Customer Success Story:
EasyStreet

Markets Served
Data Center

Eaton makes reliability & efficiency easy for EasyStreet

Location:
Beaverton, Oregon

Challenge:
As EasyStreet began planning a new data center facility, the company sought an uninterruptible power system (UPS) that would provide the high availability needed to maintain the firm's perfect 15-year uptime record, while at the same time reducing energy requirements and environmental impact

Solution:
The Eaton backup power system was an ideal match to sustain the reliability of EasyStreet's data center, while also meeting the company's green initiatives and providing scalability for future power requirements

Results:
The Eaton solution has operated at the highest level of performance and efficiency, enabling the company to achieve energy savings while avoiding any downtime.

Background

Serving the Pacific Northwest region since 1995, EasyStreet has established an unparalleled record of reliability and technology leadership as an IT service and collocation provider. The company specializes in collocation, providing a safe, secure home for customers' hardware and software, with 24/7 monitoring and support. In addition, EasyStreet offers a variety of cloud services, data protection, monitoring and professional IT services.

Two of the firm's three Oregon-based data center sites are Type II SSAE 16-audited facilities, which set standards for environmental responsibility and quality, as well as provide external validation that controls are in place to ensure the highest levels of security and availability.

Challenges

In 1998, EasyStreet's initial facility, DC1, came online as the Northwest's first true enterprise-class data center. Since going live, the company's 24/7 monitoring and proactive protocols have resulted in 100 percent uptime for more than 15 consecutive years.

The firm's dedication to maintaining this unparalleled level of availability was at the forefront of discussions when planning began on its DC2 facility in 2009. Designed for collocation customers desiring full cabinets or cages, the new data center required a double-conversion, online UPS capable of delivering the highest level of protection and uptime for clients, whose day-to-day operations depend on the facility.

Equally important was an energy-efficient UPS design that could offer the high power density required for today's virtualized infrastructures, while supporting the region's "green" values and addressing the challenges of modern data centers' ever-escalating power requirements.

Within its new DC2, EasyStreet sought to incorporate a wide variety of innovative technologies and methodologies designed to reduce energy consumption and achieve a Power Usage Effectiveness (PUE) of 1.3 or better. (The average PUE rating for data centers is 1.8, according to a survey of more than 500 data centers conducted by The Uptime Institute.)

Furthermore, EasyStreet also needed a large, robust UPS capable of powering the modern facility, designed to be 1.2 megawatts at build out. Scalability was another consideration, since the company planned to grow into its facility over a period of several years.

Although EasyStreet researched a variety of different UPS options, it already had many years of positive experience with Eaton products and services, and valued the company's commitment to developing solutions specifically designed for the data center.

"I had been using Eaton UPSs for 15 years," reveals Jon Crowhurst, director of technical services at EasyStreet. "We had great experience with Eaton and the uptime provided by our existing Eaton 9315 units, which had performed very well. Our electrical engineers were also impressed with the Eaton hardware."

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Solution

When EasyStreet's state-of-the-art SSAE 16 Type II audited DC2 data center came online in early 2011, standing at the helm was the Eaton Power Xpert™ 9395-825 UPS. The energy-efficient unit is designed to provide backup power and scalable battery runtimes in a small footprint for large data centers, healthcare applications and other critical systems.

Eaton understands that a data center and the supporting network form the backbone of an organization's enterprise, making the company uniquely qualified to deliver the solutions needed to effectively manage power and facilitate uptime. With products like the 9395, Eaton addresses key data center requirements such as resilience, resource and asset optimization, and just-in-time capacity.

Deployed in an N+1 configuration at EasyStreet, the double-conversion, three-phase 9395 unit delivers the highest level of reliability available, proactively protecting clients against costly downtime and data loss. This is accomplished, in part, through the UPS's inherent redundancy, which enables the 9395's uninterruptible power modules (UPMs) to be configured to automatically act as N+1 redundant systems. This additional level of availability cannot be facilitated in other manufacturers' UPSs without adding a costly second unit.

