Case Study

Insurance

Intel® PRO Multi-Port Adapters

Intel® PRO Multi-Port Adapters Enhance Application Security for Warner Pacific Insurance Services

Intel® PRO server adapters, VMware, IBM, and virtual LAN (VLAN) technology combine for a secure, consolidated virtual server environment

Challenges

- Ensure high application security in a virtualized server environment
- Improve server performance by reducing the use of the host processor for network tasks
- Accommodate a consolidated infrastructure with a port-dense network interface

Solutions

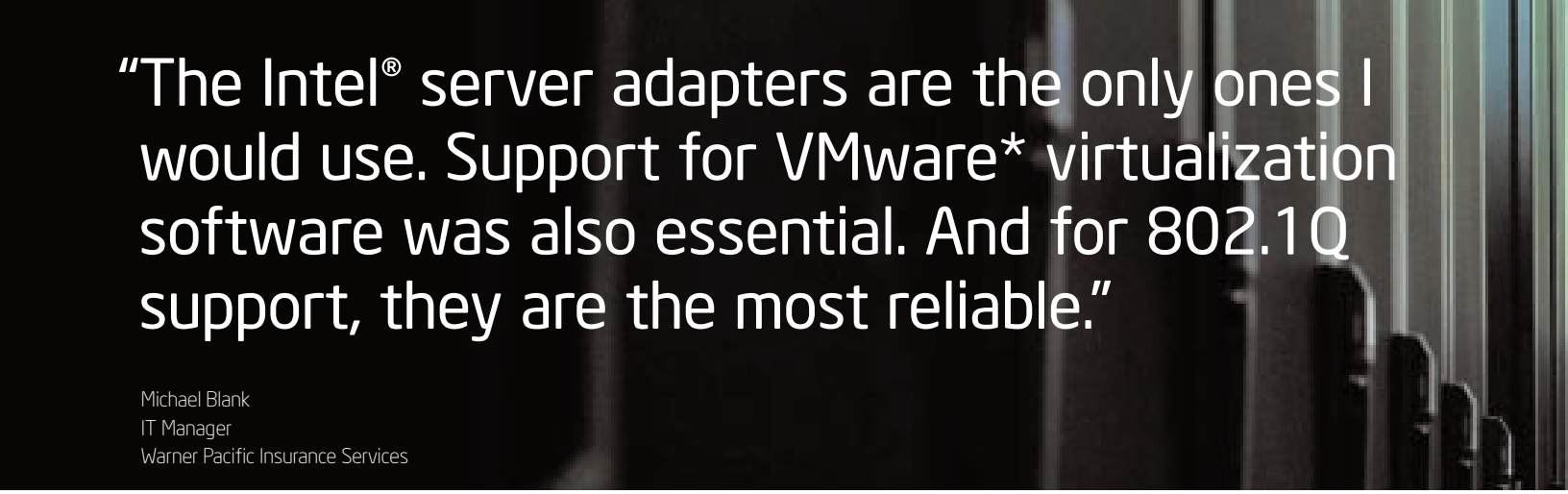
- Intel® PRO/1000 MT Quad Port Server Adapters work with IBM eServer* xSeries* 346 servers, VMware* virtualization software, VLAN implementation, and a Cisco Catalyst* 6500 core switch router to isolate application traffic

Benefits

- Warner Pacific has been able to successfully isolate application traffic to help protect sensitive business and customer information, while also ensuring compliance with HIPAA regulations. The adapters provide the reliability and interoperability the IT group requires while reducing the host processor load and accommodating the consolidated infrastructure by occupying only one PCI-Extended (PCI-X) slot per server.

Warner Pacific Creates a Virtualized Environment to Consolidate Servers

To provide insurance agents and brokers with the tools and resources they need, Warner Pacific uses technology for everything from providing real-time quotes and customized proposals to maintaining information on benefits, carriers, and industry legislation. The Warner Pacific IT department decided to build a virtualized server environment to reduce the complexity and costs of IT administration. "We wanted to minimize the amount of equipment we used to do our work," says Michael Blank, IT manager at Warner Pacific. "When you use a separate physical server for every application, you can quickly run out of real estate—and real estate is expensive."



"The Intel® server adapters are the only ones I would use. Support for VMware* virtualization software was also essential. And for 802.1Q support, they are the most reliable."

Michael Blank
IT Manager
Warner Pacific Insurance Services

"Running virtual machines and VLANs with the Intel® PRO server adapters has worked flawlessly. As a result, we can better protect sensitive information."

Michael Blank
IT Manager
Warner Pacific

Blank deployed VMware GSX Server* (now called VMware Server) on two IBM eServer* xSeries 346 servers, equipped with dual-core 3.4 GHz Intel Xeon® processors and running a Microsoft Windows* 2003 host operating system. The xSeries 346 servers feature fast I/O speeds and optional support for PCI Express* (PCIe) technology, the third-generation I/O standard.

