

**FIRST
STEPS
AMIGA**

SURFIN'

AMIGA SURFIN'

Karl Jeacle

**BOOKMARK
PUBLISHING**

**First Steps Amiga Surfin'
by Karl Jeacle**

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Foreword

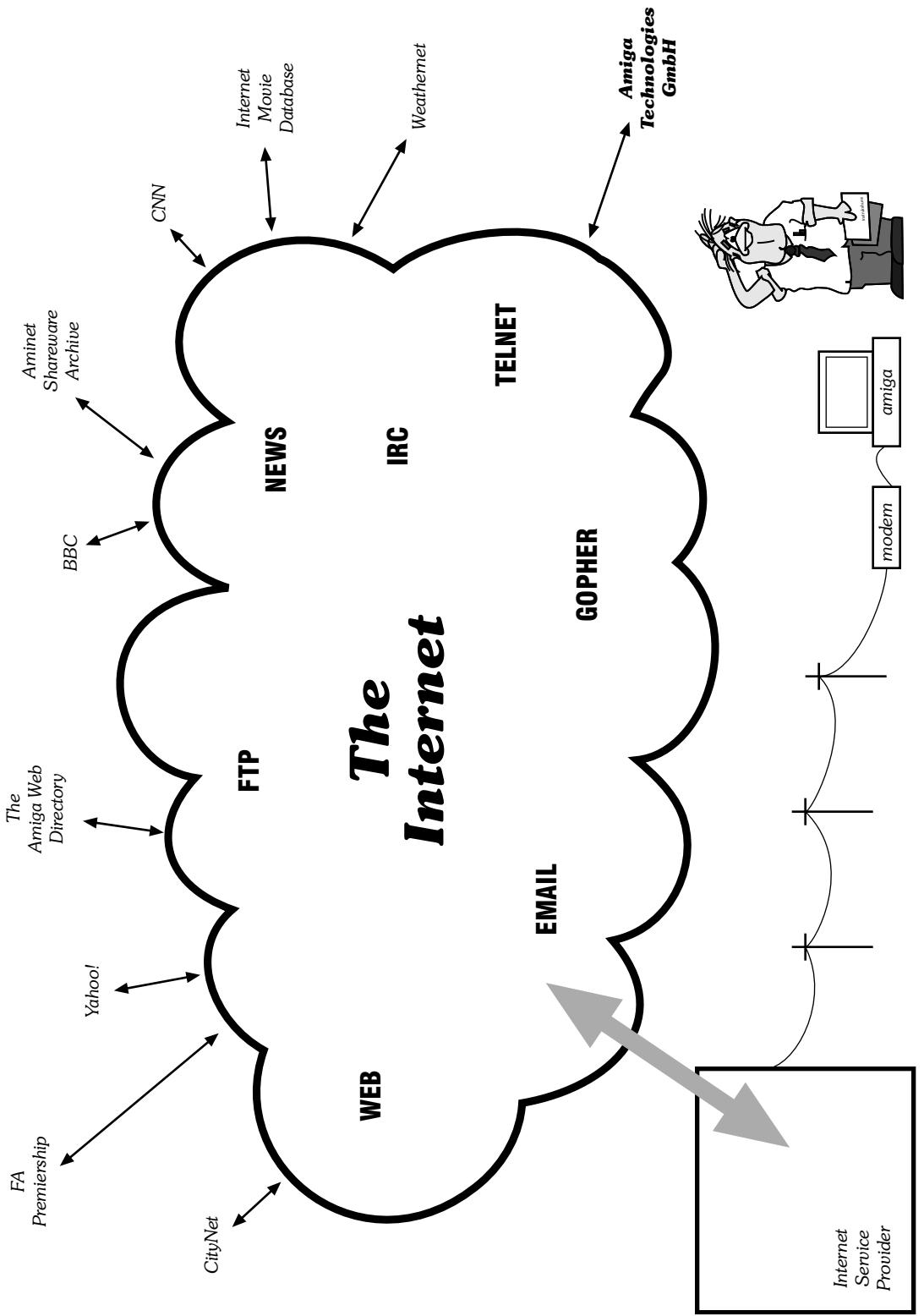
Welcome to the Internet! You've read about it in magazines, you've heard about it on the radio, you've even seen it on television. Well now here's your chance to get connected and experience the Internet for yourself.