To further mitigate downtime and increase resilience, the 9395 relies on digital signal processing (DSP) control technology, advanced battery management, airflow management systems and electric fans, all of which monitor internal conditions and provide advanced warning of potential component failures.

The innovative design of the 9395 has also been instrumental in helping EasyStreet achieve its green goals through resource and asset optimization. In addition to providing the highest efficiency rating for reduced utility costs, the UPS offers the industry's lowest total cost of ownership and lifecycle carbon footprint, the smallest footprint and weight, and the lowest transportation and installation costs.

EasyStreet opted to deploy Eaton's ground-breaking Energy Saver System (ESS), which allows the 9395 to attain an industry-leading efficiency level of 99 percent, making it the only technology on the market capable of yielding such results. Using ESS, the 9395 intelligently adapts to utility power conditions while supplying clean power to the connected equipment. 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 — translating to enormous energy savings. In fact, the energy savings from ESS typically recovers 100 percent of the cost of the UPS cost over just a three- to five-year time period.

To help EasyStreet cost-effectively prepare for the future and meet just-in-time capacity requirements, the 9395 units are engineered with inherent, internal scalability. As a result, the company can adapt to future changes in load demands and meet new requirements for higher reliability without requiring the purchase of additional UPS units.

This is especially advantageous to EasyStreet, considering the firm's plans to incrementally add on over the next three to four years. "Being able to scale up was an important factor for us," Crowhurst acknowledges, noting that the design build-out of the site will ultimately incorporate three 9395 units. "We're looking at deploying our second unit this year," he adds. "It will likely be an identical configuration."

Because EasyStreet is currently operating its 9395 at a low load, the company is taking advantage of Eaton's Variable Module Management System (VMMS) technology, which optimizes overall system efficiency even at low load levels. With VMMS, the UPS system sets redundant power modules to ready state, enabling the remaining power modules to drive the load with higher efficiency. When the load increases again and more power modules are needed, the system immediately shifts the load into additional modules. VMMS adapts both to a single UPS consisting of multiple power modules and to larger, multiple UPS parallel systems.

"We have been able to significantly reduce electrical loss by running VMMS," Crowhurst confirms. "As we increase our loads to a place where we need all modules online, we will probably then switch back to ESS."[1]

To ensure ongoing, optimal performance from its power systems, EasyStreet also relies on an Eaton service plan, which includes regularly scheduled preventive maintenance inspections by factory-trained, highly skilled technicians who inspect, test, calibrate and upgrade any UPS and/or battery components, while ensuring factory-specified performance.

"That is the key to any data center operation," Crowhurst emphasizes. "If you want uptime, you have to maintain all of your equipment."

In a unique move to further bolster energy savings and promote green initiatives, EasyStreet paired the 9395 with VYCON flywheels, an option that eliminates the need for battery maintenance, replacement and cooling for 20 years, the rated lifetime of the flywheels.

"What you see are the latest technologies designed for maximum efficiency and reliability, allowing EasyStreet to provide service with no 'green surcharge' passed to its collocation customers," Crowhurst explains. "Reliability, sustainability and having a low carbon

Eaton Power Xpert 9395

footprint are part of the ethos of our company. This vision with actual energy savings allows us to save money, which translates to saving our customers money. It's a great win-win."

Results

Since installation, EasyStreet's 9395 unit has operated at the highest level of performance and efficiency within the company's DC2. The solution is helping the company to maintain its benchmark of providing 100 percent uptime for customers, as well as achieve significant energy savings.

The innovative design of the 9395 has also been instrumental in helping EasyStreet achieve its green goals, with reduced utility costs, low total cost of ownership and lifecycle carbon footprint, and the smallest footprint and weight.

Finally, with Eaton support readily available for onsite service, EasyStreet can rest easy that quality support is immediately accessible if any need should arise.

[1]The two benefits of ESS and VMMS cannot be engaged at the same time.

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