Abstract
This guide provides information about purchasing, registering, and activating HPE iLO licenses.
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What is HPE iLO?

HPE iLO allows a system administrator to monitor and manage servers remotely.

- Integrated Lights-Out (iLO) is an embedded technology that ships in HPE Servers.
- It is key to make the server operational and boot.
- It helps simplify server set up, enable health monitoring as well as power and thermal control.
- These capabilities are included with the Server (ILO Standard).
- No installation needed and minimal setup is required.
- Features that enhance server admin productivity are licensed. 
  - Customers can choose from:
    - ILO Advanced Premium Security Edition
    - ILO Advanced
    - ILO Advanced for Blades
    - ILO Essentials

It addresses the server administrator’s concerns and needs.

- “Server setup takes too long.”
- “I need more performance and streamlined operations at scale.”
- “I need automation that integrates into my existing datacenter tools.”
- “Security threats are getting smarter. I need to protect my business.”

Deploy Faster  
Simplify Operations  
Increase Productivity  
End to end Security
**What's new for iLO licensing?**

- **New iLO Advanced Premium Security Edition license**
- **2D security bar code added to all iLO License Entitlement Certificates**
- **Recovering a lost license key**
- **FREE factory-installed iLO Licenses**
- **iLO license key now printing on the License Entitlement Certificate**
- **iLO license key now printing on the electronic email**
- **New packaging for physical/paper licensing**

**IMPORTANT NOTICE**

As of June 2017, the #0D1 option (factory installed), which provided customers the ability have the iLO license installed in the factory, is no longer available with iLO electronic SKUs. However, HPE will still provide the #0D1 option (factory installed) with a physical license.

If you currently use the #0D1 option with iLO electronic SKUs, use the equivalent physical SKU along with the #0D1 option to get the factory-installed facility.

<table>
<thead>
<tr>
<th>Retired product number</th>
<th>New product number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6U59ABE 0D1</td>
<td>512485-B21 #0D1</td>
<td>HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>E6U64ABE 0D1</td>
<td>BD505A #0D1</td>
<td>HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

*Table Continued*
<table>
<thead>
<tr>
<th>Retired product number</th>
<th>New product number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6U60ABE 0D1</td>
<td>512488-B21 #0D1</td>
<td>HPE Factory Installed/Pre-installed HPE iLO Advanced for BladeSystem 1-server License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>E6U63ABE 0D1</td>
<td>BD502A #0D1</td>
<td>HPE Factory Installed/Pre-installed HPE iLO Advanced for BladeSystem 1-server License with 3yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>E6U62ABE 0D1</td>
<td>BD775A #0D1</td>
<td>HPE Factory Installed/Pre-installed HPE iLO Essentials License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>E6U61ABE 0D1</td>
<td>BD774A #0D1</td>
<td>HPE Factory Installed/Pre-installed HPE iLO Essentials License with 3yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

For more information, see [HPE iLO license product numbers (SKUs)](https://www.hpe.com/us/en/product-catalog/detail/pip.332279.html).

**iLO Scale-Out licenses discontinued**


<table>
<thead>
<tr>
<th>HPE part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD776A</td>
<td>HP iLO Scale-Out incl 3yr TSU Flex Lic</td>
</tr>
<tr>
<td>BD778A</td>
<td>HP iLO Scale-Out incl 1yr TSU Flex Lic</td>
</tr>
<tr>
<td>BD776AAE</td>
<td>HP iLO Scale-Out incl 3yr TSU Flex E-LTU</td>
</tr>
<tr>
<td>BD778AAE</td>
<td>HP iLO Scale-Out incl 1yr TSU Flex E-LTU</td>
</tr>
<tr>
<td>BD777A</td>
<td>HP iLO Scale-Out incl 3yr TSU Track Lic</td>
</tr>
<tr>
<td>BD779A</td>
<td>HP iLO Scale-Out incl 1yr TSU Track Lic</td>
</tr>
</tbody>
</table>

**HPE Edgeline support added**

HPE iLO licensing support is available for HPE Edgeline, including Moonshot cartridges with iLO used in an HPE Edgeline chassis.

**Security**

HPE iLO Advanced Premium Security Edition builds on the world’s most secure industry standard servers by providing premium security capabilities that protect your Hewlett Packard Enterprise servers from attacks, detect intrusions, and allow you to recover your firmware securely. Available on all HPE ProLiant Gen10 Servers with iLO 5.

In addition to all the great iLO Advanced features you will receive, HPE is also introducing our new security features, such as:
• **Commercial National Security Algorithms (CNSA Mode):** Highest level of security in the industry
• **Runtime Firmware Verification:** Periodic scanning of firmware to verify integrity
• **Automatic Secure Recovery:** Recover to authentic firmware immediately in the unlikely event of compromised firmware
• **Secure Erase of User Data:** Sanitization of flash parts to ensure a pristine server configuration for redeployment or initial production

**IMPORTANT:** iLO Advanced Premium Security Edition is only available with iLO 5 and Gen10 servers.

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**Acronym definitions:**

- **CAC:** Common Access Card - 2-factor authentication used by US military and related industries
- **CNSA:** Commercial National Security Algorithm suite - highest level cryptology
- **ESKM:** HPE Enterprise Secure Key Manager - for securing keys for storage encryption
- **FIPS:** Federal Information Processing Standard Publication 140-2
- **NAND:** NAND Flash memory - non-volatile memory storage
- **SIEM:** Security Information and Event Management software - products such as HPE ArcSight, Splunk
- **TAA:** Trade Agreements Act (19 U.S.C. & 2501-2581) - required for many sales to the US government
- **TPM:** Trusted Platform Module
### Silicon Root of Trust
- HPE exclusive feature: essential firmware security is anchored directly into the silicon
- HPE builds our iLO silicon and writes our firmware code
- HPE unique FW integration; competitors buy general purpose BMCs off the shelf without ability to tie the firmware to hardware
- HPE Secure Compute protects millions of lines of FW code that run before the OS even boots.

### Runtime Verification
- Verify integrity of essential system firmware.
- Customer picks the scheduled scan interval
- Verified good & malware free redundant firmware repository
- Detection of compromised code or malware residing in essential key firmware
- Customer notification of detected compromised essential firmware code

### Secure Recovery
- Recovering essential firmware to known good state after detection of compromised code
- Customer Recovery Options:
  - Factory Recovery Set
  - Customer-defined Recovery Set
  - Logging Only (forensics mode)

### Commercial NSA
- Commercial National Security Algorithms
- Used for handling the most confidential and secret information
- Uses the highest allowed level of commercial cryptography in the industry

---

**What is HPE iLO?**
Quick pick: Which HPE iLO license is right for me?

Trial license: Free 60-day

You can sign up for a 60-day free trial iLO license to test drive our licensed features.

⚠️ CAUTION: Installing the HPE iLO Advanced Premium Security Edition free evaluation license on a HPE Gen10 Server with an active iLO license (your purchased iLO License) will overwrite the existing iLO license. Be sure to record your existing iLO license before applying the trial license.

Use one of the following methods to record and retrieve your existing license:

- Register your key at the Licensing Portal. Follow the instructions on your License Entitlement Certificate OR your email if you purchased an electronic license. See Registering a license on page 43 for more information.
- Use the Back Up and Restore feature prior to applying this trial license key. See Backup and Restore for more information.

NOTE: If you have already signed up and applied a trial license to your server, you will not be able to do this. The free trial license key can only be applied to your server once.

Test drive these today:

- HPE iLO Advance Premium Security Edition
- HPE iLO Advanced
- HPE iLO Essentials

HPE iLO license options overview

⚠️ IMPORTANT:

- HPE iLO Support for Standard Features—iLO standard features support is covered under the hardware warranty for your server.

- HPE iLO Support for Licensed Features—Purchasing one (1) and three (3) year support licenses refers to the length of the support agreement for licensed iLO features. When you register your license, HPE prepares a support agreement. Once the support agreement expires, you can continue to use licensed features. However, support for those licensed features is not available. You have the option to renew licensed features support.

- HPE iLO licenses do not expire. Once it is installed on the server, the license will remain on that server even if the license support expires. Licenses are valid for the life of the server on which they are installed.

- HPE iLO license options vary by server platform and sales region. For a detailed list of options available for a specific product number, see HPE iLO license product numbers (SKUs).
Beginning the license selection process

Procedure

1. To determine which number combination is listed for the license type, server support, and purchasing option that best meets your needs, review the options shown below.

   **Example**
   If you want:
   - An iLO Advanced license
   - For any HPE ProLiant server model
   - For less than 10 servers

   Your selection is 1-1.

2. In the table following the figure, use the link that corresponds to your selection from Step 1 to go to HPE iLO license product numbers (SKUs) and determine the license product number that matches your installation, delivery, and support requirements.
### HPE iLO License Decision Process

<table>
<thead>
<tr>
<th>1. iLO Advanced or iLO Advanced for BladeSystem</th>
<th>2. iLO Essentials</th>
<th>3. iLO Advanced Premium Security Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential iLO features, including Integrated Remote Console for SMB and remote/branch office environments</td>
<td>HPE 100 server series with iLO and below</td>
<td>All iLO Standard, Advanced, and Security features</td>
</tr>
<tr>
<td>All HPE servers with iLO plus Moonshot cartridges with iLO used in an Edgeline Chassis</td>
<td>HPE 100 server series with iLO and below</td>
<td>All HPE Gen10 Servers with iLO 5</td>
</tr>
<tr>
<td>Single-server (1-10 servers)</td>
<td>Single-server (1-10 servers)</td>
<td>Single-server (1-10 servers)</td>
</tr>
<tr>
<td>Flexible quantity (11-99 servers)</td>
<td>Flexible quantity (11-99 servers), Pay as you go: AKA/Tracking (100 or more servers)</td>
<td>Flexible quantity (11-99 servers), Pay as you go: AKA/Tracking (100 or more servers)</td>
</tr>
<tr>
<td>Preinstalled</td>
<td>Preinstalled</td>
<td>Preinstalled</td>
</tr>
<tr>
<td>Self-installed</td>
<td>Self-installed</td>
<td>Self-installed</td>
</tr>
<tr>
<td>Paper/physical Electronic</td>
<td>Paper/physical Electronic</td>
<td>Paper/physical Electronic</td>
</tr>
</tbody>
</table>

**Figure 1: HPE iLO license decision process**

The following table describes where in the iLO license product numbers (SKUs) tables to find the product number SKU associated with the license options you selected in the Purchasing row above.

