



Eaton gets an A+ for keeping Alabama schools online

Product:

Eaton® 9390, Eaton® 9395, Service

Location:

Huntsville, Ala.

Market Served:

K-12 Schools

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- K. Wayne McVay, facilities manager

Background

The Alabama Supercomputer Authority (ASA) is a state-funded corporation founded in 1989 to operate the Alabama Supercomputer Center (ASC) and the Alabama Research and Education Network (AREN).

The organization provides a wide range of services for K-12 schools statewide, including Internet connection, content filtering, consulting and design, distance learning, email and web hosting, network management, supercomputing services, integration services, and 24x7 help desk and support.

Challenge

Downtime just isn't an option for the ASA. "It would really affect the researchers and the jobs running on the supercomputers here," reveals K. Wayne McVay, facilities manager at the Alabama Supercomputer Center in Huntsville.

With research calculations running up to six weeks, even the slightest blip in power would significantly delay work, especially considering that many of the applications don't have restart capability. "If the power goes down, it may stop a job that has been running for weeks or months at a time, and that job might have to be started all over again," McVay explains. "It could really inconvenience researchers and delay results."

Yet even more detrimental, he says, would be the loss of network access, as the facility provides critical connectivity for virtually every school system in the state.

"That would certainly be the biggest hiccup," McVay acknowledges. "We have a lot of distance learning sessions, especially in the rural areas of Alabama. They need that connectivity in order to have class."

Several years ago, the ASA sought to replace its existing 120 kVA APC Silicon UPS with a different model. "I wasn't pleased with the APC performance or support," McVay notes.

The search for a solution capable of protecting the wide range of equipment on the ASA's computer room floor — worth several millions of dollars — led the organization to investigate Liebert, Mitsubishi and Eaton® units.

In addition to an exceptional level of service, the ASA required a highly reliable UPS capable of being paralleled for redundancy. A unit with a small footprint was also a factor, as space is extremely limited on the computer room floor. Another consideration for the ASA was a UPS that could offer generator compatibility.

Eaton 9390 Solution

Responding with authority to the organization's needs was the Eaton 9390 UPS. "The Eaton unit just seemed to be the best fit for this application, and also the least expensive," says McVay.

The three-phase unit delivers a best-in-class combination of power performance, battery management, scalable architecture, flexibility, power density, and warranty and service.

The 9390's double-conversion design that offers the highest level of protection available to shield equipment from the most common power problems, while its scalability allows up to four equivalent modules to be paralleled for additional capacity or redundancy.

The ASA chose to parallel two 160 kVA units. "It gives me full redundancy," McVay says of the solution. Achieving this ultimate level of reliability has proven critical for the ASA, whose facility has recently become prone to frequent power outages.



Powering Business Worldwide

"We've had more outages in the past year than in all 16 years combined that I've been here," McVay reports. "But every time, the units have worked flawlessly."

Operating each of the two 9390s for six months at a time, McVay says the solution delivers significant bang for the buck. "We're really getting a lot of value for the dollar," he confirms.

While the ability to parallel for redundancy was a prerequisite, the pair of 9390s is also delivering a complementary benefit. "Now we don't have to wait and schedule after-hours maintenance," says McVay. "Instead, we can switch from one unit to the other to complete the maintenance. We didn't have that ability before, so we always had to perform maintenance off hours, and take the system off-line. Now we're always on the UPS, no matter what."

Another boon for the ASA was the 9390's small footprint, which is 35 to 50 percent less than competitive units. Just 597 square inches and a compact 72-inch height, the unit encompasses a fraction of the space required by comparable UPSs.

"The footprint did factor in because we had limited space in that room," McVay acknowledges. "That had a lot to do with why the engineers chose that particular unit."

