HP Systems Insight Manager 7.3 Installation and Configuration Guide for HP-UX

Abstract

This document describes the installation and configuration of HP Systems Insight Manager. This document is intended for system administrators who plan to install and use HP SIM. Previous experience with Systems Insight Manager and an HP-UX operating system is helpful.

Contents

1 Installation overview and requirements

This chapter provides an overview of the HP Systems Insight Manager (HP SIM) installation process, and it identifies the system requirements for an HP-UX CMS, a managed system, and a network client.

Overview of first time install process

For a first-time installation of HP Systems Insight Manager on your CMS, perform these steps:

1. Install and configure the CMS. For more information, see "Installing HP Systems Insight Manager on the CMS for the first time" (page 25).
2. Install and configure the required management software on the systems that the CMS will manage. For more information, see "Setting up managed systems" (page 30).
3. Configure Systems Insight Manager for your environment. For more information, see "Configuring Systems Insight Manager" (page 33).

Upgrade overview

If Systems Insight Manager is installed on your CMS, see the upgrade instructions in "Upgrading HP SIM" (page 39).

System requirements

This section identifies the hardware and software requirements and recommendations for HP Systems Insight Manager. These requirements are separated into sections for the CMS, managed system, and network client.

Support for Adobe Flash player

HP recommends that the version of Adobe Flash player is atleast 11.5.502. This is a patched version of Adobe Flash Player 10. To download the latest patched version, seehttp://www.adobe.com/support/security/bulletins/apsb11-28.html.

Part 1: HP-UX Central Management Server

Prerequisite

- Install the current version of `smbclient` before installing HP-UX SIM. The current version of `smbclient` is required to successfully integrate HP-UX with the Microsoft Windows environment. This avoids the possible risk of CRA task failure error. To install the current version of `smbclient` for HP-UX, see https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=B8725AA.

Operating system

- HP-UX 11i v2 Update 2 (11.23 IA)
- HP-UX 11i v3 (11.31 IA)
- HP Integrity Virtual Machine running a guest that has HP-UX 11i v2
- HP Integrity Virtual Machine running a guest that has HP-UX 11i v3

NOTE: The Systems Insight Manager CMS cannot run on an HP Integrity Virtual Machine (HPVM) host.

The required patches must be installed for each of these operating systems. For more information, see "HP-UX patches" (page 7).

Hardware

- Any HP system (Integrity) server with a minimum of 2 GB RAM (3 GB for HP-UX 11i v3)
- Any HP system with Oracle installed with a minimum of 4 GB RAM
- Free disk space:
  - 20 MB for CMS (`/`)
  - 600 MB for the CMS and DTF agent (`/opt`)
  - 500 MB minimum recommended for data (`/var/opt`)

  NOTE: The HP ProLiant ML/DL 100 series servers do not support HP Insight Remote Support Advanced. If you are using HP Insight Remote Support Advanced, you must use HP ProLiant 300, 500, 700, or blade server.

- Swap space:
  - 4 GB minimum total swap space for Intel Itanium-based systems

Software

- OpenSSH
- HP Web-Based Enterprise Management (WBEM) Services for HP-UX, installed and active
- (Optional) Oracle 11g R2 (11.2.0.4 or later)

  NOTE: Oracle supports up to 5000 systems and 50,000 events.

  NOTE: You must install the Oracle JDBC driver, version 11.2.0.4 for Oracle 11g R2. You can download this driver from the Oracle website at http://www.oracle.com/technetwork/database/enterprise-edition/jdbc-112010-090769.html

  NOTE: You must create the Oracle database with a Unicode character set of AL32UTF8 and a national character set of AL16UTF16 before you install HP SIM. The NLS length must be set to BYTE. You must also specify the thin client .jar file location. Systems Insight Manager requires Oracle database and TNS listener services to be running when the system is restarted. Oracle by itself does not start the Oracle database and TNS listener automatically. An Oracle DBA must set these services to be restarted when the server is reset. For information on how to automatically start these services, see the Oracle documentation at http://www.oracle.com/pls/db102/homepage. Access to this link requires registration. The Oracle DBA who manages the Oracle installation must perform this task.

- Oracle 11g R2
- PostgresSQL 7.4.2

  NOTE: The `hpsimdb` version supports up to 500 systems and 5000 events.

- Java Out-of-Box installed (shipped as optional selectable software as part of the operating system)

Browser software

- Mozilla Firefox 17.0
- Mozilla Firefox 24.0
- Mozilla Firefox 10.x
- Mozilla Firefox 9.x

Networking

Properly configured and working DNS.

NOTE: HP Integrity VMs do not support running an application at the same level as the host.

NOTE: If you are running OpenView NNM or OpenView Operations on the same system, you must change the SNMP trap listening port in those products to make it function properly. For more information, see the OpenView product documentation in the *Integrating Systems Insight Manager 6.0 with HP OpenView Select Access* white paper at http://www.hp.com/go/insightmanagement/sim/docs.

NOTE: Legacy Novell systems that have only an IPX network enabled will not be manageable by an HP-UX CMS. An IP-based network must be available.

NOTE: If you are using NIS, ping `localhost` and if you receive no response, create or edit the file `/etc/nsswitch.conf` and add the following entry in the file: `hosts: files dns nis`. If the NIS server is not in the network, do not add the `nis` entry in `/etc/nsswitch.conf`.

HP-UX patches

Before you run Systems Insight Manager, install all required patches. In particular, you must install all patches that are required to support the Java version that Systems Insight Manager uses.

NOTE: To determine the Java version installed, execute:

`/opt/mx/j2re/bin/java -version`

Currently, the product is shipped with Java 1.7 Runtime Environment.

NOTE: For more information about Java patches, go to http://www.hp.com/go/java, and select **Patches** from **Site information**. This site determines the recommended patches for the Java application. Follow the instructions. To download all the patches, go to the ITRC download center (login required). For more information on individual patches, click the patch name.

Downloading and installing individual HP-UX patches

Procedure 1 Downloading patches

1. Browse to the patch database:

   http://www2.itrc.hp.com/service/patch/mainPage.do
2. Click the **HP-UX** link.
3. Select the appropriate operating system; for example, 11.23...11.31.
4. Select **Search by Patch IDs**, enter the patch IDs, and then click **search**.
5. Select the patches, and click **add to selected patch list** at the bottom of the page to add dependent patches.
6. Click **download selected**, and follow the directions. HP recommends the gzip package format from the following available formats.

   - zip package
   - gzip package
   - tar package
7. Download a script that will ftp the patches.

Procedure 2 Installing patches

1. Create a `/var/tmp/patches` directory, and copy the downloaded patches into that directory.
2. Execute:

   `gunzip patch_file`

```
tar -xvf patch_file
```

3. Load the patches into `/var/tmp/patches/depot`:

    ```
    ./create_depot_hp-ux_11
    ```

4. Install the patches:

    ```
    swinstall -x autoreboot=true -s /var/tmp/patches/depot \*
    ```

    Only the applicable patch file sets are loaded. After the system reboots, continue with the installation.

Part 2: Requirements and recommendations for managed system

Operating systems

- **Windows managed systems:**
  - Windows 2012 R2 Hyper-V
  - Windows Server 2012 Foundation
  - Windows Server 2012 Essentials
  - Windows Server 2012 Standard
  - Windows Server 2012 R2 Standard
  - Windows Server 2012 R2 Datacenter
  - Windows Server 2012 Datacenter
  - Windows Server 2012 Hyper-V
  - Windows Server 2008 Standard
  - Windows Server 2008 Standard X64
  - Windows Server 2008 Enterprise
  - Windows Server 2008 Web Edition
  - Windows Server 2008 R2 Enterprise, SP1
  - Windows Server 2008 R2 Standard, SP1
  - Windows Server 2008 R2 Datacenter, SP1
  - Window Web Servers 2008 R2 , SP1
  - Windows Small Business Server 2011 Standard
  - Windows Small Business Server 2011 Essentials
  - Windows HPC Server 2008 R2
  - Windows Server 2008 R2 Standard
  - Windows Server 2008 R2 Standard, Server Core, SP1
  - Windows Server 2008 R2 Enterprise
  - Windows Server 2008 R2 Enterprise, Server Core, SP1
  - Windows Server 2008 Standard, Server Core, SP2
  - Windows Server 2008 Enterprise, Server Core, SP2
  - Windows Server 2008 Datacenter
  - Windows Server 2008 Small Business Server
  - Windows Web Server 2008 R2
  - Windows Server 2008 Datacenter R2
  - Windows Server 2008 for Itanium-Based Systems
  - Windows Server 2008 Standard, SP2

- Windows Server 2008 Standard (x64) SP2

- Windows Server 2008 Standard (x64)

- Windows Server 2008 Enterprise, SP2

- Windows Server 2008 Enterprise (x64) SP2

- Windows Server 2008 Enterprise (x64)

- Windows Server 2008 Datacenter, SP2

- Windows Server 2008 Small Business Server SP2

- Windows Server 2008 Web Edition, SP2

- Windows Server 2008 for Itanium-Based Systems, SP2

- Windows Storage Server 2008

- Windows Storage Server 2008 Standard (x64)

- Windows Storage Server 2008 Enterprise (x64)

- Windows Storage Standard Server 2012 R2

- Windows Storage Server 2008 R2 Standard SP1

- Windows Storage Server 2008 R2 Enterprise SP1

- Windows Storage Server 2008 R2 Standard

- Windows Storage Server 2008 R2 Enterprise

- Windows Server 2003 R2 Standard

- Windows Server 2003 R2 Standard (x64)

- Windows Server 2003 R2 Standard SP2

- Windows Server 2003 R2 Standard (x64) SP2

- Windows Server 2003 R2 Enterprise

- Windows Server 2003 R2 Enterprise (x64)

- Windows Server 2003 R2 Enterprise, SP2

- Windows Server 2003 R2 Enterprise (x64) SP2

- Windows Server 2003 R2 Datacenter

- Windows Server 2003 R2 Datacenter SP2

- Windows Server 2003 Standard SP1

- Windows Server 2003 Standard (x64) SP1

- Windows Server 2003 Standard, SP2

- Windows Server 2003 Standard (x64) SP2

- Windows Server 2003 Enterprise SP1

- Windows Server 2003 Enterprise (x64) SP1
- Windows Server 2003 Enterprise (IA64) SP1
- Windows Server 2003 Enterprise SP2
- Windows Server 2003 Enterprise (x64) SP2
- Windows Server 2003 Enterprise (IA64) SP2
- Windows Server 2003 Datacenter SP1
- Windows Server 2003 Datacenter (x64) SP1
- Windows Server 2003 Datacenter (IA64) SP1
- Windows Server 2003 Datacenter SP2
- Windows Server 2003 Datacenter (x64) SP2
- Windows Server 2003 Datacenter (IA64, SP2
- Windows Server 2003 R2, Web Edition, x86
- Windows Server 2003 R2, Web Edition, x64
- Windows Server 2003 R2, Web Edition SP2, x86
- Windows Server 2003 R2, Web Edition
- Windows Server 2003 Web Edition SP1
- Windows Server 2003 Web Edition SP2
- Windows 7 (Professional/Enterprise)
- Windows 7 (Professional/Enterprise) (x64)
- Windows Vista (Business/Enterprise) SP2
- Windows Vista (Business/Enterprise) (x64) SP2

- **HP-UX and HP NonStop Kernel managed systems:**
  - HP-UX 11i v1 (11.11)
  - HP-UX 11i v2 Update 2 (11.23 PI-PA)
  - HP-UX 11i v3 (11.31 IA/PA)
  - HP NonStop Kernel
  - OpenVMS 8.3
  - OpenVMS 8.4

- **Linux managed systems:**
  - Oracle Enterprise Linux 6.2 x86
  - Oracle Enterprise Linux 6.2 AMD64/EM64T
  - Oracle Enterprise Linux 5.8 x86

- Oracle Enterprise Linux 5.8 AMD64/EM64T

- Oracle Enterprise Linux 5.7 x86

- Oracle Enterprise Linux 5.7 AMD64/EM64T

- Oracle Enterprise Linux 5.6 x86

- Oracle Enterprise Linux 5.6 AMD64/EM64T

- Red Hat Enterprise Linux 6.4 for x86

- Red Hat Enterprise Linux 6.4 for AMD64 and Intel x86-64

- Kernel-Based Virtual Machine on Red Hat Enterprise Linux 6.4

- RHEL 6.4 for Intel Itanium

- Red Hat Enterprise Linux 6.3 x86

- Red Hat Enterprise Linux 6.3 IPF

- Red Hat Enterprise Linux 6.3 AMD64/EM64T

- Red Hat Enterprise Linux 6.2 IPF

- Red Hat Enterprise Linux 6.2 x86

- Red Hat Enterprise Linux 6.2 AMD64/EM64T

- Red Hat Enterprise Linux 6.1 IPF

- Red Hat Enterprise Linux 6 IPF

- Red Hat Enterprise Linux 6.1 AMD64/EM64T

- Red Hat Enterprise Linux 6.1 x86

- Red Hat Enterprise Linux 6 x86

- Red Hat Enterprise Linux 6 AMD64/EM64T

- Red Hat Enterprise Linux 5.9 x86

- Red Hat Enterprise Linux 5.9 AMD64/EM64T

- Kernel-Based Virtual Machine on Red Hat Enterprise Linux 5.9

- Red Hat Enterprise Linux 5.8 IPF

- Red Hat Enterprise Linux 5.8 x86

- Red Hat Enterprise Linux 5.8 AMD64/EM64T

- Red Hat Enterprise Linux 5.7 IPF

- Red Hat Enterprise Linux 5.7 x86

- Red Hat Enterprise Linux 5.7 AMD64/EM64T

- Red Hat Enterprise Linux 5.6 IPF

- Red Hat Enterprise Linux 5.6 x86

- Red Hat Enterprise Linux 5.5 AMD64/EM64T

- Red Hat Enterprise Linux 5.5 IPF

- Red Hat Enterprise Linux 5.5 x86

- Red Hat Enterprise Linux 5.4 IPF

- Red Hat Enterprise Linux 5.4 x86

- Red Hat Enterprise Linux 5.4 AMD64/EM64T

- Red Hat Enterprise Linux 5.3 IPF

- Red Hat Enterprise Linux 5.3 x86

- Red Hat Enterprise Linux 5.3 AMD64/EM64T

- SUSE Linux Enterprise 11 IPF, SP2

- SUSE Linux Enterprise 11 x86, SP2

- SUSE Linux Enterprise 11 AMD64/EM64T, SP2

- SUSE Linux Enterprise 11 IPF, SP1

- SUSE Linux Enterprise 11 x86, SP1

- SUSE Linux Enterprise 11 AMD64/EM64T, SP1

- SUSE Linux Enterprise 11 IPF, SP3

- SUSE Linux Enterprise 11 x86, SP3

- SUSE Linux Enterprise 11 AM64/EM64T, SP3

- SUSE Linux Enterprise 10 IPF, SP4

- SUSE Linux Enterprise 10 x86, SP4

- SUSE Linux Enterprise 10 AMD64/EM64T, SP4

- SUSE Linux Enterprise 10 IPF, SP3

- SUSE Linux Enterprise 10 x86, SP3

- SUSE Linux Enterprise 10 AMD64/EM64T, SP3

- Debian 5.5

- Ubuntu 10.40 LTS

- Ubuntu 12.04 LTS

- Ubuntu 12.04.3 LTS

- Ubuntu 13.10 LTS

- **VMware managed systems:**

  - VMware ESXi 5.5

  - VMware ESXi 5.1 Update1

- VMware ESXi 5.1
- VMware ESXi 5.0 Update 1
- VMware ESXi 5.0 Update 2
- VMware ESXi 5.0
- VMware ESX 4.0 Update 3
- VMware ESX 4.0 Update 2
- VMware ESX 4.1 Update 2
- VMware ESX 4.1 Update 1
- VMware ESXi 4.1 Update 3
- VMware ESX 4.1 Update 3
- VMware ESXi 4.1 Update 2
- VMware ESXi 4.1 Update 1
- VMware ESX 4.0 Update 4
- VMWare ESXi 4.0 Update 4
- VMWare ESXi 4.0 Update 3
- VMware ESXi 4.0 Update 2
- Xen on RHEL 5.x
- Xen on SLES 11
- Xen on SLES 10
- Integrity VM Windows (running guest OS Windows)
- Integrity VM Linux (running guest OS Linux)
- Integrity VM HP-UX (running guest OS HP-UX 11i v2)
- Integrity VM HP-UX (running guest OS HP-UX 11i v3)
- Microsoft Virtual Server 2005 R2 SP1
- Microsoft Virtual Server 2005 R2
- Microsoft Windows Server 2008 Hyper-V SP2 running guest Windows
- Microsoft Windows Server 2008 R2 Hyper-V SP1 running guest Windows
- Microsoft Windows Server 2008 R2 Hyper-V running guest Windows
- Microsoft Hyper-V Server 2008 SP2 running guest Windows
- Microsoft Hyper-V Server 2008 R2 SP1 running guest Windows
- Microsoft Hyper-V Server 2008 R2 running guest Windows
- Microsoft Hyper-V Server 2012

