

Load-Balanced Multiple Broadband Service

When a number of users on a local network share a single ADSL (broadband) connection to the Internet, the available bandwidth is shared between whatever number of users or services is connected at that time. For example, if the download speed available is 4.5 Mb/s and three users (or sessions) are active each will receive a little less than 1.5 Mb/s (allowing for management overhead).

If two broadband connections are available, and the same 3 sessions are active, a load-balanced solution will allocate 2 sessions to one channel and the remaining session to the other channel. The maximum bandwidth available to any session at any time will not exceed that of the fastest of the available broadband channels, but the lowest speed observed by any of the 3 sessions in this example will not be less than half of the lowest bandwidth channel available.

Should one of the broadband channels fail, the network will revert to the situation existing before the load-balanced solution was installed.

The approach is scalable to larger numbers of channels but the practical limit will be reached when the implementation costs begin to approach those of alternatives such as leased lines or satellite services.

Various levels of priority can be allocated, enabling VoIP or VPN services to be prioritised within the maximum bandwidth available in any channel.

Costs can really only be assessed on a case by case basis, because much depends on the existing installation, the costs of additional broadband channels, and the number of channels to be accommodated – which dictates the type of specialised router required.

Though significantly improved performance in a typical multi-session LAN environment is provided by this type of load-balanced solution, together with much improved service resilience, it does not increase the maximum bandwidth available to a single session.