



**Hewlett Packard**  
Enterprise

# **HPE iLO standard and licensed features on HPE ProLiant Gen8, Gen9, and Gen10 servers**

## **Abstract**

This guide provides information about purchasing HPE iLO licenses.

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# HPE iLO standard and licensed features

The following table shows standard iLO features that ship at no extra cost in HPE ProLiant, HPE Edgeline, HPE Apollo, and HPE BladeSystem servers with iLO support, and the iLO licensed features that are available for each iLO license type.



**TIP:**

To see a description of a feature, click on its link in the Feature column of the table.

**See also:**

For descriptions of features, see [Standard and licensed feature descriptions](#), or click on the link for the feature in the table.

**Table 1: HPE iLO standard and licensed features**

Feature	iLO Standard	iLO Advanced Premium Security Edition	iLO Advanced / iLO Advanced for Blades	iLO Scale-Out	iLO Essentials
<b>Platform support</b>	Ships at no extra cost in all servers that support iLO	All Gen10 servers with iLO 5	All servers (iLO Advanced for Blade Systems for BL and WS servers); plus Moonshot cartridges with iLO used in an Edgeline chassis	HPE Edgeline, HPE Apollo, HPE ProLiant Gen9 SL, XL, DL 100 Series and lower; HPE ProLiant Gen8 SL, BL, WS and DL160 <sup>1</sup>	HPE ProLiant Gen9 100 Series and lower, MicroServer; HPE ProLiant Gen8 SL, BL, and DL160
<b><u>Active Health System Diagnostics</u></b>	X	X	X	X	X
<b><u>Advanced Power Management</u></b> (Power history graphs, Dynamic Power Capping)		X	X	X	
<b><u>Agentless Management</u></b>	X	X	X	X	X

*Table Continued*

Feature	iLO Standard	iLO Advanced Premium Security Edition	iLO Advanced / iLO Advanced for Blades	iLO Scale-Out	iLO Essentials
<b>Platform support</b>	Ships at no extra cost in all servers that support iLO	All Gen10 servers with iLO 5	All servers (iLO Advanced for Blade Systems for BL and WS servers); plus Moonshot cartridges with iLO used in an Edgeline chassis	HPE Edgeline, HPE Apollo, HPE ProLiant Gen9 SL, XL, DL 100 Series and lower; HPE ProLiant Gen8 SL, BL, WS and DL160 <sup>1</sup>	HPE ProLiant Gen9 100 Series and lower, MicroServer; HPE ProLiant Gen8 SL, BL, and DL160
<b><u>NEW Automatic Secure Recovery</u></b>		X			
<b><u>Backup and Restore</u></b>	X				
<b><u>NEW Commercial National Security Algorithm (CNSA) Mode</u></b>		X			
<b><u>Core Boosting</u></b> <sup>2</sup>		X	X		
<b><u>Directory Service Authentication</u></b>		X	X		
<b><u>Discovery Services</u></b>		X	X		
<b><u>Email-Based Alerting</u></b>		X	X	X	X
<b><u>Embedded Remote Support</u></b>	X	X	X	X	X
<b><u>Embedded System Health</u></b>	X	X	X	X	X

Table Continued

Feature	iLO Standard	iLO Advanced Premium Security Edition	iLO Advanced / iLO Advanced for Blades	iLO Scale-Out	iLO Essentials
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<u>Global Team Collaboration via Integrated Remote Console</u>		X	X		
<u>iLO Federation Discovery</u>	X	X	X	X	X
<u>iLO Federation Management</u>		X	X	X	
<u>iLO Reboot</u> <sup>3</sup>	X	X	X	X	X
<u>iLO RESTful API</u>	X	X	X	X	X
<u>Integrated Remote Console</u> (IRC/Virtual KVM —Supports text and graphics)	Pre-OS only all servers except BL and WS. Standard offering on BL and WS servers	X	X	Pre-OS only	X
<u>Integrated Remote Console Record and Playback</u>		X	X		