- $\circ$ Microsoft Hyper-V Server 2012 R2

- **Novell managed systems:**
  - $\circ$ Netware 6.5
  - $\circ$ Netware 6.0

- **SUN managed systems:**
  - $\circ$ Solaris 10 Sparc
  - $\circ$ Solaris 9 Sparc
  - $\circ$ Solaris 11 Intel Platform
  - $\circ$ Solaris 10 Intel Platform
  - $\circ$ Solaris 9 Intel Platform
  - $\circ$ Solaris 8 Intel Platform

- **IBM managed systems:**
  - $\circ$ AIX 6.1
  - $\circ$ AIX 5.3

Hardware

- **For Windows:**
  - $\circ$ Any HP ProLiant system
  - $\circ$ Any HP Itanium-based system

- **For HP-UX:**
  - $\circ$ Any HP PA-RISC system
  - $\circ$ Any HP Itanium-based system

- **For Linux:**
  - $\circ$ Any HP ProLiant system
  - $\circ$ Any HP Itanium-based system

Software

This software is not required, but if you want improved management capabilities, HP recommends that you install it.

- For Windows:
    - OpenSSH Services 5.9p1
    - HP ProLiant Support Pack (PSP) baselined at v9.2
    - HP Support Pack for ProLiant (SPP) 2013.02.0
    - HP Service Pack for ProLiant 2013.09.0 (B)
    - WBEM/WMI
    - SNMP (recommended as an alternative to WBEM)
- For Linux:
    - SSH
    - HP ProLiant Support Pack (PSP) baselined at v9.2
    - HP Support Pack for ProLiant (SPP) 2013.02.0
    - HP Service Pack for ProLiant 2013.09.0 (B)
    - SNMP (recommended as an alternative to WBEM)

This software is not required, but if you want improved HP SIM capabilities, HP recommends that you install it. You can purchase or download this software from different suppliers:

- SSH Client
- X Window Server

Required web browsers

- **For Windows:**
  - Microsoft Internet Explorer 11
  - Microsoft Internet Explorer 10
  - Microsoft Internet Explorer 9
  - Microsoft Internet Explorer 8
  - Mozilla Firefox Extended Support Release 17.0
  - Mozilla Firefox Release 24.0
  - Mozilla Firefox 10.x
  - Mozilla Firefox 9.x
  - Mozilla Firefox 6.x
  - Mozilla Firefox 3.x

  NOTE: For optimum performance, the minimum resolution for the browser must be 1024 x 768.

- **For HP-UX:**
  - Mozilla Firefox 3.5 (3.5.09.00)
  - Mozilla Firefox 3.6
  - Mozilla Firefox Release 24.0

- **For Linux:**
  - Mozilla Firefox 10.x
  - Mozilla Firefox 9.x
  - Mozilla Firefox Release 24.0
  - Mozilla Firefox 6.x
  - Mozilla Firefox 3.x

  NOTE: For all Internet Explorer browsers, you must have the SSL 3.0 or TLS 1.0 browser security options enabled for HP SIM to work properly.

Managed storage system

To view the latest information regarding HP SIM support for a particular storage system, including Fibre Channel disk arrays, switches, tape libraries, or hosts (with Fibre Channel host bus adapters), see the HP SIM SMI-S Provider web page at http://www.hp.com/go/hpsim/providers.

This web page also offers information on obtaining and installing SMI-S providers.

Foreign language support

Japanese, Korean, Simplified Chinese, and Traditional Chinese are supported on all platforms, as listed in "System requirements" (page 5). French, German, Italian, and Spanish are supported on Windows systems only.

HP CloudSystem Integrated Manager requirements

HP CloudSystem Integrated Manager consists of blade computer systems, integrated connectivity to data and storage networks, and shared power subsystems. HP CloudSystem Integrated Manager enables you to quickly navigate your HP CloudSystem environments — including server blades and desktops, enclosure infrastructures, racks, and integrated switches — through hierarchical tree views and picture views. You can conveniently manage individual blade system or groups of blade systems.

System support

CloudSystem Integrated Manager manages blade infrastructures. For an updated list of supported systems, see http://h18002.www1.hp.com/products/servers/management/bsme/index.html. On the right side of the screen, select **Support & Documents**. Under Resources for HP CloudSystem Integrated Manager Software, select **Manuals**. Under General reference, select **HP CloudSystem Integrated Manager Support Matrix**.

Hardware support

Table 1 Supported HP c-Class platforms

Product models	Minimum firmware version for software management
HP BladeSystem c3000	2.00 or later
HP BladeSystem c3000 Tower Model	2.10 or later
HP BladeSystem c7000	1.30 or later
HP Bladesystem c7000 Platinum	1.30 or later

Table 2 Supported HP e-Class platforms

Product models	Minimum firmware version for software management
HP ProLiant BL 10e Enclosure	N/A

Table 3 Supported HP p-Class platforms

Product models	Minimum firmware version for software management
HP ProLiant p-Class 1U Power Enclosure	2.40
HP ProLiant p-Class 3U Power Enclosure	2.40
HP ProLiant p-Class Enhanced Enclosure	2.40
HP ProLiant p-Class Standard Enclosure	2.40

Table 4 Supported c-Class servers

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3/ iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
AiO SB600c storage solution	2008.01.24	1.43	Microsoft Windows Storage Server 2003	7.91.0.0
HP carrier grade AMC Expansion	NA	NA	NA	NA
HP Tape Blade	NA	T61D[2]	Microsoft Windows 2000	NA

Table 4 Supported c-Class servers *(continued)*

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3/ iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
HP SB40c for HP c-Class Blade System	NA	2.0.0.0[2]	NA	NA
Integrity BL860c	01.01A	T 02.05 or later	Windows, Linux, and HP-UX	NA
Integrity BL870c	03.11	TO2.05 or later	Windows, Linux, and HP-UX	NA
PCI expansion blades	NA	NA	NA	NA
ProLiant BL260c G6	NA	1.75 or later	Windows, Linux, Solaris, and NetWare	8.20
ProLiant BL260c G5	I20 02/14/2008	1.50 or later	Windows and Linux	8.00
ProLiant BL280c G6	I22 3/11/09	1.75	Windows and Linux	8.20
ProLiant BL460c	5/1/2007	1.24 or later	Windows and Linux	7.50 or later
ProLiant BL460c G6	I24 2/24/09	1.75	Windows and Linux	8.20
ProLiant BL465c	6/1/2005	1.24 or later	Windows and Linux	7.60 or later
ProLiant BL465c G5	9/12/2008	1.70	Windows Server 2003 and 2008, Linux, Solaris, and VMWare ESX Server	8.15
ProLiant BL480c	5/1/2007	1.24 or later	Windows and Linux	7.50 or later
ProLiant BL490c G6	I21 2/23/09	1.75	Windows and Linux	8.20
ProLiant BL495c G6	A14 05/07/2009	1.78	Windows 2003, Windows 2008, RHEL 5 Update 3, RHEL 4 (minimum Update 8), VMWare ESX 4.0.0 or later, XenSource, RedHat XEN, and SLES XEN	8.25
ProLiant BL495c G5	8/29/2008	1.61	Windows Server 2003 and 2008, Linux, and VMWare ESX Server	8.11
ProLiant BL680c G5	10/18/2007	1.35 or later	Windows and Linux	7.9 or later
ProLiant BL685c	6/1/2005	1.24 or later	Windows and Linux	7.60 or later
ProLiant BL685c G6	A17 2/14/2009	1.75	Windows and Linux	8.20
ProLiant BL2x220c G5	I19 03/03/2008	1.50 or later	Windows and Linux	8.00
ProLiant BLxw460c Blade Workstation	7/31/2007	1.30 or later	Windows XP or Vista, and Linux	7.91 or later
ProLiant xw2x220c Blade Workstation	09/16/2008	1.60	Windows XP or Vista	8.15
BL420c Gen8	I30, 08/20/2012	ILO4 firmware 1.30 or later, OA firmware 3.55	Microsoft Windows server, RHEL, SLES, Solaris, VMware	HP Service Pack for ProLiant 2012.10.0

Table 4 Supported c-Class servers *(continued)*

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3/ iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
ProLiant BL465c Gen8	A26, 08/14/2012	ILO4 firmware 1.30 or later	Microsoft Windows server, RHEL, SLES, Oracle Solaris, Vmware, Citrix Xenserver	HP Service Pack for ProLiant 2012.10.0
ProLiant BL460c G5	I23, 05/02/2011	ILO2 firmware 2.12 or later	Microsoft Windows Server Microsoft Windows Server Hyper-V, RHEL, SLES, Oracle Enterprise Linux (OEL) Solaris 10 for x86/x64 based Systems, Vmware, Citrix XenServer	PSP 8.0 or later
ProLiant BL465c G6	A13, 05/02/2011	ILO2 firmware 2.12 or later	Microsoft Windows server, RHEL, SLES, Solaris 10 for x86/x64 based systems, VMware ESX, Citrix Xenserver	PSP 8.5 or later
ProLiant BL685c G5	A08, 05/02/2011	ILO2 firmware 2.12 or later	Microsoft Windows Server, Microsoft Windows Server Hyper-V, RHEL, SLES, Oracle Enterprise Linux(OEL), Solaris 10 for x86/x64 based Systems,Vmware, Citrix XenServer	PSP 8.0 or later
ProLiant BL2x220c G6	I26, 05/05/2011	ILO2 firmware 2.12 or later, OA firmware 2.6 or later	Microsoft Windows Server, RHEL, SLES, Solaris 10 for x86/x64 based Systems, Vmware, Citrix XenServer	PSP 8.3 or later
ProLiant BL2x220c G7	I29, 05/05/2011	ILO3 firmware 1.5 or later, OA firmware 3.11 or later	Microsoft Windows Server, RHEL, SLES Oracle Solaris, Vmware, Citrix Xenserver	PSP 8.7 or later

[1] For specific version of the operating systems, browse the ProLiant support matrix at http://h71028.www7.hp.com/enterprise/cache/461942-0-0-0-121.html

[2] Firmware - Storage Tape

Table 5 Supported Servers HP Consolidated Client Infrastructure (CCI)

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3/ iLO 4	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required

Table 5 Supported Servers HP Consolidated Client Infrastructure (CCI) *(continued)*

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3/ iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
		firmware version required		Windows
ProLiant BL1000	2.04 A	4.01 Rev. A[2] 15 Jan 2008	Windows XP	NA
ProLiant BL1500	1.02 Rev. A	4.01 Rev. A[2] 15 Jan 2008	Windows XP or Vista	NA
ProLiant BL2000	2.06 Rev. A	4.01 Rev. A[2] 15 Jan 2008	Windows XP or Vista	NA
ProLiant BL2500	2.06 Rev. A	4.01 Rev. A[2] 15 Jan 2008	Windows XP or Vista	NA

[1] For specific version of the operating systems, browse the ProLiant support matrix at http://h10018.www1.hp.com/wwsolutions/index.html

[2] HP PC BL Enclosure Integrated Administrator

Table 6 Supported e-Class Servers

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 /iLO 3/ iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
ProLiant BL 10e	2003.02.17 (C)	4.00 A[2] 7 Nov 2005	Microsoft Windows 2000	NA
ProLiant BL 10e G2	2003.02.17 (C)	4.00 A[2] 7 Nov 2005	Microsoft Windows 2000	NA

[1] For specific version of the operating systems, browse the ProLiant support matrix at http://h10018.www1.hp.com/wwsolutions/index.html

[2] HP ProLiant BL e-Class Integrated Administrator

Table 7 Supported p-Class Servers

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3/ iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
Integrity BL60p	01.70	H.03.21	HP-UX	NA
ProLiant BL20p	2004.05.01 (14 May 2004)	1.70 or later	Windows and Linux	7.10 or later
ProLiant BL20p G2	4.09 (I04-09/16/2004)	1.70 or later	Windows and Linux	7.10 or later
ProLiant BL20p G3	2006.02.14 (25 May 2006)	1.80 or later	Windows and Linux	7.10 or later

Table 7 Supported p-Class Servers *(continued)*

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3/ iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
ProLiant BL20p G4	2007.11.13 (A) (17 Jan 2008)	1.24 or later	Windows and Linux	7.50 or later
ProLiant BL25p		1.70 or later	Windows and Linux	7.20 or later
ProLiant BL25p G2	2007.09.23 (A) (4 Dec 2007)	1.24 or later	Windows and Linux	7.60 or later
ProLiant BL25xwp		1.88 or later	Windows and Linux	
ProLiant BL30p	2005.10.27 (21 Jun 2006)	1.70 or later	Windows and Linux	7.10 or later
ProLiant BL35p		1.70 or later	Windows and Linux	7.20 or later
ProLiant BL40p	2003.07.25 (12 Aug 2003)	1.70 or later	Windows and Linux	7.10 or later
ProLiant BL45p		1.70 or later	Windows and Linux	7.20 or later
ProLiant BL45p G2	2007.09.23 (A) (4 Dec 2007)	1.24 or later	Windows and Linux	7.60 or later
ProLiant BL490c G7	I28 2011/01/29	iLO 3	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Solaris VMware Citrix XenServer	PSP 8.7
ProLiant BL620c G7	I25 7/9/2010	iLO 3	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Server Citrix XenServer	PSP 8.7
ProLiant BL465c G7 (AMD Opteron 6200)	A19	iLO 3 version 1.05	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Solaris VMware ESX Citrix XenServer	PSP 8.7
ProLiant BL490c G7	I28 2011/01/29	iLO 3	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Solaris VMware Citrix XenServer	PSP 8.7
ProLiant BL620c G7	I25 7/9/2010	iLO 3	Microsoft Windows Server Red Hat Enterprise Linux (RHEL)	PSP 8.7

