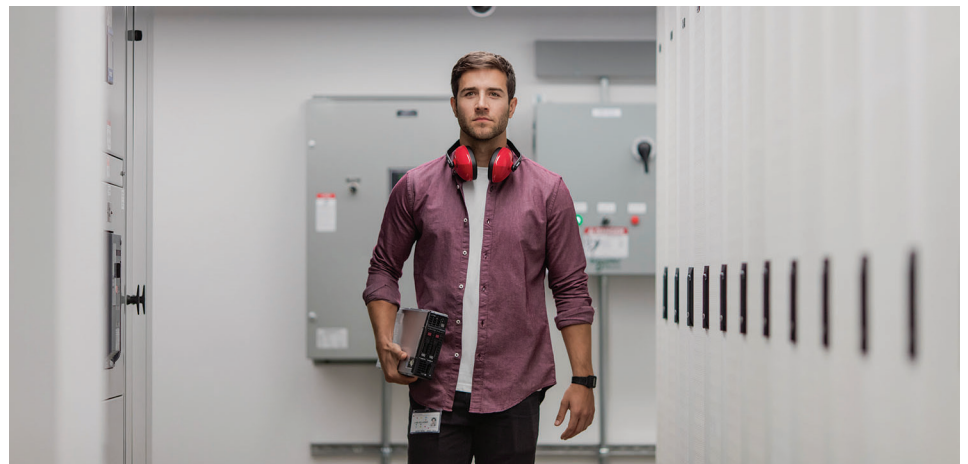




HPE Integrated Lights-Out Portfolio



The preferred IT administrator for every HPE ProLiant server

Traditional server management and provisioning can create unnecessary burdens for many organizations. Information technology (IT) administrators in today's business environments need a more streamlined process to manage servers throughout the IT lifecycle, including tools to help them diagnose problems and procedures for efficiently resolving errors. The key capabilities of HPE Integrated Lights-Out (iLO) are embedded in every ProLiant Gen8 and Gen9 server, the solution's scalable licensing offerings, and mobile-app features that support IT staff—anywhere, anytime.

Out of the box, HPE iLO simplifies server setup, provides access to server health information, enables management at scale, improves server power and thermal control, as well as basic remote administration.

To help you manage your servers more easily—this embedded management process runs on a separate microprocessor chip (i.e., “out of band management”). This way, HPE iLO remains available, even when the server suffers a failure. You can use iLO to determine precisely what went wrong and then fix it quickly and efficiently, even if you can't power on your server. HPE iLO Management provides a rich set of capabilities that automate and simplify system provisioning, troubleshooting, and firmware updates.

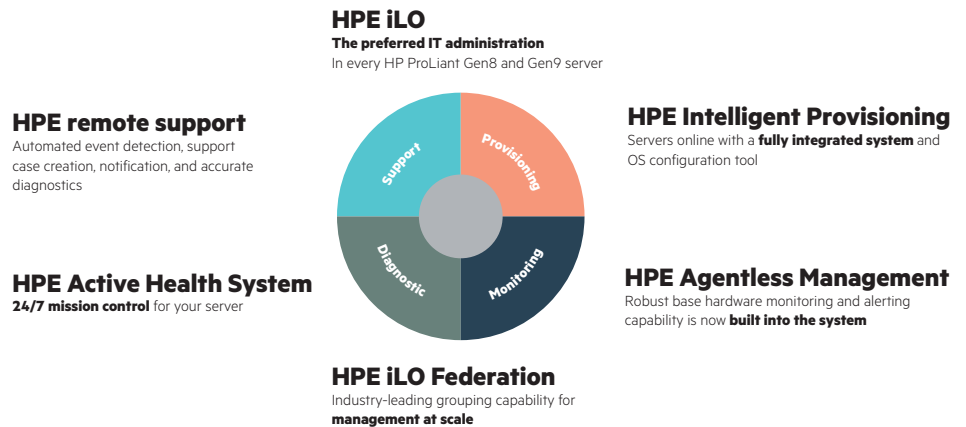


Figure 1. HPE iLO Management—Core lifecycle management functions built in for instant availability

“HPE’s Integrated Lights-Out, iLO as HPE’s server provisioning and management package is generally known, rocks...That really was easy!...Believe me, if you don’t use iLO, well...it’s your fault.”

– John Obeto, Absolutely Windows

With the HPE iLO Management, you can automate your common tasks during each step of the server lifecycle, from initial deployment to ongoing management and service alerting. This translates to faster time to deployment, higher server and application availability through ongoing health monitoring, and significantly quicker time to resolution when issues arise.

Key features and benefits

The HPE iLO Management portfolio includes:

HPE Integrated Lights-Out (iLO)

The HPE iLO management processor is the core foundation for the HPE iLO portfolio. HPE iLO management processors for HPE ProLiant servers simplify server setup, engage in health monitoring of power and thermal control, and promote remote administration for every HPE ProLiant server. HPE iLO is the intelligence that drives and manages the server components and how they interact with each other.