Table Continued

Feature	iLO Standard	iLO Advanced Premium Security Edition	iLO Advanced / iLO Advanced for Blades	iLO Scale-Out	iLO Essentials
<b>Platform support</b>	Ships at no extra cost in all servers that support iLO	All Gen10 servers with iLO 5	All servers (iLO Advanced for Blade Systems for BL and WS servers); plus Moonshot cartridges with iLO used in an Edgeline chassis	HPE Edgeline, HPE Apollo, HPE ProLiant Gen9 SL, XL, DL 100 Series and lower; HPE ProLiant Gen8 SL, BL, WS and DL160 <sup>1</sup>	HPE ProLiant Gen9 100 Series and lower, MicroServer; HPE ProLiant Gen8 SL, BL, and DL160
<b><u>IPMI Over LAN/DCMI</u></b>	X	X	X	X	X
<b><u>IPv6</u></b>	X	X	X	X	X
<b><u>Jitter Smoothing</u></b>		X	X		
<b><u>Pre-Boot Health Summary</u></b> <sup>4</sup>	X	X	X	X	X
<b><u>Remote Syslog</u></b>		X	X	X	
<b><u>RIBC</u></b>	X	X	X	X	X
<b><u>NEW Runtime Firmware Verification</u></b>		X			
<b><u>Scripted Virtual Media</u></b>		X	X		
<b><u>NEW Secure Erase of Non-Volatile Storage (NAND/User Data)</u></b>		X			
<b><u>Silicon Root of Trust</u></b>	X	X	X	X	X
<b><u>SSH Command Line Interface</u></b>	X	X	X	X	X

Table Continued

Feature	iLO Standard	iLO Advanced Premium Security Edition	iLO Advanced / iLO Advanced for Blades	iLO Scale-Out	iLO Essentials
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<b><u>Text-Based Remote Console via SSH<sup>5</sup></u></b>		X	X	X	
<b><u>NEW Two-Factor Authentication (Kerberos, Smart Card - PIV/ Common Access Card)</u></b>		X	X		
<b><u>Virtual Media via Integrated Remote Console</u></b>	Standard offering on BL and WS servers only	X	X		X
<b><u>Virtual Power Button</u></b>	X	X	X	X	X
<b><u>Virtual Serial Port</u></b>	X	X	X	X	X
<b><u>Virtual Serial Port Record and Playback</u></b>		X	X	X	
<b><u>Web-Based GUI</u></b>	X	X	X	X	X
<b><u>NEWWorkload Matching Profiles</u></b>	X	X	X	X	X



- <sup>1</sup> When an iLO Scale-Out license is applied to a blade server, it does not remove features that are available with the iLO Standard for BladeSystem license.
- <sup>2</sup> Core Boosting works with selected Intel processors to enable higher performance across more processor cores. For more information, see the HPE Gen10 Servers Intelligent System Tuning white paper, available from [www.hpe.com/support/gen10-intelligent-system-tuning-en](http://www.hpe.com/support/gen10-intelligent-system-tuning-en).
- <sup>3</sup> Available only on HPE Gen9 servers and above.
- <sup>4</sup> This feature is available only on HPE Gen9 servers and above.
- <sup>5</sup> This feature is supported only on servers that are configured to use the Legacy BIOS boot mode. It is not supported on servers that are configured to use UEFI mode.

# Websites

## Websites

### General websites

Hewlett Packard Enterprise Information Library

[www.hpe.com/info/EIL](http://www.hpe.com/info/EIL)

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

[www.hpe.com/storage/spock](http://www.hpe.com/storage/spock)

Storage white papers and analyst reports

[www.hpe.com/storage/whitepapers](http://www.hpe.com/storage/whitepapers)

For additional websites, see [Support and other resources](#).

