Connecting your Linux box to a Broadband network

NETWORKING

Linux is not supported by most Broadband ISPs, but that doesn't mean all is lost. Colin Murphy reveals why

Broadband A transmission medium capable of supporting a wide range of frequencies, typically from audio up to video frequencies. It can carry multiple signals by dividing the total capacity of the medium into multiple, independent bandwidth channels, where each channel operates only on a specific range of frequencies.

That's the technical definition anyway. For the purpose of this article broadband loosely refers to some means of Internet connection other than a standard dial up modem.

Wherefore art thou, cable?

The two major players in the UK cable market are ntl and blueyonder. Due to the way the cable franchises were distributed, back in the dim and distant past, we ended up with a geographic monopoly. Through a process of mergers and acquisitions, the cable television and Internet networks have for the main part been left in the hands of these two companies, though there are one or two independent areas still around.

Your particular local region will only be handled by the cable company that holds the franchise for that area, which doesn't leave much room for competition. Cable is costly to install, which is the reason given for the way the franchise process was handled. It's also the reason why you can't expect cable to be available nation-wide. If you can't get cable television in your area, then the harsh reality is that you won't be able to get cable Internet access either.

Even if you can get cable television in your area you still may not be in the clear: some of the older networks may not have been designed with aforethought and may not be capable of carrying broadband information. If this is the case then you'll just have to wait until the cable system in your area has been upgraded.

The only way to be sure is to contact the company's Web site and go through their availability ritual, which is usually laden with Flash animations, to make it that much more of a pain to look at via a dial-up modem.

There is one perceived problem with cable modem access, and that's contention. The physical connection between your PC and the cable company's network box in the street is shared by as many as 100 or so other users, which means you must share the available bandwidth. ADSL, which we will come onto in a moment, does not have this contention issue – a fact that is often used to claim superiority over cable. There are other factors that balance this out though, most importantly that the cable coax or fibre has a much higher bandwidth than the link used with ADSL.

On the plus side, if you are lucky enough to have access to a broadband Internet connection, the connection to a Linux system is fairly painless. With both blueYonder and ntl networks you simply need to run a network cable to the back of your set-top box and set up the Ethernet network protocols.

On installation, the engineer will want to register the MAC address of your network card which you can easily look up by inputting the command

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ifconfig
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into a terminal screen. This will present you with a list of parameters for each network card. You will want to quote the Hwaddr for the card you intend to connect your cable modem to.

Obviously, you might want to consider putting in a firewall to offer you a greater level of protection.

Neither of the cable companies actively support Linux systems, but there are very active Linux support groups for blueyonder, though I can't comment for ntl.

Broadband availability

Because of the lack of nationwide cable coverage, you'll need to check to see if broadband cable is available in your area:

blueyonder   http://www.blueyonder.co.uk
ntl   http://www.ntl.co.uk

More information about cable broadband in general, including availability, is available from:

http://www.cablemodeminfo.com/linbasics.x.html-ssi
http://www.by-users.co.uk/faqs/linux/index.htm

Community support for Linux users can be found on the Web

ADSL availability

You will need to confirm that you are in an area that is covered by ADSL. If your current ISP offers ADSL then you can check availability through them, otherwise you should try *http://www.btopenworld.com/broadband/* looking for their 'Availability' button.

For more information about ADSL see *http://www.adslguide.org.uk/links.asp*, and for more information about the Alcatel modems in particular see *http://www.linuxdude.co.uk/docs/Alcatel-Speedtouch-USB-mini-HOWTO/speedtouchusb.html*.

xDSL broadband

ADSL is the most common form of DSL broadband in the UK at the moment, but it still cannot offer a nationwide coverage. BT Ignite handles the ADSL connection but the service is sold through various other ISPs including BT's own BTopenworld. You'll need to be within 5.5km of the nearest equipped exchange, and there's the catch, as not all exchanges are up and running yet. Once again, you need to check availability through the BTopenworld Web page, which is not offered in plain text.

In the UK, broadband is supplied to domestic users with an Alcatel USB modem, limiting you to what type of equipment you can use. There is also a driver issue with these USB devices. Alcatel has produced drivers but they have received a mixed reception from Linux users. Work is constantly being done by Alcatel and other parties to try and improve this situation, but there is still some way to go before the matter is settled. The best way to stay up to date with the efficacy of domestic ADSL in this country is to keep an eye on the *uk.comp.os.linux* newsgroup

For businesses, or at least those that can write-off the additional expense, there is a more business-orientated service, which will enable you to use a straightforward Ethernet connection.

HomeChoice

HomeChoice are an ADSL service provider but with a difference. They've been set up to provide on-demand television, which is transmitted through ADSL cables, so you still need to be in an area where ADSL is available. The advantage with HomeChoice is they use their own set-top boxes to provide the television signals, but they also offer a serial port for data. There are no driver issues to worry about with a serial connection, as everything you need is provided in with the most basic Linux distributions. See their Web page *http://www.homechoice.co.uk/* for information. There is further help available from *http://www.maxuk.net/hc/faq.html*.

Wireless

This developing technology falls into two categories: microwave and satellite. The microwave technology is available now in selected areas, from companies such as Tele2 and on a trial basis from ntl. The ntl trials have been give a high rating by Linux users.
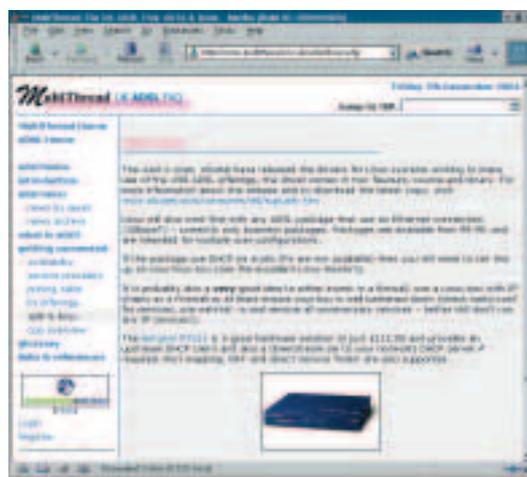
Much like with the ntl cable connection, this service uses a standard cable modem connected to the computer using an Ethernet card (10/100mbps). USB connection is also available, but there is still no knowledge base as to how well this would work. Systems will be allocated a single public IP address via a DHCP server and ntl recommends that you take appropriate precautions (i.e. install a firewall, anti-virus software, etc.) to protect your system from the risk of attack.

Typical downloads speeds will be up to 512kbps, though actual speeds may vary depending on Internet traffic loads.

Satellite

Could the future lie in the stars? Perhaps it will, as this technology should see the end to regional problems. Broadband delivery systems have been supplied by satellite for sometime – anyone who has used Sky Interactive will be able to vouch for that. Unfortunately, the return path is less than fast, and usually calls on the use of a 56Kb modem. I don't think anyone is going to consider having this sort of system installed as a standalone Internet service.

The future is changing though and two-way satellite connectivity is a reality – albeit a very costly one, at present. For the moment at least there's no reason why you can't use these types of services with your Linux boxes, as they use standard Ethernet connections to their modem devices.

ADSL under Linux