



SUN AND KEDONG ELECTRIC POWER CONTROL SYSTEM BUILDING A GREEN ELECTRIC POWER SYSTEM TO CREATE A SUSTAINABLE FUTURE

Industry
Electric Power

Customer
Qinghai Electric Power Corporation

Business Issues

- Fast growing energy demand
- Power supply security
- Operational costs and efficiency
- Environmental sustainability
- Huge and growing client database

Solution
An improved systems capacity through the combined technologies of Sun SPARC Enterprise servers, StorageTek array, Solaris 10, Java 3D and Oracle database to minimize energy consumption, reduce operating costs, for better performance efficiency and an improved user interface of client data display.

Business Results
Better management of operating costs

- Reduced hardware cost
- Saved data center space
- Increased server utilization rate

Energy savings and emission reduction

- Noticeable decrease in equipment energy consumption

Improved efficiency

- Enhanced systems performance
- Simultaneous large-scale data collection
- Easy data checking and processing

Products/Services/Solutions

- Sun SPARC Enterprise T5440 server
- Sun SPARC Enterprise T5220 server
- Sun StorageTek 6540 array
- Solaris 10
- Sun Cluster software
- SunSpectrum System Services Gold Services

URL Reference
<http://partneradvantage.sun.com>

Pressed with mounting electric power demand, Qinghai Electric Power Corporation was recently facing challenges to not only improve the efficiency of its electric power supply system on a sustainable basis, but to also fulfill the company's commitment to green energy. These issues led them to seek ways to optimize its electric power system as well as implement a strategic solution to save energy, reduce emissions, and uphold the company's corporate social responsibility.

Sun joins hands with Kedong to forge a Green Electric Power System

To help Qinghai with these goals, Kedong Electric Power Control System Co., Ltd. formed an alliance with Sun Microsystems to develop an integrated electric power system solution based on Sun's technology for this grid operator.

While Kedong cultivated a close relationship with Qinghai to understand its business requirements, Sun, backed by a distinguished client base and expertise, provided its proven range of solutions and services. Both companies held in-depth studies and thorough technical discovery discussions prior to proposing a solution.

Kedong and Sun developed an optimal and outstanding solution for Qinghai, resulting in the grid operator's continued development and strengthening its value proposition in the industry.

Challenges Facing Qinghai

Qinghai is part of the Northwest China Grid Company Limited. To date, the company supplies electric power supply to three (3) cities and 28 counties including Xining City, Haidong Region, Hainan Prefecture, Haibei Prefecture, Huangnan Prefecture, and most of Guoluo Prefecture together with Haixi Prefecture.

Its power grid currently covers 58% of the Qinghai Province with an area of 420,000 square kilometers. The company now serves 4.935 million people, which is 91% of the total population in the northwest province.

As economic and social development in the Qinghai province continue to take place, the power grid operator recognized the critical tasks of meeting fast-growing electric power demand, eliminating potential business hazards, and mitigating unparalleled pressure on the power supply security. Apart from these responsibilities, the company needed to uphold its commitment to protect the environment through a safe, economical, clean, and efficient supply of power.

To respond to these challenges, it was imperative for Qinghai to optimize its current power system of the company through best-of-class technology solutions.

Choosing the Best Solution Provider

Kedong was the clear choice for Qinghai with the following competitive advantages:

- an industry leader specializing in electric power services, including the power grid dispatch automation system engineering and the power distribution system engineering
- extensive experience in providing industry solutions backed up by successful cases nationwide, including the Beijing Power Grid Dispatch Automation System
- a company known for employing first-class technologies as proven by the number of national awards it has won for science and technology advancement

After detailed studies, Kedong with Sun as its partner, proposed a solution packaged seamlessly to suit the actual conditions and requirements of the northwest grid operator and provide strong ROI. Kedong's primary responsibility was in software installation and implementation while Sun supplied and implemented the fundamental IT architecture.

“The Kedong-Sun solution has remarkably met our requirements for energy saving and emission reduction, as well as improved performance.”

Li Guodong, Technical Manager, Qinghai Electric Power Corporation

Building a Best-Of-Class Solution with Advanced Technology

Kedong and Sun assembled a solution to deliver a reduction in power supply and cooling costs, savings in data center space, enhanced service levels, and increment in server utilization rate.

The Sun SPARC Enterprise T5440 server, running on Solaris 10 was picked for its excellent performance, environmental protection and cost benefits. This system is based on CoolThreads technology, a proven open-source chip multithreading (CMT) architecture designed for scalability and reliability. It is the world's first four-socket universal server that is powered by the UltraSPARC T2 Plus “system on a chip” processor and boasts up to 4x higher performance per watt, as little as one-fifth the cost of competitive systems.

The Sun SPARC Enterprise T5440 server provides flexible, open-source and zero-cost virtualization technology using Logical Domains (LDoms) and Solaris Containers – with an ability to run up to 128 virtual machines on a single server without paying for proprietary virtualization technologies. Qinghai can therefore safely consolidate multiple applications onto one system and increase its utilization rates and efficiency.

This server is also equipped with an intelligent fan control system that regulates the rotating speed of the fan according to the air temperature. With this feature, Qinghai is able to cut down its energy consumption and cooling cost by up to 70%.

Business continuity is especially important for a regional utility company like Qinghai. The Sun Cluster software which is a flexible multi-system, multi-site disaster recovery solution plays a key role in managing the availability of applications services and data across local, regional and vastly dispersed datacenters.

Another outstanding feature of Kedong's solution is the enhanced user-interface of its client data display enabled by Java 3D technology. This fourth-generation 3D graph API tool makes it easy for a new user to efficiently operate the power system.

The Sun StorageTek 6540 array was adopted for its ability to stream data-intense applications continuously at top speed, including email and databases. This performance is integral in supporting the Oracle database so that it can simultaneously process and access large-scale data. It can also give Qinghai the modular flexibility to grow fast and quickly adapt to constantly changing business requirements.

Finally, Qinghai opted for the SunSpectrum System Services Gold Services plan to complement the solution and to support its unique business needs. With this, Sun will continue to deliver its proven expertise and trusted service quality and help Qinghai achieve high availability within its IT infrastructure.

Learn more

For more information about Sun, please visit www.sun.com

For more information about Kedong, please visit <http://www.epri.ac.cn/>

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