it is how you specify a link to another Web page. The `HREF=` in our example simply means "hypertext reference". By clicking on the word "this" on our Web page, the browser will load a page called "page.html".

HTTP

To network all these HTML files on different machines a protocol is needed to transfer data between the client browser and Web server. Enter HTTP—The HyperText Transfer Protocol.

HTTP is transport protocol independent, which means it can be implemented using any underlying transport protocol, such as TCP/IP or Novell IPX. However, almost all current implementations run over TCP, usually on port 80. Hence the requirement for AmiTCP or the Commodore AS225 software if you want to start net surfing.

Setting up a Web server is as simple as running a program called HTTPD, which is a program that just sits listening for incoming requests. These requests can be as simple as `GET /` which would request the server's home page. As a user you don't need to know anything about HTTP itself. Your browser sends the commands to the HTTPD server for you.

The URL

One of the innovations which has come with the Web is the URL—the Uniform Resource Locator. The URL, as the name implies, is a uniform way of specifying how resources on the Internet can be located. You can think of it simply as a Web page address, but it can be used to describe lots of things. For example:

The Amiga Technologies GmbH home page
http://www.amiga.de/

The location of the AmiTCP demo
ftp://src.doc.ic.ac.uk/pub/aminet/comm/tcp/AmiTCPdemo_40.lha

A WWW browser accessible via telnet
telnet://info.cern.ch

A Gopher site
gopher://gopher.ucd.ie/

The Amiga graphics Usenet news group
news:comp.sys.amiga.graphics

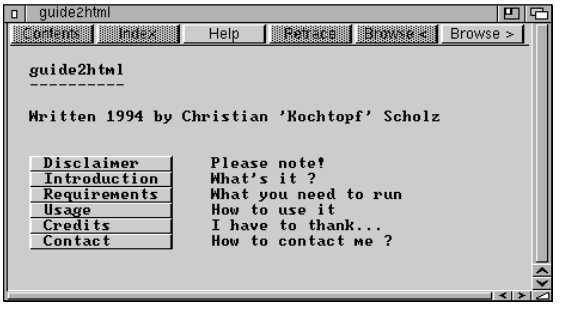
Creating a Web page

Having a personal Web page has now become as popular for Internet users as having an email address. If the sample HTML page shown earlier looks a bit too much like hard work, there are a number of programs which can help you create Web pages more easily on your Amiga. We'll take a quick look at three of them, guide2html, HTML-Heaven and Webmaker.

Guide2html

Description
Converts AmigaGuide files to HTML
Author
Christian 'Kochtopf' Scholz
Price
Freely distributable
Location
text/hyper/guide2html.lha
Requirements
No additional software needed

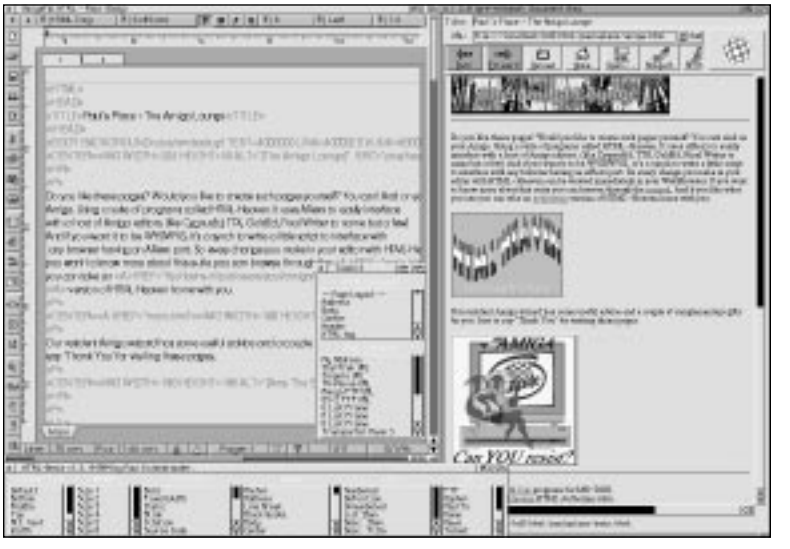
Guide2html is a simple program that will convert files written in AmigaGuide format to HTML. This is useful if you have written some hypertext in AmigaGuide and would like to put it online using the Web. For example, take the documentation provided with the program...



Now use Guide2html to convert it into HTML, and hey presto you've instantly got an HTML version of some AmigaGuide text...

HTML-Heaven

Description
A suite of programs to create HTML from your favourite text editor
Author
Paul Kolenbrander
Price
Shareware (US$15)
Location
text/hyper/HTML-Heaven.lha
Requirements
No additional software needed



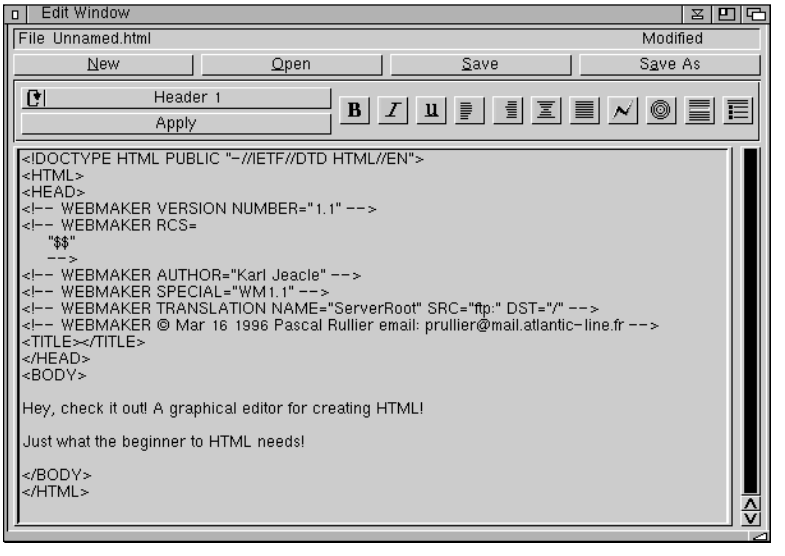
HTML-Heaven uses the Amiga's ARexx scripting language to interface with your favourite text editor. It works with editors such as AME, CygnusEd, Amiga Ed, Final Writer 4, Wordworth 5, GoldEd, TurboText and any other editor that supports ARexx.

Since the hardest part of writing HTML is remembering all the tags and what they do, HTML-Heaven gives you a number of windows which show you all the tags available and let you insert the tag into your text by simply clicking on the buttons displayed in its windows. If you intend writing a lot of HTML on your Amiga, this can come in pretty handy, but if you are just creating the odd page now and again then the package might be a little complex and offer more features than you really need. A handbook on HTML is probably all you need.

There are currently no desktop publishing style programs that create HTML available for the Amiga, so HTML-Heaven is about the closest you'll get to a graphical HTML builder on the Amiga.

WebMaker

Description
A graphical tool to help create HTML files
Author
Pascal Rullier
Price
Uncrippled shareware, all contributions welcome
Location
text/hyper/WebMaker1_1.lha
Requirements
Magic User Interface (MUI)



WebMaker is one of the first dedicated HTML editors available on the Amiga. It's not a text editor with HTML extensions. It's not a DTP program that can save as HTML. Its sole purpose in life is to help write HTML.

In appearance it's like a basic text editor, but the difference is that every menu option and every on-screen button is somehow related to HTML. When you create a new document it automatically inserts all the basic tags needed for a Web page, leaving you to start typing in content immediately.

WebMaker allows you to highlight text and then click a button or pull down a menu to insert the relevant HTML tags into the page. This works for almost every HTML command available, and where more than one parameter might be relevant for the tag (such as an anchor) WebMaker will pop up a small window where you can type in the necessary details.

Although this is an early release without a built-in preview function, WebMaker comes with a third-party program, HTMLView, which previews HTML pages in a window on your Workbench. By using this program, or just keeping a separate Web browser running while you create pages with WebMaker, you'll be able to preview your HTML pages instantly.

WebMaker is a good choice for the HTML beginner.

Recommended Web pages

Walk into any bookstore and you will find shelves of books dedicated to the Web. Many of them will be large directories of Web pages. These are often a tempting purchase if you are new to the Web, but the Internet is growing so quickly that no book can hope to cover all the best Web sites out there. The smart way to use the Web is to only ever keep a small number of Web page addresses to hand, and then re-use them over and over to find new places to visit.

This is possible because of something called a search engine—Web sites which maintain huge databases of information on the content of almost every Web site in the world.

Each search engine has advantages and disadvantages and is usually tailored to meet the requirements of a particular type of search. Search engines use forms on their Web pages to allow you to enter a keyword upon which to search.

Search engines

Yahoo
http://www.yahoo.com/

Yahoo is probably the best known search engine. It is categorised by subject and is a good place to start if you just want a list of sites relevant to a particular topic.

Infoseek
http://www.infoseek.com/
Lycos
http://www.lycos.com/

Infoseek and Lycos are good examples of the other type of search engine available on the Web. They automatically browse Web sites all over the world and build a database of the information they find on each page. They don't store everything on every page they find, just a few words or a few lines from each Web page visited—enough to fulfil any search requirements.

SavvySearch
http://www.cs.colostate.edu/~dreiling/smartform.html

SavvySearch acts as a smart front-end to other search engines. Instead of typing your query into multiple engines, you just give it to SavvySearch once and it goes off, asks a number of search engines, and then summarises its findings.

General interest

A few sites that you might want to check out to get a feel for what's available on the Web:

Movie Database
http://www.imdb.com/

This Movie Database is one of the best resources available on the Internet. You can look up just about any movie ever made and get fully cross-referenced cast listings, reviews, ratings and biographical information on actors and actresses.

The BBC
http://www.bbcnc.org.uk/

Lots of useful background information about what's happening at the BBC.

