

Terremark Builds Next-Generation Network and Service Insertion Point for IP Services Delivery with Cisco 12410 Routers

Executive Summary

Customer Name
Terremark Worldwide, Inc.

Industry
Telecommunications

Business Challenge

- Build a next-generation services delivery network infrastructure
- Simplify the creation and launch of new services from a single connection point
- Ensure high availability

Network Solution

- Cisco routing and switching solutions including the Cisco 12410 routers and Cisco Catalyst 6509 switches

Business Value

- Now carries a significant percentage of Latin America’s Internet traffic over the network infrastructure
- Established solid network foundation for moving ahead with new service creation
- Several hundred customers and growing, including all global network service providers, ASPs, VoIP providers, ISPs, and large enterprises

Terremark created a “service insertion point” for creating and delivering new services from a single multiservice platform. Using Cisco solutions, the network is now meeting increasing carrier and enterprise demand for advanced, converged services over a single network connection.

Business Challenge

Terremark Worldwide, Inc. (TWW) is a leading operator of integrated network access points (NAPs) and best-in-class network services. It is the owner and operator of the “NAP of the Americas,” a world-class, purpose-built facility located in Miami, Florida, that occupies 750,000 square feet.



The building was built to provide customers with a disaster-resistant, ultra-secure, and hurricane-proof environment that provides nonstop service.

The NAP of the Americas is Terremark’s flagship facility, which provides carrier-neutral connectivity, peering, colocation, hosting, and a full menu of managed services. The first NAP designed specifically to route network traffic between the Americas, the Caribbean, and Europe, the NAP of the Americas connects more than 100 of the world’s leading telecommunication carriers, as well as Internet service providers (ISPs), network service providers, government entities, multinational enterprises, and other end users—more than several hundred customers worldwide and growing.

NAPs are locations where two or more networks meet to interconnect and exchange Internet and data traffic. With the NAP of the Americas, Terremark is committed to providing customers with more than just connectivity. Instead, the NAP of the Americas provides customers with a service insertion point – a single connection that allows access to an array of

advanced networking solutions and managed services. Most of the world’s end users have access to these services through the mesh of interconnected carrier networks that are located in the NAP of the Americas and either terminate or have transit traffic through the facility.

This has important implications for all of Terremark’s customers. At the NAP of the Americas, Terremark can insert a new service – such as network-based storage capabilities – and make it available to all customers. Carriers can, in turn, offer a business continuity or disaster recovery service to their end-user customers without having to reengineer their own networks. Features are provisioned through the network, allowing the costs to be shared among multiple customers and eliminating the need for customers themselves to install specialized network equipment, hire and train support staff, or implement new management tools.

Enterprise customers also benefit from massive connectivity found at the NAP of the America, which simplifies delivery of network services to multiple locations. For example, one international customer required at least five carriers to interconnect all of its sites around the world. By coming to Terremark, the customer can connect numerous sites with multiple connectivity options, including a virtual private network (VPN), and have one vendor and one bill to manage. Third-party software developers can reach virtually every connected consumer in the world through the mesh of interconnected networks, enabling them to simplify service delivery, reduce marketing and support costs, and expand their reach.

“Customers come to Terremark for several reasons,” says Javier Rodriguez, Chief Marketing Officer at Terremark Worldwide, Inc. “First, Terremark is equipped with the network architecture, knowledge, and experience to provide a multitude of connectivity solutions and a wide range of value-added services. We can eliminate the capital costs that customers would otherwise incur to create their own infrastructures. Second, because our facility is purpose-built for critical services and ultra-high performance and availability, customers can quickly and confidently launch new services. Finally, our high concentration of carriers enables our customers to connect to more markets more efficiently and much more cost-effectively than they could by building their own connectivity.”



Providing traditional connectivity, collocation, dedicated hosting, and managed services is already a thriving business for Terremark. However, as its customers increasingly prepare to deliver a range of converged and virtual services to their end users, Terremark evaluated new network infrastructure solutions that would enable it to maintain high-quality traditional services while easily inserting new services into service providers’ networks. Its existing network infrastructure was not sufficient to maintain and support multiple services, such as advanced security, voice, storage, and other advanced services from a single platform. To achieve Terremark’s service delivery goals, the existing infrastructure would have required adding network layers to achieve comparable functionality, increasing capital costs and support requirements.

