

Veracity Networks



EXECUTIVE SUMMARY

Challenge

Preempt competition from a market giant by deploying an agile and highly resilient network

Solution

- Brocade ICX Switches for access and backbone rings
- Brocade VDX Switches with Brocade VCS Fabric technology for aggregation and a cohesive, highly resilient fabric
- Brocade MLX Series core routers for high-level aggregation, core routing, and routing voice and video traffic with required QoS

Results

- Achieved carrier-class resiliency and availability, surviving three fiber cuts without disruption to customers
- Gained flexibility to deliver fast connections for any service or bundle to any customer, regardless of location
- Preempted competitive giant with the ability to deliver 10 GbE services today
- Built in unmatched scalability for future growth without complicating management or operations

Upgrading the Network to Fast and Fail-Proof

From providing telephone services for off-campus student housing to becoming one of Utah's fastest growing telecommunications providers, Veracity Networks has come a long way. Today, the company delivers a full range of voice, data, and video services to residences and business customers of all sizes. And with each connection comes a commitment to delivering world-class service with a local touch—no matter where the customer is located on Veracity's more than 300 miles of fiber.

Veracity's original network ran on Cisco equipment. However, when the company merged with Broadweave Networks in 2009 it gained a fiber-optic network and a suite of residential services. With its new customer base and the ability to deliver data, voice, and video "triple play" services, Veracity needed a network that would enable it to seamlessly deliver individual or bundled services to any customer.

As a service provider, Veracity needed nonstop resiliency and high availability features in its new network. Although fiber cuts anywhere along the fiber path are a constant danger, service outages are unacceptable. Voice and video traffic quality are especially vulnerable to performance degradation due to any number of factors. Veracity's new network had to protect the customer experience—even in the event of a fiber cut. The IT team wanted failover and Open Shortest Path First (OSPF) routing for high resiliency and fast reconvergence. They also wanted to quickly isolate problems and automate recovery in the event of an issue.

Being able to maintain high Quality of Service (QoS) was also a critical requirement for voice, video, and TV services. And competitive pressure is heating up. Veracity wanted to be the first

to offer 10 GbE services in its service areas to protect its existing customer base and win new business customers, so the new network had to be able to consistently deliver 10 Gbps performance.

However, the company had just replaced almost its entire fiber infrastructure. The new network had to fit within a constrained budget and deliver a lot of value for each dollar spent.

Adding Value from Edge to Core

Veracity turned to Red Sky Solutions, an engineering-led integrator that focuses on delivering IT solutions that reduce operational effort and cost. Together, they designed the new network and features that would give Veracity the carrier-class capabilities it wanted with the cost and operational efficiencies it needed. And for the new network, Red Sky recommended Brocade® solutions.

Red Sky and Veracity brought in the Brocade team to help them design and deploy the optimal network for Veracity customers. Starting at the access layer, Veracity deployed Brocade ICX® 6450 Switches, which are deployed in distribution "huts" across the service area, as well as at business customers'

premises. The Brocade ICX 6450 Switches deliver enterprise-class features and stackable switching at an affordable price. Veracity can buy what it needs today and easily scale ports and services in the future for high investment protection. The switches also automatically discover new Brocade ICX Switches within a stack,

can be automatically configured, and appear as a single switch to the network to simplify management. Real-time synchronization across the stack and hitless failover give Veracity the high resiliency it needs at the edge.

