HP ProLiant Gen8 Server with HP iLO Management Engine
Setup Guide

Abstract

This document, intended for network administrators and installers, provides an overview of a single HP ProLiant Gen8 server installation and configuration for small businesses.

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1 Overview

This document provides an overview of the installation, local and remote configuration, and management software for HP ProLiant Gen8 servers.

HP ProLiant Gen8 servers are available in a wide variety of models to suit any environment. These servers, combined with the latest HP software, allow a tightly integrated experience.

This guide provides a high-level set of steps to setup and configure a single small business server, including:

- A setup checklist of materials to gather before you begin
- An overview of the software and configuration utilities offered on HP ProLiant Gen8 servers
- "Before you begin" (page 7)
- "Software and configuration utilities" (page 9)
- "Hardware installation and configuration" (page 21)
- "Booting for the first time" (page 27)
- "Post OS installation" (page 43)
- "Troubleshooting" (page 49)
- "Support and other resources" (page 51)

Each procedure is available with greater detail in separate documents. See Related information for a list of the available documents.

2 Before you begin

Visit the HP ProLiant Gen8 Server Management Information Library at:

http://www.hp.com/go/proliantgen8/docs

There you can find user guides, maintenance and service guides, white papers, tech briefs, instructions, best practices, helpful hints, and other useful links for setting up and configuring your server.

The information library also includes information and links to key documents about HP Smart Storage, the HP iLO Management Engine, Intelligent Provisioning, and more.

Setup checklist

To prepare for installing your new HP Gen8 server, gather the following information and items to simplify installation:

- Operating system installation media (Windows, Linux, VMware ESX) and product key — Installation can be from disc, network share, FTP, or USB. Be sure to have installation keys and read any implementation notices that accompany the OS.
- Network connectivity — Ensure that the LAN connection is active, and determine IP addresses to assign if you are using static IP addressing. If you plan to install the OS from a network share, have the server name or IP address, the share name, and a valid user name and password.
- Internet connectivity — Verify that there is a path from the LAN to the Internet when your new hardware is powered on, and make a note of the gateway to use (if present).
- USB storage device — Used for troubleshooting; the USB device stores an Active Health System log download that you can send to HP. USB storage devices are also ideal for storing an HP Service Pack for ProLiant (SPP).
- Power management plan — During initial (and future) HP ProLiant Gen8 server setup using Intelligent Provisioning you can choose between the following three power management choices:
  - Balanced power and performance
  - Minimum power usage
  - Maximum performance

  The power management plan chosen is automatically reflected in the RBSU. For more information about the power plan choices, see the *HP ROM-Based Setup Utility User Guide* at:

  http://www.hp.com/support/rbsu .

  Determine where an uninterruptable power supply (UPS) fits into your redundancy and safety strategy. For more information about HP ProLiant server power protection and management, see:

  http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html.
- Storage — Using the Array Configuration Utility in Intelligent Provisioning, you configure and manage the array controllers. This utility provides online, high-availability configuration, management, and diagnostic capabilities for all HP Smart Array products. This includes controller settings and configuration, physical drive write cache settings, and spare activation modes settings. You can group together the physical drives attached to each controller, and then further subdivide the available storage into logical drives to increase performance and fault tolerance.

- Component licenses for HP iLO 4— Your HP ProLiant Gen8 server has the standard version of iLO installed, which does not need separate component licenses. You can upgrade to iLO Advanced by acquiring the advanced license. Also note that iLO Advanced is included with the purchase of HP Insight Control. For more information, see the *HP iLO 4 User Guide*: http://www.hp.com/go/ilo.
- HP Service Pack for ProLiant (SPP) — During initial setup, HP recommends that you update the combined firmware, hardware, and OS drivers simultaneously using SPP. If you have a properly configured network and Internet connection during setup, the latest SPP can be downloaded and installed automatically (or loaded from a USB device) during initial setup. Download the main SPP ISO or OS-based server pack subset from HP at http://www.hp.com/go/spp/download.
- iLO administration plan — If you do not have DHCP enabled for iLO, you will need to have an iLO IP address to assign, along with iLO subnet mask, gateway address, and DNS name. Additionally, you might need to assign the domain name, DNS (secondary, and tertiary), and WINS servers (if used). Finally, determine the settings needed for remote command line access to the iLO configuration, including authentication, bit rate, and whether to enable SSH and on what port.
- Documentation — Every HP ProLiant Gen8 server comes with the following:
  - Documentation and instructions DVD
  - Setup poster
  - Warranty card (HP ProLiant ML and DL)
  - Read This First sheet
  - Rack server hardware installation kit and instructions (for rack servers)
  - Two chassis labels that show the following:
    - Motherboard schematic
    - Processor, fans, and cabling installation procedures

3 Software and configuration utilities

Server mode

The software and configuration utilities presented in this section operate in online mode, offline mode, or in both modes.

Software or configuration utility	Server mode
"HP iLO" (page 9)	Online and Offline
"Active Health System" (page 10)	Online and Offline
"Integrated Management Log " (page 11)	Online and Offline
"Intelligent Provisioning" (page 11)	Offline
"HP Insight Diagnostics" (page 11)	Online and Offline
"HP Insight Remote Support software " (page 12)	Online
"Erase Utility" (page 12)	Offline
"Scripting Toolkit " (page 13)	Online
"HP Service Pack for ProLiant " (page 13)	Online and Offline
"HP Smart Update Manager " (page 13)	Online and Offline
"HP ROM-Based Setup Utility" (page 14)	Offline
"Array Configuration Utility " (page 16)	Online and Offline
"Option ROM Configuration for Arrays " (page 17)	Offline
"ROMPaq utility" (page 17)	Offline

Server QuickSpecs

For more information about product features, specifications, options, configurations, and compatibility, see the QuickSpecs on the HP website (http://www.hp.com/go/productbulletin). At the website, choose the geographic region, and then locate the product by name or product category.

HP iLO Management Engine

The HP iLO Management Engine is a set of embedded management features supporting the complete lifecycle of all HP ProLiant Gen8 servers, from initial deployment through ongoing management.

HP iLO

HP iLO for HP ProLiant servers simplifies server setup, engages in health monitoring of power and thermal control, and promotes remote administration for all HP ProLiant servers. The iLO subsystem includes an intelligent microprocessor, secure memory, and a dedicated network interface. This design makes iLO independent of the host server and its operating system.

iLO enables and manages the "Active Health System" (page 10) and also features Agentless Management. All key internal subsystems are monitored by iLO. SNMP alerts are sent directly by iLO regardless of the host operating system or even if no host operating system is installed.

"HP Insight Remote Support software " (page 12) is also available in HP iLO.

Using iLO, you can do the following:

- Access a high-performance and secure Remote Console to the server from anywhere in the world.
- Use the shared iLO Remote Console to collaborate with up to six server administrators.
- Remotely mount high-performance Virtual Media devices to the server.
- Securely and remotely control the power state of the managed server .
- Have true Agentless Management with SNMP alerts from iLO regardless of the state of the host server .
- Access Active Health System troubleshooting features through the iLO interface.
- Register with HP Insight Remote Support (RS) software without installing any drivers or agents.

For more information about iLO features (which may require an iLO Advanced Pack or iLO Advanced for BladeSystem license), see the iLO documentation on the Documentation CD or on the HP website (http://www.hp.com/go/ilo/docs).

Active Health System

HP Active Health System provides the following features:

- Combined diagnostics tools/scanners
- Always on, continuous monitoring for increased stability and shorter downtimes
- Rich configuration history
- Health and service alerts
- Easy export and upload to Service and Support

The HP Active Health System monitors and records changes in the server hardware and system configuration. The Active Health System assists in diagnosing problems and delivering rapid resolution when server failures occur.

The Active Health System collects the following types of data:

- Server model
- Serial number
- Processor model and speed
- Storage capacity and speed
- Memory capacity and speed
- Firmware/BIOS

HP Active Health System does not collect information about Active Health System users' operations, finances, customers, employees, partners, or data center, such as IP addresses, host names, user names, and passwords. HP Active Health System does not parse or change operating system data from third-party error event log activities, such as content created or passed through by the operating system.

The data that is collected is managed according to the HP Data Privacy policy. For more information see the HP website (http://www.hp.com/go/privacy).

The Active Health System log, in conjunction with the system monitoring provided by Agentless Management or SNMP Pass-thru, provides continuous monitoring of hardware and configuration changes, system status, and service alerts for various server components.

The Agentless Management Service is available in the SPP, which is a disk image (.iso) that you can download from the HP website (http://www.hp.com/go/spp/download). The Active Health System log can be downloaded manually from iLO or HP Intelligent Provisioning and sent to HP. For more information, see the *HP iLO User Guide* or *HP Intelligent Provisioning User Guide* on the HP website (http://www.hp.com/go/ilo/docs).

Integrated Management Log

The IML records hundreds of events and stores them in an easy-to-view form. The IML timestamps each event with 1-minute granularity.

You can view recorded events in the IML in several ways, including the following:

- From within HP SIM
- From within operating system-specific IML viewers
  - For Windows: IML Viewer
  - For Linux: IML Viewer Application
- From within the iLO user interface
- From within "HP Insight Diagnostics" (page 11)

Intelligent Provisioning

Several packaging changes have taken place with HP ProLiant Gen8 servers: SmartStart CDs and the Smart Update Firmware DVD will no longer ship with these new server blades. Instead, the deployment capability is embedded in the server blade as part of HP iLO Management Engine's Intelligent Provisioning.

- Intelligent Provisioning is an essential single-server deployment tool embedded in HP ProLiant Gen8 servers that simplifies HP ProLiant server setup, providing a reliable and consistent way to deploy HP ProLiant server configurations.
- Intelligent Provisioning assists with the OS installation process by preparing the system for installing "off-the-shelf" versions of leading operating system software and automatically integrating optimized HP ProLiant server support software from SPP. SPP is the installation package for operating system-specific bundles of HP ProLiant optimized drivers, utilities, management agents, and system firmware.
- Intelligent Provisioning provides maintenance-related tasks through Perform Maintenance features.
- Intelligent Provisioning provides installation help for Microsoft Windows, Red Hat and SUSE Linux, and VMware. For specific OS support, see the *HP Intelligent Provisioning Release Notes*.

For more information on Intelligent Provisioning software, see the HP website (http://www.hp.com/go/ilo). For more information about Intelligent Provisioning drivers, firmware, and SPP, see the HP website (http://www.hp.com/go/spp/download).

HP Insight Diagnostics

HP Insight Diagnostics is a proactive server blade management tool, available in both offline and online versions, that provides diagnostics and troubleshooting capabilities to assist IT administrators who verify server blade installations, troubleshoot problems, and perform repair validation.

HP Insight Diagnostics Offline Edition performs various in-depth system and component testing while the OS is not running. To run this utility, boot the server blade using "Intelligent Provisioning" (page 11).

HP Insight Diagnostics Online Edition is a web-based application that captures system configuration and other related data needed for effective server blade management. Available in Microsoft Windows and Linux versions, the utility helps to ensure proper system operation.

For more information or to download the utility, see the HP website (http://www.hp.com/servers/diags). HP Insight Diagnostics Online Edition is also available in the SPP. For more information, see the HP website (http://www.hp.com/go/spp/download).

HP Insight Diagnostics survey functionality

"HP Insight Diagnostics" (page 11) provides survey functionality that gathers critical hardware and software information on ProLiant server blades.

This functionality supports operating systems that are supported by the server blade. For operating systems supported by the server blade, see the HP website (http://www.hp.com/go/supportos).

If a significant change occurs between data-gathering intervals, the survey function marks the previous information and overwrites the survey data files to reflect the latest changes in the configuration.

Survey functionality is installed with every Intelligent Provisioning-assisted HP Insight Diagnostics installation, or it can be installed through the SPP (see "HP Service Pack for ProLiant " (page 13)).

Erase Utility

CAUTION: Perform a backup before running the System Erase Utility. The utility sets the system to its original factory state, deletes the current hardware configuration information, including array setup and disk partitioning, and erases all connected hard drives completely. Refer to the instructions for using this utility.

The Erase utility enables you to erase system CMOS, NVRAM, and hard drives. Run the Erase Utility if you must erase the system for the following reasons:

- You want to install a new operating system on a server blade with an existing operating system.
- You encounter an error when completing the steps of a factory-installed operating system installation.

To access the Erase Utility, click the Perform Maintenance icon from the Intelligent Provisioning home screen and then select Erase.

