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Leeds Bradford *broadband connection voucher scheme*

Broadband ***jargon buster***

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Terminology Buster

These are some of the descriptions you will see when you start to look for a broadband connection.

Contended/Shared Service

A shared link or 'contended' connection will provide the advertised download and upload speeds only when there are no other users sharing the service. You probably won't know that you're sharing a line or who you're sharing it with. To optimise the amount of time end-users actually get those speeds a provider calculates the overall speed they need on the main 'pipeline' to give each customer the service requested most of the time. The minimum service that can be expected can be calculated by looking at number of shared users. This is called the 'contention ratio'. For example a contention ration of 20:1 means that at peak time twenty other users could be using the same capability and so each user experiences a 20th of quoted download and upload speeds in a busy period. In reality, users aren't often all making heavy demands on the service at the same time. A shared service can be perfectly acceptable and cost far less than a similar dedicated service. The fact that the service is contended will be identified in the terms and conditions of contract.

Uncontended/Dedicated Service

A dedicated or 'uncontended' connection will provide your business with the full quoted download and upload speeds at all times, which you can chose how to configure. The price of uncontended services is usually higher as the costs of provision, by definition, are not shared with other users. These services will also often come with a detailed service level agreement that specifies quality of service for reliability and maintenance. You need to consider how important it is to your business to have certainty of the speeds available to you and whether it is worth the additional cost.

Broadband Speed

Speed is measured in Megabits per second (Mbit/s or Mbps – you will see the term shortened in several ways). There are 8 Megabits in a Megabyte with a Megabyte representing approximately 1 million characters of text. You will see terms such as 'superfast' and 'ultrafast' but there is no official fixed definition of the terms.

Download speed

Download speed is the rate at which data (including emails, web pages, video etc.) can be transferred from another network (or the Internet) to your end of a broadband connection.

Upload speed

Upload speed is the rate at which data can be transferred from your business to another network (or the Internet). Upload speed may be the same or different from the download speed depending on which service you select. Most consumer services have much lower upload speeds – you should consider carefully how much upload capacity your business needs.

Symmetric/Asymmetric

A symmetric connection will offer you the same upload and download speeds. An asymmetric service will usually offer you a considerably lower upload speed than download speed and will typically cost less. Think about how your business uses the connection and whether having a fast upload speed is important to you.

Speed checker

There are a number of commercially available speed checkers where you can input your phone number or address to see what the estimated performance of your broadband connection would be, download and upload. These are normally offered on the websites of service providers. There are other kinds of speed checker where your computer can measure the connection speed itself – search on line for these.

What do all the technologies mean?

In this section, we describe the main technologies used by suppliers to bring you your broadband connection. We have taken out as much 'jargon' as we can, but in places the only way to describe the technology is with some technical language that can't be translated. If you have questions, remember that you can ask your suppliers to talk you through how it all works.

The suppliers you talk to will have product names for their services that may not be exactly the same as the wording below. We can't list all supplier products but you can use these definitions with your suppliers to help you understand which category their product falls into.

Fibre To The Premise (FTTP)

Where an optical fibre runs all of the way from the provider's network to your premises. Very high download and upload speed (e.g. 10 Gigabytes per second and above) are possible with some types of active fibre systems. However, lower cost passive optical networks (PON), also classified as FTTP, are often used by suppliers and typically offer asymmetric speeds of up to 330Mbit/s download speed and 30Mbit/s upload speed.

Fibre to the Cabinet (FTTC)

Where optical fibre is run to a street side cabinet, the additional expense of running fibre right up to a user's premise is avoided. However the existing copper telephone lines that are used for the final connection to the premises from the cabinet have lower capacity than fibre, typically up to 80Mbit/s download speed and 20Mbit/s upload speed. Speeds depend on how far you are from the cabinet: the speed will be lower the farther the copper has to run.

Fibre on demand

Where a supplier usually offers FTTC to customers as a standard product rather than FTTP (because of the high deployment costs), or if FTTC would not provide a sufficiently fast service to meet an individual customer's needs, then some network operators would offer FTTP for an additional charge by offering what suppliers call an 'on-demand' product. Charges are often considerable and are payable upfront.