Stacked Brocade ICX 7750 Switches provide direct connections from Brocade

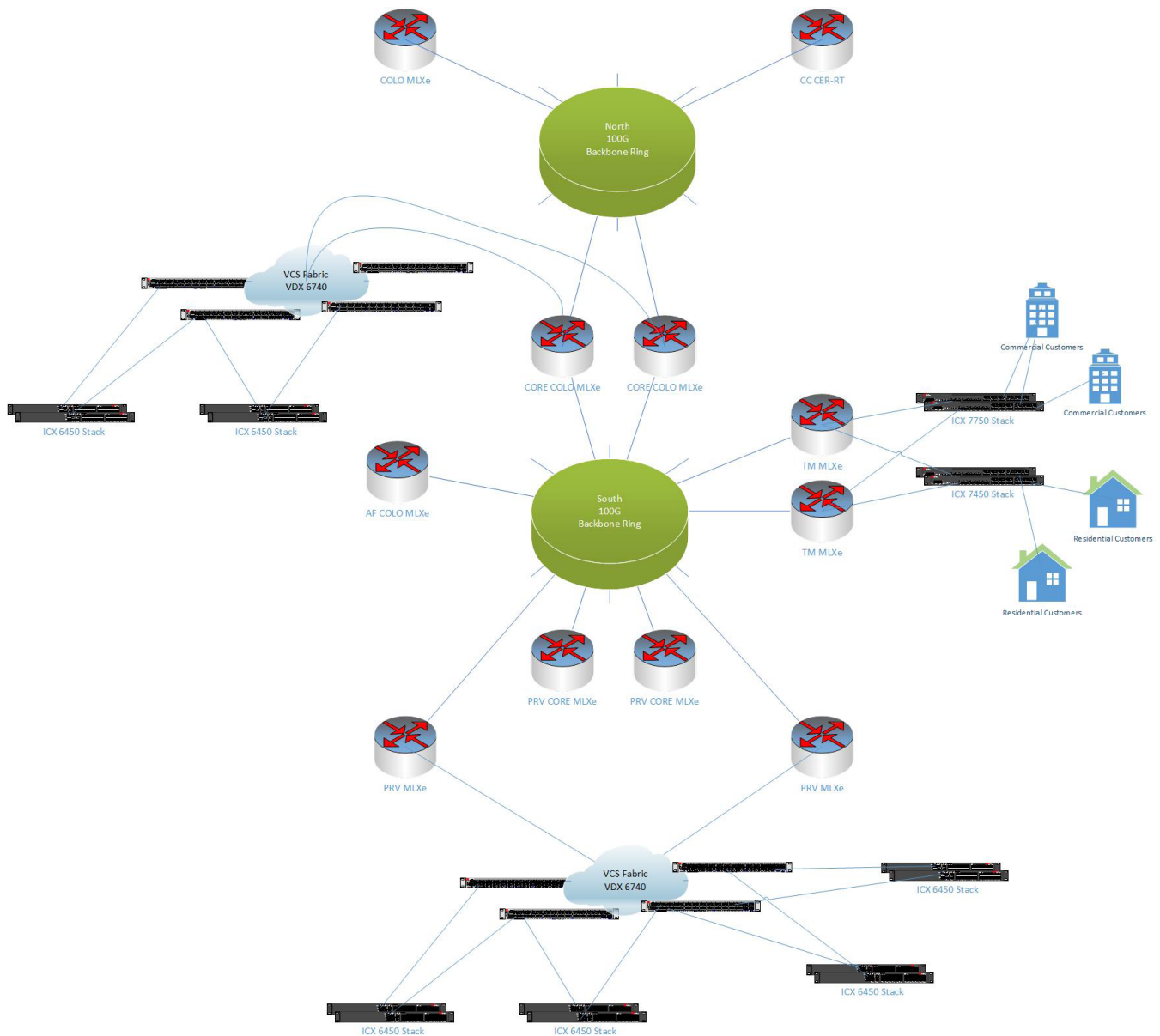
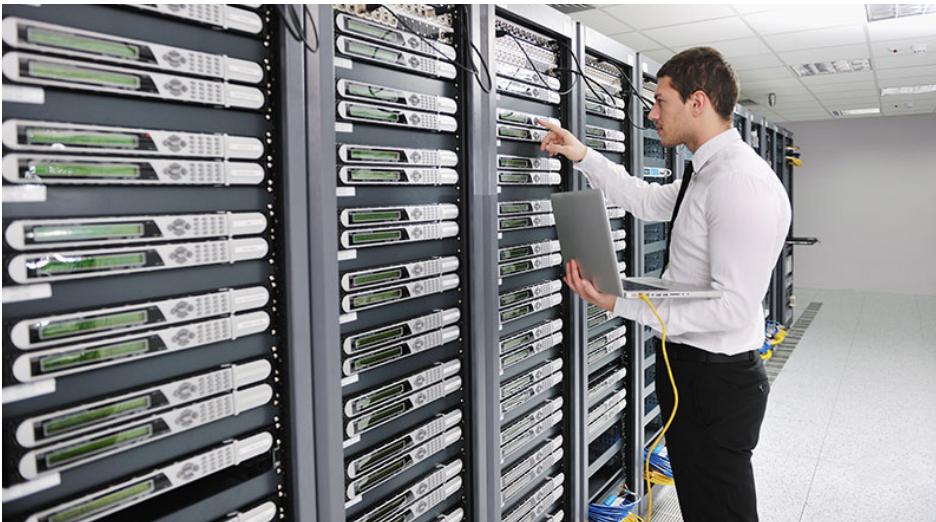


Figure 1: Veracity Networks New Brocade Network Architecture.



WHY BROCADE

“The Brocade fabric enables us to easily fulfill our commitment to providing the fastest connection available. Whether a customer subscribes to a single service, needs additional redundancy, or bundles services, we can stack Brocade switches any way that’s needed between our distribution huts to deliver the service. And we do it flexibly, consistently, and with minimal effort.”

