Overview

HP Lights-Out 100i (LO100i) provides IPMI, DCMI, and SMASH system management capabilities which are activated for additional functionality with LO100i Advanced licenses for HP ProLiant 100 series servers at affordable price-performance levels. It allows customers, or their service providers, to remotely manage their servers over a LAN or the Internet from anywhere, anytime regardless whether the server is located in the same building, across town, or around the globe.

With HP ProLiant LO100i, users can remotely access a server's serial and Telnet consoles and monitor system environmental conditions from a browser or command line. Advanced Licenses enable virtual KVM and virtual media as well as offer secured browser and command line access. "At-the-server" remote control means you can stay in control of HP ProLiant 100 series servers for administration, troubleshooting and maintenance over a network.

LO100i offers the following features and capabilities:

- LO100i Standard features are included with the purchase of any HP ProLiant 100 series server and offer a set of basic remote control and management capabilities.
- LO100i Advanced Licenses are optional key activated value packs that enable virtual KVM and virtual media as well as secured browser and command line access to the LO100i management processor. Licensing versions are based on server generations:
    - Version 2.10 for the HP ProLiant DL140 G3 and DL145 G3 contains graphical remote console, floppy and CD virtual media and SSL/SSH security as licensable features.
    - Version 3.0 is for the HP ProLiant DL160 G5, DL165 G5 and DL185 G5 servers. It features, as part of its licenses, the addition of USB 2.0 and DVD-ROM virtual media support and an enhanced browser interface. LO100i Advanced Pack support provides protocol support for much faster transfer speeds plus simplified virtual media (floppy and CD with no TFTP server requirements). Additionally virtual KVM OS-independent remote graphical console is provided.
    - Version 4.0 is for the whole line of HP ProLiant 100 Generation (G6) series servers, all of which incorporate the LO100i and offer the optional LO100i Advanced Licenses. SSH and SSL are standard (free) and not licensable with this version.
- License types supported are:
    - Flat Pack licenses (consisting of an envelope containing a license entitlement certificate, a software process change card, a license key request form, and a mailing envelope). Flat packs deliver single and flex entitlement certificates and are offered instead of CD kits.
    - Support for LO100i Advanced Pack Electronic Licenses (available through limited points of sales)
    - EULA licenses with a one-time, optional, license activation key.

A license entitlement certificate will be delivered in place of a license activation key. The license entitlement certificate will be delivered via physical shipment for existing product numbers (with the exception of tracking licenses) and via e-mail for the new electronic license product numbers. It will contain information needed to redeem license activation key(s) online or via fax. This new electronic redemption process will allow for easier license management and better service and support tracking. For more information, please visit: http://www.hp.com/go/ICe-license. For more information about these options, please see the licensing section below or visit: www.hp.com/go/lo100

QuickSpecs

Overview

What's New

- LO100 is now available on all HP ProLiant 100 series G6 servers as a standard offering which helps reflect the powerful collection of embedded management capabilities across the HP ProLiant portfolio.
- Newer Features include:
  - LO100i Advanced Licenses options for all HP ProLiant 100 series G6 servers
  - Better alignment with iLO - all HP ProLiant 100 series G6 servers support LO100i (no LO100c option)
  - TS&U & upgrade licensing for HP ProLiant 100 series G5 and G6 servers
  - Enhanced HP ProLiant 100 series G6 server NIC sideband support
  - Improvements to HP SIM support thru the addition of Insight Management (SNMP) Agents to HP ProLiant 100 series G6 servers
  - IPv6 support std added as a feature to HP ProLiant 100 series G6 servers (coexistence at launch)
  - SSL & SSH security (now a standard feature with setup in factory for HP ProLiant 100 series G6 servers)
  - DCMI 1.0 support (standard feature for HP ProLiant 100 series G6 servers)

NOTE: As of January, 2009, LO100i Select Pack Licenses for the DL160 G5, DL165 G5 and DL185 G5 servers are no longer being offered.
NOTE: LO100i Select will continue to be available for the HP ProLiant DL100 series Generation G3/G4 servers for the duration of their life cycle.

HP ProLiant Lights-Out 100i
Standard Features

Remote Serial Console LO100i standard provides access to the host server's serial, text-based console over an Ethernet network. From the operating system-independent console you can access BIOS and POST screens during startup as well as Microsoft Emergency Management Services on systems running Windows Server 2003 and 2008 and serial tty sessions on systems running Linux operating systems.

