Phobos

CASE STUDY

IN-Boost™ SSL Card Gives Big Performance Boost to NetWORLD Connections

NetWORLD Connections, Inc. (www.networld.com), based in Salt Lake City, is an Internet service provider that offers dial-up and wireless high-speed Internet connections for both residential and commercial customers. The company's services, which are competitively priced at only $79 per year, are currently available in four national markets including Atlanta, Denver, Miami, and the major metropolitan areas of Utah. NetWORLD Connections, which was founded in 1996, has emerged as the third-largest private ISP in Utah.

NetWORLD Connections customers rely on it for services as simple as POTS and ISDN dial-up Internet access and as complex as interactive micro-targeted media campaigns. To better serve their growing customer base, NetWORLD has implemented powerful Internet backbone support with three OC3 lines located directly outside its server site in Salt Lake City. In addition, it has recently introduced broadband 2.4 GHz wireless Internet access to its customers that allows 11 Mbps upload and download data transfers.

With a powerful pipeline and backbone behind the company, NetWORLD is capable of providing unique Web-based applications to its customers. One such customer is eMortgageSoft, a mortgage software company based in Salt Lake City. NetWORLD has recently partnered with eMortgageSoft to develop the first online mortgage origination software and to provide Web hosting and secure transaction processing for the intensive information contained in origination documents for a home loan.

Critical Problems of Hosting an Online Mortgage Origination Site. As the first ISP to provide online mortgage document processing, NetWORLD had to determine the best way to deal with the massive amount of data contained in mortgage documents and the intensive credit reporting information coming into the site from the country's main credit bureaus.

Second, NetWORLD had to guarantee secure transaction processing for the strictly audited and government-regulated information contained in the loan origination documents. The complicated mathematical algorithms used to perform Secure Socket Layer (SSL) transactions for site authentication and 128-bit encryption for online mortgage processing was consuming a large percentage of NetWORLD's secure server's capacity. The burden of processing was consuming a large percentage of NetWORLD's secure server's capacity. The burden of processing secure Web-based mortgage documents when secure keys were loaded into the Window NT IIS server was quickly overwhelming the server, causing it to perform at least 75 percent slower than it did without encryption. Based on this type of Windows NT IIS encryption solution, the server couldn't handle more than one or two users at a time.

The Phobos IN-Boost SSL Advantage
NetWORLD installed the IN-Boost™ SSL network interface card to offload the burden of SSL encryption processing from the Web server. By loading secure keys into the EPROM of the IN-Boost card, all encryption and decryption were performed by the card, leaving the Web server's processor free to perform mathematical calculations for mortgage origination.

The IN-Boost card offers the following benefits:

• Powerful on-board processor, proprietary operating system, and TCP stack perform all secure transaction functions, helping boost performance up to 50 times.

• Only SSL offloading technology on a PCI expansion card; replaces costly dedicated server solutions.

• Replaces server NIC with 10/100 Mbps Ethernet connection.

• Supports up to 200 new simultaneous connections, and up to 900 sustained simultaneous connections per Web server.

• Supports up to 256 secure keys and certificates, greatly simplifying setup and management for multiple domain names.

Putting the IN-Boost SSL Card to the Test

NetWORLD tested the IN-Boost card over a two month intensive process. "At this point we're using one IN-Boost card on one Windows NT server set up to support from 50 to 100 simultaneous log ons — that more than adequately supports what we need for mortgage processing," says Kip Massey, senior Web administrator at NetWORLD. NetWORLD's initial testing of the IN-Boost card with 15 simultaneous users, showed a server and Web site performance increase of 50 times. "The minute we installed the IN-Boost card, we couldn't believe the incredible speed boost. It was as if there was no encryption being performed at all," says Massey.

"When you consider the other options available for SSL encryption, nothing comes close to the price and performance of the IN-Boost SSL Card. What's nice about this solution is that we're using all of the Web server's processor ability to perform intensive calculations rather than losing half of its capacity on secure transactions processing."

— Kip Massey
Senior Web Administrator
NetWORLD

In addition, NetWORLD further tested the card with 40 simultaneous users to see if it could slow down the card. "Actually, all we could do was slow down the server," continued Massey. "Testing it against our current needs, I don't believe we're anywhere near reaching the limit of the IN-Boost card — we've actually reached the limit of the server instead."

As new servers are added to the NetWORLD network, the IN-Boost solution will make expansion easy since all SSL encryption data is contained on the card, eliminating the need to program all secure keys and other encryption information into the server. Support for 10/100 Mbit Ethernet provides high-speed network performance which is also important to NetWORLD. "We've been running the card in full duplex at 100 Mbit speeds and it works great," says Massey.

The Price is Right...

"Finding a solution like this for $2,495 is what we liked best about the IN-Boost card," says Massey. "Before the Phobos solution, the only choice available was an expensive $7,000 to $10,000 server which really couldn't handle security, additional users, or the intensive nature of mortgage document origination. When you look at the difference in price, we saved close to 75 percent with the IN-Boost solution — and nothing can beat that."