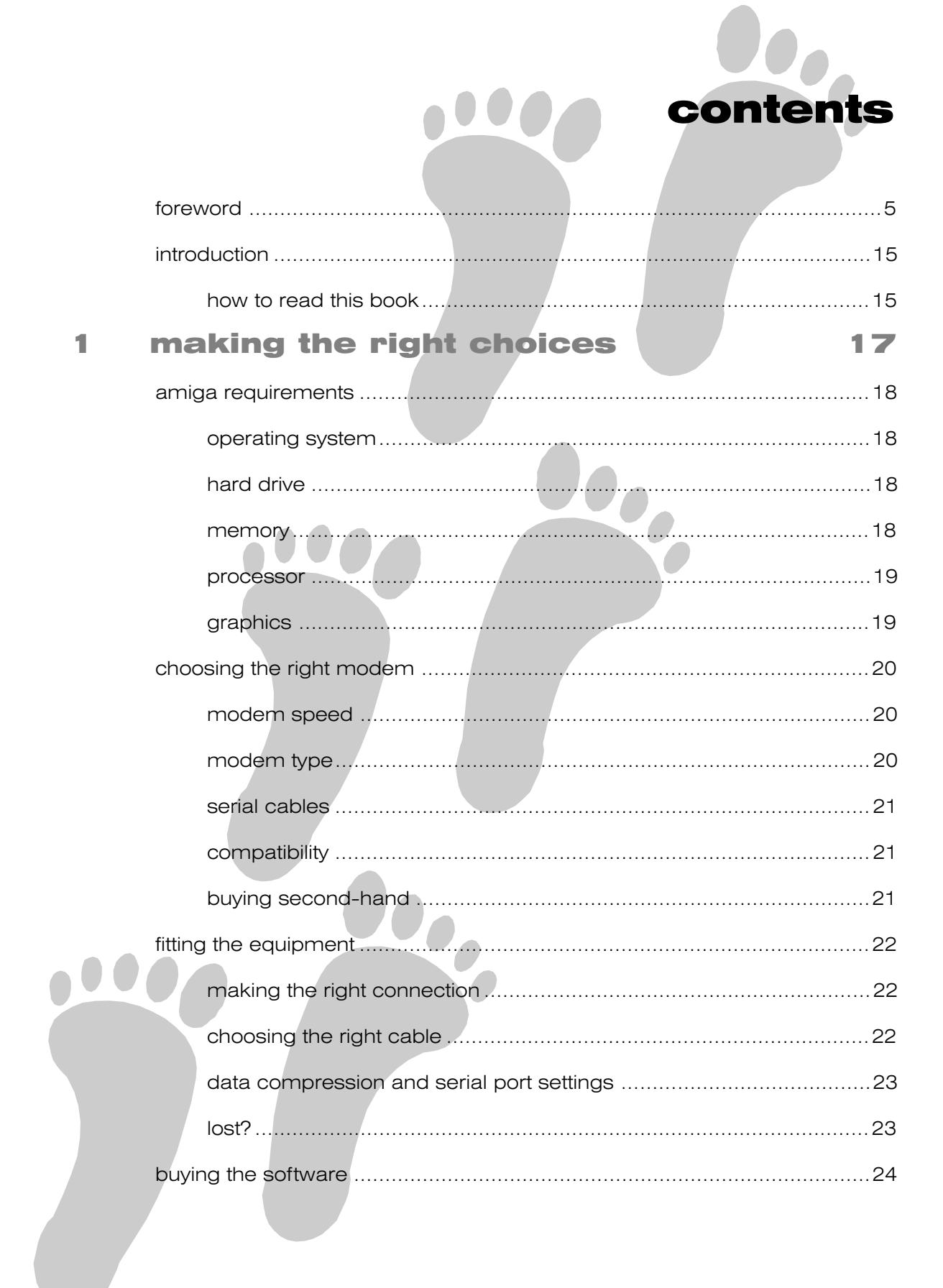
This book will help you transform a basic Amiga hooked up to a TV into a powerful Internet workstation! You don't have to be an expert to read this book, we'll take you through the basics of buying the right hardware and software and how to configure them on your Amiga, and then explain how to install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

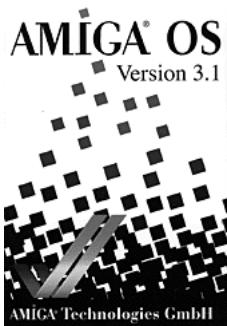
That's it. There's no looking back now. Read on. And start surfing!