**NOTE:** HPE Synergy compute modules have built-in iLO Advanced capabilities; no license is needed.
If your purchasing selection is:

<table>
<thead>
<tr>
<th>Find your product number (SKU) here:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
</tr>
<tr>
<td>You have selected the HPE Server Edgeline Chassis which can support Server Cartridges with iLO. If you require iLO Advanced features, you must purchase an iLO Advanced license for EACH cartridge in the enclosure. Select the quantity of iLO licenses based on the number of server cartridges. If you are ordering more than five (5) iLO licenses, HPE recommends that you review our Flexible Quantity or Tracking/Activation Key Agreement Licenses. Refer to Purchasing options on page 29 for more information.</td>
</tr>
<tr>
<td>1-2</td>
</tr>
<tr>
<td>For a non-blade server: <strong>Advanced Single-server</strong></td>
</tr>
<tr>
<td>For a single BladeSystem: <strong>Advanced for BladeSystem Single-server</strong></td>
</tr>
<tr>
<td>For up to eight BladeSystems: <strong>Advanced for BladeSystem Eight-server</strong></td>
</tr>
<tr>
<td>1-3</td>
</tr>
<tr>
<td>For non-blade servers: <strong>Advanced Flexible Quantity</strong></td>
</tr>
<tr>
<td>For BladeSystem: <strong>Advanced for BladeSystem Flexible Quantity</strong></td>
</tr>
<tr>
<td>1-4</td>
</tr>
<tr>
<td>For non-blade servers: <strong>Advanced Pay as you go volume (AKA/Tracking)</strong></td>
</tr>
<tr>
<td>For BladeSystem: <strong>Advanced for BladeSystem Pay as you go volume (AKA/Tracking)</strong></td>
</tr>
<tr>
<td>2-1</td>
</tr>
<tr>
<td><strong>Essentials Single-server</strong></td>
</tr>
<tr>
<td>3-1</td>
</tr>
<tr>
<td>Advanced Premium Security Edition <strong>Single-server</strong></td>
</tr>
<tr>
<td>3-2</td>
</tr>
<tr>
<td>Advanced Premium Security Edition <strong>Flexible quantity</strong></td>
</tr>
<tr>
<td>3-3</td>
</tr>
<tr>
<td>Advanced Premium Security Edition <strong>Pay as you go volume (AKA/Tracking)</strong></td>
</tr>
</tbody>
</table>

**HPE iLO license product numbers (SKUs)**

The following tables list available HPE iLO license product numbers (SKUs) and the delivery, support, and registration options available for each.

**NOTE:** To insure that iLO single-server physical licenses are installed at the factory at no extra cost, you must include 0D1 option in the product number SKU as shown in the following tables.
IMPORTANT:

• You are entitled to a one (1) or a three (3) year support contract on licensed features.

NOTE: iLO Standard features are supported under the Server Hardware Warranty.

• iLO license part numbers ending in #0D1 are factory pre-installed iLO licenses. They are installed at an HPE factory at NO extra charge. This ensures your iLO Advanced features are ready to go once you set up your server.

• After your one (1) or three (3) year support contract expires, your HPE iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features.

• HPE iLO licenses do not expire. Once it is installed on the server, the license will remain on that server even if the license support expires. Licenses are valid for the life of the server on which they are installed.

• HPE iLO standard features are shipped at no extra cost as part of your server purchase.

• The HPE Server Edgeline Chassis supports Server Cartridges with iLO. If you require iLO Advanced features, you must purchase an iLO Advanced license for EACH cartridge in the enclosure. Select the quantity of iLO licenses based on the number of server cartridges.

   If you are ordering more than five (5) iLO licenses, HPE recommends that you review our Flexible Quantity or Tracking/Activation Key Agreement Licenses. Refer to Purchasing options on page 29 for more information.
Table 1: Advanced > Single-server - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>512485-B21</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>512485-B21 #0D1</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>Yes</td>
<td>HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features - Factory Installed/Pre-installed</td>
</tr>
<tr>
<td>BD505A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>BD505A #0D1</td>
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<td>3-year 24x7</td>
<td>Yes</td>
<td>HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features - Factory Installed/Pre-installed</td>
</tr>
<tr>
<td>E6U59ABE</td>
<td>Electronic</td>
<td>1-year 24x7</td>
<td>No</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>E6U64ABE</td>
<td>Electronic</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

1. When selecting factory pre-installed (#0D1) iLO licenses, you can only buy one (1) license per server purchased on the same order. If you need to buy more than one (1) license, either select more servers OR select an iLO NON pre-installed license.

2. License registration is not available in the Americas (AMS) and Asia Pacific or Japan (APJ) regions for these licenses. Your license key is printed on the installations instructions that are shipped with your order. Retain this key for your records and to obtain support.
### Table 2: Advanced > Flexible Quantity - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features 1,2</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>512486-B21</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>BD506A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

1. You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2. iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at [http://www.hpe.com/support/iLO5](http://www.hpe.com/support/iLO5).

### Table 3: Advanced > Pay as you go volume (AKA/Tracking) - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features 1,2</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description3</th>
</tr>
</thead>
<tbody>
<tr>
<td>512487-B21</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced AKA Tracking License 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>BD507A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced AKA Tracking License 3yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

1. You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2. iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at [http://www.hpe.com/support/iLO5](http://www.hpe.com/support/iLO5).

3. For additional information on AKA, visit [www.hpe.com/info/aka](http://www.hpe.com/info/aka).
### Table 4: Essentials > Single server - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD775A</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Essentials License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>BD775A #0D1</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>Yes</td>
<td>HPE Factory Installed/Pre-installed HPE iLO Essentials License with 1yr Support on iLO Licensed Features - Factory Installed/Pre-installed</td>
</tr>
<tr>
<td>BD774A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Essentials License with 3yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>BD774A #0D1</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>Yes</td>
<td>HPE Factory Installed/Pre-installed HPE iLO Essentials License with 3yr Support on iLO Licensed Features - Factory Installed/Pre-installed</td>
</tr>
<tr>
<td>E6U62ABE</td>
<td>Electronic</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Essentials Electronic License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>E6U61ABE</td>
<td>Electronic</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Essentials Electronic License with 3yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

1. You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2. iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.

3. When selecting factory pre-installed (#0D1) iLO licenses, you can only buy one (1) license per server purchased on the same order. If you need to buy more than one (1) license, either select more servers OR select an iLO NON pre-installed license.
Table 5: Advanced for BladeSystem > Single-server - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features ¹,²</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)³</th>
<th>Description</th>
</tr>
</thead>
</table>
| 512488-B21     | Physical | 1-year 24x7                      | No                                              | NOT HPE Factory Installed/Pre-installed  
HPE iLO Advanced for BladeSystem 1-server License with 1yr Support on iLO Licensed Features |
| 512488-B21 #0D1 | Physical | 1-year 24x7                      | Yes                                             | HPE Factory Installed/Pre-installed  
HPE iLO Advanced for BladeSystem 1-server License with 1yr Support on iLO Licensed Features - Factory Installed/Pre-installed |
| BD502A         | Physical | 3-year 24x7                      | No                                              | NOT HPE Factory Installed/Pre-installed  
HPE iLO Advanced for BladeSystem 1-server License with 3yr Support on iLO Licensed Features |
| BD502A #0D1    | Physical | 3-year 24x7                      | Yes                                             | HPE Factory Installed/Pre-installed  
HPE iLO Advanced for BladeSystem 1-server License with 3yr Support on iLO Licensed Features - Factory Installed/Pre-installed |
| E6U60ABE       | Electronic | 1-year 24x7                  | No                                              | NOT HPE Factory Installed/Pre-installed  
HPE iLO Advanced for BladeSystem Electronic License with 1yr Support on iLO Licensed Features |
| E6U63ABE       | Electronic | 3-year 24x7                  | No                                              | NOT HPE Factory Installed/Pre-installed  
HPE iLO Advanced for BladeSystem Electronic License with 3yr Support on iLO Licensed Features |

¹ You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

² iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.

