BridgeWave

Case Study

ResTech Services

ResTech Services Gains a Competitive Edge in Accelerating Metro Ethernet Rollout with BridgeWave's High-Capacity Gigabit Ethernet Wireless Links

In the race to provide a fast ramp to the information superhighway, ResTech Services is out front as a leading-edge Internet Service Provider with highly competitive offerings for residents and businesses throughout Madison, Wisconsin. As home of the University of Wisconsin-Madison, the bustling metropolis includes a variety of apartments, condominiums and campus-area housing that accommodates many of the university's 40,000 full-time students. Founded in 2000 as a technology arm of Steve Brown Apartments, a property management company with strong ties to the university, ResTech earned a stellar reputation for simplified ordering, highly responsive customer service and unprecedented levels of bandwidth capacity.

In 2005, ResTech began working with other local property management firms to expand its business and expedite the rollout of high-speed metro Ethernet. Currently, the company provides economical digital voice and data services to more than 5,000 multi-dwelling units, serving more than 10,000 customers. As early adopters of innovative technologies, ResTech relies heavily on high-speed wireless links to keep pace with ever-increasing bandwidth requirements, streamline service deployments and reduce operating expenses. In doing so, the fast-growing ISP competes very effectively against AT&T, the local exchange carrier (LEC) and cable operator Charter Communications.

According to Bryan Schenker, director at ResTech Services, the ISP has always been highly motivated to find new technologies and management solutions that enable it to stay a few steps ahead of the incumbent operators. "We implemented a switched network with a high-speed wireless backbone, which enabled us to slash hardware costs, scale fast and offer better levels of service," he says. "Getting Internet service is as easy as plugging into an Ethernet jack and ordering service over the phone or electronically. There's no need for a truck roll and no two-week delay waiting for service. Our customers really appreciate our same-day, hassle-free service delivery—which is a stark contrast to their experiences with the phone and cable companies."

CHALLENGE

In 2002, ResTech installed Proxim Tsunami QuickBridge 5GHz wireless links to backhaul traffic to its network backbone. At the time, the ISP provided 4Mbps Internet service—faster and more affordable than the competing services offered by the cable company. By 2005, ResTech had increased network capacity to meet escalating bandwidth demands with a 10Mbps Internet service and VoIP offering. In doing so, the ISP continued to use a variety of 5GHz wireless links to backhaul traffic and connect different properties to its network via multiple points of presence (PoPs) around town.

Over time, however, it became clear that ResTech needed more capacity, especially as its tech-savvy customer base started downloading large amounts of streaming video. The growing popularity of video services such as YouTube and Joost would soon cause a strain on ResTech's backbone unless substantially more bandwidth was added. "Approximately 50 percent of our customers are students, the most demanding Internet audience," explains Schenker. "Napster started the need for more capacity, but video is a whole new ballgame. We had to anticipate the latest trends, including the eventual reality of IPTV."

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In planning for sufficient network capacity, ResTech also had to take into consideration the need to accommodate the annual influx of students. "When 5,000 students all move in at the same time, we have a surge in bandwidth needs," adds Schenker. "We need to move fast in activating new accounts without impacting network performance for everyone else." As ResTech's network grew, the ISP realized that 5GHz wireless links wouldn't provide the required bandwidth. They also were beginning to experience 5GHz frequency saturation issues in the downtown portions of the network, making it increasingly difficult to avoid RF interference.

SOLUTION

In seeking more robust wireless links to support its ever-expanding network, stepping up to gigabit wireless seemed the logical next step, so the team initiated research into this rapidly emerging product segment. ResTech was familiar with Terabeam's heritage using 60GHz radios and knew that Terabeam's parent had purchased the assets of Proxim. A Google search also revealed that BridgeWave was a pioneer in providing 100Mbps and Gigabit Ethernet solutions in both the 60GHz and 80GHz frequency ranges.

After reviewing the technical specifications of the products, ResTech was most impressed with BridgeWave's GigE wireless links as well as the company's fast response to questions about co-locating radios and antenna polarization. "Since we have more than 20 5GHz radios on our downtown rooftop, we had some concerns about installing multiple radios on a single site," says Schenker. "With BridgeWave's radios, however, the extremely narrow antenna beamwidth eliminates any interference concerns, while also making the links inherently more secure than other wireless technologies."

