

Making best use of your Borders Online quota

This page provides some advice on how you can ensure that your Borders Online quota meets your broadband needs with minimal cost and inconvenience.

However, first a brief explanation as to why we do not offer an “unlimited” service. The key reason is that the wireless spectrum available for us to use is severely limited. We have to divide this between what is available for customers and the links between our relays, to transport traffic to and from our fibre connections to the Internet. Most of the time our links are not congested, but at peak times – mainly in the evening – some links become saturated.

In our network, we have a number of finite resources, the two main ones being money coming in and wireless spectrum available. More capacity costs more money, either to licence more spectrum or to pay for radio equipment that is capable of utilising the spectrum more efficiently. A significant proportion of our income is already invested in improving our capacity to handle traffic at peak periods. In the last 12 months the evening peak level of traffic has increased by more than 50%. Usage quotas are the method we use to attribute the cost of providing a service to those that use it.

There is no right answer, but we are not alone in relying on usage quotas. Most mobile broadband services, which also use limited wireless spectrum, have usage quotas. Don't believe any mobile operator who promises “unlimited” usage for the average user. They cannot afford to deliver that in practice – and they don't. Some ISPs that rely on fixed lines have usage quotas because, like us, they want to provide a good service to all of their customers. In their case they are managing limited capacity from the local exchange to their core network centres.

So, how can you get the most out of your quota? There are three areas in which it is easy to make large improvements.

- **Streaming TV and video.** There is a huge difference between the data usage for standard definition (SD), high definition (HD) and ultra-high definition (4K or higher). With modern streaming protocols, streaming services such as Netflix use less than 1 GB of data per hour in SD, 2-3 GB per hour in HD and 5-10 GB per hour in Ultra HD. If you are watching streaming video on anything smaller than a 42-in screen the chances of you noticing the difference between HD and UHD is small. On a phone or laptop (other than the most expensive Apple equipment) there is little point in using anything other than SD.

So, Lesson 1: set the streaming quality to the lowest that is suitable for your equipment. That will not be the default setting, as almost all services use the speed of your connection to set the video quality. They test your Borders Online network connection and in most cases will set the video quality to the highest definition, thus using 5-10 GB per hour. You can reduce your streaming usage by 50-90% without any significant loss in quality by going to the Settings page of each app and selecting a more appropriate video quality. For families with children, ensure that all streaming apps – Netflix, YouTube, etc – on their phones and laptops are set to no more than standard definition.

Remember that many streaming apps pre-emptively download a whole episode or even a series. Exit from streaming apps rather than just suspending them. For some devices – e.g. Amazon FireStick – there is a setting that allows you to limit or turn off pre-emptive downloads.

[Don't worry about streaming music, internet radio, podcasts, etc unless you have this on all of the time, since most services use less than 0.06 GB per hour (i.e. more than 15 hours for 1 GB) and the highest quality services rarely exceed 0.12 GB per hour.]

- **Cloud storage and back-up.** Apple and many other services offer cloud-based storage or back-up. Such services are extremely useful for security and accessibility, but they are also often huge users of your data. The reason is that the back-up software is often designed for a completely different setting – usually businesses with local area networks and large back-up servers.

So, Lesson 2: change the default settings for any cloud-based storage or back-up software. Limit either (a) the frequency of backups, and/or (b) the scope of the files included in backups. What files (if any) do you really need to back-up every 10 mins or hour rather than once a day? Some programs are notorious – and pointless – data hogs. For example, there is little point in backing up email files multiple times per day because most modern email systems are cloud-based, so that even if the copy on your computer is lost the original remains. Don't use cloud-based storage for your music files since any reasonable collection can easily run to hundreds of GB. Similarly, don't use cloud-based programs to transfer files from one computer to another, unless you really know what you are doing.

- **Sky Q and Catch-up.** Both these services use your broadband connection to download their content. If you miss a show and use Sky Catch-up or watch a movie or series on Sky-Q, the program is **not** delivered by the Sky satellite dish but over the internet, so that it will affect your broadband usage. The service is similar to BBC iPlayer but it is just better integrated into the Sky boxes under your TV. Again, be sure to adjust the settings on your Sky box to ensure that it does not stream in the highest possible definition.

The more general point is: **Don't rely on the default settings for streaming, storage, back-up and similar software!** These are convenient for the software designer but they are mostly not suitable for you. Windows 10 is better than most systems because you can tell it that you are using a metered internet connection. Its response is crude but at least it does pay attention to the fact that data usage matters. Apple is notoriously careless about data usage. Its system updates are invariably bloated, but in reality this is much less important than how you use streaming services.

In summary, many internet-based services are developed and offered by companies who assume that their customers have access to abundant network capacity at a low cost. Living in rural communities, we don't have such abundant network capacity, so either we need to use the existing capacity more carefully or we pay more for the privilege. Over time, technology will improve our baseline capacity, but there will always be new services that push the limits – e.g. 8K TV being demonstrated in a tech show in Las Vegas recently. By making small adjustments to the way in which you use streaming services you can enjoy their benefits without incurring a large usage cost.