Table 7 Supported p-Class Servers *(continued)*

Product Models	Minimum BIOS — System ROM required	Minimum Integrated Lights-Out (iLO) / iLO 2 / iLO 3 / iLO 4 firmware version required	Operating Systems Supported[1]	Minimum ProLiant Support Pack (PSP) required Windows
			SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Server Citrix XenServer	
ProLiant BL680c G7	I25 6/4/2010	iLO 3	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Server Citrix XenServer	PSP 8.7
ProLiant BL685c G7 (AMD Opteron 6100)	A20	iLO 3 Version 1.05 and OA version 3.10	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Solaris VMware Citrix XenServer	PSP 8.7
ProLiant BL685c G7 (AMD Opteron 6200)	A20	iLO 3 version 1.05 and OA version 3.10	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Solaris VMware Citrix XenServer	PSP 8.7
ProLiant BL460c Gen8	I31 2011/12/21	iLO 4 version 1.30 or later and OA version 3.50	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer	HP Service Pack for ProLiant 2013.09.0b

[1] For specific version of the operating systems, browse the ProLiant support matrix at http://h10018.www1.hp.com/ wwsolutions/index.html

Table 8 Supported c-Class Interconnects/Switches

Product Models	Minimum Software Management firmware version
Cisco Catalyst Blade Switch 3020 for HP c-Class Blade System	12.2(25)SEF1
Cisco Catalyst Blade Switch 3120G for HP	IP Base IOS firmware package[1]
Cisco Catalyst Blade Switch 3120X for HP	IP Base IOS firmware package[1]
Cisco MDS 9124e Fabric Switch	3.3(1a)
HP 1:10Gb Ethernet BL-c Switch	1.0.0
HP 1Gb Ethernet Pass-Thru Module for HP c-Class BladeSystem	NA
HP 10Gb Ethernet BL-c Switch	1.1.0

Table 8 Supported c-Class Interconnects/Switches *(continued)*

Product Models	Minimum Software Management firmware version
HP 1/10Gb Ethernet Blade Switch	1.0.0
HP 1/10Gb Virtual Connect Ethernet Module	1.22
HP 1/10Gb-F Virtual Connect Ethernet Fiber Module	1.22
HP 1/10Gb-F VC Module	NA
HP 3Gb SAS BL-c Pass-Thru Module	NA
HP 4Gb Fiber Channel Pass-Thru Module for c-Class BladeSystem	NA
HP 4Gb Virtual Connect Fiber Channel Module for c-Class BladeSystem	1.22
HP GbE2c Ethernet Blade Switch for HP	2.0.4
HP GbE2c Layer 2/3 Ethernet Blade Switch	2.0.4
HP Virtual Connect Flex-10 10Gb Ethernet Module for BladeSystem c-Class	2.25
HP Virtual Connect 8Gb Fibre Channel Module (24-port)	NA
Brocade 8Gb SAN Switch for HP BladeSystem c-Class	NA
HP NC382m Dual Port 1GbE BL-c Adapter	Boot code version 4.4.14 and MBA version 4.4.16
QMH2562 8Gb FC for HP BladeSystem c-Class	4.04.04
HP NC532m Dual port 10GbE BL-c Adapter	Boot code version 4.5.10 and MBA version 4.5.20
LPe 1205-HP 8Gb FC for c-Class	1.10a4
HP 3G SAS BL Switch Module	NA

[1] For more information on the IP Base IOS firmware package, see www.hp.com.

Table 9 Supported e-Class Interconnects/Switches

Product Models	Minimum Software Management firmware version
HP BladeSystem PC Blade Switch	1.1.1.4 Rev. A
HP ProLiant BL e-Class (C-GbE) Interconnect Switch	2.1.6 A

Table 10 Supported p-Class Interconnects/Switches

Product Models	Minimum Software Management firmware version
Brocade 4GB SAN Switch for HP p-class Blade system	v5.3.0d
Mcdata 4GB SAN Switch for HP p-class Blade system	6.4.0.07.00
HP ProLiant BL p-Class Cisco Gigabit Ethernet Switch Module	12.2(44)SE
HP ProLiant BL p-Class GbE Interconnect Switch Module	2.1.9
HP ProLiant BL p-Class GbE2 Interconnect Switch Module	3.2.3.0

2 Installing HP Systems Insight Manager on the CMS for the first time

Preparing the system

1. **For a first time install of Systems Insight Manager on your CMS, install and configure the CMS. The procedure to complete this step is in this chapter.**
2. Install and configure the required management software on the systems that will be managed by the CMS. For more information on this step, see "Setting up managed systems" (page 30) for details.
3. Configure HP SIM for your environment. For more information, see "Configuring Systems Insight Manager" (page 33).

Perform the following, to install HP SIM on an HP-UX 11i system. To upgrade HP SIM, see "Upgrading HP SIM" (page 39).

NOTE: HP Servicecontrol Manager is no longer supported. If HP Servicecontrol Manager is installed on your system, and you want to upgrade your system and keep your data, you must obtain HP SIM version 6.0 and perform a HP SIM 6.0 upgrade. For more information, see "Upgrading HP SIM" (page 39).

This procedure verifies that your system meets the minimum requirements and prepares your system for installation. For more information, see "System requirements" (page 5).

1. Install the latest recommended HP-UX 11i Java patches.

   For a list of the recommended patches, see http://ftp.hp.com/pub/softlib/hpuxjava-patchinfo/index.html.

2. Verify that a previous version of HP Servicecontrol Manager or HP SIM is not installed and configured for use by issuing the following commands:

   ```
   swlist -l bundle B8337BA B8339BA B8338BA T2414BA
   ```

   ```
   swlist -l product ServControlMgr AgentConfig SysMgmtServer
   SysMgmtAgent
   ```

   If any of these are installed and have been configured for use, perform an upgrade to save your data. If the version of the SysMgmtServer product starts with B.04 or C.04 use the steps in Upgrading HP SIM.

   Or you can uninstall HP Servicecontrol Manager or HP SIM using the following command:

   ```
   swremove -x enforce_dependencies=false ID
   ```

   where ID is the product or bundle ID. For example:

   ```
   swremove -x enforce_dependencies=false B8339BA
   ```

   or

   ```
   swremove -x enforce_dependencies=false T2414BA
   ```

   Remove the old product subdirectories by executing the following command:

   ```
   rm -rf /opt/mx /etc/opt/mx
   ```

   The database for the Servicecontrol Manager, `pgsql`, can be removed by executing the following command:

   ```
   swremove pgsql
   ```

3. Download the software, or locate a copy of the software on a depot server.

   To download the software, see http://www.hp.com/go/hpsim, and on the upper—right of the page under **HP management software**, click **Download**. The HP SIM **Download** page

appears. Under **Systems Insight Manager and related components,** select **HP SIM-HP-UX**, and then select **Download latest version of HP SIM-HP-UX** for a full product installation.

4. When installing HP SIM, Java Out-of-Box (JAVAOOB) is required and is automatically selected for installation. For additional information, see https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPUXJAVAOOB. The kernel parameter values that the JAVAOOB adjusts are listed in the following table.

Table 11 Java Out-of-Box settings

Java Out-of-Box settings	Kernel parameter values
max_thread_proc	3000
maxdsiz	2063835136
maxfiles	2048
maxfiles_lim	2048
nfile	4097
nkthread	6000
nproc	2048
tcp_conn_request_max	2048

Table 12 HP SIM adjusted kernel parameters

Java Out-of-Box settings	Kernel parameter values
nfile	30000 **NOTE:** This parameter only applies to HP-UX version 11.23.
semmns	4096
semmni	2048

Installing and configuring the software

When you install HP SIM, the following software dependencies are required: SysMgmtDB, JAVAOOB, and HP-UX Secure Shell (SSH). To manage your HP SIM Central Management Server (CMS) optimally, install WBEM if it is not already installed. If you downloaded your software from the Web, these dependency packages are included in the depot file.

Procedure 3 Installation using the depot file

1. Install HP SIM.

   `swinstall -s /directory/depot -x autoreboot=true HPSIM-HP-UX`

   where directory is the path to the depot file and depot is the name of the depot file. For example:

   `swinstall -s /tmp/HPSIM_download.depot -x autoreboot=true HPSIM-HP-UX`

   NOTE: All required dependencies are selected automatically for installation.

2. (Optional, required only if you plan to use an Oracle database.) Configure HP SIM to use a newly created Oracle database using the following command:

   `/opt/mx/bin/mxoracleconfig`

   The command executes and asks for user information for the following host/port/Database/Username/Password/Jar file path with the file name.

```
mxoracleconfig
```

Or

```
mxoracleconfig -h hostname -n port number -d database -u username
-p password -j driverjarfilelocation [-f]
```

Table 13 Oracle database commands

Commands for an Oracle database	Description
`-h Hostname`	Full DNS name or IP address of the Oracle server
`-n Portnumber`	Port number to be used to connect to the oracle instance. Default port is 1521
`-d Databasename`	Name of database instance
`-u Username`	Database user name
`-p Password`	Database password for the corresponding user name
`-j Driverfilelocation`	Full path to thin driver jar file. This is not required if the jar file is already in the class path for HP SIM and jboss. Mxoracleconfig will report an error if the driver class cannot be loaded. Mxoracleconfig will not copy over a jar file if it already exists in the classpath for HP SIM and jboss.
`-f Force flag to force a re-run`	Typically this command is run only once. This flag is provided if a re-run is required because of some type of user error such as specifying the wrong Oracle server or database instance.

NOTE: The JRE bundled with HP SIM 7.2 is jre1.6.0_34.

3. Test the prerequisites:

    `/opt/mx/bin/mxinitconfig -l`

    This verifies that the prerequisites are present. You can review the log file found in `/var/opt/mx/logs/initconfig.log` to verify that the initialization completed.

    NOTE: HP SIM recommends resolving any warnings before continuing with the setup process.

4. Initialize HP SIM:

    `/opt/mx/bin/mxinitconfig -a`

    NOTE: The initialization of HP SIM is done in the background, which takes several minutes. To verify if the initialization is 100% complete, view the file `/var/opt/mx/logs/initconfig.log`.

    NOTE: After upgrading from a previous version of HP SIM, if you notice a pre-existing collection returning an unexpected result, and HP SIM has not been restarted since the upgrade, then stopping and restarting the HP SIM service should resolve this.

5. Verify that the `mxdomainmgr` and `mxdtf` daemons are running:

    `ps -ef | grep mx`

    If they are not running, start them:

    `/opt/mx/bin/mxstart`

6. (Optional) To use the CMS as a managed system, install WBEM, if it is not already installed. WBEM requires OpenSSL, so be sure that OpenSSL is installed on the CMS by running the following command:

`swlist OpenSSL`

If this command returns `Error: Software "OpenSSL" was not found on host`, then OpenSSL is not installed.

OpenSSL is available on Software Depot at http://www.hp.com/go/softwaredepot or on your operating system media.

a. Install the OpenSSL Software:

`swinstall -s/directory/OpenSSL_depot OpenSSL`

where directory is the path to the depot file, and `OpenSSL_depot` is the name of the OpenSSL depot file.

b. Install WBEM:

`swinstall -s /directory/depot B8465BA`

where directory is the path to the depot file and depot is the name of the depot file. For example:

`swinstall -s /tmp/WBEM_download.depot B8465BA`

NOTE: To verify if WBEM (cimserver, cimserverd) daemons are running, run the following command:

`ps -ef | grep wbem`.

NOTE: On HP-UX 11i v2 (September 2004 or later) (B. 11 .23) WBEM is installed by default.

---

7. (Optional) Configure the CMS to send SNMP traps to itself.
a. Add the name of the CMS as a trap-dest in the file `/etc/SnmpAgent.d/snmpd.conf`
`trap-dest: <cms_full_hostname_or_ip_address>`
b. Stop the SNMP Master agent and all subagents with the following command:

`/sbin/init.d/SnmpMaster stop`

c. Restart the SNMP Master agent and all subagents with the following command:

`/usr/sbin/snmpd`

Tuning HP SIM (Optional)

Using SAM or the HP-UX Kernel Configuration tool (kcweb) or kctune, complete the following optional manual parameter adjustments, if needed.

- Set the `dbc_max_pct` kernel parameter. This is the percentage of physical memory that can be dynamically allocated for the data buffer cache. It defaults to 50%, which is usually too high. Set this variable to the percentage of your system physical memory that equals approximately 200 MB. For example, a server with 1 GB of RAM should have this value set at 20%. Refer to the `dbc_max_pct` man page for additional details in tuning this parameter.

  NOTE: This value cannot be less than `dbc_min_pct`, which cannot be less than 1%. For more information, see the `dbc_max_pct` man page for additional details.

  NOTE: For HP-UX 11i v2 (September 2004 or later) (B. 11 .23), these parameters are dynamic, when you modify the parameters, you do not have to reboot the system.

  NOTE: The kernel tunable parameter dbc_max_pct is obsolete for HP-UX 11i v3.

Next steps

Install and configure the required Management software on the systems that will be managed by the CMS. For more information, see "Setting up managed systems" (page 30). Next, complete the initial setup of HP SIM which involves using the First Time Wizard to perform the initial configuration of HP SIM Central Management Server as well as steps for setting up managed systems. For details, see "Configuring Systems Insight Manager" (page 33).

HP SIM is now installed and initialized on the CMS. Start the HP SIM GUI using Firefox at `http://<IP_Address>:280/`.

NOTE: The Systems Insight Manager Registration window and First Time Wizard appear when a user with full configuration rights logs in to HP SIM for the first time. Follow the onscreen instructions to register HP SIM or click **Register Later** to register at another time. If your HP SIM system is not connected to the internet, you can go to a system that has internet access and navigate to http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPSIM-LIC to register and retrieve a code to confirm to the HP SIM application that it is registered and to discontinue the registration prompt. The First Time Wizard configures only the basic settings of an initial setup for HP SIM. Refer to the http://www.hp.com/go/insightmanagement/sim/docs for more information.

NOTE: If installing ServiceGuard Manager for the first time, install ServiceGuard Manager 5.0. To download ServiceGuard Manager 5.0, see http://www.hp.com/go/softwaredepot, for more information.

When you install HP ServiceGuard Manager, it recognizes and registers HP SIM.

3 Setting up managed systems

Perform step 2 to install and configure the required management software.

1. Install and configure the CMS. The procedure to complete this step is in the installation chapter of this guide. For more information, see "Installing HP Systems Insight Manager on the CMS for the first time" (page 25).

2. **Install and configure the required management software on the systems that the CMS will manage. The procedure to complete this step is in this chapter.**

3. Configure HP SIM for your environment. For more information, see "Configuring Systems Insight Manager" (page 33).

Setting up managed systems involves installing the required management software. The management software that you must install depends on the type of managed system.

