



TOPCON RUNS SILVER PEAK SOFTWARE ON CISCO ROUTERS TO SOLVE BRANCH PERFORMANCE PROBLEMS

Branch offices increase network throughput by 402x and improve business productivity without requiring new hardware.

Extending enterprise services and applications to branch offices often presents many IT challenges. Sluggish Web applications and long file transfers can threaten user productivity and increase corporate risk of data loss. Topcon Positioning Systems faced these challenges, and while the company knew it could solve its problems with WAN optimization, the company realized deploying WAN optimization hardware would be impractical and expensive for many reasons.

Instead, Topcon engineers chose an innovative solution – run Silver Peak virtual WAN acceleration in their existing Cisco routers. Topcon improved throughput by as much as 402-times without adding hardware. “We got the best of both worlds – great performance and low infrastructure management costs,” says Dean Robinson, senior network engineer at Topcon.

PRODUCTIVITY PROBLEMS, NETWORK CHALLENGES

Topcon Positioning System is part of the Topcon Group, a diversified company providing GPS products, laser eye care and laser surgery. The Topcon data center connects to 15 remote offices via multiprotocol label switching (MPLS) and general Internet connections. The remote offices are spread across Asia/Pacific, Europe and the US with the global data center and IT headquarters in Livermore, California.

As Topcon expanded its business, so did the congestion on their network. The Australian development team working on Topcon’s global positioning software started having problems sharing code with developers in Moscow. Apache Subversion (SVN), the group’s versioning software, could not transfer the code in time to the other office,

Background

- Manufacturer of precision positioning equipment with 1200 employees and 15 offices.
- Initial deployment in data center (Livermore, California) and three remote offices - two in Australia and one in Russia.
- All locations were connected via AT&T MPLS; some sites were also connected via Internet VPN.
- Lines speed ranged from 50 Mbps to 1.536 Mbps.

Business Challenges

- Versioning software, Apache Subversion (SVN), could not replicate code in time.
- Management comprised due to sluggish Jira project management software.
- SharePoint management costs increased by having to localize SharePoint site.
- Productivity declined due to sluggish FTP.

Network Background

- High latency between sites (as much as 200ms round-trip).
- Congested WAN links.
- Slow CIFS transfers and Web applications.

Silver Peak Results

- Packet loss reduced by 41 percent.
- CIFS traffic reduced by 81 percent; HTTP by 75 percent.
- Effective throughput increased 402x on 2 Mbps connections.
- Microsoft SharePoint site consolidated due to line improvement.
- SVN backups completing in time.
- Jira performance improved.
- FTP transfers more than tripled on first pass (reaching 1.5 Mbps) and nearly 20x on subsequent transfers (9 Mbps).

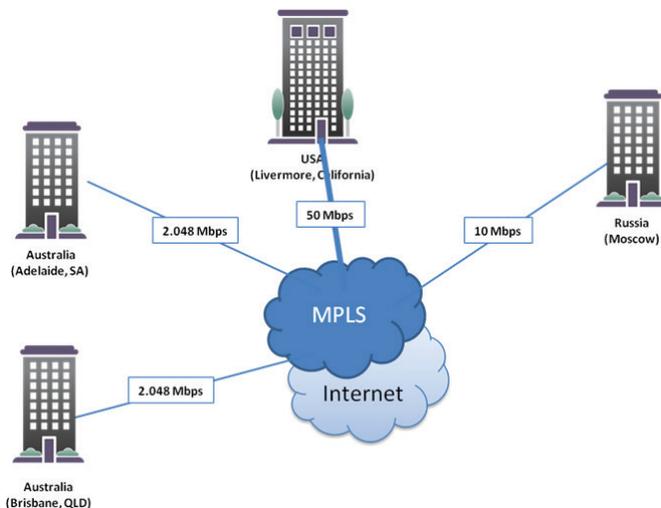


Figure 1: Topcon initially deployed Silver Peak in four of its offices.

while the Jira project management software used to track projects was proving sluggish. “Transfers from our Adelaide office to our Moscow office would be left to run overnight and still not complete by the morning,” added Robinson. “We even tried transferring smaller pieces of code at a time with no success.”

Microsoft SharePoint costs also increased as the SharePoint site had to be kept in Moscow due to the network problems.

Bandwidth was an obvious challenge in some of the remote offices, but hardly the only problem. Round trip delay on the Moscow-to-Australia connection averaged 200 milliseconds (ms). Combined with the packet loss rates (.27 percent), Topcon’s Adelaide office was quietly wasting nearly half of its WAN bandwidth. “I didn’t realize the latency and bandwidth was such an issue until I started speaking with Silver Peak,” said Robinson

Finding a solution that matched branch requirements was a challenge. “Closet space in some of our remote offices is quite tight and we were worried about deploying a physical appliance that would consume rack space and generate heat,” said Robinson. “Costs and delays would also increase because of the time and expense to ship more gear.”

