

# RELIANCE GLOBALCOM DATA BUSINESS SCALES METRO AREA NETWORK WITH CARRIER ETHERNET SOLUTIONS

## Summary

**Industry:** Telecommunications

**Challenge:** To meet growing demand for service capacity in their core and metro Ethernet networks, while maintaining their reputation for providing the most stringent, SLA-backed services on the market.

**Selection Criteria:** After determining that MPLS VPLS was the optimum technology for their strategic purposes, the company evaluated potential solutions based on feature set and reliability, as well as the ability of the vendor to provide global support for the Reliance Globalcom Data Business.

**Network Solution:** Reliance Globalcom is deploying the Juniper Networks MX Series 3D Universal Edge Routers and M Series Multiservice Edge Routers to equip its core and metro networks in the U.S. to support 10-Gigabit Ethernet and beyond in major metropolitan areas.

**Results:** Reliance Globalcom has used the MX Series and the M Series to extend MPLS and VPLS services to the network edge, while enabling higher capacity services and improving scalability, security, and reliability.

Reliance Communications is one of the world’s largest integrated telecom service providers. Its Reliance Globalcom division provides enterprise services, capacity sales, managed services, and a highly successful retail portfolio of voice, Internet access, and value added services to more than 1400 enterprises, 200 carriers, and 1.5 million retail customers in 50 countries worldwide. In addition to managing its parent company’s global telecommunications services, Reliance Globalcom operates the world’s largest private undersea cable system. This 65,000 km-long global service delivery platform uses 22,000 kms of domestic optic fiber and an overlay, low-latency MPLS-based IP network to connect 40 key business markets in India, the Middle East, Asia, Europe, and the U.S.

The Reliance Globalcom Data Business designs, builds, and manages reliable, high-performance global networks over which they offer a host of solutions and services for multinationals, enterprises, and other carriers. High-quality carrier Ethernet services, which are delivered to enterprise customers around the world, are a cornerstone of the company’s portfolio of services. Its native Ethernet network employs Virtual Private LAN Services (VPLS) over an MPLS platform to provide extremely reliable and secure high bandwidth services at speeds up to 1 Gbps. All services run over a physical network that relies on a metro fiber route mile infrastructure that completely bypasses the Regional Bell Operating Company (RBOC) Central Offices. Thanks to this architecture, Reliance Globalcom can establish the complete network redundancy and diversity it needs to offer customers extremely robust business continuity strategies—a critical consideration for a company that prides itself on offering high-performance, customer-focused networking services.

## Challenges

As a nimble and agile company with expertise in delivering solutions for medium to large enterprises and multinationals, Reliance Globalcom also offers specific vertical solutions for the financial, legal, government, and medical industries. Its reputation for providing highly reliable services backed by the industry’s most stringent service-level agreements (SLAs) has driven incredible growth across all market sectors, but has taxed its physical network in two ways.

First, the tremendous growth had pushed the Juniper Networks® M20 Internet routers Reliance Globalcom relied on to power its core network to the limits of their capacity. The company needed to find a next generation platform capable of supporting global MPLS VPLS services with the same reliability as its current M20 platform, but on a much greater scale.



**“Reliance Globalcom prides itself on its network that is optimized to offer customers the most in performance and scalability. Juniper’s platform enables us to scale our metro area Ethernet network as the need dictates. Juniper’s focus on carrier-class reliability underscores its commitment to resilient, high-performance equipment and their products are essential to keeping us at the cutting edge.”**

Dr. Shankar Narayanaswamy  
Vice-President, Network Architecture,  
Reliance Globalcom

Second, increasing requests from customers for ever higher bandwidth services were beginning to strain the physical capacity of Reliance Globalcom’s metro backbone network, which could only support Ethernet services at speeds up to 1 Gbps.

As Dr. Shankar Narayanaswamy, Vice President of Network Architecture for Reliance Globalcom Data Business, explains, “Customers were coming to us and saying, ‘we want more capacity.’ They wanted to buy not 100 Mbps, but 1 Gig, 2 Gigs, 3 Gigs from us. At the same time, our customer base was rapidly growing and our existing customers were requiring more bandwidth. To stay ahead, we upgraded our network infrastructure to anticipate future demands on the network.”

This was an especially acute problem for Reliance Globalcom Data Business. Because the company has a policy of never overselling the capacity on its network, the bandwidth limitations on its metro network could have potentially limited the company’s ability to take on new customers.

