Brochure

Automated energy optimization

HP ProLiant Gen8 servers

With embedded intelligence across three dimensions—sense of location, power utilization, and thermal demand—you gain a unique level of visibility and control over the energy efficiency of your data center.

Servers and infrastructure so intelligent they maximize the use of space, power, and cooling

As data centers grow, power and cooling costs grab an ever-larger piece of the IT budget. HP helps you fight back with server infrastructure so smart it automatically maximizes the use of space, power, and cooling. That's the story of the next-generation HP ProLiant servers with the ProActive Insight architecture and its technologies for automated energy optimization.

These technologies reduce the power and airflow needed to operate ProLiant Gen8 servers, enabling you to reclaim limited space, power, and cooling resources for needed workloads. All the while, they reduce the need for error-prone manual processes for asset tracking, checking, and documenting power and rack configurations.

The automated energy optimization capabilities in the new ProLiant family are enabled by HP 3D Sea of Sensor technologies. With embedded intelligence across three dimensions—sense of location, power utilization, and thermal demand—you gain a unique level of visibility and control over the energy efficiency of your data center. With this innovation, HP has created HP Location Discovery Services, HP Thermal Discovery Services, and HP Power Discovery Services to help reduce energy use, reclaim data center power capacity, and extend the life of your data center.

HP Location Discovery Services

Optimize workload placement with servers that self-identify and inventory themselves.

In yet another industry first, HP provides built-in location awareness in the new ProLiant servers, a capability that works hand-in-hand with technology in the new HP Intelligent Series racks. Together these technologies send the rack identification number and precise U location to the servers.

This capability provides important location information to HP Insight Control software, along with power and temperature data. In addition, HP uses secure non-emitting and radio-free technology to meet the security requirements of many organizations.

HP Location Discovery Services provides detailed server information by location, helping you avoid hours of tedious manual data entry into spreadsheets. The combination of this location data with real-time, auto-populated power and thermal data enables optimal workload placement.

HP Thermal Discovery Services

Reduce energy usage and increase compute capacity.

You'll reduce energy usage and increase compute capacity with HP Thermal Discovery Services. This HP innovation helps you squeeze the most IT out of every bit of data center power and cooling capacity.

Increased power efficiency is driven in part by the new HP Intelligent Series rack, the first server rack with built-in intelligence to correlate server temperature and workload with the exact location of each server to deliver the right level cooling. The new racks also include an innovative rack door that has an industry-leading 81 percent of open door airflow, resulting in a 25 percent increase in airflow efficiency to cool servers with less airflow and less computer room air handling power.

The new HP ProLiant Gen8 servers themselves build upon a track record of delivering the highest compute capacity per watt. With new high-efficiency HP Platinum Plus Power Supplies, a 3D Sea of Sensors, and HP SmartMemory, you can power and cool 20 HP ProLiant Gen8 servers for the same cost as 18 HP ProLiant G6 servers.

The new ProLiant family also builds upon the efficiency achievements of HP ProLiant Gen7 servers, which were the industry's first servers to earn the ENERGY STAR® Qualification rating. The next-generation servers continue this leadership by being the first to include a 3D array of temperature sensors to help precisely control server fans to direct cooling and reduce unnecessary fan power by dozens of watts per server.

HP Power Discovery Services

Eliminate power configuration errors and precisely track power usage by rack and server.

HP Intelligent PDU is the first power distribution unit with full remote outlet control, outlet-by-outlet power tracking, and automated documentation of power configuration. Only HP Intelligent PDUs track outlet power usage at 99 percent accuracy, showing system-by-system power usage and available power. The HP Intelligent PDU uniquely records server ID information by outlet and forwards this to Insight Control, saving hours of manual spreadsheet data-entry time and eliminating human wiring and documentation errors.

Industry-first, high efficiency HP Platinum Plus server power supplies, available as standard on many of the new ProLiant servers, communicate with the HP Intelligent PDU to automatically record servers as they are plugged in and to automatically verify that redundant power supplies are correctly connected to redundant power sources or alert you if they are not.

Teaming the new HP Platinum Plus high efficiency power supplies and the HP iPDU with HP Insight Control v7 Power Management software enables the collection and display of critical temperature, workload, power, and location data for servers in the new HP Intelligent Series rack-level enclosure. This combination of data enables you to automatically track your server assets and locations and place workloads for optimal performance.

The world's most self-sufficient servers

In today's data centers, small advances in technology won't solve the big problems. To respond effectively to exploding demand for applications, data, and digital content, your IT organization needs intelligent technology built for the challenges of the cloud era. That's the next-generation HP ProLiant family.

With an unprecedented set of innovations, the new ProLiant family provides the heart and mind of a self-aware and intelligent converged infrastructure. From core to cloud, HP is transforming the expectations and economics of the data center with the world's most self-sufficient servers.

To learn more about the new ProLiant family, visit **hp.com/go/proliantgen8**.

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