*makin
the
right
choices*

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





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

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

The version of AmigaOS 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 AmigaOS 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 AmigaOS 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.

Graphics

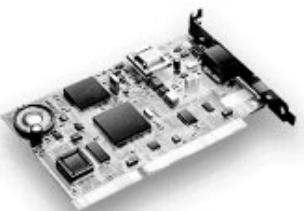
Most Internet applications have no specific graphics requirements, so the Amiga is over-specified in this area. However, the reason the World Wide Web has become so popular is because it has a point-and-click graphical front-end. To display the Web in all its glory you'll need to display 256 colours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

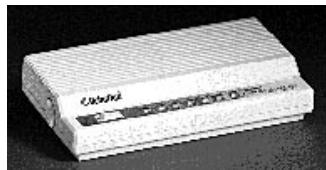
If you have a “big-box” Amiga and have slots available, then, if you can afford it, a graphics card will work wonders for you. If you already have AGA a graphics card might be considered a bit of a luxury, but most of the Amiga graphics cards on the market today offer high-resolution displays with at 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.



The Amiga 1200 is a perfect Internet starter machine.



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



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



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

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.

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.

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.

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.

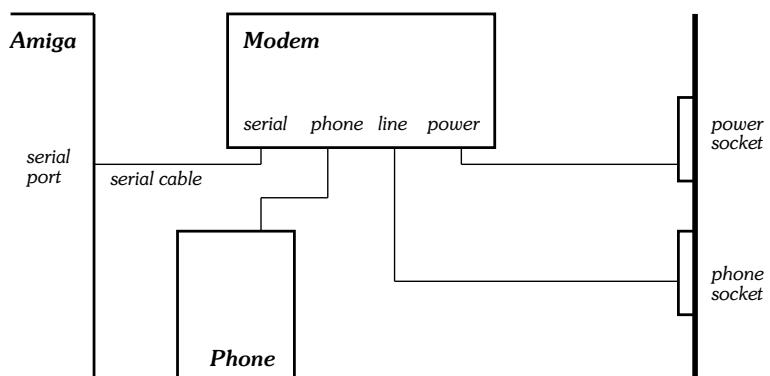
Fitting the equipment

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.

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.

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.

Buying the software

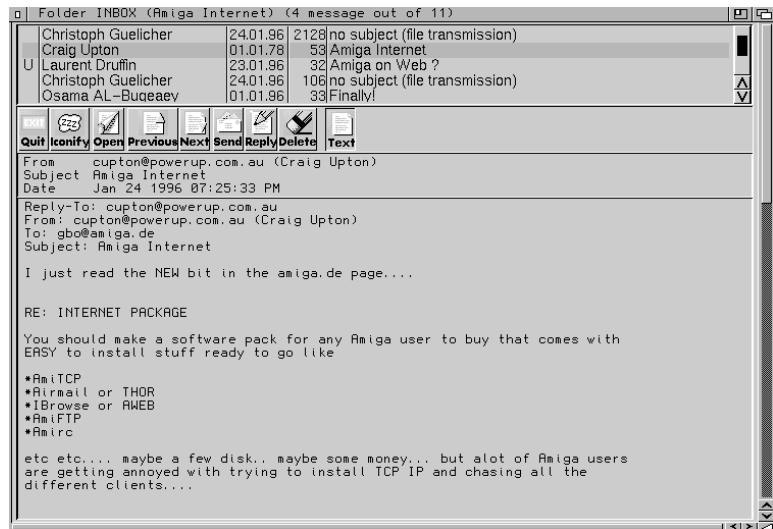
In this section we'll look at the different types of Amiga software you'll need to use the Internet. The diagram to the left will give you an idea of all the pieces of software you'll need and how they fit together.

