Global telecommunications company relies on Foreseer to harness the power of data to manage energy and protect availability

Location:
Global

Segment:
Telecommunications, data centers

Problem:
Need to manage energy usage and ensure optimal service to 15 million customers

Solution:
Implement a power and energy management system using Foreseer®

Results:
High-performance and cost-saving benefits

Contact Information

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Background

A rapidly expanding global telecommunications company recognized that it needed an enterprise-wide power and energy management system to manage its energy usage and ensure optimal service to its 15 million customers. With 1,500 facilities including national and regional data centers, head end and hub sites, the company wanted a system that protected the operational health of those facilities as well as enabled it to address issues and manage energy proactively and predictively.

The company worked with Worldwide Environmental Services (WES), which provides critical facility solutions that optimize energy utilization while maintaining high availability operations, and Eaton to implement a power and energy management system.

The goal was to deploy a standardized system with the monitoring and management capabilities that would enable it to eliminate any customer impact due to critical infrastructure failures.

Challenges

Because the telecommunications company's facilities span a large geographic footprint, it required a solution with a distributed, scalable architecture. To ensure that hundreds of different models of equipment from many different manufacturers could be monitored, an extensive, multi-vendor, device-driven library of interfaces was required. WES Senior Account Manager John Teague explains, "The ability to integrate multi-vendor controls was critical to enable a centralized solution to be implemented without the expense of replacing thousands of system components."

To harness the power of the collected data, the solution needed to include high-performance trend analysis and forecasting tools to access archived data for assessing equipment performance through cause analysis, impact analysis, capacity planning, preventative maintenance assessments and trending. It was essential that the system monitored and archived every point in the system once per second to provide data centers with the ability to access data for trending all device parameters within the system. To ensure that decisions could be made proactively, the ability to access archived data was critical.

The system needed to provide integrated power quality diagnostics as well as sequence of events recording to enable users to analyze the events that precede a catastrophic event and make changes to prevent recurrence.

To afford the telecommunications company with the ability to "see" up to 180 days into the future based on historical data and trends demanded a system with automated predictive capability. This would enable thresholds to be defined and situations to be remedied long before an actual critical alarm condition occurs.

Powering Business Worldwide

Solution

WES and Eaton recognized that Eaton's Foreseer® offering would not only address the telecommunications company's current needs, but also provide additional benefits.

WES Technical Director Mark Welsko reports, "With its distributed, scalable architecture, Foreseer can manage enterprise-wide data centers and ensure that data gathered from monitoring can be used as a tool for power and energy management. With its ability to cover the entire critical infrastructure with one platform, Foreseer gives the company real-time information on all its facilities on a single pane of glass that it can use for predicting potential problems and also taking proactive measures to ensure operational reliability."

Monitoring and managing the data center critical infrastructure is a top business priority because data center downtime costs can be astronomical. Conservatively, if a critical facility has $200 million of monthly revenue flowing through it in customer fees, a single interruption causing 10 percent of its supported customers in that facility to call and complain and then 1 in 10 people in that group demanding a refund, could cost the company $2 million in refunded revenue. The cost of one event could exceed the cost of investing in a monitoring system several times over.

Eaton's Power Management Account Manager Christian Laurenzano explains, "Cost per point is a major consideration for implementing a monitoring and management system. With Eaton's virtual interface drivers, we can literally bring in hundreds of data points with one cable connection. This enables a fairly large system to be sized up at a very reasonable benefit to cost ratio."

Results

While maintenance of service to their customers is paramount, with its investment in Foreseer, the company is also gaining additional performance and cost-saving benefits.

Welsko reports, "Foreseer stands out from its competition by having the default feature of efficiently archiving every data point in the system. For example, at one medium-sized deployment with 55,000 channels of data, we were able to address a maintenance event that would have turned into an outage of a major air conditioning system. It initially appeared that the system was experiencing a mechanical failure that would require shutting down the system, replacing multiple components and recommissioning it. With Foreseer, we were able to look at relevant data points and see precisely what was going on with the system. We determined that during a transitional event, a flood of cold air was causing a physical disruption to the system. Through a Web conference across three states, the controls contractor for the system initiated a programming change to correct the situation in 30 seconds. A high-cost, high-risk maintenance expense, that would not have fixed the problem in the end, was avoided."

Foreseer
Provides an integrated, holistic solution to harness the power of data to manage energy and protect availability.

Foreseer's ability to detect a problem before it has an impact on a data center or other critical facility enables the company to achieve "critical saves." When a regional weather event threatened the critical facilities across a large geographical area, the system's messaging and reporting capability allowed managers to deploy limited resources to areas requiring the exact attention. Intelligent application of fuel and personnel resources avoided customer-impacting events.

With Foreseer's ability to provide custom reports, the telecommunications company is monitoring all aspects of its energy usage from the power levels by device across the enterprise to its Power Usage Effectiveness (PUE) rating. This enables the company to quickly estimate the energy efficiency of its facilities, compare the results among data centers, and determine if energy efficiency improvements need to be made.

By working in partnership with Eaton and WES, the global telecommunications company is using Foreseer to provide an integrated, holistic solution to harness the power of data to manage energy and protect availability. By collecting data and turning it into meaningful information, the company has the ability to address issues and manage energy proactively and predictively. With the scalable platform in place, the company is positioned to accommodate future expansion, while at the same time ensuring its ability to provide optimal customer service profitably.

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