



# HPE Integrated Lights-Out Portfolio



“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

## **Your Server Management Engine**

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 Gen9 and Gen10 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 server management at scale, improves server power and thermal control, as well as basic remote administration.

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.



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

“With the ProLiant Gen10 beta we are anticipating HPE has made some unique and innovative enhancements. Automating and orchestrating server provisioning with iLO 5 will enable us to deploy and manage at scale. The Silicon Root of Trust and the Runtime Verification that check iLO and firmware for compromised code will be welcome.”

– Lead Engineer, IT Architecture, Advanced Scientific Research and Manufacturing Company

## Key features and benefits

The HPE iLO management portfolio includes:

### Server Security

Fueling the world’s most secure industry standard servers<sup>1</sup> is HPE iLO 5. iLO 5 and Gen10 hardware upgrades allow HPE to deliver server security through innovations that protect your HPE servers from attacks, detect potential intrusions and allow users to recover their firmware securely.

### Protect

Remove vulnerabilities that expose infrastructure firmware to malicious attacks with HPE exclusive Silicon Root of Trust. HPE Secure Start uniquely ensures that only HPE signed firmware will boot by validating through the HPE Silicon Root of Trust, so that you can be confident that your booted firmware is safe. With iLO 5 we have the ability to enforce use of cryptography and algorithms that confirm to Commercial National Security Algorithms (CNSA). iLO 5 also introduces support for 2 factor authentication via Personal Identity Verification (PIV) cards/Common Access Cards (CAC).

### Detect

Runtime Firmware Verification ensures that your essential firmware is checked at regular intervals to identify any potential intrusions that may occur post-boot.

### Recover

Avoid lasting damage to your business by quickly restoring essential firmware to the factory settings or the last known authenticated safe setting in the unlikely event of a breach.

Learn more at [hpe.com/info/security](https://hpe.com/info/security).

### Intelligent Systems Tuning

Through the HPE partnership with Intel®, Intelligent Systems Tuning (IST) is server tuning technology that enables you to match server resources to your workload for significant performance improvements, real savings and, and a more intelligent server environment.

Learn more at [hpe.com/info/ist](https://hpe.com/info/ist).

### 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.

### 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, making the management of multiple servers, as easy as one.

For more information on HPE iLO Federation, please read the [HPE iLO Federation User Guide](#).

### HPE Active Health System

The HPE Active Health System (AHS) is an essential component of the iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Now with the Active Health System Viewer (AHSV), customers with an active warranty or support agreement on Gen8, Gen9, or Gen10 servers have a web-based portal to easily read their AHS logs and speed problem resolution. Self-repair recommendations for a select set of errors help customers take repair actions without the need for HPE personnel intervention and return server environments to optimum performance quicker.

Learn more about AHS and AHSV at [hpe.com/servers/ahs](https://hpe.com/servers/ahs).

### At the Server Management

Exclusively available on Gen10 servers, the new iLO service port is a USB port for integrated remote console and AHS downloads that gives users direct, front of the server access to iLO. This new feature also allows users to give iLO access without the need to connect and authenticate on your network, making it simpler to access the information needed quickly.

<sup>1</sup> Based on external firm conducting cyber security penetration testing of a range of server products from a range of manufacturers, May 2017.

**Discover 100s of servers in seconds and update 100s of server firmware in minutes with iLO Federation<sup>2</sup>**

HPE continues to impress me with the new services being developed. First was the online SPP creation tool and now the AHS log viewer.

Being able to get information from the AHS files will be an invaluable troubleshooting tool and allow us to self-remedy many of the less complex issues.

Great Job HPE!

– Sam Kostmayer, IT Manager,  
Deloitte Services LP

### **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 for much easier configuration and setup of remote support for HPE ProLiant Gen8, Gen9, and Gen10 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. For more information visit: [hpe.com/info/insightremotesupport](https://hpe.com/info/insightremotesupport).

### **HPE Intelligent Provisioning**

Intelligent Provisioning is a server deployment and maintenance capability embedded across HPE ProLiant Gen8, Gen9, and Gen10 servers. With HPE Intelligent Provisioning, you can deploy servers faster to overcome the complexity of server maintenance and deployment.

New in Gen10, Intelligent Provisioning is now Always On. Intelligent Provisioning is accessible from the iLO browser user interface anytime without having to reboot your server.

Learn more at [hpe.com/servers/intelligentprovisioning](https://hpe.com/servers/intelligentprovisioning).

### **Remote Access**

Remote management capabilities allow users to effortlessly manage servers from the convenience of a laptop or mobile device. Configurable alerts also enable proactive task status and error messages via UI, email, SMS, and IFTTT so users can stay on top of server health with ease and before errors result in downtime.

