



AMAZING INTERNET TECHNICAL BULLETIN

For broad publication – Copyright notices and acknowledgement must be maintained

15 May, 2002

SO WHAT IS 'BROADBAND'?

So you've all heard about the Internet revolution known as 'broadband', right? If not then you soon will! This document is intended to give you an understanding of what the new 'best thing since sliced bread' is.

The term 'broadband' applies to two things:

1. The delivery of large amounts of data from websites, or other Internet resources, such as movies, Internet radio, graphic intensive websites, etc.
2. High-speed consumer connections to the Internet.

The definition used in this document is the second though having the second allows the first.

Some History

Until recently the only cost effective way of accessing the collection of computers and networks that is the Internet was by regular telephone line (POTS¹) and a modem² device plugged into your computer. Using a regular modem has many drawbacks that most of you will be familiar with:

- The wait for a connection to be established while you sit twiddling your fingers
- The wait for your email and websites to download to your computer
- The frustration when the connection is mysteriously dropped in the middle of a large download
- The drop in bank balance from those all-night gaming sessions

Well, never fear – you can now forget the pains of using the Internet with... da da da (trumpets blare, drums roll) BROADBAND!

Introducing ADSL

ADSL is Asymmetric Digital Subscriber Loop. I'll explain what that means in parts:

The Subscriber Loop (sometimes referred to as the local loop) is the part of the telephone network that runs from your house/business to the telephone exchange – typically a pair of copper wires. Because of the traditional nature of telephone usage, the local loop is

¹ Plain Old Telephone Service: refers to a regular household type phone line used for voice calls that you have in your home.

² MOdulate – DEModulate: a device for converting one type of signal to another (and back again at the end of a connection). A regular computer type modem converts computer signals into audio signals that can be sent down a POTS line and converted back to computer signals at the other end.

optimised for transmitting voice signals – this is why you need a telephone modem in your computer to connect to the Internet.

The Digital part of the name refers to the way the signal is sent – digital instead of analogue. I'm not going to get into technical speak here, so I'll explain this by using something we all know about – music. Remember records and vinyl? They were (and still are) analogue recordings. Touted as their replacement are CD's. Digital recordings. That gives you a vague idea of the difference that will suffice. I'll cover this thoroughly in a later paper.

Asymmetric refers to the fact that the connection speed is different going to the Internet than coming from the Internet – it's faster coming from the Internet because when you're surfing or collecting your email, most of the data is coming from the Internet to you.

Now let's take a quick look at how it works.

Because of the nature of the POTS network, especially the local loop, the telephone companies need to work some technical magic to make ADSL work on our telephone lines. Extra equipment must be installed in the exchanges – this has already been done in about 400 exchanges around the UK – and a different telephone socket installed at your property. One cool thing about this is that you don't need an additional phone line, AND you can continue to use the modified line for regular telephone calls at the same time you are connected to the Internet!

So if you're within range of one of the 400 exchanges should you rush out and get ADSL? Well that depends. The current cost of a single user home connection is around £25-30 per month with no call charges plus a one-time connection fee. Do you spend that much already on connecting to the Internet? Are you fed up with the delays and slowness of the Internet? If you answered yes to either or both of these questions, then go for it – I can guarantee that the Internet is a whole new experience with ADSL.

Oh, and one other thing. ADSL is an always-on connection. That means you're connected to the Internet all the time! Don't forget to eat, sleep and go to work.

What are the benefits again?

Let me summarise the benefits for easy reference:

- One-off monthly fee with no per-minute charges
- Always-on connection; no delays connecting
- Approximately 10 times faster than a regular modem with the base ADSL package

With ADSL you can actually begin to really use the Internet as the powerful resource that it is.

What do I need for ADSL?

Again, I'll list out what you need in order to be able to switch to ADSL:

- Primarily you need to be within range of an ADSL upgraded exchange. You can check this on this page: <http://www.btopenworld.com/broadband/ava10>
- For the home user package, you need a computer that is supported by the ADSL provider. Mainly this means any of the Microsoft Windows variants newer than Windows 98, or MacOS 8.6 – 9.x. Other computers may be supported.
- Because of the 'always-on' nature of ADSL, you should install a firewall on your computer to prevent unwanted access to your computer. There are many firewalls available, two of which are:

- o Norton Personal Firewall (<http://www.symantec.com/sabu/nis/npf/>),
- o Zonelabs ZoneAlarm (<http://www.zonelabs.com/>)

What are the packages

ADSL connectivity comes in two flavours: a home user package and a business user package.

The home user version consists of a USB³ ADSL modem and connects to your computer via a USB port. It can only be used by a single computer.

The business version consists of an ADSL modem with network connectivity. You can simply plug this into your network. This allows multiple computers to share the connection. As with the above firewall recommendation for the home user package a firewall is essential, even more so in a business environment. In this environment I would recommend a dedicated firewall to protect the whole of your network.

Who are the providers?

As with a regular Internet connection, you need to have a provider in order to get ADSL connectivity to the Internet. There are a plethora of companies out there providing this service so I'll mention two and point you to this website: <http://www.adslguide.org.uk/>

The providers I'll mention are:

- For the home user package Pipex - <http://www.xtreme.pipex.net/adsl/sales/>
- For the business package InWeb - <http://www.inweb.co.uk/>

Disclaimer: whilst the above aren't recommendations, I do have reasons for choosing them. Pipex are currently one of the cheapest home user providers and are heavily promoting ADSL. This is a Good Thing. InWeb are the provider we use for our connectivity and we use them when doing ADSL network installations for our clients.

The Conclusion?

ADSL is great! It makes using the Internet and using your computer begin to merge into one. With ADSL and similar technologies the Internet is just another resource you have at your fingertips rather than something that you deliberately use.

I've been using ADSL to connect to the Internet for around 4 years now. I listen to Internet radio stations, research technical issues and of course, together with my workmates, publish websites. Most of all I send email. Lots of it! Without ADSL, I would spend most of my day hopelessly frustrated. I hope this document has answered your questions about ADSL and made you as excited about the future of the Internet as we are.

[RONNY ADSETTS](#)
Technical Director

³ Universal Serial Bus – a way of connecting devices to your computer such as printers, scanners, keyboards, mice, etc.