



customer profile

SYNPLICITY SYNTHESIZING LAN-LIKE PERFORMANCE ACROSS A GLOBAL WAN



BACKGROUND – SYNPLICITY®

Synplicity® Inc. (Nasdaq: SYNP) is a leading supplier of innovative software solutions that enable the rapid and effective design of complex, high-performance semiconductors. The company's product is used in a wide range of communications, military/aerospace, consumer, semiconductor, computer, and other electronic systems markets, improving key design planning, logic synthesis, physical synthesis, and verification functions for FPGA, FPGA-based ASIC prototyping, and DSP Designers.

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— LAM HOANG, DIRECTOR OF IT AT SYNPLICITY

To ensure that developers can easily share source code and design information across distributed geographic locations, Synplicity relies on a variety of core business applications, including Network File System (NFS) and File Transfer Protocol (FTP) for file services, Mirapoint Message Server for email, Intranet access via a corporate web portal, and remote desktop access to centralized UNIX hosts. However, high latency and packet loss (up to 20% in some instances) made it difficult to deliver these applications

between Synplicity's corporate headquarters in California, their disaster recovery facility in Oregon, and regional facilities throughout North America, Europe, and India.

"We were only getting 1% of actual throughput on our link to India," explained Lam Hoang, Director of IT at Synplicity. "This made it virtually impossible to share information effectively, which was a source of serious frustration among our remote users."

A STRUGGLE AGAINST PRIVATIZATION

Synplicity toyed with the idea of replacing their IPVPNs with dedicated private lines to overcome their WAN performance issues. However, in some instances, such as the WAN link to India, this would cost approximately \$7,000 in additional monthly IT costs.

"With 20 facilitates worldwide, that type of expenditure could easily snowball out of control," said Lam.

Furthermore, while migrating to private links would likely improve packet loss on Synplicity's WAN, it would not address the latency issues that are inherent to long, international connections. This was particularly problematic to those users leveraging remote desktop software, which sends screen updates and mouse movements over the WAN in an interactive fashion. The slightest latency and jitter can make these products virtually unusable.

To overcome these challenges, Synplicity's IT department decided to trial Silver Peak's NX appliances. They were drawn to the fact that the Silver Peak solution leverages data reduction technology to minimize the transfer of

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Quick Synplicity Facts

- Number one supplier of FPGA synthesis solutions
- Offices throughout North America, Europe, and Asia-Pacific
- International VPN links suffering from high loss (20%) and latency
- Extensive usage of interactive applications, such as remote desktop
- Remote mirroring required for disaster recovery

Silver Peak Results

- 3–4x increase in first-pass FTP transfers; 15–20x increase in subsequent passes across international WAN links
- 7x improvement in email performance and Intranet downloads
- Noticeable improvement in remote desktop access
- Improved employee productivity; increased effectiveness of global design process

information across the WAN and deliver information locally whenever possible to speed up application performance. Furthermore, it combined latency mitigation and loss mitigation techniques to overcome many of the WAN impairment issues being faced in the Synplicity environment. For example, the Silver Peak appliances leverage a technology called Forward Error Correction (FEC) to overcome packet loss and improve application performance by avoiding packet retransmissions during periods of heavy congestion.

After installing Silver Peak NX appliances in California and India, the company immediately saw a 4x improvement in file transfers. As the Silver Peak appliances continued to learn the network and start eliminating the transfer of duplicate information, average throughput to India continued to increase significantly, reaching 20x in some instances. Though difficult to quantify, users began to notice significant improvements when using remote desktop software. Screen transfers that used to take minutes were reduced to

seconds. In addition, there was an estimated 7x improvement in email performance and Intranet downloads as duplicate content (for example, file attachments) were delivered locally from Silver Peak appliances instead of retransmitted across the WAN.

“I knew things were getting much better when our employees in India began referring to the Silver Peak appliance as the ‘magic box’,” said Hoang. “At that point, I made the decision to try out the appliance on other problematic links in different parts of the world, including our European hub in Turkey.”

Synplicity synthesized a cost-effective solution for improving application performance across its global WAN. By turning to Silver Peak, the company improved its development operations by decreasing application response time and increasing WAN bandwidth efficiency. From source code to software verification, Silver Peak is the right design choice for companies looking to share business-critical information across geographically distributed locations.

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