

Overview

HP Integrated Lights-Out is an HP innovation that integrates industry leading Lights-Out functionality and basic system board management capabilities on selected ProLiant servers.

HP Integrated Lights-Out consists of an intelligent processor and firmware that provides standard and advanced levels of lights-out, remote management functionality. Basic system board management functions, diagnostics and essential Lights-Out functionality are provided as standard features of the server and are referred to as Integrated Lights-Out Standard. Advanced functionality, referred to as Integrated Lights-Out Advanced, can be licensed with the optional HP ProLiant Essentials Integrated Lights-Out Advanced Pack or Integrated Lights-Out Select Pack. Integrated Lights-Out Select and Advanced offer sophisticated virtual administration features for full control of servers in dynamic data center and remote locations.

NOTE: This QuickSpecs document is based on iLO firmware version 1.91. For more information on Integrated Lights-Out, please visit: <http://www.hp.com/servers/ilo>.

Starting July 9, 2007, HP iLO Advanced Packs and HP iLO Select Packs may be purchased in an Insight Control software suite with one year of 24 x 7 Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. iLO Advanced Packs and Select Packs will continue to be available on a standalone basis with optional future upgrades. For more information about these options, please see the licensing section below or visit: <http://www.hp.com/go/ilo>.

ProLiant Essentials Integrated Lights-Out Advanced Pack

NOTE: Featuring: Lights-Out management upgrades for HP ProLiant ML/DL servers requiring remote control including graphic console support.

HP ProLiant Essentials Integrated Lights-Out Advanced Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 512485-B21

HP ProLiant Essentials Integrated Lights-Out Advanced Pack, No Media, Flexible-Quantity License, including 1 year of 24x7 Technical Support and Updates 512486-B21

ProLiant Essentials Integrated Lights-Out Advanced Pack, No Media , Tracking License 452143-B21

HP ProLiant Essentials Integrated Lights-Out Advanced Pack, No Media, Tracking License, including 1 year of 24x7 Technical Support and Updates 512487-B21

NOTE: The tracking license above (512487-B21) may only be purchased by customers that have implemented an activation key agreement (AKA) with HP implemented after December 15 2008.

ProLiant Essentials Integrated Lights-Out Advanced Pack Tracking License 302281-B21

NOTE: Tracking licenses may only be purchased by customers that have implemented an activation key agreement (AKA) with HP. Only customers with an AKA agreement implemented prior to July 9, 2007 should continue to purchase iLO Advanced Pack tracking licenses with part number 302281-B21.

HP ProLiant Essentials Integrated Lights-Out Advanced for BladeSystem , No Media, Flexible-Quantity License, including 1 year of 24x7 Technical Support and Updates 512490-B21

HP ProLiant Essentials Integrated Lights-Out Advanced for BladeSystem, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 512488-B21

HP ProLiant Essentials Integrated Lights-Out Advanced for BladeSystem, No Media, 8-Blade License, including 1 year of 24x7 Technical Support and Updates 512489-B21

ProLiant Essentials Integrated Lights-Out Select Pack

NOTE: Featuring: Lights-Out management upgrades for HP ProLiant servers that do not require the graphic console upgrade (HP ProLiant ML/DL servers with 1st generation iLO using standard text console).

ProLiant Essentials Integrated Lights-Out Select Pack, No Media, Tracking License 452160-B21

Overview

ProLiant Essentials Integrated Lights-Out Select Pack, Tracking License

413121-B21

NOTE: Tracking licenses may only be purchased by customers that have implemented an activation key agreement (AKA) with HP.

