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# Kingston Technology Moves to a Broadband WAN with Silver Peak

*Memory Products Leader Improves Replication Performance over Distance while Reducing Dependency on MPLS*


Replicating data to a remote data center hundreds or even thousands of miles away helps enterprises improve the chances of surviving a regional disaster and ensuring business continuity. But when distance between sites increases, application performance suffers and networking costs escalate. This is why Kingston Technology, one of the world's largest independent manufacturers of memory products, turned to Silver Peak to re-design its WAN.

Kingston is headquartered in Fountain Valley, California and employs more than 4,000 people worldwide. The company has a regional headquarters in Taiwan and the United Kingdom, a disaster recovery (DR) site in Taiwan, and branch offices in six other locations. Kingston relies heavily on virtualization, and its globally distributed network and disaster recovery facility are essential to maintaining business continuity.

## Replication Challenge Prompts New Look at the Network

Kingston began developing a disaster recovery plan in 2010 after human error had taken out some of the power circuits in its data center. The company initially considered a Las Vegas colocation facility for its DR site before selecting the company's existing Taiwanese facility, which could be implemented at a fraction of the cost.

The company's replication workloads include Zerto to copy Virtual Machine Disk (VMDK) files that support many of the company's applications, Maxava running Remote Journal to protect the AS/400s, and IBM Notes replication.

Maintaining data in Taiwan meant replicating data from the United States over a long distance WAN, and that proved to be a challenge for two reasons:

- Extending MPLS networking into the region would have cost the company thousands-of-dollars a month, and would take more than a month to get connected.
- The lack of performance when transferring data over a long distance WAN would put the company's recovery point objectives (RPOs) in jeopardy.

Frustration with the high cost and complexity of MPLS had a ripple effect across the business with other applications as well. Even over MPLS, the company's voice-over-IP (VoIP) calls with Avaya Aura Communication Manager were unclear at times due to packet loss and out-of-order packets. SQL queries generated by the company's inventory application also took too long to fulfill and required too much bandwidth to operate. Users were often forced to wait for long screen refreshes.

## The Rise of the Broadband WAN

Leveraging broadband for the WAN offers relief in the form of greater flexibility and faster deployments, but raises concerns about security and reliable performance over long distances. Kingston wanted to reap the benefits of Internet connectivity, but had not made the transition from MPLS to Internet because of the security and reliability concerns. In Taiwan, Internet connectivity could be provisioned much more quickly and easily than MPLS.

## Customer: Kingston Technology

### Business Challenges

- Lengthy replication workloads put DR plan in jeopardy
- MPLS too expensive and complex for connecting remote sites
- Sluggish enterprise applications

### Network Background

- 11 locations throughout Asia Pacific, North America, and Europe
- Data centers in Shanghai, Shenzhen, Taiwan, the US, the UK, and Ireland
- Internet speeds ranging from 1.5 Mbps to 100 Mbps

### Silver Peak Results

- Secure, optimized broadband enabled in just two hours
- Maxava and Zerto replication performance improved by 10x
- Internet throughput increased by as much as 80%

Kingston Technology required a software-based solution for the WAN that would embrace the company's investment in virtualization, accelerate data replication performance, and allow the company to take advantage of Internet connectivity in a secure and optimized manner. Silver Peak WAN software was an ideal fit.

"Being in the free trade zone in Shanghai has its shipping challenges," says David Flores, senior network administrator at Kingston. "With Silver Peak software for the WAN, I could avoid those hassles and connect our international offices in China and Europe in a matter of hours – without leaving my desk."

## Software-Defined WAN is Key

Silver Peak helped Kingston Technology flexibly and securely extend replication into Taiwan via the most cost-effective source of connectivity available. With Silver Peak's WAN software, Kingston was able to avoid expensive MPLS technology and use secure Internet connectivity to dramatically reduce its WAN costs and complexity.

Delivered as a virtual machine, Silver Peak offers a simplified deployment model and accelerated IPsec support that prompted a company-wide transition away from MPLS to Internet connectivity. The Silver Peak software is now helping Kingston improve application performance at all remote sites.

As a WAN overlay, Kingston benefits from unprecedented levels of visibility, control and security over all traffic traversing its Internet WAN. In addition to improving application and network performance, the Silver Peak software gives Kingston the flexibility to deploy new sites rapidly, as well as non-disruptively extend, move, or change existing sites as business demands evolve.

Flores commented, "Performance was great with Silver Peak, but the huge benefit was the ease-of-deployment with the software."

Flores leveraged Kingston's existing investment in virtualization to simplify deployments in the remote offices. Using software instead of hardware appliances allowed Flores to reduce Kingston's acquisition costs. The company avoided shipping costs and delays, tariffs, and any specialized IT resources that would be needed to unpack, rack and enable any new hardware.

Flores added, "Having one Silver Peak software image and one configuration to control and accelerate our Internet connectivity is outstanding! No other solution I have ever worked with has this much flexibility."

## The Silver Peak Impact

With Silver Peak deployed in its network, Kingston improved the performance of numerous applications. Replication today consumes significantly less WAN bandwidth, allowing better usage of the Kingston network, with Maxava and Zerto replication improved by as much as 10X, and Lotus Notes replication now consuming 70 percent less bandwidth.

Flores tapped Silver Peak to compensate for the poor quality of the company's Internet connections. With Silver Peak, out-of-order packets were repaired, with the greatest impact occurring between Taiwan and the US, where 2.11 percent of packets had been delivered out-of-order. Packet loss was also improved across several other routes, particularly within China where Silver Peak reduced loss by as much as 24 percent, improving the overall throughput of the connection by 80 percent.

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*David Flores, Senior Network Administrator*