Run the Erase utility to:

- Reset all settings — erases all drives, NVRAM, and RBSU
- Reset all disks — erases all drives
- Reset RBSU — erases current RBSU settings

After selecting the appropriate option, click Erase System. Click Exit to reboot the server after the erase task is completed. Click Cancel Erase to exit the utility without erasing.

HP Insight Remote Support software

HP strongly recommends that you install HP Insight Remote Support software to complete the installation of your product and to enable enhanced delivery of your HP Warranty, HP Care Pack Service, or HP contractual support agreement. HP Insight Remote Support supplements your monitoring 24 x 7 to ensure maximum system availability by providing intelligent event diagnosis, and automatic, secure submission of hardware event notifications to HP, which will initiate a fast and accurate resolution, based on your product's service level. Notifications may be sent to your authorized HP Channel Partner for on-site service, if configured and available in your country.

To download the software, go to Software Depot (http://software.hp.com).

Select Insight Remote Support from the menu on the right.

For more information about prerequisites, supported hardware, and associated operating systems, see the *HP Insight Remote Support Release Notes* at http://www.hp.com/go/insightremotesupport/docs..

Scripting Toolkit

The Scripting Toolkit is a server deployment product that enables you to build an unattended automated installation for high-volume server deployments. The Scripting Toolkit is designed to support ProLiant BL, ML, DL, and SL servers. The toolkit includes a modular set of utilities and important documentation that describes how to apply these tools to build an automated server deployment process.

The Scripting Toolkit provides a flexible way to create standard server configuration scripts. These scripts are used to automate many of the manual steps in the server configuration process. This automated server configuration process cuts time from each deployment, making it possible to scale rapid, high-volume server deployments.

For more information, and to download the Scripting Toolkit, see the HP website (http://www.hp.com/go/ProLiantSTK).

HP Service Pack for ProLiant

SPP is a release set that contains a comprehensive collection of firmware and system software components, all tested together as a single solution stack for HP ProLiant servers, their options, BladeSystem enclosures, and limited HP external storage.

SPP has several key features for updating HP ProLiant servers. Using HP SUM as the deployment tool, SPP can be used in an online mode on a Windows or Linux hosted operating system, or in an offline mode where the server is booted to the ISO so that the server can be updated automatically with no user interaction or updated in interactive mode.

For more information or to download SPP, see the HP website (http://www.hp.com/go/spp/).

HP Smart Update Manager

The HP SUM provides intelligent and flexible firmware and software deployment. This technology assists in reducing the complexity of provisioning and updating HP ProLiant Servers, options, and Blades within the data center. HP SUM is used to deploy firmware and software in SPP.

HP SUM enables system administrators to upgrade ROM images efficiently across a wide range of server blades and options. This tool has the following features:

- Enables GUI and a command-line, scriptable interface
- Provides scriptable, command-line deployment
- Requires no agent for remote installations
- Enables dependency checking, which ensures appropriate install order and dependency checking between components
- Deploys software and firmware on Windows and Linux operating systems
- Performs local or remote (one-to-many) online deployment
- Deploys firmware and software together
- Supports offline and online deployment
- Deploys necessary component updates only
- Downloads the latest components from Web
- Enables direct update of BMC firmware (HP iLO)

For more information about HP SUM and to access the *HP Smart Update Manager User Guide*, see the HP website (http://www.hp.com/go/hpsum/documentation).

HP ROM-Based Setup Utility

RBSU is a configuration utility embedded in ProLiant servers that performs a wide range of configuration activities that can include the following:

- Configuring system devices and installed options
- Enabling and disabling system features
- Displaying system information
- Selecting the primary boot controller
- Configuring memory options
- Language selection

For more information on RBSU, see the *HP ROM-Based Setup Utility User Guide* on the Documentation CD or the HP website (http://www.hp.com/support/rbsu).

Using RBSU

To use RBSU, use the following keys:

- To access RBSU, press the **F9** key during power-up when prompted.
- To navigate the menu system, use the arrow keys.
- To make selections, press the Enter key.
- To access Help for a highlighted configuration option, press the **F1** key.

IMPORTANT: RBSU automatically saves settings when you press the Enter key. The utility does not prompt you for confirmation of settings before you exit the utility. To change a selected setting, you must select a different setting and press the Enter key.

Default configuration settings are applied to the server at one of the following times:

- Upon the first system power-up
- After defaults have been restored

Default configuration settings are sufficient for proper typical server operation, but configuration settings can be modified using RBSU. The system will prompt you for access to RBSU with each power-up.

Auto-Configuration process

The auto-configuration process automatically runs when you boot the server for the first time. During the power-up sequence, the system ROM automatically configures the entire system without needing any intervention. During this process, the ORCA utility, in most cases, automatically configures the array to a default setting based on the number of drives connected to the server.

NOTE:

- If the boot drive is not empty or has been written to in the past, ORCA does not automatically configure the array. You must run ORCA to configure the array settings.
- The server may not support all the following examples.

Drives installed	Drives used	RAID level
1	1	RAID 0
2	2	RAID 1

Drives installed	Drives used	RAID level
3, 4, 5, or 6	3, 4, 5, or 6	RAID 5
More than 6	0	None

To change any ORCA default settings and override the auto-configuration process, press the **F8** key when prompted.

For more information on RBSU, see the *HP ROM-Based Setup Utility User Guide* on the Documentation CD or the HP website (http://www.hp.com/support/rbsu).

Boot options

Near the end of the boot process, the boot options screen is displayed. This screen is visible for several seconds before the system attempts to boot from a supported boot device. During this time, you can do the following:

- Access RBSU by pressing the **F9** key.
- Access Intelligent Provisioning Maintenance Menu by pressing the **F10** key.
- Access the boot menu by pressing the **F11** key.
- Force a PXE Network boot by pressing the **F12** key.

Configuring AMP modes

Not all ProLiant servers support all AMP modes. RBSU provides menu options only for the modes supported by the server. Advanced memory protection within RBSU enables the following advanced memory modes:

- Advanced ECC Mode—Provides memory protection beyond Standard ECC. All single-bit failures and some multi-bit failures can be corrected without resulting in system downtime.
- Online Spare Mode—Provides protection against failing or degraded DIMMs. Certain memory is set aside as spare, and automatic failover to spare memory occurs when the system detects a degraded DIMM. DIMMs that are likely to receive a fatal or uncorrectable memory error are removed from operation automatically, resulting in less system downtime.

For DIMM population requirements, see the server-specific user guide.

Re-entering the server serial number and product ID

After you replace the system board, you must re-enter the server blade serial number and the product ID.

1. During the server blade startup sequence, press the **F9** key to access RBSU.
2. Select the **Advanced Options** menu.
3. Select **Service Options**.
4. Select **Serial Number**. The following warning appears:

   ```
   Warning: The serial number should ONLY be modified by qualified service personnel. This value should always
    match the serial number located on the chassis.
   ```

5. Press the **Enter** key to clear the warning.
6. Enter the serial number and press the **Enter** key.
7. Select **Product ID**. The following warning appears:

   ```
   Warning: The Product ID should ONLY be modified by qualified service personnel. This value should always
    match the Product ID located on the chassis.
   ```

8. Enter the product ID and press the **Enter** key.
9. Press the **Esc** key to close the menu.
10. Press the **Esc** key to exit RBSU.

11. Press the **F10** key to confirm exiting RBSU. The server blade automatically reboots.

Utilities and features

Array Configuration Utility

ACU is a utility with the following features:

- Runs as a local application or remote service accessed through the HP System Management Homepage
- Supports online array capacity expansion, logical drive extension, assignment of online spares, and RAID or stripe size migration
- Suggests the optimum configuration for an unconfigured system
- For supported controllers, provides access to licensed features, including:
  - Moving and deleting individual logical volumes
  - Advanced Capacity Expansion (SATA to SAS and SAS to SATA)
  - Offline Split Mirror
  - RAID 6 and RAID 60
  - RAID 1 (ADM) and RAID 10 (ADM)
  - HP Drive Erase
  - Video-On-Demand Advanced Controller Settings
- Provides different operating modes, enabling faster configuration or greater control over the configuration options
- Remains available any time that the server is on
- Displays on-screen tips for individual steps of a configuration procedure
- Provides context-sensitive searchable help content
- Provides diagnostic and SmartSSD Wear Gauge functionality on the Diagnostics tab

ACU is now available as an embedded utility, starting with HP ProLiant Gen8 servers. To access ACU, use one of the following methods:

- If an optional controller is not installed, press **F10** during boot.
- If an optional controller is installed, when the system recognizes the controller during POST, press **F5**.

For optimum performance, the minimum display settings are 1024 × 768 resolution and 16-bit color. Servers running Microsoft operating systems require one of the following supported browsers:

- Internet Explorer 6.0 or later
- Mozilla Firefox 2.0 or later

For Linux servers, see the README.TXT file for additional browser and support information.

For more information about the controller and its features, see the *HP Smart Array Controllers for HP ProLiant Servers User Guide* on the HP website (http://www.hp.com/support/SAC_UG_ProLiantServers_en). To configure arrays, see the *Configuring Arrays on HP Smart Array Controllers Reference Guide* on the HP website (http://www.hp.com/support/CASAC_RG_en).

Option ROM Configuration for Arrays

Before installing an operating system, you can use the ORCA utility to create the first logical drive, assign RAID levels, and establish online spare configurations.

The utility also provides support for the following functions:

- Reconfiguring one or more logical drives
- Viewing the current logical drive configuration
- Deleting a logical drive configuration
- Setting the controller to be the boot controller
- Selecting the boot volume

If you do not use the utility, ORCA will default to the standard configuration.

For more information regarding the default configurations that ORCA uses, see the *HP ROM-Based Setup Utility User Guide* on the Documentation CD or the HP website (http://www.hp.com/support/rbsu).

For more information about the controller and its features, see the *HP Smart Array Controllers for HP ProLiant Servers User Guide* on the HP website (http://www.hp.com/support/SAC_UG_ProLiantServers_en). To configure arrays, see the *Configuring Arrays on HP Smart Array Controllers Reference Guide* on the HP website (http://www.hp.com/support/CASAC_RG_en).

ROMPaq utility

The ROMPaq utility enables you to upgrade the system firmware (BIOS). To upgrade the firmware, insert a ROMPaq USB Key into an available USB port and boot the system. In addition to ROMPaq, Online Flash Components for Windows and Linux operating systems are available for updating the system firmware.

The ROMPaq utility checks the system and provides a choice (if more than one exists) of available firmware revisions.

For more information, go to the HP website (http://www.hp.com/go/hpsc) and click on **Drivers, Software & Firmware**. Then, enter your product name in the **Find an HP product** field and click **Go**.

Automatic Server Recovery

ASR is a feature that causes the system to restart when a catastrophic operating system error occurs, such as a blue screen, ABEND (does not apply to HP ProLiant DL980 Servers), or panic. A system fail-safe timer, the ASR timer, starts when the System Management driver, also known as the Health Driver, is loaded. When the operating system is functioning properly, the system periodically resets the timer. However, when the operating system fails, the timer expires and restarts the server.

ASR increases server availability by restarting the server within a specified time after a system hang. At the same time, the HP SIM console notifies you by sending a message to a designated pager number that ASR has restarted the system. You can disable ASR from the System Management Homepage or through RBSU.

USB support

HP provides both standard USB 2.0 support and legacy USB 2.0 support. Standard support is provided by the OS through the appropriate USB device drivers. Before the OS loads, HP provides support for USB devices through legacy USB support, which is enabled by default in the system ROM.

Legacy USB support provides USB functionality in environments where USB support is not available normally. Specifically, HP provides legacy USB functionality for the following:

- POST
- RBSU
- Diagnostics
- DOS
- Operating environments which do not provide native USB support

Redundant ROM support

The server blade enables you to upgrade or configure the ROM safely with redundant ROM support. The server blade has a single ROM that acts as two separate ROM images. In the standard implementation, one side of the ROM contains the current ROM program version, while the other side of the ROM contains a backup version.

NOTE: The server ships with the same version programmed on each side of the ROM.

Safety and security benefits

When you flash the system ROM, ROMPaq writes over the backup ROM and saves the current ROM as a backup, enabling you to switch easily to the alternate ROM version if the new ROM becomes corrupted for any reason. This feature protects the existing ROM version, even if you experience a power failure while flashing the ROM.

Keeping the system current

Drivers

NOTE: Always perform a backup before installing or updating device drivers.

The server blade includes new hardware that may not have driver support on all OS installation media.

