



RICOH

THE RICOH GROUP UNIFIES AND SIMPLIFIES ITS GLOBAL NETWORK TO ACCELERATE MIGRATION TO THE CLOUD

Summary

Company:

The Ricoh Group

Industry:

Technology

Business Challenges:

Upgrade the network to streamline the move to the cloud and assure the best possible user experience

Technology Solution:

- MX480 5G Universal Routing Platform
- SRX5800 Services Gateway
- Juniper Sky Advanced Threat Prevention
- QFX5100 Switch
- EX9214 Ethernet Switch

Business Results:

- Created a digital workplace for 100,000 employees across 500 locations
- Improved operational efficiency with a unified network from branch to WAN
- Mitigated risk with integrated, centralized, and automated security
- Achieved 50% reduction in physical space for network gear in its offices
- Reduced power consumption by two-thirds

As a leader in empowering the digital workplace, The Ricoh Group helps its customers work smarter. As an early adopter of cloud to fuel productivity, its global network—which supports 100,000 employees—was experiencing significant pains. Ricoh unified and simplified its network operations and built a massively scalable network around the Juniper Networks® MX Series 5G Universal Routing Platforms, Juniper Networks QFX Series Switches, and Juniper Networks EX Series Ethernet Switches. And with Juniper security, Ricoh can quickly detect and proactively respond to threats.

The Ricoh Group has long been on the vanguard of the cloud, embracing applications and services that empower employees to work more easily from anywhere and any device. But as the popularity of cloud applications grew, so did its network pains. Slow connections to hundreds of locations became a drag on the promise of the cloud.

Ricoh has a long history of technical innovation, dating back to the creation of Riken photosensitive paper in 1936. Today, with consolidated sales of over 2000 billion yen,¹ Ricoh's office printing business makes digital multifunction printers, projection systems, and interactive whiteboards. Its office services business makes PCs, servers, network equipment, and software. It also makes and sells commercial and industrial printing equipment.

Inspiring the Digital Workplace

Ricoh is focused on Empowering its customers' digital workplaces. The company applies those same principles to its own employees, allowing them to work smarter. "Today, more and more people are using the cloud and clamoring for work-style reform. That means our network needs are changing rapidly," says Tomotake Wakuri, corporate senior architect for security and network of Ricoh's Digital Promotion Division. "To quickly respond to users' needs and improve customer satisfaction, we thought we needed to control everything from building to operating the network infrastructure."

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¹<https://www.ricoh.com/about/company/data/>

Ricoh's network was strained by its very success. As more applications migrated to the cloud, the impact of drastically different traffic patterns became readily apparent to employees working in branch locations. Some cloud applications didn't work properly. Other applications, like voice, video, and Web conferencing, were so slow that employees stopped using them. Users were dissatisfied.

To make matters worse, network operations were disjointed across Ricoh's many affiliated companies and locations. The networks for each location were managed as separate domains. The WAN was a managed service. Internet connectivity was also outsourced.

Delivering a consistent user experience required intensive fine-tuning. Ricoh has hundreds of locations bustling with activity, and if traffic spiked on one branch office connection, employees at other locations were also impacted. With poor visibility into network performance at the branch offices, employee complaints about application performance had to be investigated separately. Internet routes had to be changed manually to improve application performance. Resolving issues took too long and cost too much, and that was a drag on employee and IT staff productivity.

To reap the full value of the cloud and improve IT service quality, Ricoh refreshed its global network. Unifying its network architecture was the first step to eliminating the complexity that stood in the way of business productivity.

Accelerating Cloud

"When we started rebuilding our network environment, our goal was to do all the design, building, and operations work ourselves. However, our operations team at the time consisted of only two people," Wakuri says. "It was critical that we implement an efficient and simple operation."

To create a smarter digital workplace, Ricoh simplified its branch, campus, and WAN architecture. "We emphasized three selection criteria for technologies and products," says Wakuri. "The technology had to be easy to configure to decrease the number of mistakes, enable easy automation, and support industry standards and protocols to assure interoperability."