The Electronic Telegraph
http://www.telegraph.co.uk/

Definitely a sign of things to come. The day when you can read a personalised newspaper on your computer every day can't be far away.

The FA Premiership
http://www.fa-premier.com/

Up-to-date facts and match reports about all the clubs in the English Premiership. If you're into soccer, this is an excellent site.

Weathernet
http://cirrus.sprl.umich.edu/wxnet/

24-hour weather reports from around the world.

CityNet
http://www.city.net/

Pointers to information on all countries and major cities in the world.

Amiga sites

Amiga Technologies GmbH
http://www.amiga.de/

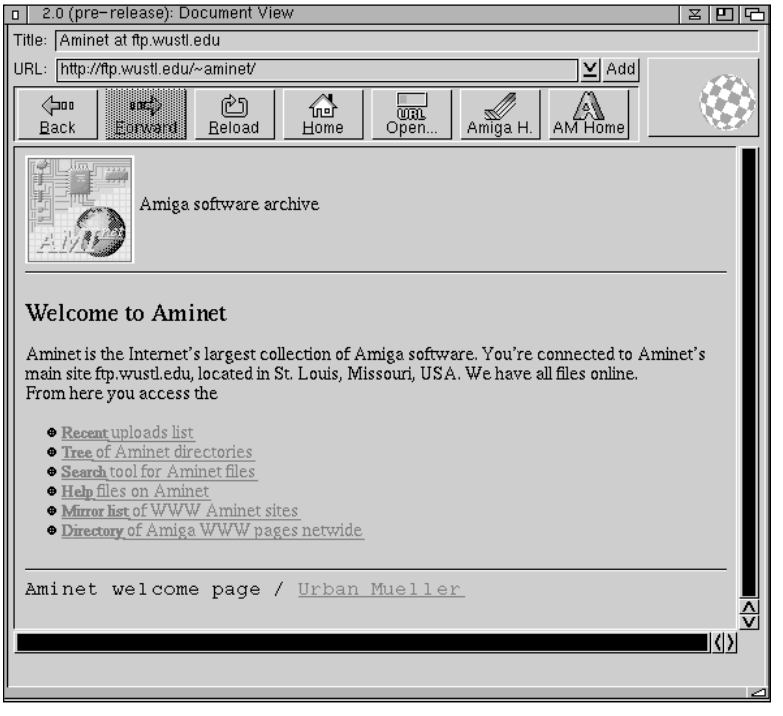
The home page of the company which owns the Amiga. Watch here for press releases and details of new Amigas and the current product line.

The Amiga Web Directory
http://www.cucug.org/amiga.html

Maintained by an Amiga User Group in the United States, this has to be the definitive collection of Amiga related links available on the Web.

Aminet
http://src.doc.ic.ac.uk/public/aminet/info/www/home-src.doc.html

The world's largest Amiga FTP archive can also be accessed through the World Wide Web. If you don't have proper FTP access then Aminet on the Web will come in handy.



The Web isn't just limited to browsing text and pictures, You can also use your Web browser to download files from the Aminet archives.

Miscellaneous

Four11
http://www.four11.com/

Looking for someone's email address on the Internet? This site has millions of email address on file.

The WWW Virtual Library
http://www.w3.org/hypertext/DataSources/bySubject/Overview.html

The predecessor of the search engine. This page is still a useful place to check out if Yahoo doesn't come up with the goods.

bits that didn't fit

6

- HTML tutorial
- Guide to Usenet news
- Serious surfin' with ISDN
- Software checklist
- The future
- Internet domains
- And finally...

HTML tutorial

To create a Web page you must use a language called HTML—the HyperText Markup Language. All Web pages are written in HTML. It's a fairly simple, text-based language with a number of different "tags" that allow you to specify how you would like your data to appear on the Web page.

Mastering HTML is not difficult, it just takes a little while to get used to all the tags. Once you have learnt the basics, the more complex features of the language fall into place quite easily.

HTML files are written in plain text. You can use any text editor of your choice. By convention, HTML files have a ".html" extension, although sometimes when you access a Web page you will see the file referred to as ".htm". This just indicates that the Web page was probably created on a PC running MS-DOS, which has a three letter restriction on filename extensions. The Amiga has no such limitations.

Let's take a look at some of the most useful tags available in HTML and see how each one can be used when creating a Web page.

Basic document tags

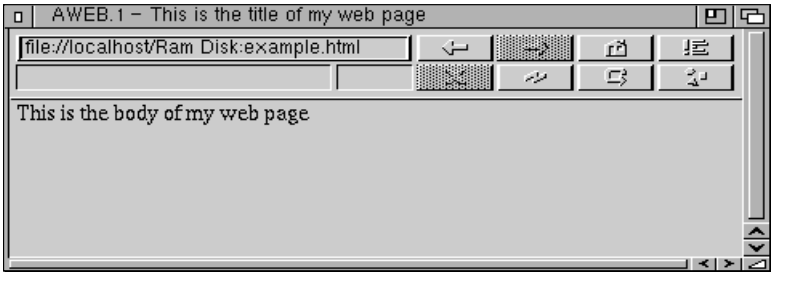
You can take a normal text file and use it without any changes as a HTML file, but the HTML standards require a number of basic HTML tags that should be used if you want to ensure that your document will work with all Web browsers. Essentially, a blank document looks like this:

```
<HTML>
      <TITLE>
      This is the title of my web page
      </TITLE>
      <BODY>
      This is the body of my web page
      </BODY>
</HTML>
```

The indentation used above is artificial; white space like this will be ignored by the browser, it is used here to show how the document is structured and how the tags relate to each other.

As you can probably guess, tags start and end with angle brackets, and to turn the effect of a tag off you include a forward slash. So `<HTML>` tells the browser "this is the start of a Web page" and `</HTML>` tells the browser "this is the end of the Web page".

The `<TITLE>` tag is used to create a title at the top of the Web page, usually displayed on the titlebar of the browser, not in the document itself. Everything contained between the `<BODY>` and `</BODY>` tags is displayed as the Web page itself. The above HTML looks like this:



Once you have used these basic tags to construct your Web page, everything after them relates to how the text and images on the page are laid out. These basic tags are once-off tags merely to make the page a valid HTML page. Although a page might still work even when they are left out, you cannot guarantee that all Web browsers will understand the page if they are not present.

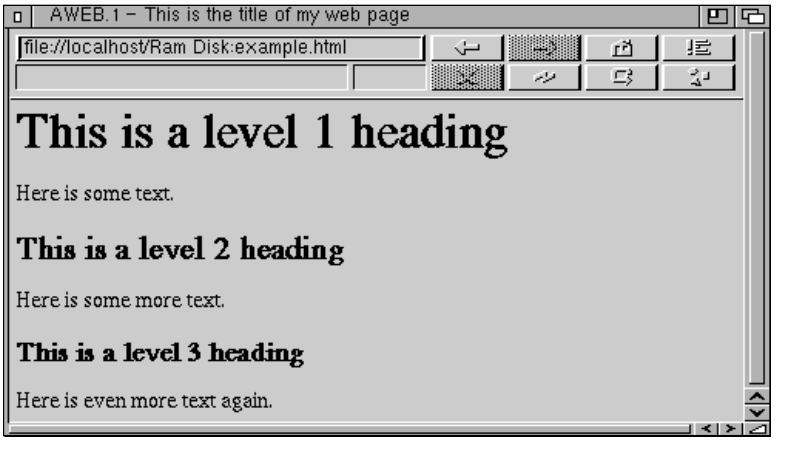
Headings

Okay, so now you have a basic Web page with some plain text on it. The next thing you'll want to do is to add some structure to the layout of information on the page.

In HTML this is normally done by using section headings. Up to six heading sizes are available, but often browsers only have the correct fonts set up for the first three. Here is an example of some HTML using heading tags:

```
<H1>This is a level 1 heading</H1>
Here is some text.
<H2>This is a level 2 heading</H2>
Here is some more text.
<H3>This is a level 3 heading</H3>
Here is even more text again.
```

If we place the above HTML inside the body of the Web page we made earlier, this is what the page will look like:



As you can see, Level 1 headings are the largest size available. Each heading automatically appends a new line and a short paragraph break.

Basic formatting

There are a number of tags which can be used to break up your text without using section headings. Three of these are `<BR>`, `<P>` and `<HR>`. These tags differ from the tags we've seen so far because you don't have to "turn them off"—there is no need to use a `</BR>`, `</P>` or `</HR>` tag in other words.

The `<BR>` tag is a simple line break (new line) command. Since white space is ignored in HTML you have to specifically indicate when you want text to appear on a new line. As you will see in the example below, your HTML source file might have two sentences on different lines, but on the screen they will both appear on the same line if a `<BR>` tag is not used.

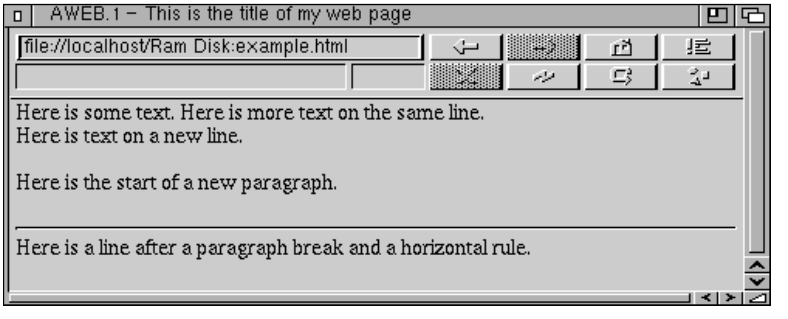
The <P> tag is used to start a new paragraph. It is the same as the <BR> tag but includes a short gap after the new line has been made. It is a very useful tag and tends to be used far more than <BR>.