If you are installing an Intelligent Provisioning-supported OS, use Intelligent Provisioning and its Configure and Install feature to install the OS and latest supported drivers. See "Booting for the first time" (page 27).

If you do not use Intelligent Provisioning to install an OS, drivers for some of the new hardware are required. These drivers, as well as other option drivers, ROM images, and value-add software can be downloaded as part of an SPP.

If you are installing drivers from SPP, be sure that you are using the latest SPP version that your server blade supports. To verify that your server blade is using the latest supported version and for more information about SPP, see the HP website (http://www.hp.com/go/spp/download).

To locate the drivers for a particular server, go to the HP website (http://www.hp.com/go/hpsc) and click on **Drivers, Software & Firmware**. Then, enter your product name in the **Find an HP product** field and click **Go**.

Software and firmware

Software and firmware should be updated before using the server for the first time, unless any installed software or components require an older version. For system software and firmware updates, download the SPP ("HP Service Pack for ProLiant " (page 13)) from the HP website (http://www.hp.com/go/spp/).

Version control

The VCRM and VCA are web-enabled Insight Management Agents tools that HP SIM uses to schedule software update tasks to the entire enterprise.

- VCRM manages the repository for SPP. Administrators can view the SPP contents or configure VCRM to automatically update the repository with internet downloads of the latest software and firmware from HP.
- VCA compares installed software versions on the node with updates available in the VCRM managed repository. Administrators configure VCA to point to a repository managed by VCRM.

For more information about version control tools, see the *HP Systems Insight Manager User Guide*, the *HP Version Control Agent User Guide*, and the *HP Version Control Repository User Guide* on the HP website (http://www.hp.com/go/insightmanagement/sim/docs).

HP Operating Systems and Virtualization Software Support for ProLiant Servers

For information about specific versions of a supported operating system, see the HP website (http://www.hp.com/go/ossupport).

Change control and proactive notification

HP offers Change Control and Proactive Notification to notify customers 30 to 60 days in advance of upcoming hardware and software changes on HP commercial products.

For more information, refer to the HP website (http://www.hp.com/go/pcn).

4 Hardware installation and configuration

Installing ProLiant DL servers

1. **Install options**

   Install any hardware options before initializing the server. For information about installing options, see the documentation that ships with the option. For server-specific information, see the server user guide on the Documentation CD and on the HP ProLiant Gen8 Server Management Information Library website http://www.hp.com/go/proliantgen8/docs.

2. **Install the server in the rack**

WARNING! To reduce the risk of personal injury or damage to the equipment:

- Be sure that the rack is adequately stabilized before installing the server.
- Reduce the weight of the server by removing the hard drives and power supplies before installing the server into the rack.
- At least two people are required to lift the server during installation or removal.

CAUTION: Always plan the rack installation so that the heaviest item is on the bottom of the rack. Install the heaviest item first, and continue to populate the rack from the bottom to the top.

Install the server into the rack. For more information, see the *Quick Deploy Rail System Installation Instructions* that ship with the rack hardware kit.

3. **Connect peripheral devices to the server**

IMPORTANT: When using cable management arm components, be sure to leave enough slack in each of the cables to avoid damaging the cables when the server is extended from the rack.

Connect the peripheral devices to the server. The ports are labeled on the rear of the server. For more information on ports and connectors, see the server user guide on the Documentation CD and on the HP ProLiant Gen8 Server Management Information Library website http://www.hp.com/go/proliantgen8/docs.

4. **Connect the power cord to the power supply**

WARNING! To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the storage system.

a. Connect the power cord to the power supply.
b. Thread the power cord through the strain relief clip (if applicable). For instructions on using the power cord strain relief clip, see the instructions that ship with the clip.
c. Connect the power cord to the AC power source.

5. **Powering on and selecting boot**

   Connect an Ethernet cable to a NIC and press the Power On/Standby button.

   NOTE: HP recommends that you cable only one NIC during initial setup and configuration.

   During the initial boot:

   - To modify the server configuration ROM default settings, press **F9** when prompted from the start up sequence to enter the RBSU. By default, RBSU runs in English.
   - If you do not need to modify the server configuration and are ready to install the system software, press **F10** to access Intelligent Provisioning.

   NOTE: If an HP Smart Array controller has been added or is embedded in the system, the controller defaults to a RAID configuration based on the size and number of hard drives installed. For more information on modifying the controller default settings, see the documentation on the Documentation CD.

   See "Booting for the first time" (page 27) for instructions on booting your server for the first time and using Intelligent Provisioning to configure the server and install the operating system.

Installing ProLiant ML servers

1. **Install options**

   Install any hardware options before initializing the server. For information about installing options, see the documentation that ships with the option. For server-specific information, see the server user guide on the Documentation CD and on the HP ProLiant Gen8 Server Management Information Library website http://www.hp.com/go/proliantgen8/docs.

2. **Install the server**

   Choose an appropriate, well ventilated area to set the server.

3. **Connect peripheral devices to the server**

   Connect the peripheral devices to the server. The ports are labeled on the rear of the server. For more information on ports and connectors, see the server user guide on the Documentation CD and on the HP ProLiant Gen8 Server Management Information Library website http://www.hp.com/go/proliantgen8/docs.

4. **Connect the power cord to the power supply**

   ⚠ **WARNING!** To reduce the risk of electric shock or damage to the equipment:

   - Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
   - Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
   - Unplug the power cord from the power supply to disconnect power to the equipment.
   - Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the storage system.

   a. Connect the power cord to the power supply.
   b. Connect the power cord to the AC power source.

5. **Powering on and selecting boot**

   Connect an Ethernet cable to a NIC and press the Power On/Standby button.

   NOTE: HP recommends that you cable only one NIC during initial setup and configuration.

   During the initial boot:

   - To modify the server configuration ROM default settings, press **F9** when prompted from the start up sequence to enter the RBSU. By default, RBSU runs in English.
   - If you do not need to modify the server configuration and are ready to install the system software, press **F10** to access Intelligent Provisioning.

   NOTE: If an HP Smart Array controller has been added or is embedded in the system, the controller defaults to a RAID configuration based on the size and number of hard drives installed. For more information on modifying the controller default settings, see the documentation on the Documentation CD.

   See "Booting for the first time" (page 27) for instructions on booting your server for the first time and using Intelligent Provisioning to configure the server and install the operating system.

Installing ProLiant SL servers

1. **Select a site**

   Select an installation site that meets the detailed installation site requirements described in the server user guide on the Documentation CD and on the HP website http://www.hp.com.

2. **Verify the pallet contents**

   See the names and descriptions of the components in the *HP ProLiant SL Servers Quick Setup Instructions* at http://www.hp.com/go/insightcontrol/docs.

3. **Install the chassis**

   The chassis can be installed either in a rack or rack-free environment. For rack installations, install the rack rails, and then install the chassis and other components. See the Chassis Setup and Installation Guide, Quick Deploy Rail System Installation Instructions (which ship with the rack hardware kit), and applicable installation instructions.

4. **Install options**

   Install any hardware options before initializing the node. For options installation information, see the documentation that ships with the option. For node-specific information, see the node user guide on the HP website at: http://h18004.www1.hp.com/products/servers/sl/index.html.

5. **Install components**

   WARNING! The node is very heavy. To reduce the risk of personal injury or damage to the equipment:

   - Be sure that the rack is adequately stabilized before installing the server.
   - At least two people are required to lift the server during installation or removal.

   CAUTION: Always plan the rack installation so that the heaviest item is on the bottom of the rack. Install the heaviest item first, and continue to populate the rack from the bottom to the top.

Before installing front or rear components into the s6500 chassis, review s6500 chassis bay numbering for each component. See the quick setup instructions for slot numbering information.

Based on the total number ordered and the planned configuration, install the following components:

- Nodes
- Power supplies
- System fans

See the appropriate chassis setup and installation guide, and the node installation instructions.

6. **Power up the chassis**

   Connect the AC or DC power cables, depending on the power configuration.

   When the circuit breakers are powered, the chassis and HP ProLiant SL Advanced Power Manager have power. By default, each installed component also powers up. Examine the HP ProLiant SL Advanced Power Manager for any errors that might prevent installed components from powering up.

7. **Configure the chassis**

   For further information to set up and configure your system, see the *HP ProLiant SL Servers Solution Overview* and the *Chassis Setup and Installation Guide* for your model.

Installing ProLiant BL servers

1. **Install the enclosure**

   The enclosure can either be installed in a rack or in a rack-free environment. For rack installations, install the rack rails and then install the enclosure and other components.

2. **Install the front components**

   Install any ordered options, such as processor, memory, mezzanine card, or hard drive into each server blade. Then install the server blades into the enclosure.

   Install power supplies based on the total number ordered and on the planned power configuration.

3. **Install the rear components**

   Install the Onboard Administrator module(s) and Active Cool fans based on the total number ordered and the planned configuration.

4. **Cable the Onboard Administrator module**

   Use the appropriate cables to connect each installed Onboard Administrator module to the external connections. The connectors on the Onboard Administrator module provide a connection to the iLO management network and the capability to link multiple enclosures.

5. **Install and cable the interconnects**

   Install the interconnects based on the type of fabric in the configuration and the planned installation location of each mezzanine card. Use the appropriate cables to connect each installed interconnect module to the network.

6. **Power up the enclosure**

   Connect the AC power cables based on the power configuration.

   When the AC circuit breakers are powered up, the enclosure and HP BladeSystem Insight Display have power. By default, each installed component also powers up.

7. **Run the Insight Display wizard**

   When the enclosure is powered up for the first time, the HP BladeSystem Insight Display launches an installation wizard to guide you through the initial configuration process.

   a. Record important information, such as the Onboard Administrator IP address, gathered while running the installation wizard.
   b. Read the Insight Display and write down the IP address for the active and standby Onboard Administrator (by default, the Onboard Administrator obtains an IP address via DHCP.) This IP address is needed for remote connection and subsequent setup. If DHCP is not used, a static IP address can be configured with the Insight Display installation wizard.
   c. The Insight Display verifies that no installation or configuration errors exist and indicates configuration check progress. If configuration errors are indicated, follow the on-screen instructions to correct the problem.

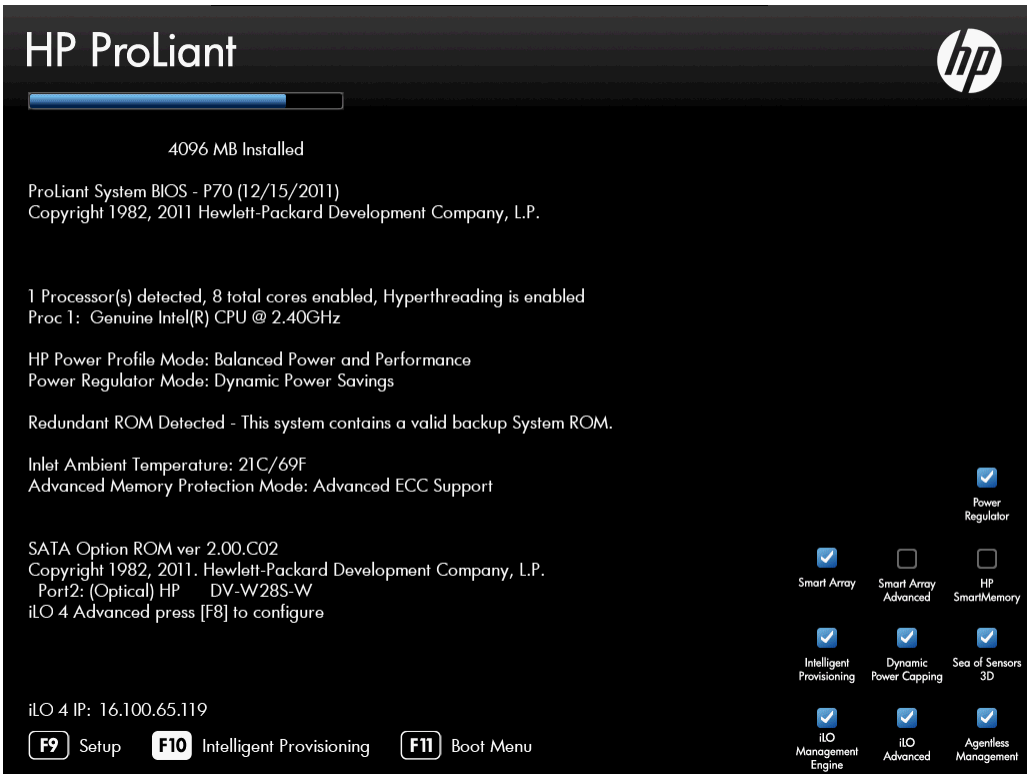
   When the screen displays **No Errors Detected**, the hardware installation is complete.

