

In-House Implementation of Advanced Green ICT

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Data Centers Green Reference for Tomorrow

Environmentally-Friendly Data Centers

Striving to achieve not only high functions, high security, and robustness, but thorough energy efficiency.



"Spot" Air-conditioning System

"We want to apply not only the functions and performance of our data centers, but their environmental performance, in order to contribute to our customers and society."

Satoru Yagi

General Manager, Green Data Center Project Department
Fujitsu Limited

- Advanced network technologies, highly dependable security, robust facilities able to withstand natural disasters, and the most advanced green technologies ensure 24-hour a day 365-day a year support for our customers' systems.
- Based on electric power saving know-how practiced and accumulated by 40 overseas Fujitsu data centers and more than 60 domestic Fujitsu data centers, Fujitsu provides Green Infrastructure Solutions, which are services supporting the diagnosis, design, construction, and operation of our customers' facilities.

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The most advanced green technologies cut electric power use by approximately 40%^{*1}

In order to save energy at data centers, we must begin with efforts to use energy more efficiently at the facilities. For example, efforts focused on power supply equipment, air-conditioners, etc., which account for more than half of electric power consumption.

At the Tatebayashi System Center, Fujitsu has employed the following green technologies to cut electric power use consumed by the facilities by about 40%^{*1} from the quantity used by existing data centers;

1. thermo-fluid simulations to optimize air-conditioners' settings,
2. an energy-saving operating management system visualizes electric power, temperature, and air volume at each server rack to achieve optimum operation of the center,
3. "spot" air-conditioning systems cool down over-heated spots caused by exhaust from server racks.

*1 Performance at Fujitsu.

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Thermo-fluid simulations to optimize server cooling efficiency

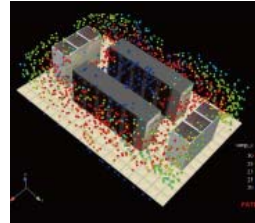
This technology optimizes cooling efficiency by visualizing the complex flow of heat inside a server room with images with rich presence produced by a stereoscopic display system. By drawing on its own rich experience to perform thermo-fluid simulations based on



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heat-transfer engineering, Fujitsu has succeeded in saving energy at its data centers while stably operating its servers, systems etc., by providing necessary cooling air flows at the most appropriate locations.

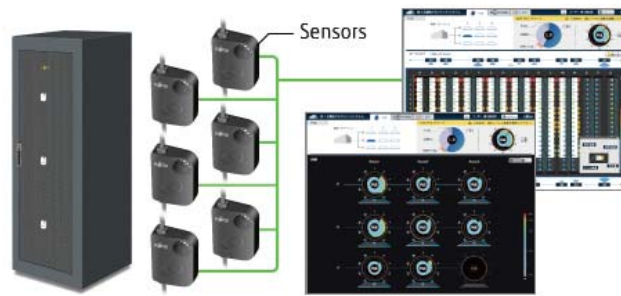


Air-conditioning operating optimization simulation

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Management for thorough energy saving operation in real time

Sensors installed on distribution panels and server racks, for example, measure the quantity of electricity used, temperature, and wind speed to visualize the state of cooling. The system optimizes energy use or air-conditioning operation based on this information to realize thorough energy saving in real time.



Energy-saving Operating Management System



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