

Leading Athletic Apparel Designer Improves Agility and Sustainability with Digital Update

A Vertiv Case Study



Background

Within the manufacturing and retail industries, both sustainability and the ability to quickly respond to shifting consumer tastes often emerge as key differentiators that establish competitive advantage. This was the case for one of the world's leading designers and producers of athletic shoes, apparel, equipment and accessories.

Across the board, this retailer was reshaping the consumer experience — led by digital. Enabling this digital transformation while still growing revenue was a data center revitalization project for the company's logistics center. This project aligned with internal initiatives established by its chief sustainability officer.

As part of the company's push to be a zero-carbon and zero-waste business, its supply chain sustainability team sought to modernize its data center network with energy-efficient technology. The company wanted to reduce environmental impact while supporting advanced core compute strategy.

The large-scale, multi-year revitalization project consolidated and replaced all legacy data center equipment and systems. It allowed the company to move to a single data center vendor for design support and leadership. The need for the revitalization was also driven in part by internal directives to connect with the company's consumers more efficiently across multiple distribution channels.

The completion of the project enabled 24x7 support and redundancy across all North America data centers, supporting 24x7 logistic center operations.

Challenge:

Efficiently meet consumer demand with high volume, next-day, and expedited product delivery options, and effectively handle higher dot-com transactional speeds.

Solution:

Updated and networked power and cooling equipment for core data centers, as well as enclosed in-row solutions for edge facilities.

Results:

- \$200,000 in reduced downtime costs
- 50% reduction in utility costs
- Decreased capital expenditures
- Enhanced 24x7 customer responsiveness capabilities

Challenge

Changing consumer demands require greater capacity

Aging power and cooling infrastructure within data center facilities required an upgrade in order to operate more effectively and efficiently. The data centers were designed and built in the late 1990s and were not able to support high volume, next-day, or expedited delivery options, nor the dot-com transactional speeds that the business required to keep pace with shifting consumer trends.

Logistic centers designed for limited operational hours on Monday through Friday created multiple days of shutdown opportunities per month and limited redundancy. The company did not have the capacity for a logistical shift, and the data centers were no longer supporting the business efficiently.

The operational needs of the supply chain had quickly stretched beyond the operating capacity of the data center fleet and its supportive environment. Issues that threatened operations and overall business continuity included having the following:

- Single heating, ventilation, and air-conditioning (HVAC) structures for data center cooling
- Multiple vendors for support and maintenance
- No cohesive deployment or refresh plan across the logistic data center network
- Rising maintenance costs
- Limited failover capabilities

To align with the company's internal directives to better connect with consumers, the retailer needed to replace its legacy fleet of computer room air-conditioning (CRAC) units and uninterruptible power supply (UPS) systems.

These critical assets were from varied manufacturers and weren't networked. Not only were they mis-matched across facilities with incompatible communication capabilities, they were also inefficient and aged.

Solution

New hardware and software enhances systems stability

As part of the revitalization effort for the North America logistic centers, the retailer worked with Computer Environment, a Vertiv partner, to install a unified solution.

This solution consisted of the following critical assets:

- Liebert® EXM UPS
- Liebert® GXT4 UPS
- Liebert® DS direct expansion cooling system
- Liebert® CRV in-row, air-cooled cooling system
- Liebert® DataMate air-cooled systems with outdoor, split system condensing units

The cooling solution reduced facility costs for maintenance and power consumption, and it reduced the size of the infrastructure footprint. The new units operate at a third of the costs of traditional CRAC units.

Scalable power was a huge gain across the network. The company can now transition on the fly without downtime from as little as 4 kVA to 160 kVA based on power needs. Likewise, power can be scaled down as compute is removed, lowering energy consumption.

In addition, Vertiv™ monitoring and logging tools such as Liebert® Nform monitoring software allowed detailed reporting and tracking of all key metrics from every connected system.

Tracking such metrics as compressor hours, power curves, inverter health, and battery alerts supported trending of overall system health for a more predictive maintenance strategy, allowing the company to locate issues before they become operational problems.

The redundant cooling and power allowed for maximum uptime to support the facilities' 24x7 operations. Using real-time monitoring with a networked keyboard, video and mouse (KVM) switch and networked power distribution units (PDUs) also gave the company control of power usage for better system management. Additionally, having multi-fused and circuited PDUs within secure cabinets safeguarded systems by preventing accidental outages.

The deployment of in-row cooling and in-rack UPS coupled with a sub-zero enclosure has allowed the retailer to create a repeatable, stable data center in a box that is deployable to all new logistic center facilities.

