

Mission Critical Case Study: TriRivers Health Partners

Market Served
Healthcare

Eaton and TriRivers power reliable healthcare IT

Location:

Rockville, Illinois

Segment:

Healthcare

Industry:

Higher education

Challenge:

Establish a highly scalable and redundant centralized power system to support critical healthcare IT requirements and electronic health record storage

Solution:

End-to-end Eaton power quality and distribution equipment, server enclosures with integrated heat containment and Intelligent Power Manager™ software

Results:

Completely redundant power system capable of easy, high-density scalability to meet growing capacity needs, reliable backup power to help maintain 24/7 uptime, unified power system monitoring and management

"Eaton as a vendor provides us with the ability to take some of the things off the table that we used to worry about, but don't have to anymore. With a full B-side utility, generator and UPS room distributing to the B-busway in each room, TriRivers is supported with best-in-class redundancy and efficient power systems."

Roger Crook, TriRivers president

Background

Located in North Central Illinois, TriRivers is a healthcare information technology (IT) organization jointly sponsored by SwedishAmerican Health System in Rockford, Illinois and FHN (formerly Freeport Health Network) in Freeport, Illinois.

The collaborative venture provides shared infrastructure and staffing, a regional fiber optic network and collocation data center services to support over 5000 users across more than 50 locations in Illinois and Wisconsin. The shared data facility also provides organizations with reliable, centralized storage of electronic health records for enhanced patient security, convenience and productivity.

TriRivers operates its information systems from multiple data center locations, including a 33,000 square-foot hosting data center in Rockford, and a backup facility at FHN Memorial Hospital in Freeport, IL.

A fiber optic 300 plus mile network connects the data centers and healthcare facilities that are supported by TriLightNET TeleHealth Communications, which is wholly owned by TriRivers.

This innovative network allows healthcare organizations such as SwedishAmerican and FHN to reduce costs greatly by sharing infrastructure and staffing

for help desk, technical and operations support, technical services and data management functions.

Challenge

The TriRivers system allows doctors to access critical healthcare applications as well as consult in real-time to UW Health for eICU and other services. This capability results in faster treatment for patients, reduced waiting time for diagnoses and access to critical care specialists. To maintain dependable service for its customers, TriRivers first ensures the ongoing health of its own critical equipment and applications.

"We work around the clock for the entire year, relying on our computer systems as the backbone of our operations," explained Sheryl Johnson, VP and CIO of SwedishAmerican. "All of our medical records are vital to taking proper care of patients, which means that we can't afford to have downtime—even for maintenance."

When it comes to managing power in critical healthcare IT environments, one anomaly or malfunctioning power device can bring down an entire network.

Maintaining a clean, reliable supply of power across the network and receiving warnings and intervening before a potential problem can result in downtime are top priorities.



Powering Business Worldwide

Further, the Health Insurance Portability and Accountability Act (HIPAA) sets the standard for protecting patient data. Any company that manages protected health information and electronic medical records must ensure that all required physical, network and process security measures are followed.

To help immunize against these threats, achieve HIPAA compliance and ensure reliable patient care, TriRivers sought a premium backup power system capable of safeguarding the more than 1000 virtual mission critical servers within its data centers. The organization also wanted a solution it could grow into, as well as one that would facilitate easy maintenance.

"One of our major strengths is that we look at our clients' specific IT requirements before we develop a customized data storage solution," said Roger Crook, president at TriRivers. "To provide this service in a timely manner, it was important to develop a flexible and adaptable power system that would enable simple scalability without sacrificing performance."

Solution

TriRivers gained a highly scalable, centralized power protection and distribution solution by collaborating with Eaton data center experts. Combining technical innovation with a rich feature set, the end-to-end Eaton power management solution delivers an impressive combination of power performance, electrical efficiency, simplified management, inherent flexibility and power density.

As the heart of the power protection system, the double conversion design of the Eaton 9390 backup power system provides TriRivers with the highest level of protection, safeguarding equipment against the most common power problems.

In addition, with a high efficiency rating of 94 percent and output power factor of 0.90, the unit lowers total ownership costs by reducing the cost of power to support protected loads.

