



INTELSAT KEEPS GLOBAL CUSTOMERS CONNECTED WITH BEST-IN-CLASS COMMUNICATIONS SERVICES

Summary

Company:

Intelsat

Industry:

Telco

Business Challenges:

While preserving the stellar experience customers are accustomed to, Intelsat sought to upgrade to a new core network to support new revenue-generating business services while saving time and money.

Technology Solution:

- PTX1000 Packet Transport Router
- Onsite technical services, including Resident Engineer

Business Results:

- Attracted new customers and increased revenue based on 99.999 percent service-level availability
- Upgraded global transport network without interrupting service delivery
- Saved significantly in OpEx due to reduced power and footprint requirements
- Realized a 90 percent time savings in network configuration due to automation
- Enabled transport of legacy TDM traffic and advanced services on a single infrastructure

Intelsat delivers high-quality, cost-effective video and broadband services anywhere in the world. This innovator broadcast the American hero Neil Armstrong’s first steps on the moon to the entire globe and made sure that 17.4 million Game of Thrones fans could watch the epic final episode. To deliver global connectivity, Intelsat’s space-based fleet is integrated with its IntelsatOne terrestrial infrastructure, which relies on a core network from Juniper Networks.

With a fleet of approximately 50 satellites plus teleports, Intelsat manages the world’s most extensive and secure communications network. Thousands of organizations serving billions of people rely on Intelsat for broadband connectivity, video broadcasting, secure satellite communications, and seamless mobility services. Users of Intelsat’s connectivity services run the gamut from global broadcasters to leading mobile network operators and corporate enterprises to airlines and cruise ships to governments around the globe. They all rely on Intelsat to ensure that their highly sensitive, always critical traffic reaches its destination.

Intelsat’s network also frequently serves as a critical connectivity link in times of need. For example, when Hurricane Maria wreaked havoc on Puerto Rico, the Florida Keys, and Houston, Intelsat stepped in when land-based communications failed. Field workers set up emergency telecom centers in minutes to help the aid process and provide survivors with a means to reach their friends and family. Efforts like these have established Intelsat as a trusted and vital global communications provider.

“The PTX Series allows us to commercially scale comfortably and offer more services with five-nines reliability based on our traffic engineering, link protection, and QoS. With this core network, we can comfortably implement more resilient business services at the edge.”

- Donald Carstensen, senior principal network engineer, Intelsat

Smaller Core Footprint with Much More Power

Intelsat operates the world’s largest satellite backbone, with terrestrial infrastructure, managed services, and an open, interoperable architecture that enables customers to drive revenue through a new generation of network services.

IntelsatOne Core Infrastructure

New core routers were needed to increase density, providing more 10GbE and 100GbE ports in a smaller, more energy-efficient footprint. Reducing power consumption would provide ongoing OpEx savings. The addition of the latest core routing capabilities would position Intelsat to offer new services and grow revenue.

Rack space at Intelsat's data centers had become limited. The network engineering team wanted to shrink the overall footprint and make room for additional gear to support new services. The team knew that smarter, faster, more automated options were available for configuring, updating, and maintaining its global fleet of routers.

"We had a 90 percent time saving in bringing the Juniper routers up. We expect to realize significant OpEx savings from both power and space."

- Darren Bono, manager, Network Reliability Engineering, Intelsat

Following a comprehensive evaluation, Juniper Networks® PTX1000 Packet Transport Router emerged as the leader in terms of port density, automation, and scalability. The PTX1000 Packet Transport Router provides high-density 10GbE, 40GbE, and 100GbE interfaces, along with other flexible configuration options. Occupying only two rack units, the PTX1000 enables Intelsat to organically distribute peering points throughout the network. It uses a rich IP/MPLS feature set, without sacrificing performance or deployability.

The most critical test, though, would come from the field. Could the PTX1000 Packet Transport Router meet the reliability and performance expectations of Intelsat's customers?

"We deliver services with 99.999 percent availability to customers," says Donald Carstensen, senior principal network engineer at Intelsat. "We wanted to offer additional services with five nines availability with a smaller data center footprint and more capabilities."

ZTP Is Automation Hero

The migration to a new IP/MPLS transport network, enabled by the PTX1000 routers, needed to meet tight deadlines and not disrupt service.

The zero-touch provisioning (ZTP) feature in the Juniper Networks Junos® operating system turned what can typically be a month-long network configuration project into a single-day task.

A site in California was the first to go live, and Juniper's ZTP stood out as an automation hero. A recently hired new grad on Intelsat's network team—who had never worked with Juniper—configured the routers in no time using ZTP. Before long, the routers were set up and running smoothly.

What normally took hours of work for each router—and ultimately one to two months for a global project—required a mere hour for each location. The switch to Juniper routing was trouble-free and never disrupted customer services. Intelsat has since "stressed" the flexibility in the PTX1000 ZTP capability by performing such operations with newly deployed routers across the globe, centrally utilizing ZTP to bring the routers up with virtually no manual intervention in Junos OS upgrades and initial configuration.

"It was as simple as turning up the Juniper core, migrating the traffic over, and shutting down the previous gear," says Carstensen. Intelsat is rolling out dozens more sites in the next few months.

The results of the switch to Juniper are evident and compelling. "We had a 90 percent time saving in bringing the Juniper routers up," says Darren Bono, manager, Network Reliability Engineering at Intelsat. "We expect to realize significant OpEx savings from both power and space."

New Classes of Business Services Push Revenue Up

Intelsat is in growth mode and is expanding the capabilities and the services provided by its satellite network. With Juniper, the transport network can keep pace with Intelsat's business strategy and more easily maintain customer service levels.

Now, Intelsat can assign class of service through quality of service (QoS), MPLS traffic engineering, and MPLS fast reroute (FRR). It can distinguish mission-critical military operations from a video stream or emails from cruise ships, a new and thriving business line. "The operations team can more easily understand the QoS to troubleshoot faster. It used to take hours of analysis," says Bono.

Armed with knowledge, the network operations team can make sure customers receive the service levels they expect. "We enabled every bell and whistle of network engineering to make sure our services run correctly," Bono explains. "We worked closely with our Juniper Resident Engineer to design the traffic engineering and what we're doing today with Juniper is a better implementation than what we had previously."

With so many different types of customers, class of service is exactly what Intelsat needed to differentiate government traffic from media traffic and cruise ship traffic. Separating traffic will help Intelsat as it continues to expand service offerings.

“The PTX allows us to commercially scale comfortably and offer more services with five-nines reliability based on our traffic engineering, link protection, and QoS,” says Carstensen. “With this core network, we can comfortably implement more resilient business services at the edge.”

“Juniper helps us continue to provide the best possible experiences for all our current and future customers.”

- Donald Carstensen, senior principal network engineer, Intelsat

Exceptional Customer Experiences

While Intelsat looks forward to launching new communications services over its high-density transport network, the company is focused on the needs of all customers. Some customers are tied to legacy technologies like time-division multiplexing (TDM), and with a flexible Juniper network, Intelsat doesn't leave them stranded.

In Africa, for example, Intelsat provides connectivity for the Centers for Disease Control's field locations as a backup to sometimes unreliable terrestrial networks. The satellite

connectivity has proven critical in keeping the CDC sites throughout Africa connected when local broadband services experience problems. Without satellite, the CDC field workers could not deliver data to the Atlanta headquarters for analysis or share disease prevention and treatment information through the different African regions.

With an advanced IP/MPLS transport network and flexible router interface options, Intelsat can continue to support these regions now and in the future. “Juniper helps us continue to provide the best possible experiences for all our current and future customers,” Carstensen says.

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.

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