HP Insight Dynamics 6.2 Getting Started Guide

Acknowledgments

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1 Introduction to HP Insight Dynamics

This document provides an overview of HP Insight Dynamics. It is intended to be used by system administrators and other technical professionals involved with data center operations, administration and planning.

- Chapter 1 describes the product features and the available configurations.
- Chapter 2 (page 15) describes the licensing model and license mangement procedures.
- Chapter 3 (page 21) describes initial setup steps to get started with Insight Dynamics.
- Chapter 4 (page 25) describes the tools available to set up managed systems correctly and diagnose and correct common configuration problems.
- Chapter 5 (page 29) provides a list of support resources and a comprehensive list of Insight Dynamics documentation.
- The Command reference (page 35) provides command reference pages for the *vseassist*(1M) and *vselicense*(1M) commands that are mentioned elsewhere in this document.
- The Glossary (page 47) provides definitions of key terms used in this document. Initial occurrences of terms with glossary definitions appear in italics. If you are viewing this document in electronic form, click the italicized term to jump to the glossary definition.

HP Insight Dynamics is an integrated command center that enables you to continuously analyze and optimize your adaptive infrastructure. It builds on the HP infrastructure management portfolio, including HP Systems Insight Manager (HP SIM) and HP Insight software.

Insight Dynamics provides an integrated graphical environment for managing physical servers, *logical servers*, *virtual machines*, *server blades*, *nPartitions*, *virtual partitions*, applications, and *workloads*. You can dynamically resize virtual servers and migrate resources where they are needed, based on service-level objectives and business requirements.

For information about the changes in this release of Insight Dynamics, see the *HP Insight Dynamics 6.2 Release Notes*. For a complete list of Insight Dynamics documentation and the web sites where these documents can be found, see "Related information" (page 29).

IMPORTANT: The information in the following sections is a summary. Specific supported hardware and software configurations are provided in the *HP Insight Software 6.2 Support Matrix*, available at http://www.hp.com/go/insightdynamics/docs.

Components of HP Insight Dynamics

The Insight Dynamics software is installed on a *Central Management Server (CMS)* running HP SIM, which provides a browser-based user interface. A single CMS can be used to manage different types of systems. The software is installed on the CMS once, regardless of how many or what types of *managed system* licenses are purchased. The following CMS installations are supported:

- Insight Dynamics can be installed on the following types of CMS running Microsoft Windows:
  — HP ProLiant server
  — *HP BladeSystem* c-Class ProLiant *server blade*
  — *Virtual machine* running under VMware ESX or Microsoft Hyper-V on HP ProLiant or supported non-HP server

On a CMS running Microsoft Windows, Insight Dynamics is installed as part of the Insight software family of products. For installation and configuration information, see *HP Insight Software 6.2 Preinstallation Worksheet*, *HP Insight Software 6.2 Quick Installation Guide*, and *HP Insight Software 6.2 Installation and Configuration Guide*. For an introduction to Insight software,

including security recommendations, summary of included products, and documentation roadmap, see *HP Insight Software 6.2 Getting Started Guide*.

- Insight Dynamics can be installed on the following types of CMS running HP-UX:
  — HP Integrity server
  — HP Integrity server blade
  — virtual machine running under HP Integrity Virtual Machines

  For installation on a CMS running HP-UX, see *HP Insight Dynamics 6.2 Integrity CMS Installation and Configuration Guide*.

The following sections summarize the major software components of Insight Dynamics. For more information, see the user guides and other documents listed in "Related information" (page 29). Help is also available within the software by clicking the ⚹ button in the upper right of most screens.

HP Insight Virtualization Manager software

Virtualization Manager provides the framework for visualizing your virtual server environment. All of the systems and workloads that you are authorized to view are displayed in graphical views. The hierarchical relationships between systems is displayed in the Visualization View. Different perspectives can be selected to customize this view. The Workload View shows the workloads running under servers. Both views show current utilization metrics, allowing you to easily monitor the operational status of the resources managed by Insight Dynamics.

With Virtualization Manager, you can perform the following tasks:

- Customize the level of detail that you want to see
- Easily access additional Insight Dynamics capabilities to manage and configure systems and workloads
- Inventory your virtual and physical servers
- Centrally configure your server resources for optimum utilization

Launch Virtualization Manager from HP SIM in any of the following ways:

- From the HP SIM menu bar, choose **Tools→Virtualization Manager...**
- From the HP SIM **Systems and Event Collections** list in the left navigation area, choose **Systems→Shared→Systems by Type→All VSE Resources**, or expand the **All VSE Resources** collection by clicking its ⊞ icon, then choose a subset such as **nPartitions**
- Create a custom HP SIM collection whose default view is set to "VSE", and choose that collection in the left navigation area

For more information about Virtualization Manager, see the *HP Insight Virtualization Manager 6.2 Software with Logical Server Management User Guide*, available at http://www.hp.com/go/insightdynamics/docs.

Logical servers

A *logical server* is a set of configuration information that you create, activate and move across physical and virtual machines. It contains the logical server definition and description, including the server compute resources (for example, number of CPU cores and amount of memory), and the server connections to storage fabric and networks.