Ricoh chose Juniper Networks to help achieve these goals. Juniper's innovation through engineering, from the early days of the Internet to today's advancements in performance, automation, and security, as well as a strong service provider heritage, was a critical factor in the decision.

Today, Microsoft Office 365 and a host of other applications are readily available. Wakuri offers an example: "The CEO did a presentation over the Internet, and 2600 employees were able

to watch the broadcast without any trouble whatsoever." User complaints about the network have decreased dramatically, and IT operations costs are also lower.

Simplifying a Global Network

The Juniper Networks MX480 5G Universal Routing Platform connects Ricoh's three data centers in Japan with 500 offices in 200 countries and regions around the world. "The MX480 that is responsible for the WAN between the data centers of Tokyo, Osaka, and Yokohama and our Internet connection boast incredible stability," says Wakuri. "The Internet side sometimes has to handle a full BGP routing table of more than 500,000 routes, but it goes off without a hitch."



Ricoh's data centers contain thousands of virtual machines and more than 2 petabytes of storage. The data centers are connected at 10 Gbps using the Ethernet VPN (EVPN) capability on the MX Series routers, which creates a virtual bridge. "The Tokyo and Osaka data centers are 500 kilometers apart, and with Juniper routing, they function as a single network," Wakuri says.

The Juniper Networks QFX5100 Switch and EX9214 Ethernet Switch provide connectivity at large offices. Now, the office networks are simpler, more reliable, and more cost-effective to manage and maintain. Ricoh has also reduced the physical space required for network equipment in its offices by half and reduced power consumption by two thirds.

The Juniper Networks Junos® operating system delivers ongoing operational simplicity and savings. "I really like that Junos OS is the same, whether it is a switch, a router, or a firewall," says Wakuri. Configuration is standardized and allows for easy automation using open-source software such as Python. "We love Juniper because of the interoperability it provides," Wakuri says. Automating operational and configuration tasks saves time, speeds troubleshooting, and maximizes uptime by warning of potential problems and automatically responding to systems and events.

Enhancing Cybersecurity

Ricoh took additional steps to protect against rising cyber threats—especially with the recent scourge of ransomware. Juniper Sky™ Advanced Threat Prevention provides advanced malware protection from the cloud. “When an employee accesses a sketchy site, the threat is automatically evaluated and, depending on the evaluation, a warning can be displayed, or the network communication can be blocked,” Wakuri explains. “Seeing the large number of attempted access to suspicious sites, sometimes I worry about what would have happened if we had not implemented Sky ATP.”

The Juniper Networks SRX5800 Services Gateway provides next-generation data center security, and each branch office has an SRX5800 for LAN/WAN connectivity and security. “By visualizing the logs from the SRX Series firewalls, we can spot threats that are happening and find suspicious devices and block them from the network,” Wakuri says. “The SRX Series firewall has made a huge difference for us.” More than 1 TB of logs from the SRX Series firewalls is fed into Ricoh’s security information and event manager (SIEM) each day.

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Adopting Juniper’s Software-Defined Secure Network (SDSN) framework, in which every element—including routers, switches, and firewalls—becomes an active participant in detecting and containing threats, is key to keeping Ricoh protected. With Juniper’s SDSN framework, Ricoh can automatically detect and respond to threats faster and more easily.

A Bright Future

By simplifying and unifying its network, Ricoh has eliminated the roadblocks and complexity that once stood in the way of business growth and innovation. Next, it plans to roll out Office 365 and refresh its networks in China and Southeast Asia. “In expanding overseas, our expectations are high with regard to Juniper,” says Wakuri. With the tools of the digital workplace easily accessible, Ricoh employees can continue to innovate and deliver value to customers.

For More Information

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

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

Corporate and Sales Headquarters

Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or +1.408.745.2000
Fax: +1.408.745.2100
www.juniper.net

APAC and EMEA Headquarters

Juniper Networks International B.V.
Boeing Avenue 240
1119 PZ Schiphol-Rijk
Amsterdam, The Netherlands
Phone: +31.0.207.125.700
Fax: +31.0.207.125.701

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