

## Cisco ASR 1000 enables Cisco business strategies by providing capacity, resiliency for collaborative applications

With 70,000 employees in hundreds of locations around the globe, Cisco Systems relies on a high-capacity, robust network infrastructure for effective communication and collaboration.

**Challenge:** How to improve operational efficiency while keeping total cost of ownership under control?

Globalization, company growth, and proliferating rich media applications are all factors driving Cisco's ongoing network expansion. With over 400 branch offices and 22,000 home-based workers spread throughout the world, virtual meetings via video and collaboration tools such as Cisco WebEx have become the norm for Cisco employees. Virtual meetings and webinars have proven so cost-effective and time-efficient that Cisco has expanded its video footprint to include Cisco partners and customers. Cisco TelePresence, offering high-definition video on large screens, allows face-to-face virtual meetings and collaboration between employees, customers, and suppliers. Extranet partners—who account for over 80% of Cisco business—access resources securely over leased circuits or VPNs. Increased traffic from all these sources was also putting pressure on the Cisco network backbone and its connections to the Internet. The challenge was how to maintain the same excellent user experience and high resiliency in the face of expanding demand for network services.

**“Thanks to the increased network capacity, performance, and robustness, 25,000 San Jose employees now access several applications that reside natively in our Texas data centers.”**

—Jawahar Sivasankaran, Senior Manager, IT Customer Strategy and Success

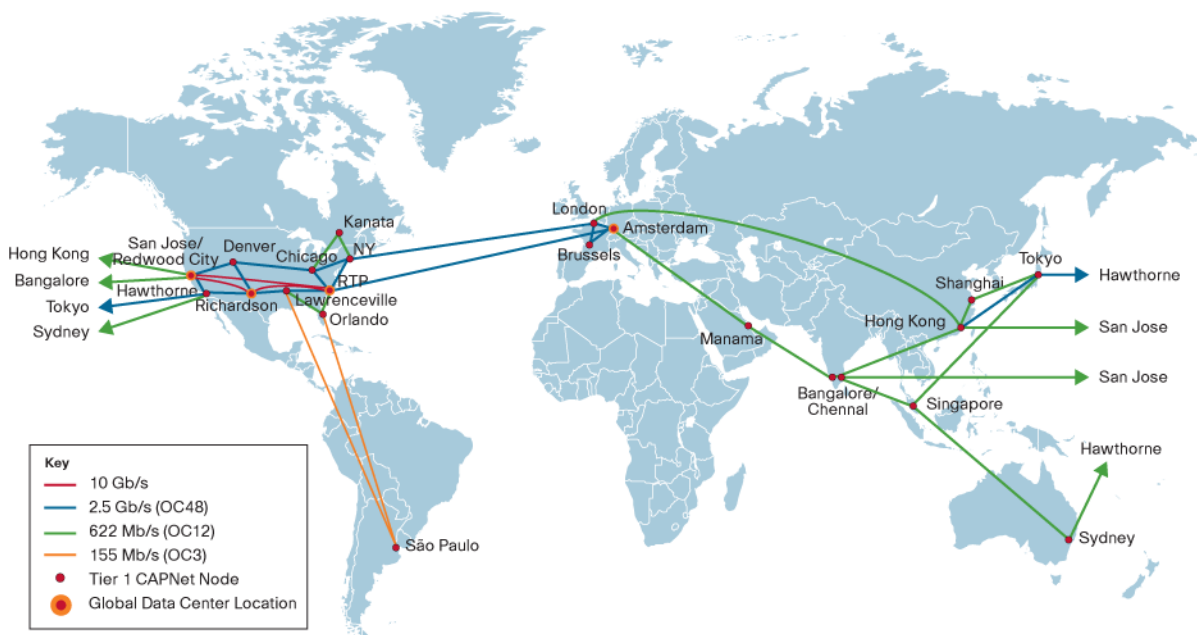
### Solution

The Cisco ASR 1000 Series Aggregation Services Routers can be used as a portfolio of high end Enterprise WAN routers that establish a new price-to-performance class offering, delivering a highly reliable WAN edge solution where information, communication, collaboration, and commerce converge. As an early field trial recipient of the Cisco ASR 1000, Cisco IT was well placed to evaluate the business benefits of the product.

Cisco IT aligned their ASR 1000 deployments with their fleet management hardware upgrade program. The first ASR 1000 deployments were in two application areas: upgrading Internet edges, and replacing Cisco virtual office head-end solutions for home-based workers. “The ASR 1000 gives us the flexibility to scale as traffic demands at the edge increase,” says Jawahar Sivasankaran, Senior Manager, IT Customer Strategy and Success. “We can upgrade the ASR 1000 WAN connection from T1 to T3 to OC3 to OC192, without a forklift hardware replacement,” says John Moe, Senior Architect and Member of Technical Staff within the Network and Data Center Services team.

As the upgrade program continued, Cisco IT installed ASR 1000 routers in other edge locations, including aggregating WAN traffic from branch offices, aggregating extranet partners using dedicated leased lines or VPNs, and as standalone solutions for large branch offices. The ASR 1000 also was also a good fit for core router locations requiring OC3 or 10 Gigabit Ethernet capacity, since its in-service software upgrades and high hardware and software availability ensure non-stop router operation (see Figure 1). The Cisco WebEx Node, an optional shared port adapter for the ASR 1000, enhances performance and reduces bandwidth consumption for WebEx collaboration sessions in several locations. Finally, the ASR 1000 acts as a voice/video gateway for several business-to-business Cisco TelePresence locations.

**Figure 1.** Cisco Global WAN Backbone, 2010 with ASR 1000 series routers providing links via 10Gb/s, OC48, OC12, and OC3 connections.



## Results

The ASR 1000 was an important component in a Data Center consolidation and WAN optimization program that is projected to save Cisco US\$80 million over three years. Before the ASR 1000 deployments, many branch offices had their own underutilized servers, which was costly and inefficient. The capacity and resiliency of the ASR 1000, combined with service virtualization capabilities embedded in Cisco Integrated Services Routers Generation 2 (ISR G2) in the branches, helped Cisco IT relocate applications to centralized data center locations, eliminating hardware redundancy and reducing maintenance costs.

As part of a new Data Center virtualization and cloud strategy, several applications were migrated from Cisco headquarters in San Jose, California, to two new Production Data Centers in Texas. Cisco IT installed two ASR 1000 routers, connected by 10 Gigabit Ethernet, prior to the switchover. “The ASR 1000 was instrumental in transferring an enormous amount of data and business applications from San Jose to Texas”, says Moe. “Thanks to increased the network capacity, performance, and robustness, 25,000 San Jose employees now access several applications that reside natively in our Texas data centers,” explains Sivasankaran.

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The ASR 1000 WebEx node deployments also maintained the integrity of the user experience while reducing bandwidth consumption, allowing more room for traffic from other rich media applications. ASR 1000 routers also help support the expansion of Cisco TelePresence, currently numbering over 1100 locations.

### Next Steps

There are now close to a hundred ASR 1000 routers installed, with more coming online every quarter. As Cisco global locations expand, the ASR 1000 will play a key role in improving operational efficiency while reducing operations costs. "The capacity, flexibility, resiliency, and improved bandwidth utilization of the Cisco ASR 1000 routers support our goal to expand high-end video locations from 6,000 to over 20,000 in the next 18 months," says Sivasankaran, "They will also play a key role in our journey to a more virtualized network experience, where workers can access applications on any device in any environment, enhancing collaboration and productivity."



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