The <HR> tag is for horizontal rules, used to break up text by inserting lines across your Web page. It doesn't matter how wide the browser window is, the horizontal rule will always run across the whole page.

Here is Some simple HTML using these tags:

```
Here is some text.
Here is more text on the same line.
<BR>
Here is text on a new line.
<P>
Here is the start of a new paragraph.
<P>
<HR>
Here is a line after a paragraph break and
a horizontal rule.
```

And here is what that looks like:



Images

What makes the Web so attractive to use is the graphical nature of most Web pages. It is extremely easy to include images in your Web page. A single <IMG> tag is all that is required.

The initial standard for images on the Web was CompuServe GIF format. Every graphical Web browser supports this picture type. Recently, however, people are moving away from the GIF format and embracing the JPEG image standard. JPEG images take up less disk space and can have more colours, but they require a bit more computing power to decode than the more basic GIF images.

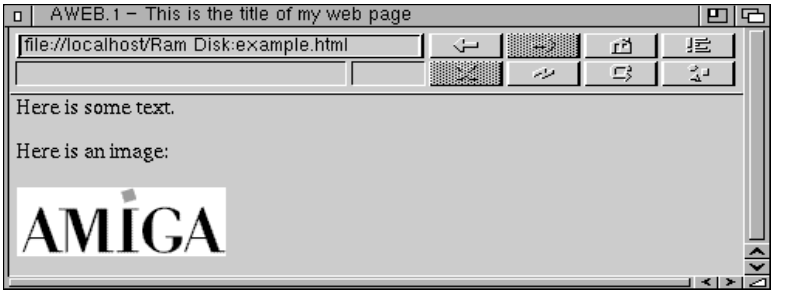
So you can take your pick between the GIF and JPEG image formats when creating images for your Web page. Using any other image formats—Amiga IFF or Windows BMP files for example—is not a good idea. Almost no one will be able to view these. Let's take a look at how to place an image on a Web page:

```
Here is some text.
<P>
Here is an image:
<P>
<IMG SRC="image.gif" ALT="Amiga">
```

The <IMG> tag can take a number of parameters. The first (and most obvious) parameter is SRC—the name of the file to be included. The second parameter,

ALT, specifies a text alternative for the Web browser to display if for whatever reason it cannot display the image file—perhaps the user is running a text-only Web browser such as Lynx, or maybe the user has disabled image loading to speed up Web page transfers.

Only the SRC parameter is required and, as you will see below, when graphics are enabled there is no way to tell whether or not the ALT parameter has been used by the Web page creator.

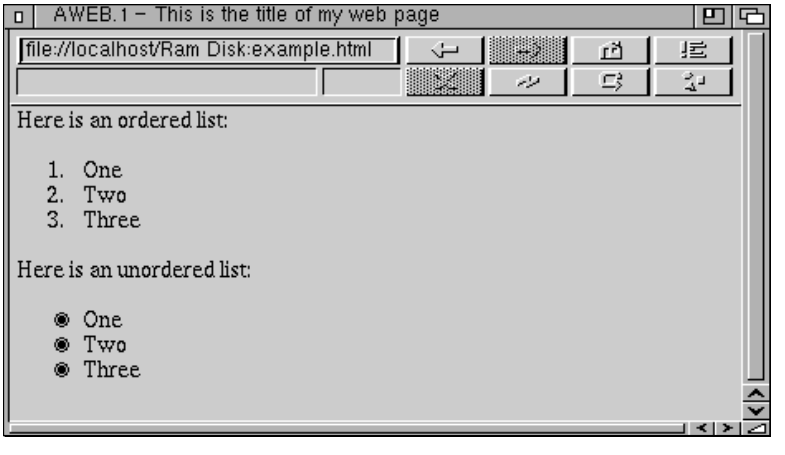


Lists

Two popular ways of presenting a list of items on a Web page are by using the ordered and unordered list tags. An ordered list uses automatically generated numbers to denote each item in the list. Unordered lists use "bullet points" beside each item in the list. Let's see some HTML that uses both kinds of lists:

```
Here is an ordered list: <P>
<OL>
<LI>One
<LI>Two
<LI>Three
</OL>
Here is an unordered list: <P>
<UL>
<LI>One
<LI>Two
<LI>Three
</UL>
```

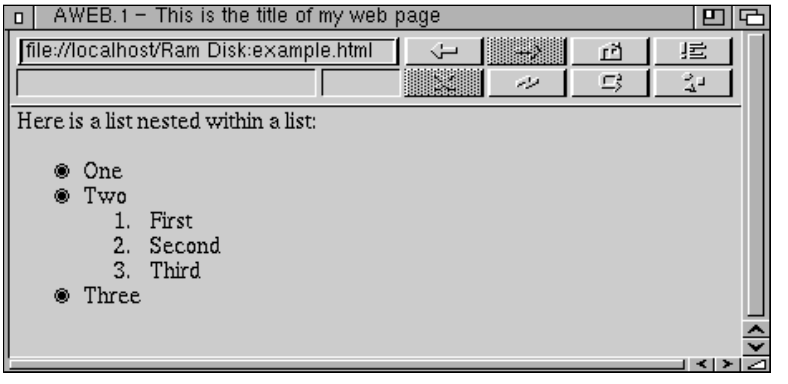
Ordered lists use the <OL> tag, unordered lists use the <UL> tag. Each line item is denoted with an <LI> tag.



You can put anything you want after an <LI> tag as part of a list, it doesn't have to be a line of text. In fact you can even put another whole list within a list. Here is a list nested within a list:

```
<P>
<UL>
<LI>One
<LI>Two
     <OL>
     <LI>First
     <LI>Second
     <LI>Third
     </OL>
<LI>Three
</UL>
```

Again, the indentation used above is purely for effect, it has no impact on how the browser will lay out the Web page.



Styles

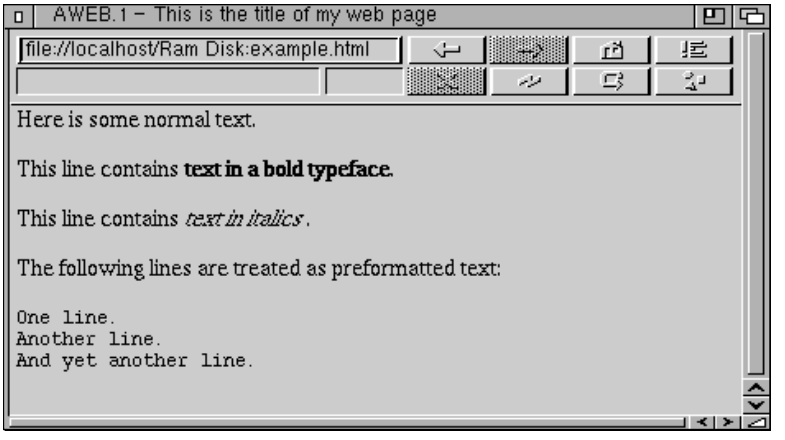
You now know how to create a Web page, add headings, perform some simple text formatting, embed images and construct lists. Making your text look a little more attractive might be the next item on your agenda.

The HTML specification lists quite a few different tags which can be used to highlight text on a Web page. Most of these are variations on the same theme. The three most important are <B>, <I> and <PRE>.

The <B> and </B> tags turn bold text on and off, whereas <I> and </I> turn italics on and off. The <PRE> and </PRE> tags can be used to insert preformatted ASCII text into a Web page.

```
Here is some normal text.
<P>
This line contains <B>text in a bold typeface</B>.
<P>
This line contains <I>text in italics</I>.
<P>
The following lines are treated as preformatted text:
<PRE>
One line.
Another line.
And yet another line.
</PRE>
```

Here is how the above HTML is displayed on screen:



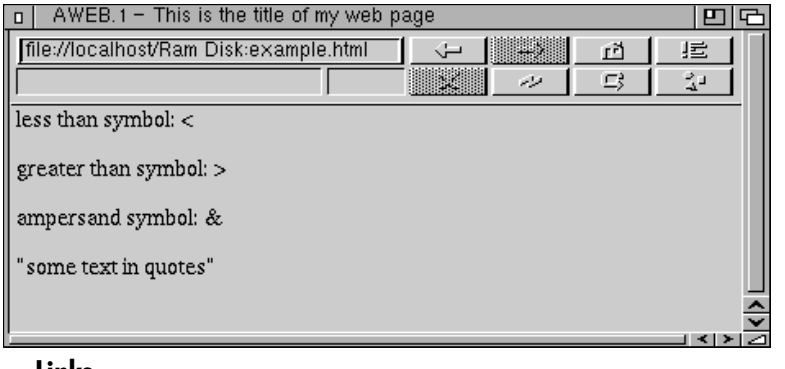
The <B> and <I> tags are used in the same way as you would use the bold and italic styles in a word processor. The <PRE> tag is slightly different in that it is intended for use when inserting a block of ASCII text which may look correctly formatted when using a non-proportional fixed-width font—the kind of font you normally use in a text editor or in a Shell window. The <PRE> tag honours white space and new lines.