- HP-UX

- Storage systems

- Windows systems see the http://www.hp.com/go/insightmanagement/sim/docs

- Linux - see the http://www.hp.com/go/insightmanagement/sim/docs

Installing the required software on an HP-UX system

Procedure 4 Basic managed system software for HP-UX

1. For HP-UX, the following software, shown with minimum recommended versions, is required for essential HP SIM functionality to operate. This software is installed by default as part of the latest HP-UX 11i v2 or HP-UX 11i v3 operating environments, but it might need to be installed or updated on older HP-UX 11i v2 systems.

   - T1471AA HP-UX Secure Shell

   - OpenSSL

   - HP WBEM Services for HP-UX

   This WBEM Services bundle contains basic system instrumentation that appears in the HP SIM Property Pages, as well as supporting data collection and reporting by HP SIM inventory functionality. To maximize the value of HP SIM for properties, inventory, and events, see http://www.hp.com/go/hpsim/providers for the latest WBEM Services bundle.

2. Ensure the managed system software is installed on HP-UX 11i v2 Update 2. On HP-UX 11i v3, the listed software's or its equivalences are always installed.

   To verify that the minimum required software is installed, log in to the remote system, and run the following command:

   ```
   $ swlist –l bundle T1471AA B8465BA OpenSSL
   ```

   If WBEM Services is not found and your operating system is 0603 11.23 OEUR or later, run the following command:

   ```
   swlist –l product HPUXBaseAux.WBEMServices
   ```

   To verify that the optional providers and HP System Management Homepage are installed, run commands such as:

   ```
   $ swlist –l bundle LVMProvider WBEMP-LAN-00 SysMgmtWeb SysFaultMgmt
   OnlineDiag
   ```

3. Acquire and install the managed system software if not previously installed.

    The SecureShell, WBEM bundles are included on the HP-UX Operating Environment and Application Release media, as well as part of the HP SIM HP-UX depot downloaded from http://h18013.www1.hp.com/products/servers/management/hpsim/dl_hpux.html.

    For the WBEM providers, see http://h18013.www1.hp.com/products/servers/management/hpsim/dl_hpux.html .

    After the depots containing the software have been acquired, they can be installed from the managed system using commands such as:

    ```
    $ swinstall -s <depot_location> OpenSSL
    ```

    NOTE: HP WBEM Services depends on OpenSSL, so this must be installed first.

    ```
    $ swinstall -s <depot_location> T1471AA

    $ swinstall -s <depot_location> B8465BA

    $ swinstall -s <depot_location> <names of WBEM providers being
    installed>
    ```

Setting up managed storage systems

Storage Management Initiative Specification (SMI-S) is a Storage Networking Industry Association (SNIA) standard that enables interoperable management for storage networks and storage devices. HP SIM uses this standard to discover and manage the storage systems it supports.

You must have a storage system's WBEM SMI-S provider installed and configured for HP SIM to discover it. This includes storage devices such as Fibre Channel disk arrays, switches, tape libraries, or hosts (with Fibre Channel host bus adapters.)

To view the latest information regarding HP SIM support for a particular device, see the HP SIM SMI-S Provider webpage, http://www.hp.com/go/hpsim/providers. This webpage offers information on obtaining, installing, and configuring SMI-S providers.

Setting up managed systems using the HP SIM interface

The Insight managed system setup wizard and Configure or Repair Agents tools, enable you to configure your managed systems by installing agents, applying licenses, and executing configuration steps. To run these tools against multiple systems simultaneously, you must have authorizations to run the Insight managed system setup wizard and Configure or Repair Agents tools. You must have full CMS configuration privileges to modify the HP SIM community strings in the node security file. In addition, you must enter root or administrator level user credentials for the target system.

*   To run Configure or Repair Agents, select **Configure→Configure or Repair Agents**.

*   To run the Insight managed system setup wizard, select **Configure→Managed System Setup Wizard**.

For more information on these tools, see http://www.hp.com/go/insightmanagement/sim/docs and the HP SIM help system.

Installing SMI-S providers

Each storage vendor provides the SMI-S provider and installation instructions for its storage system. The webpage referenced in the previous section provides information on obtaining SMI-S providers. Also, consult the storage vendor website or representative for more information regarding their SMI-S providers. For each storage system:

Procedure 5 Installing SMI-S providers

1. Verify that the applicable SMI-S provider is installed.

2. If the SMI-S provider is not installed, obtain and install it, according to the vendor installation instructions.

Verifying SSL

HP SIM requires that Secure Sockets Layer (SSL) is enabled for the SMI-S provider in order to discover and manage the storage system that the provider supports. Verify that SSL is enabled for each SMI-S provider.

Configuring SMI-S providers

Occasionally, it might be necessary to modify an SMI-S provider port number or password. Use the provider's documentation to perform these modifications. For example, if two CIMOMs exist on the same host, you must configure them to use different ports to communicate with the CMS.

4 Configuring Systems Insight Manager

Perform step 3 to configure HP SIM for your environment.

1. Install and configure the CMS. For more information, see "Installing HP Systems Insight Manager on the CMS for the first time" (page 25).
2. Install and configure the required Insight Management Agents on the systems that will be managed by the CMS. For more information, see "Setting up managed systems" (page 30).
3. **Configure HP SIM for your environment. For more information, see "Configuring HP Systems Insight Manager using the First Time Wizard" (page 33), "Configuring HP SIM using the Options menu" (page 35), or "Configuring HP-UX systems manually" (page 37).**

Configuring HP Systems Insight Manager using the First Time Wizard

The initial setup of HP SIM uses the First Time Wizard to provide step-by-step instructions for performing the initial configuration of HP SIM CMS as well as steps for setting up managed systems, configuring discovery, configuring event handling, adding users, and defining authorizations. To perform the initial setup, you must complete the installation of your CMS as described in "Setting up managed systems" (page 30).

The First Time Wizard is automatically launched the first time a user with administrative privileges signs in to HP SIM. The administrative account used to install HP SIM is the initial administrative account. If the wizard is canceled before completion, it restarts each time an administrative user signs in. You can cancel and disable the wizard from starting automatically by selecting the **Do not automatically show this wizard again** checkbox and clicking **Cancel**. You can start the wizard manually by selecting **Options→First Time Wizard** .

The First Time Wizard helps you configure settings on the CMS. After configuring a setting, click **Next** to continue the First Time Wizard setup procedure. The First Time Wizard does not apply any changes until you click **Finish** on the **Summary** page.

NOTE: The default settings in Firefox block the First Time Wizard. You must disable the pop-up blocker in Firefox to see the First Time Wizard.

The following is an overview of the First Time Wizard configuration screens:

- **Introduction**

  Describes the purpose of the First Time Wizard. You can cancel the First Time Wizard and disable the wizard from automatically starting when an administrative user signs in.

- **Managed Environment**

  Specifies all operating systems managed by the CMS. The selections made here configure HP Systems Insight Manager to show collections, tools, and reports only for managed environments that are selected.

  This page also displays required details for each TDEF selection, such as IP address of the Ignite server, sign in credential information, and so on.

- **System Automatic Discovery**

  Use the wizard to enable discovery, set up the discovery schedule, and enter the IP address ranges or host names of the systems you want to discover. Discovery is the process HP SIM uses to find and identify systems on your network and populate the database with that information. A system must be discovered to collect data and track system health status.

- **Credentials: System Automatic Discovery**

  Use the wizard to set the sign-in credentials and the SNMP and SNMP v3 credentials for the Discovery task.

- **Configure Managed Systems**

  Configure managed systems as they are discovered, by configuring WBEM and WMI, SNMP, SSH access, and trust relationship.

- **WBEM/WMI Mapper Proxy**

  To retrieve managed system information on Windows systems, enter the mapper proxy system host name and port number.

  NOTE: This page only appears if you selected to manage a Windows operating system.

- **Privilege Elevation**

  Enable privilege elevation if, on HP-UX, Linux, and ESX managed systems, you are required to sign in as a non-root user and then request privilege elevation to run root-level tools.

- **E-mail**

  Enter the e-mail settings that the CMS will use to send e-mail notifications. You can set up Automatic Event Handling tasks that prompt HP Systems Insight Manager to send e-mails when the CMS receives a specific event.

- **Summary**

  Displays all First Time Wizard settings with the option to modify settings or to finish the First Time Wizard.

The First Time Wizard configures only the basic settings of HP SIM. When you are finished entering information in the HP SIM First Time Wizard, review your selections on the **Summary Page**, and then click **Finish** to save them. For more information on the First Time Wizard, see the HP SIM help system.

Operating-system-specific collections

The following collections are removed if the associated operating system is not selected on the **Managed Environment** page of the First Time Wizard or from the **Managed Environment** page in the HP Systems Insight Manager UI (**Options→Managed Environment**). These collections are located in the **System and Event Collections** under **Systems by Operating System** and **Cluster by Type**, with the exception of **All VSE Resources** which is located under **Systems by Type.**

Table 14 Collections by operating system

Windows	Linux	HP-UX	Other
Microsoft Windows Server 2003	Red Hat Linux	HP-UX	SCO Unix
Microsoft Windows Server 2008	SuSE Linux	HP Serviceguard (under **Clusters by Type**)	HP Tru64 UNIX
Microsoft Windows NT	Linux	All HP Integrity Virtual Machines[1]	HP OpenVMS
Microsoft Windows XP	All HP Serviceguard Clusters[1]	All Virtual Partition Servers[1]	HP NonStop Server
Microsoft Windows 95, 98, Me		All Resource Partitions[1]	HP TruClusters
MSCS Clusters		All Shared Resource Domains[1]	OpenVMS Clusters
Microsoft Vista		All HP Serviceguard Clusters[1]	Novell Netware
Microsoft Windows 2000			AIX

Table 14 Collections by operating system *(continued)*

Windows	Linux	HP-UX	Other
			Solaris
Microsoft Windows Server 2012			

[1] Located under **All VSE Resources**.

Operating-system-specific reports

The following reports are specific to HP-UX and are added or removed depending on whether HP-UX is selected or not. Windows or Linux do not have specific reports.

- Cellular Systems - Servers
- HP-UX File System - HP-UX
- HP-UX Kernel Parameters - HP-UX
- HP-UX Logical Volume - HP-UX
- HP-UX Network Details - HP-UX
- HP-UX Physical Volume - HP-UX
- HP-UX Software Bundle - HP-UX
- HP-UX Software Product - HP-UX
- HP-UX Volume Group - HP-UX

The following reports have no data for HP-UX and are removed if HP-UX is the only selection.

- System License Info
- Logical Disk Drives
- Installed Controllers
- Physical Disk Drives

Configuring HP SIM using the Options menu

Procedure 6 Configuring the managed systems using the Options menu

1. Configure the protocol settings.

   Protocol settings define how HP Systems Insight Manager communicates with the managed systems. To configure these settings, Select **Options→Protocol Settings→Global Protocol Settings**.

2. Add users and user groups.

   NOTE: Users that have been added to the CMS cannot view or manage systems until authorizations have been configured for them.

   NOTE: HP-UX and Linux-provided command line tools, such as `ls` and `df`, are run as root by default. For security reasons, run them as a specific user to avoid permitting unintended capabilities to a user.

   To add users, select **Options→Security→Users and Authorizations→Users**, and then click **New**.

   To add user groups, select **Options→Security→Users and Authorizations→Users**, and then click **New Group**.

3. Add toolboxes.

   Toolboxes, define the set of tools to which a user has access. To add toolboxes, select **Options→Security→Users and Authorizations→Toolboxes**, and then click **New**.

4. Add authorizations

Authorizations give the user access to view and manage systems. Each authorization specifies a user or user group, a toolbox, and a system or system group. The specific set of tools that can be run against a system is specified in the assigned toolbox.

You must plan which systems each user is going to manage and which specific set of tools the users are authorized to execute against the managed systems. A user with no toolbox authorizations on a system cannot view or manage that system.

Authorizations are additive. If a user is authorized on Toolbox1 on a system and is also authorized for Toolbox2 on the same system, the user is authorized for all tools in both Toolbox1 and Toolbox2 on that system. Similarly, a user authorized for the **All Tools** toolbox needs no other toolbox authorization on that system because the **All Tools** toolbox always includes all tools.

To add authorizations, select **Options→Security→Users and Authorizations→Authorizations**, and then click **New**.

5. Configure e-mail settings.

E-mail settings enables users to receive e-mail notification of certain events. To configure e-mail settings, select **Options→Events→Automatic Event Handling→Email Settings**.

6. Set up automatic event handling

Automatic event handling defines the action that HP SIM performs when an event is received. To setup automatic event handling, select **Options→Events→Automatic Event Handling→New Task**.

7. Configure and execute discovery

Discovery is the process that HP Systems Insight Manager uses to find and identify the systems on your network and populate the database with that information. To configure and execute a discovery, you must create a Discovery task. HP SIM ships with one default discovery task (Discovery). However, you can create a new discovery task to discover specific systems.

To configure Discovery, select **Options→Discovery**.

8. Configure the WMI Mapper.

For HP SIM to manage Windows systems, the WMI Mapper as Proxy must be configured and correctly identified.

You must install the Pegasus WMI Mapper service on a Windows operating system. After installing the WMI Mapper, configure HP SIM to identify the WMI Mapper system by performing the following steps:

a. Enter the correct user and password for identifying the WMI Mapper node in the Global Protocol Settings page.

b. Select **Options→Protocol Settings→WMI Mapper Proxy**. The **WMI Mapper Proxy** page appears.

c. Click **New**. The **Add WMI Mapper Proxy** page appears.

d. Enter the IP address or the host name in the **Host:** field where OpenPegasus WMI Mapper is installed, and enter the port number where the WMI Mapper is installed in the **Port number** field.

e. After identification is complete, be sure the **Properties Page** link on the System Page for the WMI Mapper node appears, and click the link to open the Properties page.

For more information on the Options menu items, see the HP SIM help system.

Configuring HP-UX systems manually

Procedure 7 Configuring HP-UX manually

1. Configure SNMP to send traps to the CMS.
   a. Add the full host name or IP address of the CMS as a trap-dest in the following file:

      `trap-dest: hostname or ip_address`

   b. Stop the SNMP Master agent and all subagents with the command:

      `/sbin/init.d/SnmpMaster stop`

2. Set trust relationship to **Trust by Certificate**. For more information, see *System Management Homepage Online Help* at http://h18013.www1.hp.com/products/servers/management/agents/documentation.html.

3. Configure secure shell (SSH) access.

   On the CMS, copy the SSH-generated public key from the CMS to the managed system using the `mxagentconfig` command:

   Use one of the following commands:

   - `mxagentconfig -a -n <hostname> -u root -f <file_with_root_password>`

   - `mxagentconfig -a -n <hostname> -u root -p <root_password>`

   > **NOTE:** Using the —p option exposes the password through `ps` output, so use of the `-f` option (with a file only readable by root, and containing only the managed system root password) is highly recommended when using `mxagentconfig -a`. If the `-p` option is used, enclose the password in single quotes if the password has any special characters, such as $. For more information and options, see the `mxagentconfig` manpage with `man mxagentconfig`.

   If SSH is not installed on the managed system, enter the following:

   `swinstall -s /directory/depot T1471AA` where directory is the path to the depot file and depot is the name of the depot file. For example:

   `swinstall -s /tmp/HPSIM_download.depot T1471AA`

4. Create subscriptions for WBEM events.

> **NOTE:** Subscribing to WBEM Indications/Events on managed systems is optional.