5 Booting for the first time

1. **Power on the system**

   When you first power on a ProLiant Gen8 server, the server displays a list of booting subsystems and self tests. After the initial POST, the server displays the HP ProLiant initialization screen. The checked icons at the bottom right represent each option that is present or installed on the server:

Figure 1 HP ProLiant initialization



NOTE: When using DHCP, the iLO 4 IP address appears at bottom left.

2. **Start Intelligent Provisioning (F10)**

   Depending on the options installed on your HP ProLiant server, the available function keys display at the bottom of the screen. Some function keys only display after the corresponding component is initialized. These function keys might include the following:

   - **F5** — Runs the HP Array Configuration Utility (ACU)
   - **F8** — Runs the Option ROM Configuration for Arrays Utility
   - **F9** — Opens the ROM-Based Setup Utility (RBSU)
   - **F10** — Starts Intelligent Provisioning
   - **F11** — Opens the boot menu, for overriding the default boot options
   - **F12** — Boots from the network

   If you do not choose a function key before the server completes initial power on procedures, a short menu of available function keys appears briefly. If you still do not choose a function key, the server will try to boot from the boot devices configured in the RBSU.

   Press **F10** to start Intelligent Provisioning. Wait while Intelligent Provisioning loads. The Intelligent Provisioning preferences screen appears.

Navigating Intelligent Provisioning

Use the navigation icons at the top right-hand corner of the Intelligent Provisioning window to return to the home screen, view the help file, view system information, or power down the server.

- **Home**—click to return to the Intelligent Provisioning start.
- **Help**—click for more information about the screen being viewed.
- **System Information**—click to display your system information, including the Intelligent Provisioning version.
- **Exit**—click to power down or reboot the server.
- **Previous**—click to return to the previous screen after validating and saving your choices.
- **Continue**—click to move to the next screen after validating and saving your choices.

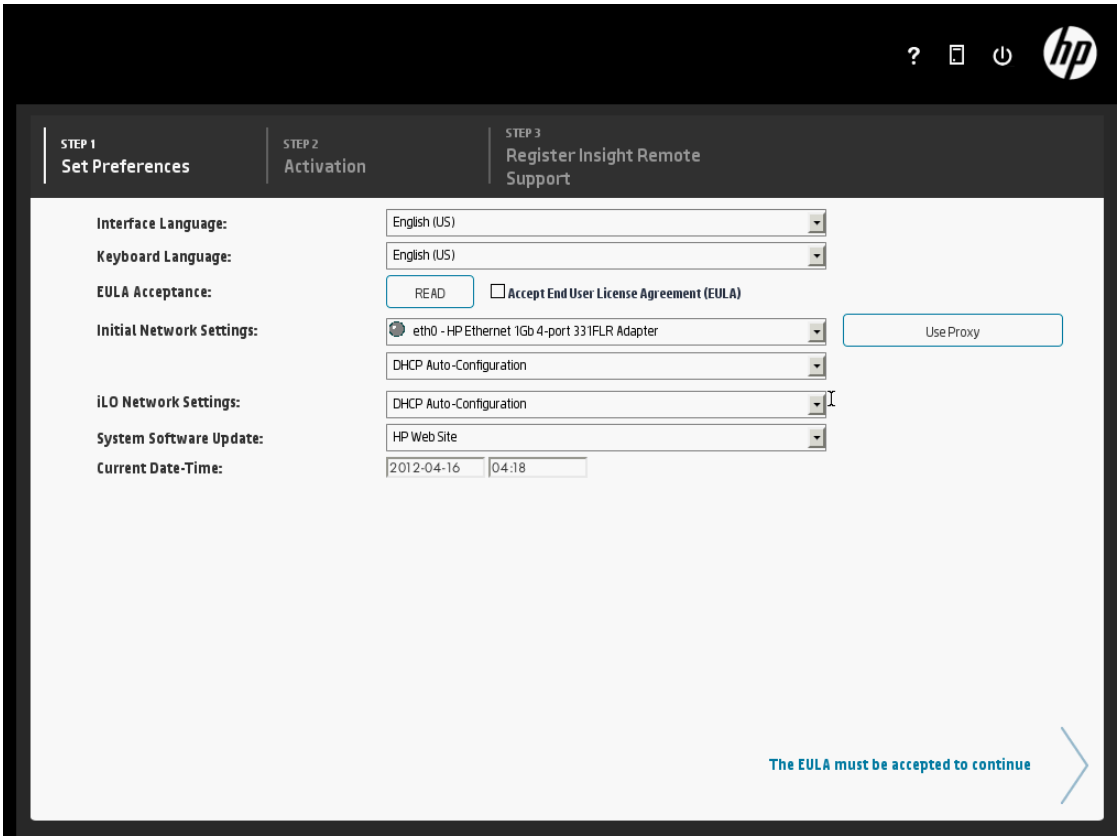
Setting preferences

The Set Preferences screen displays automatically the first time Intelligent Provisioning runs on a server. You can change preferences later by clicking **Perform Maintenance**, and then clicking **Intelligent Provisioning Preferences**.

1. **Choose a language**

   Choose your interface language and keyboard language.

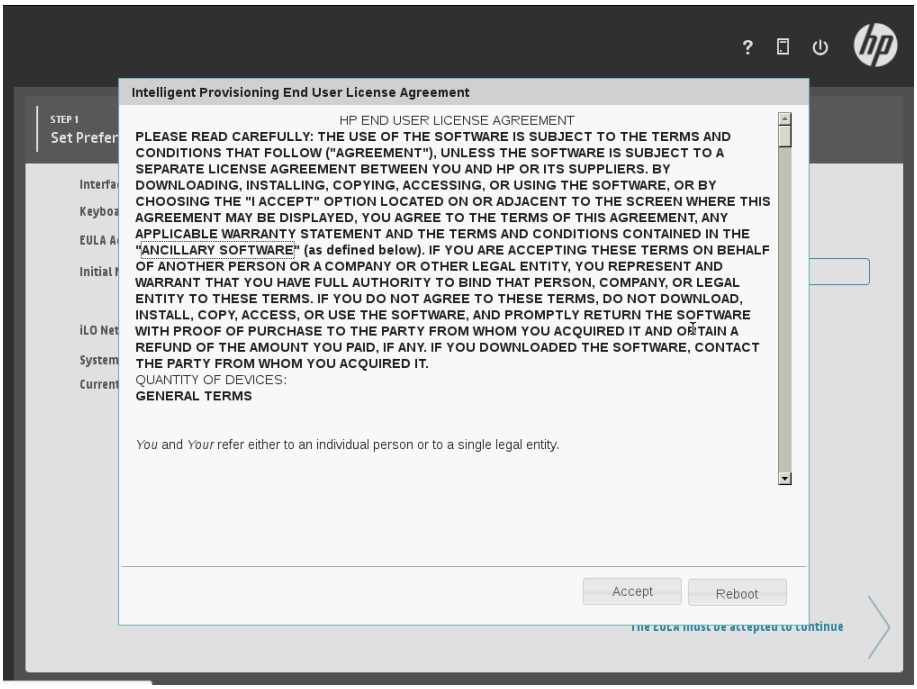
Figure 2 Intelligent Provisioning preferences



2. **Accept the EULA**

   Click **Read** to open the EULA. To continue, you must accept the EULA by clicking **Accept**. Click **Reboot** to cancel configuration using Intelligent Provisioning and reboot the server.

Figure 3 Intelligent Provisioning EULA



3. **Set preferences**

   Set the rest of the preferences according to network requirements:

   - Initial Network Settings — Select the active NIC (marked with a green status icon) from the list. Next, choose an IP addressing scheme:
     - DHCP Auto-Configuration — HP recommends that you select DHCP to have IP addresses assigned automatically to your server.
     - IPv4 Static — Selecting IPv4 causes four new fields to be added, for static IPv4 address, network mask, gateway address, and DNS address.
     - IPv6 Static — Selecting IPv6 causes two fields to be added, for the static IP address and the Gateway address. IPv6 Static must be 128–bit only.

     NOTE: If your network uses proxy servers, click **Use Proxy** and then enter the proxy server address and port.

   - iLO Network Settings — Select an iLO network IP addressing scheme:
     - DHCP Auto-Configuration — HP recommends that you select DHCP to have iLO IP addresses assigned automatically.
     - IPv4 Static — Selecting IPv4 causes three new fields to be added, for static IPv4 address, network mask, and gateway address.
     - Off — Selecting Off makes this server unavailable through iLO.

   For more information about using iLO, see the *HP iLO 4 User Guide* on the HP website: http://www.hp.com/go/ilo/docs

   - System Software Update — Select how you would like to deliver System Software updates to your server:
     - HP Web Site — HP recommends selecting this option to download all software updates for your server from http://www.hp.com. An “Updates Available” banner

will appear across the top of the screen to notify you when an update is available. Clicking this banner takes you to the **Firmware Update** page.

- HTTP/FTP — Requires an address of a local repository in the URL field. If you use an FTP path, do not include spaces or punctuation.
- Disable—Select this if you plan to use only the system software embedded on the shipped server, instead of using Intelligent Provisioning, to perform updates. You can download SPP from the HP website:

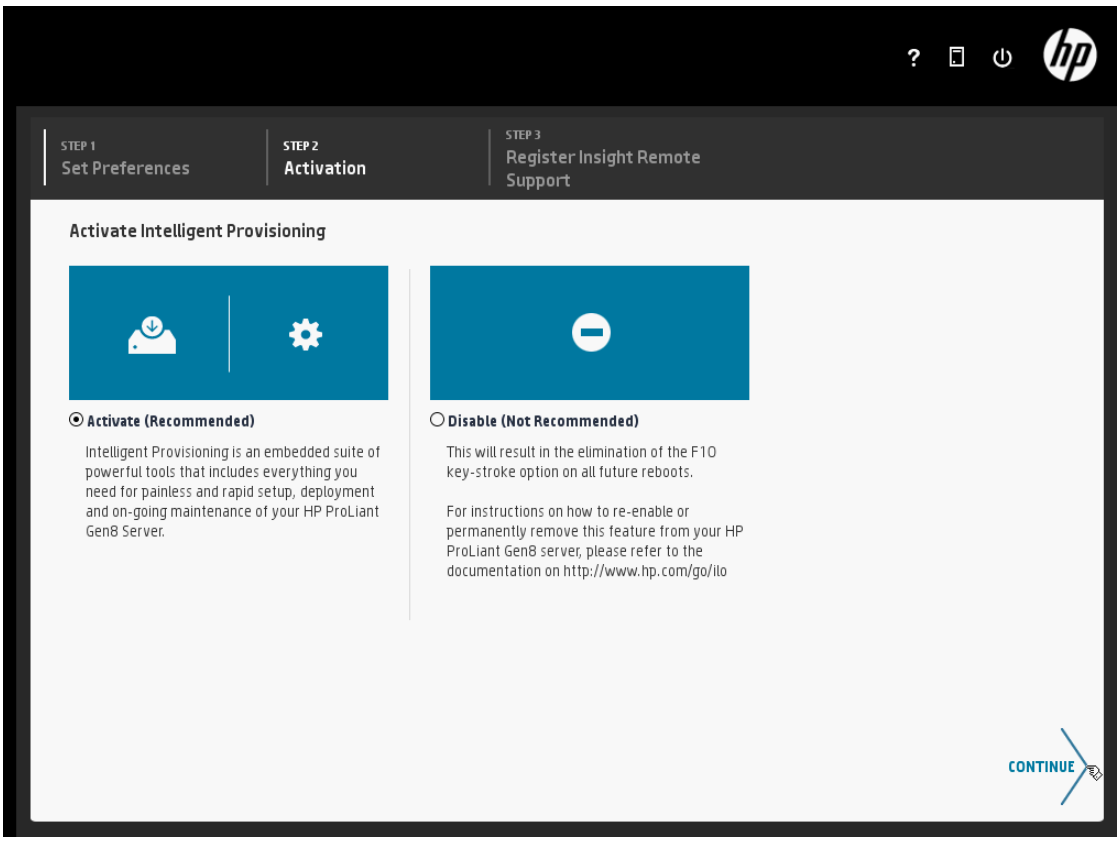
  http://hp.com/go/spp/download

- Current Date-Time—The current date and time can be changed through this setting.