Equally appealing was the fact that BridgeWave's gigabit wireless links are highly cost-effective, offering GigE performance at a 100Mbps radio price point. The products also are well known for ultra low latency, which was a major criterion for ResTech. In guaranteeing high service levels, ResTech needed a jitter-free solution for VoIP as well as anticipated rollouts of IPTV.

> ***"With BridgeWave's high-performance GigE wireless links, we can be much more agile than our competitors. This future-proof solution lets us continually scale our network and services to deliver the highest quality of affordable voice, data and video services over the Internet. There's no end in sight to what we can do."***
>
> - Bryan Schenker,
> Director,
> ResTech Services

BridgeWave's GigE wireless links provided the capacity, reliability, low latency and expandability ResTech wanted in a high-speed network backbone. As a result, the company purchased its initial links in 2005 and continued to extend its backhaul capabilities with the assistance of Wincomm Technologies Corp., a Solon, Ohio-based distributor of products, systems, solutions and services for a variety of networking applications including wireless and WiMax.

BENEFITS

ResTech has installed two BridgeWave FE60 100Mbps and three GE60 GigE links, with plans for additional deployments. The 100Mbps radios provide end-point service delivery at two properties while the GigE radios aggregate and backhaul traffic to the network core. Link installation has proven to be fast and easy, thanks to an intuitive user interface and a simple alignment tool for aiming the antennas. "The narrow beam-widths are amazingly easy to line up," says Schenker. "We hardly ever spend more than 10 to 20 minutes on fine-tuning." The narrow beams also eliminate interference concerns about co-locating multiple links on the same rooftop.

The high-capacity BridgeWave radios have performed reliably, enabling ResTech to maintain "five-nines" network availability while facilitating rapid expansion. With plenty of headroom now to accommodate network growth, ResTech is gearing up to offer a 20Mbps Internet service while also testing new, bandwidth-intensive video capabilities.

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In particular, the low-latency, jitter-free links support VoIP and set the stage for emerging IPTV services. The ISP is testing IPTV over BridgeWave's GigE links; early results are positive, with no signs of image degradation or pixilation. As a result, ResTech is planning a pilot IPTV project by year-end with widespread distribution forecasted for 2008. "We're pretty excited about the prospects of IPTV as it removes the cable company's last competitive advantage," says Schenker. "If demand accelerates as projected, we expect to buy another 20 or so BridgeWave links in the next year."

ResTech also is exploring other ways to leverage its ample network capacity, including working with Steve Brown Apartments on a state-of-the-art IP video surveillance and card-key access system for a new, on-campus property. All the traffic for the video and new access system, along with a 50Mbps Internet service offering, will ride on the ISP's BridgeWave links.

BridgeWave's high-speed GigE links are proving instrumental in helping this thriving ISP retain a significant lead over competing service providers while producing a complete ROI in less than a year. "With BridgeWave's high-performance, cost-effective GigE wireless links, we can be much more agile than our competitors," concludes Schenker. "This future-proof solution lets us continually scale our network and services to deliver the highest quality of affordable voice, data and video services over the Internet. There's no end in sight to what we can do."

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CUSTOMER:
ResTech, an Internet Service Provider based in Madison, Wis., www.restechservices.net

INDUSTRY:
Telecommunications

CHALLENGES:

- Escalating bandwidth demands and rapid network expansion required increased capacity.
- Spectrum saturation with large installed base of 5GHz radios caused interference problems.
- Expedited service delivery to heavy student population created operational challenges.
- Planned IPTV rollout required ultra low latency network performance.

SOLUTION:
Two BridgeWave FE60 100Mbps and three GE60 GigE wireless links

CHANNEL PARTNER:
Winncom Technologies Corp., a Solon, Ohio-based distributor of products, systems, solutions and services for a variety of networking applications including wireless and WiMax.

BENEFITS:

- Substantial bandwidth gains set the stage for expanded Internet offerings, including IPTV and IP video surveillance.
- Simplified installation using intuitive user interface and simple tool for adjusting antennas.
- Narrow antenna beam-widths eliminated all interference concerns and highly reliable performance ensures "five nines" availability.
- Future-proof solution provides competitive edge while achieving ROI in less than a year.

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