The Benefits

“There are no more spreadsheets and phone calls,” says Greg. “The only time the data center talks to Rocky Mountain Power by phone is when either party is performing maintenance.”

Data is exchanged using OSIsoft and Kepware – more than 106 million transactions are going on every day. The objective is to adequately balance load and supply.

The data center comprises about 300,000 square feet and is ‘staffed’ by about 50 people and 8,000 computers that process orders and shipping information. The data collection system is monitoring more than 2,000 I/O points with Kepware and about 200,000 total I/O points.

“The real-time database uses OSIsoft PI. We read all of the servers’ power and store it in the database. The OSI database and the utility database are located off-site in Salt Lake City and are bi-directionally exchanging data. Kepware is a key part in making that happen. Kepware pulls all the information from the drivers. Kepware works on demand so at the site, OSI sends the data to Kepware on a schedule and the utility sends its request to Kepware. We tell the utility what our load is and the utility tells us how much power they actually supplied. We use it to monitor the quality of the power coming in and the electrical usage,” Greg explains.

“Data is exchanged using OSIsoft and Kepware – more than 106 million transactions are going on every day. The objective is to adequately balance load and supply, Greg said.”

All sides have benefited from this deployment, which only took about two months to develop and deploy. Rocky Mountain Power is now able to fulfill its NERC obligations and the data center is able to validate its power quality and power usage.

“By using this system, the data center saved money in both business process and labor costs. By eliminating manual reporting, the center estimates that it was able to re-deploy staff members to more meaningful tasks,” Greg notes.

In addition to meeting all legal requirements, quality of power has been improved and reaction time to power issues is much faster and at lower cost.
As the largest energy utility in the state, Rocky Mountain Power’s fundamental issue on the grid is to balance power – load from supply. Rocky Mountain Power is always, at every moment, balancing the demand and the supply of electricity in Utah and needs accurate, real time warnings of demand changes – even a few minutes warning of a demand change makes a difference in power reliability and fuel cost.

“The Approach

Rocky Mountain Power and the data center called in DST to design a system that would provide all the necessary information to manage NERC requirements. “At first we thought we could tie the two LANs together but it became impossible for legal and technical reasons,” says Greg. “Looking to Kepware – the only technology that could do what we needed – we developed a Modbus-based system to satisfy all requirements.”

Today DST monitors more than 200,000 physical signals in the data center and turned to Kepware Technologies to provide the communications driver to “keep us connected,” says Greg.

“Nearly all building management or electrical systems are designed like they don’t need to talk with any other systems,” says Greg. “The problem is that you just can’t have enough staff to manually monitor the site so you need to have a system that aggregates the data to develop total energy use systems. When you connect the monitoring system to other systems is where Kepware comes in. It’s the glue that keeps everything talking to each other.”

The Internet data center tracks more than 2,000 power measurements directly at the utility interconnection point and at their on-site generators and reports 50 summary calculations to Rocky Mountain Power. In turn, Rocky Mountain Power reports actual power usage to the internet company - the real time voltage and current at each of two redundant 150kv transmission lines, including power sags and swells.

Organization:
Data Center

Industry:
Energy Utility

Sales/Service Area:
United States

Solution:
KEPServerEX®, sharing information with OSIsoft, to monitor more than 2,000 I/O points with 50 summary report calculations. Kepware Drivers used include: Allen-Bradley, ControlLogix and Modbus

“Looking to Kepware – the only technology that could do what we needed - we developed a Modbus-based system to satisfy all requirements,”
— Greg Dumas, DST Chief Technology Officer

“Many customers and utilities alike manage demand and supply by dispatching their engineers to spend hours creating spreadsheets and calling each other with their very latest out-of-date forecasts,” says Greg Dumas, DST Chief Technology Officer.

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The Customer

DST Controls is a full service control systems and industrial data integration company head-quartered in Benicia, CA. It serves customers on five continents with automated control and monitoring of industrial equipment, processes, and data.

As a control and data systems integrator, DST accomplishes its mission by using proven, off-the-shelf hardware and software solutions when possible, and inventing effective hardware and software solutions when necessary.

DST’s multi-disciplined staff provides control, automation, and data collection systems to a wide range of industries from water treatment to power-grid substations; from vibration-dampening systems for satellite launch vehicles to automated quality control systems for bottling. If processes, equipment, or industrial data flow need automating, DST Controls is the systems integrator to do it.

The Challenge

DST’s customer, a large ecommerce data center near Salt Lake City, was advised by Rocky Mountain Power that it needed to provide the utility with up-to-date information on energy demand in the Center. In addition, Rocky Mountain Power needed to satisfy requirements from the North American Electric Reliability Corporation (NERC). NERC is certified by the Federal Energy Regulatory Commission to establish and enforce reliability standards for the bulk-power system. As a manager of the grid, NERC requires that the utility ‘balance’ power needs.

In order to do that they need forecasts for demand, which in the case of the data center is provided by a DST system.

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