HP Data Center Smart Grid: Energy Efficiency for the Converged Infrastructure Architecture

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Overview

The No. 1 problem facing today's data centers is hitting limits of power and cooling capacity. Chief information officers (CIOs) need a blueprint for their data centers to reclaim stranded power and cooling capacity and better manage costs, which requires a more intelligent view of the entire IT and facilities environment. This requires a significant shift from the way most data centers are currently managed, with facilities and IT managers operating independently. To enable new levels of energy and cost efficiencies, facilities must share a common, comprehensive view of data center power and cooling.

The HP Data Center Smart Grid combines hardware, software and services to create an intelligent, energy-aware environment spanning the entire data center – from the technology infrastructure to facilities. The HP Data Center Smart Grid, a key element of the newly announced HP Converged Infrastructure Architecture, collects, monitors and communicates thousands of power and cooling measurements across the data center in real time. As a result, customers gain valuable insight and control over energy use.

The HP Data Center Smart Grid enables customers to:

- Reduce operating costs for power and cooling systems
- Extend the life span of data center facilities and other capital investments
- Improve reliability through optimized power and cooling efficiency
- Gain insight and control over energy costs as well as overall environmental impact

For the first time, customers can visualize energy usage and take action based on accurate environmental data. This maximizes power density, efficiency and capacity use. Business growth can be accelerated as more applications and services are hosted within the same data center footprint, reducing power capacity operating costs.

Reduce, optimize and integrate data center resources

By integrating all elements of a data center – from technology equipment to the facility – and viewing it as a single system, facility and IT managers can collectively address capacity challenges. HP Data Center Smart Grid provides an accurate understanding of status and trends with the tools needed to address problem areas. To optimize power usage, changes can be made manually or automatically. The impact is displayed instantly to ensure maximum efficiency and resource utilization over time.

By balancing the placement of equipment within the data center, technology managers also can identify and repurpose stranded power to ensure an effective use of capacity, without sacrificing reliability or performance.

Taking energy efficiency to the next level

HP has combined its energy portfolio under one universal management system, complete with energy-aware and power-saving technologies. The enhanced HP Data Center Environmental Edge adds "time" to provide the view of thermal activity across the data center. Through real-time energy monitoring, customers gain a better understanding of data center energy efficiency, usage and trends to more quickly identify and correct issues.

Data Center Power Control, a new feature in HP Insight Control, aligns technology needs with power and cooling delivery. HP Data Center Power Control delivers automatic brown-out protection by providing server-level visibility and control over power delivery based on the priority of the workload. The solution monitors, alerts and can automatically adjust power allocation during peak energy usage or based on policy-based rules.

These new offerings join HP's existing energy-efficiency portfolio, which includes the HP ProLiant G6 server platforms, the HP Performance Optimized Data Center (POD) and HP Thermal Logic. The HP Data Center Smart Grid extends HP Thermal Logic technology from systems such as servers and storage, to broader environmental monitoring and control across the facility.

Energy-saving services
A new suite of HP Converged Infrastructure Consulting services are also available through HP Technology Services to help customers realize an energy-efficient and intelligent data center. Harnessing years of experience in end-to-end data center design and deployment, HP offers services that enable customers to identify the energy issues in their existing data centers and to develop, as well as implement, energy plans. HP's services teams can also design and deploy a new energy-aware data center from the ground up.

Pricing and availability
The solutions that make up the HP Data Center Smart Grid are available direct and through qualified channel partners.

The enhanced HP Environmental Edge is currently available with prices starting from $10 per sq. ft./$350 per rack.[1] Also available today is the new HP Insight Control Data Center Power Control, which starts at $549.[2]

More about the HP Converged Infrastructure Architecture and the key role of the HP Data Center Smart Grid is available at www.hp.com/go/convergedinfrastructure.

[1] Based on estimated U.S. street prices at 5,000 sq. feet.
[2] Estimated U.S. street prices. Actual prices may vary.