

As NetWork Speeds Increase, Focus Shifts



Don MacVittie, 2010-13-09

Someone said something interesting to me the other day, and they're right "at 10 Gig WAN connections with compression turned on, you're not likely to fill the pipe, the key is to make certain you're not the bottleneck." (*the other day is relative – I've been sitting on this post for a while*)

I saw this happen when 1 Gig LANs came about, applications at the time were hard pressed to actually use up a Gigabit of bandwidth, so the focus became how slow the server and application were, if the backplane on the switch was big enough to handle all that was plugged into it, etc. After this had gone on for a while, server hardware became so fast that we chucked application performance under the bus in most enterprises. And then those applications were running on the WAN, where we didn't have really fast connections, and we started looking at optimizing those connections in lieu of optimizing the entire application.

But there is only so much that an application developer can do to speed network communications. Most of the work of network communications is out of their hands, and all they control is the amount of data they send over the pipe. Even then, if persistence is being maintained, even how much data they send may be dictated by the needs of the application. And if you are one of those organizations that has situations where databases are communicating over your WAN connection, that is completely outside the control of application developers.

So the speed bottleneck became the WAN. For every problem in high tech, there is a purchasable solution though, and several companies (including F5) offer solutions for both WAN Acceleration and Application Acceleration. The cool thing about solutions like [BIG-IP WebAccelerator](#), [EDGE Gateway](#), and [WOM](#) are that they speed application performance (WebAccelerator for web based applications and WOM for more back-end applications or remote office), while reducing the amount of data being sent over the wire – without requiring work on the part of developers. As I've said before: If developers can focus on solving the business problems at hand and not the technical issues that sit in the background, they are more productive.

Now that WAN connections are growing again, you would think we would be poised to shift the focus back to some other piece of the huge performance puzzle, but this stuff doesn't happen in a vacuum, and there are other pressures growing on your WAN connection that keep the focus squarely on how much data it can pass. Those pressures are multi-core, virtualization and cloud. Multi-core increases the CPU cycles available to applications. To keep up, server vendors have been putting more NICs in every given server, increasing potential traffic on both the LAN and the WAN. With virtualization we have a ton more applications running on the network, and the comparative ease with which they can be brought online implies this trend will continue, and cloud not only does the same thing, but puts the instances on a remote network that requires trips back to your datacenter for integration and database access (yeah, there are exceptions. I would argue not many). Both of these trends mean that the size of your pipe out to the world is not only important, but because it is a monthly expense, it must be maximized.

By putting in both [WAN Optimization](#) and Web Application Acceleration, you stand a chance of keeping your pipe from growing to the size of the Alaska pipeline, and that means savings for you on a monthly basis.

You'll also see that improved performance that is so elusive. Never mind that as soon as one bottleneck is cleared another will crop up, that comes with the territory. By clearing this one you'll have improved performance until you hit the next plateau, and you can then focus on settling it, secure in the knowledge that the WAN is not the bottleneck. And with most technologies – certainly with those offered by F5 – you'll have the graphs and data to show that the WAN link isn't the bottleneck.

Meanwhile, your developers will be busy solving business problems, and all of those cores won't go to waste.





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