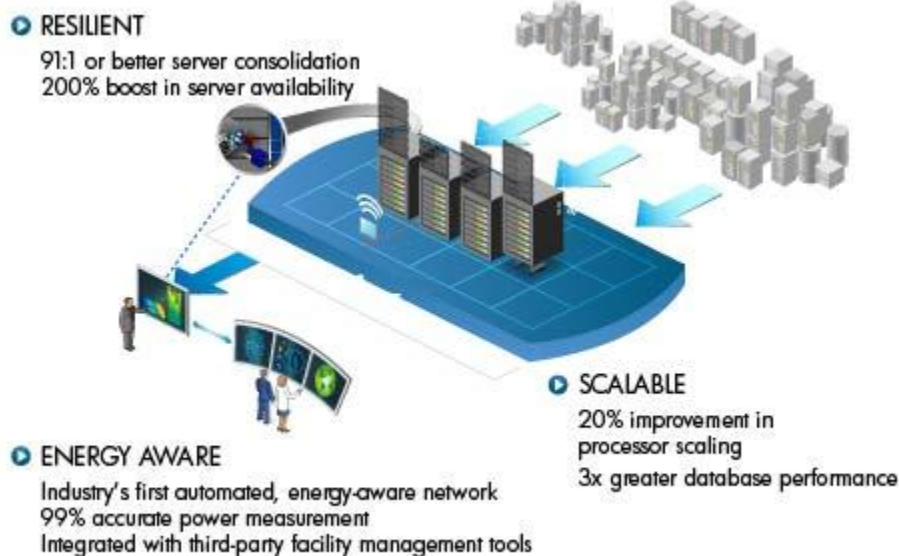


Under the Hood: HP ProLiant G7 servers and Intelligent Power Discovery

The wide-ranging problem of IT sprawl—the explosion of data and technologies in data centers—has a straightforward solution. New scale-up HP ProLiant G7 servers help companies blaze a quick path to more reliable server performance. Meanwhile, HP Intelligent Power Discovery technology helps create the Industry's first energy-aware network between IT and facilities.

Let's take a look at the technologies behind these innovations.



HP enhances processor innovations

HP has added unique innovations on top of what Intel® and AMD provide in their processors. HP innovations featured in the new scale-up ProLiant G7 servers include Thermal Logic, Dynamic Power Capping, and the HP Integrated Lights-Out 3 (iLO3) standard. iLO3 is key to monitoring power consumption.

Meet the new members of the HP ProLiant family:

- **HP ProLiant DL580 G7 server.** With up to 1TB memory footprint, 11 I/O slots and up to 32 cores, it is ideal for the most demanding x86 applications.
- **HP ProLiant DL980 G7 server.** Offering up to eight Intel Xeon 7500/6500 series processors, up to 64 cores and up to 2TB of memory, this server is an x86 scale-up powerhouse. It also features a key HP innovation, the PREMA Architecture, described below.
- **HP ProLiant DL585 G7 server.** This AMD Opteron 6000-based server offers up to 512MB memory and up to 48 cores. It offers four-socket performance at two-socket pricing—providing payback within 30 days.¹

HP PREMA Architecture extends Intel innovations

HP PREMA architecture offers a way for companies to relieve the massive stress under which their data centers operate. PREMA Architecture, built in to the HP ProLiant DL980 G7 server, brings many benefits, in particular:

- **Redundant system fabric:** Provides 50% more interconnect capacity and dynamic traffic routing capability for improved reliability in addition to extending many of Intel 7500 series processor's advanced reliability functionalities.
- **Smart CPU caching:** Achieve up to 20% better processor scaling than competitive 8 socket systems by reducing processor overhead.

HP Intelligent Power Discovery helps reduce human error

A crisis has been brewing in the data center, caused largely by IT's inability to accurately monitor power consumption. Fifty-seven percent of 100 data center managers surveyed in 1997 blamed outages on human error². The same study revealed that 18 percent of respondents did not know the average power density of their racks. In 1998, another survey showed that data centers suffered from a lack of unified tools to monitor their environments in real-time.³

HP Intelligent Power Discovery fills this gap with a hardware/software solution that gives IT total control over the server environment. At the same time, they can avoid needless costs created by overprovisioning energy requirements.

Data center managers can now see automatically:

- When new servers are plugged in.
- If they have redundant power supplies.
- Which power distribution units (PDUs) are plugged in to which outlets.
- How much power servers consume.
- If there is enough power—or too much—provisioned for each rack.

Automation is the key word

The components of HP Intelligent Power Discovery:

- **Platinum Power Supplies:** A common-slot architecture for flexibility and bright blue power-line communications connectors for use with HP's Intelligent PDU.
- **Intelligent Power Distribution Unit (PDU):** Six individually monitored C19 outlets communicate with monitoring software and allow visual power monitoring via multi-segment LED display.
- **Insight Control software:** Enables instant server discovery and comprehensive power management.

Intelligent Power Discovery hooks into third-party facility management software, providing a dynamic map of data center power consumption. This enables IT and facilities to free trapped capacity in overprovisioning and avoid power overloads in underprovisioned racks.

HP Intelligent Power Discovery is not limited to just the new scale-up HP ProLiant G7 server models described here. It is also available on other HP ProLiant G6 and G7 servers, such as the DL360 and DL380 servers.

How to enable automated intelligent power discovery

The HP ProLiant DL580 G7 server, the HP ProLiant DL585 G7 server and the HP ProLiant DL980 G7 servers are all engineered to enable HP Intelligent Power Discovery. All that's needed are the right number of Platinum Power Supplies and intelligent PDUs. Insight Control takes the information from the Intelligent PDU and Platinum Power Supplies to provide a complete picture of the data center's power profile.

HP understands the importance of automating manual processes and enabling data center managers to see the full power-consumption picture. Learn more about the [features and benefits of HP ProLiant G7 servers](#) and [Intelligent Power Discovery](#).