



HP ProLiant Gen8 Servers Reclaim Power and Space in Data Centers

Overview

Ensuring data center capacity can meet growing workload requirements is critical to an organization's ongoing survival. However, constraints on physical space, rising power demands and limits on available cooling are taxing data center capacity. For most organizations, the high cost of adding capacity is not an option, leaving IT managers struggling to get what they need from existing resources without inadvertently causing downtime.

Built on a legacy of delivering a leading compute capacity per watt in the industry, the new [HP ProLiant Generation 8 \(Gen8\) servers](#) optimize power, cooling and space resources.

New HP Gen8 servers feature the HP [ProActive Insight architecture](#), which enables data center and IT managers to identify the physical location of each server in the rack, row and data center. This insight, combined with HP 3D Sea of Sensors technology, allows clients to reduce power requirements, reclaim as much as 10 percent more usable power per circuit and eliminate manual configuration and tracking errors that can increase downtime.⁽¹⁾

Three new powerful features automate energy optimization in the data center so clients can:

- Optimize workload placement with [HP Location Discovery Services](#) and eliminate labor-intensive and error-prone tracking of IT assets;
- Reduce energy use and increase power capacity with [HP Thermal Discovery Services](#), which improve airflow efficiency by as much as 25 percent with the industry's first intelligent server rack. Together, with HP Gen8 servers, clients can experience annual energy savings of up to \$640,000 in a 10,000-square-foot data center over a three year period;^(2,3)
- Increase system uptime with [HP Power Discovery Services](#), which

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automatically track power usage per rack and server, eliminating errors and manual record keeping resulting in a 25 percent reduction in the causes of unplanned data center outages.⁽⁴⁾

Built-in location awareness

With servers that self-identify through Location Discovery Services, data center managers can speed system deployment and increase workload performance. HP is the first company to automate discovery of rack identification numbers with the precise location of servers, saving hours of manual asset tracking.

With real-time, auto-populated power and thermal data, data center managers have the information to better match workloads with available power, cooling and space resources.

Real-time temperature data

HP Thermal Discovery Services bring a new level of energy efficiency to the data center by offering a “graphical topology” view into both the historical and current power usage of every system. With this data, clients can reduce power usage by intelligently locating workloads for optimal energy and performance.

Additionally, HP has designed the first server rack with built-in intelligence to correlate server temperature with workloads. Overutilized servers are automatically flagged, so power can be reallocated to keep critical systems running.

Automatic power tracking

HP Power Discovery Services help reduce unplanned data center outages with the new HP Intelligent Power Distribution Unit (iPDU), providing clients with the confidence that systems are resourced correctly and redundantly with 99 percent accuracy.⁽²⁾ Shrinking power deployment from hours to minutes, the HP iPDU helps to enforce maximum power load limits on circuits to eliminate breaker overloading and downtime.⁽⁵⁾ With a few clicks, redundant outlets are paired on different iPDU's, sending the information to [HP Insight Control](#) to confirm the correct power configuration.

(1) Based on an average PDU power monitoring accuracy of 94 percent vs. the HP iPDU's 99 percent-plus accuracy.

(2) Based on HP internal testing comparing an HP Intelligent Series rack with a leading vendor rack.

(3) Utilizing the 10 percent reduction in power consumption for HP ProLiant Gen8 servers, the



annual power costs to operate a 10kW capacity rack (with 20x DL380p Gen8 servers installed) will be reduced by up to \$1,850 per rack when compared to a 10kW capacity rack with similarly configured HP ProLiant G6 servers.

- (4) Based on an Aperture survey in 2007: 57 percent of all data center outages are the result of human error. This includes 26 percent caused by PDU and breaker overloads.
- (5) Based on HP internal analysis, compares manual documentation of power configuration vs. automatic documentation performed by HP Intelligent PDU.

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