With HPE iLO, you can now have the same homogeneous server management experience across multiple HPE ProLiant servers. Also, with the HPE iLO Mobile App, you can access, deploy, and manage your server anytime from select smartphones and mobile devices in any location. Check it out at: hpe.com/info/ilo/mobileapp

HPE Intelligent Provisioning

Exceeding its predecessor HPE SmartStart, Intelligent Provisioning is a server deployment and maintenance capability embedded across HPE ProLiant Gen8 and Gen9 servers. The key benefit is you no longer have to insert and deal with any physical media.

With HPE Intelligent Provisioning, you can deploy servers faster to overcome the complexity of server maintenance and deployment by:

- Providing step-by-step HPE ProLiant server deployment assistance in a simple and consistent manner
- Simplifying system configuration with guided, profile-driven or scripted approaches for seamless integration with standard IT processes
- Recognizing automatically if the system software is out-of-date and downloading the latest update

HPE Agentless Management

HPE Agentless Management runs on HPE iLO, independent of the OS and the main CPU. It offers robust basic server monitoring without the complexity of OS-based agents. The base hardware monitoring and alerting capabilities are built into the system (running on the HPE iLO processor). They start working the moment a power cord and an Ethernet cable are connected to the server.

“...This could really be a big deal for any enterprise looking at the possibility of using one of these systems as a branch-office server. With iLO you have the ability to connect to a virtual console on the machine and remotely connect local resources such as an ISO file or physical DVD drive, allowing them to appear as local resources on the remote machine. This makes installing new software or updates extremely easy.”

– Paul Ferrill, ServerWatch

Discover 100s of servers in seconds and update 100s of server firmware in minutes with iLO Federation³

HPE iLO Federation

HPE iLO Federation is a key enablement feature that provides scalable and efficient server management. Through the creation of security groups, you can rapidly deploy and discover numerous servers. The following HPE iLO Federation Discovery capabilities are built-in every ProLiant Gen8 and Gen9 server:

- Query and Display
- Group health status
- Group configurations
- Server name registration
- Inventory server licensing

HPE iLO Federation Management capabilities that require an iLO Advanced, iLO Advanced for BladeSystem, or an iLO scale-out license are as follows:

- Firmware Updates
- Group Virtual Media¹
- Group Power Control
- Group Power Capping
- Group License Activation

HPE iLO Federation gives you the ability to manage multiple servers, as easy as one. For more information on HPE iLO Federation, please read the [HPE iLO Federation White Paper](#).

HPE Active Health System

HPE Active Health System (AHS), an essential component of HPE iLO, monitors and records changes in the server hardware and system configuration. HPE Active Health System provides essential information to speed problem diagnosis and deliver rapid resolution through the help of services and support when system failures occur. It also:

- Provides a consolidated diagnostic mechanism without impacting performance
- Monitors more than 1,600 system parameters to help you start problem analysis faster and spend less time with support, reproducing or describing errors²

- Raises the bar on quality and customer experience, with easy export and upload of data collected by Active Health to HPE Service and Support for accurate and rapid problem resolution

With embedded alerting in HPE iLO 4, SNMP alerts can be generated without the need for agents running in the OS. The active management software (AMS) running in the OS environment can be optionally installed to provide HPE iLO with additional information from the OS for more accurate problem diagnosis.

HPE remote support

HPE remote support tools monitor your servers 24x7 and proactively alert you to potential problems. The tools work in conjunction with HPE iLO 4, HPE Active Health System, and HPE Agentless Management for much easier configuration and setup of remote support for HPE ProLiant Gen8 and Gen9 servers. Tools such as HPE Insight Remote Support and HPE Insight Online direct connect offer automated event detection, support case creation, notification, and accurate diagnostics, so you can spend less time solving problems and focus more on IT value-add to your business. You can then use [HPE Insight Online](#) dashboard to monitor hardware health, track service events and support cases, view device configurations, and proactively monitor your HPE contracts and warranties as well as HPE Proactive service credit balances. The Insight Online mobile dashboard enables you to remain up to date whether you are in the office or on the road.

Embedded alerting and embedded remote support are part of HPE iLO 4 in HPE ProLiant Gen8 and Gen9 platforms. With embedded remote support, HPE iLO transmits hardware service events via a secure encrypted connection for analysis by HPE. A support case is generated if needed. Support cases are then sent to HPE support staff or HPE Authorized Partners for appropriate action. This is done automatically without user intervention, saving you time and resources. For more information visit: hpe.com/info/insightremotesupport

¹ HPE iLO Scale-Out does not offer Group Virtual Media.

² HP (now Hewlett Packard Enterprise) proprietary internal test, July 2012.

