Computer St. Louis
1650 Headland Dr.
Fenton, MO 63026
Tel: (314) 821-3237
Fax: (314) 821-1979
www.computerstlouis.com

Understanding The Differences Between Dedicated Fiber and Cheaper Broadband Internet Options

The question comes up frequently – what are the differences between dedicated fiber and cheaper broadband options? Hopefully, this will help explain those differences. The fact that many dedicated fiber options offer slower download speeds than cheaper forms of broadband causes the most confusion, given the cost differences. In short, reliability, consistency of speed, upload speeds, and service level agreements are the four primary areas that differentiate dedicated fiber from cheaper broadband options.

Reliability is guaranteed with dedicated fiber options. Most dedicated fiber contracts offer bill credits for downtime, although this rarely occurs due to how fiber is delivered. Where cheaper broadband options are spliced at multiple points, dedicated fiber has a direct run. Cheaper broadband services are delivered on a "best effort" basis. They want to keep subscribers happy enough to avoid cancellations, but whether you are down for two hours or two days, there are no credits that can be claimed for the outage and business disruption.

The splice points on cheaper broadband can cause noise and interference on the lines, which will also lead to inconsistency in speed or even full outages. With dedicated fiber, the proverbial "last mile" to a main node is not shared. This means fewer hops, fewer points of failure, improved reliability, and often, lower latency.

In most cases, dedicated fiber services come with high-end routers or network equipment, designed to run reliably without disruption for years. Conversely, many cheaper broadband connections will use residential-grade modems. Providers are looking for cheap, replaceable hardware. Occasional resets are typically part of the design, and they always seem to be necessary at the worst possible times.

With dedicated fiber, the consistency of speed is guaranteed to match the port speed and provisioned to a set amount with no sharing at the node. With commodity broadband, it is a shared service, with large amounts of bandwidth delivered to a central node where it is carved up for service delivery. In many cases, these nodes are overprovisioned by 20 to 50 times the total speed available. Carriers assume that most subscribers will not be pulling their full capacity at the same time. This overprovisioning will cause variations in the data stream – a leading cause of voice and video inconsistency. Most users will not notice if a web page or an email takes an extra second to load, but a half second of dead space during a phone call or a web meeting is instantly disruptive.

Upload speeds are the most common difference between dedicated connections and cheaper broadband options. Typically, dedicated options will have a symmetrical speed, matching upload and download speeds. Cheaper broadband options will usually have different upload and download speeds – 200 Mbps (download) by 10 Mbps (upload), for example. With many firewalls and routers, bandwidth policies work much more effectively if the download and upload speed are the same, allocating certain amounts of data to various policies and critical services that are latency sensitive.

In conclusion, both types of service have their place, but need for a dedicated service or multiple, blended services rises with the need for consistent internet connectivity and critical business operations.