> **NOTE:** For more information about HP-UX WBEM events, go to the WBEM Event Subscriptions for HP-UX systems managed by *Systems Insight Manager 6.x white paper* at http://www.hp.com/go/insightmanagement/sim/docs.

To subscribe to WBEM Indications/Events:

a. From the managed system, be sure WBEM is installed.
b. Verify that **SysFaultMgmt** provider is installed:

    ```
    cimprovider -ls
    ```

c. From the CMS:

    To subscribe to WBEM Events, you must have **root** access. If the Global Protocol Setting does not match the managed system or does not contain **root** access, the subscription for WBEM Indications fails. You can verify what access WBEM has by running the following command line:

    ```
    mxnodesecurity -l -p wbem -n <systemname>
    ```

    If the managed system does not have a root level user credential configured, you can add it for the individual system.

    > **NOTE:** You can use the Configure or Repair Agents tool to perform this step without permanently recording a **root** password.

    To change the individual system:

    ```
    mxnodesecurity -a -p WBEM -c
    <username:password> -n <systemname>
    ```

5. From the CMS, run the WBEM Indications/Events command line:

    ```
    mxwbemsub -l -n <systemname>
    ```

    For more information, see http://www.hp.com/go/insightmanagement/sim/docs.

    If not previously done so, install WBEM on the managed system.

    swinstall -s /directory/depot

    where directory is the path to the depot file and depot is the name of the depot file. For example:

    swinstall -s /tmp/HPSIM_download.depot

5 Upgrading HP SIM

This chapter provides the steps to upgrade HP SIM 6.3 and later. Before beginning the HP SIM upgrade, verify that your user name and password to access to the database are valid. When you perform and upgrade, HP SIM checks for a previous installation of HP SIM, stops HP SIM and all related services and daemons, overwrites or copies files to the appropriate locations on the CMS, and then restarts HP SIM and all related services.

NOTE: If you are upgrading from HP SIM 6.x with Virtual Server Environment 5.x, you will also need to upgrade to Virtual Server Environment 6.x after upgrading to HP SIM 7.x.

Procedure 8 Upgrading HP SIM

1. Verify that your system meets the minimum requirements.

   NOTE: HP SIM does not support upgrading to an Oracle database. Oracle is supported on a fresh installation only.

2. Install the latest required and recommended HP-UX 11i patches. For more information, see http://ftp.hp.com/pub/softlib/hpuxjava-patchinfo/index.html.

   If you are running the 2002 release of HP-UX 11.11 (11i v1), apply the required and recommend patches to save time during the upgrade process. If you do not apply the patches, you could experience extended upgrade times of 2 hours before you can log in to the system after an upgrade. If `initconfig.log` shows 100% completion and you cannot browse into HP SIM on port 280, then stop and start the HP SIM service by running `mxstop` and `mxstart` respectively. If the browser is not displaying the pages properly, shut down all the browsers to clear the cache.

3. Download the software, or locate a copy of the software on a depot server.

   To download the software, see http://www.hp.com/go/hpsim, and select **Download** under HP management software on the upper-left of the screen. The HP SIM **Download** Page appears. Under **Systems Insight Manager and related components**, select **HP SIM-HP-UX**, and select **Download latest version of HP SIM-HP-UX** for a full product install.

   When installing HP SIM, Java Out-of-Box and SSH are required, and automatically selected for installation. For additional information about Java Out-of-Box, see http://www.hp.com/products1/unix/java/java2/outofbox/index.html. The Java Out-of-Box settings and kernel parameter values required for HP SIM:

   Table 15 HP SIM kernel configuration parameters

Java Out-of-Box settings	Kernel parameter values
dbc_max_pct	20
semmns	4096
semmni	2048

   When you install HP SIM, the following software dependencies are required: SysMgmtDB, JAVAOOB, and SSH. If you would like HP SIM to manage your CMS you must install WBEM if it is not already installed. If you downloaded your software from the Web, these dependency packages are included in the depot file. The installation procedure will be described using this depot.

4. If you have an Oracle database, after upgrading HP Systems Insight Manager do the following:
   a. Stop HP Systems Insight Manager.

b. Search for a file named `ojdbc5.jar` or `ojdbc6.jar` in the `[installdir]/lib` and `[installdir]/jboss/server/hpsim/lib` directories and remove it from any locations where it is found.

c. Download the new driver from the Oracle website at http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/index.html.

d. Copy the JDBC driver file (`ojdbc5.jar` or `ojdbc6.jar`) to the `[installdir]/lib` and `[installdir]/jboss/server/hpsim/lib` directories.

5. Install HP SIM:

`swinstall -s /directory/depot -x autoreboot=true HPSIM-HP-UX`

where directory is the path to the depot file and depot is the name of the depot file. For example:

`swinstall -s /tmp/HPSIM_download.depot -x autoreboot=true HPSIM-HP-UX`

NOTE: When upgrading your HP SIM installation on HP-UX to HP SIM 7.3 the HP-UX upgrade process includes an automatic reboot and can take up to two hours to complete. You can check the `initconfig.log` to determine if the upgrade has completed.

6. After upgrading, sign in to HP SIM, and run the Daily System Identification task to ensure that all your associations are updated correctly.

NOTE: Before running the Daily System Identification task, if there is a WMI Mapper Proxy node configured from the previous release, you must first re-identify the WMI Mapper node and verify that the Properties page for the WMI Mapper is working properly.

To run the daily Identification task:

a. Select **Tasks & LogsView All Scheduled Tasks**. The **All Scheduled Tasks** page appears.

b. Select the **Daily System Identification** task.

c. Click **Run Now**.

NOTE: To update ServiceGuard Manager to 5.0, see http://www.hp.com/go/softwaredepot., After you upgrade to ServiceGuard Manager 5.0, you can launch ServiceGuard Manager by clicking a cluster name.

6 Uninstalling HP SIM

Uninstalling HP SIM from an HP-UX system

⚠ **CAUTION:** Removing HP SIM permanently deletes the information in the database unless you back it up before removing the software.

Procedure 9 Uninstalling HP SIM

1. Stop the HP SIM daemons:

   `mxstop`

2. Verify that the daemons are no longer running:

   `ps -ef | grep mx`

   If any of the HP SIM daemons are running, note their process IDs (PIDs) in the `ps -ef` output, and kill them:

   `kill -9 PID`

   where PID is the process ID of the daemon. For example, if the `ps -ef | grep mx` command displays a line that looks like:

   `root 18582 1 0 Jan 12 ? 00:13:18 /opt/mx/lbin/mxinventory`

   then the command to kill this daemon is:

   `kill -9 18582`

3. (Optional) Back up the HP SIM database:

   `/opt/hpsmdb/pgsql/bin/pg_dump -f filename`

   where filename is the name of the backup file.

   To restore HP SIM using the database, see the http://www.hp.com/go/insightmanagement/sim/docs.

4. Remove the HP SIM software:

   NOTE: If a registered plug-in is installed, which is dependent on HP SIM, then you must first un-install the dependent plug-in before un-installing HP SIM.

   `swremove -x enforce_dependencies=false HPSIM-HP-UX`

5. Remove the directories installed by the HP SIM software:

   `rm -rf /opt/mx /var/opt/mx /etc/opt/mx`

7 Configuration options

Several configurable parameters in HP SIM that are not available from the GUI. These parameters can only be configured by editing a configuration file on the CMS.

NOTE: All HP SIM parameters have been set to predefined values that are appropriate for most situations. Only change these parameters if you are experiencing issues with the default values.

There are two main default locations where HP-UX configuration files are stored:

- `/etc/opt/mx/config`
- `/opt/hpwebadmin/lib`

These files follow the format of a Java properties file. Therefore, the keys in these files are case-sensitive. In addition, the backslash (\) must be represented by a double-backslash (\\). For more information about the Java property file format, see http://java.sun.com/.

This chapter provides information on the following configuration options:

- "CPU utilization during data collection" (page 42)
- "GUI time-out policy" (page 42)
- "Systems Insight Manager audit log configuration" (page 43)
- "Configuring task results" (page 44)

CPU utilization during data collection

Overview

The data collection task runs many threads in parallel to overlap computing and database operations with the wait for managed systems to respond. On slower systems, this might temporarily saturate the CPU, depending on the processor speed of the CMS system and the number of systems being collected. Therefore, Systems Insight Manager provides some strategies to lessen the CPU usage.

Implementation

To lessen the CPU usage during data collection on the CMS:

- Limit the number of systems that are being collected at one time. For example, create separate data collection tasks for different groups of systems and schedule them to run at different times.
- Configure the CMS to use a remote database on a system other than the CMS. A substantial portion of the CPU load is consumed by the database during data collection. This option is only supported with a Windows CMS.
- Lower the `DataCollectionThreadCount` parameter in the `globalsettings.props` file. This parameter defaults to 3. Lowering it to 2 or 1 reduces the CPU demand of data collection tasks, but it increases the time required to complete the tasks.

GUI time-out policy

Overview

Systems Insight Manager provides two alternative time-out policies. The first time-out policy is for environments in which Systems Insight Manager is used to monitor system status, which is called the monitor time-out policy. The second time-out policy is more strict and will time-out inactive users. This is called the active time-out policy and it is similar to the policy, used by Servicecontrol Manager.

Monitor time-out policy

The monitor time-out policy keeps sessions alive, provided the user has a web browser window open displaying the Systems Insight Manager GUI. Closing the browser or navigating to another web page starts the timer for the time-out period. The default time-out period is 20 minutes. Users must use some other means to protect an unattended session from illegal use, such as password-protected screen savers.

Active time-out policy

The active time-out policy only keeps sessions alive if the user is actively using the GUI, such as clicking on links and buttons. Display and refresh of the banner is not sufficient to keep the session alive. The user is timed-out either by inactivity, closing the browser, or navigating to another site. The default time-out period is 20 minutes.

Implementation

- To configure the time-out policy, edit the `globalsettings.props` file. You can switch between these modes or change the time-out period. The default time-out policy is the monitor policy. The monitor policy is enabled when:

  `EnableSessionKeepAlive=true`

  To enable the active time-out policy, change this value to **false**.

  `EnableSessionKeepAlive=false`

  NOTE: Ensure to stop and restart HP SIM after editing the `globalsettings.props` file.

- To change the default time-out period, edit the `web.xml` file.

  Locate the `session-timeout` element, and set it to a new value in minutes.

  `<session-timeout>20</session-timeout>`

Systems Insight Manager audit log configuration

Overview

Several features of the Systems Insight Manager Audit Log are configurable. For example, you can specify which tools log data and the maximum Audit Log file size. The Systems Insight Manager Audit Log is configured through the `log.properties` file, and tool logging is enabled or disabled through the XML tool definition files.

Tool behaviors

The XML tool definition file provides an option to disable logging of single-system aware (SSA) and multiple-system aware (MSA) command tools. The log attribute for the command element specifies whether the results of the command are output to the Systems Insight Manager log file. Command output is logged by default.

Audit log parameters

In the `log.properties` file, you can configure the following Audit Log parameters:

- File name
- File extension
- Maximum file size in megabytes
- File extension of the rollover name
- Amount of memory allocated for queuing items to be written to the Audit Log

Audit log location

The location of the Audit Log can be configured using the `path.properties` file.

Implementation

Changes made to the `log.properties` file do not take effect until the log manager daemon or service is restarted. Restart the Systems Insight Manager service.

△ **CAUTION:** The queue size should be changed only with extreme care. If the queue is set too high, the log manager consumes too much system memory.

NOTE: When the Audit Log file reaches the maximum file size, the log is renamed with `MX_LOGROLLFILEEXT` extension and a new file is started. If a previous version of the file has already been renamed with the `MX_LOG_ROLLFILEEXT` extension, it will be an automatic rollover of an audit log file. A rollover will not occur until a task running is completed. However, after one hour of exceeding the maximum file size, if the task is not finished, then the audit log file will roll over to another file.

Procedure 10 Configuring the Systems Insight Manager Audit Log file location

1. Create a file named `path.properties` under `/etc/opt/mx/config`.
2. Add the following entry in the `path.properties` file: **LOG=*/var/opt/mx/logs*** .

   NOTE: */var/opt/mx/logs* is listed here as an example. This path is user-defined.

3. Restart the Systems Insight Manager service and Restart the Systems Insight Manager daemons (`mxstop` and `mxstart`). After restarting the services, a new log file named `mx.log` resides in the directory specified in `path.properties` file.

Configuring task results

Systems Insight Manager enables you to set how long entries remain on the **Task Results Page** after a task completes.

Short and long task lifetimes

Some task results are kept for a short time, while other task results are kept for a longer time. Tasks fall into one or the other category based on the type of tool associated with them. Tasks for the following tools have a short lifetime:

- Web-launch tools
- Tools that run from the `mxexec` command line using the `-O` or `-o` options to save the command output
- Tools that run X-Window commands
- Tools that specify in their tool definition the "ob-log" flag as disabled, including:
  - Hardware Status Polling
  - Data Collection
  - Identify Systems
  - Software Status Polling
  - Delete Events
  - System Protocol Settings
  - Automatic Discovery

Tools in this category have no task output, have task output that is saved outside of Systems Insight Manager, or have task results that are unlikely to be of long-term interest. Tasks for all other tools are considered long-term.

Frequently scheduled tasks

Task results can also be removed from the **Task Results Page** if a certain number of task results for a scheduled task accumulate. This setting defaults to 10 instances of a single task. If more than 10 accumulate on the results page, then the oldest task result for this scheduled task is removed.

Last result tasks

A task result is kept indefinitely if it is the last result for a scheduled task. For example, if a scheduled task is disabled, its final task result is kept indefinitely or until the task is enabled and more task results accumulate.

To configure task results using the Systems Insight Manager interface, select **Options→Task Results Settings**. For more information, see the Systems Insight Manager help system.

To configure the short and long task lifetimes manually, edit the `globalsettings.props` file.

- The long lifetime defaults to 30 days. To change that time, edit:

  `MX_JOB_MAX_COMPLETED_JOB_AGE=30`

- Task results for frequently scheduled tasks start to drop off after 10 instances. To change this value, edit:

  `MX_JOB_MAX_COMPLETED_JOBS_PER_TASK=10`

  NOTE: The limit of 10 task results applies to scheduled tasks with the "job-log" flag enabled in the tool definition. Scheduled tasks for the tools with the "job-log"flag disabled have a limit of 1. This value is not configurable.

- By default, the last task results for a scheduled task is kept indefinitely.

  Procedure 11 Keeping more than one job

  1. Stop Systems Insight Manager.
  2. Edit `globalsettings.props` and add:

     `MX_JOB_MIN_COMPLETED_JOBS_PER_TASK=`n

     Where n, is the number of task result you want to retain.
  3. Start the Systems Insight Manager service to reflect the changes.

8 Troubleshooting

8.1 Data collection issues

8.8.1.1   If you notice errors in the task results of a data collection task (for systems that are configured and should respond properly to WBEM requests), and if you see some form of `out of memory` errors or notice multiple instances of `mxinventory` processes running, then it is likely that you need HP-UX kernel patch `PHKL_35029` to fix a pthread library problem. The HP Java web-site lists this as a required patch for Java 1.5 on HP-UX 11.23 0609.