³ When selecting factory pre-installed (#0D1) iLO licenses, you can only buy one (1) license per server purchased on the same order. If you need to buy more than one (1) license, either select more servers OR select an iLO NON pre-installed license.
### Table 6: Advanced for BladeSystem > Eight-server - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>512489-B21</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced for BladeSystem 8-server License with 1yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

1. You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2. iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.

### Table 7: Advanced for BladeSystem > Flexible Quantity - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>512490-B21</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced for BladeSystem Flexible Quantity License with 1yr Support on iLO Licensed Features</td>
</tr>
<tr>
<td>BD503A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced for BladeSystem Flexible Quantity License with 3yr Support on iLO Licensed Features</td>
</tr>
</tbody>
</table>

1. You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2. iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.
Table 8: Advanced for BladeSystem > Pay as you go volume (AKA/Tracking) - iLO 3, 4, and 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>512491-B21</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced BladeSystem AKA Tracking License 1yr Support</td>
</tr>
<tr>
<td>BD504A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced BladeSystem AKA Tracking License 3yr Support</td>
</tr>
</tbody>
</table>

1. You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2. iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.

3. For additional information on AKA, visit www.hpe.com/info/aka.


<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q7E31A</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced Premium Security Edition License with 1yr Support on Licensed Features</td>
</tr>
</tbody>
</table>

Table Continued

Quick pick: Which HPE iLO license is right for me?
<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q7E33A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced Premium Security Edition License with 3yr Support on Licensed Features</td>
</tr>
<tr>
<td>Q7E33A #0D1</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>Yes</td>
<td>HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced Premium Security Edition License with 3yr Support on Licensed Features - Factory Installed/Pre-installed</td>
</tr>
<tr>
<td>Q7E32AAE</td>
<td>Electronic</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced Premium Security Edition Electronic License with 1yr Support on Licensed Features</td>
</tr>
<tr>
<td>Q7E34AAE</td>
<td>Electronic</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HPE iLO Advanced Premium Security Edition Electronic License with 3yr Support on Licensed Features</td>
</tr>
</tbody>
</table>

1 You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2 iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.
Table 10: Advanced Premium Security Edition > Flexible Quantity - HPE Gen10 Servers with iLO 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
</table>
| Q7E32A         | Physical | 1-year 24x7                        | No                                                            | NOT HPE Factory Installed/Pre-installed  
HPE iLO Advanced Premium Security Flex Qty License with 1yr Support on Licensed Features |
| Q7E34A         | Physical | 3-year 24x7                        | No                                                            | NOT HPE Factory Installed/Pre-installed  
HPE iLO Advanced Premium Security Flex Qty License with 3yr Support on Licensed Features |

1 You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2 iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.
### Table 11: Advanced Premium Security Edition > Pay as you go volume (AKA/Tracking) -HPE Gen10 Servers with iLO 5

<table>
<thead>
<tr>
<th>Product number</th>
<th>Delivery</th>
<th>Support term for licensed features</th>
<th>Is this HPE factory installed/preinstalled? (the recommended option)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q7E35A</td>
<td>Physical</td>
<td>1-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced Premium Security AKA Tracking License with 1yr Support on Licensed Features</td>
</tr>
<tr>
<td>Q7E36A</td>
<td>Physical</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced Premium Security AKA Tracking License 3yr Support on Licensed Features</td>
</tr>
<tr>
<td>Q7E12AAE</td>
<td>Electronic</td>
<td>3-year 24x7</td>
<td>No</td>
<td>NOT HPE Factory Installed/Pre-installed HPE iLO Advanced Premium Security UPGRADE Electronic License with 3yr Support on Licensed Features</td>
</tr>
</tbody>
</table>

1. You are entitled to a one (1) or a three (3) year support contract on licensed features. After your one (1) or three (3) year support contract expires, your iLO licensed features still work, and are enabled. However, you will not have HPE support for those licensed features. Your licenses do not expire. They are valid for the life of the server on which they are applied.

2. iLO standard features and firmware updates are supported under the Server Hardware Warranty Contract. iLO firmware updates are available at http://www.hpe.com/support/iLO5.

3. For additional information on AKA, visit [www.hpe.com/info/aka](http://www.hpe.com/info/aka).

4. You have selected the iLO Advanced Premium Security Upgrade license. You MUST have an HPE Gen10 Server or later with iLO 5 or higher AND an iLO Advanced license already installed on the server.
Selecting an HPE iLO license

Selecting license options

To acquire the license that best meets your needs, review and select from:

1. License options
2. Purchasing options
3. Delivery options and documentation outputs
4. Support options

HPE iLO license options

HPE iLO licenses activate capabilities, augmenting iLO standard features available on all ProLiant servers. HPE iLO provides various license types and delivery options that enable you to activate advanced features to suit your infrastructure and business needs. Because licenses are "versionless," you can use any advanced license regardless of the version of iLO you have installed. To determine which licenses are supported for your server model, see HPE iLO standard and licensed features.

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 12: HPE iLO standard and licensed features

<table>
<thead>
<tr>
<th>Feature</th>
<th>iLO Standard</th>
<th>iLO Advanced Premium Security Edition</th>
<th>iLO Advanced / iLO Advanced for Blades</th>
<th>iLO Essentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ships at no extra cost in all servers that support iLO</td>
<td></td>
<td>All Gen10 servers with iLO 5</td>
<td>All servers (iLO Advanced for Blade Systems for BL and WS servers); plus Moonshot cartridges with iLO used in an Edgeline chassis</td>
<td></td>
</tr>
<tr>
<td><strong>Active Health System Diagnostics</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Advanced Power Management</strong> (Power history graphs, Dynamic Power Capping)</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Agentless Management</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Automatic Secure Recovery</strong> (Gen10 and later)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Backup and Restore</strong> (Gen10 and later)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Commercial National Security Algorithm (CNSA) Mode</strong> (Gen10 and later)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Core Boosting</strong> (Gen10 and later)</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Directory Service Authentication</strong></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

*Table Continued*
<table>
<thead>
<tr>
<th>Feature</th>
<th>iLO Standard</th>
<th>iLO Advanced Premium Security Edition</th>
<th>iLO Advanced / iLO Advanced for Blades</th>
<th>iLO Essentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform support</td>
<td>Ships at no extra cost in all servers that support iLO</td>
<td>All Gen10 servers with iLO 5</td>
<td>All servers (iLO Advanced for Blade Systems for BL and WS servers); plus Moonshot cartridges with iLO used in an Edgeline chassis</td>
<td>HPE ProLiant Gen9 100 Series and lower, MicroServer; HPE ProLiant Gen8 SL, BL, and DL160</td>
</tr>
<tr>
<td>Discovery Services</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email-Based Alerting</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embedded Remote Support</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Embedded System Health</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Global Team Collaboration via Integrated Remote Console</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iLO Federation Discovery</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>iLO Federation Management</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iLO Reset 2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>iLO RESTful API</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>iLO Web Interface</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated Remote Console (IRC/Virtual KVM—Supports text and graphics)</td>
<td>Pre-OS only for all servers except BL and WS. Standard offering on BL and WS servers</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table Continued
<table>
<thead>
<tr>
<th>Feature</th>
<th>iLO Standard</th>
<th>iLO Advanced Premium Security Edition</th>
<th>iLO Advanced / iLO Advanced for Blades</th>
<th>iLO Essentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform support</td>
<td>Ships at no extra cost in all servers that support iLO</td>
<td>All Gen10 servers with iLO 5</td>
<td>All servers (iLO Advanced for Blade Systems for BL and WS servers); plus Moonshot cartridges with iLO used in an Edgeline chassis</td>
<td>HPE ProLiant Gen9 100 Series and lower, MicroServer; HPE ProLiant Gen8 SL, BL, and DL160</td>
</tr>
<tr>
<td>Integrated Remote Console Record and Playback</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IPMI Over LAN/DCMI</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>IPv6</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Jitter Smoothing</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Pre-Boot Health Summary</td>
<td>X</td>
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<td>Remote Syslog</td>
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<td>RIBCL</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Runtime Firmware Verification</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Scripted Virtual Media</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Secure Erase of Non-Volatile Storage</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Silicon Root of Trust</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SSH Command Line Interface</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Text-based Remote Console (Textcons)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Table Continued
<table>
<thead>
<tr>
<th>Feature</th>
<th>iLO Standard</th>
<th>iLO Advanced Premium Security Edition</th>
<th>iLO Advanced / iLO Advanced for Blades</th>
<th>iLO Essentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform support</td>
<td>Ships at no extra cost in all servers that support iLO</td>
<td>All Gen10 servers with iLO 5</td>
<td>All servers (iLO Advanced for Blade Systems for BL and WS servers); plus Moonshot cartridges with iLO used in an Edgeline chassis</td>
<td>HPE ProLiant Gen9 100 Series and lower, MicroServer; HPE ProLiant Gen8 SL, BL, and DL160</td>
</tr>
<tr>
<td>Text-Based Remote Console via SSH</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-Factor Authentication</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Kerberos, Smart Card - PIV/Common Access Card)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual Media via Integrated Remote Console</td>
<td>Standard offering on BL and WS servers only</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Virtual Power Button</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Virtual Serial Port</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Virtual Serial Port Record and Playback</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workload Matching Profiles (Gen10 and later)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

1 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.

2 iLO Reset is available only on HPE Gen9 servers and above.

3 Pre-Boot Health Summary is available only on HPE Gen9 servers and above.

4 Text-Based Remote Console via SSH 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.

**Purchasing options**

iLO licenses are available directly from HPE and from HPE sales partners. The best way to obtain an iLO license is to purchase the software license at the same time you purchase your HPE server. However, if you
are located in the US, you can also purchase your license separately from the HPE Small Business Marketplace site at [http://www.hpe.com/marketplace](http://www.hpe.com/marketplace).

Options are:

- **Single-Server License**—A single license installation.
- **Flexible Quantity License**—A single license entitlement to install on multiple iLO servers.
- **Volume Licensing or “Tracking License”**—An Activation Key Agreement (AKA) valid for future license activations.

Use the following questions and answers to help you select from the options available.

