

Case studies: How ICT is helping to deliver the low carbon economy

Title: Driving Data Centre Energy Efficiency with Thermal Services and Dynamic Smart Cooling

Company: Hewlett-Packard



Summary of what has been achieved HP has developed a first-of-its-kind thermal zone map for data centres.

Outcome: Data centre managers can arrange and manage air conditioning for optimal cooling, increased energy efficiency and lower costs.

Key Objectives

HP's new "Dynamic Smart Cooling" solution enables customers to see a three-dimensional model of exactly how much and where data centre air conditioners are cooling which enables users to optimise cooling within the data centre facility, improving energy efficiency and reducing costs.

Description

Dynamic Smart Cooling

Dynamic Smart Cooling has been developed by HP Labs as part of the HP Thermal Assessment Services offering. Customers can reduce data centre cooling energy costs by up to 45 percent by using Thermal Zone Mapping and Dynamic Smart Cooling (DSC), an advanced hardware and software solution that continuously adjusts data centre air conditioning settings to direct where and when cooling is required. The DSC solution is based on real-time air temperature measurements from a network of sensors deployed on IT racks. HP is using Thermal Zone Mapping and DSC for its own data centre consolidation project.

Since its November 2006 unveiling, the DSC solution has been in demand from Wachovia and other customers to reduce costs, address IT facility cooling constraints and reduce carbon footprints. HP is working with additional customers representing more than 70 data centres worldwide for future implementations.

Thermal assessments assist IT with data centre optimisation

HP Thermal Assessment Services use sophisticated modelling tools and techniques to determine the unique thermal conditions within a data centre. HP professionals recommend changes to optimise climatic conditions and reclaim capacity, postponing or even eliminating the need for costly mechanical upgrades.

HP offers three levels of Thermal Assessment Services, including a Comprehensive Assessment Service with three-dimensional Thermal Zone Mapping. The comprehensive assessment provides greater detail of thermal characteristics than previously possible by identifying the relative influence of each air conditioning unit. The information provided allows data centre managers to analyze "what if?" scenarios such as the impact of layout or infrastructure changes, or cooling capacity changes resulting from air conditioning unit failure. The service also makes it possible to identify appropriate settings for high computing demand time.

Environmental Benefits

Data centre cooling energy requirements – and associated costs are reduced by up to 45 percent

Scope for further work

HP Thermal Assessment Services are part of the company's Data Centre Solutions portfolio. HP Data Center Solutions provide a full range of expert, custom assessment and site planning services to help customers evaluate their IT environment and understand how to use resources more efficiently.

Further information

More information on HP Thermal Assessment and data centre services is available at <http://h20219.www2.hp.com/services/cache/114078-0-0-225-121.html>. More information on HP Dynamic Smart Cooling is available at www.hp.com/go/dsc.