Sierra Pacific Resources

Enterasys Networks and Polycom Power a State-of-the-Art Infrastructure

Sierra Pacific Resources is the investor-owned holding company for Sierra Pacific Power Company and Nevada Power Company. Sierra Pacific Power has served customers in northern Nevada and northeastern California for more than 140 years, while Nevada Power has served Las Vegas and southern Nevada since 1906.

Industry:
Power and Energy

Services:
Provides electricity to more than 843,000 customers throughout Nevada and Northeastern California, as well as natural gas and water to more than 180,000 customers in the Reno-Sparks area

Challenge:
Building an infrastructure energized to meet any demand

Solution:
Enterasys and Polycom products enhance network availability and flexibility

Benefits:

- X-Pedition switch routers provide the capacity to handle Sierra Pacific's demanding and diverse network traffic—including industry-specific applications and systems such as the electric grid
- Matrix multilayer switches extend application-level Quality of Service from the core to the network edge right to the end user
- Features like compression, encryption, traffic filtering and policy management—supported by the entire end-to-end infrastructure—provide the essential security for a utility company
- Inherent scalability of the solution has resulted in a greater return on investment—just1.5% of the company's annual budget goes toward IT
- By supporting videoconferencing systems from Polycom, the network helped save Sierra Pacific $277,000 the first year it was implemented

The two power companies merged in July 1999 to create one of the fastest growing energy companies listed on the New York Stock Exchange. Today, Sierra Pacific Resources provides electricity to 843,000 electric customers throughout Nevada and northeastern California; Sierra Pacific Power also provides natural gas to 110,080 customers and water to 70,663 customers in the Reno-Sparks area—to serve more than 1 million customers combined. With a service area that covers over 54,531 square miles of the fastest growing state in the United States, Sierra Pacific's vision is to create a premier distribution, transmission and energy services company.

The Challenge:
Building an Infrastructure Energized to Meet any Demand

Part of a rapidly evolving industry in a region of the country where growth is exploding, Sierra Pacific Resources works hard to stay a step ahead, meeting the business challenges faced by most organizations—ensuring continued profitability, meeting regulator requirements, serving customers' changing demands, and fostering collaboration between employees.

As Chuck Benton, network analyst III at Sierra Pacific Resources, explained it, Sierra Pacific Resources' progressive approach to business and innovation requires that technology solutions be in place before business challenges arise. "Our business challenge was to provide network resources that could meet all the demands of a merger between Nevada Power and Sierra Pacific Power, as well as any new applications and functionality needed after a merger," Benton said, "except we didn't know those things when we built our Enterasys network and incorporated Polycom videoconferencing systems. We just knew that we needed a network and a system that were ready for anything."

The Solution:
Enterasys and Polycom Products Enhance Availability and Flexibility

In 1996, Nevada Power and Sierra Pacific Power were supported by outdated shared Token Ring networks that were often down and couldn't keep up with the requirements of a growing utility. Benton and his Special Projects Group turned to Enterasys Networks and Aprisma (both were part of Cabletron Systems) for the solution.

Today the Sierra Pacific Resources network is supported by Enterasys X-Pedition™ switch router 8600s and 2000s as well as Matrix™ E7 and E5 multilayer switches. The entire network is managed by NetSight™ and Aprisma's SPECTRUM.

"We have an essentially flat network," Benton explained, "with a Gigabit Ethernet backbone to two core X-Pedition 8600s in Reno and two in Las Vegas with X-Pedition 2000s and Matrix E7s and E5s deployed in closets throughout our facilities. Our network supports about 3,000 nodes."

From the core of Sierra Pacific Resources' network, the 16-slot X-Pedition 8600 offers the capacity the company needs to handle its demanding and diverse network traffic, as well as pinpoint control, simplified manageability and full-function, wire-speed IP/IPX routing. With the 16-slot X-Pedition on the backbone, network throughput exceeds 31 million packets per second.

X-Peditions extend the policy-based, application-level Quality of Service to the desktop via the Matrix. When combined with the award-winning X-Pedition, the Matrix delivers scalability, advanced functionality and guaranteed Quality of Service right to the end user—without sacrificing wire-speed performance. This means that all network users can count on consistent application performance.

And with an organization like Sierra Pacific Resources where the network is so critical, the Quality of Service built into both the X-Pedition and Matrix is important. "It may be cliché, but the network is our business," Benton commented. "The only thing that doesn't function on our network is our phone system, so if the network goes down, the only 'business' we can do is make phone calls. It goes without saying that our network has to be completely available."
In fact, network availability is so critical that only four hours each month can be set aside for routine network maintenance.