**How many License Entitlement Certificates do I receive, either through paper/physical or electronic delivery?**

<table>
<thead>
<tr>
<th>Single Server</th>
<th>Flexible Quantity</th>
<th>Volume Licensing or “Tracking License”</th>
</tr>
</thead>
<tbody>
<tr>
<td>One entitlement certificate for each license ordered. For example, if you order this license for 10 servers, you receive 10 certificates.</td>
<td>One single software entitlement certificate. When you register the entitlement online, you receive one single key to activate licensed features on multiple iLO servers. For example, if you order this license for 10 servers, you receive a single entitlement that enables you to use iLO advanced features on 10 servers.</td>
<td>None. This option is an “invoice only” option. This option is an efficient Volume Licensing Program delivered through an Activation Key Agreement (AKA). It provides one master key (per product) that is assigned to your company, department, or branch—eliminating the need to maintain multiple keys. Your assigned master key code is valid for all future purchases of license activations for up to three years and can be used worldwide. You can add new products to your AKA under an amendment during the term of your agreement. For more information, see Volume Licensing or “Tracking License” details on page 31.</td>
</tr>
</tbody>
</table>

**When I register my license online, how many activation keys do I receive?**

<table>
<thead>
<tr>
<th>Single Server</th>
<th>Flexible Quantity</th>
<th>Volume Licensing or “Tracking License”</th>
</tr>
</thead>
<tbody>
<tr>
<td>One for one. You receive one key for each single license ordered.</td>
<td>One for many. You receive one key for all licenses ordered.</td>
<td>No registration is required. A master key is provided when you sign the Activation Key Agreement. For more information, see Volume Licensing or “Tracking License” details on page 31.</td>
</tr>
</tbody>
</table>

**When is each license type the best option?**
<table>
<thead>
<tr>
<th>Single Server</th>
<th>Flexible Quantity</th>
<th>Volume Licensing or “Tracking License”</th>
</tr>
</thead>
<tbody>
<tr>
<td>This license is the best option if you:</td>
<td>This license is the best option if you:</td>
<td>This license is the best option if you:</td>
</tr>
<tr>
<td>• Are purchasing a small number of ProLiant servers at a time</td>
<td>• Require a one-time purchase of iLO licenses for your current ProLiant installed base</td>
<td>• Plan to purchase a volume of iLO over time and on a regular basis</td>
</tr>
<tr>
<td>• Already own ProLiant servers and need iLO licenses</td>
<td>• Purchased quantities of new ProLiant servers and need an equivalent number of software licenses to match the number of servers purchased</td>
<td>• Want a simple software licensing option that provides one key per product for all licenses subsequently purchased over time</td>
</tr>
<tr>
<td>• Do not need the same license for multiple servers</td>
<td>• Want to curtail the number of license activation keys in use</td>
<td>• Want to eliminate the need to maintain multiple license keys in your data center over time</td>
</tr>
<tr>
<td></td>
<td>• Want to minimize physical deliverables, preferring a single license key per quantity of licenses purchased at any given time</td>
<td>• Want to use your keys worldwide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Want the least number of physical deliverables (no deliverables associated with the tracking licenses)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Want to add iLO licenses as a line item to standard ProLiant configurations purchased regularly from HPE or HPE partners or wanting to add iLO to existing ProLiant sales contracts with HPE</td>
</tr>
</tbody>
</table>

For more information, see [Volume Licensing or “Tracking License” details](#) on page 31.

**Volume Licensing or “Tracking License” details**

- Each master key that is issued is intended for future purchases of license activation keys.
- A master key is not intended to replace any:
  - Existing licenses residing on existing servers
  - Entitlement certificates purchased but not redeemed, or redeemed but not deployed
  - Entitlement certificates bundled with hardware purchases
- You cannot use a master key to replace any upgrade licenses.
- The maximum term under the AKA contract is three years. You can select a one, two, or three-year contract. At the end of your contract term, you must cease using your master keys. When the original agreement expires, you can add an amendment to continue usage of your master key, or you can process a new AKA if you have reached your forecast.
• There is no entitlement certificate sent, eliminating the need to complete the license entitlement redemption process.

• In most cases, your HPE account manager bundles the AKA tracking SKU with your server configurations (BOM), so when each server is purchased, the license SKU is included and paid for at the same time.

**Delivery options and documentation outputs**

In most cases, you can select how you want HPE to provide the information you require to activate and install your license. Depending on your location and your product, the following options are available.

- Recommended: Factory installed/pre-installed
- Self-installed

Documentation outputs are as follows.

*With paper/physical license delivery, including the factory installed option, you will receive a License Documents envelope.*

1. This envelope is marked **License Documents Enclosed**.

   ![License Documents Enclosed](image)

   The envelope contains:

   - A printed License Entitlement certificate with your iLO license key
   - Important information about your Support Contract
   - Instructions on how to ensure that you have a valid HPE iLO license key
   - Instructions on how to register your iLO license

2. This type of license is no longer available.

   **IMPORTANT:** The type of HPE iLO License shown below has been retired. You should receive an HPE envelope as shown above. If you receive a license in the format shown below, with stickers applied, contact the HPE Licensing Team. Refer to [HPE iLO licensing support contact addresses](#) for more information.
License Entitlement Certificate

**IMPORTANT:** Retain your License Entitlement Certificate in a secure location. It contains information that you must use to activate your license. If you received your License Entitlement Certificate electronically, print a copy to store for future reference.

The following example shows a License Entitlement Certificate for an HPE iLO Advanced single-server license with a one-year support option. The information listed in this certificate depends on the type of license purchased and the delivery option selected.
Information in this document:

1. License product name (abbreviated)
2. Product number (SKU)
3. Entitlement Order Number (EON): Enter this number in the HPE My License Portal (https://myenterpriselicence.hpe.com) to activate this license. To obtain HPE licensing support, you reference this number.
4. License Activation URL: To complete the optional step of activating your license, click or enter in a browser to access the HPE My License Portal (https://myenterpriselicence.hpe.com). Benefits of completing this step include:
• Receive important product alerts.
• Access the HPE Support Center ([http://www.hpe.com/support/hpesc](http://www.hpe.com/support/hpesc)).
• Activate your unique HPE Support Agreement ID (SAID). Your SAID identifies you and keeps track of your products so that HPE can provide fast, personalized support.

5. Licensing Support URL: Click or enter in a browser to access the HPE licensing support portal.

6. Additional Information: Lists additional information about installing your license, including your license key.

7. 2D barcode: As part of our ongoing commitment to security, we’ve now enabled a new iLO key validation process. Users can now leverage a 2D barcode to seamlessly validate their iLO license keys and feel confident that their license keys are HPE authenticated.

8. License key: Retain this information.

**With electronic license delivery, you receive:**

This Electronic Delivery Receipt email.

![Electronic Software Delivery Receipt](image)

Information in this document:

1. Refer to the Important Notes section below to view important information about the electronic software.
2. Click the paperclip to open a zip file. This file contains two (2) documentation files:
   • A PDL provides detailed installation instructions.
   • A text document provides a short overview of installation instructions.
3. License key
4. HPE part number
5. Click this link to view frequently asked questions about the licensing portal.

Electronic delivery benefits

- License key is displayed on the electronic delivery receipt
- Provides fast order fulfillment
- Eliminates the need to dispose of physical packaging materials
- Enables you to manage your software assets digitally

Authenticating a license

Always authenticate your license to ensure that your license key is valid and you have a Genuine Hewlett Packard Enterprise Part. There are two ways to authenticate a license:

- Scan the QR/Datamatrix on your License Entitlement Certificate.
- Validating the license by going directly to https://validate.ext.hpe.com/. Refer to the steps below.

Procedure

2. Enter your Security ID (SID) in the field provided and click **Validate**.
   If your license is valid, you will see the following information:
Risks of Counterfeit HPE Software, Spares & Options

HPE starts with the highest quality components. We work with Original Equipment Manufacturers (OEMs) to create specific HPE firmware, drivers, and software that provide optimized performance and manageability.

Around the world, a number of fraudulent HPE parts are being represented as new HPE product. These parts are packaged as HPE Option Kits and Spares Kits. HPE is providing these tools and information to allow validation of authentic HPE parts.

Validate Your Parts

Enter the Security ID (SID) from your product’s security label into the field below and click Validate. If you do not see your label here, HPE has additional information on older label revisions found on drives and memory.

```
XXX000000000
```

ValiDATE

Hewlett Packard Enterprise Security Labels use several authentication factors, including the Security ID and hologram.

Security ID is valid, and your part is likely a Genuine Hewlett Packard Enterprise Part. Please complete the validation process by performing a visual inspection of the label hologram, using the guidelines found below.

Security Label validation does not indicate whether the part is covered by an active warranty or contract. If you need service or support with this part, please visit the HPE Support website.
Locating the Label

HDD/SSD
Most often found overlapping top or bottom edge of large white label

Memory DIMM
Usually found on the right side of the DIMM – opposite the memory specification label.

Processor & HeatSink
Processor info can be validated via the label affixed to the bundled heat sink.

Aruba Transceiver
Beginning in 2017, Security ID numbers can be found on HPE Aruba transceivers. The "3ID" can be validated on this line.

Software
Beginning in 2017, security features in the form of 2D datamatrix barcodes can be found in some HPE software licenses.

Packaging
The hardware commodities listed here also ship with tamper evident labels on their packaging. You can validate your purchase with the Security ID found on the label.
If your license is invalid, you will see the following information:
Support options

Each HPE iLO license includes either a one-year, or a three-year support contract. In most cases, when you activate your license as described in the following procedures, HPE sends an email with information about the support you purchased with your license.

