

INTERMATIC LIGHTS UP TWO-TIER NETWORK ARCHITECTURE FOR IMPROVED BUSINESS EFFICIENCY

Summary

Industry: Manufacturing

Challenge: Design and deploy a high-performance network to support move of manufacturing and logistics operations to Mexico.

Network Solution: MX480 Ethernet Services Router, J4350 Services Router, ISG Series Integrated Security Gateways, SSG Series Secure Services Gateways, SA Series SSL VPN Appliances, EX4200 Ethernet Switch with Virtual Chassis technology, WX Series & WXC Series Application Acceleration Platforms, Network and Security Manager, and NSM Central Manager

Results:

- Two-tier collapsed network architecture improved performance and simplified management
- 10-Gbps Ethernet network was deployed in a 270,000-square-foot facility in 10 hours
- Increased availability of manufacturing network from 70 to 100 percent
- High-performance network has plenty of headroom for growth
- Tenfold decrease in WAN utilization was achieved
- Comprehensive security at scale includes a coordinated system that identifies, mitigates, and reports on the attacks targeting the distributed enterprise
- Single management platform drove significant productivity gains and operational efficiency, and reduced IT resource requirements

Intermatic has been manufacturing light, heat, and energy controls for more than 120 years—and its diversity of a global, retail, and industrial presence is helping the company weather the global economic storm. The company is known for its consumer timers, Malibu low-voltage outdoor lighting, industrial controls, and industrial-grade timers. Intermatic operates in more than 100 locations around the world, with the corporate headquarters in Spring Grove, Ill. and manufacturing in Mexico, Germany, and China.

Challenges

Intermatic needed flexible IT systems to support its new manufacturing and logistics facility in Juarez, Mexico. Scotty Bevill, IT project manager at Intermatic, saw the opportunity to create a state-of-the-art, high-performance network that would help the company maintain its leadership while also containing costs in these lean economic times.

Selection Criteria

Availability, reliability, and performance are critical network requirements for any high-performance business that views its network as critical to success, and Intermatic is no exception. Manufacturing is the heart of the company’s operations, and inconsistent network performance has a measurable impact on the bottom line. Operational efficiency is paramount, since four IT managers in the U.S. support the global network.

Intermatic has relied on Juniper Networks® WXC Series Application Acceleration Platforms to speed the delivery of its applications in the WAN since 2007. “The performance of the WXC Series appliances and J Series routers caused us to look at the Juniper switches,” said Bevill. “We have zero downtime with Juniper, and that gets my business.”

When it came to selecting high-performance infrastructure for the Juarez location, Intermatic compared Juniper Networks solutions against its two incumbent switch providers. Juniper Networks MX Series Ethernet Services Routers and EX Series Ethernet Switches—with their high-performance, carrier-class reliability, and operational ease—were clearly the winners.

Solution

As a vertically integrated manufacturer, Intermatic relies on a variety of applications—including enterprise applications, CAD, databases, product life cycle management, email and collaboration tools, and VoIP. The IP network connects a plethora of devices, including mainframes, servers, manufacturing process controls, and Heidelberg printing presses. “We have everything from 25-year-old technology down to the latest version of VMware,” said Bevill.

Intermatic deployed a 10-Gbps Ethernet network in the Juarez manufacturing and logistics facility. A pair of the Juniper Networks MX480 Ethernet Services Router forms the core, with multiples of the Juniper Networks J4350 Services Router at the edge. With MX Series routers at the core, Intermatic was able to eliminate the distribution layer and improve performance and operational efficiency.



The MX Series is a family of high-performance Ethernet services routers with powerful switching features that provides unmatched flexibility and reliability to support advanced services and applications. The MX Series delivers the most advanced routing features, as well as the ability to scale functionality without compromising performance. The MX480 router provides up to 480 Gbps of capacity.

Juniper Networks J Series Services Routers deliver reliable connectivity to remote offices with a powerful blend of high-performance networks and advanced services. J Series routers leverage the modular Juniper Networks Junos® software and Juniper's product portfolio to consolidate security, application optimization, and voice capabilities on a single, easy-to-manage platform.

“When we started talking about moving manufacturing to Juarez, we had some hard discussions in a short time. We needed to manage our costs. Junos factored big into the decision,” said Bevill. “The only way to deploy the technology we needed in a short time frame was to have a single network platform. Junos is the only one available.”

Scotty Bevill,
IT Project Manager, Intermatic

Intermatic deployed multiples of the Juniper Networks EX4200 Ethernet Switch with Virtual Chassis technology at the hub locations. Juniper Networks ISG Series Integrated Security Gateways with intrusion detection and prevention at major remote locations enable the company to consolidate WAN services while protecting itself from network- and application-level attacks. Intermatic also uses Juniper Networks SSG Series Secure Services Gateways to deliver high-performance security and modular LAN/WAN connectivity in smaller branch offices.

The EX4200 line of Ethernet switches with Virtual Chassis technology provides high-performance, carrier-class performance. The EX4200 switches are easy to deploy and manage, allowing for more energy-efficient networks that reduce CapEx and OpEx. They are also powered by the same field-proven Junos software as the MX Series and J Series routers, which deliver operational efficiency across the switch and router products. All EX4200 switches include high availability (HA) features such as redundant, hot-swappable internal power supplies and field-replaceable, multi-blower fan trays to ensure maximum uptime. In addition, the Virtual Chassis technology enables up to 10 interconnected EX4200 switches to behave as a single device, reducing management overhead and operational expenses.