“We are committed to delivering next-generation network-based services to our customers,” says Rodriguez. “We chose Cisco Systems® because the company’s direction is best aligned with ours and it provides the platforms and resources that will enable us to achieve our objectives more efficiently and cost-effectively. Cisco® also has the knowledge and expertise required to assist with service creation, marketing, and bringing next-generation services to market rapidly.”

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To bring their next-generation of services to market rapidly, Terremark leveraged Cisco’s Cisco Powered Network (CPN) program. “The CPN program allows us to leverage a wealth of Cisco resources to assist with service creation, acceleration and marketing. Our customers demand performance and reliability in all that we deliver and a network built with Cisco systems delivers just that.”

– Javier Rodriguez, Chief Marketing Officer, Terremark Worldwide, Inc.

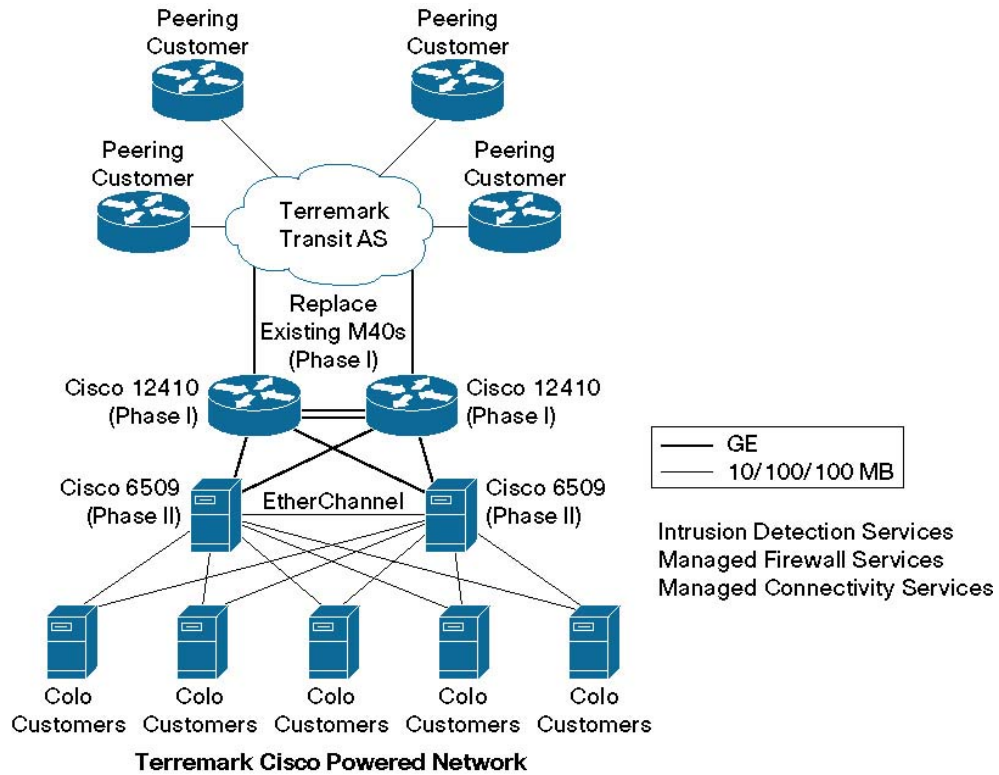


Network Solution

Terremark’s “Service Insertion Layer” is a single-service delivery platform built around Cisco technology and integrated directly into Terremark’s exchange environment. Connecting to the Service Insertion Layer allows providers of network-based services the ability to deliver exciting new services with significant economic efficiencies to their customers.

