



Research Institute

This research institute is home to some of the world's highest intellects and scholars working on fundamental research. Each year, new members attend the institute where they are given the freedom to work on achieving long-term goals without pressures for immediate results.

Background

Space constraints in an existing data center were challenging this research institute to meet requests for deployment of new technologies and increased performance reliability. When a new construction project on the institute's campus was approved, the IT team took full advantage to create a new data center. Realizing that the data center would be a place of frequent technology changes and additions, the team knew that it needed to invest in durable support systems that would not hamper existing technologies and constrain growth.

Case Summary

Location: New Jersey

Products/Services:

- Knurr Racks
- Liebert MP Advanced Power Strips
- Liebert Nform Monitoring

Critical Need: Required new IT racks that provided greater airflow and monitoring of environmental conditions.

Results

- Achieved proper airflow through a row of IT racks housing powerful servers and other technologies
- Improved rack-based power distribution to ensure connected equipment would benefit from higher reliability via receptacle-mount construction
- Minimized disruptions from load monitoring and control on power strips
- Deployed racks with features that are flexible enough to support equipment changes

The Situation

Amid an expansive campus, it's hard to imagine that this research institute would have an issue with space. Yet, that was exactly the problem for the institute's IT team responsible for mission-critical applications for one of the world's leading centers for theoretical research and intellectual inquiry. As new technologies and applications emerged, the computing requirements rose at a rapid rate and the current space was unable to support the users' needs.

When a construction project was proposed for the campus, the institute's IT team took advantage of the opportunity to propose a new data center. Based on the need to leverage new technologies, the agency allocated a 15' x 40' room for the IT team in the new building that could house a computing cluster and more equipment.

The Solution

The planning process for the new data center naturally included support systems. Through discussions with an IT reseller and DVL Inc., the institute's IT team identified the qualities required to operate a successful rack-based IT infrastructure. DVL is Emerson Network Power's local Liebert Representative office in the area.

"As we talked about the infrastructure, we kept coming back to the importance of the rack," said a DVL associate. "We knew that the institute would be filling the racks with expensive and powerful equipment. If the racks were inadequate, we knew the technologies couldn't perform as intended because of overheating from poor airflow and cable management, among other concerns."



"These PDUs provide reliable, high-quality power distribution control. We wanted top of the line and we got it."

Network administrator at the research institute

And when it came to the technologies, the institute needed to house more than 115 servers for standard operations in addition to more than 60 servers within a high performance cluster.

The solution was 18 Knurr racks, which are manufactured by Emerson Network Power to handle frequent equipment changes, reduce space constraints, manage temperature control, and provide a secure environment. Knurr racks feature a lightweight frame design of extruded aluminum framing that is superior in strength and 50 percent lighter than standard steel-frame racks.

Airflow was a major concern because the room only allowed the racks to be lined up in one row with room to walk in front and behind. Therefore, the Knurr racks' 83-percent perforated front door, which provides the freest airflow in the industry, was a necessary element of the solution. Standard cable management features of the Knurr rack added

additional airflow benefits by eliminating barriers that are often caused by cable obstructions, according to DVL.

Another important feature of Knurr racks that impressed the institute's IT team was the use of a patented, infinitely variable mounting system. This design increases application flexibility by allowing equipment to be installed at any position within the rack, rather than having to align with a more limited set of pre-drilled holes common in other rack systems.

The IT team mounted two Liebert rack PDUs in each rack to distribute power to servers and other connected equipment. One of the system administrators at the institute said, "These PDUs provide reliable, high-quality power distribution control. We wanted top of the line and we got it."

Each of the Liebert MP Advanced Power Strips is monitored remotely by Liebert Nform monitoring software that provides email alerts and local notifications of any problems.

The Results

As the new data center came online, the quality and performance was evident in the ease of equipment installation as well as the scalability to support planned additions. According to the DVL associate, representatives from the institute were impressed with the "great design, modularity and cable management capabilities."



The research institute selected Knurr racks, which feature a lightweight frame design of extruded aluminum framing that is superior in strength and 50 percent lighter than standard steel-frame racks.

Since that time, the institute has invested in additional cable management accessories and blanking panels to continue managing the addition of new equipment into the racks.

"While racks are one of the more simple pieces of equipment in a data center, it's easy for them to cause many headaches for IT managers who are forced to deal with poor quality frames and less-than-adequate functionality," the associate said. "Our contacts within the network group at this institute don't have to worry about their IT racks. They're going to be enjoying the benefits of their investment for many, many years."

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