—Chris Dunford, Vice President of IT for Veracity Networks

ICX 6450 Switches at business customer locations to a pair of aggregation Brocade MLX® Series Core Routers. Brocade ICX 7750 Switches enables Veracity to provide cost-effective 10 GbE services with all of the speed and resiliency of a much larger switch. For residential customers, stacked Brocade ICX 7450 Switches deliver high-density, cost-effective 1 GbE connectivity. The switches’ 48-port fiber connectivity allows Veracity to consolidate racks and save space while 40 GbE uplinks enable dramatic scalability using the existing optical infrastructure.

Traffic from Brocade ICX 6450 Switches is aggregated to Brocade VDX® 6740 Switches, which are Ethernet Top of Rack (ToR) switches that provide 10 GbE ports and 40 GbE uplinks. Brocade VDX Switches deliver high performance and ultra-low latency through wire-speed ports, which helps Veracity maintain high QoS for its services. Brocade VCS® Fabric technology creates a switching fabric that encompasses the Brocade

VDX and Brocade ICX Switches across aggregation and access layers. Brocade VCS Fabric technology provides unmatched automation and simple, centralized management with zero-touch provisioning. Brocade VCS fabrics also are self-forming, self-healing, and highly resilient to deliver the nonstop performance that Veracity needs.

The Brocade VDX Switches aggregate and deliver fiber traffic to redundant Brocade MLX Series Core Routers, which aggregate traffic from several locations for delivery to the core networks on the north and south 100 Gbps backbone rings. At each core network, Brocade MLX Series Core Routers perform high-speed routing for data, as well as support voice and video routing with the required QoS. Both backbone rings are built on Brocade ICX 7750 and Brocade ICX 6610 Switches, combined with off-the-shelf passive Dense Wave Division Multiplexing (DWDM) optical transport.

“Brocade’s solutions offered us tremendous flexibility in designing

Veracity’s new network,” says Jon Itri, Account Manager for Red Sky Solutions. “The fabric approach, tremendous scale-out capacity, and built-in high availability features enabled Veracity to build a carrier-class network that requires minimal operational effort compared to traditional networks.”

It Just Works

The Brocade network quickly proved its mettle. Since it was deployed, Veracity Networks suffered three major fiber cuts that lasted more than three hours. With its new Brocade network, Veracity can now segment customer services to specific parts of its network. It accelerated troubleshooting and recovery without a hitch in service delivery.

“Our network just has to work, and it does,” says Chris Dunford, Vice President of IT at Veracity Networks. “During the fiber outages, customers never noticed. All of the voice and data traffic just switched right over and we didn’t receive a single call.”

Fulfilling its Promise to Customers

Not only does the network just work, it gives Veracity the benefits of automation. The Brocade VCS Fabric technology provides network-level intelligence to automate tasks like configuration and simplify management across the entire network. The Brocade network becomes an automated, dynamic strategic enabler for Veracity, enabling it to preempt competition and meet high customer expectations. In addition to delivering exceptional value for the price, the network also significantly reduces the company's ongoing operational costs.

"The Brocade fabric enables us to easily fulfill our commitment to providing the fastest connection available," says Dunford. "Whether a customer subscribes to a single service, needs additional redundancy, or bundles services, we can stack Brocade switches any way that's needed between our distribution huts to deliver what's needed. And we do it flexibly, consistently, and with minimal effort."

Preempt a Competitive Giant

Although Google has recently announced its intention to deliver 1 GbE services to

customers in Veracity's service area, it will have to catch up to and contend with the robust service offerings of an established service provider. Veracity's 10 GbE Brocade network is already in production, and the company is able to aggressively market 10 GbE services today. Score one for the hometown team.

Building Out the Network

Dunford says that the Brocade VDX Switch is "fun to work with." Typically used in data center and storage networks, Veracity has used the Brocade VDX Switches to create a distributed metro fabric that delivers commercial services. They also are currently deploying fiber that will provide a backup ring for the Brocade VDX Switches. The new backup will simplify long-distance connections between switches and further enhance network resiliency.

"For our backbone rings, Brocade ICX Switches are a great solution, because we can scale them out as needed," says Dunford. "Each network link supports 10 Gbps optical wavelengths. If we need to add another optical wavelength, we can simply add it to the Brocade ICX Switch as needed. It's very cost-effective—and it works."

Building on a Strong Relationship

Veracity is placing a new backbone ring into production and plans to continue building on the Brocade fabric—as well as on its strong relationship with Brocade and Red Sky Solutions. Based on its successful production network, Veracity is confident in its ability to find effective ways to capitalize on new opportunities and believes that Brocade is well-positioned to meet its future needs.

"The network is so reliable that it helps all of us succeed," says Dunford. "But our partnership with Brocade and Red Sky is one of our most important vendor relationships. It's built on mutual respect and is what has helped us be successful. We're excited about the future."

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