## Related information

Website	Link
Activation Key Agreement (AKA)/Tracking License	<a href="http://www.hpe.com/info/aka">www.hpe.com/info/aka</a>
HPE iLO	<a href="http://www.hpe.com/info/ilo">http://www.hpe.com/info/ilo</a>
HPE iLO Advanced License video	<a href="https://www.youtube.com/watch?v=8MTcDsS7yQY">https://www.youtube.com/watch?v=8MTcDsS7yQY</a>
HPE iLO Documentation	<a href="http://www.hpe.com/info/ilo/docs">http://www.hpe.com/info/ilo/docs</a>
HPE iLO Essentials License video	<a href="https://www.youtube.com/watch?v=bTSxlwy5010">https://www.youtube.com/watch?v=bTSxlwy5010</a>
HPE iLO Free Online Training	<a href="http://www.hpe.com/ww/iloBundle">http://www.hpe.com/ww/iloBundle</a>
HPE iLO Licensing	<a href="http://www.hpe.com/info/ilo/licensing">http://www.hpe.com/info/ilo/licensing</a>
HPE iLO Licensing (Spanish)	<a href="https://www.youtube.com/watch?v=xYzIph2ZrUE&amp;feature=youtu.be\h">https://www.youtube.com/watch?v=xYzIph2ZrUE&amp;feature=youtu.be\h</a>
HPE iLO Mobile App	<a href="http://www.hpe.com/info/ilo/mobileapp">http://www.hpe.com/info/ilo/mobileapp</a>
HPE iLO Scale-Out License video	<a href="https://www.youtube.com/watch?v=tnW0qyXp0_E">https://www.youtube.com/watch?v=tnW0qyXp0_E</a>
HPE iLO Scripting and Command Line Guide	<a href="http://www.hpe.com/support/ilo4-cli-gde-en">http://www.hpe.com/support/ilo4-cli-gde-en</a>
HPE iLO Technical How-to Videos	<a href="http://www.hpe.com/info/ilo/videos">http://www.hpe.com/info/ilo/videos</a>
HPE Licensing Portal	<a href="https://myenterpriselicense.hpe.com">https://myenterpriselicense.hpe.com</a>
HPE ProLiant training	<a href="http://www.hpe.com/ww/learnproliant">http://www.hpe.com/ww/learnproliant</a>
HPE Technical Support	<a href="http://www.hpe.com/assistance">http://www.hpe.com/assistance</a>

# Support

## HPE iLO licensing support contact addresses

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### NOTE:

- To obtain support, you must provide proof of a license purchase.
  - You cannot exchange a license that is redeemed (activated).
- 

- Americas: [licensing.ams@hpe.com](mailto:licensing.ams@hpe.com)
- Europe, Middle East, and Africa: [licensing.emea@hpe.com](mailto:licensing.emea@hpe.com)
- Asia-Pacific and Japan: [licensing.apj@hpe.com](mailto:licensing.apj@hpe.com)

## Obtaining your Service Agreement ID (SAID), and accessing updates

The SAID is a 12 digit number assigned for entitlement to a service agreement contract. You must have a SAID to access HPE Technical Support and Software Updates for HPE hardware and software products.

When your license is registered on the **My License Portal**, you receive a Welcome to Support letter or email that includes your SAID, along with other contract information.

After you receive your SAID, you can link it to your HPE Passport account so that you can access updates directly from the Software updates and licensing portal (<http://www.hpe.com/downloads/software>).

### Procedure

1. Go to the Hewlett Packard Enterprise Support Center at [www.hpe.com/support/hpesc](http://www.hpe.com/support/hpesc) and log in using your HPE Passport account.
2. On the left navigation menu, click **Manage my contracts & warranties**.
3. Click **Link support agreements** and follow the instructions.

To access software updates if you have not yet linked your SAID to your HPE Passport account:

- Go to the Software updates and licensing portal at <http://www.hpe.com/downloads/software>, and sign in with your HPE Passport account.
- Select **Directly enter an SAID**, enter your SAID, and click **View available products**.

## Support and other resources

### Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

<http://www.hpe.com/assistance>

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

<http://www.hpe.com/support/hpesc>

### Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

## Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

#### **Hewlett Packard Enterprise Support Center**

[www.hpe.com/support/hpesc](http://www.hpe.com/support/hpesc)

#### **Hewlett Packard Enterprise Support Center: Software downloads**

[www.hpe.com/support/downloads](http://www.hpe.com/support/downloads)

#### **Software Depot**

[www.hpe.com/support/softwaredepot](http://www.hpe.com/support/softwaredepot)

- To subscribe to eNewsletters and alerts:  
[www.hpe.com/support/e-updates](http://www.hpe.com/support/e-updates)
- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:

[www.hpe.com/support/AccessToSupportMaterials](http://www.hpe.com/support/AccessToSupportMaterials)

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### **IMPORTANT:**

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Passport set up with relevant entitlements.

