

Explaining contention ratios

Introduction

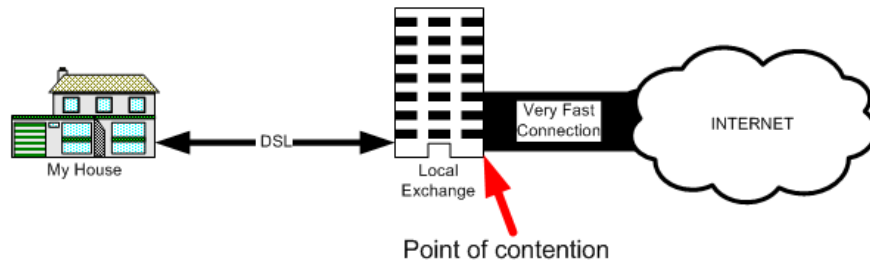
So why is it that a 1Mbps 50:1 contention ratio DSL line and a 1Mbps 50:1 VSAT service **do not** provide the same level of service?

This is one of the biggest errors that a rookie buyer of VSAT services can make. The services are represented by the same numbers, so surely they are comparable?

The problem lies in the way the DSL industry and the satellite industry use the term "contention ratio" to mean the same thing, but measured at a different point.

DSL (and ADSL)

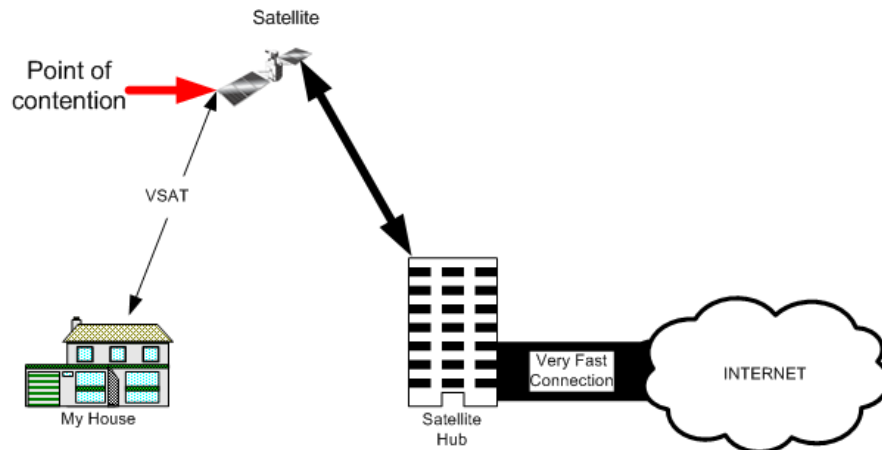
Let's consider a typical situation of a DSL line supplying a home, as illustrated below:



In this situation, the house is connected to the local exchange by a DSL line (e.g. 1Mbps) which is not shared with other subscribers. If the service has a 50:1 contention ratio, this represents contention for the very fast connection which exists between the exchange and the rest of the Internet. Since this is normally a big, fast connection, the practical effect of the contention is minimal. If you test the speed of an overall DSL connection, it will normally be in the region of 75-100% of the nominal speed of the service.

VSAT

Consider now the situation with a typical VSAT connection:



In this case, it is the nominal 1Mbps link itself, between the house and the satellite which is shared with other subscribers. It is therefore common to see much more variability in the throughput achievable via satellite than via a DSL connection.

“Hidden” contention

Of course, if the subscriber connects their Internet connection to a network, then the users who are attached to the network effectively increase the contention ratio. In our DSL example, if an average five users are attached to each 1Mbps subscriber at a stated contention ratio of 50:1, the contention between the house and the exchange will be 5:1 (average 200Kbps each user), but the overall effective ratio will be $5 \times 50 = 250:1$.

If the same situation is applied to our satellite subscribers, the average bandwidth drops to 4k each!

Conclusion

Does this mean that VSAT is always a poor choice for your internet connection? Absolutely not. In many locations, DSL is not available and there is no alternative to VSAT. In every case, if the VSAT service is properly understood, and the correctly specified system is purchased to match your needs, VSAT performs very well indeed.

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