Pacific Medical Centers Enhances Network Capacity for Secure Transmission of Patient Records with XO Ethernet VPLS

Pacific Medical Centers is a private not-for-profit, multi-specialty healthcare network of 10 locations in the Seattle area, with 140 primary and specialty care providers.

Its 10 locations are in the Puget Sound neighborhoods of Beacon Hill, Bothell, Northgate, Federal Way, First Hill, Lynnwood, Northgate, Renton and Totem Lake. Pacific Medical Centers serves tens of thousands of patients who have commercial insurance, including retired military and their families, family members of active-duty personnel, as well as Medicare and Medicaid patients.

Due to the increased use of digitized records and the implementation of a comprehensive Electronic Medical Records (EMR) system with fully digitized records for all patients by 2012, Pacific Medical Centers expects its network bandwidth requirements to greatly increase. A strong, seven-year relationship with XO Communications including the ongoing use of XO voice and data services led the organization to discuss its changing bandwidth requirements. Based on the breadth of XO's network services and a careful cost-benefit comparison, Pacific Medical Centers chose XO Ethernet VPLS as its solution for five clinics, with deployment completed in late 2010.

Challenge

Find Cost-effective Network Service for High-bandwidth Applications in Offices with High Traffic Volumes

Pacific Medical Centers' 10 clinics are spread over a 50 mile radius and were supported by multiple service providers. Cost became a major factor in the search for a network solution with the right amount of bandwidth at the right price. Pacific Medical Centers had been using T1 lines, which provided 1.5 Mbps of bandwidth, but it needed a more scalable solution without having to deploy more costly T3/DS3 circuits to each location.

"We needed comparable bandwidth in the other clinics, served by XO and the other provider, and initially deployed T3/DS3 circuits there as well," says Carl Ballard, Senior Network Engineer at Pacific Medical Centers. "But an analysis of our needs and usage showed that most of the sites only needed an average of one to two megabits of bandwidth. A T1 wouldn't support us,

Executive Summary

Pacific Medical Centers
- 10 outpatient medical clinics
- Based in the Seattle, WA, metropolitan area

Business Challenges
- Find cost-effective, high-speed, high-bandwidth network service to support growing network utilization that includes larger, mission-critical enterprise applications with sensitive patient data
- Migrate from existing T3/DS3 network infrastructure without network downtime or loss of data
- Prepare for deployment of bandwidth-intensive Electronic Medical Records (EMR) system in 2011-2012

Solution
- Ethernet VPLS

Results
- Cost-effective private network service at lower cost than T3/DS3
- Ability to scale bandwidth, as needed in the future, at lower cost than previous solution
- Now purchasing less expensive routers to support the VPLS service, saving on previous router platform
- Prepared for coming deployment of EMR system throughout all of the clinics in 2011-2012

but that didn't warrant a full T3/DS3, even with our planned growth."

Ballard and others in the IT group at Pacific Medical Centers have seen the use of its network and bandwidth utilization grow dramatically. Aside from the digitization of records and transmission between offices, the organization is in the process of deploying an EMR system. While providing many benefits, adhering to the latest government guidelines, and qualifying for government incentive programs, EMR systems entail complete digitization of all patient records, including large imaging files, and increased storage and bandwidth requirements.

Other applications have further added to network traffic and bandwidth needs. For example, at its Canyon Park clinic, with the highest network utilization of all of the Pacific Medical Centers, a network presence application utilizing radio frequency ID (RFID) tags tracks the location of patients, staff, and even equipment like crash carts and wheelchairs, within the clinic in real-time.

Solution

XO Ethernet VPLS Service

Pacific Medical Centers chose XO Ethernet VPLS, which provides 10 Mbps of bandwidth per location. The solution provides plenty of room for growth at a much more affordable price compared to T3/DS3 service.

Ethernet VPLS allows Pacific Medical Centers to extend its existing Ethernet LAN over a managed WAN solution. Ballard and his staff manage its network routing and XO Communications provides geographically dispersed clinics with Ethernet multipoint service

(or any-to-any connectivity), which is required for enterprise-scale applications like EMR systems that are transmission-sensitive, require high speed, high bandwidth, and stringent security.

With XO Ethernet VPLS service, Pacific Medical Centers does not have to share address and routing information with any service provider. They can also privately transport both IP and non-IP traffic while enjoying the highest levels of network performance, cost efficiency, and easy scalability.

Results

Smooth Deployment Followed by Additional Cost-cutting Opportunity

Deployment of the Ethernet VPLS service at the five clinics was completed within two weeks in November and December 2010. Cisco 3800 Series routers were used for the Ethernet VPLS interface. After a few days of testing with both the T3/DS3 and VPLS connections running simultaneously, the T3/DS3 service was turned off and cancelled. The new service will enable Pacific Medical Centers to deploy smaller, less expensive routers than the 3800s, which were needed to support the T3/DS3 physical interfaces. As part of the company's SMARTnet contract with Cisco, they will be able to downgrade the routers to save money.

Ballard and the IT department are expecting another jump in bandwidth utilization when the EMR system goes live for testing in the middle of 2011 and then again when it is deployed at the end of 2011. "I have no doubt that the current XO Ethernet VPLS service will be sufficient to serve our needs both then and in the foreseeable future."

"We chose XO Ethernet VPLS service because it gives us the bandwidth we need, with room to grow. Adding bandwidth is much less expensive than with a T3/DS3 circuit. And we didn't want VPNs because we didn't want our patient data traversing the public Internet. With VPLS, we have more control over the circuit, not just our end."

Carl Ballard
Senior Network Engineer
Pacific Medical Centers

About XO Communications

XO Communications is a leading nationwide provider of advanced communications, managed network and IT infrastructure services for business, large enterprise and wholesale customers. These customers include more than half of the Fortune 500, in addition to leading cable, mobile wireless and domestic and international telecommunications companies. XO offers a superior customer experience through its innovative data and IP solutions, its employees' focus on customers and the proven performance of its advanced network.

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