Virtual Power Button Using a supported browser interface or command line, HP Lights-Out 100i 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 HP Lights-Out 100i. You can also power off and on the server in one step.

Remote environmental monitoring

Remote environmental monitoring with HP ProLiant 100 Series G6 servers
With the introduction of HP ProLiant 100 series G6 servers, LO100i has similar integration to HP Systems Insight Manager as HP ProLiant 300 series and above; so remote environmental monitoring is available. Through SNMP agents; processor information and indicators are monitored as well as memory information and indicators. Other capabilities are

- The ability to monitor PCI devices and system slot info; sensor info and indications, including redundancy, fans, temperature sensors, power supplies, ASR, and unit ID visual indicators, and computer system info, including physical location, IML, system ROM, and aggregate system status.
- Network agents give information on the network controller and indications
- Storage agents give info for information on the storage controller and indications
- Indications (Alerts) are logged to system event logs

HP ProLiant 100 series Insight Management agents are more limited than on HP ProLiant 300 series and above; hence environmental monitoring is more limited since the LO100i can only report what is provided to it; e.g.:

- Health monitoring is limited to disk, fans, network, power supplies and temperature. (HP ProLiant 300 series and above have additional capabilities in the areas of memory, processors, fan redundancy, hardware logs, power metering, NMI logging as well as monitoring pre-failure thresholds.)
- Alerting for HP ProLiant 100 series provides basic alert notification. (HP ProLiant 300 Series and above have additional protection of critical server components by providing pre-failure alert notifications on memory, processors, and storage.)
- HP ProLiant 100 & 300 series and above provide the same performance monitoring capabilities by providing info on CPU, Memory, Disk free space, Network Utilization and I/O.

Remote environmental monitoring with earlier generation models
HP Lights-Out 100i enables operating system-independent remote monitoring of system temperature, fans and voltage via the browser and command line interfaces.

Standard Features

Browser access
HP Lights-Out 100i is fully accessible by means of Microsoft® Internet Explorer 6.0 SP1 (Windows clients), Internet Explorer 7.0 SP1 on Windows Vista clients with Windows Vista hot fix support, Firefox 1.5 (Windows and Linux clients) and Mozilla 1.7.12 (Windows and Linux clients) or later. This capability allows easy access to the features of HP Lights-Out 100i from standard browsers. LO100i Advanced provides Secure Socket Layer security as a standard feature for HP ProLiant 100 series G6 servers or as an upgrade option (G3 and G5) to protect data communication.

Command line access
HP Lights-Out 100i is accessible using the industry standard command line, System Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) over a Telnet or serial interface. LO100i Advanced provides Secure Shell security as a standard feature (HP ProLiant 100 series G6 servers) or as an upgrade option to protect data communication.

IP Configuration
HP Lights-Out LO100i supports static IP addresses and automatic network configuration using Dynamic Host Configuration Protocol (DHCP).

User Accounts
HP Lights-Out LO100i supports fifteen operator user accounts with four privilege levels including administrator, operator, OEM, and user with designated roles for each. The administrator account allows access to all commands and configuration options. The operator account allows execution of all commands but prevents access to user account and LO100i configuration.

System Event Log
HP Lights-Out LO100i captures and stores the IPMI event log for access via browser or command line even when the server is not operational. This capability can be helpful when troubleshooting remote host server problems.

Network Connectivity
HP Lights-Out LO100i is accessible via a shared system NIC or via a dedicated management NIC (this may vary by server model). The shared NIC allows connectivity to the management processor for LO100i features only without an extra port for each server. In addition to support for the licensable Virtual KVM and Virtual Media features, the dedicated NIC allows customers to isolate management processor access on a separate network or just provide an alternate path in the event the system NIC is not available.

