

# Fortune 100 Energy Company Speeds IT Service Delivery with Highly Automated Global WAN

## Summary

### Company:

Fortune 100 Oil and Gas Company

### Industry:

Energy (Oil & Gas)

### Business Challenge:

This integrated energy company needed to redesign its WAN to address enterprise business agility issues and improve service quality, reliability, and cost optimization.

### Technology Solution:

- MX960, MX480, and MX240 3D Universal Edge Routers
- Junos Space Network Management Platform with Activation Director and Junos SDK
- Junosphere
- Professional Services and Resident Engineer

### Business Results:

- Built an efficient, future-proof core and edge network for global connectivity
- Created service-provider-like MPLS network to deliver services and bandwidth
- Used automation to simplify operations

As a Fortune 100 company that's involved in virtually every facet of the oil and gas industry, it prides itself on operating responsibly, executing with excellence, and applying innovative technologies to fuel new opportunities for profitable growth. Beyond oil and gas, the company is involved in alternative fuels, coal mining, and manages significant interests in power assets with a total operating capacity of more than 2,000 megawatts.

## Business Challenge

For this company, being a leader means being bold and committed to satisfying the world's growing need for energy while operating responsibly and profitably. Being successful also requires an IT infrastructure that can keep pace with the challenges of a diversified, global operation.

The company was bringing a new North American data center online, but the network that connected its data centers and network hubs around the world was aging. A lot had changed since its WAN was designed 15 years ago, both in terms of business changes and technology advances. Over time, the network had become overly complex, hard to manage, and inflexible.

The legacy WAN was designed to support internal corporate information systems only, but with advanced technology now used pervasively across all facets of the operation, the network needed to support the technology needs of a broad array of its joint ventures, its business partners, and other third parties without any compromises in performance, availability, or security. The network needed to be far more flexible, while delivering high performance, uncompromising reliability, and unyielding security.

The company wanted an MPLS network that would deliver service-provider-like connectivity to employees, contractors, partners, and guests in its major business locations, data centers, and network hubs around the world. This new network needed to support a portfolio of network services and a range of speeds to satisfy a broad variety of business requirements, including connectivity to virtualized data centers.

While revamping its network, the company also wanted to align the network hubs geographically with the business. By making sure the network hubs were served by multiple service providers, the company could better leverage competing carriers for the best value while simplifying connectivity to cloud services.



## Technology Solution

When it came to its next-generation global WAN, the company decided to challenge the status quo. Like many other energy companies, it already used Juniper security solutions, so it knew firsthand that Juniper consistently developed and delivered market-leading solutions and services and that Juniper had earned its reputation as an innovator by out-engineering the competition and exceeding customers' expectations. Based on this experience, the company partnered with Juniper to build a WAN that met its requirements for performance, global scale, and geographical redundancy, with a complete set of network automation tools that it could use to provision and activate MPLS and Ethernet network services.

The company selected the Juniper Networks® MX Series 3D Universal Edge Routers, which provide the industry-leading system capacity, density, and performance, for its global network. The Juniper Networks MX960 3D Universal Edge Router was the ideal anchor point for the core MPLS network domain, with the ability to provide highly elastic, automated, and customized service delivery at scale. Juniper Networks MX480 and MX240 3D Universal Edge Routers are used as Provider (P) and Provider Edge (PE) routers, depending on whether the network hub provides core network connectivity, virtualized data center infrastructure, or connectivity to large business units.

Juniper Networks Junos® operating system for routing, switching, and security improves the reliability, performance, and security of existing applications. Using Junos, the IT team can deploy new network services faster while lowering network operations costs.

The network, which spans more than 70 network hubs across the world, was rolled out over two years. The 10-Gbps MPLS WAN supports multiple classes of applications and services to support the company's corporate, operational, and business partner needs. With Juniper's extensive IPv4 and IPv6 MPLS traffic engineering and quality-of-service (QoS) capabilities, the company can consolidate services efficiently while supporting different applications and services. QoS is implemented at the MX480 provider edge routers, so the full range of QoS requirements is applied consistently across the core network, allowing seamless transitions for traffic moving between the core and the edge networks.

Availability is assured by design. MX Series routers deliver carrier-grade reliability, with redundant Routing Engines (REs), power supplies, and switch fabric. The company deployed redundant pairs of MX Series routers in each point of presence (POP), with each router capable of handling the total traffic load on its own.

The network operations team uses Juniper Networks Junos Space Network Management Platform to automate and manage operations, network planning, service provisioning, and troubleshooting from one centralized network management

platform. Using Junos Space Services Activation Director, coupled with custom scripts based on Junos SDK, the company's IT team can automate the rapid provisioning of MPLS and Ethernet services, track site-specific QoS profiles, and troubleshoot network problems. Automation has significantly streamlined provisioning MPLS and Ethernet services anywhere the company operates in the world.

The network team used Junosphere, a virtual environment where they could validate the network design and configurations before rolling out the solution to the production environment. Network staff also used Junosphere for training, which helped avoid excessive travel costs and time out of the office.

Finally, the company leveraged Juniper Professional Services and Resident Engineers to personalize the support and have Juniper expertise where and when it was needed, without having to hire additional resources.

## Business Results

This energy leader has built more than a network. The network is more flexible, with the ability to support corporate, operational, and business partner applications and services over the same global infrastructure now and well into the future. It's simpler to operate through network automation. Having a service-provider-like network, it can auto-provision the most appropriate service—whether MPLS or Ethernet—and bandwidth for the core network, data center infrastructure, and business unit locations as needed.

The network hubs are now aligned with business operations, so workers have predictable access to their applications. And with increased carrier diversity at hub sites, the company has improved business continuity as well as its negotiation position with service providers to lower cost and improve service. With more choice, it can purchase fast, reliable connectivity at a more competitive rate and leverage public cloud providers and the Internet with the same level of reliability as for internally delivered services.

By modernizing and simplifying its network architecture, the company has improved network performance and reliability and reduced management overhead. This is helping the IT team keep focused on delivering high-quality services to its business units.

## Next Steps

This company, like many others in the energy sector, faces global economic turmoil, increased competition, and huge price swings. As the company transforms its business, it continues to use technology and innovate to produce energy responsibly and capture growth opportunities. With Juniper, it has a global network infrastructure that can keep pace with change.

## For More Information

To find out more about Juniper Networks products and solutions, please visit [www.juniper.net](http://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](http://Juniper Networks) or connect with Juniper on [Twitter](https://twitter.com/Juniper) and [Facebook](https://www.facebook.com/Juniper).

### 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](http://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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