The ISG Series is a fully integrated firewall/VPN/intrusion detection and prevention system with multi-gigabit performance, a modular architecture, and rich virtualization capabilities. Intermatic uses the SSG Series—a purpose-built, modular security platform—to consolidate devices at its branch offices and reduce IT expenditures. The SSG Series provides connectivity and protects the network with unified threat management (UTM), stateful firewall, IPS, antivirus, anti-spam, and Web filtering.

Intermatic uses Juniper Networks SA Series SSL VPN Appliances to provide employees, customers, and partners with anywhere, anytime access to corporate resources and applications. Employees have access to their key applications from anywhere using the clientless SSL VPN. Channel partners and large retail and distributor customers access the Intermatic extranet and ecommerce sites.

Intermatic uses the WXC Series and Juniper Networks WX Series Application Acceleration Platforms to deliver highly responsive applications and optimize its WAN infrastructure investments. The WXC Series and WX Series devices accelerate mission-critical applications and rich content by reducing the volume of traffic traversing the WAN, accelerating the delivery of Web applications by speeding application-specific protocols, and facilitating real-time collaboration by accelerating VoIP through prioritization and allocating bandwidth allocation.

Results

The startup of a new facility is always a major undertaking, but in Intermatic's case, the network was up and running in record time. Bevill and his team staged the 10-Gigabit Ethernet network in the Spring Grove, Ill. data center and shipped the equipment to Juarez, Mexico. “We stood up the network in a 270,000-square-foot facility in 10 hours,” said Bevill. “It was fully deployed and monitored, and we closed the project.”

A lightning-fast buildout was just the first of many benefits from the Juniper infrastructure. The network performs better, is more reliable, and is easier to manage. Collapsing the core simplified the architecture because Intermatic could eliminate the distribution layer as well as an overly complex VLAN architecture.

Network stability was also improved. “We have 100 percent availability in Juarez,” said Bevill. Network availability had hovered around 70 percent with the previous vendors' switching gear.

Performance also greatly improved, and the Intermatic network has plenty of headroom for growth. The Juarez network runs at 30 percent capacity, whereas capacity on the previous manufacturing network regularly pushed into the red zone of performance. WAN utilization is a mere 10 percent, which is a tenfold decrease, thanks to the reduction of the VLAN chatter over the distributed network.

The Juniper infrastructure has allowed IT greater control over its network. IT manages all of its routes, which has reduced its dependency on the service provider for change control on the WAN. “We have a fully meshed BGP network and use ISG Series and SSG Series firewalls to dynamically control which routes are populated. We can decide which routes should talk, so we don't have to call our service provider to make changes,” said Bevill.

With coordinated security among Juniper's solutions for intelligent security and performance, Intermatic has been able to gain greater visibility and control over the campus network. Juniper Networks Adaptive Threat Management Solutions across the WXC Series, IPS, SA Series and Network and Security Manager products help Intermatic close the security gap while improving security and performance for remote workers. With Adaptive Threat Management Solutions, Intermatic gains a coordinated system that identifies, mitigates, and reports on the attacks targeting the distributed enterprise.

The company has about 250 users working outside of corporate headquarters, and ensuring consistent application delivery to these locations is critical. “We have a lot of lightweight protocols, such as telnet, and we ensure the consistent performance of these applications with the WXC Series platforms,” said Bevill. Massive design databases and CAD applications place intense pressure on network performance, as do file transfers and backup. In fact, the company replicates more than 100 MB over the WAN without impacting other business-critical applications. The WXC Series platform has also allowed Intermatic to hold the line on costly WAN upgrades. “Many locations have T1 and E1 access lines with good application performance,” said Bevill.

The Juniper infrastructure has enabled Intermatic to contain costs in a number of areas, including through consolidation of network equipment and simplified network management. “When we started talking about moving manufacturing to Juarez, we had some hard discussions in a short time,” said Bevill. “We needed to manage our costs. Junos factored big into the decision. The only way to deploy the technology we needed in a short time frame was to have a single network platform. Junos is the only one available.”

Junos software was easier to learn than anticipated. Bevill and his team of network engineers went through Juniper's training course and picked it up quickly. “Junos is phenomenal,” said Bevill. “It has all the bells and whistles, and it's easy to consume. It's easier to script and do remote management than others that we've used.”

The IT team uses Juniper Networks Network and Security Manager and NSM Central Manager to manage the network, which spans three continents. “We have no IT support outside of Spring Grove, but I haven't traveled in a year and a half,” said Bevill.

The relationship between Intermatic and Juniper is strong. “We've had immense support from Juniper,” said Bevill. “I have a personal relationship with our account representative. I don't get a call center with someone asking for my account number. Service like that doesn't exist when companies get too large.”

Next Steps and Lessons Learned

Intermatic deployed VoIP in the Juarez facility, and is planning to broaden its VoIP rollout to other locations as it investigates other ways of improving collaboration and containing costs. The company plans on using advanced routing features available on its network to implement traffic engineering, multicast, and in-house MPLS.

Bevill also wants to bring to bear the benefits of a Juniper infrastructure at its corporate headquarters. “Juarez is done the right way—by design, by architecture, and by protocol,” said Bevill. “When we turn up Spring Grove the right way, we'll be able to stop fighting fires.”

For More Information

To find out more about Juniper Networks products and solutions, visit www.juniper.net.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

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