Standard Features

Integration with HP
Systems Insight Manager

Integration with HP Systems Insight Manager with HP ProLiant 100 Series G6 servers
With the introduction of HP ProLiant 100 series G6 servers, LO100i has similar integration to HP
Systems Insight Manager (SIM) that is available on HP ProLiant 300 series and above because these
servers now offer the HP Insight Management Agents, a well established management and Internet
standard that provides these basic capabilities:

- Server Agents
  - Processor information and indications
  - Memory information and indications
  - PCI devices and system slot info
  - Sensor info and indications, including redundancy, fans, temperature sensors, power
    supplies, ASR, and unit ID visual indicator
  - Computer system info, including physical location, IML, system ROM, and aggregate
    system status
- Network Agents
  - Network controller info and indications
- Storage Agents
  - Smart Array storage controller info and indications
- Indications (Alerts) are logged to system event logs

NOTE: HP ProLiant 100 series Insight Management Agents are more limited than on HP ProLiant 300
series and above; consequently LO100i will only report what is provided to it. Health monitoring is
limited to disk, fans, network, power supplies and temperature. Alerting for HP ProLiant 100 series
provides basic alert notification. HP ProLiant 100 & 300 series and above provide the same
performance monitoring capabilities, however, by providing info on CPU, memory, disk free space,
network utilization and I/O.

Integration with HP Systems Insight Manager with earlier generation models
Integration with HP Systems Insight Manager (SIM) is limited for LO100i with the earlier HP ProLiant 100
series Generations prior to G6 servers. HP Systems Insight Manager is able to discover and associate HP
Lights-Out 100i management processors and provides links to launch it from a browser. This centralized
access simplifies management in environments with large numbers of HP ProLiant 100 Series servers with
Lights-Out 100i deployed at remote sites.

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Optional Features

HP ProLiant Lights-Out 100i
Advanced Pack Features

Virtual KVM graphic console

LO100i graphical consoles provide Virtual KVM capabilities with KVM over IP performance. This gives system administrators a single console that is responsive and agile for both in-band and out-of-band server administration. LO100i Virtual KVM works with a standard browser and no additional software (other than a Java runtime environment) is required for operation.

Virtual Media

Version 4.0 for the HP ProLiant 100 series G6 servers supports all the features of the V2.1 and V3.0. It is offered in Advanced Pack licenses only.

With Version 3.0, the features of Version 2.10 are supported plus enhancements to virtual media with the addition of support for USB 2.0 and DVD-ROM drives. Servers supported are all HP ProLiant DL100 G5 servers that have the embedded remote management processor and support the LO100i Advanced Licenses.

Version 2.0 supports LO100i Virtual Media on Advanced and Select licenses and allows a floppy diskette image or ISO 9660 image on a client PC to appear locally connected to a remote server with a LO100i management processor. The Virtual Media features save time and increase efficiency by eliminating the need to visit servers in datacenters and remote sites just to insert a diskette or CD to update software or firmware. Servers supported are the HP ProLiant DL140 G3 and DL145 G3.

Secure Socket Layer and Secure Shell Security

HP Lights-Out 100i Advanced provides a secure remote management environment using industry standards, Secure Sockets Layer (SSL) and Secure Shell (SSH), to secure public and private network communication with the LO100i management processor using browser and command line access. SSL and SSH prevent unauthorized access to LO100i and protect data communicated over networks. This upgrade is recommended to ensure secure network communication over Internet links when using any LO100i features. These features become standard with the HP ProLiant 100 series G6 servers.

Compatibility

HP ProLiant 100 Series Servers

Embedded LO100i Version 4.0 and its Advanced licenses are compatible with all HP ProLiant G6 servers.

Embedded LO100i Version 3.0 and its Advanced licenses are compatible with the HP ProLiant DL160 G5, DL165 G5 and DL185 G5 servers.

Embedded LO100i Version 2.10 and its Advanced and Select licenses are compatible with the HP ProLiant DL140 G3 and DL145 G3 servers.