**IMPORTANT:**

- You do not need your support contract to obtain the iLO licensed features. Once you have entered the valid key, iLO licensed features will be enabled on your server.
- You are entitled to a one (1) or a three (3) year support contract on licensed features.
- After your one (1) or three (3) year support contract expires, your **HPE iLO licensed features still work, and are enabled**. However, you will not have HPE support for them.
- **Your licenses do not expire.** They are valid for the life of the server on which they are applied.
- **HPE iLO standard features** are supported under the server hardware warranty.

For details about a specific license, see [HPE iLO license product numbers (SKUs)](#).
Registering and redeeming a license key

Why register your licenses?

Registering your iLO licenses is important. Doing so:

- Provides important product alerts.
- Provides access to the HPE Support Center.
- Activates your unique HPE Support Agreement ID (SAID).

Your SAID identifies you and keeps track of your products so that HPE can provide fast, personalized support.

**NOTE:** At this time, the HPE Licensing Portal does not track SAID agreements.

- Allows you to keep track of all your HPE product licenses in one convenient place via the HPE Licensing Portal.

To register one or more licenses:

**Procedure**

1. Locate the Entitlement Order Number (EON) listed on your License Entitlement Certificate or Licensing Confirmation Email.
2. Follow the steps for Registering a license.

Best practices for retaining license information

- If you received your license electronically, retain the Electronic Delivery Receipt email for future reference.
- If you received a non-electronic (paper/physical) license that is shipped in the HPE iLO license envelope, retain your License Entitlement Certificate paperwork for future reference.
- After you purchase and activate a license, forward the confirmation emails you receive from HPE to others in your organization who might need to manage licenses in the future.
  - You can easily forward the activation receipt and confirmation email to an address you specify during the license registration process. See Activating a license.
  - If you are not the original purchaser of a license, request a copy from the person in your organization who made the purchase.
  - For licenses that are not shipped in an HPE iLO license package, you can use the licensing portal or XML scripting to retrieve your license information. See Viewing installed license information.

**NOTE:** For security, license key characters are hidden when you view license information in iLO.

- Because you cannot track a license that is shipped in an HPE iLO license package (physical), you must retain physical copies of paperwork that is supplied using that method.
License documentation and activation

Do I need a license activation key?
You must have a license activation key to install and begin using your license. The license activation key is a 5-by-5-character code in the following format and is printed on your License Entitlement Certificate when ordering a physical (paper) license OR via an electronic email:

xxxxx-xxxxx-xxxxx-xxxxx-xxxxx

**IMPORTANT:** Record each license activation key and retain it in a secure location for future reference. To ensure that keys are not used in other systems after installation, the key characters are hidden in the Activation Key field on the iLO Administration > Licensing page.

Next steps: Electronic and paper delivery methods
The license documentation you receive and how you must use it to activate your license depends on the delivery method used. Options are as follows:

- Electronic delivery
- Paper delivery not in an HPE iLO license package

For more information, see Delivery options and documentation outputs.

Registering a license
Registering your license is optional. Benefits include:

- Receive important product alerts.
- Access the HPE Support Center (http://www.hpe.com/support/hpesc).
- Access software updates via the HPE Update Center (www.hpe.com/downloads/software).
- Activate your unique HPE Support Agreement ID (SAID). Your SAID identifies you and keeps track of your products so that HPE can provide fast, personalized support.

Procedure

1. Locate and review your License Entitlement Certificate.
2. Go to the My License Portal [https://myenterpriselicense.hpe.com](https://myenterpriselicense.hpe.com) and sign in with your HPE Passport account email address.

   The HPE License Portal welcome page appears and the Activate My Products tab is displayed.
3. Enter your Entitlement Order Number (EON) and click Search

A Select Products to Activate page similar to the following example displays your products that are available for license activation.

4. Do one of the following:
   - To activate licenses for all products listed, leave the Select all Products in this family check box selected.
   - To activate a specific license, select the corresponding check box.

5. Click Next.

A Designate Activatee page appears.
6. Do one of the following:

- To activate the license for yourself, select **I am activating for myself**.
- To activate on behalf of another user, select **I am activating on behalf of another user**, and complete the information about the user.

7. To have license files emailed to the specified user, leave the **Email License files to this user** check box selected.

8. Click **Next**.

The **Activation Complete** page appears.
9. (Optional) To participate in a survey about your license purchasing experience, click the survey link and follow the instructions.

10. Do any of the following:

   • To open the installation instructions, click the PDF file link.
   • To open the license key, click the .TXT file link.
   • To copy the license key, click the **Copy Key to Clipboard** link.
   • To download the installation instructions or license key, click the checkbox next to the file(s) you want and then click **Download**.

   An Activation Receipt similar to the following example is generated. If you selected the download or share options, your activation receipt is sent via email with your license activation key and installation instructions in an attached zip file.
Dear Customer,

Thank you for your license activation at the [My License Portal](#). Your license keys and additional instructions (if applicable) are attached to this email.

### Activation Details

<table>
<thead>
<tr>
<th>Entitlement Order #</th>
<th>Product #</th>
<th>Product Description</th>
<th>Activated Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXXXXXXXXXXXXXX</td>
<td>HPE iLO Adv incl 3y TSU E-LTU</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

### License Key Details

Product Family: HPE iLO

Get the most out of your iLO licensed features! Your purchase of an iLO license entitles you to free web-based training. To access your free HPE iLO training, visit our HPE Education website [www.hpe.com/ww/iLOBundle](http://www.hpe.com/ww/iLOBundle). To access HPE ProLiant training, visit our HPE Education website [http://www.hpe.com/ww/learnproliant](http://www.hpe.com/ww/learnproliant).

<table>
<thead>
<tr>
<th>Description</th>
<th>File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation Instructions</td>
<td>ILO_Installation_Instructions.pdf</td>
</tr>
<tr>
<td>HPE iLO License Key</td>
<td>HPE_iLOKey.txt</td>
</tr>
</tbody>
</table>

Attachment: license_HPE_iLO_zip

If you have questions, please [contact Licensing Support](#).

Sincerely,

Hewlett Packard Enterprise

11. Retain the Activation Receipt for future reference.

### Verifying license activation

- **Verify:**
  - You receive an [Activation Receipt](#).
  - You can view information about your activated license on the [Software downloads and licenses](#) page in your HPE Passport account.
Installing a license

License installation methods

You can use the following methods to install a license:

- Entering the 25-digit alphanumeric license key (aka 5x5 key) in iLO using a browser
- Using XML scripting
- Using the iLO CLI
- Using the RESTful API
- Using iLO Federation group licensing

Prerequisites

Procedure

- Privileges to configure iLO settings
- A license that is supported on the server on which you want to install it
- A license activation key

Entering the 25-digit alphanumeric license key (aka 5x5 key) in iLO using a browser

Procedure

1. Locate your license activation key.

2. Log in to iLO and navigate to the Administration > Licensing page.

3. On the Licensing page, enter the license key in the Activation Key box.

NOTE: Once you enter your activation key in this window, all that will display of it is the last five digits. Record and save your license key somewhere else before you enter it here.
To move between segments, press the Tab key or click inside a segment of the Activation Key box. The cursor advances automatically when you enter data into the segments of the Activation Key box.

4. Click Install.

The EULA confirmation page opens.

Confirm EULA

You must read and accept the End User License Agreement ("EULA") included with the iLO License Pack to activate these advanced features. This EULA grants Licensee rights to license the advanced features ONLY if the installation keys are Authorized Copies as defined in the EULA. Except as expressly provided in the EULA regarding use of such Authorized Copies, nothing shall be construed as granting any other rights to Licensee. Click the button to acknowledge that you have read and agree to the terms and conditions of the iLO License Pack End User License Agreement.

I agree

5. Review the EULA confirmation details, and click OK.

Using XML scripting

You can use XML commands and an advanced scripting interface to install your licenses. This method is useful when you want to roll out license keys as part of a large-scale server deployment. Scripts are XML files written for a scripting language called RIBCL. The following methods are available:

- **Recommended method**: HPQLOCFG (HP Lights-Out Configuration Utility)—A utility that replaces the previous HP Lights-Out Configuration Utility (CPQLOCFG). This utility is a Windows command-line utility that sends XML configuration and control scripts over the network to iLO.

  **NOTE**: The HPQLOCFG (HP Lights-Out Configuration Utility) has the same command formatting as the CPQLOCFG utility.

- HPONCFG (HP Lights-Out Online Configuration Utility)—A local online scripted setup utility that runs on the host and passes RIBCL scripts to the local iLO. This utility requires the HPE ProLiant iLO 3 or 4 Channel Interface Driver.

- LOCFG (Lights-Out Configuration Utility)—A custom iLO scripting environment that includes a Perl sample you can use to send RIBCL scripts to iLO over the network.
NOTE: Because the HPONCFG and LOCFG utilities run on the server itself, you do not need to enter the server IP address, FQDN, or login credentials when using either of those utilities. All other commands for installing a single-server license are the same for all utilities.