4. **Click Continue.**

   Click **Continue**. The Intelligent Provisioning activation page appears. To continue configuring your new HP ProLiant Gen8 server, select **Activate (Recommended)** and then click **Continue**.

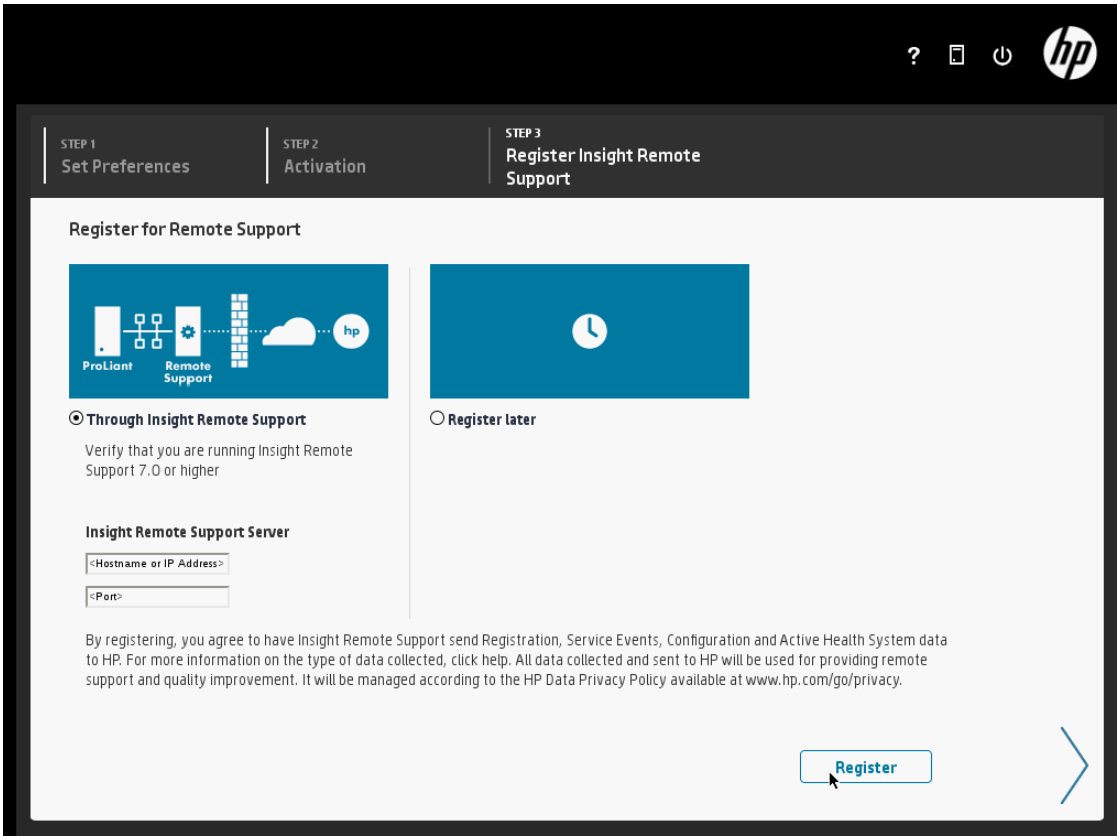
Figure 4 Intelligent Provisioning activation



When activated, you can access Intelligent Provisioning during server POST by pressing the **F10** key. If you disable Intelligent Provisioning, pressing the **F10** key during POST does not launch Intelligent Provisioning.

To re-enable Intelligent Provisioning, from the RBSU Boot menu, select **Server Security→Intelligent Provisioning (F10 Prompt)→Enabled**.

5. **Register for Insight Remote Support**



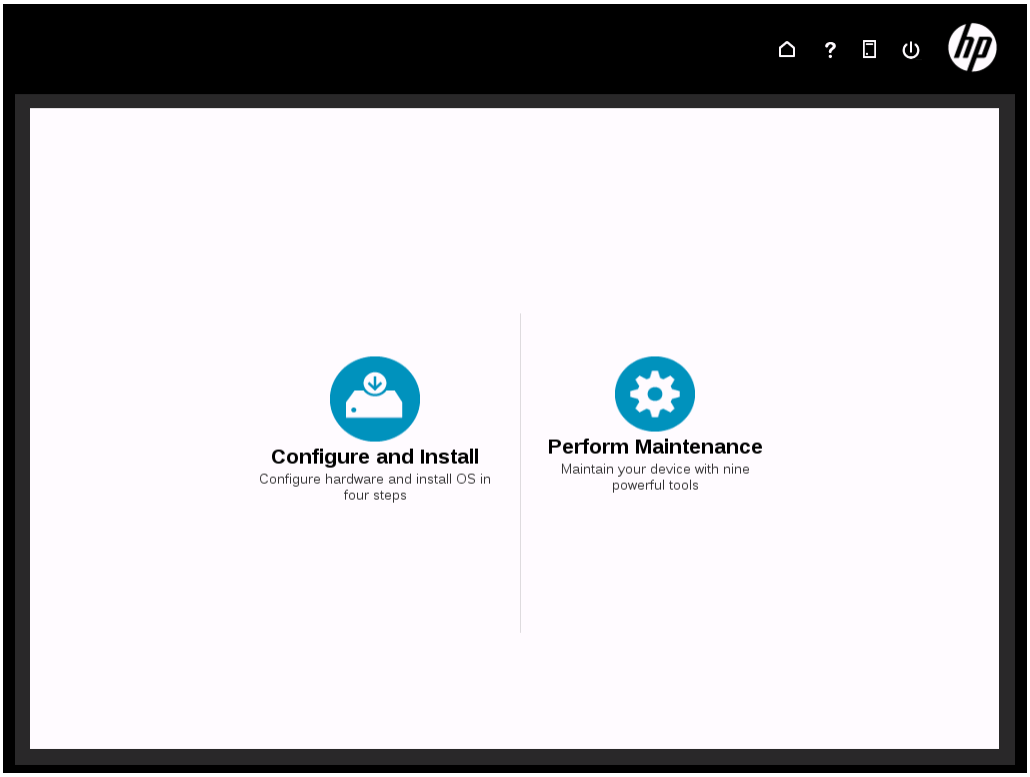
HP Insight Remote Support provides automatic submission of hardware events to HP to prevent downtime and enable faster issue resolution. If you have Insight RS installed on a Remote Support Server, you can register Insight RS on this machine immediately. To register, select **Through Insight Remote Support**, enter the hostname or IP address and port number of the Insight Remote Support Server (the server on which Insight RS in installed) and then click **Register**. To register later, select **Register Later**.

NOTE: To protect your privacy, do not use sensitive information in the name of the Hosting Device. The server name will be visible in HP Insight RS and HP Insight Online, and can be viewed by HP support and your authorized service provider, reseller/distributor, and installer.

6. **Return to the home screen**

Click **Previous** twice to open the initial Intelligent Provisioning screen.

Figure 5 Intelligent Provisioning home



NOTE: When the server is connected to the Internet, if an update to Intelligent Provisioning is available from HP, the banner **Updates available** appears at the top of the screen.

7. **Start the configuration and installation**
   Click **Configure and Install**.

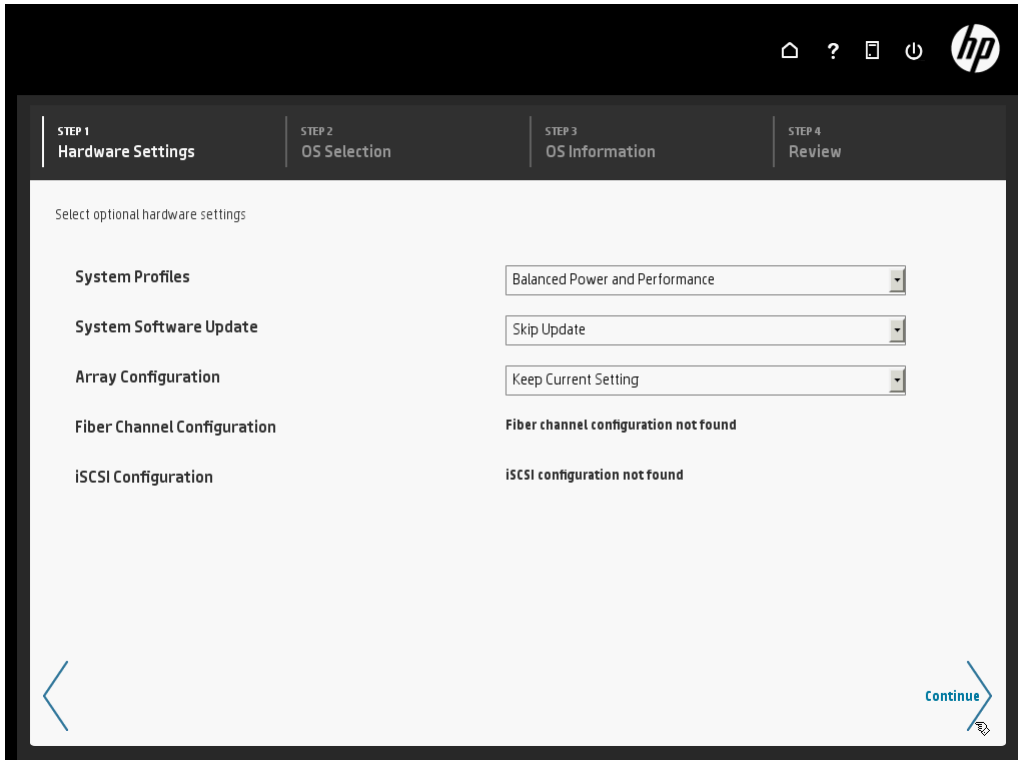
Configure and install

To configure and install your HP ProLiant server, complete the following four screens:

- Hardware Settings
- OS Selection
- OS Information
- Review

Step 1: Hardware Settings

Figure 6 Hardware Settings step



Make selections from the choices available:

NOTE: If unsupported media devices, including SD cards, are connected at this point, you will get an error stating `There are no physical disks attached`. Remove the unsupported media device, and make sure you have network share information available, or a disk or ISO, FTP, or USB drive installed when prompted in "Step 2: OS Selection" (page 35).

1. **System Profiles**

   Select the power management for this system. Your chosen settings are automatically reflected in the RBSU.

2. **System Software Update**

   Using this feature, you can specify whether to get drivers and software updates from the HP website or a local repository on your network. You can update before the OS installation or postpone the update.

   NOTE: You must have connected a NIC to the network for a system software update to be successful, and the NIC must be selected in the Initial Network Settings field of the Set Preferences screen.

3. **Array Configuration**

   This feature provides high-availability configuration, management, and diagnostic capabilities for the server's storage subsystem. Choose one of the following:

   - Keep Current Settings — select this when reprovisioning a server; this setting maintains any previously constructed arrays.
   - Recommended Settings — HP recommends that you select this choice for an initial server setup. This allows the Array Configuration Utility to poll any disks that are present and

build an appropriate array. For example, if there are two disks connected to the Smart Array card, the setup defaults to RAID 1.

△ **CAUTION:** Selecting this choice will reset all disks (and arrays, if any are present.) Because no arrays or disk data are present during a first-time setup, this will not affect your server. However, if you choose this when reprovisioning your server, you can lose your data and any disk arrays. For more details about the Array Configuration Utility, see the *HP Array Configuration Utility User Guide* at http://www.hp.com/bizsupport.

- Customize — This selection opens the Array Configuration Utility (when you click **Continue**) and allows you to choose array settings.

You can keep the current settings, use recommended settings, or customize. If you choose to customize, the Array Configuration Utility in the Perform Maintenance page opens.

4. **Fiber Channel and iSCSI Configuration**

   Because this is the initial setup for the server, a Fiber Channel and iSCSI configuration will not be found. However, if you are reprovisioning this server, you can choose whether to use the existing Fiber Channel or iSCSI configuration.

