

Sublime Group Ltd. Uses Juniper WXC Platforms to Accelerate Document Flow

**Organization:**

Sublime Group Limited

Industry:

Business Process Outsourcing

Challenge:

Maintain high-speed connectivity between Auckland headquarters and Fiji data center over saturated WAN link without investing in additional expensive bandwidth

Solution:

Juniper Networks WXC™ application acceleration platforms

Benefits:

- Overall WAN efficiency improved by more than 30 percent
- Powerful data compression increased effective WAN throughput
- Security enhancements protected critical and sensitive data

Sublime Group Limited is a document management specialist firm for small and medium-sized businesses based in Australia and New Zealand. The company manages critical document workflow such as accounts payable, human resources records, monthly billing, direct mail applications and database management for its clients.

The Auckland, New Zealand-based Sublime was founded in 2004 by CEO Cowan Pettigrew and his partner, Craig Pellett. Document management is a classic niche business — a small yet critical part of an enterprise's workflow — and from the outset, Pettigrew and Pellett set their sights on an underserved segment of that business. "There was definitely a gap in the market," said Pettigrew. "The global enterprises were being served, but not the smaller guys. That's who we targeted."

The Sublime service covers the design and layout of documents such as monthly invoices, the integration of these documents with other files, and their management and presentation to users at client companies. "We look after every bit of paper that goes into a business, and every bit going out," said Pettigrew. A typical Sublime client is a company like Taxicharge, a mid-sized New Zealand-based voucher service whose taxi company customers generate 120,000 vouchers per month.

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Cowan Pettigrew
CEO
Sublime Group Limited

As Sublime grew, Pettigrew noticed that poor WAN performance between the company's Auckland headquarters and the the company's data processing, storage and data center operations located in Fiji was causing productivity problems.

"The IP connectivity between Auckland and Fiji is prone to high levels of latency, causing file transfers to lag considerably," said Pettigrew. "These inefficiencies were costing us money."

The Solution

Pettigrew initially considered upgrading to a 2 Mbps pipe between Auckland and Fiji, but the cost would have been prohibitive. "Any labor cost savings would have been offset by high bandwidth expenses," said Pettigrew.

Next, Pettigrew explored WAN optimization solutions that would improve application performance for remote users while allowing Sublime to maintain its existing low-bandwidth connection. Working through Infinity Solutions, the local Juniper Networks partner, Pettigrew learned about the Juniper WXC WAN optimization and application acceleration platforms.

The WXC application acceleration platforms provide distributed enterprises with a scalable approach for accelerating application delivery over the WAN. Based on the integrated WX Framework, which delivers all the elements needed to accelerate applications and optimize WAN performance, the WXC platforms feature innovative technologies that help businesses improve application response times, maximize WAN investments, and control and prioritize key applications.

These include Molecular Sequence Reduction™ (MSR™), Juniper's flagship compression algorithm that delivers up to a 10-fold increase in WAN capacity. The MSR technology, which has its roots

in DNA pattern matching, scrutinizes every file sent over the WAN looking for redundant data flows; if it recognizes a pattern it has seen before, it replaces the repetitive data with a label before sending the file to its destination. Because these repetitive patterns are removed from the flow, far less traffic traverses the WAN, reducing contention for limited resources and improving application performance.

The WXC platform also leverages the Juniper Network Sequence Caching technology which, like MSR compression, identifies redundant patterns at the IP layer and replaces them with labels for transmission across the WAN. However, unlike the MSR technology, which operates entirely in memory, the sequence caching technique uses hard drives onboard the WXC platform to retain and recognize particularly large patterns over longer periods of time. As a result, sequence caching technology can detect patterns separated by hundreds of gigabytes of data or last seen days or even weeks earlier, reducing traffic volume even more and increasing WAN capacity by up to 100 times.

Sublime is also utilizing the WXC platform's Packet Flow Acceleration™ (PFA™) and Application Flow Acceleration™ (AppFlow™) technologies to improve application performance between Auckland and Fiji.

The PFA technique uses two different technologies to reduce the impact of latency on TCP-based applications running over wide-area links. The first technology, Active Flow Pipelining, terminates TCP at the LAN-WAN boundary and substitutes a more efficient transport protocol between WX devices, ensuring fast, efficient application delivery over high-latency WANs. The second technology, Forward Error Correction, uses recovery packets that accompany each transmission to reconstruct any lost data – particularly valuable on loss-prone connections such as satellite links.

The AppFlow technology takes over where PFA leaves off, accelerating specific applications such as Microsoft Exchange, Windows file services and web-based applications whose performance across the WAN is constrained by their underlying Layer 7 protocols.

These protocols – the messaging application programming interface (MAPI), common internet file system (CIFS) and HTTP, respectively – utilize transmission techniques that are highly vulnerable to WAN latency. MAPI and CIFS, for instance, break messages into small blocks of data which are transmitted sequentially; because each block of data must be acknowledged before the next block is sent, a single transaction could require hundreds or even thousands of time-consuming round trips. HTTP operates in much the same way, building web pages incrementally by requesting objects one at a time; dozens of round trips are required to load a single page, frustrating users and driving down productivity.

The AppFlow technology overcomes these constraints by pre-fetching data when the first request comes in, pipelining objects across the WAN as quickly as possible. As a result, subsequent data blocks or web objects are available locally when requested by the user, producing a three- to 50-fold improvement in overall performance.

Sublime is also employing the WXC platform's Quality of Service (QoS) and bandwidth allocation features to prioritize business-critical and

latency-sensitive applications. Comprehensive management tools also provide Sublime with unparalleled visibility into WAN behavior, including which applications are being used, how much bandwidth they're consuming, and how congestion is impacting performance.

The Benefits

Sublime began testing of the WXC devices in November 2005. Following the successful test, the platforms were fully deployed in the production network in January 2006.

"Since the WXC deployment, WAN capacity has soared 100-fold and network efficiency has improved 33 percent," said Pettigrew. "As a result, Sublime is no longer hindered by bandwidth constraints, so we can continue to run our data center out of Fiji, right next to the data entry operators."

Pettigrew's team has also discovered two unexpected benefits of the WXC platforms.

First, since the platform has compressed 100MB of data down to 60MB, file transfer and turnaround times have been reduced by several minutes, and each new transmission shows incremental improvements over the last transfer. "That doesn't sound like a lot, but when you're talking gigabytes of data, which is what we are doing each month, it adds up," said Pettigrew.

Second, because the WAN acceleration is carried out via an encrypted tunnel established between the WXC platforms at either end of the WAN link, Sublime is able to assure customers that the data is secure.

“The WXC platforms effectively become a security tool,” said Pettigrew. “The data is broken down into a series of tokens, which can only be read by the WXC device at the other end. It would be highly unlikely for any other device to decrypt the transmission.”

The next step for Sublime, said Pettigrew, is to deploy WXC devices on-site for larger customers who generate enough WAN traffic to justify the installation.

For Sublime, the WXC platform is not so much an application accelerator as a “business-advantage enabler” that allows innovative enterprises to grow quickly by strategically leveraging cost-effective resources, according to Pettigrew.



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