For more information, see:

- The **HPE iLO 5 Scripting and Command-Line Guide**
- **How to Install an iLO License Key Through Scripting**

**Sample license XML script**

```
<RIBCL VERSION="2.0">
  <LOGIN PASSWORD="password" USER_LOGIN="adminname">
    <RIB_INFO MODE="write">
      <LICENSE>
        <ACTIVATE KEY="11223-34455-66778-89900-AABBC"/>
      </LICENSE>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

**Recommended procedure: Installing a single license using HPQLOCFG (HP Lights-Out Configuration Utility)**

**Procedure**

1. Locate your license activation key.
2. Go to [www.hpe.com/support/ilo4](http://www.hpe.com/support/ilo4) and download the latest utility.
3. Locate the folder in which your utility is installed.
4. Move the `License.xml` file into the same folder as the utility.
5. Open a command prompt, navigate to the folder containing the utility and XML file, and open the XML file.
6. Do one of the following:

   - To execute the generic script without modifying it:
     ```
     UtilityName.exe -s IPAddress/fqdn -f xmlFileName.xml -l logfile.txt -u username -p password -t KEY="KEY"
     ```

     Example
     ```
     hpqlocfg.exe -s mydl360server.mydomain.com -f License.xml -l mylogfile.txt -u adminaccount -p myadminpass123 -t KEY="abcde-fghij-klmno-pqrst-uvwxy"
     ```

   - To modify the `License.xml` file:

     a. Enter the login information for the system on which you are installing the license.
For example: `<LOGIN PASSWORD="myAdminPass123" USER_LOGIN="adminAccount">

b. Enter the license key you purchased.

`<ACTIVATE KEY="abcde-fghij-klmno-pqrst-uvwxy"/>

c. Save the changes to your file, and then execute as follows. To specify verbose (detailed) output, add the `-v` tag.

`UtilityName.exe -s IPAddress/fqdn -f xmlFileName.xml -l logfile.txt -v`

Example

`hpqlocfg.exe -s mydl360server.mydomain.com -f License.xml -l mylogfile.txt -v`

Sample output

When the non-verbose form of the command is successful, no output is displayed.

Verbose output looks similar to the following.

```
<?xml version="1.0"?>
<RIBCL VERSION="2.23">
<RESPONSE
     STATUS="0x0000"
     MESSAGE='No error' />
</RIBCL>
```

Installing a single license using (HP Lights-Out Online Configuration Utility) or LOCFG (Lights-Out Configuration Utility)

Procedure

1. Locate your license activation key.
2. Go to [http://www.hpe.com/support/iLO5](http://www.hpe.com/support/iLO5) and download the latest utility.
3. Locate the folder in which your utility is installed.
4. Move the `License.xml` file into the same folder as the utility.
5. Open a command prompt, navigate to the folder containing the utility and XML file, and open the XML file.
6. At the command prompt, do one of the following:
   - To execute the generic script without modifying it:
UtilityName.exe -f xmlFileName.xml -l logfile.txt

Example
hponcfg.exe -f License.xml -l mylogfile.txt

- To modify the License.xml file:
  a. Enter the license key you purchased.
     <ACTIVATE KEY="abcde-fghij-klmno-pqrst-uvwxy"/>
  b. Save the changes to your file, and then execute as follows. To specify verbose (detailed) output, you can add the -v tag.
     UtilityName.exe -f xmlFileName.xml -l logfile.txt
     Example
     hponcfg.exe -f License.xml -l mylogfile.txt

Using the iLO CLI

Procedure
1. Open a connection in an SSH client application, such as PuTTY.
2. Leave the SSH port as 22, and the Connection type as SSH.
3. At the login prompt, enter your user name and password.
   The hpilo-> prompt appears.
4. To navigate to the license page, enter cd map1/oemhp_license1, and then enter show.
   The license information is displayed, including the license type (oemhp_name1), and the license key that is partially redacted for security reasons.
5. To add a license, replace KEY with your 5X5 license key in the following command:
   oemhp_licenseinstall KEY
   Valid formats for entering a license key are:
   - oemhp_licenseinstall "AAAAA-BBBBB-CCCCC-DDDDD-EEE"E
   - oemhp_licenseinstall AAAA-BBBBB-CCCCC-DDDDD-EEE
   - oemhp_licenseinstall AAAA-BBBBB-CCCCC-DDDDD-EEE
   - oemhp_licenseinstall AAAA-BBBBB-CCCCC-DDDDD-EEE
   - oemhp_licenseinstall "AAAAABBBBBCCCCCDDDDDEEEEEE"
   The following output is displayed:
   - status=0
   - status_tag=COMMAND COMPLETED
   - New license key installed
Using the RESTful Interface Tool

Procedure

1. Locate your license activation key.
2. Download the RESTful Interface Tool (Windows MSI package, or Linux RPM package) from https://hewlettpackard.github.io/python-redfish-utility/.
3. Locate the folder in which you specified the utility to install.
4. Move the License.json file into the same folder as the utility.

Sample license JSON script:

```json
{
   "body": {
      "LicenseKey": "XXXXX-XXXXX-XXXXX-XXXXX-XXXXX"
   },
   "path": "/rest/v1/managers/1/LicenseService"
}
```

5. Open a command prompt, navigate to the folder containing the utility and JSON file, and open the JSON file.
6. Replace the default (invalid) license key with your valid key.
7. Save the changes to your file, and execute the RESTful command as follows:

   ilorest.exe rawpost license.json --url mydl360server.mydomain.com -u adminaccount -p myadminpass123

8. If the command is successful, a message stating that The resource has been created successfully appears.

Using iLO Federation group licensing

You can use iLO Federation, a licensed feature, to manage your iLO license keys. The iLO Federation Group Licensing page displays the license status for iLO Federation group members, and you can use the Group Licensing page to activate iLO licensed features within a configured group.

Consider the following when you use iLO Federation group licensing feature to install a license in these scenarios:

- On the servers in an iLO Federation group, each member of the group must have the Configure iLO Settings privilege.
- On multiple servers, you must use a key that is authorized for the number of selected servers.
- On a server that already has a key installed, the new key replaces the current key. If you do not want to replace existing licenses, click Unlicensed in the License Information Status table to install licenses only on servers that are unlicensed.
Viewing iLO Federation group license information

Procedure

1. Click iLO Federation in the navigation tree, and then click the Group Licensing tab.
2. Select a group from the Selected Group menu.
3. Optional: To filter the list of servers, click a license type or status link in the License Information section.

iLO Federation group license details

- **Type**—The number of servers with each listed license type. The percentage of the total number of servers with each listed license type is also displayed.
- **Status**—The number of servers with each listed license status. The percentage of the total number of servers with each license status is also displayed. The possible status values follow:
  - **Evaluation**—A valid evaluation license is installed.
  - **Expired**—An expired evaluation license is installed.
  - **Perpetual**—A valid iLO license is installed. This license does not have an expiration date.
  - **Unlicensed**—The factory default (iLO Standard) features are enabled.

Verifying license installation

<table>
<thead>
<tr>
<th>✓</th>
<th>Verify:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No installation error messages are displayed.</td>
<td></td>
</tr>
<tr>
<td>You can view information about your installed licenses.</td>
<td></td>
</tr>
</tbody>
</table>
Managing licenses

Prerequisites

• An HPE Passport account
• Privileges to configure iLO settings
• An installed license

Viewing installed license information

Viewing installed licenses in iLO

Procedure

1. Log in to iLO and navigate to the Administration > Licensing page.
2. Under Current License Status, view the following information for each installed license:
   • License—The license type
   • Status—The license status. A green check indicates that the license is installed and active.
   • Activation Key—The installed key

   NOTE: For security, key characters are hidden.

Viewing installed licenses in the licensing portal

Procedure

2. Enter your HPE Passport account email address and password, and click Sign In.
4. To view information for each installed license, click My Entitlements.
5. Log out and close your browser.

Viewing installed licenses using XML scripting

You can use XML commands and one of these scripting utilities to view your installed licenses.

NOTE:
Because the HPONCFG and LOCFG utilities run on the server itself, you do not need to enter the server IP address or FQDN when using either of those utilities. All other commands for viewing installed licenses are the same for all utilities.
Sample Get_all_licenses script

```xml
<RIBCL VERSION="2.0">
  <LOGIN PASSWORD="password" USER_LOGIN="adminname">
    RIB_INFO MODE="read" <GET_ALL_LICENSES/>
  </RIB_INFO>
</LOGIN>
</RIBCL>
```

**Using HPQLOCFG (HP Lights-Out Configuration Utility)**

Open a command prompt in the HPQLOCFG utility and do one of the following:

**Procedure**

- To execute the generic script without modifying it:
  ```
  UtilityName.exe -s IPAddress/fqdn -f xmlFileName.xml -l logfile.txt -u username -p password
  
  Example
  hpqlocfg.exe -s mydl360server.mydomain.com -f Get_All_Licenses.xml -l mylogfile.txt -u adminaccount -p myadminpass123
  ```

- To modify the Get_All_Licenses.xml file:
  1. Enter the login information for the system on which you are installing the license. For example: `<LOGIN PASSWORD="myAdminPass123" USER_LOGIN="adminAccount">`
  2. Save the changes to your file, and then execute as follows. To specify verbose (detailed) output, you can add the `-v` tag.
     ```
     UtilityName.exe -s IPAddress/fqdn -f xmlFileName.xml -l logfile.txt
     
     Example
     hpqlocfg.exe -s mydl360server.mydomain.com -f Get_All_Licenses.xml -l mylogfile.txt
     ```

**Using HPONCFG (HP Lights-Out Online Configuration Utility) or LOCFG (Lights-Out Configuration Utility)**

Open a command prompt in the HPONCFG or LOCFG utility and do one of the following:

**Procedure**

- To execute the generic script without modifying it:
  ```
  UtilityName.exe -f xmlFileName.xml -l logfile.txt
  