The core network is built on Cisco 12410 routers. The Cisco 12000 Series routers offer the highest density and most operationally efficient 10-Gigabit systems for IP over Multiprotocol Label Switching (IP/MPLS) networks in the industry, with the ability to scale near-seamlessly from 2.5 Gbps per slot to 40G per slot. It delivers uncompromising routing performance, superior quality-of-service (QoS) capabilities, proven high-availability support, comprehensive Layer 2 and Layer 3 services, and a fully integrated core feature set. Terremark has implemented nonstop forwarding (NSF) and stateful switchover (SSO) features to maximize availability.

Dual sets of Cisco Catalyst® 6509 switches form the heart of the service insertion point. As the Cisco premier intelligent multilayer modular switch, the Cisco Catalyst 6509 switch delivers secure, converged services across the network and supports a wide range of services, including data and voice integration and LAN, WAN, and MAN convergence. It provides 48 to 576 10/100/1000-Mbps to 1152 10/100-Mbps Ethernet ports and supports multiple gigabit and 10-Gbps trunks for maximum uptime and performance. Today, Terremark interconnects all enterprise customers requiring secure, reliable global Internet access through the Cisco Catalyst 6509 switches to multiple upstream Internet backbone providers. As new services are defined and launched, Terremark can insert Cisco Catalyst advanced integrated services modules into the Catalyst 6509 switches to quickly enable a wide range of services such as wireless LAN, voice, IP security (IPSec) VPNs, Secure Socket Layer (SSL) VPN, intrusion detection, content switching, and more.



Business Value

“The combination of our core infrastructure and massive networking connectivity makes us unique in the industry,” says Rodriguez. “Once our customers are connected to our infrastructure, we’re able to provide them with new advanced technologies, such as storage, security, and other advanced services with little or no need for customer premises equipment. Thus, we enable them to eliminate capital and operational investment in other complex technologies and solutions.”

Customers using Terremark facilities gain a world-class data center without having to build it themselves, manage it, or shift focus from core businesses. The NAP of the Americas gives them security, storage, network monitoring, and other services – including transit – all from one location. With the addition of its new services insertion layer, based on Cisco technology, solutions providers can now insert their services directly into the networks of the world’s leading carriers.

“The Cisco infrastructure will serve as a distribution point for many of the new services on the horizon,” says Rodriguez. “For example, if we insert a firewall card in the Catalyst 6509 switch, we can immediately service several hundred customers without having to physically visit each one.” By extension, carrier customers can distribute these services to end users around the world over the Terremark infrastructure, touching hundreds of millions of customers.

Terremark’s massive concentration of carrier networks provides customers with access to a communications marketplace like no other in the world. One multinational customer reported savings in excess of 60 percent of its total wide-area networking cost by relocating its data center to the NAP of the Americas. Through the NAP of the Americas marketplace, customers can reach almost any corner of the world at a highly competitive price.

Next Steps

With the Cisco 12410 routers and Cisco Catalyst 6509 switches in place, Terremark's next step is to begin adding new services to the architecture, such as security and network storage capabilities for storage-area network (SAN) replication, back-up, and restoration services. The ultra-secure nature of the NAP of the Americas provides a secondary site solution for data preservation and protection. Through carrier connections, downstream customers can access these services easily and eliminate the cost of having to create a secondary, secure infrastructure and facility themselves. At the same time, it creates a service opportunity in which carriers can participate by selling connectivity services.



Managed security services could include protection against denial-of-service (DoS) attacks, intrusion detection and intrusion prevention services, and a range of firewall capabilities. All could be provisioned from Terremark's Cisco service insertion point.

"The Cisco architecture is the underlying connection to all of our customers and the enabler of future value-added services, including those that are time-sensitive, application-based, and Web services-based that require QoS and high availability," says Rodriguez. "With Cisco, we can offer instant access to any of these services to any of our customers."

For More Information

To learn more about Cisco routing solutions, visit: <http://www.cisco.com/go/routing>.

To learn more about Cisco switching solutions, visit: <http://www.cisco.com/go/switching>.

To learn more about Terremark, visit: <http://www.terremark.com>.

This customer story is based on information provided by Terremark Worldwide, Inc. and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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