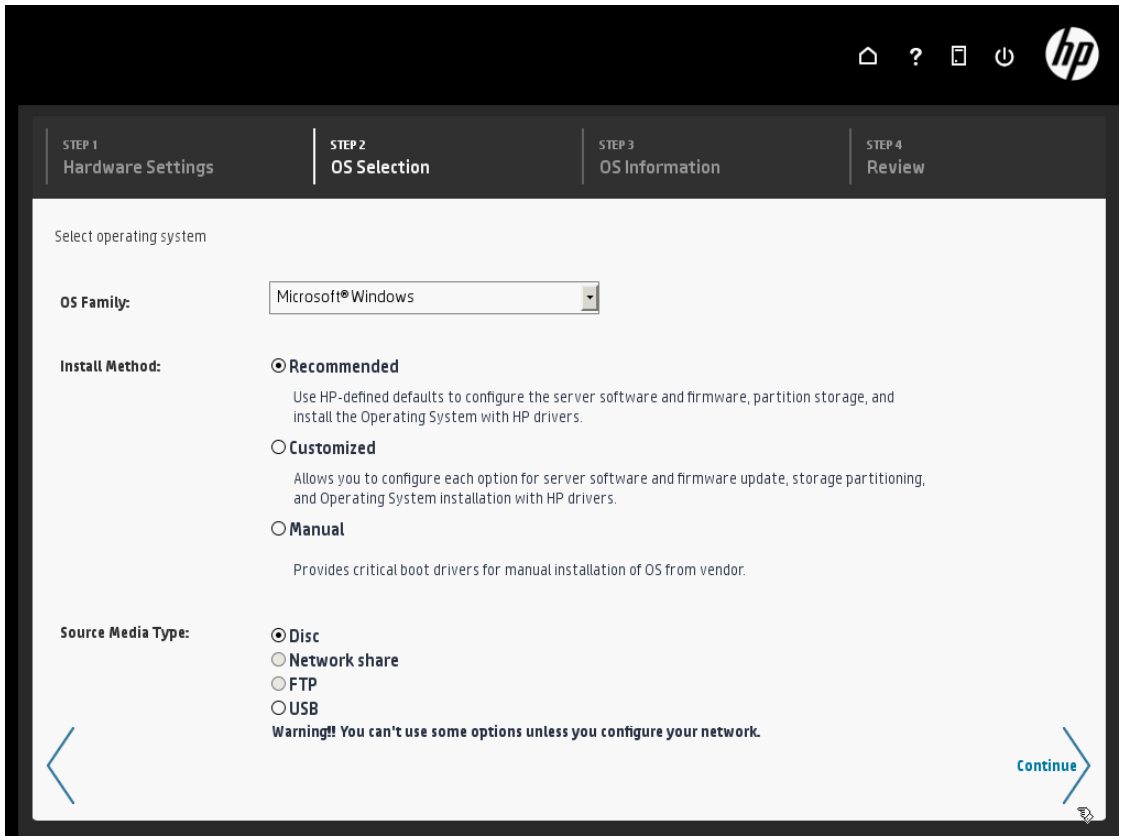
5. **Continue**

   Click **Continue**.

Step 2: OS Selection

This screen displays the different operating systems available for installation. Some of the operating system selections might be unavailable if either the system or the primary controller in the system does not support the installation of that particular operating system. Select the operating system you are installing from the choices displayed on this screen.

Figure 7 OS Selection step



1. **Select an OS Family**

   Select an operating system family to install. Each of these operating systems supports different installation methods and source media types. If the OS you want to install is not listed, check http://www.hp.com for OS drivers or an update to the HP ProLiant firmware.

   NOTE: For more information about OS support, see http://www.hp.com/go/supportos. The available install method and source media type change depending on the selected OS family.

2. **Select an Install Method**

   This section provides options for installing an operating system. Different operating systems support different installation methods, so some options are not always available.

- Recommended — Use HP-defined defaults to configure the server software and firmware, partition storage, and install the operating system with HP drivers. HP recommends this selection for first-time server setup.
- Customized — Custom installation enables you to configure each option for server software and firmware updates, storage partitioning, and operating system installation with HP drivers.

  Choosing a Customized installation also allows you to choose SNMP and WBEM management protocols. See "Customized Installation" (page 37) for more information.
- Manual — Provides critical boot drivers for the manual installation of an operating system from a vendor. When selecting a manual installation, the only source media type available is optical disc. This option reboots the server into the operating system CD/DVD that has been inserted.

3. **Select a source media type**

   Select disc, network share, FTP, or USB.
4. **Click Continue**

   Click **Continue** to proceed.
5. **Supply required information based on source media**

   Depending on the choice of source media, do one of the following:

Source Media Type	Required information
Disc (default)	None if using standard bootable operating system DVD/CD-ROM media or virtual media through iLO.
Network File Share	Specify a network share with operating system contents. Selecting Network File Share requires you to add the following information: • Server Name/IP Address — Server name or IP address of the server that hosts the operating system contents. If a server name is specified, a DNS entry is required below. • Share Name — The name of the network share using Server Message Block (SMB) protocol that hosts the operating system contents. • User Name — User name used to access the network share. • Password — Password for the user name used to access the network share.
FTP	Enter the name or IP address of the FTP server that contains an operating system install. FTP support requires anonymous access to the FTP server. Intelligent Provisioning does not support connecting to an FTP server through a proxy. **IMPORTANT:** When entering an FTP path, remove spaces and punctuation. The FTP server folder structure should not contain spaces or special characters (including punctuation).
USB	Browse the path to the operating system ISO, and then double-click the ISO file.

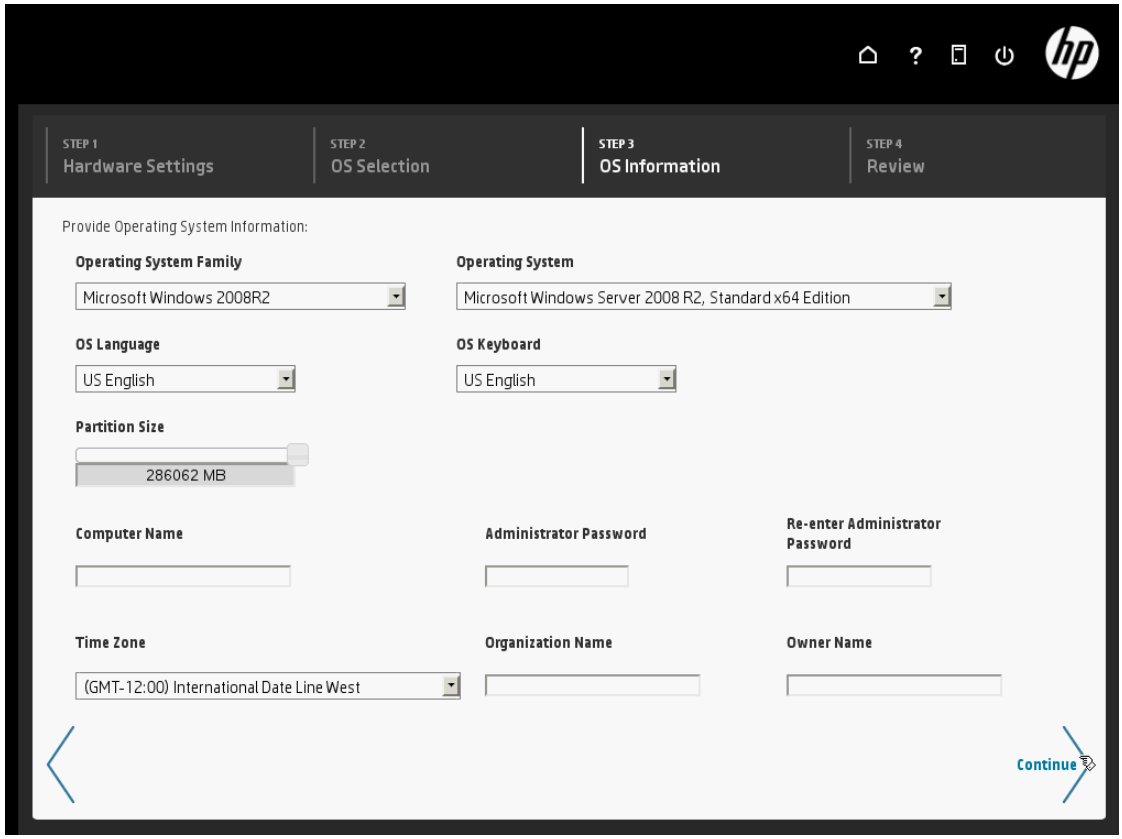
6. **Click Continue**

   Click **Continue** to proceed.

Customized Installation

If you selected **Customized Install** on the OS Selection screen, after clicking **Continue** you can add custom installation information and then choose which monitoring management protocol to install.

Figure 8 Custom installation information



After selecting an operating system to install, you must enter or confirm the information in the following fields:

- Operating system family
- Operating system
- OS language and keyboard

Be sure to use the correct product key. Enter an incorrect key causes an error, prompting you to press Enter. Pressing Enter reboots the server. You can reinstall the operating system, or manually clear the drives using the Array Configuration Utility.

The required information varies depending on the type of Microsoft operating system you are installing. Some of the following fields might be displayed:

- **Computer Name** (optional) — Enter a personalized name instead of using the default. When installing Microsoft Smart Business Server, HP recommends entering the final system name during installation.

  NOTE: When AMS is installed, the server name is displayed in HP Insight RS and HP Insight Online, and can be viewed by HP support and your authorized service provider, reseller/distributor, and installer. To protect your privacy, do not use sensitive information in the name of the HP ProLiant Gen8 server. For more information about Agentless Management Service, including known issues, see "Agentless Management Service" (page 39)

- **Administrator password** (optional) — Specify a password. If no administrator password is entered, you are prompted for a password during the first log on. This field is not displayed

when installing Microsoft Windows Small Business 2011 Essentials. The initial administrator password defaults to “admin” for this operating system.

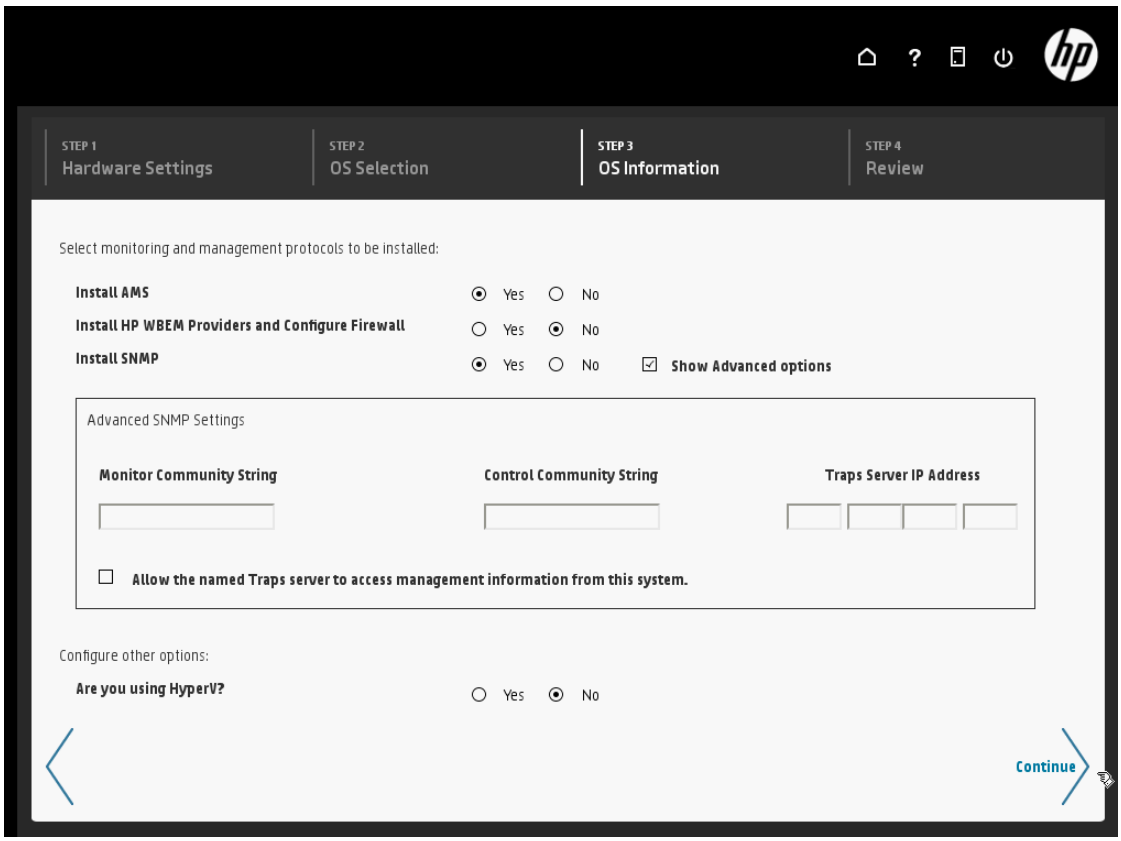
- **Organization Name** (optional) — Enter the organization’s name.
- **Owner Name** (optional) — Enter the user’s full name.
- **Product Key** — Enter the Microsoft Product Identification (Product ID) number. This is displayed for Microsoft Windows Server 2008 R2, Microsoft Windows Small Business Server 2011, or HP brand Microsoft media.
- **Time Zone** — This filed contains the time zone of this system, which is used by the operating system to perform daylight savings time updates and other time-related functions.
- **Partition Size** — Specify the size of partitions on which to install the operating system. The range is limited by the minimum size recommended by the selected operating system and space available in the server logical drive. Partition size is not displayed for all operating systems.