Supporting All Aspects of the Business

According to Benton, in addition to typical business functions like building environment, security, materials management, e-mail and Internet services, the Sierra Pacific Resources network also supports vital, industry-specific applications and systems—the company's event system, which controls the electric grid; the outage management system, which pinpoints where on the electric grid an outage is located; the system that processes customer payments transmitted via Internet from grocery stores and banks around the state; as well as the "trader" system.

"Sierra Pacific Resources and its affiliates produce only about 50% of the power we provide to our customers. The rest of the power is purchased on the open market," Benton explained. "Using the network, our traders purchase this power to meet our contracted obligations. It's simple: If our traders can't access the network, they can't buy power and we can't meet our contracts, meaning customers could 'go dark.'"

In this post-September 11 world, network security is also critical, and because utility companies are highly visible this is especially true for organizations like Sierra Pacific Resources. "Security tools—like compression, encryption, traffic filtering and policy management—have always been available in our infrastructure," said Benton. "We've just taken a harder look at how we've implemented security technologies and have worked to be sure that others in the organization understand that protecting valuable data may require some compromises."

Benton also points to the scalability of the network as an important element. "Since implementation, we've needed to replace our customer information system which was not Y2K compliant and deploy a new ERP application," Benton said. "With the network's scalability, we didn't need to upgrade hardware, which meant that any issues could be dealt with at the application level and all funding could be directed toward expenses associated with the new application.

"I guess you could say that the network we installed in 1997 has been able to meet every demand placed upon it," Benton commented. "This is a great return on investment. Right now only 1.5% of the company's annual budget needs to be directed to IT."

Polycom Videoconferencing System Adds Exciting New Capabilities

When it was deployed in 1997, one of the capabilities expected of the new network was the ability to support video. At that time, Sierra Pacific Resources looked to Polycom, a worldwide provider of voice, video, data and web communication solutions, to provide the videoconferencing tools it needed. "We decided very quickly on Polycom," Benton stated. "The solution is transparent to switched Ethernet, IP addressable and virtually plug and play. We keep our Polycom ViewStation units on carts with Sony Trinitrons, and our end users roll them wherever they're needed. They find them very easy to use.

"Our choice to work with Enterasys and Polycom was very forward looking," Benton added, "because when Nevada Power and Sierra Pacific Power merged two years later, we had a network and high-quality, interactive video communications that could easily facilitate collaboration between the sites in Las Vegas and Reno." The end result: With the appliance-based

ViewStation systems enabling video conferencing in company facilities, the need to travel became a thing of the past. "The solution is extremely cost effective," Benton said. "In the first year of implementation, we saved $277,000 on the travel expenses that would have been incurred by employees traveling between our facilities."

Today, 40 Polycom systems enable between 8 and 12 video conferences each day over T1 lines between facilities; the company can't track video conferences, which occur on the network within each individual facility, but Benton estimates that this figure could be as high as 50 each day. "Since we are a merged company, conferences are held frequently so management and employees in different locations can communicate with each other," Benton said. "This videoconferencing capability is a new tool in the tool box of everyday business."

Sierra Pacific Resources also has many unique uses of its Polycom systems. Board rooms in each facility feature Polycom systems with 57" Panasonic flat screens, for example, and even the security system is video ready. "IP-addressable security cameras can be attached to the network, enabling security officers to dial in from anywhere and to check a security camera," Benton said.

The Future:
A Wireless Canopy for Las Vegas

When Benton envisions the future, he sees technology creating a company that is even more flexible, truly working in real time. "We're currently testing a 'wireless canopy' across Las Vegas covering about two million people," Benton said. "With this canopy, for example, we can equip our service trucks with mobile Polycom systems that connect wirelessly via Enterasys RoamAbout™ to a central location. Images of damage could be sent instantly to the foreman, another technician, even to the factory where the product was manufactured for damage assessment and repair strategies. We expect to deploy this solution this year."

A wireless canopy could also make life a little easier for Sierra Pacific Power employees, who during a storm could log on to the company network from home to respond to customer calls rather than driving to the office.

"Utilities in general operate in a volatile, changing marketplace, and because of our location in one of the fastest growing regions of the country, constant change is even more likely for Sierra Pacific Resources," Benton stated. "Thinking ahead and taking advantage of technology—to have what we need before we need it—is a philosophy we're very proud of. It's also a strategy that will continue to make us successful."

"We've also helped ensure our success by partnering with the right vendors," Benton concluded. "Both Enterasys and Polycom have created solutions that can give us, and companies like us, the features, functionality, reliability and flexibility that enables us to meet our business goals."

Contact Us

For more information, call Enterasys Networks toll free at 1-877-801-7082, or +1-978-684-1000 and visit us on the Web at enterasys.com