### **Download mobile app for Android**

### **Download mobile app for IOS**

## **Licensed product offerings**

### **HPE iLO Advanced Premium Security Edition License**

HPE iLO Advanced Premium Security Edition builds on the world's most secure Industry Standard servers<sup>3</sup> by providing premium security capabilities that protect your HPE servers from attacks, detect intrusions and allow you to securely recover essential firmware. Exclusively available on HPE ProLiant Gen10 servers, the iLO Advanced Premium Security Edition license delivers all the management capabilities of the iLO Advanced license with premium security features like Commercial National Security Algorithms (CNSA) mode, runtime firmware verification, automatic secure recovery and secure erase of NAND/User data.

Learn more at [hpe.com/servers/ilopremium](https://hpe.com/servers/ilopremium).

### **HPE iLO Advanced License**

HPE iLO Advanced and HPE iLO Advanced for HPE BladeSystem offer smart remote functionality without compromise, for enterprise environments. 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. For more information, visit: [hpe.com/servers/iloadvanced](https://hpe.com/servers/iloadvanced).

<sup>2</sup> 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.

<sup>3</sup> Based on external firm conducting cyber security penetration testing of a range of server products from a range of manufacturers, May 2017.

“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

#### **HPE iLO Essentials License**

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. 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: [hpe.com/servers/ilo/essentials](https://hpe.com/servers/ilo/essentials).

#### **HPE iLO Scale-Out License**

The HPE iLO Scale-Out is a license built for managing massive scale-out environments. 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: [hpe.com/servers/ilo/scale-out](https://hpe.com/servers/ilo/scale-out).

#### **HPE iLO and HPE OneView—Better together**

The integration of HPE iLO Advanced and HPE OneView gives you enhanced utilization and performance monitoring capabilities needed to build your server infrastructure. For more information visit: [hpe.com/info/oneview](https://hpe.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 5 or iLO 4) within your HPE ProLiant server.

## HPE ProLiant Gen10 with HPE iLO 5

Feature	HPE iLO Standard	HPE iLO Essentials	HPE iLO Scale-Out	HPE iLO Advanced or iLO Advanced for BladeSystem	HPE iLO Advanced Premium Security Edition
<b>Platform support</b>	All Gen10 servers with iLO 5	ProLiant 100 series servers and below	HPE ProLiant DL 100 and 10 series, Apollo Servers, BL and WS servers	All servers (iLO Advanced for BladeSystem for BL and WS servers)	All Gen10 servers with iLO 5
<b>Embedded health system</b>	✓	✓	✓	✓	✓
<b>Virtual power buttons</b>	✓	✓	✓	✓	✓
<b>IPMI over LAN/DCMI</b>	✓	✓	✓	✓	✓
<b>Web-based GUI</b>	✓	✓	✓	✓	✓
<b>SSH command line interface</b>	✓	✓	✓	✓	✓
<b>RIBCL</b>	✓	✓	✓	✓	✓
<b>Virtual serial port (VSP)</b>	✓	✓	✓	✓	✓
<b>IPv6<sup>4</sup></b>	✓	✓	✓	✓	✓
<b>Active Health System</b>	✓	✓	✓	✓	✓
<b>Embedded remote support</b>	✓	✓	✓	✓	✓
<b>Agentless Management</b>	✓	✓	✓	✓	✓
<b>Integrated Remote Console (IRC/Virtual KVM, support text, and graphics)</b>	Pre-OS only all servers except BL and WS. Standard offering on BL and WS servers.	✓	Pre-OS only	✓	✓
<b>Pre-boot health summary<sup>5</sup></b>	✓	✓	✓	✓	✓
<b>iLO Reboot Switch<sup>5</sup></b>	✓	✓	✓	✓	✓
<b>HPE RESTful API<sup>6</sup></b>	✓	✓	✓	✓	✓
<b>iLO Federation Discovery<sup>6</sup></b>	✓	✓	✓	✓	✓
<b>iLO Federation Management<sup>6</sup></b>			✓	✓	✓

<sup>4</sup> IPv6 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. IPv6 is only supported when iLO is connected via a Dedicated NIC, not valid on Shared port