Installing Management Protocols

When you choose a customized operating system installation, you can choose Agentless Management Server (AMS), SNMP, or WBEM configurations. AMS is installed by default during a recommended install. The other two protocols, SNMP and WBEM, are not installed by default, so no information is populated on the System Management Homepage after a recommended install.

IMPORTANT: To populate information in the System Management Homepage, install SNMP or WBEM agents.

Figure 9 Monitoring and management protocols



AMS Configuration

Use the install AMS selection to enable AMS to send pre-failure messages to HP Support. For more information about AMS, see "Agentless Management Service" (page 39).

WBEM Configuration

Use the Install HP WBEM Providers and Configure Firewall selection to enable Intelligent Provisioning to enable remote WMI access to this system and configure the firewall automatically. For security purposes, use either an Administrator account or grant WMI management privileges to a lower account to access WMI management data. If you prefer to use a lower privileged Windows user account, set it up after Intelligent Provisioning has completed the operating system and SPP installation. For detailed instructions on using an optional lower privileged user account, see the HP Insight Management WBEM Providers User Guide on the HP website:

http://h18013.www1.hp.com/products/servers/management/wbem/

SNMP Configuration

Use the Install SNMP selection to install SNMP services. Select **Show Advanced options** to enter the Monitor and Control community strings, and Traps Server IP Address for the device. Monitor is a ready only community string. Control is a read/write community string. Finally, select whether to allow the named Traps server to access management information from this system.

Agentless Management Service

AMS is a lightweight service that collects operating system-based management information and provides it to iLO. AMS collects the following information:

- Server inventory information on installed applications
- Information on processes, including running, system name, IP address, and operating system installed
- NIC information that iLO cannot access

AMS runs in the operating system context, but it is not an agent in the traditional sense. The information that AMS provides to iLO is a very small subset of the data that the traditional SNMP agents provide, therefore AMS is a very lightweight component. AMS consumes less memory and CPU cycles compared to the in-band SNMP agents. HP recommends selecting AMS.

When using Agentless Management and AMS, note the following:

- HP does not recommend installing AMS together with the Insight Management Agents and WMI Providers. To enable the System Management Homepage, install WBEM providers.
- If you must run AMS together with the Insight Management Agents on Linux systems, start the hp-ams daemon process first and decrease the number of traditional agents running on the system (for example, `cmasm2d`).
- For more information about AMS on Linux systems, see the manpage for `hpHelper`, the AMS daemon process.
- When AMS is installed on Windows systems, the Agentless Management Service Control Panel is installed. You can use the control panel to enable or disable AMS, and to uninstall AMS. The Agentless Management Service is installed by default when installing the SPP.
- AMS writes OS configuration information and critical events to the Active Health System log.

NOTE: When AMS is installed, the server name is displayed in HP Insight RS and HP Insight Online, and can be viewed by HP support and your authorized service provider, reseller/distributor, and installer. To protect your privacy, do not use sensitive information in the name of the Gen8 server.

AMS is available from the HP website. To download AMS from the HP website:

1. Navigate to the Support & Drivers page on the HP website: http://www.hp.com/support.
2. Select **Drivers & Software**.
3. Enter the platform you are using in to the search field, for example, `DL380`.
4. Select the product from the list.
5. Select an OS.
6. Download the software.
7. Follow the installation instructions provided with the downloaded software.

For more information about Agentless Management and AMS, see the *HP iLO 4 User Guide* at http://www.hp.com/go/ilo.

For more information, see "Step 3: OS Information" (page 40)

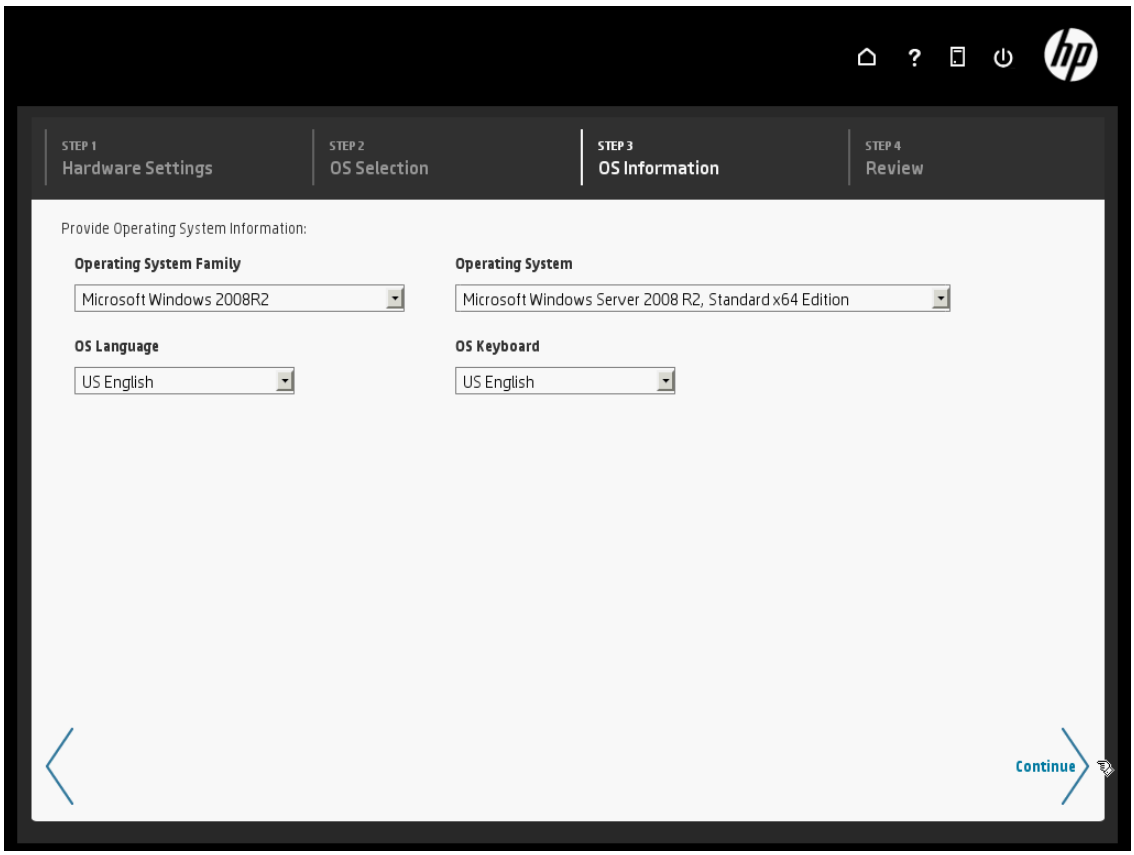
Step 3: OS Information

After selecting an operating system to install, choosing the recommended install method and click **Continue**, enter or confirm the information in the following fields:

- Operating system family
- Operating system
- OS language and keyboard
- Product key – Enter the Microsoft Product Identification (Product ID) number. This field is not displayed for Microsoft Windows Server 2008 R2, Microsoft Windows Small Business Server 2011, or HP-branded Microsoft media.

Click **Continue**.

Figure 10 OS Information step

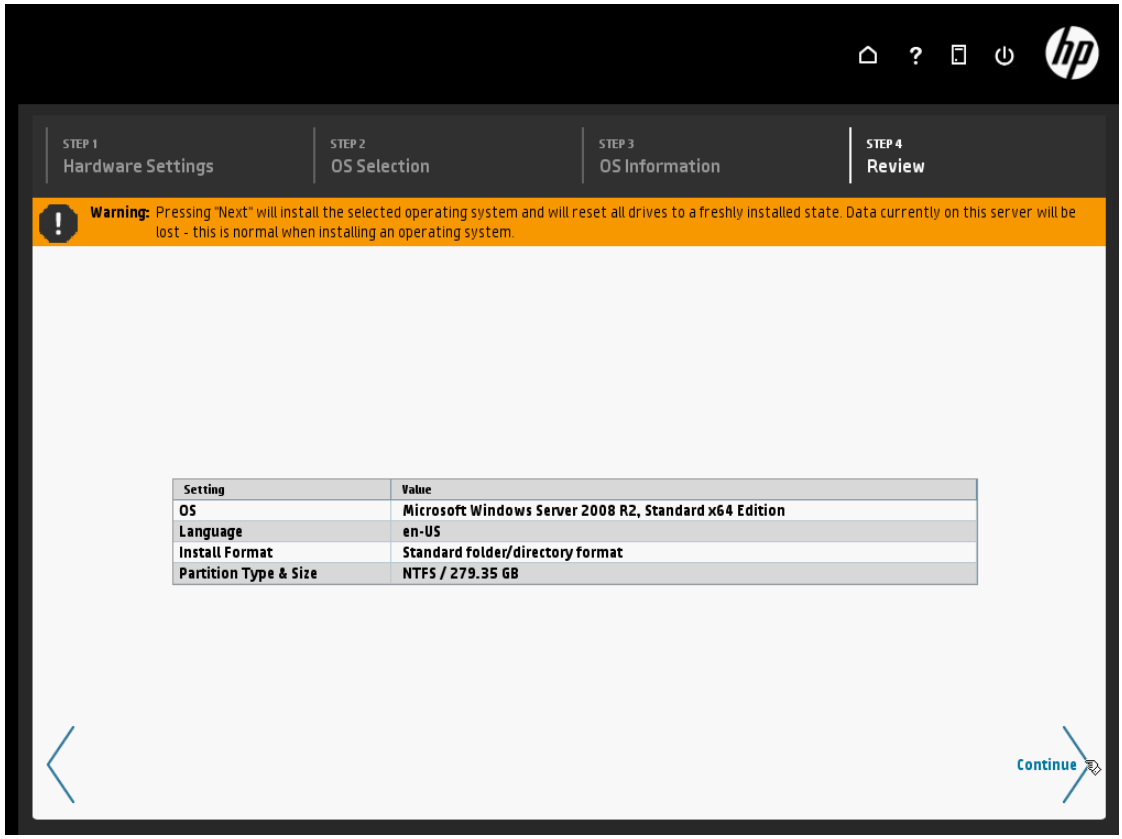


Step 4: Review

The Review screen displays your hardware and OS settings.

△ **CAUTION:** Continuing past this screen resets drives to a newly installed state and installs the selected OS. Existing data on the server drives will be lost. This will not affect a first-time setup.

Figure 11 Review step



1. Review the information to confirm your choices.
2. Click **Continue**. When you click **Continue**, all drives will be reset and all data on them will be lost before the OS is installed. This does not affect a first-time setup because there is no data present yet.

If you chose to update the system software before installation, the HP Insight Update screen appears and the update starts. Click **Show Details** for a detailed list of the update installation. When the update is finished, the server automatically reboots and begins the OS installation. Follow the OS prompts to complete the OS installation.

Manual Installation

If you selected a manual install, review the OS information here. When ready, click **Continue** and the server will reboot to the OS media and begin the OS installation.

6 Post OS installation

State of server after install

The default Windows installation automatically includes key HP software. Click **Start→All Programs** to find the following:

- HP Management Agents
  - Event Notifier Config
  - Event Notifier Help
  - HP System Management Homepage

    NOTE: A System Management Homepage icon is also automatically added to the desktop.

