PHŒNIX CONTACT

INSPIRING INNOVATIONS

Building redundancy from edge to enterprise energy management with ILC 2050 BI controllers

Summary

- A large state-of-the-art data center outside Washington, D.C. features 15 MW of premium capacity, 2N+1 redundancy at device, edge, and server levels for duplication of equipment and everything related to the building automation system

- OTI (**www.otipro.com**) was selected to lead the project

- Controls are integrated through an OT Network backbone made of fiber connected through Optigo Connect switches and splitters. At the system edge, OTI opted for Phoenix Contact ILC controllers

- The project provides easy access to a world of important data, including an energy management dashboard and more

If a Phoenix Contact ILC 2050 BI has any interruption, the whole system is smart enough to switch to the redundant system with zero downtime. The secondary controller continues controlling the system and collecting critical data with no interruption.

Customer profile

A large data center property owner operates several highly efficient, cost-effective wholesale data centers. Each of its national facilities meets or exceeds the highest industry standards for data centers in all operational categories of availability, security, connectivity and physical resilience.

The data center company offers wholesale and colocation facilities around the United States, including a new site outside the nation's capital.

Challenge: A major transformation

The company recently transformed a very large data center into a state-of-the-art wholesale space with 15 MW of premium capacity, 2N+1 redundancy, and more.

Solution: Operational technology backbone

The data center management company selected OTI, a master systems integrator and building controls contractor with projects completed in 46 states and three countries, to lead the project.

With Phase 1 completed, OTI has connected 12,000 I/O points from control systems in the first 10,000-square-foot data hall, plus office space and a chiller plant.

This was the fourth time that OTI oversaw an integration for this customer. OTI specializes in operational technology integrations to improve business performance and peace of mind for its partners. As a controls contractor, OTI offers end-to-end support for upgrading existing systems and implementing entirely new controls.

With Phase 1 completed, OTI has connected 12,000 I/O points from control systems in the first 10,000-square-foot data hall, plus office space and a chiller plant. Each point transmits data to the enterprise command center developed by OTI and the backup history servers on 5-minute intervals. Critical points transmit at 1-minute intervals.

As with most OTI projects, controls are integrated through an operational technology backbone made of fiber connected through Optigo Connect switches and splitters. At the system edge, OTI opted for Phoenix Contact ILC controllers because they are:

• IP-based

• Easily expanded with I/O modules

• Able to support multiple communications protocols (BACnet/IP, BACnet MS/TP, Modbus TCP, Modbus RTU, LON, KNX/IP, SNMP, oBIX, Enocean, DALI, MP-Bus Belimo, M-Bus)

• Embedded with Niagara framework

Phoenix Contact, an international automation specialist, can provide most of the components in the control cabinet.

Results: Smart and smarter

Because this facility is a fully 2N+1 redundant data center, OTI's integrations in power and cooling systems are also redundant. For example, a primary ILC controller is in constant communication with a redundant ILC controller. If an ILC has any interruption, the whole system is smart enough to switch to the redundant system with zero downtime. The secondary controller continues controlling the system and collecting critical data with no interruption.

Phoenix Contact's ILC 2050 controller operates on the Niagara Framework to enable Internet of Things-based automation.

This is OTI's fourth integration with the data center company, and the energy management dashboard can be configured to provide hierarchical access. For example, executives can easily get a high-level overview of each property, while building engineers can access data from the building they control. Data center tenants also have access to energy usage reports and near-real-time views into their server rack space to aid in their data management strategies.

OTI has been retained for the full data center project, which will be completed in four phases.

© 2022 PHOENIX CONTACT

PHOENIX CONTACT • P.O. BOX 4100 • HARRISBURG, PA 17111-0100
Phone: 800-888-7388 • 717-944-1300 • Technical Service: 800-322-3225 • Fax: 717-944-1625
Website: www.phoenixcontact.com