Standard Features

Integrated Lights-Out Standard Features

Virtual Text Remote Console	The standard Integrated Lights-Out provides embedded hardware remote console capabilities on a text mode screen. The operating system-independent console supports text modes that display remote host server activities, such as shutdown and startup operations.
Virtual Power Button	Using a supported browser, command line or script interface, Integrated Lights-Out can be used to remotely operate the power button of a host. For example, if the host server is off, you can turn it on from Integrated Lights-Out. 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 with a failed operating system.
Virtual Indicators	Integrated Lights-Out provides the ability to monitor and control the status of the Unit ID LED. The Unit ID LED is the blue LED on the ProLiant server that is used for identifying systems in a rack full of servers. Integrated Lights-Out allows you to view the status of the Unit ID LED and change the status using Integrated Lights-Out Web pages.
Power Regulator for ProLiant	In iLO v 1.70 or later, the new Power Regulator for ProLiant can be enabled from any of the iLO standard interfaces, browser, command line or script. Static Low Power Mode and Dynamic Power Savings Mode can be enabled to save on server power and cooling costs. On supported ProLiant servers, Power Regulator allows CPU's to operate at lower frequency and voltage during periods of reduced application activity. (Visit the Power Regulator web site for supported server information.)
Dedicated or Shared LAN Network Connectivity	Integrated Lights-Out provides a choice of network connectivity through a dedicated 10/100-Mbps Ethernet network connection or through a shared connection via one of the embedded system NICs. The dedicated network connection supports both graphic and text mode and provides in-band SNMP notification of server problems on a real-time basis without separate telephone connections or modem sharing devices. The NIC can auto-select speeds between 10 Mbps and 100 Mbps. The shared network connection supports text based interaction with iLO such as command line, virtual serial port and text console. Shared Network port is available on firmware versions 1.60 or greater and ProLiant G4 servers.
Dial-up support	Integrated Lights-Out supports dial-up access when using a modem router or external Remote Access Service (RAS) connection to log on to the network.
Virtual Private Network (VPN) support	Integrated Lights-Out functionality is available around the world when used in conjunction with VPN technology.
Browser Accessible	Integrated Lights-Out is fully accessible by means of Microsoft® Internet Explorer 6.0, Netscape 7.2 (Linux clients only), and Mozilla Firefox 1.7.3 (Linux clients only). This capability allows easy access to the features of Integrated Lights-Out, giving administrators full control over the remote host server's display, keyboard, and mouse, regardless of the state of the host server or operating system.

Standard Features

Command line accessible Firmware version 1.70 or greater supports the new industry standard command line, DMTF System Management Architecture for Server Hardware, Command Line Protocol and Draft Specification. Using the Command Line Protocol (CLP), customers can configure, update and operate all iLO functions including virtual power, display logs, and invoking the remote console or virtual serial port. In addition to allow a smooth transition to CLP, the Simple Command Line Interface introduced in iLO version 1.60 will continue to be supported in iLO version 1.70.

Integrated Lights-Out is also accessible from a command line over Telnet, Secure Shell and direct serial connection. Firmware version 1.70 or greater supports the new industry standard command line, DMTF System Management Architecture for Server Hardware, Command Line Protocol, and Preliminary Specification v 0.9. Using the Command Line Protocol (CLP), customers can configure, update and operate all iLO functions including virtual power, display logs, and invoking the remote console or virtual serial port.

Auto-Configuration of IP Address using DNS/DHCP Integrated Lights-Out provides automatic network configuration. Integrated Lights-Out comes with a default name and Dynamic Host Configuration Protocol (DHCP) client that leases an IP address from the DHCP server on the network. Integrated Lights-Out will register the device name with Domain Name Services (DNS) and Windows Internet Naming Service (WINS). For systems that do not use DNS/DHCP, Integrated Lights-Out allows static IP configuration.

Easy to set up and use An onboard ROM-based configuration utility allows fast and easy setup without additional software. The Integrated Lights-Out can also be setup via the browser or command line interface over the network. Integration with SmartStart Scripting Toolkit allows configuration of the card as part of the initial server deployment. For large deployments, the HP Lights-Out Configuration Utility can be used to configure groups of iLO processors, saving time and resources.

Local user accounts The Integrated Lights-Out supports up to 12 local user accounts with customizable access rights, individual logins and passwords.

Security Integrated Lights-Out provides strong security for remote management in distributed IT environments by using industry-standard Secure Sockets Layer (SSL) encryption of HTTP data transmitted across the network. SSL encryption (128-bit) ensures that the HTTP information is secure as it travels across the network.

In addition, integrated Lights-Out uses Secure Shell version 2 to provide strong authentication and encryption of commands executed on iLO management processors over a network. PuTTY and OpenSSH clients may be used to access iLO over a Secure Shell connection.

Integrated Lights-Out tracks all login attempts and maintaining a record of all login failures. When login attempts fail, Integrated Lights-Out also generates alerts and sends them to a remote management console. Integrated Lights-Out also provides logging of user actions in event log, progressive delays for failed login attempts, and login legal warning.