³ Discovery substantiation: Multi-casting method of communicating with 186 iLOs and discovering them in 3.693 seconds. Comparing it against our previous generations and competitors. Based on HPE Internal estimates, Houston, TX, USA, July 2014.
Update substantiation: Performing iLO firmware updates of 200 systems in 380 seconds. Comparing it against our previous generations and competitors. Based on HPE Internal estimates, Houston, TX, USA, July 2014.

Licensed product offerings

HPE Integrated Lights-Out Advanced license—Smart remote management

HPE iLO Advanced and HPE iLO Advanced for HPE BladeSystem offer smart remote functionality without compromise, for HPE ProLiant servers. The license includes the full-integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality. With this license, your IT managers can perform system administration tasks without physically visiting their servers and management at scale with iLO Federation.

iLO Federation management features offer:

- Group Firmware Update gives you the ability to update the firmware of multiple servers
- Group Virtual Media gives you the ability to replicate same script media within an iLO Federation group
- Group Power Control lets you turn several servers on and off with a single click
- Group Power Capping allows servers to share power consumption among a group of servers
- Group License Activation for faster implementation of iLO licenses
- Group Configuration lets you set up several iLOs into a group

For more information on how to purchase, visit: hp.com/buy/iloadvanced

HPE Integrated Lights-Out Essentials license—Just Right IT for small- to medium-sized businesses

HPE iLO Essentials is a license that offers remote server management uniquely designed for small and medium business servers, delivering more value for your investment. Offered on HPE ProLiant Gen8 e-Series, HPE Gen8 MicroServer and Gen9 100 Series and below servers, the license

provides full remote management access via the Integrated Remote Console (IRC), virtual media, email-based alerts, and rapid server status via iLO Federation discovery. HPE iLO Essentials is the key to unlocking remote server management that can save you time and money, increase efficiency, and accelerate time to resolution. For more information, visit: hp.com/go/ilo/essentials

HPE Integrated Lights-Out Scale-Out license—Purpose-built for HPC

The HPE iLO Scale-Out is a license built for managing massive scale-out environments. HPE iLO Scale-Out is offered on HPE ProLiant Gen8 DL160, HPE ProLiant Gen9 DL 100 series and below, HPE ProLiant Gen8 as well as HPE ProLiant Gen8 and Gen9 SL servers. This license provides fast remote access via sophisticated scripting tools, lower operational cost with HPE Dynamic Power Capping, faster time to resolution with iLO Federation management and proactive notifications, and an overall increase in data center efficiency. HPE iLO Scale-Out is a hassle-free, intelligent server management solution for the world's extreme data centers. For more information, visit: hp.com/go/ilo/scale-out

HPE iLO and HPE Insight Control or HPE OneView⁴—Better together

The integration of HPE iLO Advanced and HPE Insight Control or HPE OneView gives you powerful capabilities that deliver the health monitoring, performance, multi-server deployment, energy efficiency, and precise control needed to build your server infrastructure. For more information on how to purchase, visit: hp.com/info/insightcontrol or hp.com/info/oneview

HPE Integrated Lights-Out feature comparison tables

HPE iLO licenses can be purchased stand-alone or with your HPE ProLiant server order. When ordering a license, please check the HPE iLO comparison tables listed below for features specific to the HPE iLO version (iLO 3 or iLO 4) within your HPE ProLiant server.

⁴ HPE OneView supports HPE ProLiant Gen9 rack (DL) and blade (BL) servers. Customers may purchase HPE OneView licenses now, and will be granted rights to use HPE Insight Control software and transition to HPE OneView with a free upgrade, when available. Customers also have the option to purchase HPE Insight Control.

HPE ProLiant G7 with HPE iLO 3

Feature	HPE iLO Standard	HPE iLO Standard for BladeSystem	HPE iLO Advanced	HPE iLO Advanced for BladeSystem
Platform support	All (except BL)	BL and WS	All (except BL)	BL and WS
Embedded health system	✓	✓	✓	✓
Virtual power buttons	✓	✓	✓	✓
IPMI over LAN/DCMI	✓	✓	✓	✓
Web-based GUI	✓	✓	✓	✓
SSH command line interface	✓	✓	✓	✓
RIBCL	✓	✓	✓	✓
Virtual serial port (VSP)	✓	✓	✓	✓
IPv6⁵	✓	✓	✓	✓
Integrated Remote Console (IRC/Virtual KVM, support text, and graphics)	Pre-OS only	✓	✓	✓
Global Team Collaboration via Integrated Remote Console			✓	✓
Integrated Remote Console record and playback			✓	✓
Virtual Media via Integrated Remote Console		✓	✓	✓
Scripted virtual media			✓	✓
Text-based remote console via SSH (TEXTCONS)			✓	✓
Directory Service Authentication			✓	✓
Kerberos authentication			✓	✓
Advanced power management (power history graphs, Dynamic Power Capping)			✓	✓

⁵IPv6 Phase 1 Support: Static address assignment (up to four), router advertised (RA) address assignment (up to three plus the link-local address), static routes (up to three), default gateway (one), enables the following iLO applications/clients: HTTP/HTTPS, SSH, SNMP, DDNS, Remote Console, and Virtual Media through the Remote Console.