  Example
  hponcfg.exe -f Get_All_Licenses.xml -l mylogfile.txt
  ```

- To modify the Get_All_Licenses.xml file:
  1. Modify the file.
  2. Save the changes to the file, and then execute as follows. To specify verbose (detailed) output, you can add the `-v` tag.
     ```
     UtilityName.exe -f xmlFileName.xml -l logfile.txt
     
     Example
     hponcfg.exe -f Get_All_Licenses.xml -l mylogfile.txt
     ```
UtilityName.exe -f xmlFileName.xml -l logfile.txt -v

Example
hponcfg.exe -f Get_All_Licenses.xml -l mylogfile.txt -v

Viewing installed licenses using the iLO CLI
For information, see the HPE iLO Scripting and Command Line Guide.

Recovering a lost license key
There are three situations in which you might need to recover a lost license key:

- **System board replacement**: If a system board replacement is required to address a hardware issue, you can use this feature to transfer the iLO configuration from the original system board to the new system board.

  1. Replace the system board and transfer the hardware components from the old system board to the new system board.
  2. Power on the system and ensure that all components are working correctly.
  3. Log in to iLO with the default user credentials for the new system board.
  4. Click **Administration** in the navigation tree, and then click **Backup & Restore**.
  5. Click **Restore**.
  6. Depending on your browser, click **Browse** or **Choose File**, and then navigate to the backup file.
  7. If the backup file is password protected, enter the password.
  8. Click **Upload and Restore**. iLO will prompt you to confirm the request.
  9. Click **Restore**. iLO resets and closes your browser connection. It might take several minutes before you can re-establish a connection.

- **Lost license key**: If a license key is accidentally replaced, or you reset iLO to the factory default settings, and you are not sure which key to install, you can restore the license key and other configuration settings from a backup file.

  1. Log in to iLO with the default user credentials for the new system board.
  2. Click **Administration** in the navigation tree, and then click **Backup & Restore**.
  3. Click **Restore**.
  4. Depending on your browser, click **Browse** or **Choose File**, and then navigate to the backup file.
  5. If the backup file is password protected, enter the password.
  6. Click **Upload and Restore**. iLO will prompt you to confirm the request.
  7. Click **Restore**. iLO resets and closes your browser connection. It might take several minutes before you can re-establish a connection.

- **Retrieving a registered license key from the licensing portal**:
1. Go to the My License Portal [https://myenterpriselicense.hpe.com](https://myenterpriselicense.hpe.com) and sign in with your HPE Passport account email address.

2. Click the Manage My Assets link near the top of the page.

3. Click the Download icon to the right of your entitlement number. The following screen displays.

4. Retrieve your license key by doing one of two things:
Reactivating your HPE iLO license key after your server reverts to factory defaults

IMPORTANT:
If your server reverts to factory defaults, you must reactivate and reinstall your license key on that server.

Troubleshooting

License key network error

Symptom
You are installing a license and you see a Network error: Connection refused message.

Cause
You entered an invalid host name or IP address during license installation.

Action
Check for errors in the host name and IP address, and then try again.

Server disconnect error

Symptom
You are installing a license using the iLO CLI and you see a Server sent disconnect message.

Cause
The CLI serial console session has been acquired by someone else.

Action
Try establishing a new telnet session and, when can do so, try the command again.

License key installation errors

Symptom
You see a License Key Error or a License Installation Failed message.
Solution 1

Cause
The key is not an iLO license key.

Action
Obtain an iLO license key, and then try again.

Solution 2

Cause
An evaluation key was submitted when a regular license was previously installed.

Action
None. iLO does not support installing an evaluation key when a regular key was previously installed.

Solution 3

Cause
The iLO date and time settings are incorrect.

Action
Check the iLO date and time settings, and then try again.

Solution 4

Cause
The license key entered is incorrect.

Action
Check for errors in the license key, and then try again.

License key not received after completing the activation process

Symptom
You completed the license activation process but did not receive your license activation key.

Action
1. Locate the Entitlement Order Number (EON) on your License Entitlement Certificate.
2. For further assistance, contact the HPE licensing support team, and provide the EON See HPE iLO licensing support contact addresses.
HPE iLO license return policy

You can obtain a replacement iLO license if:

- The license is purchased in error, and the associated License Entitlement Certificate key is not yet redeemed. A redeemed license is one that is registered in the My License Portal and has an iLO 25-character license key assigned to it.
- The license is self-installed.
- The license is preinstalled at the factory, you lose your EON, and need a new license for a replaced motherboard.

To begin the return policy, contact the licensing team. See HPE iLO licensing support contact addresses.
Websites

General websites
Hewlett Packard Enterprise Information Library
   www.hpe.com/info/EIL
For additional websites, see Support and other resources.

Product websites
iLO
   http://www.hpe.com/info/ilo
iLO 5 Information Library
   http://www.hpe.com/support/ilo-docs
iLO Support
   http://www.hpe.com/support/ilo5
iLO Advanced
   http://www.hpe.com/servers/iloadvanced
iLO Advanced Premium Security Edition
   http://www.hpe.com/servers/ilopremium
iLO mobile app
   http://www.hpe.com/info/ilo/mobileapp
Active Health System Viewer
   http://www.hpe.com/servers/ahsv
Intelligent System Tuning
   http://www.hpe.com/info/ist
HPE ProLiant Gen10 servers
   http://www.hpe.com/info/proliantgen10-docs
HPE ProLiant Gen10 and HPE Synergy compute module troubleshooting
   http://www.hpe.com/info/Gen10-troubleshooting
UEFI System Utilities
   http://www.hpe.com/info/ProLiantUEFI/docs
SUM
   http://www.hpe.com/info/sum-docs
SPP
   http://www.hpe.com/info/spp/documentation
Intelligent Provisioning
   http://www.hpe.com/info/intelligentprovisioning/docs
iLO RESTful API and RESTful Interface Tool
   http://www.hpe.com/info/redfish
Remote Support
   http://www.hpe.com/info/insightremotesupport/docs
HPE OneView
http://www.hpe.com/info/oneview/docs

OA
http://www.hpe.com/support/oa/docs

HPE SIM
http://www.hpe.com/info/insightmanagement/sim/docs

## Related information

<table>
<thead>
<tr>
<th>Website</th>
<th>Link</th>
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</thead>
<tbody>
<tr>
<td>HPE Integrated Lights-Out (iLO) helpful links and resources</td>
<td><a href="http://www.hpe.com/support/ilo-resource-ref-en">www.hpe.com/support/ilo-resource-ref-en</a></td>
</tr>
<tr>
<td>Activation Key Agreement (AKA)/Tracking License</td>
<td><a href="http://www.hpe.com/info/aka">www.hpe.com/info/aka</a></td>
</tr>
<tr>
<td>HPE iLO</td>
<td><a href="http://www.hpe.com/info/ilo">http://www.hpe.com/info/ilo</a></td>
</tr>
<tr>
<td>HPE iLO Advanced License video</td>
<td><a href="https://www.youtube.com/watch?v=8MTcDsS7yQy">https://www.youtube.com/watch?v=8MTcDsS7yQy</a></td>
</tr>
<tr>
<td>HPE iLO Documentation</td>
<td><a href="http://www.hpe.com/info/ilo/docs">http://www.hpe.com/info/ilo/docs</a></td>
</tr>
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<td>HPE iLO Essentials License video</td>
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<td>HPE iLO Free Online Training</td>
<td><a href="http://www.hpe.com/ww/iloBundle">http://www.hpe.com/ww/iloBundle</a></td>
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<td><a href="http://www.hpe.com/info/ilo/licensing">http://www.hpe.com/info/ilo/licensing</a></td>
</tr>
<tr>
<td>HPE iLO Licensing (Spanish)</td>
<td><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></td>
</tr>
<tr>
<td>HPE iLO Mobile App</td>
<td><a href="http://www.hpe.com/info/ilo/mobileapp">http://www.hpe.com/info/ilo/mobileapp</a></td>
</tr>
<tr>
<td>HPE iLO Technical How-to Videos</td>
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</tr>
<tr>
<td>HPE Licensing Portal</td>
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</tr>
<tr>
<td>HPE ProLiant training</td>
<td><a href="http://www.hpe.com/ww/learnproliant">http://www.hpe.com/ww/learnproliant</a></td>
</tr>
<tr>
<td>HPE Technical Support</td>
<td><a href="http://www.hpe.com/assistance">http://www.hpe.com/assistance</a></td>
</tr>
</tbody>
</table>
HPE iLO licensing support contact addresses

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
• Europe, Middle East, and Africa: licensing.emea@hpe.com
• Asia-Pacific and Japan: 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

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.

Renewals for iLO license technical support and software updates

All iLO license activation keys are sold with 1 year or 3 years included HPE Foundation Care 24 x 7 technical support. Once the support reaches the expiration date, you will receive a notification letter and offer for additional support coverage. Contact your HPE account representative or reseller if you do not receive the renewal offer letter before your support expiration date. For continued software updates support, ensure that the HPE hardware product used with your iLO license maintains a valid warranty or support maintenance agreement.
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
  Hewlett Packard Enterprise Support Center: Software downloads
  www.hpe.com/support/downloads
  Software Depot
  www.hpe.com/support/softwaredepot
- To subscribe to eNewsletters and alerts:
  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
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.

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
HPE Proactive Care services
www.hpe.com/services/proactivecare
HPE Proactive Care service: Supported products list
www.hpe.com/services/proactivecaresupportedproducts
HPE Proactive Care advanced service: Supported products list
www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information
Proactive Care central
www.hpe.com/services/proactivecarecentral
Proactive Care service activation
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

Additional warranty information
HPE ProLiant and x86 Servers and Options
www.hpe.com/support/ProLiantServers-Warranties
HPE Enterprise Servers
www.hpe.com/support/EnterpriseServers-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

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

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

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

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). 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.
HPE iLO customer scenarios

Business requirements and solutions

Managing multiple servers from one system

Requirement
You are a mid-size business with a few servers, and many virtual machines. You must manage these servers from a single pane of glass without purchasing an additional server or complex tools.

Solution
Use HPE iLO Federation to:

• Manage multiple servers from one system by running the iLO web interface.