Special Characters

Let's take a quick look at how to include some commonly used symbols in a Web page. Because the greater than (>), less than (<), ampersand (&) and doublequote (") characters are all used in writing HTML, you must use special characters when inserting them into a Web page.

```
less than symbol: &lt;
<P>
greater than symbol: &gt;
<P>
ampersand symbol: &amp;
<P>
&quot;some text in quotes&quot;
<P>
```

The above HTML is displayed as:



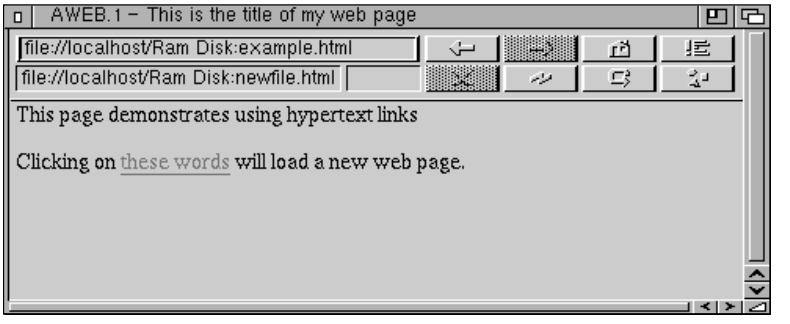
Links

The most important feature of HTML is <A>, the anchor tag. This allows you to insert hypertext links into your Web pages. The anchor tag normally has one parameter, HREF, which is set to the address or URL (Uniform Resource

Locator) of the page to which the anchor points. This example shows how to use the most basic type of hypertext link:

```
This page demonstrates using hypertext links
<P>
Clicking on <A HREF="newfile.html">these words</A> will
load a new web page.
```

The anchor tag begins with `<A` and ends with `</A>`. The text between the middle angle brackets is highlighted on screen as shown below.



When a user clicks on "these words" the Web browser will request the file called "newfile.html". The screenshot above was taken with the mouse pointer hovering over the link. You can see in the string gadgets at the top of the screen that the current page is called "example.html" and that if the user clicks on the link below the mouse pointer the file "newfile.html" will be loaded.

As mentioned above, a hypertext link to another Web pages (to other HTML files, that is) is the most popular type of link, but there are many types of URLs and therefore many things that can be pointed to by an anchor link. Any valid URL can be placed in a link. Here are some examples:

```
Clicking on <A HREF="mailto:jbloggs@isp.co.uk"> Joe
Bloggs</A> will allow you to send me an electronic mail
message.
```

```
My favourite newsgroup on the Internet is
<A HREF="news:rec.sport.soccer">.
```

```
You can initiate an FTP transfer from within your web
browser if you want to download
<A HREF="ftp://foo.bar.com/pub/archive.lha">
this file</A>.
```

The first example uses the `mailto` URL to specify an email address. If the browser is correctly configured, and has email support, you can send Joe an email by clicking on his name.

The second example allows you to point to a newsgroup on the Internet. Your browser must support news reading and have a news server set up for this to work.

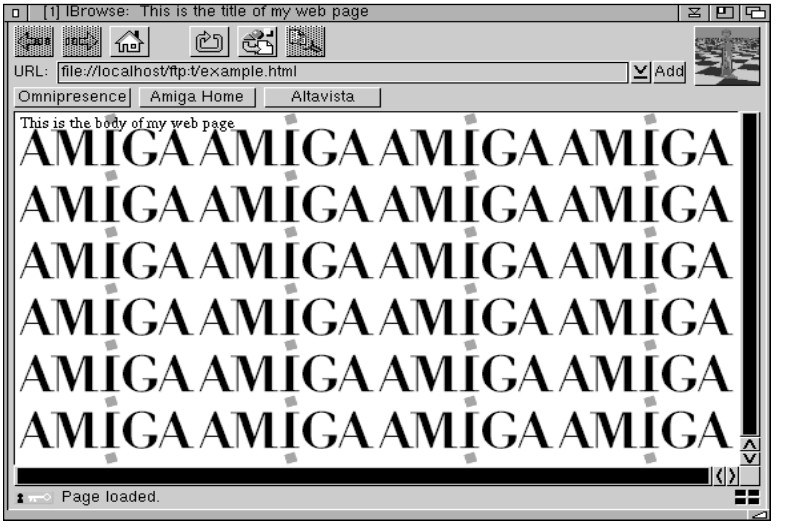
Finally, the most useful of all, you can point to a file on an anonymous FTP site by specifying its Internet address and filename using the ftp URL.

Netscape Extensions and HTML 3

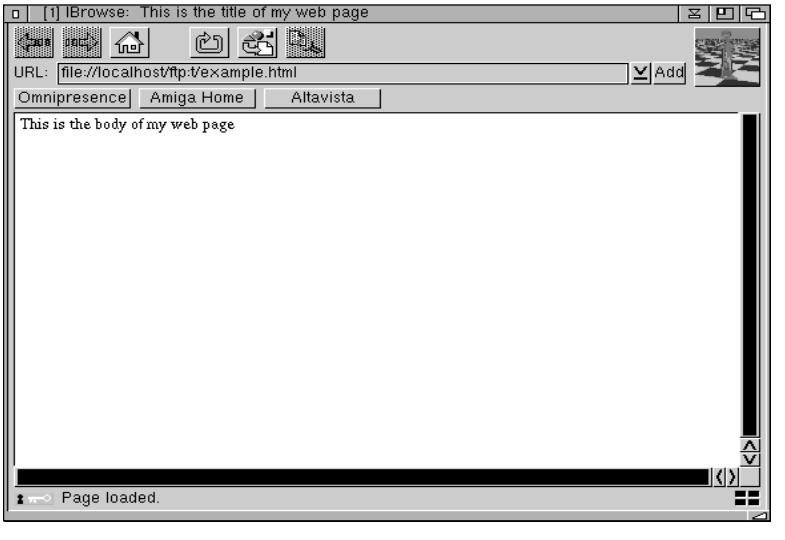
The HTML 3 specification and the makers of the popular Netscape browser have been forging ahead in improving the features of HTML. So far, Amiga Web browsers are still catching up—not all Amiga browsers support all of the latest HTML extensions.

Two of the most popular new extensions allow using colour and/or images on the background of a Web page, and using tables to layout data. Adding an image as a background to a Web page is done with the `BACKGROUND` parameter of the `<BODY>` tag. Setting a colour to be the background of a page is done with the `BGCOLOR` parameter to `<BODY>`.

For example, `<BODY BACKGROUND="image.gif">` in our very first HTML file would produce:



And `<BODY BGCOLOR="#ffffff">` would produce:



The `BGCOLOR` parameter is of the form RRGGBB, where RR, GG and BB are hexadecimal values of red, green and blue. In the example above, `ffffff` means a hexadecimal value of `ff` for each of the red, green and blue levels in the background colour. In denary `ff` is 255 and `00` is the value zero, so red, green and blue settings of `ff` will produce a white background, while settings of `00` will produce a black background.

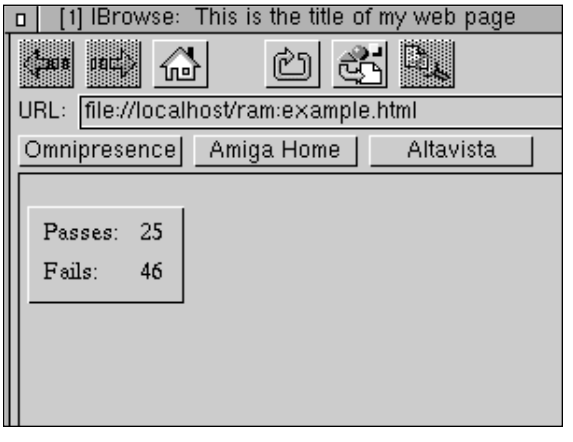
Tables

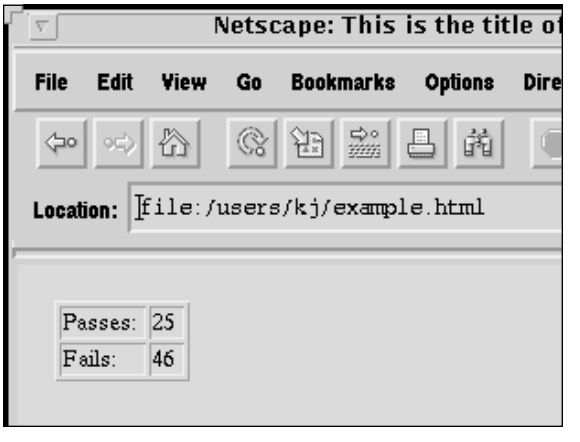
Tables are a recent addition to HTML and are not fully supported by all Amiga browsers yet. Tables are the only way to get data to correctly layout across and down the page in a structured, configurable way.

The `<TABLE>` and `</TABLE>` tags are used to delimit the start and end points of table data. Each row starts with a `<TR>` and ends with a `</TR>`. Within each row you can insert a number of table data elements with the `<TD>` tag. Let's look at a simple example:

```
<TABLE BORDER=1 VALIGN=CENTER>
  <TR>
      <TD>Passes:
      <TD>25
  </TR>
  <TR>
      <TD>Fails:
      <TD>46
  </TR>
</TABLE>
```

Once again I've used artificial formatting in the HTML code to make it a little easier for you to understand. The `BORDER` parameter in the `<TABLE>` tag specifies that a single pixel border should be used in the table. `VALIGN` requests that table elements should be centred vertically in each cell.





The screenshots above show how the table will look when rendered on a Web page. As mentioned above, current Amiga browsers have limited support for tables. Even as simple a table as this looks different when viewed with the Netscape browser, the screenshot on the right.

Guide to Usenet news

A few short years ago Usenet news was what it was all about. Getting on the Internet, as it was then, was about sending email and taking part in the discussion groups known as Usenet newsgroups.

It started back in 1979 when some graduate students at Duke University and the University of North Carolina got together and started to exchange messages on the university computers in much the same way as the popular bulletin board systems of the day. Before long the idea started to spread, along with the free software to run the system, and as more and more networks connected to each other, Usenet as we know it today came into being.