8.2 Installation issues

8.8.2.1   **On an HP-UX system, upgrading SIM from the 6.3 version to the 7.2 version does not restore the complete All Software Distributor tools on the CMS.**

When you upgrade HP SIM from the 6.3 version to the 7.2 version on an HP-UX system, the upgrade process does not reinstate Set SD Access tool as an option under **Deploy -> Software Distributor**.

Solution: To resolve this issue, run the following command: **mxtool -a -f /var/opt/mx/tools/swm-msa-tools.xml**.

8.8.2.2   **The Virtual Server Environment (VSE) Standalone Servers collection displays the same result as the All Servers collection after the database initialization during the Systems Insight Manager installation.**
Solution: The Virtual Server Environment collection is not available by default in Systems Insight Manager 7.2. This collection is available only if the VSE plug-in is installed.

To resolve this issue, restart the Systems Insight Manager server if collections return unexpected results after the Systems Insight Manager installation.

8.8.2.3   **On an HP-UX system, the `mxinitconfig -a` command fails at step 8, and the following error appears in the `/var/opt/mx/logs/initconfig.log` file: ...8. Database Configuration Connecting to database...- Failed HP Systems Insight Manager shutting down: Lost connection to database. org.postgresql.util.PSQLException: Connection refused.Check that the host name and port are correct and that the postmaster is accepting TCP/IP connections. for db loaded from database.props**
Try the following solutions:

- Ensure that the `semmni` and `semmns` kernel parameters are set to the minimum values (1024 for `semmni` and 2048 for `semmns`).

- The subdirectory `/var/opt/iexpress/postgresql` exists because the PostgreSQL product is not installed or was installed and removed incorrectly. Remove PostgreSQL if it is installed, delete the `/var/opt/iexpress/postgresql` directory, and then reinstall PostgreSQL.

8.3 Memory issues

8.8.3.1   Many things can cause an out-of-memory condition when you are running the HP SIM product. The two common ones are not enough physical memory or not enough swap

space. Others may be related to how the kernel parameters are tuned. For example, if the *maxssiz* parameter (which is used to set the maximum size of the stack for each of the user process) is set to 256 MB, you might get an Unable to create native thread error. In this case, try lowering the value to 32 MB or lower to resolve the problem.

8.4 HP Servicecontrol Manager and HP SIM issues

8.8.4.1   If you are upgrading your system from HP-UX 11i v2 to HP-UX 11i v3 and HP Servicecontrol Manager 3.0 is configured on your system or HP SIM is installed on your system, and you want to continue to run HP SIM in the future, upgrade to HP SIM by using one of the following upgrade scenarios:

- If Servicecontrol Manager 3.0 is configured on your system and you do not want to lose your data, you must upgrade HP Servicecontrol Manager before you upgrade your system from HP-UX 11i v2 to HP-UX 11i v3.

- If you do not want to keep any of the data from Servicecontrol Manager, you can remove Servicecontrol Manager before you start the upgrade. Determine whether Servicecontrol Manager is installed on your system by entering the following commands:

  swlist –l <bundlename>

  swlist -l product ServControlMgr AgentConfigSysMgmtServer SysMgmtAgent

  Remove Servicecontrol Manager by using the following command:

  swremove ID

  where ID is the product or bundle ID. For example:

  swremove -x enforce_dependencies=false B8339BA

  or

  swremove -x enforce_dependencies=false SysMgmtServer SysMgmtAgent

  Remove the old product subdirectories by executing the following command:

  rm -rf /opt/mx /etc/opt/mx

  You can remove the database for ServiceControl Manager, mysql, by executing the following command:

  swremove mysql

- If Servicecontrol Manager is not configured or if HP SIM 6.x is installed and you want to continue to use HP SIM, you must select HP SIM 7.2 for upgrade.

  Execute the following command:

  -x match_target=true

  Use this option or use the interactive mode to select **HPSIM-HP-UX**.

  You can also specify **HPSIM-HP-UX** on the command line. The HP SIM 7.2 installer will upgrade both a configured and an unconfigured instance of HP SIM 6.0. If you chose to remove either HP Servicecontrol Manager or HP SIM, execute the following command to remove subdirectories that were used in the product:

  rm -rf /opt/mx /etc/opt/mx

  If these subdirectories are not removed, you might encounter database errors when you are trying to run mxinitconfig -a when installing HP SIM 7.2.

8.8.4.2   **The time shown in HP SIM is not the same as the system time**

*Solution:*In HP-UX CMS, if the system time is changed after HP SIM service is started, HP SIM continues to show the old time. To resolve this issue, restart the HP SIM service.

8.5 Security issues

8.8.5.1 **Attempts to import the HP SIM certificate from `cert.pem` or `server_cert.pem` into a separate application result in failure.**

Solution: An improperly formed certificate file can cause this issue. Back up the certificate file. Then view the file by using a text editor, and compare the last two lines before the END CERTIFICATE line. The following is an example of a certificate file with duplication that can cause the failure:

`O/4Hcl9nRz0uZGcdsypjgW5CUDqZyzzeEB17DHWnC8qzEC7/D+VpW+5RdRTlhh5c`

`DzdIjLZnRz0uZGcdsypjgW5CUDqZyzzeEB17DHWnC8qzEC7/D+VpW+5RdRTlhh5c`

`-----END CERTIFICATE-----`

If some duplication exists in the last two lines, manually edit the file to repair it. Be sure you have the file backed up before you attempt this solution. On the last line only, delete the characters, in groups of four, at the end of the line that duplicate the characters from the line above it. All four characters in the group must be identical, including case. Using the same example, the last two lines would look like this after editing:

`O/4Hcl9nRz0uZGcdsypjgW5CUDqZyzzeEB17DHWnC8qzEC7/D+VpW+5RdRTlhh5c`

`DzdIjLZn`

`-----END CERTIFICATE-----`

Save the file and then try again to import it into the desired application. Note that some applications are more lenient than others and might work without requiring you to fix the certificate file.

9 Support and other resources

Information to collect before contacting HP

Be sure to have the following information available before you contact HP:

- Software product name
- Hardware product model number
- Operating system type and version
- Applicable error message
- Third-party hardware and software
- Technical support registration number – SAID (Service Agreement Identifier)

How to contact HP

Use the following methods to contact HP technical support:

- In the United States, see the Customer Service / Contact HP United States website for contact options:

  http://welcome.hp.com/country/us/en/contact_us.html

- In the United States, call 1-800-HP-INVENT (1-800-474-6836) to contact HP by telephone. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, conversations might be recorded or monitored.

- In other locations, see the Contact HP Worldwide website for contact options:

  http://welcome.hp.com/country/us/en/wwcontact.html

Security bulletin and alert policy for non-HP owned software components

Open source software (such as OpenSSL) or third-party software (such as Java) are sometimes included in HP products. HP discloses that the non-HP owned software components listed in the Insight Management end user license agreement (EULA) are included with Insight Management. The EULA is included with the Insight Management Installer on Insight Management DVD #1.

HP addresses security bulletins for the software components listed in the EULA with the same level of support afforded HP products. HP is committed to reducing security defects and helping you mitigate the risks associated with security defects when they do occur.

When a security defect is found, HP has a well defined process that culminates with the publication of a security bulletin. The security bulletin provides you with a high level description of the problem and explains how to mitigate the security defect.

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

http://www.hp.com/country/us/en/contact_us.html

After registering, you will receive e-mail notification of product enhancements, new driver versions, firmware updates, and other product resources.

Registering for software technical support and update service

HP SIM is supported in any one of the following situations:

- A valid warranty exists (90 days Global Limited Warranty)
- Purchase of Insight Control (having 1-year 24x7 Technical Support bundled with the license purchase)

- If the question is related to HP Insight Remote Support (HP Insight RS), then HP SIM will be supported as it pertains to Insight RS with a Hardware Warranty or Hardware Contract
- The customer purchases a HP SIM Care Pack (Part #: UR389E)

Support includes one year of 24 x 7 HP Software Technical Support and Update Service. This service provides access to HP technical resources for assistance in resolving software implementation or operations problems.

The service also provides access to software updates and reference manuals in electronic form as they are made available from HP.

With this service, customers benefit from expedited problem resolution as well as proactive notification and delivery of software updates. For more information about this service, see the following website:

www.hp.com/services/insight

Registration for this service takes place following online redemption of the license certificate.

How to use your software technical support and update service

As HP releases updates to software, the latest versions of the software and documentation are made available to you. The Software Updates and Licensing portal gives you access to software, documentation, and license updates for products on your HP software support agreement.

You can access this portal from the HP Support Center:

http://www.hp.com/go/hpsc

After creating your profile and linking your support agreements to your profile, see the Software Updates and Licensing portal at http://www.hp.com/go/hpsoftwareupdatesupport to obtain software, documentation, and license updates.

HP authorized resellers

For the name of the nearest HP authorized reseller, see the following sources:

- In the United States, see the HP U.S. service locator website:
  http://www.hp.com/service_locator

- In other locations, see the Contact HP worldwide website:
  http://www.hp.com/go/assistance

Related information

Documents

- HP Insight Control documentation:
  http://www.hp.com/go/insightcontrol/docs

- Systems Insight Manager documentation:
  http://www.hp.com/go/insightmanagement/sim/docs

- HP Matrix Operating Environment documentation:
  http://www.hp.com/go/matrixoe/docs

Websites

- HP Insight Control:
  http://www.hp.com/go/insightcontrol
- Systems Insight Manager:
  http://www.hp.com/go/hpsim

Typographic conventions

This document uses the following typographical conventions:

Table 16 Typographic conventions

Book title	The title of a book. On the web, this can be a hyperlink to the book itself.
`Command`	A command name or command phrase, for example `ls -a`.
`Computer output`	Information displayed by the computer.
Ctrl+x or **Ctrl-x**	A key sequence that indicates you must hold down the keyboard key labeled **Ctrl** while you press the letter x.
`ENVIRONMENT VARIABLE`	The name of an environment variable, for example, `PATH`.
Key	The name of a keyboard key. **Return** and **Enter** both refer to the same key.
Term	A term or phrase that is defined in the body text of the document, not in a glossary.
User input	Indicates commands and text that you type exactly as shown.
Replaceable	The name of a placeholder that you replace with an actual value.
[ ]	In command syntax statements, these characters enclose optional content.
{ }	In command syntax statements, these characters enclose required content.
		The character that separates items in a linear list of choices.
...	Indicates that the preceding element can be repeated one or more times.
WARNING	An alert that calls attention to important information that, if not understood or followed, results in personal injury.
CAUTION	An alert that calls attention to important information that, if not understood or followed, results in data loss, data corruption, or damage to hardware or software.
IMPORTANT	An alert that calls attention to essential information.
NOTE	An alert that contains additional or supplementary information.
TIP	An alert that provides helpful information.

10 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.

Glossary

A

administrative rights user
A user who is authorized for the **All Tools** toolbox on all systems, including the Central Management Server. This type of user has been given special privileges to administer the HP Systems Insight Manager software.

administrator
A user who manages users, resource pools, and self-service requests through infrastructure orchestration console.

agent
A program that regularly gathers information or performs some other service without the user's immediate presence. HP Systems Insight Manager agents provide in-depth hardware and software information and subsystem status to HP Systems Insight Manager and numerous third-party management applications.
See also management agent.

alarm
A user-configurable notification displayed in the **System Status** panel of HP Systems Insight Manager when certain events occur. For instance, if a monitored item changes, an alarm notifies the user that a change has occurred.
See also trap, event.

all events collection
Displays all events that have occurred for all systems.

All Tools toolbox
A default toolbox that provides complete access to all tools for the authorized system or system group.

architect
A user who creates a multisystem infrastructure template using HP Matrix Operating Environment infrastructure orchestration (a graphical designer) and then publishes the template for other users to create infrastructure services

attribute
A single characteristic of a manageable product or component, as in an attribute of a Management Information Format (MIF) file. A set of related attributes constitutes a group. For example, the clock speed of a processor chip is an attribute of a group that describes that chip.
See also Management Information Format.

authentication
The process of identifying an individual, based on a user name and password. Authentication is distinct from authorizations and ensures that the individual is who they claim to be.

authorizations
A mapping of a relationship between a user, a toolbox, and a system or system group.

automatic discovery
The process that HP Systems Insight Manager uses to find and identify systems on your network and populate the database with that information. A system must first be discovered to collect data and track system health status. The primary source for automatic discovery is ping sweeps configured in the automatic discovery tasks page. Other sources might include receiving events from unknown systems or from a management processor that has information about a server. Identification automatically runs on discovered systems.

available software
A listing of the software components available in the repository to which the Version Control Agent (HP VCA) has been configured to point. When browsing directly into a HP VCA, these additional components can be selected for installation.

B

banner
The section of the GUI at the top of the screen that includes the user name and links to the **Home** page and sign out functions.

C

caution
A note to indicate that failure to follow directions could result in damage to equipment or loss of information.

Central Management Server
A system in the management domain that executes the HP Systems Insight Manager software. All central operations within HP Systems Insight Manager are initiated from this system.

central processing unit polling rate	The rate for how often the Cluster Monitor CPU Resource checks CPU utilization as reported by Insight Management Agents on monitored systems.
certificate	An electronic document that contains a subject's public key and identifying information about the subject. The certificate is signed by a certificate authority (CA) to bind the key and subject identification together. *See also* certificate authority.
certificate authority	A trusted third-party organization or company that issues digital certificates used to create digital signatures and public-private key pairs. The role of the CA in this process is to guarantee that the individual who has been granted the unique certificate is the individual they claim to be.
certificate key	A value used alone or with an encryption decoder (corresponding public or private key) for cryptography. In traditional private key cryptography, the communicators share a key or cipher so that each can encrypt and decrypt messages. The risk in this system is that if any party loses the key, the system is broken. In public key cryptography, the private key is associated with a public key, so each person in the system has a personal private key that is never shared.
cleared status	A status condition that indicates an event is cleared.
clearing events	Changing the event status from uncleared to cleared.
clients	HP desktop, portable, and workstation systems.
cluster	A parallel or distributed computing system made up of many discrete systems that form a single, unified computing resource. Clusters vary in their features, complexity, and the purposes for which they are best suited.
cluster IP address	The IP address of the cluster.
cluster monitor	A core component of HP Systems Insight Manager. Cluster Monitor adds the ability to monitor and manage multi-node clusters. Cluster Monitor also manages multiple cluster platforms in a heterogeneous environment.
cluster monitor resource	A program that provides a monitoring or management function for clustered nodes in a cluster.
cluster system identification	Information about cluster systems. This information is stored in the database.
collections	The method for grouping system or event.
command line interface	A text-based application that can be executed from a command shell such as sh, csh, ksh or the Microsoft Windows CMD shell.
common information model	An object-oriented schema defined by the Desktop Management Task Force (DMTF). CIM is an information model guide that describes and shares management information enterprise-wide. CIM is designed for extending each management environment in which it is used.
common information model object manager	A CIMOM acts as the interface for communication between web-based enterprise management (WBEM) providers and management applications such as HP Systems Insight Manager. A CIMOM that provides an interface for an SMI-S provider is called an SMI CIMOM.
communications protocol	*See* management protocol.
complex	Computer systems that support multiple hardware partitions are referred to as a complex. For example, the HP Integrity Superdome systems support multiple hardware partitions within a single complex.
component	A component is a single, self-describing, installable (interactive or silent) binary file containing a single piece of software, such as firmware image, driver, agent, or utility, that is supported by the management and update tools.
configuration history report	The Survey Utility that contains reports that show configuration details for server and compares configuration history files for differences.
Configure or Repair Agents	An HP Systems Insight Manager feature that enables you to repair credentials for SNMP settings and trust relationships that exist between HP Systems Insight Manager and target systems. You can also update Web Agent passwords on target systems that have 7.2 agents or earlier installed.
control tasks	Sequences of instructions that are associated with a search, event, or both, such as Delete Events, Remove Disk Thresholds, Set Disk Threshold, and Set Device Access community strings.

critical status	A state generated when HP Systems Insight Manager can no longer communicate with a managed system.
custom tools	Custom tools are tools that can be created by the user to run on the Central Management Server or on target systems. For example:

- **Remote tool**

  A tool that runs on selected target systems. It might copy files to the target systems or run specific X-Window applications on the target systems. You can schedule this tool.

