ION Geophysical Maps the Ocean Bottom for Oil and Gas Exploration with a Rock-Solid Network

Summary

Company:
ION Geophysical

Industry:
Oil and Gas

Business Challenge:
Connect data centers, global offices, and an exploration ship with high-performance, reliable connectivity.

Technology Solution:
- EX4200 and EX2200 Ethernet Switches
- SRX210 Series Services Gateway

Business Results:
- Enabled high-performance, scalable switching to power data centers
- Ensured rock-solid, worry-free, smooth connectivity to far-flung locations
- Achieved operational simplicity

Oil and gas exploration and production are a high-risk, high-reward business. As upstream providers prospect for hydrocarbons, they work with partners to collect and analyze massive amounts of seismic data. ION Geophysical, which generates high-resolution images of the Earth's subsurface for exploration and production, is one of these key partners. ION offers deep expertise in geophysical and geological technologies, advanced data processing and reservoir services, integrated ocean-bottom services, seismic data acquisition services, and industry-leading software. The company also owns one of the industry's largest seismic data libraries.

Business Challenge

As ION expanded its products and extended its geographical reach, it needed a high-performance, carrier-grade network that would provide secure connectivity to all its locations. The company is global, with headquarters and data centers in Houston and offices in the U.S., Canada, Latin America, Europe, Africa, Russia, China, and the Middle East.

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Steve Miller, Senior Network Security Engineer, ION Geophysical

Technology Solution

With Juniper switching and security, ION was able to build more than a network to power its business. "Juniper fits the bill," says Steve Miller, senior network security engineer at ION Geophysical. "We chose Juniper because of the abundant features, Junos operating system, and from a cost perspective."

ION securely connects its 20 locations using Juniper Networks® SRX Series Services Gateways and legacy Juniper firewalls that still hum along. SRX Series gateways provide high-performance security in a scalable and resilient platform. Connectivity to ION's global offices is assured with dual WAN links, so if the primary link fails, traffic is dynamically shifted to the secondary link, and applications and services are not interrupted. "We take advantage of dynamic protocols to ensure that there are no interruptions and to keep our site-to-site collaborations flowing," says Miller. "It's a big benefit."

ION's ocean-bottom seismic vessel, which operates largely in the Arctic, needs to transmit key quality, health, safety, and environmental (QHSE) information when it comes into port. This data is essential to ensure the health and safety of workers and the public and to comply with local laws and regulations where the ship operates. But given the remote location, a flawless connection isn't always easy.

The SRX210 Services Gateway, equipped with an asymmetric digital subscriber line (ADSL) interface for WAN connectivity, has delivered smooth and reliable connections. "We needed a way for them to document QHSE information and sync the data with SharePoint," says Miller. "The Juniper solutions have been outstanding. Having an outage on a vessel can get costly very quickly, and we've had zero connectivity issues since we started using the SRX Series in 2011. That is exactly what we all strive for. None of us wants that phone call in the middle of the night."

Juniper also is an essential element in ION's data centers. ION uses the Juniper Networks EX4200 Ethernet Switch for the core in its primary and secondary corporate data centers to support ERP and other enterprise applications. EX2200 Ethernet Switches are used for top-of-rack switching in its high-performance compute data center. ION also uses EX2200 switches in its remote offices.

Business Results

The Juniper network has been rock-solid reliable over the years, which is even more important, given the deep downturn in the oil industry. IT resources are tapped out, and, more than ever, the IT team needs a network that just works.

"Reliability has been the main benefit of the Juniper network," says Miller. "With the downturn in oil, there's no money to replace equipment. We're very fortunate that Juniper has stayed steady and consistent. Juniper doesn't need a lot of hands-on attention."

Miller also appreciates Juniper Networks Junos® operating system, which runs across Juniper's routing, switching, and security devices. Running Junos OS in the network has improved the reliability, performance, and security of existing applications, and it simplifies network operations. "With Juniper, we've been able to keep a consistent platform throughout the network," says Miller. "Junos OS is so feature-rich from its advanced routing and security down to troubleshooting with real-time captures on the device. It's now a cornerstone of ION's network and it has become difficult for any competitor to meet the features we require and deliver on the price point as well."

Juniper has been a solid partner over the years. "When we need information, our Juniper rep is right there," says Miller. For example, an ION subsidiary in Brazil needed to increase switching capacity in its seismic data processing center, but didn't have any local connections for network gear. "Our Juniper rep got a connection going fast," he says.

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Next Steps

Miller is looking ahead as the oil and gas industry shows signs of recovery. One of his top priorities moving forward will be to upgrade the corporate campus and data center core networks to 10 Gbps. He's also investigating how software-defined networking and network virtualization can increase network agility. "While we're in a deep industry downturn, we can plan and get our infrastructure ready to capture the opportunity when the market recovers."

For More Information

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

About Juniper Networks

Juniper Networks challenges the status quo with products, solutions and services that transform the economics of networking. Our team co-innovates with customers and partners to deliver automated, scalable and secure networks with agility, performance and value. Additional information can be found at Juniper Networks or connect with Juniper on Twitter and Facebook.

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