Reliance Globalcom had been meeting its immediate capacity needs by using link aggregation to increase the capacity on its backbone in key metropolitan areas. The company had already deployed eight aggregated Gigabit Ethernet links on its hub in Chicago, seven in New York, and four in Philadelphia, but the expense of this approach limited its long-term utility. To meet increasing demand, Dr. Narayanaswamy knew the company needed to upgrade its metro area networks to support multiple 10-Gigabit Ethernet technology in the short term, and ultimately 40-Gigabit Ethernet and 100-Gigabit Ethernet technology, when those technologies became available.

“The raw need to scale and add bandwidth on the network was really the big driver,” said Dr. Narayanaswamy. “It wasn’t availability, because we already had a proven high-performance network; we are already the fastest and have the best SLAs. It came down to pure capacity.”

## Selection Criteria

Although Dr. Narayanaswamy was pleased with the performance and reliability of his existing MPLS VPLS architecture, he viewed the upgrade as an opportunity to assess alternative approaches to carrier Ethernet services.

“As the architecture team, we have a charter to really understand the industry and the pros and cons of various technologies. We make sensible technical decisions based on business drivers,” he said.

One of those alternative approaches was Provider Backbone Transport (PBT). This pre-standard technology can be used to set up quality of service (QoS)-capable, point-to-point Ethernet tunnels across a metro area network. After evaluating the new technology, Dr. Narayanaswamy was unconvinced that it offered much in the way of new capabilities or reduced costs. Worse, because it would be a complete change in the way his network operated, he would have to retrain his entire staff. And that was too big of a risk to take on a technology with uncertain industry support.

“I didn’t see PBT as a viable solution today. I didn’t see that it was compelling enough to justify a change to a new paradigm for my network,” he said.

Having reaffirmed the strategic viability of the current MPLS VPLS architecture, Dr. Narayanaswamy and his team began looking for an MPLS VPLS solution that met their requirements for service flexibility, scalability, and reliability.

“The goals that the legacy architecture met—and that the new architecture needed to meet—are high performance, scalability over time, and fast failover. It is easy to buy equipment that does the first two, but then having the performance to fail over fast drove the requirements to use certain technologies and not others on the metro backbone,” said Dr. Narayanaswamy. “Any solution that required us to dial back any of our current capabilities would not be acceptable.”

Equally important were the qualities the vendors themselves brought to the table. Dr. Narayanaswamy was looking for a partner with a reputation for reliability and the capability to provide global support. “Being global, we need to partner with companies that can support us globally,” he said.

Testing in Juniper’s Proof of Concept labs and his team’s familiarity with Juniper Networks Junos® operating system convinced Dr. Narayanaswamy that a solution based on the MX Series 3D Universal Edge Routers and Juniper Networks M120 Multiservice Edge Router was the right approach.

## Solution

After determining to deploy the MX Series in its metro backbone networks and the M120 in its core network, Reliance Globalcom worked with Juniper to determine the optimum service configuration.

The company focused first on replacing the M20s with the M120 routers in its core network. After developing a test plan and testing the proposed configuration in Reliance Globalcom's San Francisco lab, Reliance Globalcom immediately began deploying the solution.

"Deploying the Juniper M120 was simple. It also runs Junos and it is certainly more scalable, offering faster circuits—for example, OC-192 and 10-Gigabit Ethernet circuits—whereas the M20s could not," said Dr. Narayanaswamy.

Typically, Reliance Globalcom completes a production trial in one market before deploying the solution in other areas. The M120 is now deployed as an upgrade for the existing M20s in London, Singapore, Paris, New York, Chicago, Denver, and Stamford, Connecticut. At the same time, because Reliance Globalcom had not yet certified the MX Series, they also deployed the M120 Multiservice Edge Routers in place of the MX Series in the metro backbone in the New York market.

"We hadn't certified the MX Series yet when we designed this, so we actually bought M120s and deployed them instead of MX Series in New York. We were able to implement the M120 as routers quite well. We turned it up, put MPLS VPLS on it, connected everything up, began putting customers on it, and we've had zero problems," said Dr. Narayanaswamy.

Reliance Globalcom plans to deploy the MX Series within its managed metro Ethernet service to seamlessly link multiple enterprise LANs within a single metro over Ethernet-based metropolitan fiber networks (see Figure 1). Once in place, the MX Series will add up to 960 Gbps of switching and routing capacity to Reliance Globalcom's metro backbone network.