- **CMS tool**

  A tool that runs on the CMS. It is usually a script or batch file and can pass in environment variables. Using Automatic Event Handling, you can configure this tool to run when events are received. You can schedule this tool.

- **Web page tool**

  A tool that launches a web URL. The URL is launched in a separate browser window on the CMS. You cannot schedule this tool.

D

data collection reports	Data collection reports include information about discovered systems in a single instance or a historical trend analysis report. HP Systems Insight Manager supports **Overwrite existing data set (for detailed analysis)**, formerly known as Single Instance Data Collection task in Insight Manager 7, and **Append new data set (for historical trend analysis)**. With **Overwrite existing data set (for detailed analysis)**, data is collected from a system at a single instance. With **Append new data set (for historical trend analysis)**, data detailing the system history is collected.
data collection tasks	Procedure that involves gathering information from a group of managed systems and storing that information in the database. HP Systems Insight Manager uses Hardware Status Polling and Data Collection Tasks to implement data collection.
Desktop Management Interface	An industry-standard protocol, primarily used in client management, established by the Desktop Management Task Force (DMTF). DMI provides an efficient means of reporting client system problems. DMI-compliant computers can send status information to a central management system over a network.
Desktop Management Task Force	An industry standard body that defines WBEM standards for the industry. HP is an active sponsor and participant in the DMTF body.
digital signatures	A technology used to validate the sender of a transaction. This technology uses private keys to digitally sign the data and public keys to verify the sender.
discovery	A feature within a management application that finds and identifies network objects. In HP management applications, discovery finds and identifies all the HP systems within a specified network range.
discovery filters	Enables users with to prevent or allow certain system types from ever being added to the database.
discovery template	Files that can be used by automatic discovery in lieu of typing the addresses directly in to the **Ping inclusion ranges** or **Exclusion ranges** fields on the **Automatic Discovery - General Settings** page and are designed to be used as a quick way to change the scope of automatic discovery.
Distributed Component Object Model	An extension of the Component Object Model (COM) that enables COM components to communicate between clients and servers on the same network.
Distributed Task Facility	A management application that manages the remote execution of tasks on managed systems.
Domain Name Service	A service that translates domain names into IP addresses.

E

e-mail notification	One of the notification tasks in HP Systems Insight Manager that sends notifications through e-mail.

edit collection	To modify existing collections to add or remove search criteria.
enclosure	A physical container for a set of server blades. It consists of a backplane that routes power and communication signals and additional hardware for cabling and thermal issues. It also hosts the CPU or server power supplies.
event	Information sent to certain users that something in the managed environment has changed. Events are generated from SNMP traps. HP Systems Insight Manager receives a trap when an important event occurs. Events are defined as:

- **Warning.**

  Events of this type indicate a state that might become a problem.

- **Informational.**

  Events of this type require no attention and are provided as useful information.

- **Normal.**

  Events of this type indicate that this event is not a problem.

- **Minor.**

  Events of this type indicate a warning condition that can escalate into a more serious problem.

- **Major.**

  Events of this type indicate an impending failure.

- **Critical.**

  Events of this type indicate a failure and signal the need for immediate attention.

event overview	A chart that summarizes the events by product type.
external sites	Third-party application URLs.

G

graphical user interface	A program interface that takes advantage of the graphics capabilities of the computer to make the program easier to use. The HP Systems Insight Manager GUI runs in a web browser.

H

health status	Health status is an aggregate status all of the status sources (which can be SNMP, WBEM, and HTTP) with the most critical status being displayed. *See also* system health status.
hosts files	A file that follows the UNIX, Linux, or Windows host file format, which is an IP address followed by a name and each system is listed on a separate line in this file. This file is used by discovery to manually add multiple systems to the HP Systems Insight Manager database,
HP CloudSystem Integrated Manager	HP CloudSystem Integrated Manager is an HP Systems Insight Manager plugin that enables you to manage blade systems from HP Systems Insight Manager for Windows, HP-UX and Linux. HP CloudSystem Integrated Manager is composed of blade computer systems, integrated connectivity to data and storage networks, and shared power subsystems. The HP CloudSystem Integrated Manager enables you to quickly navigate your HP blade environments including server blades and desktops, enclosure infrastructures, racks, and integrated switches, through hierarchical tree views. Users are able to conveniently configure, deploy, and manage individual or groups of blade systems.
HP Insight Control	System management software that is capable of managing a wide variety of systems, including HP systems, clusters, desktops, workstations, and portables. HP Systems Insight Manager combines the strengths of Insight Manager 7, HP Toptools, and HP Servicecontrol Manager to deliver a single tool for managing HP ProLiant, Integrity, and HP 9000 systems running Windows, Linux, and HP-UX. The core HP Systems Insight Manager software delivers the essential capabilities required to manage all HP server platforms. HP Systems Insight Manager can also be extended to deliver unparalleled breadth of system management with plug-ins for HP storage, power, client, and printer products. Plug-ins for rapid deployment,

	performance management, and workload management enable systems administrators to pick the value added software required to deliver complete lifecycle management of their hardware assets.
HP Insight Control database	The database that stores vital information about HP Systems Insight Manager, including users, systems, and toolboxes.
HP Insight Control power management	An integrated power monitoring and management application that provides centralized control of server power consumption and thermal output at the datacenter level. It extends the capacity of datacenters by enabling the user to control the amount of power and cooling required for ProLiant servers. Built on ProLiant Power Regulator Technology, it extends new server energy instrumentation levers into HP Systems Insight Manager for greater Unified Infrastructure Management.
HyperText Transfer Protocol	The underlying protocol used by the World Wide Web.
Insight Control virtual machine management	Provides central management and control of Virtual Machines on Microsoft Virtual server, Vmware's GSX and ESX. Integrated with HP Systems Insight Manager, virt provides unified management of HP ProLiant host servers and virtual machines.
Insight Management Agents	A program that regularly gathers information or performs some other service without the user's immediate presence.
Insight Vulnerability and Patch Manager software	The all-in-one vulnerability assessment and patch management tool integrated into HP Systems Insight Manager, simplifying and consolidating the proactive identification and resolution of issues that can impact server availability into one central console.
Version Control Agent	An agent that is installed on a server to enable you to see the HP software installed on that server. The HP VCA can be configured to point to Version Control Repository Manager, enabling easy version comparison and software update from the repository.
Version Control Repository Manager	An HP agent that enables a customer to manage HP provided software stored in a user-defined repository.

I

identification	While discovery finds systems, identification attempts to determine what the system type is. In addition, it determines what management protocol a system supports, using credentials from the **Global Protocol Settings** page, and attempts to determine the operating system and version loaded, along with other basic attributes about the system. Finally, it determines if the system is associated with another system. For example, a management processor in a server.
infrastructure service	A running configuration of infrastructure resources that is designed to run a business application such as a multi-tier web application. It is also referred to as a service or service instance.
installed version	A particular HP software component that is installed on the server.
Internet Protocol	Specifies the format of datagrams (packets) and the addressing scheme on a network. Most networks combine IP with Transmission Control Protocol (TCP), which establishes a virtual connection between a destination and a source.
IP range	Systems with an IP address that falls in the specified range.

J

Java database connectivity	Similar to Open DataBase Connectivity (ODBC), this set of Application Program Interfaces (APIs) provides a standard mechanism to allow Java applets access to a database.
Java Remote Method Invocation	A set of protocols that enable Java objects to communicate remotely with other Java objects.

K

keystore	A database that maintains a list of keys. The keystore can contain a subject's own private key. A keystore can also contain a list of public keys, as published in certificates. *See also* key.

M

Major status
Status information collected from the system that indicates one or more of the monitored subsystems are not operating properly which is impacting the system. Action should be taken immediately.

managed systems
Any system managed by HP Systems Insight Manager, such as servers, desktops, storage systems, and Remote Insight Boards (RIBs).

management agent
A daemon or process running on a managed system. It receives and executes requests from the Central Management Server on the managed system.

management domain
A collection of resources called managed systems that have been placed under the control of HP Systems Insight Manager. Each Central Management Server is responsible for a management domain. The managed systems can belong to more than one management domain.

Management HTTP Server
An integrated piece of software used by the HP suite of HP Web-enabled System Management Software to communicate over HTTP and HTTPS. It provides a uniform set of functionality and security to HP Web-enabled System Management Software. This version is available in the ProLiant Support Pack 7.10 or earlier.

Management Information Base
The data specification for passing information using the SNMP/SNMP v3 protocol. An HP MIB is also a database of managed objects accessed by network management protocols.

management instrumentation
Agents running on systems that provide management information for HTTP, or SNMP protocols.

management LAN
A LAN dedicated to the communications necessary for managing systems. It is typically a moderate bandwidth (10/100 BaseT) and secured through limited access.

management protocol
A set of protocols, such as WBEM, HTTP, or SNMP/SNMP v3, used to establish communication with discovered systems.

management scope
A set of systems within the set of all discovered systems that HP Systems Insight Manager manages.

management services
A core set of capabilities such as automatic discovery, data collection, a central repository for system and event information, event management, basic notification, and secure access. These functions are used by add-ins from HP, a Management Solutions Partner, and HP Systems Insight Manager users.

management tasks
Procedures you set up to search systems or events.

manual discovery techniques
Processes that enable you to bypass a full discovery for the following tasks:

- Adding a single system
- Editing the system
- Creating or importing an HP Systems Insight Manager database hosts file
- Creating or importing generic hosts files

Microsoft Clustering Service status page
A page that summarizes cluster status as defined by Microsoft Cluster Server and lists the status and values of MSCS-defined cluster attributes. The Cluster Monitor uses color to display status based on MSCS condition values (Normal, Degraded, Failed, and Other).

Minor status
Status information collected from the system that indicates one or more of the monitored subsystems are not operating properly which is impacting the system. Action should be taken as soon as possible to prevent further failure.

Monitor Tools toolbox
A default toolbox that contains tools that display the state of managed systems but not tools that change the state of managed systems.

multiple-system aware
A run type that supports multi-system operations. Tools with this run type operate on the target systems using their own internal mechanisms instead of using the Distributed Task Facility. The MSA run type uses the Distributed Task Facility to launch the tool on a single system before the tool interacting with the other managed systems.

N

network clients
Any computer system connected to your network with a compatible browser used to connect to the HP Systems Insight Manager GUI.

O

Onboard Administrator	The Onboard Administrator is the central point for controlling an entire c-Class enclosure. It offers configuration, power, and administrative control over the rack, and its associated blades (Compute Servers), blade management processors (iLOs), network switches (depending on the models of switches used) and storage components (such as SAN or SATA). The Onboard Administrator is a single management processor, with shared resources to an optional backup twin processor for failover.
Open Service Event Manager	Enables you to collect, filter, and send problem reports for supported systems (ProLiant and Integrity) running Insight Management Agents. In addition, OSEM automatically sends service event notifications to HP Systems Insight Manager when a problem is detected on the system.
OpenSSH	A set of network connectivity tools providing encrypted communication sessions over a computer network using SSH. It was created as an open source alternative to the proprietary SSH software suite offered by SSH Communications Security.
operator rights user	A user who has limited capability to configure the Central Management Server. operator rights users have permission to create, modify, and delete all reports and their own tools.
overall software status	This section indicates whether the software on the server that the Version Control Agent is installed on has any updates available within the repository in which it has been configured to monitor.

P

HP Insight Control performance management	A software solution that detects, analyzes, and explains hardware bottlenecks on HP ProLiant servers. HP Insight Control performance management tools consist of Online Analysis, Offline Analysis, Comma Separated Value (CSV) File Generator Report, System Summary Report, Status Analysis Report, Configuration, Licensing, and Manual Log Purge.
HP ProLiant Support Pack	A set of HP software components that have been bundled together by HP and verified to work with a particular operating system. A ProLiant Support Pack contains driver components, agent components, and application and utility components. All of these are verified to install together.
ProLiant and Integrity Support Packs	An ProLiant and Integrity Support Packs is a set of HP software components that have been bundled together by HP, and verified to work with a particular operating system. An ProLiant and Integrity Support Packs contains driver components, agent components, and application and utility components. All of these are verified to install together.
ProLiant Essentials license key	The contractual permissions granted by HP to the customer in the form of a coded embodiment of a license that represents a specific instance of a license. A single license can be represented by a single key or by a collection of keys.
provisioning	The process of creating a service from a template. Through the Insight Orchestration Self-Service Portal or the Insight Orchestration console, a user submits a request to create the service and Insight Orchestration controller searches its inventory allocating the computing resources to all logical resource definitions in the template.

R

HP Insight Control server deployment	The HP Insight Control server deployment is a multiserver deployment tool that enables IT administrators to easily deploy large numbers of servers in an unattended, automated fashion. The Insight Control server deployment is installed separately from HP SIM. It requires a license for each server managed. You must register your Insight Control server deployment product to purchase licenses or obtain a 10-node 30-day license before installing Insight Control server deployment (a 10-node 7-day evaluation license is built into the software). The Insight Control server deployment is installed from its own DVD. See http://www.hp.com/servers/rdp for information about Insight Control server deployment including a link to obtain evaluation licenses or register your product. See the Insight Control server deployment documentation for network environment setup, prerequisites for the deployment server, and installation instructions.
HP Insight Remote Support Advanced	The HP Insight Remote Support Advanced provides proactive remote monitoring, diagnostics, and troubleshooting to help improve the availability of HP-supported servers and storage devices in your data center. The Insight Remote Support Advanced reduces cost and complexity in support of systems and devices. The Insight Remote Support Advanced securely communicates incident information through your firewall and/or Web proxy to the HP Support Center for reactive support.