Standard Features

Group Administration & Action

Group administration simplifies an IT administrator's task of configuring and managing large deployments of Integrated Lights-Out processors. Using the HP Lights-Out Configuration Utility, an administrator can easily configure network settings, global settings, and activate the ProLiant Essentials iLO Advanced Pack license keys on a group of Integrated Lights-Out processors at a time. This can be performed in a batch process or by using HP System Insight Manager's powerful device query mechanism. Integrated Lights-Out also allows group actions on one or many servers including controlling the power switch, rebooting, retrieving important blade topology information, and switching on/off the Unit ID LED using scripts. In addition, group actions can be executed from the HP SIM menu with iLO firmware v 1.70 or greater.

Remote Firmware Update

This feature ensures that Integrated Lights-Out is always up-to-date with the latest firmware available from HP. Updates to the ROM code on Integrated Lights-Out are accomplished through the browser interface, XML scripting, or using an online flash components for Windows and Linux.

Auxiliary Power

The Integrated Lights-Out management processor obtains its power from the auxiliary power plane of the server. If the server provides Redundant Power Supplies (RPS) then Integrated Lights-Out will use redundant power and will continue operation in the event of a power supply failure

HP Systems Insight Manager, Insight Manager 7 and System Management Home Page Integration

HP Systems Insight Manager and Insight Manager 7 discover all Integrated Lights-Out devices installed in servers on the network as management processors. The management processors are associated with the servers in which they are installed. Systems Insight Manager and Insight Manager 7 provide hyperlinks on the server device pages to launch and connect to Integrated Lights-Out. In addition, all Integrated Lights-Out devices can be grouped together logically, displayed on one page and issued group action commands from the HP SIM menu bar. This capability provides access to Integrated Lights-Out from one point in Systems Insight Manager and Insight Manager 7. Combined with System Management Home Page, Integrated Lights-Out provides remote access to system management information through the Integrated Lights-Out Web browser interface.

Headless Server Deployment

Enables deployment of headless servers in a data center, eliminating the need to have a monitor, keyboard, mouse, and switch box in every rack. Provides superior cable management by reducing the required external cables from five to three per server.

Alert Administration

Provides support for delivery of SNMP server agent and Integrated Lights-Out generated alerts to a management console such as HP Systems Insight Manager. Traps forwarded by the processor can be configured in Insight Manager for delivery to an administrator's pager or e-mail.

Integrated Management Log

Integrated Lights-Out manages the server's Integrated Management Log that can be accessed using a supported browser, even when the server is not operational. This capability can be helpful when troubleshooting remote host server problems.

Integrated Lights-Out Event Log

It includes a detailed event log independent of operating system, which is easily accessible through the browser or through Insight Manager. User actions like server power on/off, reset, changes in user configuration, clear event log, successful and unsuccessful login attempts are logged in the Integrated Lights-Out Event Log enabling auditing of user actions by the supervisor.

Standard Features

Advanced Server Management (ASM)

The Integrated Lights-Out management ASIC includes all of the Health and Wellness features of the Advanced Server Management controller. The Health drivers interface with the iLO ASIC to provide system management support, including monitoring of server components, event logging, and support for the Management Agents.

System Diagnostics

Integrated Lights-Out may be used to diagnose systems. The Remote Console may be used to monitor the system for POST error messages, the Integrated Management Log and iLO Event Log record events useful for diagnostics, Virtual Media (if activated by an iLO Advanced key) may be used to boot and run System Diagnostics. A new feature with Integrated Lights-Out is the ability to record server "Port 84 POST Codes" as the system boots. These codes document the progress of the server through the booting process.

Microsoft Emergency Management Service Console Integration

The Microsoft Emergency Management Service console provides a text-based screen to access the host server. Integrated Lights-Out provides the option to access the EMS console from the Integrated Lights-Out browser interface. The Emergency Management Service console option will be available on future ProLiant servers using Windows Server 2003 (when available).

Virtual Serial Port

The Virtual Serial Port provides a text-based screen to access the host server's serial console over an Ethernet network. Integrated Lights-Out provides the option to access Microsoft Emergency Management Services on systems running Windows Server 2003 and serial tty sessions on systems running Linux operating systems.

ProLiant BL p-class support

Integrated Lights-Out resides on each ProLiant BL p-class server blade and incorporates new functionality in its firmware to support the specific modular infrastructure of the ProLiant BL p-class system. The Integrated Lights-Out allows the p-class blades to be easier to deploy and manage. The new Static IP Bay Configuration feature further simplifies deployment by automatically assigning IP addresses from a reserved static pool as blades power on even if DHCP is present.