Even when operating at loads lower than 50 percent, the 9390 provides an efficiency level that is higher than most traditional, fully loaded UPS systems. Eaton enables efficient use of power for maximum savings; due to its high efficiency rating, the 9390 produces less heat, which lowers facility cooling costs and optimizes energy usage.

The 9390 backup power system provides internal expansion capacity to help TriRivers meet future needs economically. The unit also provides a fully redundant backup power system to minimize the risk of unexpected outages and support HIPAA requirements for network uptime. With instant response to utility conditions, the UPS can quickly detect changes within incoming power feeds to ensure reliable power for always-on operations.

New Eaton power distribution units and busway infrastructure at the TriRivers data center complement the internal scalability of the 9390. The components combine to create a power distribution system capable of cost-effective expansion when business moves forward. Eaton's busway is custom-engineered and built to fit TriRivers' specific layout requirements, with a compact design that occupies less space and can be installed faster than traditional cabling.

"By simply snapping in new busway sections and plugging in power distribution units, we are able to bring new racks online in a matter of hours rather than a period of days," said Crook. "The expandable busway system also reduces cabling, which can prevent airflow circulation in the rack and lead to cooling losses."

"It's easy to snap in new busway sections and plug into power distribution units," said Crook. "It takes only hours, not days, to install an additional row of busplug boxes, cabinets and ePDUs."

The Eaton-managed ePDU power distribution units stemming from the busway ducts allow TriRivers to monitor and control critical factors such

as voltage, current and power. This level of information enables the organization to make the right decision when it comes to data center energy consumption, and also helps prevent power loss proactively. Integrated with Eaton's management software, TriRivers is able to control these units from any computer on the network server—helping achieve the power system availability needed for HIPAA compliance.

TriRivers also employed Eaton environmental monitoring probes (EMP), which enable IT management to collect temperature and humidity readings in the rack environment. The collected data can be monitored in real time via the on-board screen or remotely using a Telnet connection or a standard Web browser.

To unify monitoring and management of its power system, TriRivers relies on Intelligent Power Manager software. The supervisory platform allows users to monitor and manage multiple power and environmental devices across the network from a single interface. The innovative software combines critical applications to ensure system uptime and data integrity with power monitoring and management.

"Intelligent Power Manager software paired with the managed power distribution units gives us in-depth system information down to the outlet level, so that we can closely monitor power status and rack conditions within the same pane of glass in our operations center," said Crook. "With access to historic data down to the device level, the platform also allows us to proactively design and implement solutions for higher availability and efficiency."

To complete the package, TriRivers outfitted its data center with Eaton's Paramount™ enclosure system, a scalable platform compatible with virtually all major servers, switches and other networking equipment. It provides integrated heat containment and unparalleled levels of storage,

cooling, power integration and cable management to meet nearly any client need. The racks also provide a secure locking system to heighten security in accordance with HIPAA.

As part of the project, TriRivers also tapped Interstate PowerCare® to assist in the design of the new data center model, including built-in expansion capacity.

Eaton solution

- 9390 UPS
- 125 kVA power distribution unit
- Managed ePDUs
- Switchgear
- Rack-based heat containment
- Paramount enclosure system
- Busway
- Environmental monitoring probes (EMP)
- B-line cable trays
- Power XpertT monitoring software
- Intelligent Power Manager software

Results

With the Eaton solution, TriRivers can better help healthcare clients reduce costs through the centralization of data and real-time energy management functions—without worrying about the safety or accessibility of data.

With Eaton power management products, the company can now:

- Ensure the highest level of reliability within its data center to protect customer assets
- Remotely monitor its power system to maintain availability for HIPAA compliance
- Identify energy-efficiency opportunities through real-time and historical power data
- Easily and cost-effectively scale to meet future growth, with the ability to customize power management and protection specifically for client needs
- Enhance heat containment at the rack level to reduce cooling costs and extend equipment life
- Utilize clean, reliable power from two power systems with architecture to scale-as-you-grow

Note: Features and specifications listed in this document are subject to change without notice and represent the maximum capabilities of the software and products with all options installed. Although every attempt has been made to ensure the accuracy of information contained within, Eaton makes no representation about the completeness, correctness or accuracy and assumes no responsibility for any errors or omissions. Features and functionality may vary depending on selected options.

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