BladeUPS Gives Hospital Flexibility to Grow

Product:
Eaton BladeUPS

Location:
Florence, S.C.

Market Served:
Healthcare

"Here at Carolinas Hospital we depend on the BladeUPS for 24/7 uptime of our critical health care systems,"

- Ray Graham, IT consultant for Carolina Hospital System

Background

Carolinas Hospital System is located in Florence, S.C. and serves patients in a nine-county area. Its medical center features state-of-the art facilities and equipment, and provides comprehensive services that include acute care, cancer treatment, cardiac care, emergency/trauma services, maternity care and an array of specialized rehabilitation programs. With 420 beds and more than 1,800 highly skilled medical professionals, including over 270 specialized physicians in every major specialty on staff, Carolinas Hospital System is more than equipped to meet the region's health care needs.

In 1998, Carolinas Hospital System moved into its new multi-million dollar medical campus built across town from its old location. The new facility provides increased access to some of today's most sophisticated medical tools and techniques, anticipating patient needs for decades to come.

In conjunction with this major relocation and the hospital's vision for the future, administrators recognized that achieving greater reliability and 24/7 availability of its information technology (IT) systems would positively enhance patient care and improve operational efficiency.

Challenge

Similar to any business on utility power, Carolinas Hospital System's critical IT infrastructure is susceptible to daily power quality issues such as surges, sags, load fluctuations and other power interferences. A typical commercial customer can experience four to 15 outages per year. Hospitals must proactively implement power protection and management strategies to protect IT systems, diagnostic imaging equipment, clinical labs and monitoring support systems against a full range of problems. "We view technology as an asset to facilitate even better care for hospital patients," said Ray Graham, IT consultant for Carolinas Hospital System. "In a hospital environment, downtime must be avoided as critical equipment and patient information is needed around the clock."

Carolinas' IT infrastructure generates, stores and transports huge volumes of critical patient health care data — information that is becoming more vital as health care evolves into the "digital hospital" model. The hospital's data center, which currently serves 1,800 users and houses over 50 servers, was also moved to the new campus in 1998. At that time, the IT staff moved the primary power backup device, an uninterruptible power system (UPS), which was approaching capacity. In 2005, the data center added two additional UPSs (Eaton 9125s) to power its servers, but data center expansion quickly brought these units to full capacity.

Confronting growth demands, as well as new HIPAA requirements, Carolinas Hospital System sought to bolster its power protection efforts in two critical areas — its patient health information servers and its primary distribution cabinet. "Our initial UPS implementation was not designed to accommodate the entire data center," explained Graham. "Power protection is a vital part in maintaining our technology infrastructure, and we sought a solution that would address our immediate data center requirements, as well as our future expansion plans."

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Solution

Hospital administrators quickly engaged a team of experts to diagnose the situation and prescribe the right power protection solution. Jones Engineering, Inc., the local Eaton Representative in South Carolina and an expert in power quality solutions, helped determine the appropriate specifications for the project. Working with members of the IT staff, several criteria were identified and evaluated including total system scalability, battery runtime, and redundancy requirements. Jones Engineering ultimately recommended Eaton's BladeUPS™ solution.

"Aside from industry-leading power performance, the deciding factor in choosing BladeUPS was its modular design and built-in bypass capability. With a modular system there are no downtime requirements, and when additional capacity is needed, you simply plug in another module," said Graham. "We were already confident with Eaton products as our previous UPS systems never failed us. Turning to Eaton and its BladeUPS was a logical solution."

The BladeUPS is the industry's most energy efficient, rack-based, three-phase system, specifically designed and optimized for today's high-density computing environments. Carolinas Hospital System installed two 12kW BladeUPS modules for its data center with the capability to add five more modules in a single 19-inch rack for a complete 60kW, N+1 redundant, system. The two modules are in redundant mode, which allows hospital IT or facility managers to perform full maintenance on any module without interruption of conditioned power to their protected IT equipment.

Implementation

Carolinas Hospital System ordered the BladeUPS at the end of January 2007, and installation and implementation of the system occurred two weeks later.

Carolinas Hospital System has been migrating its critical servers to the BladeUPS and will migrate additional servers as time and resources permit. The IT staff has also transitioned eight servers containing primary patient information systems to the BladeUPS. The hospital will eventually decommission its old UPS that moved to the new site and power the entire data center with the BladeUPS. There are also plans to move the two 9125 units to the hospital's main distribution closet to provide power protection for core networking equipment that supports hospital connectivity to all remote sites.

"We are now using UPS systems in our two most critical areas — patient health information servers and our primary distribution closet. This strategy is essential because the BladeUPS now bridges the gap between loss of utility power and locally generated power. We have complete confidence that we will not experience power problems that harm our computers, data, or affect patient care," added Graham.

Result

One of the reasons Carolinas Hospital System chose BladeUPS was for additional features not found in other UPS offerings. One such feature is the integral network monitoring which allows e-mail notifications about power events to be sent in advance of cutting servers over to backup power. This is a new feature for the hospital, and the UPS is now programmed to distribute pager and e-mail notification for both critical and major power events. This feature also gives the IT staff the ability to examine the load on the BladeUPS and easily determine how many more devices can be added before worrying about capacity issues.

Carolinas Hospital System plans to transfer everything in its data center to the BladeUPS, such as additional support for clinical, radiology and facility applications, including accounting and payroll applications. Hospital IT staff plan to add another six servers to support that transition and implementation of an entirely new health information
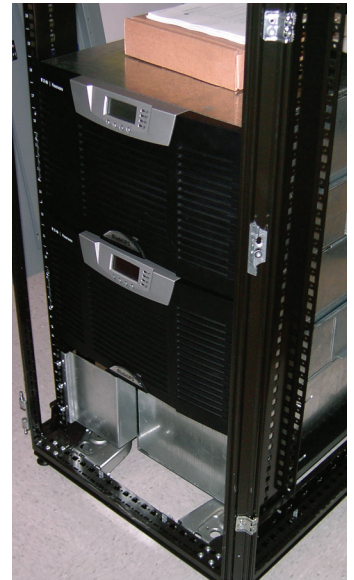
systems application. In the coming months, all infrastructure systems, networking components in the data center and current domain support systems will move to the BladeUPS.

"Here at Carolinas Hospital we depend on the BladeUPS for 24/7 uptime of our critical health care systems," said Graham. "Downtime procedures are a last resort because we cannot prolong the amount of time required to provide care and services to patients. Downtime raises our costs and decreases patient satisfaction. Anything we can do to prevent that is a plus."

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