Cable (DOCSIS 3.0)

The original Cable TV networks used fibre optic links from the network to street side distribution points and coaxial copper lines to users' premises. Coaxial copper lines have a higher capacity over longer distances than traditional 'twisted pair' copper telephone lines and this TV technology has been adapted to provide data communications at up to 120Mbit/s.

Mobile

Mobile telephone technologies can provide high maximum download speeds. However its reliability and performance varies with the location, environment, loading of the network by other users and the available radio spectrum. Mobile connections are not eligible under the Connection Voucher Scheme as costs of connection typically fall below the minimum grant level. Mobile technologies can however be used as part of another solution (see below).

Ethernet First Mile (EFM)

Ethernet is the communications protocol (a kind of language) used by most wired office networks. You may be familiar with it in your office wiring systems. Connections to the external broadband network in the past have used other communications protocols (another one is called ATM) which need both equipment to translate protocols (to let different parts of the system talk to each other) and add extra operational costs for network providers. EFM allows the Ethernet protocol to be conveniently transmitted over the existing copper telephone lines and optical fibre links, and can reduce costs to users.

Fixed Wireless Access (FWA)

Wireless links can be used instead of copper or optical fibre links to connect users from a wireless base station. Usually the base station is mounted on a mast or building at your premises. The connection's performance is designed to be more stable and predictable than mobile because user equipment is in a fixed location. Often FWA uses mobile technologies adapted for fixed operations.

Leased line

A leased line is a copper or fibre connection providing a data service with a Service Level Agreement (for example, this may cover. download speeds, repair times and so on). Depending upon the type of service ordered the sockets and connectors, and their electrical characteristics, might differ from the usual Ethernet components that you may be familiar with.

Leased line – Ethernet

An Ethernet leased line can be connected to existing office-based Ethernet networks without additional protocol translation equipment. It 'presents' an Ethernet interface to the user.

Microwave

Microwave is a kind of leased line that uses a radio link rather than copper or fibre. Generally it requires a line of sight from the network location to an antenna dish mounted on or near your premises.

And finally, within the scheme you will be asked to tell us what kind of service you have had in the past and what service you will choose using your Connection Voucher. There are two possible answers. We have used some of the technical terms described above in these definitions.

Next Generation Access (NGA)

The 'next generation' referred to is the industry-wide upgrade in technology from current 'old' methods that are used to deliver slower broadband speeds. In the list above, the NGA technologies are : Fibre to the premise, Fibre to the cabinet, Fibre on demand, Cable (DOCSIS 3.0), some newer types of Fixed Wireless Access, and Ethernet First Mile (EFM) delivered on a contended basis (that is, not a dedicated/uncontended line that only you use). Typically, NGA solutions will be lower cost than Business Grade and are likely to be both contended and asymmetric. The minimum speed you need to contract with your supplier for to use a Connection Voucher is 30Mbit/s either upload or download if you choose one of these products. If you already have an NGA connection at or above 30Mbit/s you should contact your city for requirements for the minimum speed that would be eligible for a Connection Voucher.

Business Grade

There is no standard definition of Business Grade, but characteristics of a Business Grade line will be that it is often symmetric, always uncontended and will have a robust service level agreement from your supplier. Technologies above that would deliver a Business Grade service would be: Leased line, Leased line – Ethernet, Microwave, Ethernet First Mile (EFM) delivered on an uncontended/dedicated basis. Typically, Business Grade solutions will cost more, reflecting the higher quality and reliability of the service offered. The minimum speed you need to contract with your supplier for to use a Connection Voucher is 20Mbit/s upload and download. Remember that if you already have a Business Grade connection and wish to use a voucher to upgrade your service, your new connection must offer you at least double the speed – that is from 10 to 20 Mbit/s or from 20 to 40, and so on if you choose one of these products.

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City of Bradford MDC
www.bradford.gov.uk

For more information:

Visit
www.superconnectedleedsbradford.co.uk

Email:
info@superconnectedleedsbradford.co.uk

Or call: **0113 395 0357**

Department for
Culture, Media & Sport
4th Floor, 100 Parliament Street
London SW1A 2BQ
www.gov.uk/dcms

Administered on behalf of Government by Broadband Delivery UK (BDUK), this programme is transforming Britain by promoting growth, enabling skills and learning, and improving quality of life.

For more information about vouchers, go to **www.connectionvouchers.co.uk**

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