A logical server is managed within Virtualization Manager and, when activated, is applied to the creation of a virtual machine using hypervisor-based software or to a bare-metal server blade using HP Virtual Connect Enterprise Manager. Logical servers can be defined using the Create Logical Server wizard or created and activated via the import of an existing server blade or virtual machine.

The Logical Servers feature in Virtualization Manager allows you to perform tasks such as the following:

- Populate an enclosure
- Load balance servers
- Evacuate servers, for routine maintenance or in case of disaster

📝 **NOTE:** Logical server management is only supported on a CMS running Microsoft Windows.

For more information about managing logical servers, see the *HP Insight Virtualization Manager 6.2 Software with Logical Server Management User Guide*, available at http://www.hp.com/go/insightdynamics/docs.

HP Insight Capacity Advisor software

Capacity Advisor lets you quickly and safely test potentially costly configuration changes in your data center before you actually make them. To start Capacity Advisor, select **Tools→Capacity Advisor** from the top menu bar, or select the **Capacity Advisor** tab within Virtualization Manager. With Capacity Advisor, you can find answers to questions such as the following:

- Is there room on this system for an additional workload?
- Will this workload fit on this system?
- Can I consolidate these servers as virtual machines on a single server?
- What might my resource demand be in six months or a year?
- What are the estimated power costs for cooling a real or simulated system configuration?
- What does a comparison of several what-if scenarios reveal about the analyzed alternatives?

Capacity Advisor helps you optimize workloads across your *management domain* to help maximize utilization of server resources. It provides scenario analysis to help you manage your current server resources and plan for changes to your workloads and resources. These scenarios allow you to simulate the following actions:

- Resizing systems
- Resizing workloads
- Moving workloads

Capacity Advisor provides the following additional features.

- **Automated generation of reports**   Capacity Advisor automates report generation that would otherwise take many manual steps to collect and present data or analysis.

- **Trace-based simulator**   Providing graphs over specific data intervals, Capacity Advisor gives a more complete and accurate view of resource utilization than focusing on a single peak.

- **Ease of data gathering**   Data is collected automatically using a secure protocol and stored in a central database for analysis.

For more information about Capacity Advisor, see the *HP Insight Capacity Advisor 6.2 User Guide*, available at http://www.hp.com/go/insightdynamics/docs.

HP Insight Capacity Advisor Consolidation software

Capacity Advisor is also available through a limited-duration license for systems that are intended to be consolidated. The HP Insight Capacity Advisor Consolidation software does not include Virtualization Manager or any other Insight Dynamics components. Using this software, you can collect and analyze data to help you plan the consolidation of existing systems, without requiring a full Insight Dynamics license for those systems. For more information, see the section "Data collection and the HP Insight Capacity Advisor Consolidation software" in the *HP Insight Capacity Advisor 6.2 User Guide*.

HP Insight Orchestration software

HP Insight Orchestration extends HP Insight Dynamics to provide rapid provisioning and repurposing of infrastructure services from shared resource pools using a self-service portal. Insight Orchestration delivers advanced template-driven design, provisioning and on-going operations for multinode, multi-tier infrastructure services.

HP Insight Orchestration supports four main activities to automate the deployment of infrastructure services:

Design   An architect uses the graphical designer to create simple and complex infrastructure templates that, when tested, can be published for users to create infrastructure services.

Provision   A self-service user selects an existing template and then requests infrastructure provisioning from it, against an assigned pool of resources. The administrator can approve or deny this request, and monitor its progress.

Operate   The administrator manages server, network, and storage pools, defines virtual machine images and software deployment jobs, performs manual provisioning tasks as part of the fulfillment of self-service requests, and uses Insight software to monitor the health and utilization of the managed environment.

Integrate   Architects and administrators integrate Insight Orchestration with existing IT processes by modifying or creating Operations Orchestration workflows to customize the Insight Orchestration automation. They can link to approval processes, extend operating system deployment and server configuration, and integrate the SAN management processes with server deployment.

For more information about HP Insight Orchestration software and the related Operations Orchestration software, see the list of documents under "Related information" (page 29).

HP Insight Recovery software

HP Insight Recovery provides simplified disaster recovery of logical server environments. With a mouse click, HP Insight Recovery transfers application environments running on HP BladeSystems or on virtual machines to a remote Recovery Site. It utilizes the data replication capabilities of HP storage environments to ensure that application data is properly transitioned to the recovery location and that the overall transition is measured in minutes, not days. Insight Recovery is only supported on an HP ProLiant CMS running Microsoft Windows.

Logical servers that are included in an HP Insight Recovery configuration are referred to as "DR protected logical servers". An HP Insight Recovery configuration consists of two sites, each managed by HP Insight Dynamics. At any point in time, one site is configured with the primary role and the other is configured with the recovery role. HP Insight Recovery pairs symmetrically configured logical servers across the two sites. The DR protected logical servers at the Primary Site are in an activated state, providing services to the end-user. The peer logical servers at the Recovery Site are in a deactivated state.