Integrated Lights-Out Standard & Advanced

The Integrated Lights-Out supports all the standard and advanced features on the p-class blade systems. The p-class blades ship from the factory with the Integrated Lights-Out Advanced feature set enabled, allowing the administrator to have full use of the robust graphical remote console and virtual media. Customers have the ability to view the server console at all times, to apply software and firmware updates remotely, to access troubleshooting information, and to reset the server and watch the entire reboot sequence from the convenience of a client browser.

Diagnostic Port & POST LED Indicator

For convenient walk-up access or in the event that some portion of the network is down and the administrator cannot reach the Integrated lights-Out through the network, the p-class blade is equipped with an "iLO Diagnostic Port" that guarantees access to Integrated Lights-Out. The Integrated Lights-Out has been designed to provide feedback during the POST process as a blade system does not include a directly attached monitor. The Integrated Lights-Out blinks the Server Health LED during the boot process to enable the onsite administrator the results of the POST process.

Standard Features

Power Allocation & Release

One of the primary responsibilities of Integrated Lights-Out in the server blade architecture is to assist in managing the power resources. In order for a server blade to power on, the necessary power must be available from the infrastructure. Integrated Lights-Out ensures that there is enough power available by acting as an intelligent conduit to the server blade infrastructure and its Power Management Module.

Infrastructure Communication

The Integrated Lights-Out enables administrators to easily configure and manage the entire infrastructure of the p-class system, thereby reducing the complexity of the modular nature of the p-class. Integrated Lights-Out includes a separate tab in the web interface that only appears on ProLiant BL p-class systems. This web page provides specific information and configuration abilities applicable to the blade system. The Integrated lights-Out web interface provides user-level diagnostics of the rack infrastructure. This includes information on temperatures, fans, Unit ID LED, the presence of power supplies, firmware revisions and serial numbers of the blade and enclosure management modules. Integrated Lights-Out provides the communication mechanism to propagate alerts throughout the infrastructure. It can also forward SNMP alerts to Insight Manager 7 or other SNMP-based management consoles. These iLO SNMP alerts include server events, such as a host server reset, thermal and power alerts generated by the Enclosure Manager and Power Supply Manager and iLO events such as unauthorized login attempt.

Advanced Features

Integrated Lights-Out Advanced & Integrated Lights-Out Select Features on iLO Management Processors

iLO Advanced Pack

iLO Advanced licenses provide an easy key-activated upgrade to full Lights-Out functionality on HP ProLiant ML and DL servers. Using HP iLO Advanced features; IT managers can perform most server management and administration tasks without physically visiting ProLiant ML and DL servers. Although feature activation varies somewhat, iLO Advanced Packs support first generation iLO and iLO 2 management processors

iLO Select Pack

iLO Select licenses provide a cost-effective upgrade to full Lights-Out functionality on ProLiant servers in two specific environments, ProLiant Server Blades and ProLiant ML/DL servers managed with remote consoles available in iLO 2 Standard Blade Edition and iLO 2 Standard, respectively. (Full graphic console is standard on ProLiant BL server blades and the standard remote serial console is typically used on all HP ProLiant ML, DL and BL servers running Linux operating systems.) Although feature activation varies somewhat, iLO Select Packs support first generation iLO and iLO 2 management processors.

Virtual Graphical Remote Console (iLO Advanced only)

Integrated Lights-Out provides embedded hardware Graphical Remote Console capabilities that can turn a supported browser into a virtual desktop, giving the user full control over the display, keyboard, and mouse of the host server. The operating system-independent console supports graphic modes that display remote host server activities, such as shutdown and startup operations. It works with a standard browser and no additional software is required on the remote server or client system. iLO firmware v 1.75 and later feature mouse enhancements that improve performance using absolute positioning technology.

Virtual Media (iLO Advanced and iLO Select)

The USB-based Virtual Media feature allows an IT administrator to boot the remote server using a standard 1.44-MB diskette on the client machine, a DVD/CD drive or USB flash drive on the client machine, or the image of a floppy diskette or DVD/CD from anywhere on the client's network. After the remote server has booted a USB-capable operating system (e.g., Windows® 2000, Windows 2003, or Red Hat Linux 7.2), the virtual device or ISO 9660 image is available as if it were a local USB device. The Virtual Media features save time and increase efficiency by eliminating the need to visit the remote server just to insert and use a diskette or DVD/CD. This feature allows administrators to carry out any of the following functions remotely from an applet user interface, command line or script.

