

case study



Stonegate VPN Lifts Performance of Pickerings Network

Executive Summary

Pickerings Lifts were encountering severe network traffic congestion within their infrastructure. Pickerings infrastructure consisted of seven remote offices around the UK with a head office in Cleveland using a 64kbit/sec leased line wide area network. Sapphire with whom Pickerings had developed a strong IT security services relationship put a plan together to replace their network with a solution based on StoneGate Firewall and Virtual Private Network (VPN) technology from Stonesoft Corporation. This provided a direct return on investment by harnessing the public Internet, whilst using higher capacity 512kbit/sec ADSL lines to ensure high availability and resilience. The StoneGate solution offered central management and a powerful intrusion prevention system, and dramatically reduced Pickerings overall networking costs.

About Pickerings Lifts

Pickerings Lifts have been manufacturing passenger and goods lifts in the UK since 1854. Today through its national network of regional offices Pickerings Lifts offer a fast and reliable design and installation service for all types of new lift as well as maintenance, service and repair, including 24 hour emergency call out for any design of lift. The company's head quarters are in the North East of England.

The Dilemma: Performance Problems as Network Reaches Capacity

Pickerings had a series of seven remote offices around the country, connected to the head office, Cleveland, by a BT Kilostream 64kbit/sec leased line wide area network. This had been running for seven and a half years, and had replaced a system where 5.25" floppy diskettes and tapes were posted to the regional offices to keep their business data current with their central database. This had resulted in delays of two to three days, and revenues were

frequently affected by the wait for chargeable information, such as the engineers' timesheets.



But the network itself eventually became a problem as Pickerings' bandwidth requirements increased over time. When Pickerings replaced their branch offices' dumb terminals with Windows PCs, the 400 employees started to require more bandwidth. Network performance was suffering as there was now no longer small amounts of Telnet traffic from the dumb terminals, but also Windows NT domain traffic, file and print services, and management system overheads. If an employee opened an image in their Outlook email client, the network crawled to a halt due to lack of bandwidth.

Pickerings knew that upgrading the WAN from 64kbit/sec to 128- or 256kbit/sec with BT would be extremely costly. So they turned to IT security services consultancy, Sapphire, who put forward a proposal that would increase Pickerings network bandwidth and performance whilst also lowering annual costs.

The Solution: Stonegate SG-200 Firewall/VPN
Sapphire could see that Pickerings' systems were struggling with the additional traffic, and that they were facing daily bandwidth problems. So in February 2004, they proposed a way to increase the speed of the links between the branch offices,

and maintain security in those connections, in a way that would still reduce their costs.

The solution was based on StoneGate Firewall and Virtual Private Network technology from Stonesoft Corporation that harnessed the public Internet, and used lower-cost ADSL lines.

In July 2004, Sapphire implemented the new network, based around StoneGate SG-200 Firewall/VPN, a small footprint 75Mb/sec server appliance, with smaller firewall devices at each remote office. By tunnelling all network traffic from remote offices via the VPN and through the appliance all email and web browsing activities travel securely.

The solution also used StoneGate IPS, an intrusion prevention and analysis system. StoneGate IPS detects malicious or inappropriate traffic, accurately identifies it, and responds accordingly.

The new network consisted of managed 512kbit/sec ADSL lines for the seven remote offices, and 2Mbit/sec leased lines at the Stockton head office, from two Internet Service Providers (ISPs): EasyNet and Onyx. Sapphire recommended dual service providers as a belt and braces approach, and it is a feature of Stonesoft's StoneGate VPN solution.

Stonesoft's patented Multi-Link technology provides high availability and load balancing for Internet and VPN traffic across multiple ISPs. The technology works by automatically maintaining the fastest possible link to the Internet and eliminates the customer's Internet connection as a potential point of failure, without the use of complex routing protocols or additional hardware.