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## Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

<http://www.hpe.com/support/selfrepair>

## Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

### Remote support and Proactive Care information

#### HPE Get Connected

[www.hpe.com/services/getconnected](http://www.hpe.com/services/getconnected)

#### HPE Proactive Care services

[www.hpe.com/services/proactivecare](http://www.hpe.com/services/proactivecare)

#### HPE Proactive Care service: Supported products list

[www.hpe.com/services/proactivecaresupportedproducts](http://www.hpe.com/services/proactivecaresupportedproducts)

#### HPE Proactive Care advanced service: Supported products list

[www.hpe.com/services/proactivecareadvancedsupportedproducts](http://www.hpe.com/services/proactivecareadvancedsupportedproducts)

### Proactive Care customer information

#### Proactive Care central

[www.hpe.com/services/proactivecarecentral](http://www.hpe.com/services/proactivecarecentral)

#### Proactive Care service activation

[www.hpe.com/services/proactivecarecentralgetstarted](http://www.hpe.com/services/proactivecarecentralgetstarted)

## Warranty information

To view the warranty for your product or to view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products* reference document, go to the Enterprise Safety and Compliance website:

[www.hpe.com/support/Safety-Compliance-EnterpriseProducts](http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts)

### Additional warranty information

#### HPE ProLiant and x86 Servers and Options

[www.hpe.com/support/ProLiantServers-Warranties](http://www.hpe.com/support/ProLiantServers-Warranties)

#### HPE Enterprise Servers

[www.hpe.com/support/EnterpriseServers-Warranties](http://www.hpe.com/support/EnterpriseServers-Warranties)

#### HPE Storage Products

[www.hpe.com/support/Storage-Warranties](http://www.hpe.com/support/Storage-Warranties)

#### HPE Networking Products

[www.hpe.com/support/Networking-Warranties](http://www.hpe.com/support/Networking-Warranties)

## Regulatory information

To view the regulatory information for your product, view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the Hewlett Packard Enterprise Support Center:

[www.hpe.com/support/Safety-Compliance-EnterpriseProducts](http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts)

## **Additional regulatory information**

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

**[www.hpe.com/info/reach](http://www.hpe.com/info/reach)**

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

**[www.hpe.com/info/ecodata](http://www.hpe.com/info/ecodata)**

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

**[www.hpe.com/info/environment](http://www.hpe.com/info/environment)**

## **Documentation feedback**

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (**[docsfeedback@hpe.com](mailto:docsfeedback@hpe.com)**). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.

# Standard and licensed feature descriptions

The following list describes features that are standard HPE iLO server features, and features that require a license. Where applicable, it shows which required licenses are needed for a feature.

## **Active Health System Diagnostics**

Provides a 24/7 control center for your server that enables you to continuously monitor more than 1600 system parameters and receive consolidated health and service alert.

### **Recommended for**

All customers

## **Active Health System Viewer**

A free tool that enables you to view and self-diagnose any issues with your server. Obtain the viewer at [www.hpe.com/servers/ahsv](http://www.hpe.com/servers/ahsv).

### **Recommended for**

All customers

## **Advanced Power Management**

Provides access to power related data from any of the three iLO interfaces (browser, script, or command line). Available information includes time spent in Power Regulator Dynamic Savings mode, average, peak, and minimum power consumption over 24-hour intervals. and iLO Power Meter (when supported by the host).

### **Recommended for**

Enterprise, financial, government, security conscious customers

### **Required license**

iLO Scale-Out, iLO Advanced, or iLO Advanced for BladeSystem

## **Agentless Management**

Monitors and generates SNMP traps and additional operating system data independently of the operating system and processor.

### **Recommended for**

All customers

## **Automatic Secure Recovery**

Validates the iLO firmware when power is applied. If the firmware is invalid, the iLO firmware is flashed automatically (iLO Standard license). Also validates the system ROM during server startup. If valid system ROM is not detected, the server is prevented from booting. Recovery options include swapping the active and redundant ROM, and initiating a firmware verification scan and recovery action (iLO Advanced Premium Security Edition license).