Value Pack Options

Lights-Out 100i Advanced Pack	The HP Lights-Out 100i Advanced Pack provides HP customers with an easy upgrade to a complete set of entry level Lights-Out functionality on supported HP ProLiant 100 Series Servers that are typically managed from a graphic console. The LO100i Advanced Pack enables the Virtual KVM Remote Console and Virtual Media. Using LO100i Advanced, IT managers can perform essential "in-front-of-the-server" hardware management and system administration without physically visiting the server. Secure Socket Layer and Secure Shell encryption and authentication are now standard (free) with the G6 100 series servers.
Lights-Out 100i Select Pack	This product is discontinued on the HP ProLiant 100 series G5 servers and beyond. The HP Lights-Out 100i Select Pack provided HP customers with an easy upgrade to a complete set of entry level Lights-Out functionality for supported HP ProLiant DL100 Series Servers that are managed from a command line interface. The LO100i Select Pack enabled the Virtual Media and Secure Socket Layer and Secure Shell encryption and authentication. Using LO100i Select, IT managers can perform essential "in-front-of-the-server" hardware management and system administration without physically visiting the server. **NOTE:** Only available on Generation (G3/G4) HP ProLiant 100 series servers after 12.31.08.
Licensing and Packaging	HP Lights-Out LO100i is licensed to provide customers with choices that meet a variety of needs. • Single Server Advanced Licenses • Electronic Single Server Advance Licenses • Flexible-Quantity Advanced licenses • Tracking (AKA) Advanced Licenses Licenses are non-transferable. Full details are contained in the End User License Agreements.
Evaluation Licenses	FREE license keys are available to temporarily activate LO100i Advanced features for evaluation purposes. The evaluation key unlocks all of the industry leading remote management on supported HP ProLiant servers up to 60 days. Evaluation keys are available at: http://www.hp.com/go/tryessentials.
Single-Server License	Contains one license, a printed license entitlement certificate, end user license agreement, and license key installation card delivered via physical shipment. For use with a single server. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation keys. Available for: • All HP ProLiant 100 G6 series servers with embedded LO100i • HP ProLiant 100 G5 series servers with embedded LO100i (DL160 G5, DL165 G5 and DL185 G5 servers) with no media licenses in both flat packs and electronic delivery • HP ProLiant DL140 G3 and DL145 G3 servers in CD Kits only

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Value Pack Options

Electronic Licenses

Can be purchased as a single license or as multiple licenses with a single activation key. Contains license(s) for a customer defined quantity of servers, a license entitlement certificate for the quantity of licenses purchased, end user license agreement, and license key installation information delivered via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Only available through limited points of sales.

Electronic software is now available in most countries. HP recommends purchasing electronic products over physical products when available for faster delivery and the convenience of not having to manage-either file away or throw away-confidential paper licenses. For more information, please contact an HP representative.

Flexible Quantity License Kit

Used to purchase multiple licenses with a single activation key. Contains license(s) for a customer-defined quantity of servers, a license entitlement certificate for the quantity of licenses purchased, end user license agreement, and license key installation card delivered via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Available for:

- All HP ProLiant 100 G6 series servers with embedded LO100i
- HP ProLiant 100 G5 series servers with embedded LO100i (DL160 G5, DL165 G5 and DL185 G5 servers) with no media licenses
- HP ProLiant DL140 G3 and DL145 G3 servers in Option Kits only

Activation Key Agreement

The activation key program is provided for customers who plan to purchase LO100i Advanced Packs periodically over a 1 to 3 year time frame. The program is a way for HP customers under contract to pay for each license as it is used. Customers are provided a single key to deploy throughout their network.

NOTE: 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: To order the HP Lights-Out 100i LO100i Advanced Packs, contact your HP Account Manager or HP Authorized Reseller, or go online at: http://www.hp.com/servers/lightsout

NOTE: For more information regarding HP ProLiant HP Lights-Out 100i Advanced Packs visit: http://www.hp.com/servers/lightsout

Value Pack Options

Models

HP Lights-Out 100i Advanced Pack

HP LO100i Advanced Pack, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates	530521-B21
HP LO100i Advanced Pack License, including 1 year of 24x7 Technical Support and Updates, Electronic	TA859AAE

NOTE: Electronic software is available in all countries except China and Japan. For China and Japan should order the physical equivalent.

HP LO100i Advanced Pack, No Media, Flexible-Quantity License including 1 year of 24x7 Technical Support and Updates	530527-B21
HP LO100i Advanced Pack, Tracking License including 1 year of 24x7 Technical Support and Updates	530530-B21

NOTE: The above licenses support the embedded LO100i on ALL the HP ProLiant 100 G6 series servers as well as the HP ProLiant DL160 G5, DL165 G5 and DL185 G5 servers.

NOTE: The following licenses are for discontinued HP ProLiant 100 series G3/G4 servers and are included for reference only.

HP LO100i Advanced Pack 1-Server License	413115-B21
HP LO100i Advanced Pack Flex License	413116-B21
HP LO100i Advanced Pack Tracking License	413117-B21

NOTE: The above licenses support the embedded LO100i on the HP ProLiant DL140 G3 and DL145 G3 servers.

HP LO100i Select Pack 1-Server License	413111-B21
HP LO100i Select Pack Flex License	413112-B21
HP LO100i Select Pack Tracking License	413113-B21

NOTE: The above licenses support the embedded LO100i on the HP ProLiant DL140 G3 and DL145 G3 servers.

