Broadband basics

Many of us would be completely lost without the internet.

We use it to keep in touch, to find information and to watch our favourite films and TV shows.

It can also be vital for work, to shop and bank - and we can do all this from our homes thanks to broadband.

If you're new to broadband and want to find out more about it, or how to get the most from your existing service, then read on.

What is broadband?

Broadband is a way of connecting to the internet. It allows information to be carried at high speed to your personal computer, laptop, tablet, smartphone, smart TV or other web-enabled device.

Broadband has largely replaced the original 'dial-up' (narrowband) method of connecting to the internet, which was much slower.

What types of broadband are available?

The three most common types of fixed-line broadband in the UK are ADSL, cable and fibre.

ADSL

ADSL stands for Asymmetric Digital Subscriber Line and is the most commonly available type of broadband.

There are two different types of ADSL technology which are used in the UK - ADSL1 and ADSL2+. Both deliver broadband through the copper wires of your phone line.

ADSL1 is capable of a maximum speed of about 8Mbit/s, and ADSL2+ is able to provide a maximum speed of about 24Mbit/s.

However, the broadband speeds you can achieve via both types of ADSL connection will depend on how far you live from your telephone exchange - the further away you are, the lower the speeds. This means that the actual speeds you receive will typically be much lower than the maximum speeds shown above.

Cable

Cable networks use fibre optic and coaxial cables to deliver superfast broadband services - as well as TV and phone services – direct to homes.

Unlike with ADSL, speeds are not lost with distance. Cable technology is capable of delivering vastly increased broadband speeds. The fastest cable broadband packages now offers speeds of 'up to' 152Mbit/s.

Fibre

Fibre broadband is delivered via clusters of fibre optic cables (each one thinner than a human hair) and speeds are faster than ADSL.

There are two types of superfast fibre broadband - 'fibre-to-the-cabinet' (FTTC) and 'fibre-to-the-premises' (FTTP).

With fibre-to-the-cabinet, fibre optic cables run from the telephone exchange to street cabinets before using standard copper telephone wires to connect to homes. Most fibre connections in the UK are fibre-to-the-cabinet services, and are typically sold as offering speeds of 'up to' 38Mbit/s or 76Mbit/s.

Fibre-to-the-premises broadband – which, as the name suggests, involve fibre optic cables running directly to your home – is faster than fibre-to-the-cabinet but currently only represents a minority of broadband connections. Fibre-to-the-premises broadband services can offer speeds of anything up to 1Gbit/s (i.e. 1,000Mbit/s).
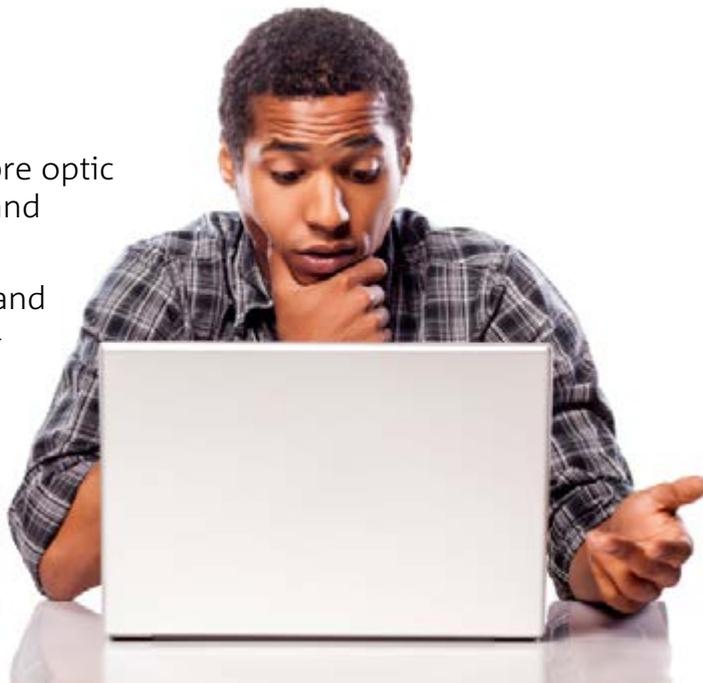
Which broadband services are available in my area?

Virtually every home in the UK can get ADSL broadband. There are numerous providers although not all may offer services in your area.

Superfast cable services are available to just under half of UK homes. Virgin Media and WightFibre (which provides services in the Isle of Wight) are the UK's only two cable providers.

Superfast fibre services are currently available to around 70% of UK homes and are offered by a number of internet service providers including BT, Sky, TalkTalk Plusnet and EE. These providers account for about 99% of the superfast fibre broadband market, but there may be a number of other service providers serving your area.

In the area surrounding Kingston-upon-Hull, KCOM provides ADSL, some FTTC and a rapidly expanding FTTP broadband service.

There are a number of ways you can find out which broadband services and deals are available in your area.

You can enter your details – usually your phone number and postcode – in an online checker, or use an Ofcom accredited price comparison website to see what deals are available.

SamKnows, Ofcom's broadband speeds research partner, also offers a broadband availability checker on its website.

What are the benefits of superfast broadband compared to ADSL?

Superfast fibre and cable broadband offers significantly faster speeds than ADSL services.

The latest Ofcom figures suggest the average speed delivered over ADSL is under 8Mbit/s.

Comparatively, the average speed delivered via superfast broadband services is just under 50Mbit/s.

Using these speeds, downloading an average length feature film would be around six times quicker over a superfast broadband connection versus ADSL.

Superfast broadband services generally cost more than ADSL services, although they might not be as expensive as you think – use an Ofcom-approved comparison site to see what deals are available to suit your budget.