### **Required license**

iLO Advanced Premium Security Edition

## **Backup and Restore**

The Backup and Restore feature allows you to restore the iLO configuration on a system with the same hardware configuration as the system that was backed up. This feature is not meant to duplicate a configuration and apply it to a different iLO system.

In general, it is not expected that you will need to perform an iLO restore operation. However, there are cases in which having a backup of the configuration eases and expedites the return to a normal operating environment.

As with any computer system, backing up your data is a recommended practice to minimize the impact from failures. Hewlett Packard Enterprise recommends performing a backup each time that you update the iLO firmware.

### **Commercial National Security Algorithm (CNSA) Mode**

Commercial National Security Algorithm (CNSA) mode (also known as SuiteB security state) is available only when the FIPS security state is enabled.

When set to this security state:

- iLO operates in a mode intended to comply with the SuiteB requirements defined by the NSA, and intended to secure systems used to hold United States government top secret classified data.
- You cannot use SUM to directly install iLO Secure Flash components, TPM components, or NVDIMM components. To install these component types, use SUM to add files or install sets to the iLO installation queue, or install each update individually by using the iLO Firmware or Group Firmware Update pages.
- You cannot connect to the server with network-based tools that do not support TLS 1.2.
- The system maintenance switch setting to bypass iLO security (sometimes called the iLO Security Override switch) does not disable the password requirement for logging in to iLO.

#### **Required license**

iLO Advanced Premium Security Edition

### **Core Boosting**

Core boosting works with selected Intel processors to enable higher performance across more processor cores. For more information, see the HPE Gen10 Servers Intelligent System Tuning white paper, available from [www.hpe.com/support/gen10-intelligent-system-tuning-en](http://www.hpe.com/support/gen10-intelligent-system-tuning-en).

### **Directory Service Authentication**

Integrates directory services, such as Microsoft® Active Directory, to authorize directory users with assigned user roles to Integrated Lights-Out processors.

#### **Required license**

iLO Advanced Premium Security Edition, iLO Advanced, or iLO Advanced for BladeSystem

### **Discovery Services**

Automatically reports server locations to HPE SIM and Insight Control. Power Discovery Services is an enhancement to the iPDU technology. It automatically reports iPDU power status.

#### **Required license**

iLO Advanced Premium Security Edition, iLO Advanced, or iLO Advanced for BladeSystem

### **Email-Based Alerting**

Sends iLO alert conditions that are detected independently of the host operating system to a specified email address.

#### **Recommended for**

All customers

#### **Required license**



iLO Advanced Premium Security Edition, iLO Scale-Out, iLO Essentials, iLO Advanced, or iLO Advanced for BladeSystem

### **Embedded Remote Support**

Enables you to register servers for HPE remote support.

#### **Recommended for**

All customers

### **Embedded System Health**

Monitors fans, temperature sensors, power supply sensors, and VRMs without loading the System Management Driver.

You can access the status of these components from all HPE iLO for ProLiant user interfaces (browser, SMASH CLP command line, and script), independently of the host operating system. The management processor also reports sensor status to the operating system through an IPMI specified interface. The intelligence of iLO manages the Sea of Sensors thermal control, directs the Dynamic Power Capping technology, and monitors the health of server components.

#### **Recommended for**

All customers performing system maintenance

### **Global Team Collaboration via Integrated Remote Console**

Enables up to six iLO users with remote console privileges in different locations to collaborate using the Integrated Remote Console to troubleshoot, maintain, and administer remote servers.

#### **Required license**

iLO Advanced Premium Security Edition, iLO Advanced, or iLO Advanced for BladeSystem

### **iLO Federation Discovery**

Queries using any iLO in the Federation Group of multiple systems to return results from the full group. When data is loaded on an iLO Federation page in the iLO web interface, a request for data is sent from the iLO system running the web interface to its peers, and from those peers to other peers until all the data for the selected iLO Federation group is retrieved.

#### **Recommended for**

Enterprise customers with a large number of HPE servers

### **iLO Federation Group License Activation**

Activates licensed features on all servers within a configured iLO Federation group.

#### **Required license**

iLO Scale-Out, iLO Advanced, or iLO Advanced for BladeSystem

### **iLO Federation Management**

Enables you to manage multiple servers from one system running the iLO web interface.