The hierarchies

Today there are several thousand newsgroups (topic areas) to choose from. Each of these groups can contain hundreds of postings or articles every day. There is no central authority. Everything is contributed by the users around the world. Anyone can post a message. The "big seven" hierarchies are:

comp All the computer related newsgroups. Amiga, PC, Macintosh, printers, modems, networks, telecoms and anything else remotely technical.

misc Miscellaneous topics not covered elsewhere.

news Newsgroups discussing how to administer and use the Usenet system.

rec Recreational topics. Arts, sports, hobbies and so on. This is a large chunk of Usenet. After the *comp* hierarchy it is the most popular.

sci Scientific discussions on medicine, physics, chemistry...

soc The Social groups. These range from discussion on life in general, to relationships, to cultures in many different parts of the world.

talk It's all that happens on Usenet but for those discussions that turn out to be somewhat "religious" in nature, the *talk* hierarchy is the only place for those arguments that will never die.

And of course there's the *alt* (alternative) hierarchy. Not all sites carry the *alt* groups. If you've heard about anything remotely bizarre on the Internet, then *alt* is where you'll find it.

Moderation

As mentioned above, anyone can post to any newsgroup. The only exception to this is where a newsgroup is designated as a "moderated" newsgroup. What this means is that all postings to this group are redirected via email to someone who has volunteered or been elected to moderate the group. This works well for groups which contain announcements or reviews. The moderator can ensure that all postings are suitable for the newsgroup before forwarding them into the newsgroup for worldwide consumption.

While this may sound like a form of censorship, it's important to remember that Internet users have collectively embraced this idea and encourage it where appropriate. One of the reasons for moderation is to avoid too much "noise" in a newsgroup. For example, let's say you don't have much time to spend wading through hundreds of messages about people discussing the

latest movies being shown in the cinema. You can go to a moderated newsgroup which only contains complete film reviews. No discussions. Anyone can write the reviews, the moderator just ensures that the only articles you find in the group are reviews. If you want to read general discussions, you can find them in another newsgroup.

Netiquette

Before you become engrossed in Usenet and start posting messages left, right and centre, bear in mind that the audience is a lot larger than you might suspect.

Most newsgroups have many thousands of avid readers who follow the groups every day. The largest, most popular groups have up to half a million readers. These numbers are growing all the time.

When you read an article you don't always have to "follow up"—or to put it another way, you don't have post a new message to the newsgroup for everyone to read. It might be more appropriate to reply to the poster of the message via private email. In fact, often you'll see people post a question and specifically say something along the lines of "Please reply via email, I'll summarise". And that's exactly what they mean. If 10 or 15 people reply to them with bits and pieces of answers, rather than start a whole discussion on the topic the original poster will just send a summary posting after a few days after all the information has been digested.

Be careful where you post. Always try to pick the newsgroup most appropriate to your subject material. In the rare case where there are two or more groups to which your posting is relevant, you should "cross-post" the message. This means the messages will go to each group, but readers will only come across it once. If you posted the message individually again and again to the different groups, readers would have to reread it over and over again. This really annoys people!

The mortal sin of Usenet posting is an extension of this. It's called "spamming" or "sending spam". It's where you post the same message to many groups which are really not relevant to the posting. For example, someone in the south of France should really only post job offers to the local newsgroups instead of to every group they can find with the word "job" in it. It may reach a wider audience, but 99% of the people who see the message will just swear under their breath.

Amiga newsgroups

Because the Amiga is popular with hobbyists and enthusiasts there are lots of Amiga-related newsgroups on the Internet. If you're fed up with reading out-of-date information in magazines, or if you don't have too many Amiga experts living nearby, then Usenet news is the answer to your prayers. Let's run through the most popular Amiga Usenet newsgroups:

comp.sys.amiga.advocacy A popular Amiga newsgroup devoted to people who like to advocate the benefits of using an Amiga over other types of computers. You can learn a lot from this group, especially since it is one of the few Amiga groups read by many non-Amiga users.

comp.sys.amiga.announce A low-traffic moderated group that contains announcements of new hardware and software products and any other announcements relevant to Amiga owners.

comp.sys.amiga.applications Word processors, spreadsheets, databases, miscellaneous utilities and so on.

comp.sys.amiga.audio MIDI, sound samplers, creating and listening to music on the Amiga.

comp.sys.amiga.cd32 Devoted to users of the Amiga CD32 and Commodore CDTV products.

comp.sys.amiga.datacomm This group is still a very active newsgroup but much of its traffic has moved over to the *comp.sys.amiga.networking* group as this group is more oriented towards modems, terminal programs and bulletin board systems.

comp.sys.amiga.emulations Emulating other computers on your Amiga. Mostly discussions on the popular Macintosh and PC emulators, but also the old 8-bit machines such as the Commodore 64 and Sinclair Spectrum.

comp.sys.amiga.games Games, games, games. You get the picture.

comp.sys.amiga.graphics Everything graphics related. Paint and drawing tools, new and old graphics cards, image manipulation programs, video toasters, 3D modelling, ray-tracing and rendering.

comp.sys.amiga.hardware A high-traffic Amiga newsgroup which discusses anything and everything to do with Amiga hardware. You can get advice on equipment you might be thinking of buying, and you can find solutions to common problems people are having with their Amigas. A great resource.

comp.sys.amiga.introduction If you're an Amiga beginner this is a good place to go first. You can ask questions here without worrying about other more experienced users getting annoyed. You can learn a lot about the Internet as well as the Amiga.

comp.sys.amiga.marketplace Buy, sell or trade your Amiga hardware and software over the Internet. Beware of jumping into deals here unless you know what you're doing. There are some crooks out there waiting to rip you off, so be careful about what you buy and who you buy it from. Also, remember that this is a worldwide group, so most of the people buying and selling will be living outside of the United Kingdom.

comp.sys.amiga.misc Most hierarchies have a *misc* group. It's just a catch-all for any Amiga discussion that isn't specific to one of the other Amiga newsgroups. If you have an Amiga question and aren't too sure where to ask, try here.

comp.sys.amiga.multimedia Creating multimedia presentations on the Amiga. Authoring tools such as Scala and CanDo, graphics programs, sound tools, animation players and so on.

comp.sys.amiga.networking Having a problem with any Internet tools on your Amiga? Want to get some advice on ISDN or Ethernet equipment? This is the place to be.

comp.sys.amiga.programmer Programming the Amiga. Mostly C and Assembler but anything goes.

comp.sys.amiga.reviews A moderated newsgroup for reviews of Amiga hardware and software products. Anyone can write a review provided they follow a few simple guidelines. All reviews are stored for future reference at an FTP site.

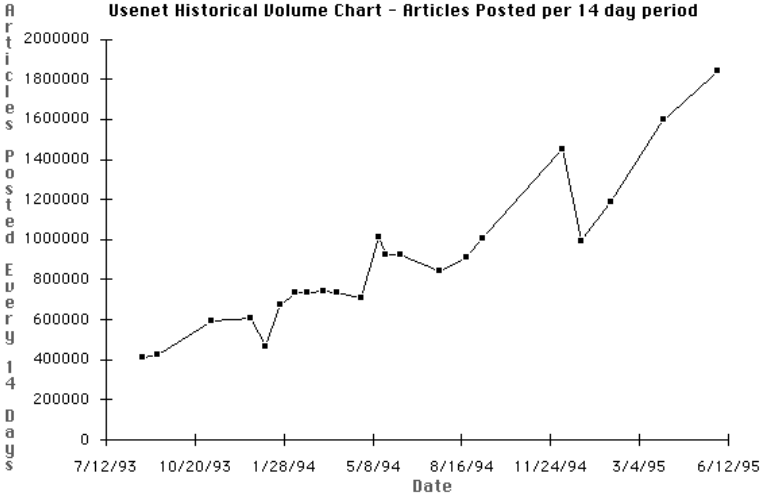
comp.sys.amiga.uucp This is a low traffic newsgroup which probably won't be around for too much longer. UUCP stands for Unix-to-Unix Copy Program. It was one of the first pieces of software used to transfer email and Usenet news around the Internet. The emergence of TCP/IP has made UUCP somewhat superfluous.

comp.unix.amiga Not part of the normal *comp.sys.amiga* hierarchy, this group was originally created to discuss Commodore's SVR4 Unix on the Amiga 3000UX but is now mostly used for discussion of Amiga NetBSD and Amiga Linux.

Usenet growth and readership

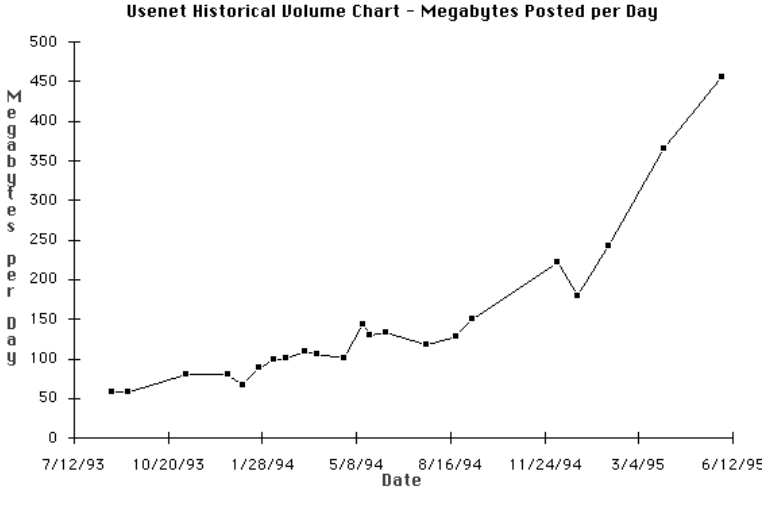
For a number of years Brian Reid from Digital Equipment Corporation has been generating statistics on the size of Usenet—monitoring the number of articles passing through backbone Internet sites and estimating how many users worldwide read the different newsgroups.

The Web site *http://www.tlsoft.com/arbitron/* contains more detailed information on this, but below are two of their charts illustrating the growth in Usenet over the last few years.



The chart above shows how many articles have been posted to Usenet newsgroups over a 14-day period for the last two years. In the summer of 1993, when the Internet was starting to experience its huge increase in size, there were about 400,000 articles posted every two weeks. In just two years this figure grew to 1.8 million articles every fortnight. The trend is continuing.