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.



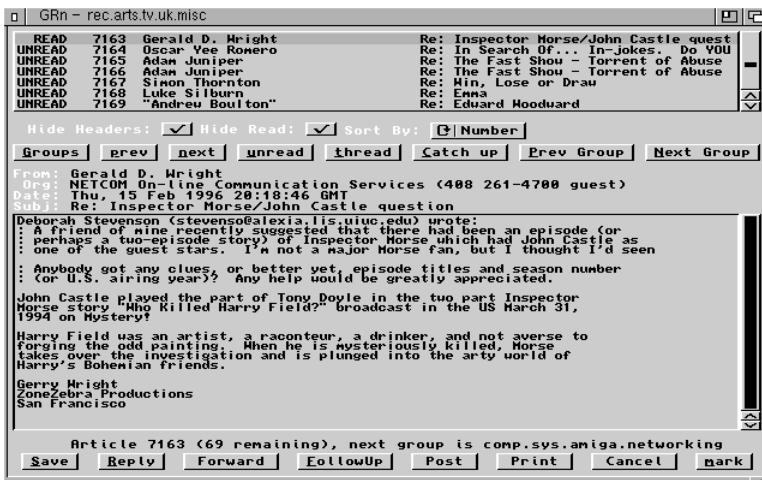
Email is cheap, convenient and above all fast! Once you've made the phone call to your ISP and are online, sending an email to anywhere in the world costs you nothing. Not a sausage.

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.



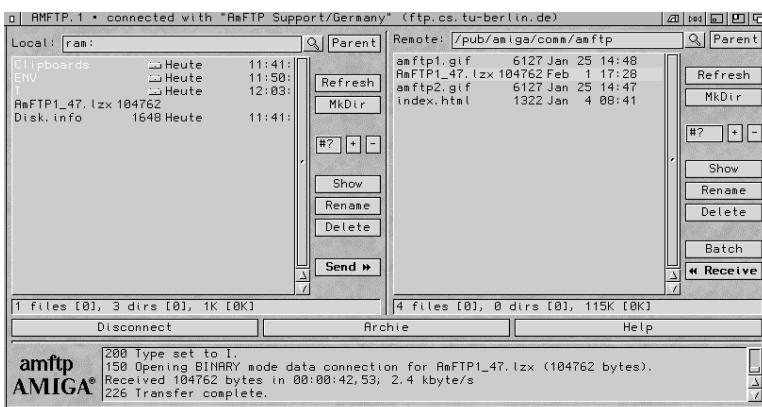
Naturally, being a computer network many of the Usenet newsgroups have a technical content—there are about 20 Amiga specific newsgroups for example—but there are also many non-technical groups.

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

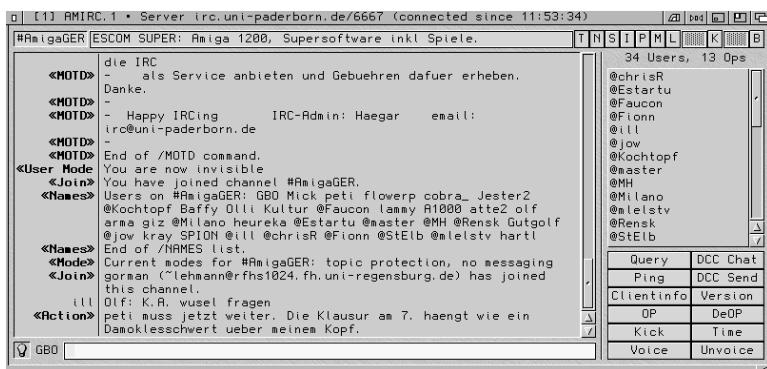
One of the earliest services available on the Internet, and still one of the most useful, is the ability to transfer files. A convention called the File Transfer Protocol (FTP) was developed as a standard for file exchange between computers, regardless of the operating system used on machines. Sites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