#### **Recommended for**

Enterprise customers with a large number of HPE servers

#### **Required license**

iLO Advanced Premium Security Edition, iLO Scale-Out, iLO Advanced, or iLO Advanced for BladeSystem

## **iLO Reboot**

When the UID button for is pressed for five seconds, initiates a manual reboot iLO without bringing down the server.

### **Recommended for**

All customers

## **iLO RESTful API**

The iLO RESTful API is a management interface that server management tools can use to perform server configuration, inventory, and monitoring via iLO. A REST client, such as the RESTful Interface Tool, sends HTTPS operations to the iLO web server to `GET` and `PATCH` JSON-formatted data, and to configure supported iLO and server settings.

## **iLO RESTful API with Redfish Compliance**

Operates iLO via Redfish-compliant HPE RESTful API

### **Recommended for**

Customers with multi-vendor data centers who want a common way to manage them, and don't like the insecure nature of IPMI.

## **Integrated Remote Console (IRC)**

Turns a supported browser into a virtual desktop, giving you full control over the display, keyboard, and mouse of the host server. You can use the Remote Console to access the remote file system and network drives, observe POST boot messages as the remote host server restarts, and initiate ROM-based setup routines to configure the remote host server hardware. When you are installing operating systems remotely, the Integrated Remote Console enables you to view and control the host server monitor throughout the installation process.

### **Recommended for**

All customers with remote management needs.

### **Required license**

With iLO Standard and iLO Scale-Out licenses, support for this feature is pre-OS text mode only. Full support is available with all other iLO license types.

## **Integrated Remote Console Record and Playback**

Records and plays back video streams of events, such as startup, ASR events, and sensed operating system faults. You can manually start and stop the recording of console video. You can use the Integrated Remote Console applet to view saved iLO video files.

### **Recommended for**

Enterprise customers

### **Required license**

iLO Advanced Premium Security Edition, iLO Advanced or iLO Advanced for BladeSystem

## **IPMI over LAN/DCMI**

Uses the LAN or Data Center Management Interface function of the Intelligent Platform Management Interface specification to establish remote connectivity independently of the processor, firmware, and operating system.

### **Recommended for**

Customers with multi-vendor data centers who want a common way to manage them.

## **IPv6**

Provides IPv6 network support.

## **Jitter Smoothing**

HPE's Jitter Smoothing technology mitigates processor frequency fluctuation to reduce latency and deliver deterministic and reliable performance. In variable workloads where processor frequency changes occur often, Jitter Smoothing can improve overall throughput above turbo boost mode alone.

## **Kerberos Authentication**

Integrates iLO authentication into a customer security system. If the client workstation is logged in to the domain, and the user is a member of a directory group for which iLO is configured, enables a user to log in to iLO without supplying a user name and password.

### **Recommended for**

Enterprise, financial, government, security conscious customers

### **Required license**

iLO Advanced Premium Security Edition, iLO Advanced, or iLO Advanced for BladeSystem

## **Pre-Boot Health Summary**

You can use iLO to display the Pre-Boot Health Summary on an external monitor when the server is powered on or off. This feature is useful for troubleshooting when the server will not start up, and can also be used to view the server IP address and other health information.

### **Recommended for**

All customers

## **Remote Insight Board Command Language (RIBCL)**

Provides Remote Insight Board Command Language for server administration.

## **Remote Syslog**

Sends event notification messages to Syslog servers.

### **Recommended for**

Enterprise customers with Security and Event Management (SIEM) systems

### **Required license**

iLO Advanced Premium Security Edition, iLO Scale-Out, iLO Advanced, or iLO Advanced for BladeSystem

## **Runtime Firmware Verification**

The Firmware Verification feature allows you to run an on-demand scan or implement scheduled scans. To respond to detected issues, choose between logging the results or logging the results and initiating a repair action that uses a recovery install set.

### **Required license**

iLO Advanced Premium Security Edition

## **Scripted Virtual Media**

Connects scripted media for access by the servers in an iLO Federation group.