If you think that's bad, take a look at the chart below. Not only has the number of articles posted increased but the size of the average article has rocketed. This is because of the popularity of the binaries (non-text) groups,



especially the picture groups. This second chart shows the massive increase which has occurred in the same two year period. Fifty megabytes were required to store one day's news postings in 1993. By the summer of 1995 you needed almost half of a gigabyte for just one day!

For comparison, back in 1991 before the Web was around and when email and Usenet news were the most popular applications on the Internet, a full day's newsfeed required 17 megabytes. That's 17Mb to 450Mb in four years—an increase by a factor of 25.

All these figures have been taken from Brian Reid's readership reports. On the opposite page is a cut-down report from July 1995. Only the top 50 newsgroups are listed, along with the top five Amiga groups. The net has grown significantly since this report so you can expect all the figure shown to have increased substantially.

The most important thing to learn from this report is the potential number of readers that will come across anything you post to Usenet. About 30,000 people might read that post about how to get your widget working—that's a lot of collective time potentially wasted, especially if you figured it out yourself 30 minutes after posting the message... So think before you post!

The old saying

Usenet is steeped in folklore but if there's one thing you should know about Usenet it's the saying: "Oh, I read it on Usenet, so it must be true!" Usenet is great fun, you can learn a lot, just don't believe everything you read!

```
From: reid@pa.dec.com (Brian Reid)
Newsgroups: news.lists
Subject: USENET Readership report for Jul 95
Date: 6 Aug 1995 17:17:54 -0700
Organization: DEC Network Systems Laboratory
Lines: 3108
This is the full set of data from the USENET readership report for Jul 95.
Explanations of the figures are in a companion posting.
        +- Estimated total number of people who read the group, worldwide.
        |     +- Actual number of readers in sampled population
        |     |     +- Propagation: how many sites receive this group at all
        |     |     |      +- Recent traffic (messages per month)
        |     |     |      |      +- Recent traffic (megabytes per month)
        |     |     |      |      |      +- Crossposting percentage
        |     |     |      |      |      |    +- Cost ratio: $US/month/rdr
        |     |     |      |      |      |    |      +- Share: % of newsrders
        |     |     |      |      |      |    |      |   who read this group.
        V     V     V      V      V      V    V      V
   1 510000  3373   91%    39     0.6    22%  0.00   5.7%  news.announce.newusers
   2 260000  2759   57% 11408    11.5    46%  0.02   4.6%  alt.sex
   3 240000  1796   80%    78     0.3     0%  0.00   3.0%  rec.humor.funny
   4 220000  2508   51%  8307    58.7    34%  0.12   4.2%  alt.sex.stories
   5 200000  1348   88%  2451     0.5    99%  0.00   2.3%  news.answers
   6 180000  1205   87%     1     0.0     0%  0.00   2.0%  news.announce.important
   7 170000  2218   47% 18619   829.6    25%  2.00   3.7%  alt.binaries.pictures.erotica
   8 170000  1244   80% 34342    51.9    24%  0.22   2.1%  misc.jobs.offered
   9 160000  1119   87%  8296    14.0     2%  0.07   1.9%  news.newusers.questions
  10 150000  1104   83%  5161     7.0    21%  0.03   1.8%  comp.lang.c
  11 150000  1064   84%  1718     2.9    20%  0.01   1.8%  comp.unix.questions
  12 140000  1263   65%    39     0.4     0%  0.00   2.1%  rec.arts.erotica
  13 140000  1070   78%  4752     7.1    14%  0.04   1.8%  rec.humor
  14 120000   996   74%   146     0.7    16%  0.00   1.7%  rec.arts.movies.reviews
  15 120000   888   81%     3     0.1     0%  0.00   1.5%  comp.risks
  16 120000   798   87%  5998    10.6    21%  0.07   1.3%  news.groups
  17 110000  1164   57%  5158     6.7     2%  0.03   2.0%  alt.tv.simpsons
  18 110000   870   74%   399     1.3     1%  0.01   1.5%  rec.food.recipes
  19 110000   719   89%   184     1.5     1%  0.01   1.2%  news.announce.newgroups
  20 100000   754   82%  5875     8.3    22%  0.06   1.3%  comp.lang.c++
  21  99000  1104   54%  6499    13.6    22%  0.07   1.8%  alt.sex.bondage
  22  98000   812   72%    48     0.2     2%  0.00   1.4%  rec.arts.startrek.info
  23  95000   722   78%  1928     2.4    37%  0.02   1.2%  misc.jobs.misc
  24  93000   748   74%  2056     2.2    21%  0.02   1.3%  rec.video
  25  92000   776   71%  5738     7.4    26%  0.05   1.3%  rec.arts.startrek.current
  26  90000   708   76% 15736    20.3    33%  0.15   1.2%  misc.jobs.contract
  27  89000  1063   50%  5543    10.0    12%  0.05   1.8%  alt.sex.movies
  28  89000   834   63%  1687     3.2    20%  0.02   1.4%  alt.bbs
  29  89000   698   76%   166     0.6     6%  0.00   1.2%  comp.os.linux.announce
  30  88000  1325   40% 11218   375.9    46%  1.50   2.2%  alt.binaries.pictures.erotica.female
  31  87000   724   72%  1423     2.4    43%  0.02   1.2%  misc.education
  32  87000   645   81%   245     1.1     1%  0.01   1.1%  comp.dcom.telecom
  33  86000   586   88%    66     1.8     6%  0.02   1.0%  news.lists
  34  84000   705   71%  4582     7.3     3%  0.06   1.2%  rec.nude
  35  82000  1016   48%   814     0.9    48%  0.00   1.7%  alt.sex.stories.d
  36  82000   650   75%  9137    13.7     5%  0.11   1.1%  rec.food.cooking
  37  81000   687   71%  4400     8.9     9%  0.07   1.2%  rec.sport.baseball
  38  79000   600   78%  1863     3.1    28%  0.03   1.0%  comp.graphics
  39  79000   561   84%  5027     8.0     5%  0.08   0.9%  comp.dcom.modems
  40  78000   813   57%  5952     7.3    24%  0.05   1.4%  alt.personals
  41  78000   782   59%  5793     8.8    72%  0.06   1.3%  alt.activism
  42  78000   655   71%  2499     5.2    45%  0.04   1.1%  rec.arts.startrek.misc
  43  77000   594   78%  2439     8.4    11%  0.08   1.0%  misc.jobs.resumes
  44  75000   824   54%  8028     9.0    23%  0.06   1.4%  alt.music.alternative
  45  75000   596   75%  2277     3.9     9%  0.04   1.0%  rec.radio.amateur.misc
  46  75000   563   79%  3223     3.0    36%  0.03   0.9%  comp.sys.mac.hardware
  47  74000  1049   42%  9762   177.1    28%  0.90   1.8%  alt.binaries.pictures.supermodels
  48  73000  1154   38%  5066    90.1    50%  0.42   1.9%  alt.binaries.pictures.erotica.blondes
  49  71000  1189   36%  3168     5.5    58%  0.03   2.0%  alt.sex.voyeurism
  50  71000  1140   37%  3681    22.3    59%  0.10   1.9%  alt.sex.exhibitionism

  57  70000   571   73%    63     0.2     0%  0.00   1.0%  comp.sys.amiga.announce
 306  36000   291   75%  4181     7.1    10%  0.13   0.5%  comp.sys.amiga.misc
 353  33000   266   74%  2116     2.3     3%  0.05   0.4%  comp.sys.amiga.marketplace
 413  31000   243   76%  2990     4.0    14%  0.09   0.4%  comp.sys.amiga.hardware
 469  29000   233   75%  7368     6.9    59%  0.16   0.4%  comp.sys.amiga.advocacy
```

Serious surfin' with ISDN

Okay, so you're online, you're downloading files, you're surfin' through Web pages, but it's a little slow, right? That extra bit of speed wouldn't go amiss now, would it?

The Integrated Services Digital Network (ISDN) could be just what you're looking for. Available in most parts of Europe now, Euro-ISDN provides you with two 64 Kbit/sec channels straight into your Amiga. A phone call to your local telephone company is all that's required. There has to be a catch, right?

Right. ISDN doesn't come cheap.

What do I need?

At the time of writing only one ISDN card is available for the Amiga—the ISDNMaster by AlfaData Technic Corp. It's a Zorro-II card for the Amiga 2000/3000/4000 and costs about DM900 (£365). Alan Berney has written a review for *comp.sys.amiga.reviews* which is available on Aminet as "docs/rview/ISDNMaster.txt".

If you can't get an internal ISDN card then the next best thing is an ISDN terminal adapter. These boxes are sometimes referred to as "ISDN modems". While this description gets the right idea across, it is technically incorrect and should be avoided. ISDN is an end-to-end digital network and no modulation or demodulation into analog signals takes place at any stage. Basically, a terminal adapter is a box with an RS-232 port on one side and an ISDN socket on the other. They often even accept Hayes modem commands so you can just plug in to your serial port and go.

A good example of a fully featured terminal adapter is the ZyXEL 2864I. This is a combined V.34 modem and ISDN terminal adapter. The V.34 side allows you to make 28.8K connections to other modems, while the terminal adapter side lets you make true ISDN calls. It can also send and receive faxes, plus it has built in voice capabilities allowing it to act as an answering machine. Truly an integrated solution! If you're serious about moving to ISDN and haven't bought a 28.8K modem yet, this might be for you.

Because ISDN calls can deliver a 128Kbps data stream, some terminal adapters allow you to use your parallel port for connection. Custom software is provided that can handle this scenario. Otherwise, the terminal adapter's serial port will run up to either 115Kbps or 230Kbps. If either your computer or your terminal adapter limits you to a 115Kbps serial connection, then you will not be able to make full use of a 128Kbps connection.