NOTE: Some of the above options may be discontinued.

Service and Support, HP Care Pack, and Warranty Information

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

Complete warranty can be found at: http://www1.itrc.hp.com/service/home/home.do

HP Services and Technical Support	HP offers a number of software support services, many of which are provided to customers at no additional charge.

SUPPORT AND SOFTWARE UPDATES
One year of 24x7 Software Technical Support and Software Updates service is included with HP LO100i software. For more information about this service, see: www.hp.com/services/insight. After HP processes your support registration, you will receive a Service Agreement Identifier (SAID). In order to receive the software updates that you are entitled to, you must use your SAID and access the Software Update Manager (SUM) at the HP IT Resource Center (ITRC) home page: http://www.itrc.hp.com.

COUNT ON HP FOR SOFTWARE SUPPORT SOLUTIONS
The following support uplift option is available:

- Three years of 24x7 Software Technical Support and Software Updates

To upgrade your support, or for technical issues using Insight Control products purchased through HP, please contact an HP support center:
http://welcome.hp.com/country/us/en/wwcontact_us.html

Join the Discussion
The HP Support Forum is a community-based, user-supported tool for HP customers to participate in discussions amongst the customer community about HP products. For discussions related to Insight Control and ProLiant Essentials software, see the "Management Software and System Tools" area.

Software and Drivers Download Pages
Provides latest software and drivers for your ProLiant products:

http://h20000.www2.hp.com/bizsupport/TechSupport/Home.jsp?lang=en&cc=us&prodTypeId=329290&prodSeriesId=440192&submit.y=11&submit.x=9&lang=en&cc=us

Management Security (http://www.hp.com/servers/manage/security)
HP is proactive in its approach to the quality and security of all its management software. Be sure to check this website often for the latest down loadable security updates.

For support questions in the U.S. that are not covered in any of the above services, please call 1-800-HP-INVENT (1-800-474-6836). (When prompted, say "Insight Manager.") HP Worldwide numbers for HP SIM, Insight Control, and ProLiant Essentials are available at:
http://www.hp.com/country/us/en/wwcontact.html.

HP Care Pack Information

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical. A full range of HP Care Pack hardware and software services are available including:
Installation and start up

Service and Support, HP Care Pack, and Warranty Information

Education courses

Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair

Comprehensive range of software technical support for Microsoft, Linux, HP ProLiant Essentials and VMW are-based IT solutions helping to deliver high level of application availability. Response times range from 30 minutes for critical problems to 2 hours.

System Management, Performance Services and Mission Critical Support Solution

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/carepack

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: http://www.hp.com/hps

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Related Options

Service and Support Offerings

NOTE: The following licenses provide service and support for HP ProLiant 100 series Generation 3 and Generation 4 servers.

HP LO100i Select Pack Non-Blade 1 year 24x7 Unlimited Software Technical Support	UF556E
HP LO100i Select Pack Non-Blade 3 year 24x7 Unlimited Software Technical Support	UF557E
HP LO100i Advanced Pack Non-Blade 1 year 24x7 Unlimited Software Technical Support	UF558E
HP LO100i Advanced Pack Non-Blade 3 year 24x7 Unlimited Software Technical Support	UF559E

NOTE: The following license provide service and support for HP ProLiant 100 series Generation 5 and Generation 6 servers.

HP LO100i Advanced Pack 3year 24x7 Software Support	UM748E

Technical Specifications

Architecture	32-bit health and remote management ASIC
Upgradeability	Flash upgradeable firmware
Network interfaces	100/100 Mbps dedicated Ethernet network connection
	One shared Ethernet connection
Management protocols	SMASH Command Line Protocol
	Intelligent Platform Management Interface (IPMI) 2.0
Security	Secure Socket Layer v3 with certificate/key server authentication and username/password (1.1 http extensions) client authentication.
	Secure Socket Layer v3 keyboard encryption
	Secure Shell v2 with certificate/key server authentication and username/password client authentication
Browser Support	Internet Explorer 6.0 SP1 on Windows clients
	Internet Explorer 7.0 SP1 on Windows Vista clients that may require Microsoft hot fix support
	Firefox 1.5 on Windows and Linux clients
	Mozilla 1.7.12 on Windows and Linux clients
Other client support	Secure Shell clients
	Telnet

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.