### **Required license**

iLO Advanced Premium Security Edition, iLO Advanced, or iLO Advanced for BladeSystem

### **Secure Erase of Non-Volatile Storage (NAND/User Data)**

This will trigger a secure hardware erase of all user and warranty info. It may take up to 24 hours and cannot be aborted until it completes. This feature needs an iLO Advanced Premium Security Edition license in order to be displayed and functioning in the GUI.

#### **Required license**

iLO Advanced Premium Security Edition

### **Secure Shell (SSH) Command Line Interface**

Provides monitoring and management via a Secure Shell CLI.

#### **Recommended for**

All customers who have remote management needs.

### **Silicon Root of Trust**

With HPE Gen10 Servers, HPE offers the first industry-standard servers to include a silicon root of trust built into the hardware. The silicon root of trust provides a series of trusted handshakes from lowest level firmware to BIOS and software to ensure a known good state.

The iLO 5 chipset acts as a silicon root of trust and includes an encrypted hash embedded in silicon hardware at the chip fabrication facility. This makes it virtually impossible to insert any malware, virus, or compromised code that would corrupt the boot process. Rather than the iLO firmware checking the integrity of the firmware every time it boots, the iLO 5 hardware determines whether to execute the iLO firmware, based on whether it matches the encryption hash that is permanently stored in the iLO chipset silicon. These improvements help ensure that, if iLO 5 is running, your server is trusted.

### **Smart Array Secure Encryption**

Supports HPE Smart Array controllers, providing data-at-rest encryption for direct-attached HDD or SSD storage connected to servers. This encryption provides an integrated solution to encrypting HDD or SSD volumes by using 256-bit XTS-AES algorithms.

#### **Recommended for**

Enterprise, financial, government, security conscious customers

#### **Required license**

iLO Scale-Out, iLO Advanced, or iLO Advanced for BladeSystem

### **Text-Based Remote Console via SSH**

Provides a text-based remote console you can customize that is protected by the SSH encryption.

#### **Recommended for**

Hyperscale customers

#### **Required license**

iLO Advanced Premium Security Edition, iLO Scale-Out, iLO Advanced, or iLO Advanced for BladeSystem

### **Two-Factor Authentication (Kerberos, Smart Card - PIV/Common Access Card)**

You can implement two-factor authentication by configuring Kerberos authentication or PIV/CAC Smartcard authentication.

#### **Required license**

iLO Advanced Premium Security Edition or iLO Advanced

### **Virtual Media via Integrated Remote Console**

Enables you to use the Integrated Remote Console to control virtual media.

**Recommended for**

All customers with remote management needs.

**Required license**

iLO Standard for BladeSystem, iLO Essentials; iLO Advanced, or iLO Advanced for BladeSystem

**Virtual Power Button**

Remotely operates the power button of a host.

For example, if the host server is off, you can turn it on from the HPE ProLiant iLO browser, command line (SM CLP), XML scripting, or WS Management interfaces. You can also power off and on the server in one step. A "press and hold" option is available for the Virtual Power Button in the event a momentary press is insufficient to power off a server experiencing an operating system failure.

**Recommended for**

All customers who have remote management needs.

**Virtual Serial Port**

Provides a bidirectional data flow with a server serial port. Using the remote console, this feature enables you to operate as if a physical serial connection exists on the remote server serial port.

**Recommended for**

Hyperscale customers who are predominantly Linux users

**Virtual Serial Port Record and Playback**

Provides a bidirectional data flow with a server serial port, enabling you to operate as if a physical serial connection exists on the remote server serial port. The iLO Virtual Serial Port is displayed as a text-based console, but the information is rendered through graphical video data. iLO displays this information through an SSH client when the server is in a pre-operating-system state, enabling a nonlicensed iLO to observe and interact with the server during POST activities.

**Required license**

iLO Advanced Premium Security Edition, iLO Scale-Out, iLO Advanced, or iLO Advanced for BladeSystem

**Web-Based GUI**

Adds web-based monitoring and management of licensed features to the standard iLO user interface.

**Recommended for**

All customers

**Workload Matching Profiles**

HPE Workload Matching allows you to tune the resources in your HPE ProLiant server by choosing a preconfigured workload profile. The server will automatically configure the BIOS settings to match the selected workload.