What about my telephone?

You can keep your normal telephone for phone calls if you like. You may not need your modem any more though. A basic rate ISDN connection is delivered to your house from the telephone company as a box on the wall which you can plug your ISDN equipment into. You can't plug a normal telephone, fax machine or modem into it though, you have to buy the proper ISDN equipment, which can be pricey. The box usually provides you with an ISDN bus, and you can connect up to eight ISDN devices to it.

ISDN uses a system called multiple subscriber numbering (MSN) which allows you to allocate multiple E.164 addresses (telephone numbers) to your ISDN bus. For example, when you order your basic rate connection the telephone company might provide you with two telephone numbers. If you intend to

use only two 64K devices on your ISDN bus, then these two numbers might effectively map on to the two B channels (64K channels) and hence on to the two ISDN devices.

However, if you plan to use, say, four devices on your network—a telephone, a fax machine, a computer and a videophone for example—then you're going to need more than two numbers. The telephone company will rent you another two numbers and you can now assign a unique number to each of your four devices. The obvious catch is that since you only have two B channels, only two devices can be active at the same time.

What can I use it for?

The primary use of ISDN will be to make 64 or 128Kbps data calls. These could be to a local BBS or Internet Service Provider. Bear in mind though that the person you're calling must also have ISDN equipment installed to take your call.

This isn't the case for regular telephone or fax calls. You can call and be called by normal public switched telephone network (PSTN) telephones and fax machines. So once you have ISDN installed there is no need for a conventional telephone connection. But there is a need for ISDN equipment because you can't plug normal PSTN equipment into an ISDN network.

Most demonstrations of ISDN you'll see will probably include some form of video conferencing. Most systems make use of both B channels. For example, one channel could be used for a crystal-clear audio connection and the other for a H.261 compressed video stream and application sharing.

Where now?

Probably the best place to start looking for more information on ISDN is the Usenet newsgroup *comp.dcom.isdn*. The frequently asked questions (FAQ) file from the group is also well worth a read. The FAQ is posted to the group biweekly. It is also available for anonymous FTP from *rtfm.mit.edu* as "/pub/usenet/news.answers/isdn-faq".

If you have World Wide Web access you should check out Dan Kegel's ISDN Page at *http://alumni.caltech.edu/~dank/isdn/*. It has pointers to lots of ISDN related information on the Web and links to ISDN equipment vendors.

The verdict

Unfortunately, ISDN doesn't cheap. You'll have to pay more for your ISDN connection, rental and calls than you would with a normal telephone line. ISDN equipment is more expensive too. But what you're buying is speed, flexibility and a piece of the future!

Software checklist

Below you will find a list of almost every piece of software discussed in this book. You don't need to get everything here, but you'll probably want to try out most of them at some stage so that you can pick your own personal favourites.

TERMINAL	OPTIONS	LOCATION
	NComm	comm/term/ncomm30.lha
	Term	comm/term/term_main.lha
	Termite	HiSoft Systems (01525 718181)

TCP/IP STACK	OPTIONS	LOCATION
	AmiTCP	Blittersoft (01908 261466)
	Inet-225	info@iworks.com
	Multilink	comm/net/mlink132.lha
	Termite TCP	HiSoft Systems (01525 718181)

DIALERS/PPP	OPTIONS	LOCATION
	GPDial	comm/tcp/GPDialv1.0.lha
	IPDial	comm/tcp/IPDialv19.lha
	NetDial	comm/tcp/Netdial4_0.lha
	PPP	comm/net/PPP1_45.lha

EMAIL	OPTIONS	LOCATION
	AmigaELM	comm/mail/AmigaElm-v8.lha
	AmigaPINE	comm/mail/pine391a_base.lha
		comm/mail/pine391a_all.lha
	Voodoo	comm/mail/Voodoo-1.209.lha

USENET NEWS	OPTIONS	LOCATION
	GRn	comm/news/GRn-2.1a.lha
	THOR	comm/mail/thor222_main.lha
		comm/mail/thor222_inet.lha
	Tin	comm/news/tin130gamma.lha

FTP	OPTIONS	LOCATION
	AmFTP	comm/tcp/AmFTP152.lha
	DaFTP	http://artech.warped.com/~danimal/DaFTP.html
	Gui-FTP	comm/tcp/Gui-FTP.lha

IRC	OPTIONS	LOCATION
	AmIRC	comm/tcp/AmIRC.lha
	Grapevine	comm/net/grapevine.lha

GOPHER	OPTIONS	LOCATION
	Gopher	comm/tcp/gopher.lha

AMINET TOOL	OPTIONS	LOCATION
	MuiADT	comm/tcp/MUIAdt.lha

CONFERENCING	OPTIONS	LOCATION
	ACUSeeMe	comm/tcp/acuseeme2_02.lha
	AmiTALK	comm/tcp/AmiTALK155.lha

WEB BROWSER	OPTIONS	LOCATION
	ALynx	comm/net/ALynx.lha
	AMosaic	ftp.omnipresence.com:/pub/amiga/amosaic/
	AWeb	comm/tcp/AWeb.lha
	IBrowse	HiSoft Systems (01525 718181)
	Mindwalker	Amiga Technologies

HTML TOOL	OPTIONS	LOCATION
	guide2html	*text/hyper/guide2html.lha*
	HTML-Heaven	*text/hyper/HTML-Heaven.lha*
	WebMaker	*text/hyper/WebMaker1_1.lha*

UTILITIES	OPTIONS	LOCATION
	LHA	*util/arc/lha_e138.run*
	MUI	*dev/gui/mui33usr.lha*
	UUcode	*util/arc/uucode.lha*

The future

Java

The Web is great. Text, pictures, sound and sometimes even the odd little movie clip you can click on. All very nice, but all a bit static. Java is a programming language that can be used to create "executable content" on a Web page. Instead of having just a picture, why not have an animation? Instead of waiting for a movie clip to download, why not just play it live as it comes across the Internet?

Java allows you to create small applications called applets which can be embedded in Web pages. Any application you can write in a conventional programming language, you can write in Java. Web pages will become more like applications. You'll start up your Web browser and go to "the spreadsheet page". Your browser will download the applet code for the spreadsheet and actually run it on your computer.

It's happening already. Check it out for yourself at *http://java.sun.com/*.

Electronic Cash

There are a number of digital cash or ecash systems in operation on the Internet today—*http://www.firstvirtual.com/* for example. The idea is that you sign up with a virtual bank by giving them your credit card details (by voice over the telephone) and in return you get a PIN number which you can use over the Internet to go shopping.

If you want to buy something over the Internet, you send your PIN number to the seller, who then requests the money from the virtual bank using your PIN. The bank contacts you by email to check that this is a valid transaction. You can then send an email reply to accept or reject the withdrawal. The whole point of the system is that your credit card details are never sent across the network so are not vulnerable to attacks.

Video Conferencing

Ah. The Holy Grail of telecommunications. Despite all recent advances in technology, good quality desktop video conferencing is still not with us. At least, not unless you have a very large bank balance. The race is on to integrate live video conferencing and the Web. You'll be able to go to someone's Web page, click on a button that says "Call me", and start a conference with them while actually "on" their page. They will appear inside your Web browser. It might seem a bit far fetched, but there are lots of companies who are spending a lot of time trying to squeeze good quality audio and reasonable picture quality down a 28.8K modem line.

One of the first off the mark is at *http://www.vdolive.com/*.

Virtual Reality

It'll probably be a while before headsets take off but the building blocks are definitely starting to come together for VR on the Internet. A language called Virtual Reality Modeling Language (VRML) has been created which allows you to describe a three-dimensional world in a text file. You can use all kinds of fancy graphical editing programs to model and create this 3D world, but because it's stored as a simple file it can be transferred in exactly the same way as a HTML file on the Web.

This leads to scenarios of not only being able to visit a museum's Web pages, but by using your mouse and Web browser to actually navigate around a

virtual representation of a museum and see its exhibits for yourself. Of course, since it's the Web, any object in a room in the virtual museum can be a link, so you can just click on that object and... anything could happen. You might just get more information on that particular object, or you might be whisked away to an entirely different virtual world somewhere else on the Web.

Sound a bit far fetched? Check out *http://www.sdsc.edu/vrml/*.

The Set-top Box

This will be probably the most likely home consumer electronics device to affect most people in the next decade. The set-top box is essentially a computer in a box that will sit on top of your television at home and let you access all the kinds of services that are now appearing on the Internet that you can access with a computer, but you'll be able to use from the comfort of your armchair with a simple remote control.

The Amiga tie-in here is a company called VIScorp (*http://www.vistv.com*), who originally just licensed the use of the Amiga chipset to create a set-top box which would essentially be a stripped down Amiga, but now owns Amiga Technologies outright.

Another company, TVInet Ltd (*http://www.tvinet.com/tvi/*), are planning something similar and hope to incorporate technologies such as Java in order to build a set-top box that has a Web browser built-in to the system so that the unit will be as simple to use as a VCR or Hi-fi.

Internet domains

Here are some Internet domain names you will come across while surfing the net. It's useful to get to know them as you can often tell where a site on the Internet is physically located or where a person lives from their email address or URL.

Some European domains

.at	Austria
.be	Belgium
.ch	Switzerland
.de	Germany
.dk	Denmark
.es	Spain
.fi	Finland
.fr	France
.gr	Greece
.ie	Ireland
.it	Italy
.lu	Luxembourg
.nl	Netherlands
.no	Norway
.pl	Poland
.pt	Portugal
.se	Sweden
.uk	United Kingdom

Some international domains

.au	Australia
.ca	Canada
.jp	Japan
.nz	New Zealand
.za	South Africa
.us	United States

Some United States domains

.com	US Commercial
.edu	US Educational
.gov	US Government
.mil	US Military

Two more domains you'll run in to

.net	Miscellaneous Network
.org	Non-Profit Organization

And finally...