Additionally, based on your support agreement, system information can be collected for proactive analysis and services.

rack	A set of components cabled together to communicate between themselves. A rack is a container for an enclosure.
Red Hat Package Manager	The Red Hat Package Manager is a powerful package manager that can be used to build, install, query, verify, update, and uninstall individual software packages. A package consists of an archive of files and package information, including name, version, and description.
Reference Support Pack	A baseline bundle of HP software components that the Version Control Agent can be configured to point to in the repository. This setting enables users to indicate that they want to keep all of their software up to a certain Support Pack level.
remote wakeup	Sometimes referred to as Wake-On-LAN (WOL). The remote powering up of a system through its resident WOL network card, provided that the system has been enabled to be so awakened using the ROM or F10 Setup.
	This is a capability on which HP Systems Insight Manager relies to turn on the systems for scheduled Software Updates or Replicate Agent Settings.
remove all disk thresholds	A task provided by HP Systems Insight Manager to remove disk thresholds for systems in an associated collection. This task only removes disk thresholds that were set by HP Systems Insight Manager or by browsing directly to the Web Agent. Any thresholds set by HP Systems Insight Manager for Windows 32, including disk thresholds, are not removed by this task.
Replicate Agent Settings	A tool that can be used to copy web-based agent settings to a group of systems.
repository	A directory containing ProLiant Support Pack or Integrity Support Packs and Smart Components.
Resource Partition	A subset of the resources owned by an operating system instance. The use of those resources is controlled through technologies such as the Fair Share Scheduler, pSets, and Memory Resource Groups.
	A resource partition also has a set of processes associated with it, and only those processes can use the resources within the resource partition. Policies established by tools such as Process Resource Manager (PRM), Workload Manager (WLM), or Global Workload Manager (gWLM) control how resources are allocated to the set of resource partitions within an operating system instance.
resource pool	A group of physical and virtual resources managed by HP Virtual Server Environment. An administrator controls resource utilization by allowing users access to resource pools.
role	*See* toolbox.
rule set	Conditions, policies, or criteria applied to system information to determine what it is.

S

SAN	A storage area network (SAN) is a network (or subnetwork) that connects data storage devices with associated data servers. A storage area network is typically part of an overall network of computing resources.
search criteria	A set of variables (information) used to define a requested subset of information from the HP Systems Insight Manager database.
Secure HTTP	An extension to the HTTP protocol that supports sending data securely over the web.
Secure Shell	A program to log in to another system over a network and execute commands on that system. It also enables you to move files from one system to another, and it provides authentication and secure communications over insecure channels.
Secure Sockets Layer	A standard protocol layer that lies between HTTP and TCP and provides privacy and message integrity between a client and server. A common usage of SSL is to provide authentication of the server, so clients can be assured they are communicating with the server it claims to be. It is application protocol independent.
secure task execution	A feature of HP Systems Insight Manager that securely executes a task from a managed system. STE ensures that the user requesting the task has the appropriate rights to perform the task, and encrypts the request to protect data from snooping.

security roles	A feature that enables administrators to restrict system access and manage access on a per-user or per-group basis. This capability enables systems administrators to delegate tasks to junior staff without providing access to advanced or dangerous features. It also enables systems administrators to delegate management of systems to specific organizations or customers without providing access to systems owned by other organizations or customers.
self-signed certificate	A certificate that is its own Certificate Authority (CA), such that the subject and the CA are the same. *See also* certificate, certificate authority.
server blade	Typically a very dense server system containing microprocessors, memory, and network connections that can be easily inserted into a rack-mountable enclosure to share power supplies, fans, switches, and other components with other server blades. Server blades tend to be more cost-efficient, faster to deploy, and easier to adapt to growth and change than traditional rack-mounted or tower servers. *See also* enclosure, racks.
server blade visual locator	A feature designed to provide visual representation of ProLiant BL e-Class, p-Class and c-Class servers within their respective enclosures and racks. *See also* enclosure, racks.
Service Advertising Protocol	A NetWare protocol used to identify the services and addresses of servers attached to the network.
set disk thresholds	A task provided by HP Systems Insight Manager to set a disk threshold for systems in an associated collection. This threshold is set on all disk volumes on the target systems.
Shared Resource Domain	A collection of compartments—all of the same type—that share system resources. The compartments can be nPartitions, virtual partitions, processor sets (pSets), or Fair Share Scheduler (FSS) groups. A server containing nPartitions can be an SRD—as long as nPartition requirements are met. A server or an nPartition divided into virtual partitions can be an SRD for its virtual partition compartments. Similarly, a server, an nPartition, or a virtual partition containing pSets can be an SRD for its pset compartments. Lastly, a Server, an nPartition, or a virtual partition containing FSS groups can be an SRD for its FSS group compartments. A complex with nPartitions can hold multiple SRDs. For example, if the complex is divided into nPartitions, named Par1 and Par2, Par1's compartments could be virtual partitions, while Par2's compartments are pSets. Each compartment holds a workload. gWLM manages the workload by adjusting the compartment's resource allocation.
Short Message Service	A convenient way to send brief text messages directly to a wireless phone. There is a maximum message length of 140 characters.
Simple Network Management Protocol	One management protocol supported by HP Systems Insight Manager. Traditional management protocol used extensively by networking systems and most servers. Management Information Base for Network Management of TCP/IP-based internets (MIB-II) is the standard information available consistently across all vendors.
Simple Object Access Protocol	A lightweight protocol for exchange of information in a decentralized, distributed environment.
Single Sign On	Permission granted to an authenticated user browsing to HP Systems Insight Manager to browse to any of the managed systems from within HP Systems Insight Manager without re-authenticating to the managed system. HP Systems Insight Manager is the initial point of authentication, and browsing to another managed system must be from within HP Systems Insight Manager.
single-system aware	A run type that does not support multi-system operations. Tools with this run type are only aware of the system on which they are running.
SMI CIMOM	*See* common information model object manager.
SMI-S provider	An industry-standard WBEM provider that implements a well defined interface for storage management. The manufacturers of host bus adapters (HBAs), switches, tape libraries, and storage arrays can integrate SMI-S providers with their systems, or provide them as separate software packages. *See also* Web Based Enterprise Management.

SNMP communication setting	Default SNMP community string used when communicating with systems supporting SNMP communications.
SNMP trap	Asynchronous event generated by an SNMP agent that the system uses to communicate a fault.
Software Distributor	The HP-UX administration tool set used to deliver and maintain HP-UX operating systems and layered software applications.
software inventory	A listing of the HP software installed on the system where the Version Control Agent is installed.
software update	A task to remotely update software and firmware.
spoofing	The act of a website posing as another site to gather confidential or sensitive information, alter data transactions, or present false or misleading data.
standard error	The default place where the system writes error messages. The default is the terminal display.
standard output	The default place to which a program writes its output. The default is the terminal display.
status message list	A list created by Cluster Management Resources to collect entries found in the bottom left area of the **Cluster Monitor** page to bring your attention to cluster attributes that are in an abnormal state.
status message summary header	The list header summary of the total number of status messages in the list and, in parentheses, the number of status messages that have not been examined.
status type	The classification of status messages (for example, Critical, Major, Minor, Normal, Warning, and Unknown).
Storage Management Initiative Specification	A standard management interface developed by the Storage Networking Industry Association (SNIA). SMI-S provides a common interface and facilitates the management of storage devices from multiple vendors. SMI-S uses industry-standard common information model and Web Based Enterprise Management technology.
storage systems	SAN-attached Fibre Channel disk arrays, switches, tape libraries, or hosts (with Fibre Channel host bus adapters).
subnet	On TCP/IP networks, subnets are all systems whose IP addresses have the same prefix. For example, all systems with IP addresses that start with 10.10.10. would be part of the same subnet.
Survey Utility	An agent (or online service tool) that gathers and delivers hardware and operating system configuration information. This information is gathered while the server is online.
symmetric key	A common key that both the server and receiver of a message share and use to encrypt and decrypt a message.
system	Systems on the network that communicate through TCP/IP. To manage a system, some type of management protocol (for example, SNMP, or WBEM) must be present on the system. Examples of systems include servers, workstations, desktops, portables, routers, switches, hubs, and gateways.
system group	A group of systems based on a system collection; a static snapshot of the source collection at the time the system group was created. Used for authorizations.
system health status	This is aggregate status all of the status sources (which can be SNMP/SNMP v3, WBEM, and HTTP) that are supported on a target system, with the most critical status being displayed. The following are the different system health statuses that can be displayed:

- **Critical**

    HP Systems Insight Manager can no longer communicate with the system. The system was previously discovered but cannot be pinged. The system might be down, powered off, or no longer accessible on the network because of network problems.

- **Major**

    A major problem exists with this system. It should be addressed immediately. For systems running an Insight Management Agents, some component has failed. The system might no longer be properly functioning, and data loss can occur.

- **Minor**

    A minor problem exists with this system. For systems running Insight Management Agents, some component has failed but the system is still functioning.

- **Warning**

  The system has a potential problem or is in a state that might become a problem.

- **Normal**

  The system is functioning correctly.

- **Disabled**

  The system is disabled from monitoring but is not necessarily turned off.

- **Unknown**

  HP Systems Insight Manager cannot obtain management information about the system.

- **Informational**

  The system might be in a transitional or non-error state.

system identification	Identifying information about systems. This information is stored in the database. The following information is identified: • Type of management protocol on the system (SNMP/SNMP v3, WBEM, HTTP, and SSH) • Type of HP system (server, client, switch, router, and so on) • Network name of system
system information	Information that is provided on the **System Page** under the **System** tab. The system information includes: • Network address • Network name • Description • Contact • Location • System links
system information using SNMP	Agents that conform to SNMP MIB-2 standards.
system links	A summary information page for a specific system that has a management agent.
System Management Homepage	An integrated piece of software used by the HP suite of HP Web-enabled System Management Software to communicate over HTTP and HTTPS. It provides a uniform set of functionality and security to HP Web-enabled System Management Software.
system overview report	A report indicating the state of systems that is available at the time that HP Systems Insight Manager is first opened. A system search result contains the number of systems that are registered with the HP Systems Insight Manager databases. Systems are grouped by their status conditions. Each number in a column is a hyperlink to a more detailed list of systems, which displays the systems that correspond to the number in the overview.
system properties	properties can be set for a single system or for multiple systems at the same time and include options such as system name, system type, system sub-type, operating system version, asset number, contact information, and whether or not the system properties can be changed or updated by the discovery process.
system search	Logical grouping of systems into a collection based on information in the HP Systems Insight Manager database. After a search is defined, you can display the results from the system view page or associate it with a management task.
system search results	The result of a system search.
system status panel	The section of the GUI on the left of the screen that displays status information and system or event alarms.

system type	One of 12 supplied types. You can add your own based on one of these types. For example, use Server type to create MyServer type. It is still a server and is reported on in the same way, but it has your designation.
System Type Manager	A utility that enables you to modify the default behavior of the discovery and identification of objects classified as Unknown or as another category of systems are discovered and identified precisely as you require. HP Systems Insight Manager discovers and identifies the system and applies the new information when an Unknown system matches a rule set that you specify as the primary rule set. Furthermore, creating the new system type provides a **System Link** page for viewing the information returned from the system agent or from the communication protocol of SNMP.

T

task	An executed instance of an HP Systems Insight Manager tool, on one or more systems, with a specific set of arguments.
task scheduling	A master scheduling tool for the scheduling of polling, control, and notification tasks.
template	A tool that specifies the requirements for an infrastructure service in terms of server groups, networks, storage, and contain customization points that use HP Operations Orchestration workflows during the execution of request.
template files	Template files are a concept that was used before HP Systems Insight Manager had multiple automatic discovery tasks. Template files should no longer be used. However, a template file enables you to create the same data range (IP ranges, and so on) that would be entered in a discover IP inclusion range. The automatic discovery task can have as input one or more template files. However, template files cannot be nested.
threshold	A preset limit that produces an event when the limit is reached or exceeded.
Tomcat	An open source implementation of Java Servlet and JavaServer Pages technologies that is used by HP Systems Insight Manager as a web server.
tool	An application, command, or script that can be executed by HP Systems Insight Manager on one or more systems to perform a task.
toolbox	A defined set of tools that a user might need for a particular task, such as database administration or software management. Each HP Systems Insight Manager toolbox is associated with a set of tools and authorizations.
trap	An unsolicited message generated by a management agent that indicates that an event has occurred. For example, a monitored item has exceeded a set threshold or changed status. Previously called alarm. *See also* event.
trap categories	Event collection systems found by event type. SNMP/SNMP v3 traps categorized by HP Systems Insight Manager into logical groups according to their functions.
trap forwarding address	The IP address of a system that has been specified to receive trap notifications forwarded by the HP Systems Insight Manager systems.
type	The classification of a system, which identifies it as a standard system type. The system types are client, cluster, portable, printer, remote access device, repeater, router, server, switch, unknown, workstation, and other.

U

uncleared event status	Events that have a Critical, Major, Minor, Normal, or Informational severity and have not been cleared or deleted from the database. Events can be cleared without being deleted from the database by using the **Clear events** menu option.
	
	• **Critical.**
	   A failure has occurred, and immediate attention is required.
	
	• **Major.**
	   A failure is impending.

- **Minor.**

  A warning condition exists that can escalate into a more serious problem.

- **Normal.**

  These events are not a problem.

- **Informational.**

  No attention required. This status is provided as useful information

unknown status	HP Systems Insight Manager cannot obtain management information about the system using SNMP/SNMP v3. Although no management instrumentation information is available, the system can be pinged. It might have an invalid community string or security setting.
user	A network user with a valid login on the Central Management Server that has been added to HP Systems Insight Manager.
user accounts	Accounts used to sign-in to HP Systems Insight Manager. These accounts associate a local Windows user account or a domain account with privilege levels and paging attributes inside HP Systems Insight Manager.
user group	A group of users defined on the Central Management Server operating system that has been added to HP Systems Insight Manager. Members of the user group in the operating system can sign-in to HP Systems Insight Manager.
user rights user	A user who cannot configure the Central Management Server. However, the user can view and run predefined reports on the Central Management Server and all managed systems.

V

HP VCA log	A listing of all the software maintenance tasks completed by the Version Control Agent and reports resulting from those tasks.
version control	Referred to as the Version Control Repository Manager installed on a Windows system for Windows and Linux ProLiant systems, and Software Distributor on HP-UX operating systems. Provides an overview of the software status for all managed ProLiant or Integrity systems and can update system software and firmware on those systems programmatically using predetermined criteria. Version control identifies systems that are running out-of-date system software, indicates if an upgrade is available, and provides reasons for upgrading. For HP-UX systems, Software Distributor can be launched from an HP Systems Insight Manager Central Management Server against one or more installed HP-UX systems.
Virtual Server Environment	An integrated server virtualization offering for HP-UX, Linux, and Windows servers that provides a flexible computing environment maximizing usage of server resources. VSE consists of a pool of dynamically sizeable virtual servers; each can grow and shrink based on service level objectives and business priorities. For more information, see http://hp.com/go/vse.

W

WBEM Services	HP WBEM Services for HP-UX is an HP product that uses WBEM and DMTF standards to manage HP-UX system resources.
Web Based Enterprise Management	This industry initiative provides management of systems, networks, users, and applications across multiple vendor environments. WBEM simplifies system management, providing better access to software and hardware data that is readable by WBEM client applications.
Web-Based Enterprise Services	A tool suite that is aimed at preventing or reducing the downtime of a system.
Web-launch aware	A run type for tools that are launched in a web browser using a web server. WLA tools can be designed to deal with multiple systems.
Windows Management Instrumentation	An API in the Windows operating system that enables you to manage and control systems in a network.
workspace	The section of the GUI where tools appear.

X client   An application or tool that appears on an X server. X clients can also be called X applications.

X server   A local application that accepts X client requests and acts on them.

X Window System   A cross-platform window system that uses the client or server model to distribute services across a network. It enables applications or tools to run on a remote computer.

XML document   A collection of data represented in XML.

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