Using Vertiv™ solutions like the Liebert® Liqui-tect™ leak detection system, the enclosure offered a complete, monitored data center structure that protects company network environments from dust, water intrusion, unstable temperatures, and security/access concerns.

Learn more about Computer Environment, which is now part of Joe Powell and Associates.

Benefits of Thermal Management Fleet

- Variable cooling capacity with intelligent control technologies for better management of energy costs
- Lead-lag operational hour sharing for greater energy efficiency
- Remote sensor and cooling controls for better stability in room temperature
- Flexibility for various room designs
- Rugged equipment for long-term reliability



Liebert® DS



Liebert® CRV



Liebert® DataMate system

Results

In helping the athletic apparel designer transform its IT environment from core to edge, Vertiv™ solutions drove business benefits in a number of ways:

Efficient Thermal Management

Replacing four traditional CRAC units with high-efficiency units in just one logistic center lowered the data center utility power cost by half. The company is no longer required to run four units continuously. Only one unit runs at a time and those units operate at 25-50% utilization for cooling. While there is an initial power savings of 50%, the savings generated by variable speed functionality is additive.

Stable Power Management

The new Vertiv™ UPS installations at each facility with dual power and split metered PDUs added \$200,000 in value immediately after deployment by eliminating costly downtime.

Any UPS disruption on the previous units resulted in one to four hours of planned downtime for maintenance. The Vertiv™ UPS fleet has a battery failover and is maintenance bypass redundant so that no downtime is required for twice-a-year battery maintenance or for ramping up or down of kVA.

Flexible, Modular Edge Computing

Costs for traditional data center buildouts are much higher than standardized deployments consisting of enclosed, in-row systems. Data center room designs can range from \$800,000 minimal construction to more than \$3 million.

The Vertiv™ enclosures were deployed within an existing space with reduced raised floor and did not require large amounts of additional electrical, plumbing and cabling. Having 208- and 408-volt access, waterless CRAC units, and fully enclosed cabinets limited wiring, while PDUs reduced cabling outside of the main structure and the edge deployment.

Savings were also realized due to precision cooling of spaces being utilized rather than cooling entire rooms. The smaller footprint of the infrastructure also allowed for repurposing raised spaces for disaster recovery and colocation.

Simplified Vendor Support

Vertiv partners handled procurement, deployment, installation, maintenance/support, and monitoring of all the company's on-site and remote equipment as part of this revitalization project. This reduced work for support teams and the company's budgeting and finance department.

Dependable Equipment and Partners

Working with Vertiv gave the company improved, reliable professional services from a global brand. Access to domain expertise throughout the equipment's entire lifecycle meant maximum utilization and achievement of customer responsiveness and resilience goals.

This retailer's legacy infrastructure caused gaps in monitoring coverage and bottlenecks in communications and support. Now, the company has an end-to-end partnership with Vertiv and coverage with redundancies for the business' 24x7 operational needs. Its data centers can run without facility power for extended times and perform controlled shutdowns if necessary.

The company can also handle disaster recovery needs at multiple locations for when additional power or cooling is needed within the supply chain network.

For this retailer, all new systems now provide real-time monitoring to spot and correct any outage risks. Within the Vertiv™ deployment footprint, the company no longer has unplanned network equipment failure.

"The final installations are significantly greener than earlier deployments, and in theory, will help propel the supply chain team beyond its 30% reduction goal 10 years ahead of the target date."

- Lead Supply Chain Engineer



Liebert® EXM UPS



Liebert® GXT4 UPS

Benefits of Power Fleet

Liebert® EXM

- High operating efficiency across multiple load scenarios
- Transformer-free design and optimized ancillaries enables better use of space and generates savings in shipping and installation costs
- Paralleled units offer capacity flexibility and system-level redundancy

Liebert® GXT4

- More usable power for supporting more connected loads that can be prioritized
- Intelligent battery health management for optimal service life

Go online to learn more about how Vertiv solutions can help support your retail modernization projects.

Vertiv.com | Vertiv Headquarters, 1050 Dearborn Drive, Columbus, OH, 43085, USA

© 2021 Vertiv Group Corp. All rights reserved. Vertiv™ and the Vertiv logo are trademarks or registered trademarks of Vertiv Group Corp. All other names and logos referred to are trade names, trademarks or registered trademarks of their respective owners. While every precaution has been taken to ensure accuracy and completeness here, Vertiv Group Corp. assumes no responsibility, and disclaims all liability, for damages resulting from use of this information or for any errors or omissions. Specifications, rebates and other promotional offers are subject to change at Vertiv's sole discretion upon notice.