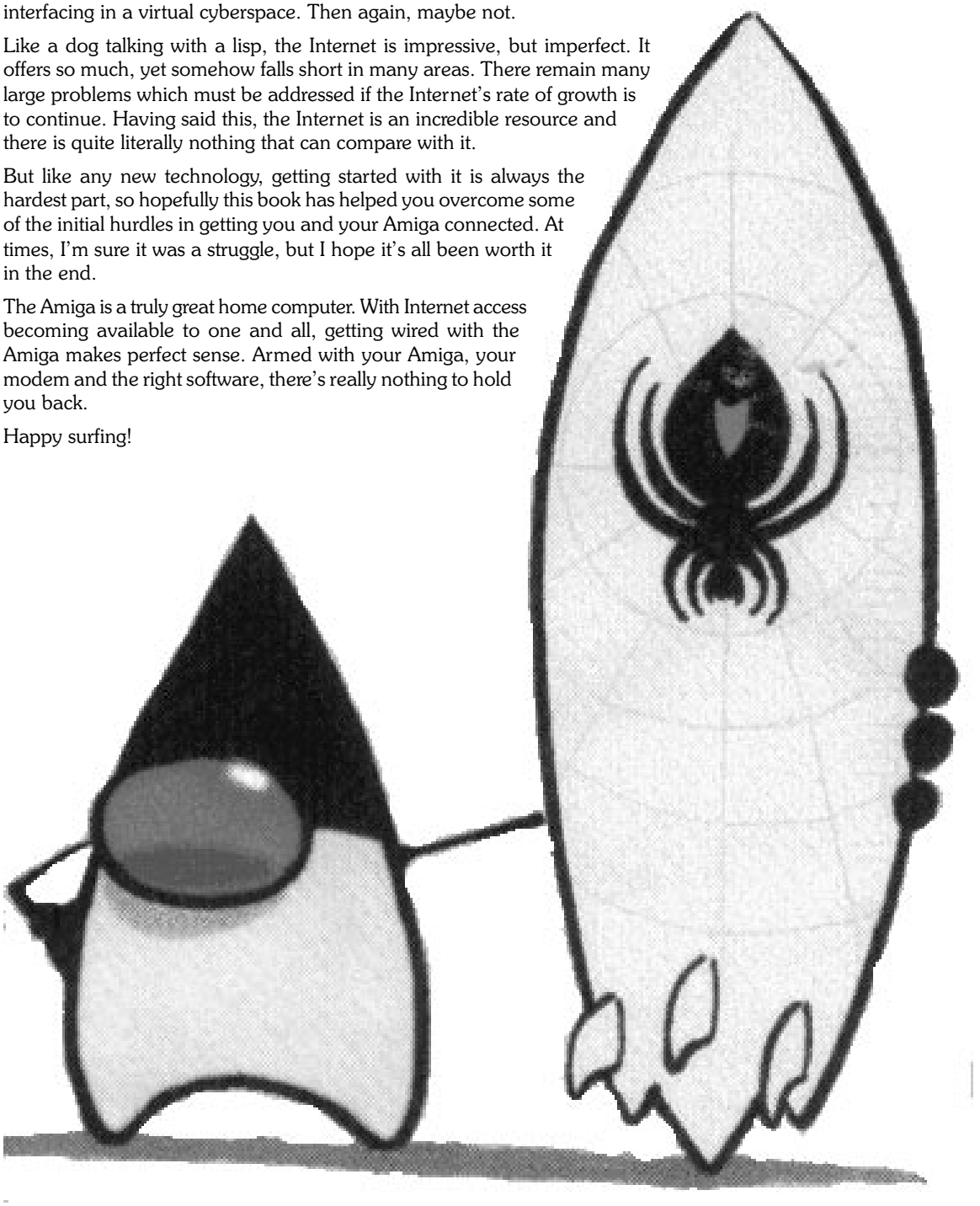
So that's it—the Internet. Not quite the much hyped information superhighway just yet, but it's getting there. No doubt in the not too distant future we'll all be wearing virtual reality headsets and spending our lives interfacing in a virtual cyberspace. Then again, maybe not.

Like a dog talking with a lisp, the Internet is impressive, but imperfect. It offers so much, yet somehow falls short in many areas. There remain many large problems which must be addressed if the Internet's rate of growth is to continue. Having said this, the Internet is an incredible resource and there is quite literally nothing that can compare with it.

But like any new technology, getting started with it is always the hardest part, so hopefully this book has helped you overcome some of the initial hurdles in getting you and your Amiga connected. At times, I'm sure it was a struggle, but I hope it's all been worth it in the end.

The Amiga is a truly great home computer. With Internet access becoming available to one and all, getting wired with the Amiga makes perfect sense. Armed with your Amiga, your modem and the right software, there's really nothing to hold you back.

Happy surfing!



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Does it make you mad when instruction books take for granted that you understand the jargon?

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Although Making the Most of Midi explains the fundamentals of Midi and Midi sequencing for the beginner, it goes much further, dealing with issues that will be of help to more established users.

The author, Paul Overaa, has been working with Midi almost since its inception in the early 1980s. He has worked with Midi using PC computers, Atari STs, and the Amiga. That work includes both reviewing and using vast amounts of Midi software, and writing his own Midi utilities. Paul uses Midi sequencers in a professional capacity, both in the studio and when playing live, so he can throw some light on the practical issues as well as tackling the technical stuff.

Most books which introduce you to Midi do so in ways which are essentially non-technical. The arguments here being that most musicians who want to use Midi are not really interested in what's happening under the surface. Paul's view is that the technical side is too important to dismiss in this way.

Paul has produced a book which looks at various Midi technical issues but explains them in terms that all Midi users will be able to understand. He has also examined some of the more complex issues, including details about fault finding and how Midi oriented computer programs are written.

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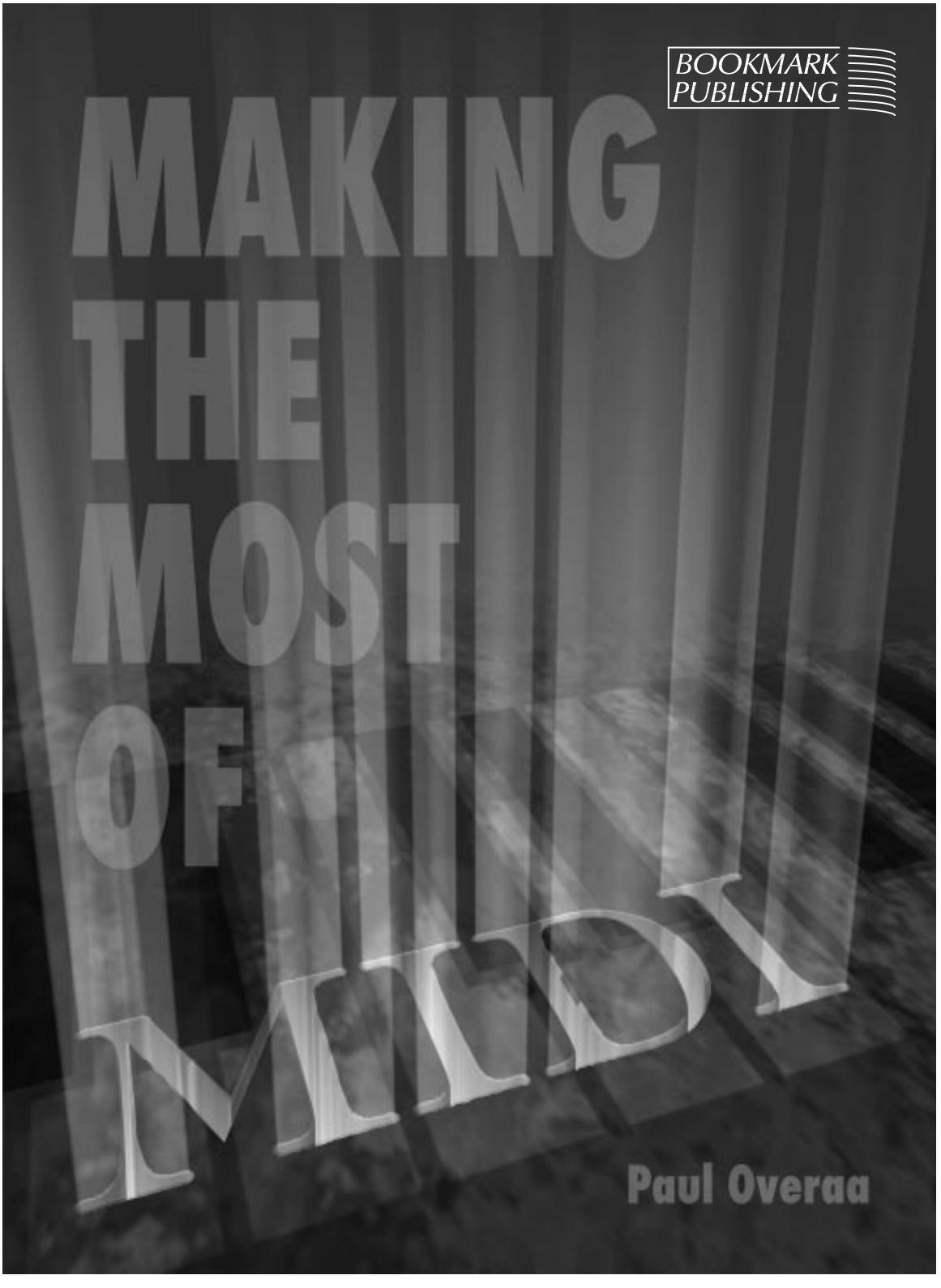
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Publication date: Autumn 1996

Making the Most of Wordworth

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