Directory Integration (iLO Advanced and iLO Select)

Integrated Lights-Out Advanced integrates with enterprise-class directory services to provide secure, scalable, and cost effective user management. Directory services, such as Microsoft Active Directory and Novell eDirectory, can be used to authorize directory users with assigned user roles to Integrated Lights-Out processors. With Active Directory, customers have the flexibility to integrate with or without a schema extension. An easy and reliable installation program is available to install a management console snap-in and extend customer's existing directory schema to enable directory support for the HP lights-out management products. A directory migration tool is available to automate setup for both methods of integration. Firmware version 1.91 and greater also supports the Active Directory nested groups feature.

Multi-factor authentication (iLO Advanced and iLO Select)

Integrated Lights-Out Advanced provides advanced user authentication with two-factor authentication using digital certificates embedded on smartcards or USB flash drives. Using this form of strong authentication, iLO access can be restricted only to IT individuals possessing a certificate bearing smartcard or flash drive and a PIN.

Advanced Features

Terminal Services Integration (iLO Advanced and iLO Select) Integrated Lights Out integrates with Microsoft Terminal Services to provide a high performance graphical remote console by automatically or manually switching to Microsoft Terminal Services when the operating system is fully loaded and available on the host system. When the operating system is not operational, iLO continues to provide its secure, hardware-based Lights-Out console for end-to-end remote access to the host server. In addition, the Microsoft Terminal Services session is routed through the iLO network interface to improve production network security.

Remote Kernel Debugger for Windows (iLO Advanced and iLO Select) Integrated Lights-Out allows you to connect a Microsoft Windows debugger running on a remote PC to the iLO Virtual Serial Port(VSP) to diagnose and repair operating system kernel errors.

HP BladeSystem server configuration and setup (iLO Advanced) Integrated Lights-Out provides enhanced initial HP BladeSystem configuration and setup using the familiar iLO interface. An embedded wizard guides users through initial iLO processor, blade server and operating system configuration and installation including integrated activation of Virtual Media using the appropriate media such as SmartStart and OS CDs or ISO 9660 images. In addition, iLO automatically renders an HP BladeSystem rack image for easy point and click navigation between blades and enclosures within a single rack.

Compatibility **Servers ProLiant Family** Please see the following URL for the latest list of supported servers:
<http://h18013.www1.hp.com/products/servers/management/riloe2/supported-servers.html>

Options

ProLiant Essentials Integrated Lights-Out Advanced Pack

Integrated Lights-Out Advanced Pack provides HP customers with an easy upgrade to full Lights-Out functionality on their Integrated Lights-Out Standard enabled ProLiant servers. The Integrated Lights-Out Advanced Pack features Virtual Graphical Console, Microsoft Terminal Services integration, Virtual Media (floppy, CD, USB flash drive and image), directory services integration and multi-factor authentication that offer IT managers with true virtual presence and control of their distributed remote sites and data centers. Using the Integrated Lights-Out Advanced, IT managers can perform all the "in-front-of-the-server" functions such as deployment, diagnostics, ROM upgrades, configuration, and maintenance without physically visiting the server.

Licensing and Packaging

iLO Advanced and iLO Select Packs are licensed to provide customers with choices that meet a variety of needs. Licenses for both products may be purchased on an individual basis or as part of an Insight Control software suite.

Effective on July 9, 2007, HP will provide Technical Support and Update Services for iLO Advanced and iLO Select when purchased with any Insight Control suite or iLO Power Management Pack. See the Software Support section below for more details

Also, effective July 9, 2007, individual iLO Advanced and iLO Select Pack license keys may be purchased for a one-time activation of licensed features in the version of iLO firmware on the iLO management processor at the time of key installation. After the initial activation, functional upgrades will require the purchase of upgrade license keys to activate new features and enhancements introduced in iLO firmware upgrade versions following version 1.91.

One license is required for every server on which the product is installed and used. Licenses are non-transferable. Full details are contained in the End User License Agreement.