But what if superfast broadband services aren't available in my area?

You can find out if exchanges near you have fibre broadband - or when they'll get it - by using this checker. You can also find out more about the superfast roll-out programme in your area here or get general information from the BDUK webpage.

It might also be worth contacting your local council, parish council or community group to see whether there are community broadband projects underway or planned in your area.

Under these schemes, community groups have partnered with broadband networks to rollout superfast services to primarily rural areas not currently serviced by mainstream providers.

You can visit the Rural Broadband Partnership website to see what projects are underway near you.
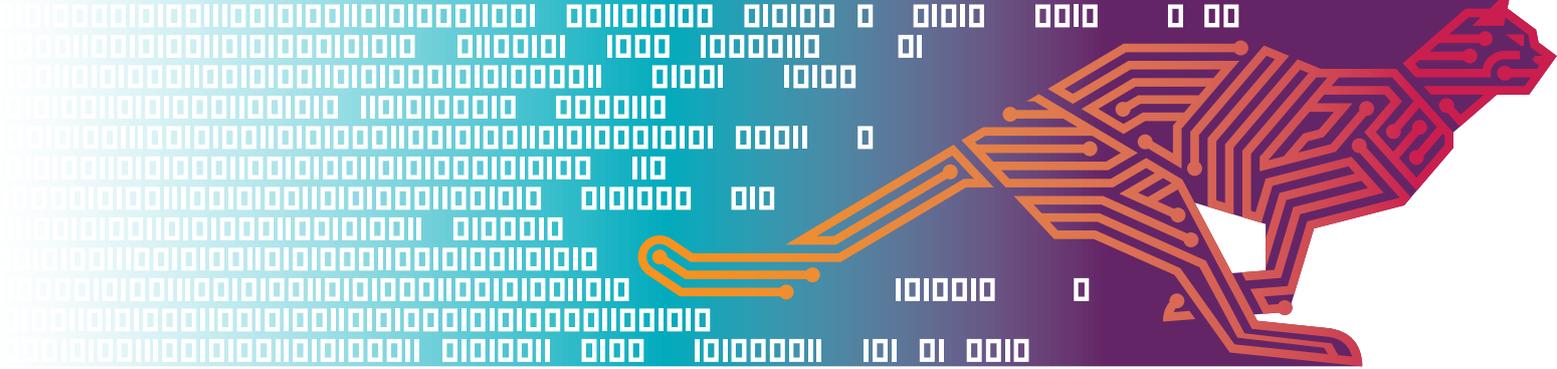
Practical tips for improving your broadband speed

There are a number of factors which can affect the speed of your broadband connection.

The distance your home is from the telephone exchange, the time of day you go online and the number of people in your home using the internet at the same time, can all play a part in slowing down your connection.

Your device may also not be set-up correctly or the line that provides the internet connection to your home may be damaged, while your internet provider's traffic management policies could also be a factor.

The following tips could help bring your connection back up to speed – the last three tips (8-10) apply specifically if you receive your broadband through your telephone line rather than via cable.

1. **Carry out a speed test on your line.** This will show you what speed you're actually getting. Carry out a few tests over several days and vary the times you carry out the test. Ofcom accredited price comparison sites Broadband.co.uk, broadbandchoices.co.uk, Cable.co.uk and Simplifydigital all have speed checkers.

2. **Talk to your internet provider.** If you have a problem with your connection, we suggest contacting your provider in the first instance. They should be able to help you work out what the cause is and how you might be able to fix it.

3. **Update your browser.** Check whether you're using the latest version of your web browser – newer versions not only provide better security but should also work faster. You can check your browser via this page on the Get Safe Online website.

4. **Some electrical devices can cause electrical interference to your router.** Halogen lamps, electrical dimmer switches, stereo or computer speakers, fairy lights, TVs and monitors and AC power cords have all been known to affect routers. Keep your router as far away as possible from other electrical devices as well as those which emit wireless signals such as cordless phones, baby monitors etc. Try to place your router on a table or shelf rather than on the floor and keep it switched on.

5. **Consider upgrading your router to the latest model.** If you have an older router, or you have regular disconnections on your line, you may benefit from upgrading. Speak to your provider.

6. **Password-protect your broadband.** If you don't keep your wireless router secure, anyone nearby could log on to your broadband. Not only could this slow down your internet speeds but your online security could also be at risk. To find out whether you are secure, scan your wireless network by visiting 'My Network Places'. There should be a picture of a padlock next to the name of your network. If there isn't then you'll need to password-protect your router. Use a password that contains a mixture of numbers and upper and lower case letters. If you're not sure how to set or change a password, speak to your provider.

7. **Try wired rather than wireless.** Use an Ethernet cable to connect your computer directly to your router rather than using WiFi. An Ethernet cable is a computer networking cable which should give you a faster, more reliable connection.

8. **Tackle phone line interference.** Any interference on your phone line could slow your broadband down. Make sure your home has the most up-to-date main phone socket and plug microfilters into every phone socket in your home. They look like little white boxes and split the phone and broadband signals so that they don't affect each other.

9. **Plug your broadband router directly into your home's main phone socket.** Try not to use a telephone extension lead – leads can cause interference which could lower your speed. If you have to use an extension lead, use a new, high quality cable with the shortest possible length. Tangled and coiled cables can also affect speeds.

10. **Fit a broadband accelerator or filter device.** There are a number of devices available that are designed to filter out interference from your home phone wiring. These may improve speed and, even if they don't, can help stabilise your broadband line and make it more reliable. Try searching online for devices that may suit your needs.