- HP System Tools
  - HP ProLiant Integrated Management Log Viewer
  - HP Array Configuration Utility
  - HP Array Configuration Utility CLI
  - HP Insight Diagnostics Online Edition for Windows
  - HP Lights-Out Online Configuration Utility

Figure 12 Default programs in Windows Start menu

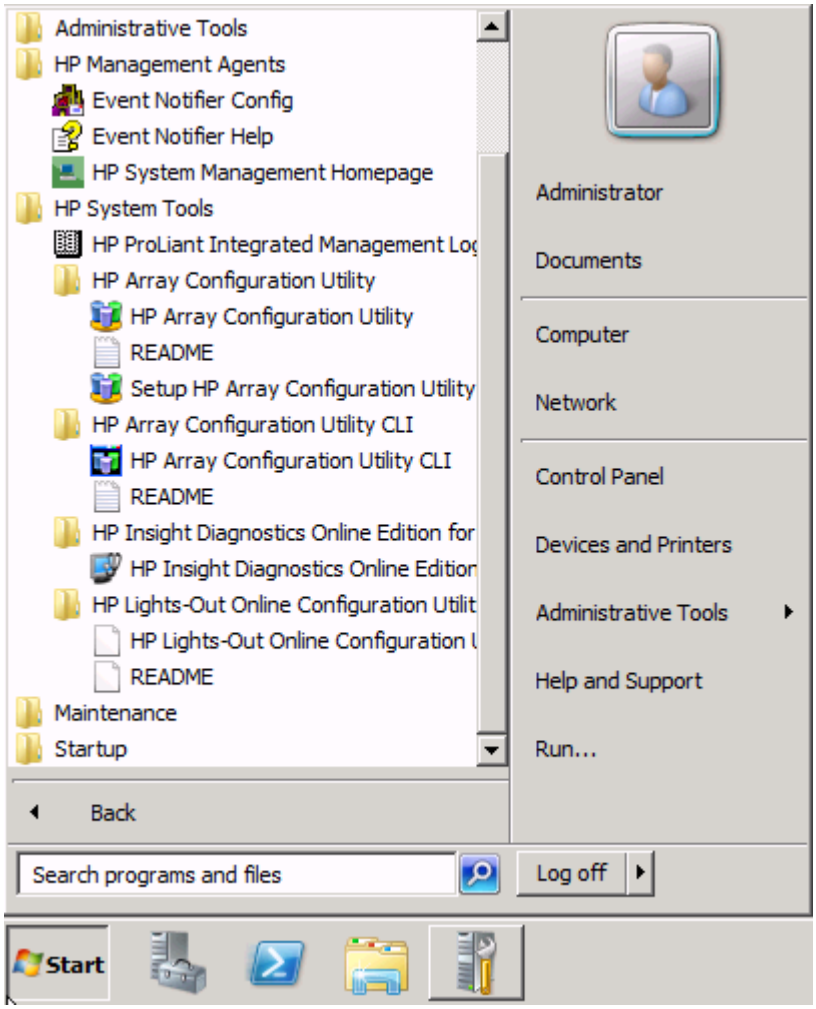
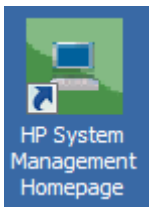


Figure 13 HP SMH icon on desktop



The System Management Homepage

HP System Management Homepage (HP SMH) is a web-based interface that consolidates and simplifies single system management for HP servers running the HP-UX, Linux, and Microsoft Windows operating systems. HP SMH aggregates and displays data from Web Agents and other HP Web-enabled System Management Software, including:

- HP Insight Diagnostics
- Array Configuration Utility
- HP Software Version Control Agents

HP SMH enables you to view detailed hardware configuration and status data, performance metrics, system thresholds, diagnostics, and software version control information using a single interface.

HP SMH features

HP SMH provides the following enhanced security and streamlined operations for HP servers running HP-UX, Linux, and Windows operating systems:

- Browser access using operating system-based Secure Sockets Layer (SSL)-secure authentication.
- Common HTTP and HTTPS service for HP Insight Management Agents and utilities, for reduced complexity and system resource requirements.
- Simplified architecture for implementing HTTP security and HP management updates.
- Access control through Network Interface Card (NIC) binding and advanced configuration features for individual and groups of users.
- Broad operating system and browser support.
- Automated log collection via smhassist.

  This feature is available only on HP-UX 11i v2 and HP-UX 11i v3 systems.
- Command Line Interface (CLI) - smhconfig - provides users with administrator rights access to set values through the command line.
- Facility to disable port 2301.
- Logging into syslog the activities related to login and logout performed on HP SMH. This feature is available only on HP-UX 11i v2 and HP-UX 11i v3 systems.
- Consolidated API logging for HP SMH and WebApps: Provides an option to log the critical and major events of both the HP SMH and its WebApps to the system log for viewing and auditing.

For complete information about using SMH, see the *HP System Management Homepage 7.2 User Guide* available from http://www.hp.com/go/smh/.

HP Insight Remote Support

See the *HP Insight Remote Support Release Notes* for a complete list of supported devices.

Device and access requirements

HP Insight RS 7.0.x can be installed on a ProLiant server or on a VMware guest. See the *HP Insight Remote Support Release Notes* for the most current supported versions. Insight RS communicates over HTTPS/443 to submit incidents to and retrieve entitlement information from the HP Support Center. HTTPS provides encryption for confidentiality of software configuration data collected from the Hosting Device and transferred to HP. HP recommends that you configure the firewall for Insight RS before installing Insight RS. If your policies require IP addresses, see *HP Insight Remote Support Security White Paper* available at http://www.hp.com/go/insightremotesupport/docs for details.

Installing HP Insight Remote Support

Before installing Insight RS, you must first download the Insight RS software package from the HP Software Depot at http://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=REMOTESUPPORT.

Download Insight RS:

1. Log on to the Hosting Device using an Administrator account.
2. Download the executable file containing the Insight RS installation files from the HP Software Depot.

Begin the installation:

1. On the Hosting Device, double-click the self-extracting executable file that you downloaded from the HP Software Depot. After the files are extracted, the installation wizard launches and performs a prerequisite check.

2. If all the prerequisites are met, click **Next**. If any prerequisites are not met, do one of the following:
   - If the problem is a critical failure, exit the installer, resolve the issue, and then restart the installer.
   - If the problem is a warning, either exit the installer and resolve the issue or check the **Confirm to continue** check box and click **Next**.
3. On the welcome screen, click **Next**.
4. Review the license agreement, select **I accept the terms in the License Agreement**, and then click **Next**. The Destination Folder section of the wizard appears.
5. Do one of the following:
   - To install Insight RS to the default destination folder (`C:\Program Files (x86)\HP\RS\`), click **Next**.
   - To install Insight RS to a different folder, click **Change**, browse to a new destination folder, click **OK**, and then **Next**.

     NOTE: Changing the installation directory only changes the location of the program files. The data files, such log files, will still save to the `C:\` drive.
6. Click **Install**. When the installation is nearing completion, you will see the following message:

   ```
   Install complete. Waiting up to 600 seconds for HPRS UI to become available.
   ```
7. When the installation completes, click **Finish** to exit the installation wizard.

If any problems occur during installation, access the log files in the `C:\ProgramData\HP\RS\LOG` folder. Note that this is a hidden folder, so you must change the folder view to show hidden files, folders, and drives.

Before proceeding, wait for a few minutes to ensure that the Hosting Device is ready for registration. If you try to log into the Insight RS Console immediately, you will see a message stating that the system is starting up and to try again later. If you do this, you will need to force a refresh on the Insight RS Console (or open a new browser window) to clear the browser cache.

Now point your browser to `https://<host device ip or fqdn>:7906`.

Log on to the Insight RS Console using an Administrator account. You can log on to the Insight RS Console using any system account, but only Administrator accounts can access the **Administrator Settings** in the Insight RS Console. The first time you log in to set up Insight RS will invoke the Hosting Device Setup Wizard.

Using the Hosting Device Setup Wizard

The initial setup of Insight RS uses the Hosting Device Setup Wizard to provide step-by-step instructions to perform the initial configuration of Insight RS as well as steps for setting up monitored devices, configuring discovery, and specifying default settings. The Hosting Device Setup Wizard must be completed when you open the Insight RS Console for the first time.

For more information on completing the Hosting Device Setup Wizard, see the *HP Insight Remote Support Installation and Configuration Guide* available at http://www.hp.com/go/insightremotesupport/docs.

Registering for Insight RS after server configuration and installation

If you chose Register later during Intelligent Provisioning setup, after the OS is installed you can register for Insight RS using iLO 4 or through the OA.

For more information on registering for Insight RS using iLO 4 or OA, see the *HP Insight Remote Support and Insight Online Setup Guide for ProLiant Gen8 Servers* available in the HP ProLiant Gen8 Server Management Information Library at http://www.hp.com/go/proliantgen8/docs.

HP Insight Remote Support and HP Systems Insight Manager Synchronization

HP Insight Remote Support 7.0.x has the ability to synchronize data with HP Systems Insight Manager (HP SIM) version 7.0 or higher. This is enabled by configuring the HP SIM Adapter under the **Administrator Settings→Integration Adapter** tab.

NOTE: Synchronization is only supported if HP SIM is installed on the same server as HP Insight RS.

If you install HP SIM before installing HP Insight RS, then the HP SIM Adapter is automatically installed. If you install HP SIM after installing HP Insight RS, then you must manually install the HP SIM Adapter. For more information on HP SIM Adapter installation, see the *HP Insight Remote Support Installation and Configuration Guide* at www.hp.com/go/insightremotesupport/docs.

NOTE: HP SIM versions 7.1 and later and Insight RS 7.0.5 support different versions of the Microsoft Windows operating system. If you intend to synchronize Insight RS with HP SIM, make sure the Hosting Device operating system is supported by both HP SIM and Insight RS.

7 Troubleshooting

The *HP ProLiant Gen8 Troubleshooting Guide, Volume I: Troubleshooting* provides procedures for resolving common problems and comprehensive courses of action for fault isolation and identification, issue resolution, and software maintenance on ProLiant servers and server blades. The *HP ProLiant Gen8 Troubleshooting Guide, Volume II: Error Messages* provides a list of error messages and information to assist with interpreting and resolving error messages on ProLiant servers and server blades. The documents are on the Documentation CD and on the HP website http://www.hp.com/go/proliantgen8/docs.

8 Support and other resources

Contacting HP

For worldwide technical support information, see the HP support website:

http://www.hp.com/support

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

New and changed information in this edition

The following additions and changes have been made for this edition:

- The following information has been updated:
  - Updated the server installation information
  - Removed server product sample schematics
  - Updated Intelligent Provisioning information
  - Added troubleshooting links
- A new Support and Other Resources chapter has been added.

Related information

The following documents [and websites] provide related information:

- *HP Intelligent Provisioning User Guide*
  http://www.hp.com/go/intelligentprovisioning/docs
- *HP iLO 4 User Guide*
  http://www.hp.com/go/ilomgmtengine/docs
- *HP Array Configuration Utility User Guide*
  Use the search feature at http://www.hp.com/bizsupport
- *HP ProLiant Error Message Reference Guide*
  http://www.hp.com/go/proliantgen8/docs
- *HP ProLiant Gen8 Server Troubleshooting Guide*
  http://www.hp.com/go/proliantgen8/docs
- *HP Insight Remote Support and Insight Online Setup Guide for ProLiant Gen8 Servers*
- HP Business Support Center
  http://www.hp.com/bizsupport

Websites

- HP ProLiant Gen8 Server Management Information Library
  http://www.hp.com/go/proliantgen8/docs
- HP Service Pack for ProLiant Information Library
  http://www.hp.com/go/spp/documentation
- HP Smart Update Manager Information Library
  http://www.hp.com/go/hpsum/documentation

Typographic conventions

Table 1 Document conventions

Convention	Element
Blue text: Table 1 (page 52)	Cross-reference links and e-mail addresses
Blue, underlined text: http://www.hp.com	Website addresses
Bold text	• Keys that are pressed • Text typed into a GUI element, such as a box • GUI elements that are clicked or selected, such as menu and list items, buttons, tabs, and check boxes
Italic text	Text emphasis
`Monospace` text	• File and directory names • System output • Code • Commands, their arguments, and argument values
`Monospace, italic` text	• Code variables • Command variables
`Monospace, bold` text	Emphasized monospace text

WARNING! Indicates that failure to follow directions could result in bodily harm or death.

CAUTION: Indicates that failure to follow directions could result in damage to equipment or data.

IMPORTANT: Provides clarifying information or specific instructions.

NOTE: Provides additional information.

TIP: Provides helpful hints and shortcuts.

Rack stability

Rack stability protects personnel and equipment.

⚠ **WARNING!** To reduce the risk of personal injury or damage to equipment:

- Extend leveling jacks to the floor.
- Ensure that the full weight of the rack rests on the leveling jacks.
- Install stabilizing feet on the rack.
- In multiple-rack installations, fasten racks together securely.
- Extend only one rack component at a time. Racks can become unstable if more than one component is extended.

9 Documentation feedback

HP 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@hp.com**). Include the document title and part number, version number, or the URL when submitting your feedback.

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