Note: When the HP iLO Scale-Out license is applied to blade servers, it does not remove features that are available with the iLO Standard for BladeSystem license.

HPE ProLiant Gen8 and Gen9 with HPE iLO 4

Feature	HPE iLO Standard	HPE iLO Standard for BladeSystem	HPE iLO Essentials	HPE iLO Scale-Out	HPE iLO Advanced	HPE iLO Advanced for BladeSystem
Platform support	All (except BL)	BL and WS	ML350e Gen8 ML310e Gen8 DL380e Gen8 DL360e Gen8 DL320e Gen8 MicroServer Gen8 HPE Gen9 100 series and below	HPE ProLiant Gen8 DL160, SL and BL HPE ProLiant Gen9 SL, DL 100 series and below	All (except BL)	BL and WS
Embedded health system	✓	✓	✓	✓	✓	✓
Virtual power buttons	✓	✓	✓	✓	✓	✓
IPMI over LAN/DCMI	✓	✓	✓	✓	✓	✓
Web-based GUI	✓	✓	✓	✓	✓	✓
SSH command line interface	✓	✓	✓	✓	✓	✓
RIBCL	✓	✓	✓	✓	✓	✓
Virtual serial port (VSP)	✓	✓	✓	✓	✓	✓
IPv6⁶	✓	✓	✓	✓	✓	✓
Active Health System	✓	✓	✓	✓	✓	✓
Embedded remote support	✓	✓	✓	✓	✓	✓
Agentless Management	✓	✓	✓	✓	✓	✓
Integrated Remote Console (IRC/Virtual KVM, support text, and graphics)	Pre-OS only	✓	✓	Pre-OS only	✓	✓

⁶IPv6 Phase 1 Support: Static address assignment (up to four), router advertised (RA) address assignment (up to three plus the link-local address), static routes (up to three), default gateway (one), enables the following iLO applications/clients: HTTP/HTTPS, SSH, SNMP, DDNS, Remote Console, and Virtual Media through the Remote Console.

Note: When the HPE iLO Scale-Out license is applied to blade servers, it does not remove features that are available with the iLO Standard for BladeSystem license.

HPE ProLiant Gen8 and Gen9 with HPE iLO 4 (continued)

Feature	HPE iLO Standard	HPE iLO Standard for BladeSystem	HPE iLO Essentials	HPE iLO Scale-Out	HPE iLO Advanced	HPE iLO Advanced for BladeSystem
Pre-boot health summary ⁷	✓	✓	✓	✓	✓	✓
iLO Reboot Switch ⁸	✓	✓	✓	✓	✓	✓
HPE RESTful API ⁹	✓	✓	✓	✓	✓	✓
iLO Federation Discovery ¹⁰	✓	✓	✓	✓	✓	✓
iLO Federation Management ¹¹				✓	✓	✓
Global Team Collaboration via Integrated Remote Console					✓	✓
Integrated Remote Console record and playback					✓	✓
Virtual Media via Integrated Remote Console		✓	✓		✓	✓
Scripted virtual media					✓	✓
Text-based remote console via SSH (TEXTCONS)				✓	✓	✓
Directory Service Authentication					✓	✓
Kerberos authentication					✓	✓
Email-based alerting			✓	✓	✓	✓
Remote syslog				✓	✓	✓
Advanced power management (power history graphs, Dynamic Power Capping)				✓	✓	✓
Virtual serial port record and playback				✓	✓	✓
Discovery services					✓	✓

^{7,8} Available only on HPE Gen9 servers and beyond

^{9,10,11} Available with iLO 4 1.40 and beyond

Family data sheet

Optimize your IT investment strategy with new ways to acquire, pay for, and use technology, in lock-step with your business and transformation goals.

hpe.com/solutions/hpefinancialservices

For ordering information, see the [QuickSpecs](#).

HPE Services

To make more out of HPE iLO 4, you need a service partner who thoroughly understands your IT environment. HPE Services has unique insight and provides a wide range of support services to help you get more from your technology.

- One- or three-year 24x7 HPE Software Technical and Software Update Service is bundled with HPE iLO licenses. With this service, you gain rapid access to the HPE call center and backline support, as well as proactive notification and firmware updates.

- If you are running business-critical environments, we offer HPE Proactive Care. This service helps you deliver high levels of application availability through proactive service management.

For more information, visit: hp.com/services/insight

Learn more at hpe.com/info/ilo



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