



## 10 Gigabit Ethernet technology: A viable option for SMBs?

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By Alan Earls

For J. Wolfgang Goerlich, an IT professional at a 200-employee financial services company, making the switch to 10 Gigabit Ethernet (10 GbE) was a straightforward process.

“Like many firms, we have a three-year technology refresh cycle. And last year, with a big push for private cloud, we looked at many things and decided 10 GbE would be an important enabler for those increased bandwidth needs,” said Goerlich.

Eight months later, he said he is happy with the choice and 10 Gigabit Ethernet technology works well for his company.

However, Goerlich admitted it helped that the organization also replaced its servers and network cards at the same time, which ensured that there was maximum compatibility between system interfaces, throughput and the capacity offered by 10 GbE technology.

Goerlich said his experiences with 10 GbE has been straightforward.

“We began the installation almost a year ago and the only real challenge was that we stayed with electrical [copper] rather than optical cable, which required tweaking and limited the distance between devices,” he said.

But concerns over cost remain an obstacle for greater small business adoption of 10 GbE.

According to Ivor Diedricks, product manager for Cisco Systems Inc.’s small business technology group, while the price of 10 GbE continues to fall, the technology is still relatively expensive and adoption has lagged among smaller organizations.

Quoting figures from Infonetics Research Inc., Diedricks said the calendar year 2010 marked a 22% decline in cost per 10 GbE port. He said that’s a trend that began several years ago and will help drive more adoption.

For smaller organizations in the short term, 10 GbE will be confined to servers, storage devices and the switches which connect them. It will also be used for backbone connectivity between switches, while 10 GbE to the desktop is not expected to happen for many years, Diedricks predicted.

Others are more optimistic about 10 GbE's proliferation among small businesses.

Joe Soricelli, CEO of Proteus Networks, a network consulting and training company, said he sees smaller companies stepping up to 10 GbE for the simple reason that the technology offers immediate and long-term benefits.

"Ten [GbE] is a mature technology today, with hardware vendors supporting it for over five years. Based on customer demand, 10 [GbE] ports are moving into devices for all portions of the network," he said.

Soricelli said larger businesses would benefit from the increased throughput and reduced latency of 10 GbE. As applications require more and more bandwidth, the core network devices between the users and the content must be able to handle the traffic.

"This is a great place to implement 10 [GbE] network links. In addition, many newer network designs are collapsing the traditional access/distribution/core levels into an access/core design," he said.

This helps reduce operational overhead and complexity, but it accelerates the need for 10 GbE at the core layer to handle inter-device traffic, as well as traffic to and from data centers, he said.

But for SMBs, Soricelli said the price tag of the 10G ports can be a little daunting.

As an example of costs, Soricelli quoted list prices for optical devices on Juniper switches: a 1 GbE short range port costs about \$500, while a 10 GbE short range port costs \$1,500. He said there are other factors which affect pricing, including the chassis and line modules.

However, when combined with a collapsed network design, the cost savings of eliminating numerous 1 GbE ports at the distribution level often provides for overall cost savings after the 10 GbE ports are purchased, he said.

"Personally, I think that every organization with their own in-house servers should be looking at 10 GbE links in their network, even if it is just for server connectivity," said Soricelli. "The need for application bandwidth is not going away and, in fact, it is increasing almost exponentially with the explosion of mobile handsets and tablets."

He said the main complexities with the technology involve the specific port connectors used. Most 10 GbE ports use fiber connections, so the specific connectors need to match the fiber cables being used, he said.

In addition, many 10 GbE ports use a gigabit interface converter (GBIC) for connectivity so the specific GBIC required is important. Some vendors support generic GBIC while others do not, Soricelli said.

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