HP will continue to provide fixes and iLO Standard and iLO Standard Blade Edition feature enhancements at no extra charge.

iLO Advanced Pack Evaluation License

A FREE license key is available to temporarily activate iLO Advanced or iLO Select features for evaluation purposes. The evaluation key unlocks all of the industry-leading remote management on supported ProLiant servers up to 60 days. The same key may be used to activate features on iLO or iLO 2 management processors. Evaluation keys are available at: <http://www.hp.com/go/tryessentials>.

1-Server License

Contains one license with unique license activation key, end user license agreement and license key installation card. For use on a single server.

NOTE: License keys will activate features on iLO or iLO 2 management processors.

Flexible-Quantity License Kit

The quantity ordered of this part number will be the quantity of licenses included in the kit along with a corresponding activation key. Use the same key to activate all licenses up to the actual quantity ordered. For a given order, one kit will be delivered with the licenses, activation key, and a single set of product documentation.

NOTE: License keys will activate features on iLO or iLO 2 management processors.

Options

Activation Key Agreement The activation key program is provided for customers who plan to purchase ProLiant Essentials products periodically over a 1 to 3 year timeframe. The program is a way for HP to customers under contract to pay for each license of the value pack software as it is used. Customers are provided a single key to deploy throughout their network.

NOTE: Nothing is delivered in conjunction with the purchase of this part number. Visit: <http://h18013.www1.hp.com/products/servers/proliantessentials/license/licenseops.html> for more information on Activation Agreements.

To order the ProLiant Essentials Integrated Lights-Out Advanced Pack or ProLiant Essentials iLO Select Pack contact your HP Account Manager or HP Authorized Reseller, or go online at: <http://www.hp.com/servers/ilo>.

NOTE: License keys will activate features on iLO or iLO 2 management processors.

For more information regarding ProLiant Essentials Software and the ProLiant Essentials Integrated Lights-Out Advanced Pack visit: <http://www.hp.com/servers/manage>.

Warranty HP will replace defective delivery media replacement for a period of 90 days following the date of purchase.

Related Options

HP Insight Control Environment Packs

HP Insight Control Environment for HP ProLiant ML/DL Servers

Featuring: The Insight Control Environment includes a single product key to license ProLiant Essentials Performance Management Pack, ProLiant Essentials Vulnerability and Patch Management Pack, and Insight Power Manager, plus separate product registration codes to license the ProLiant Essentials Rapid Deployment Pack and iLO Advanced Pack

HP Insight Control Environment, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 452148-B22

NOTE: Contains 1 license for each of RDP, PMP, VPM, IPM and iLO Advanced. Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Control Environment, No Media, Flexible-Quantity License, including 1 year of 24x7 Technical Support and Updates 452149-B22

NOTE: This part number can be used to purchase multiple licenses (minimum quantity of 5). The quantity ordered of this part number will be the quantity of licenses for each of RDP, PMP, VPM, IPM and iLO Advanced included in a single kit. Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Control Environment, No Media, 10-Server Licenses including 1 year of 24x7 Technical Support and Updates 452676-B22

NOTE: Contains 10 licenses for each of RDP, PMP, VPM, IPM and iLO Advanced. Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP iLO Advanced Pack Upgrade to Insight Control Environment, No Media, Flexible Quantity License including 1 year of 24x7 Support 464063-B21

NOTE: This part number can be used to purchase multiple licenses with a single activation key. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service

HP iLO Advanced Pack Upgrade to Insight Control Environment, Flexible Quantity License including 1 year of 24x7 Support, Electronic T9404AAE

NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customer will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: Electronic LTUs are only available through limited points of sales; if not available, order a printed license entitlement certificate (xxxxxx-B2x) instead.

HP Insight Control Environment, No Media, Tracking License, including 1 year of 24x7 Technical Support and Updates 452150-B21

NOTE: For use with signed and implemented Activation Key Agreements (AKA) only. Purchase of this part number entitles the customer to deploy additional licenses of the product under the terms of the existing Activation Key Agreement. Includes one year of 24 x 7 HP Software Technical Support and Update Service. No physical components or license keys are delivered in conjunction with the purchase of this part number. For more information on Activation Key Agreements please visit:

<http://h18004.www1.hp.com/products/servers/proliantessentials/license/akalic.html>

HP iLO Advanced Pack Upgrade to Insight Control Environment, No Media, Tracking License including 1 year of 24x7 Support 492315-B21

NOTE: For use with signed and implemented Activation Key Agreements (AKA) only. Purchase of this part number entitles the customer to deploy additional licenses of the

Related Options

product under the terms of the existing Activation Key Agreement. Includes one year of 24 x 7 HP Software Technical Support and Update Service. No physical components or license keys are delivered in conjunction with the purchase of this part number. For more information on Activation Key Agreements please visit:

<http://h18004.www1.hp.com/products/servers/proliantessentials/license/akalic.html>

HP Insight Control Environment, Tracking License, without 1 year of 24x7 Technical Support and Updates 436278-B21

NOTE: Tracking licenses may only be purchased by customers that have implemented an activation key agreement (AKA) with HP. Only customers that have implemented an AKA agreement prior to July 9, 2007 should purchase tracking licenses without 24 x 7 support.