The company is equally pleased that the units deliver the industry's best efficiency rating, which helps save in energy costs. The 9390's transformer-less design and sophisticated sensing and control circuitry combine to deliver up to 94 percent efficiency, which significantly lowers power and cooling costs. Enhanced efficiency also prolongs battery runtimes and produces cooler UPS operating temperatures, resulting in extended component life while increasing reliability and performance.

Furthermore, the 9390's low input current THD enhances generator compatibility, another important factor for the ASA, which recently added another generator to its site. "The UPSs carried us all through all of the testing of the new generator," McVay notes. "Everything in the building stays up. I don't have any problems — that's the best thing. It's taken the worry out of it."

Eaton 9395 Solution

The ASA was so impressed with the 9390s that the organization once again looked to Eaton when it required a secondary power source to protect its computer room, as well as to safeguard devices in the remainder of the building, including employee desktops.

"If the power goes out, we don't even have to reset the clocks on the microwaves or anything else in the building," McVay shares. "Also, we have eliminated the need for numerous stand-alone UPSs that were previously scattered throughout the building."

That's because the facility invested in a 225 kVA N+1 Eaton 9395 UPS, which offers unprecedented power performance, reliability and efficiency. The unit delivers the highest level of reliability and availability on the market, thanks in part to its modular design. Users can configure the 9395 with redundant power modules to become N+1 redundant systems — unlike traditional UPSs, which cannot deliver this additional availability without adding a more costly second UPS.

"I really like the fact that the 9395 is an all-in-one unit with parallel redundancy built into the single cabinet," McVay says. "Plus it's field-upgradable from 225 to 275 kVA. You just change out some modules."

Indeed, the modularity of the 9395 will allow the ASA to easily adapt to future changes in load demands or reliability requirements without having to purchase an additional UPS. "We haven't done it yet, but we're going to look at expanding down the road," McVay confirms.

The facilities manager has gained additional confidence from Eaton's eNotify Remote Monitoring Service, which provides real-time monitoring of more than 100 UPS and battery alarms. With Eaton service technicians remotely overseeing both the UPS and batteries at all times, this second set of eyes enables many issues to be resolved remotely — often before a customer even knows a potential problem exists.

"If something starts to go wrong, I know about it within minutes," McVay reveals.

In the future, the ASA may supplement the 9395 with Eaton Energy Saver System (ESS). The revolutionary technology enables the 9395 to attain an industry-leading efficiency level of 99 percent down to 15% load, making it the only technology on the market capable of yielding such results. Even more, because UPSs using ESS maintain 99 percent efficiency even when lightly loaded, the technology can deliver gains of up to 15 percentage points in efficiency over traditional models in the typical operating range.

The organization is also considering ultimately replacing its pair of 9390 units with another 9395. "It's a growth issue more than anything," McVay explains. "We had an energy survey completed in the computer room and it was suggested that the units match up. If the two 9390s ever failed, we should be able to fail over to the 9395, and right now we don't have that one-for-one match."

Service

Beyond all the bells and whistles afforded by the 9395 UPS, one of the biggest considerations prior to its selection was the fact that the unit included an Eaton service plan.

"This became a big factor when we decided to purchase the 9395 because I had already had such a great response from the service people on the 9390s," McVay reveals.

The facilities manager is quick to praise the responsiveness of the service team. "If I send an email, I'll get something back within the hour, either by email or phone," he says.

McVay also lauds the expertise of the service technicians. "The guys are very knowledgeable, they do a great job," he says. "They know their products intimately."

Results

For McVay, the ultimate reward provided by the comprehensive Eaton solution is peace of mind. "The units pretty much run themselves, I rarely have to do anything to them," he says. "They are very self-sufficient and I don't have to worry about outages."

With the 9390 and 9395 units in place, the ASA is now able to:

- Ensure the highest level of reliability and uptime to critical equipment and applications
- Perform maintenance at any time without taking the load off-line
- Easily expand its 9395 solution with a simple field upgrade
- Conserve energy with the UPSs' high efficiency rating
- Save space with the small footprint of the UPS

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