WAN Optimisation - More Apps / Less Bandwidth

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Imagine this. You are driving down the motorway on your way to work. The usual tail back is appearing in the distance, and you know the inevitable 20 minute delay is about to occur. You knew it was going to happen, it always happens, and there is very little you can do about it.

But, what if you could enter a designated lane that would shrink your car to the size of a bicycle and continue your journey at your usual speed, beating the rush hour traffic every time. Or maybe you could use one new lane, which has just appeared out of nowhere. The road is free, and your problem is solved. Well, your problem is solved until everybody else starts using the new lane, and you are back to square one. With extra lanes on demand, and cars the size of bicycles, life would be that bit easier. We would not have any traffic problems, spend less on fuel, and our productivity would increase. Wouldn't that be nice?

Unfortunately, motorways on demand and cars that change sizes are not a reality. But we have the technology available today when we look at moving data traffic through the data networks that is available to us.

In some cases, there is tug of war going between the information technology and finance departments within organisations. New applications are being deployed over the Wide Area Network (WAN) enabling information to be passed between branch offices and the headquarters of organisations around the country and around the globe. IT Managers need more bandwidth to deliver new applications to ensure the company remains competitive. Finance departments cannot justify the added expense, and the network inevitably grinds to a halt. This is beginning to sound familiar, as both scenarios involve traffic. However, in the networked environment, real solutions can be found, to ensure traffic flows smoothly, and costs are reduced.

If there is a tailback at the same place on the motorway, you can see where it is, and possibly, in time, something can be done

about it. In the network it isn't that easy. The network set-up is constantly changing, with different traffic pattern happening on an hour-by-hour basis. Consider this! An employee is downloading a movie, or an airline is offering free flights online during lunch time. Everyone is accessing the web at the same time, and the network is grinding to a halt. Due to this happening, your ERP systems cannot work effectively, and your business is compromised.

So what choices can the Head of IT make when addressing these issues: -

- Firstly, they can choose to ignore the problem, and continue to experience poor connectivity. This option is sure to see your organisation lose pace to other competitors in your sector, and they will be sure to take advantage of the situation.
- Throw more bandwidth at the problem which will alleviate the problem in the short term, and the company will add an additional expense of renting bigger pipes, and upgrading equipment to cope with the larger loads.
- Deploy applications to prioritise traffic on the network. Some companies deploy traffic analysis tools, which can monitor network traffic on all links, and prioritise mission critical application over and above other not essential applications. This in itself is progress for the IT department, as they now have reasonably good visibility of their network and can minimise abuse on the network. They can introduce policies for employees, ensuring that all employees are using the network resources responsibly; however, this prioritisation will be to the detriment of other applications that are less mission critical to the success of your business.
- Deploy a traditional compression tool, which will free up space on your WAN. These compression tools can be applied to any types of data, however, traditional compression methods can be typically limited to data of a certain size. Typical data compression operates only on a per packet basis. Each packet is compressed independently, which can lead to some data not being detected due to packet size. This in turn, means that it is usually only effective on low speed networks.
- Another tool that can be used is Proxy Caching. This is scalable to very high speeds, but has its limitations. Proxy Caching detects repetitive data by comparing the name and attributes of each object. The main limitation is that Proxy Caching is application specific and can only match entire objects thus leaving extremely similar data groups to be sent over the network.
- The latest technology break-through in this field is Molecular Sequence Reduction (MSR). MSR operates in real time, and finds repeated patterns of data across the entire data stream. MSR breaks the data down to the granular layer, and can detect patterns in spreadsheets, e-mails etc, and in each

case, the repetition will be removed from the network traffic, which in turn will provide additional capacity for the transmission of more unique data.

The real benefits to your organisation are dependant on your own unique set-up and business drivers, be it a cost cutting exercise or expansion of your network. Each business driver has the desired solution to match your needs:-

- Do you have a need to roll out new applications but don't have sufficient bandwidth to do so?
- Is your network maxed out with peak traffic the norm?
- Can you look at reducing your need for bandwidth in your organisation, thus reducing overheads on an ongoing basis?

All three problems can be addressed simply by deploying a WAN optimisation tool which gives prioritisation of traffic, and also reduces the need for additional bandwidth.

A U.S. company based in California named Peribit Networks have introduced a technological breakthrough, which can finally deliver a true alternative to expensive network upgrades, by increasing traffic throughput making way for new applications to be deployed.

Shane Buckley - President EMEA - Peribit Networks

Shane Buckley - President EMEA - Peribit Networks comments "*Repeated information data patterns typically constitute between 70-90% of all network traffic. These repetitions waste precious network resources and severely degrade network efficiency and application performance. Peribit's MSR technology enables networks to discover and remove these patterns from the data stream. Based on techniques originally used to detect patterns in genomic sequences, Peribit's MSR finds repeating data patterns of any size, anywhere in the data stream in real time. By seamlessly and transparently eliminating these numerous repetitions, MSR instantly increases effective network capacity by up to 10 times. This increased capacity translates directly into greater network efficiency, better application performance, greater ability to roll out new applications, and lower monthly transmission costs. Furthermore Peribit's QoS prioritisation and bandwidth allocation ensures application performance is maintained within the SLA policy defined by the customer.*"

When evaluating your options, look on both sides of the fence – The bandwidth provider – and the application provider. Comms-Online can assist here.

So remember, there is not much you can do to get to work any quicker, but make sure, when you get to work, you can work faster by having better networking resources, because it's a long road home.