Blank created ten virtual machines, each with its own operating system, to run ten distinct applications on the xSeries 346 servers. "Now instead of ten servers, I can have two servers doing the work of ten," says Blank. Among the software Warner Pacific runs are a custom database quoting engine, an e-mail system, and remote-access applications, plus specialized applications for particular business departments.

Using VMware software for virtualization enables Warner Pacific to improve server utilization and consolidate physical hardware while also enhancing IT flexibility and availability. IT staff can now move applications from one device to another rapidly to accommodate maintenance or allow for scaling, all without affecting application performance.

Spotlight: Warner Pacific

Warner Pacific Insurance Services is one of the leading full-service general agencies of the West, serving over 5,000 agents and brokers in California and Colorado. For nearly 25 years, Warner Pacific has provided insurance agents and brokers the tools, resources, and support they need to supply medical, dental, vision, life, and other types of insurance to their clients.

Although moving to a virtualized environment with VMware allowed Blank to use fewer physical servers, he uncovered additional challenges. Blank wanted to ensure the highest level of isolation between applications. Running all traffic from multiple applications on a physical server through a single hub was cause for concern. "If we run a financial application alongside another application that general users can access, we need to make sure that the applications are completely isolated," says Blank. Health Insurance Portability and Accountability Act (HIPAA) regulations that require organizations to maintain the privacy of personal healthcare information also affect IT strategy. "We have to make sure that we keep personal information secure."

In addition, Blank wanted to reduce any potential strain on the host processor caused by managing network tasks while also running numerous virtual machines. By delegating some processing tasks to a network card, Blank would enable servers to maintain high application performance while better accommodating peaks in demand.

Intel® PRO Multi-Port Adapters Help Segment Application Traffic

Blank selected Intel PRO multi-port network adapters for their reliability and strong interoperability. "I have evaluated many other network adapters," says Blank, "but the Intel network adapters are the only ones I would use. Support for VMware virtualization software was essential."

Blank installed an Intel® PRO/1000 MT Quad Port Server Adapter in each of his two virtualized xSeries 346 servers. Initially, he used the four available ports for four individual virtual machines. But because he had already decided to run five virtual machines on each

physical server, Blank needed to explore an alternative means of isolating traffic.

Blank decided to create VLANs for traffic segmentation. By bridging each virtual machine to its own VLAN, Blank could prevent leaks in application traffic. In this configuration, the virtual machine sends raw data to the VLAN, which tags the traffic. That traffic can only be read by other devices marked with the VLAN tag.

Unfortunately, VLAN traffic-tagging capabilities, which are a feature of VMware ESX Server*, are not natively supported with VMware GSX Server. "That capability was not available in the software, but I knew that the Intel PRO multi-port network adapters support the 802.1Q VLAN specification," says Blank. "In fact, for 802.1Q support, they are the most reliable."

Once he made the switch to the VLAN architecture, Blank could run all of the VLANs through a single port. Now he uses a second port for the VMware service console host operating system traffic, achieving complete isolation of the host traffic from the virtual machine traffic. This configuration enables Blank to run more virtual machines, while still ensuring their isolation from one another. If he later incorporates VMware VMotion* dynamic workload balancing software, he could run that traffic through a third port.

Adapters Deliver Results Now, Capabilities for the Future

For Blank, the Intel PRO multi-port network adapters have helped provide the security and reliability that his group needs. "Running virtual machines and VLANs with the Intel adapters has worked flawlessly," say Blank. "We have been able to keep applications isolated without any problems. As a result, we can better protect sensitive information."

Intel PRO multi-port network adapters not only have provided the interoperability Blank requires, they have also helped to alleviate the processor overhead. "Moving that work to the network card lets me use more of the server's processing power for virtual machines," says Blank. "That will give us room to grow in the future without having to spend money by adding more physical servers."

In the future, Blank's team could also take advantage of capabilities built into the multi-port adapters to improve application availability. Diagnostics capabilities can dynamically test and report network problems before they arise. By using the fault tolerance and teaming capabilities, the IT group could help ensure that brokers, agents, and internal staff have uninterrupted access to applications even if there is a failure.

The impressive Gigabit bandwidth capabilities will be essential if and when Warner Pacific adds applications or users on the system. "At the moment, we only use about 50 percent of the Gigabit bandwidth," says Blank. "But it gives me great confidence to know that we can expand IT services rapidly as the business grows, without having to add more hardware."

"At the moment, we only use about 50 percent of the Gigabit bandwidth, but it gives me great confidence to know that we can expand IT services rapidly as the business grows, without having to add more hardware."

Michael Blank
IT Manager
Warner Pacific

For more information on Intel® networking solutions, visit www.intel.com/network

3711741-001US

0806/CAM/TDA/XX/PDF