Taking the bull by the horns, Sapphire was determined to give Pickerings additional redundant capacity by installing dual StoneGate SG-200 Firewall/VPN appliances at their head office running in parallel on the two ISP leased lines. Simon Butterick, security consultant of Sapphire, explained "This will give Pickerings

resilience if a single appliance or one of the ISP's fail for any reason"

The new system was up and running from July 2004, with Simon travelling from office to office to set up firewall devices at the branch offices, sometimes covering two offices in a day, and delivering a half an hour changeover. "The installation at the head office was very straightforward, and with the management system being centralised, common security policies for the remote firewall/VPN devices meant that the installation time at each remote site took no more than 1 hour to switch to the new VPN system," Simon stated.

"StoneGate integrated with our existing applications with the minimum amount of fuss. Sapphires' engineers were able to solve all queries following installation promptly and remotely with only phone calls needed to resolve any issues"

Ian Bowers, Maintenance Service Director, Pickerings

The Benefits: Time and Cost Savings, Performance Overhaul

Pickerings were astounded by the cost savings they made with their new network. The BT Kilostream leased line connections had been costing them £4,500 annually per office. The new leased lines cost a total £900 a year, and bandwidth had increased from 64kbit/sec, to 512kbit/sec downstream and 256 kbit/sec upstream with the new connections. The initial outlay for the project was £50,000 and this covered all the new equipment at head office, the branch offices and the ADSL lines.



"Before the implementation of StoneGate we were faced with increasingly tardy response times from our network, the organisation as a whole was loosing chargeable hours. Since installing StoneGate VPN we have increased the response time of our network and by using cheaper ADSL



line have decreased our annual line rental costs."

Ian Bowers, Maintenance Service Director, Pickerings

Another key benefit of moving to the new faster network was the significant boost in performance and productivity both of individual Windows workstation users, and of the remote offices themselves. The new network that Sapphire had architected ensured the remote offices operated at a greater efficiency, with communications no longer slowing down remote PC systems.

In addition, the new VPN network was highly resilient due to the use of Stonesoft Multi-Link technology, which ensures that VPN tunnels are established along more than one path, and harness redundant connections. In the case of an ISP link failure, VPN connectivity is maintained at all times, ensuring that business critical applications are not interrupted.

"Throughout the project Sapphire offered a high level of support at all times"

*Malcolm Fourie, Resource Management Director
Pickerings*

The unified StoneGate management system manages all of the remote offices' firewall devices and Intrusion Prevention Systems. This means that new security policies can be pushed out to firewalls from one place. On top of this, StoneGate IPS is managed from the same management console, so the IPS sensors - remote devices similar to the firewall appliance - link into the management console and show what is happening throughout the network. "The system correlates events throughout the whole of the network, and can make a decision on whether an event is an attack or not. The system can also send out email or text message alerts when necessary to ensure a prompt level of response" said Simon.

At the end of the day, Pickerings had reduced the annual costs of connecting their remote offices; increased the bandwidth of the existing remote office connections; and gained a resilient

Internet connection at the head office with increased bandwidth. Above all, Pickerings gained central management of their network and infrastructure that is resilient and ready for the continued future growth of their business.

Upcoming Developments: Security Management and Future Proofing

Now, it is extremely easy to add additional remote offices to the network, and Pickerings recently extended the VPN to a new area office in Bristol. The process was straightforward and quick to accomplish, taking just three hours to complete.

Additional software updates for the StoneGate SG-200 Firewall/VPN appliances are just as easy, explained Simon Butterick. "Firewall appliance version upgrades can be performed remotely from the central management server, saving on engineers' time travelling throughout the country. Similarly, if a new operating system or application vulnerability is found, it is possible to change firewall rules across multiple firewall gateways quickly, and any rapidly spreading worm can be remotely prevented from entering any of the company's sites," he said.

"The simplicity and effectiveness of this product has proved to be a valuable asset to our organisation leading to an increase in productivity and an overall reduction in communication costs; not to mention the high level of resilience and redundancy we now have with our prime communication system."

Donald Fothergill, Chairman of Pickerings Lifts