<sup>5</sup> Available only on HPE Gen9 servers and beyond

<sup>6</sup> Available with iLO 4 1.40 and beyond

**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 Gen10 with HPE iLO 5 (continued)

Feature	HPE iLO Standard	HPE iLO Essentials	HPE iLO Scale-Out	HPE iLO Advanced or iLO Advanced for BladeSystem	HPE iLO Advanced Premium Security Edition
Global Team Collaboration via Integrated Remote Console				✓	✓
Integrated Remote Console Record and Playback				✓	✓
Virtual Media via Integrated Remote Console	Standard offering on BL and WS servers only	✓		✓	✓
Scripted Virtual Media				✓	✓
Directory Service Authentication				✓	✓
Silicon Root of Trust	✓	✓	✓	✓	✓
2 Factor Authentication (Kerberos, Smart Card—PIV/Common Access Card)				✓	✓
Email-based alerting		✓	✓	✓	✓
Remote Syslog			✓	✓	✓
Advanced Power Management (Power history graphs, Dynamic Power Capping)			✓	✓	✓
Virtual Serial Port Record and Playback			✓	✓	✓
Discovery Services				✓	✓
Commercial National Security Algorithm (CNSA Mode)					✓
Runtime Firmware Verification					✓
Automatic Secure Recovery					✓
Secure Erase of NAND/User Data					✓
Workload Matching Profiles	✓	✓	✓	✓	✓
Jitter Smoothing				✓	✓

## HPE ProLiant Gen8 and Gen9 with HPE iLO 4

Feature	HPE iLO Standard	HPE iLO Essentials	HPE iLO Scale-Out	HPE iLO Advanced or iLO Advanced for BladeSystem
<b>Platform support</b>	All servers with iLO 4	ProLiant 100 series servers and below	HPE ProLiant DL 100 and 10 series, Apollo Servers, BL and WS servers	All servers with iLO 4 (iLO Advanced for BladeSystem for BL and WS servers)
<b>Embedded health system</b>	✓	✓	✓	✓
<b>Virtual power buttons</b>	✓	✓	✓	✓
<b>IPMI over LAN/DCMI</b>	✓	✓	✓	✓
<b>Web-based GUI</b>	✓	✓	✓	✓
<b>SSH command line interface</b>	✓	✓	✓	✓
<b>RIBCL</b>	✓	✓	✓	✓
<b>Virtual serial port (VSP)</b>	✓	✓	✓	✓
<b>IPv6<sup>7</sup></b>	✓	✓	✓	✓
<b>Active Health System</b>	✓	✓	✓	✓
<b>Embedded remote support</b>	✓	✓	✓	✓
<b>Agentless Management</b>	✓	✓	✓	✓
<b>Integrated Remote Console (IRC/Virtual KVM, support text, and graphics)</b>	Pre-OS only all servers except BL and WS. Standard offering on BL and WS servers.	✓	Pre-OS only	✓
<b>Pre-boot health summary<sup>8</sup></b>	✓	✓	✓	✓
<b>iLO Reboot Switch<sup>8</sup></b>	✓	✓	✓	✓
<b>HPE RESTful API<sup>9</sup></b>	✓	✓	✓	✓
<b>iLO Federation Discovery<sup>9</sup></b>	✓	✓	✓	✓
<b>iLO Federation Management<sup>8</sup></b>			✓	✓
<b>Global Team Collaboration via Integrated Remote Console</b>				✓
<b>Integrated Remote Console Record and Playback</b>				✓

<sup>7</sup> IPv6 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. IPv6 is only supported when iLO is connected via a Dedicated NIC, not valid on Shared port

<sup>8</sup> Available only on HPE Gen9 servers and beyond

<sup>9</sup> Available with iLO 4 1.40 and beyond


**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 Essentials	HPE iLO Scale-Out	HPE iLO Advanced or iLO Advanced for BladeSystem
<b>Virtual Media via Integrated Remote Console</b>	Standard offering on BL and WS servers only	✓		✓
<b>Scripted Virtual Media</b>				✓
<b>Directory Service Authentication</b>				✓
<b>Kerberos Authentication</b>				✓
<b>Email-based alerting</b>		✓	✓	✓
<b>Remote Syslog</b>			✓	✓
<b>Advanced Power Management (Power history graphs, Dynamic Power Capping)</b>			✓	✓
<b>Virtual Serial Port Record and Playback</b>			✓	✓
<b>Discovery Services</b>			✓	✓

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### HPE Pointnext Services

To get the most out of HPE iLO 5 and iLO 4, you need a service partner who thoroughly understands your IT environment. HPE Pointnext Services provide a wide range of support services to help you get more from your technology.

- One- or three-year 24x7 HPE Software Technical Support is bundled with HPE iLO licenses. With this service, you gain rapid access to HPE support center representatives to assist you with iLO configuration and issue resolution. This support can be extended to four or five years to match your ProLiant server's support.
- For 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: [hpe.com/services](http://hpe.com/services)

### Resources

- [HPE iLO Licensing Guide](#)
- [Selecting the right iLO license](#)
- [iLO Features and Supported Servers](#)
- [iLO Licensing FAQ](#)

Learn more at [hpe.com/info/iLO](http://hpe.com/info/iLO)

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