HP Insight Control Environment for HP BladeSystem

HP Insight Control Environment for BladeSystem, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 453484-B21

NOTE: Contains 1 license for each of RDP, PMP, VPM, IPM and iLO Select. Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Control Environment for BladeSystem, No Media, Flexible-Quantity License, including 1 year of 24x7 Technical Support and Updates 436749-B22

NOTE: This part number can be used to purchase multiple licenses (minimum quantity of 5). The quantity ordered of this part number will be the quantity of licenses for each of RDP, PMP, and VPM included in a single kit. Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Control Environment for BladeSystem, No Media, 8-Server Licenses, including 1 year of 24x7 Technical Support and Updates 436747-B22

NOTE: Contains 8 licenses for each of RDP, PMP, VPM, IPM and iLO Select. Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Control Environment for BladeSystem, No Media, Tracking License, including 1 year of 24x7 Technical Support and Updates 437786-B22

NOTE: For use with signed and implemented Activation Key Agreements (AKA) only. Purchase of this part number entitles the customer to deploy additional licenses of the product under the terms of the existing Activation Key Agreement. Includes one year of 24 x 7 HP Software Technical Support and Update Service. No physical components or license keys are delivered in conjunction with the purchase of this part number. For more information on Activation Key Agreements please visit:

<http://h18004.www1.hp.com/products/servers/proliantessentials/license/akalic.html>

NOTE: Tracking licenses may only be purchased by customers that have implemented an activation key agreement (AKA) with HP. Only customers that have implemented an AKA agreement prior to July 9, 2007 should purchase tracking licenses without 24 x 7 support.

HP Insight Control Management Software Media Kit 436222-B21

NOTE: Insight Control Management DVD media without licenses. Contains Insight Manager and Essentials software products and components licensed by Insight Control Management suites. Uses an integrated installer to perform quick and accurate software installation and updates.

Technical Specifications

Architecture	32-bit PCI-based health and remote management ASIC
Processor	32-bit RISC processor core running at 66MHz
Upgradeability	Option firmware upgradeable via Flash ROM.
Video Support	Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colors), 800 x 600 (256 to 16.7M colors), 1024 x 768 (256 to 65K colors), 1280 x 1024 (256 colors)
Interfaces	One dedicated Ethernet network connection (10/100 Mb/s) One shared Ethernet network connection via one of the embedded 1Gb/s system network interfaces
Memory	2 MB Flash ROM 8 MB SDRAM
Operating System Support	Microsoft Windows 2000 Server and Advanced Server Microsoft Windows Server 2003, Standard Edition, Web Edition, Enterprise Edition, SBS Edition, x64 bit Edition Red Hat Enterprise Linux SUSE LINUX Enterprise Server Novell NetWare 5.1, 6.5 NOTE: For more Linux OS support & certification information, please visit our the HP ProLiant & Bladesystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hplinuxcert.html
Client System Support	Microsoft 2000 Professional Microsoft Windows Server 2003 Microsoft Windows XP Professional Edition Red Hat Enterprise Desktop 4.00 Novell/SUSE Linux Desktop 9
Client Browser Support	Microsoft Internet Explorer 6.0 SP1 or later Firefox 1.0 (on supported Linux client systems) Mozilla 1.75 (for supported Linux client systems)
Command Line Support	Telnet, Secure Shell and serial port access
Security	Secure Socket Layer Secure Shell version 2 (Password and certificate)
Directory Support Services	Active Directory V1.0 (Windows 2000, 2003) Novell eDirectory V8.6.2, V8.7 (Novell NetWare 5.X, 6.X, Red Hat 7.1, Windows 2000, Windows Server 2003)
Driver Support	Health Driver (iLO Advanced Server Management Controller Driver) iLO Management Interface Driver

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