• Communicate with other iLO systems via multi-cast discovery, peer-to-peer communication, and iLO Federation groups.
• Retrieve iLO Federation data. 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.
• View information from iLO Federation nodes.
• Deploy settings to iLO Federation nodes. (Required license: iLO Advanced)

Configuring, managing, and optimizing server performance

Requirement
You want to create, read, update, or delete information on a server using simple HTTPS calls.

Solution
Use the iLO RESTful API implementation in UEFI and iLO. It provides:

• A new, single command-line interface tool
• Redfish Protocol compliance
• A programmable, intelligent management solution that helps ensure that your servers are scalable, secured, discoverable, and extensible

Protecting your data

Requirement
You want to protect your server from unauthorized access and data breaches.

Solution
Use UEFI and HPE iLO.

• With UEFI server configuration you can:
• Create a chain of trust for installation authentication.
• Increase server security with four new levels of Secure Boot options

• With iLO server access and management, featuring two-factor user authentication, you can protect your server with:
  • The iLO Event Log
  • Agentless Management
  • Directory services integration (Required license: iLO Advanced)
  • LDAP
  • Role-based access control within iLO
  • Kerberos-based Single-Sign-on (Required license: iLO Advanced)

Implementing a standardized method for server control and monitoring

Requirement
Your company has asked you to implement a standardized method for controlling and monitoring your server.

Solution
Use the Intelligent Platform Management Interface (IPMI) in iLO to:

• Manage events and status independently of the host system processor, firmware (BIOS or UEFI), and operating system, including:
  • Monitoring system information, such as fans, temperatures, and power supplies
  • Utilizing recovery capabilities, such as system resets and power on/off operations
  • Reviewing logging details about abnormal events, such as over-temperature readings or fan failures
  • Viewing inventories of hardware components

Connecting to a network

Requirement
You want to connect your server to a network.

Solution
Use HPE iLO to connect your server to a network port. iLO standard provides two options:

• A dedicated network management port on HPE ProLiant Gen9 Servers with 4 GB NAND
• A shared network port that enables VLAN tagging on HPE ProLiant Gen9 Servers with 2 GB NAND

Maximizing power efficiency

Requirement
You want to conserve the energy consumption of your server.
Solution
Use HPE iLO power control options to:

• Securely turn servers on or off remotely.
• Monitor power consumption and server power settings.
• Dynamically change power capping (Required license: iLO Advanced)

Identifying and resolving problems

Requirement
You want to be alerted to problems as they occur with your server and to resolve them quickly.

Solution
Use the iLO Integrated Management Log to:

• View detailed event logs, including server outages and resets.
• Configure event notifications via:
  ◦ SNMP alerts
  ◦ Remote Syslog (Required license: iLO Advanced)
  ◦ Email alerts (Required license: iLO Advanced)

Discovering all servers in your infrastructure

Requirement
Your team installed 100 new servers in your data center and they must be discovered immediately.

Solution
Use iLO Federation to discover hundreds of servers in seconds. It provides:

• Query and display capabilities
• Group health status updates
• Group configuration details
• DNS name registration information

Remotely managing servers

Requirement
You are away from your office and need to access your server.

Solution
Use the iLO web interface or mobile app to manage your server anytime from anywhere. With iLO, you can remotely:

• Inventory and deploy servers using ROM-based tools
• Launch and monitor the progress of iLO scripts
• Use the remote console
• Power your server on and off
• Troubleshoot and diagnose issues
• Mount an ISO CD/DVD image via virtual media (Required license: iLO Advanced)
• Engage with up to six coworkers in different locations at once (Required license: iLO Advanced)
• Record and play back for later reference the steps you need to administer servers (Required license: iLO Advanced)

Deploying, managing, and updating firmware across your data center

Requirement
You want to quickly, deploy, manage, and update firmware across hundreds of servers in your data center.

Solution
Use the full management capabilities of iLO Federation provided by an iLO Advanced license. This license enables iLO Federation options for performing:

• Group firmware updates (Required license: iLO Advanced)
• Group license activation (Required license: iLO Advanced)
• Group virtual media (Required license: iLO Advanced)
• Group power control (Required license: iLO Advanced)
• Group power capping (Required license: iLO Advanced)
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.

**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 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.

**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 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 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 Advanced, or iLO Advanced for BladeSystem

**iLO Reset**

When the UID button is pressed for five seconds, initiates a manual iLO reset 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.

**iLO Web Interface**

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

**Recommended for**

All customers

**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 license, 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 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 Advanced, or iLO Advanced for BladeSystem

Text-Based Remote Console (Textcons)

The Text-Based Remote Console (Textcons) allows you to perform two-way data stream communication via BIOS in the server.

Recommended for
Hyperscale customers who mainly use Linux in BIOS mode

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

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.
HPE iLO Licensing FAQs

Why is it important to register even though my license key is already installed?

Registration is important because:

• If you lose your license key, you can obtain it through the My License Portal (https://myenterpriselicense.hpe.com).
• You receive your support contract that is included in the price of your iLO license.

What happens if I lose my license key?

Recovering a lost license key

There are three situations in which you might need to recover a lost license key:

• System board replacement: If a system board replacement is required to address a hardware issue, you can use this feature to transfer the iLO configuration from the original system board to the new system board.

1. Replace the system board and transfer the hardware components from the old system board to the new system board.
2. Power on the system and ensure that all components are working correctly.
3. Log in to iLO with the default user credentials for the new system board.
4. Click Administration in the navigation tree, and then click Backup & Restore.
5. Click Restore.
6. Depending on your browser, click Browse or Choose File, and then navigate to the backup file.
7. If the backup file is password protected, enter the password.
8. Click Upload and Restore. iLO will prompt you to confirm the request.
9. Click Restore. iLO resets and closes your browser connection. It might take several minutes before you can re-establish a connection.

• Lost license key: If a license key is accidentally replaced, or you reset iLO to the factory default settings, and you are not sure which key to install, you can restore the license key and other configuration settings from a backup file.

1. Log in to iLO with the default user credentials for the new system board.
2. Click Administration in the navigation tree, and then click Backup & Restore.
3. Click Restore.
4. Depending on your browser, click Browse or Choose File, and then navigate to the backup file.
5. If the backup file is password protected, enter the password.
6. Click **Upload and Restore**. iLO will prompt you to confirm the request.

7. Click **Restore**. iLO resets and closes your browser connection. It might take several minutes before you can re-establish a connection.

- **Retrieving a registered license key from the licensing portal:**
  
  1. Go to the My License Portal [https://myenterpriselicense.hpe.com](https://myenterpriselicense.hpe.com) and sign in with your HPE Passport account email address.
  
  2. Click the **Manage My Assets** link near the top of the page.

  ![](welcome-to-my-license-portal.png)

  3. Click the **Download** icon to the right of your entitlement number. The following screen displays.
4. Retrieve your license key by doing one of two things:

- Click the HPE_ILOKEY_[###].TXT link to download a text version of the license key.
- Click Copy Key to Clipboard to copy the license key. Then paste the license key into another document and save it.

Does my license expire?

No. Your license is valid for the life of the server.

Do I lose functionality of licensed features when my one or three year Technical and Support Contract expires?

No. Your licensed features, and standard features, continue to be available. If you require support on licensed features, you must obtain a support contract.

Are standard iLO features covered in my one or three year Technical Support Contract?

No. Standard iLO features are covered under your server hardware warranty.

Is HPE iLO Scale Out license still available?

No, HPE retired this license effective February 05 2018. HPE suggests purchasing either the HPE iLO Security Premium Edition or the HPE iLO Advanced License.
Can I upgrade from an Essentials license to an iLO Advanced license?

No, not at this time.

Can I upgrade any of my iLO licenses to the HPE iLO Advanced Premium Security license?

Yes, you can. Part No/Product # is Q7E12AAE - HPE iLO Advanced Premium Security Upgrade Electronic License.

Can I transfer my license to another server?

No. Your license key is only valid for the server on which it is installed.

What is a SAID?

A SAID (Service Agreement Identification) is a 12-digit number assigned for entitlement to a service agreement contract. You must have it to access HPE Technical Support and Software Updates for HPE Hardware and Software products.

How do I get a SAID and what do I do with it?

After you register your license on the My License Portal (https://myenterpriselicense.hpe.com), HPE sends your SAID in a welcome letter similar to the following example.
Figure 3: Sample SAID welcome letter

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).

When do I use my SAID?

Use your SAID to access:

- HPE Technical Phone Support
- The HPE Support Center (http://www.hpe.com/support/hpesc)
- Software updates for HPE Software products via the HPE Update Center (http://www.hpe.com/downloads/software)
What if I have not received my welcome letter with my SAID, or I lost my SAID?

- If you purchased your license directly from HPE, send an email requesting a welcome letter and SAID to the address for your region. Make sure to include your HPE sales order number.
  - Americas: licensing.ams@hpe.com
  - Europe, Middle East, and Africa: licensing.emea@hpe.com
  - Asia-Pacific and Japan: licensing.api@hpe.com

- If you purchased your license from a reseller, contact the reseller and provide your sales order number to request your SAID and welcome letter.