As usual, Dr. Narayanaswamy plans a more traditional deployment approach, in which one market is used to prove the technology in the field before other markets upgrade to the new solution. Even as they take a measured approach to integrating the high capacity MX Series in their metro backbone, Reliance Globalcom continues to rely on Juniper's engineering expertise to help design the optimum solution.

"On the MX Series we received help from your engineering team and on the Proof of Concept test in the lab. And we are continuing to leverage that as we now consider how to push the standards-based paradigm from the absolute edge to the access rings in our network," Dr. Narayanaswamy said.

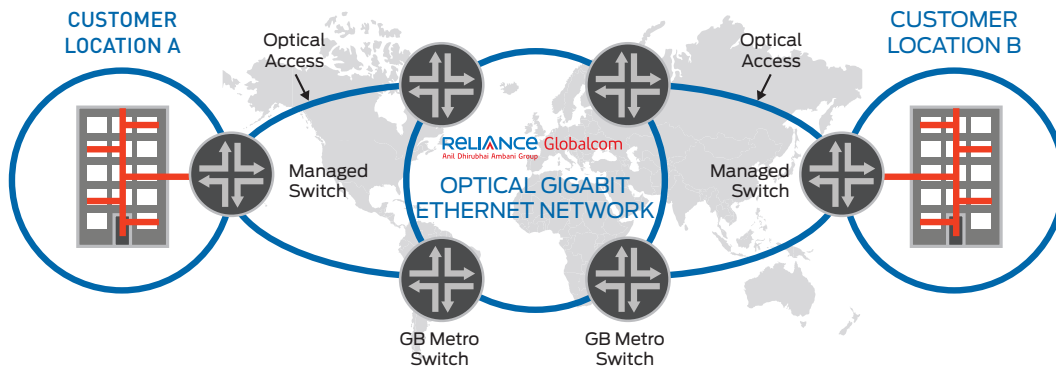


Figure 1: Reliance Globalcom is deploying the Juniper Networks MX Series 3D Universal Edge Routers with its Managed Metro Ethernet service to seamlessly link multiple enterprise LANs within a single metro over Ethernet-based metropolitan fiber networks

## Results

With this deployment, Reliance Globalcom has gained a service-enabling network infrastructure that is capable of scaling to support VoIP, high-definition video conferencing, backup and recovery, electronic trading, and other multimedia business applications. The upgrade offers a reliable and cost-effective service configuration that will enable Reliance Globalcom to migrate to 40-Gigabit Ethernet and even 100-Gigabit Ethernet technology over time to address future demands for additional capacity. Today, the new network ensures the carrier-class service reliability essential to enterprise and financial services customers, while enabling Reliance Globalcom to extend its MPLS and VPLS services to the network edge and improve network performance.

Finally, because both the MX Series and the M120 leverage the proven Junos OS, Reliance Globalcom benefits from the operational efficiency and management simplicity of using a single operating system in multiple portions of its network. And in fact, the entire solution is proving to be exceptionally reliable, scalable, and easy to manage.

“The good thing with Junos is that it’s one OS across everything and that makes life very easy for us. The core is Junos, the edge is Junos, and it’s all very manageable,” said Dr. Narayanaswamy.

### Next Steps and Lessons Learned

Although this project focused strictly on increasing network capacity, Dr. Narayanaswamy envisions using the new platform to offer new services in the future.

“We can help customers evaluate, deploy, and manage services at Layer 1 through Layer 3. As businesses implement applications that cut costs and improve communications for their global operations, we have the assurance of working with Juniper’s gear to provide a solid foundation in support of the next generation of services,” he said.

Looking forward, Dr. Narayanaswamy continues to track the evolution of the Juniper Networks roadmap with an eye to finding new technologies that he can use to maximize the utility of his network such as new management software, new Junos OS capabilities, a 10-Gigabit Ethernet customer interface, a multi-tenant unit, and SONET cards for the MX Series.

“We have started using the MX Series in the metro. Once Juniper comes up with SONET cards for them, we can look at using them in the core as well,” said Dr. Narayanaswamy.

There are two reasons why Dr. Narayanaswamy is so focused on integrating Juniper’s technology into his network: the equipment’s broad feature set and exceptional stability.

“To any carrier, those are really the basic ‘must haves.’ Without the feature set, I can’t make revenue. But without stability, the customers will walk. The success of your business—and your customer’s business—rides on those two simple but critical attributes. And those are two things Juniper does very well,” he said.

## For More Information

To find out more about Juniper Networks products and solutions, visit [www.juniper.net](http://www.juniper.net).

## About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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