SILVER PEAK SOFTWARE IN A ROUTER

PeakIP Solutions, an IT integrator, introduced Topcon to Silver Peak. Silver Peak’s Virtual Acceleration Open Architecture (VXOA) software not only delivers unmatched optimization and performance, but can be downloaded and deployed in minutes across a wide variety of hardware platforms, including off-the-shelf servers, server blades and routers.

Topcon had already invested in virtualization and had Cisco Integrated Services Routers

(ISRs) at some of the branch offices. Running Silver Peak software on the Cisco Unified Computing System (UCS) Express blades in those ISRs meant no additional hardware would be needed at the branch. (Robinson had experience with Cisco WAAS and deemed it inappropriate for the installation.)

“We really liked Silver Peak’s story,” he added. “The focus on virtualization aligned with our strategic direction. Everything we’re doing moving forward we’re trying to do it a virtual environment if possible.” The company has about 25 hosts today running 300 virtual machines (VMs).

Silver Peak tackles all three problems degrading Topcon’s network performance – loss, latency and bandwidth. Packet loss was reduced by 41 percent. Bandwidth limitations were overcome by reducing CIFS traffic by 81 percent and HTTP by 75 percent. Coupled with protocol optimizations to overcome latency, Topcon saw the effective throughput on its 2 Mbps connections increase to 805 Mbps – a 402x improvement.

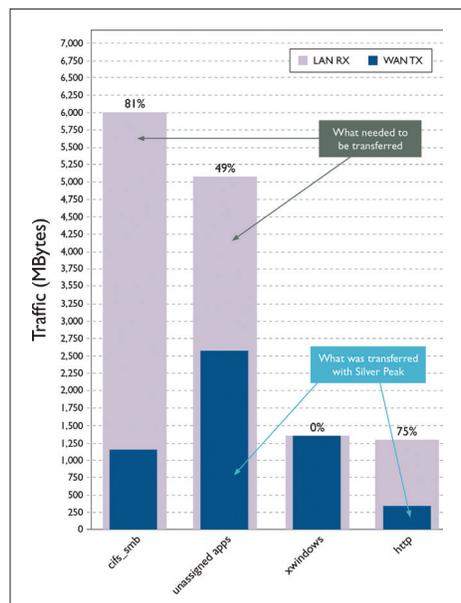


Figure 2: Topcon saw application performance improve by over 80 percent.

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Topcon also liked the reporting provided by Silver Peak's Global Management System (GMS). "I love the capability of GMS to provide an overall view and the ability to manage systems," added Robinson. "I saw nothing close to that in Cisco WAAS." With GMS, he can see the detail of his network graphically and as raw data. The daily reports show optimization levels, which lets administrators keep track of the performance of the network and better manage service provider relationships.

BOTTOM LINE BENEFITS

The flexibility of Silver Peak software allowed Topcon to deploy a common code base across a variety of hardware appliances, including on VMware hypervisors on servers in the Livermore data center and in the Moscow office, and on Cisco UCS blades in Adelaide.

With Silver Peak deployed, FTP transfer performance from Moscow to Livermore improved from 40 Kbps before Silver Peak to approximately 1.5 Mbps for initial transfer and 9 Mbps on subsequent transfers. Performance has become so much more effective that Topcon was able to reduce its SharePoint costs by relocating the Moscow SharePoint site to Livermore. And with HTTP improvement and file transfers completing on time, SVN and JIRA applications no longer had problems. Users stopped complaining, which was success for Robinson.

For more information on how Silver Peak can help your organization, visit our virtual marketplace for a free software trial or contact your local Silver Peak representative.

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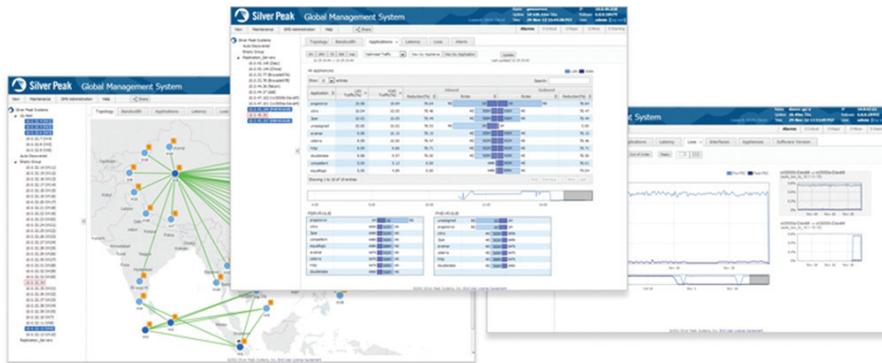


Figure 3: GMS provides detailed visibility into the WAN.