If a disaster occurs at the Primary Site, the administrator at the Recovery Site can trigger a site failover via a push-button provided by HP Insight Recovery. This will prepare the storage associated with the DR protected logical servers at the Recovery Site for read-write access, and then activate the logical servers at the Recovery Site. The site role at the Recovery Site will be changed to primary.

For more information about HP Insight Recovery software, see the see the list of documents under "Related information" (page 29).

HP Storage Provisioning Manager

HP Storage Provisioning Manager (SPM) is a software tool that provides a service-centric management interface to storage, allowing storage requests to be fulfilled with available storage services from a storage catalog. SPM securely automates storage management tasks.

SPM is automatically installed as part of Insight Dynamics and is accessed through the logical server management (LSM) feature of Virtualization Manager. SPM must be connected to *EVAs* using Command View (CV), storage arrays that are managed by HP Insight Orchestration (HPIO) using Insight Operations Orchestration or *SMI-S*, and to unmanaged storage arrays.

For more information about SPM, see the *HP Storage Provisioning Manager User Guide*, available at http://www.hp.com/go/insightdynamics/docs.

Application Discovery

Application Discovery helps you identify and learn about the applications and processes running in your data center or computing network.

With Application Discovery, you can do the following:
- Discover the location and number of recognized, running and installed applications in your network or data center
- Monitor the activity and resource usage of running processes and applications
- Define and adapt application templates to your environment for better discovery of your third-party and custom applications, and to make them available for adding to monitored workloads
- Select the event types for which you want to receive notifications and set their level of importance

For more information about Application Discovery, see the *Application Discovery 6.2 User Guide*, available at http://www.hp.com/go/insightdynamics/docs.

HP Insight Global Workload Manager software for Integrity

To access Global Workload Manager (gWLM) from Virtualization Manager, select the **Shared Resource Domain** tab or select one of the items under **Tools→Global Workload Manager** from the Insight Dynamics menu bar. Global Workload Manager improves both workload performance and resource utilization in a shared computing environment. For servers partitioned with nPartitions, virtual partitions, virtual machines, psets, or FSS groups, gWLM can do the following:
- Monitor each application.
- Determine the CPU resources needed by each application.
- Automatically migrate CPU resources between partitions to where they are needed most. This migration improves application performance by making more resources available to the application at times of peak demand. In addition, migrating idle resources to the applications that are busy increases processor utilization.

For more information about gWLM, see the *HP Insight Global Workload Manager 6.2 User Guide*, available at http://www.hp.com/go/insightdynamics/docs.

HP Instant Capacity Manager

The Instant Capacity (iCAP) Manager is a web-based interface that can be used to monitor your Instant Capacity environment. There are several pages available in iCAP Manager, including a home page to provide an overview of the Instant Capacity resources available, a Global Instant Capacity (GiCAP) group manager page to provide more insight into the group managers, and detail pages for GiCAP groups and iCAP complexes and hosts.

You can get to iCAP Manager in either of the following ways:
- From the Virtualization Manager Visualization tab, click the iCAP technology link associated with any managed system that has iCAP components, TiCAP capacity, or is a member of a GiCAP group.
- Select **Tools→Instant Capacity Manager** from the Insight Dynamics menu bar.

For more information about iCAP Manager, see the iCAP Manager help.

Partition Manager

Partition Manager provides system administrators with a convenient graphical user interface to configure and manage nPartitions on HP server systems. Using Partition Manager, you can perform configuration tasks without having to remember commands and parameters. You select nPartitions, cells, I/O chassis or other components from the graphical display, then select an action from a menu.

You can use Partition Manager to perform the following tasks:
- Create, modify and delete nPartitions
- Examine the nPartition configuration of a complex
- Check the complex for potential configuration and hardware problems
- Manage hardware resources on the complex

For more information about Partition Manager, see the Partition Manager help.

Integrity Virtual Machines Manager

HP Integrity Virtual Machines Manager (VM Manager) is the GUI that you can use from your browser to manage Integrity VM resources. VM Manager allows you to create, configure and evaluate virtual machines, and monitor and evaluate data and resources at the level of the VM Host. You can view all of a VM Host's virtual machines and their assigned resources, and you can view all resources assigned to a specific virtual machine or virtual switch. For example, VM Manager provides graphical views of virtual-to-physical network and storage devices so that you can view I/O data, including resource utilization information. VM Manager obtains information about Integrity VM resources through Web-Based Enterprise Management (WBEM) providers installed on the VM Host.

For more information about VM Manager, see the *HP Integrity Virtual Machines Manager 4.1.1 Software: User Guide*, available at http://www.hp.com/go/insightdynamics/docs.

Product configurations

Insight Dynamics is licensed per managed system. Different Insight Dynamics suite licenses are available for managing different types of systems, as shown in Table 1-1. For more information about Insight Dynamics licenses, see "License management" (page 15).

Table 1-1 Managed Systems Supported by CMS

Suite license	Managed systems supported	CMS platform
HP Insight Dynamics suite for ProLiant	• HP ProLiant servers running Microsoft Windows or Linux • HP BladeSystem c-Class ProLiant server blades running Microsoft Windows or Linux • *Virtual machines* and *VM hosts* running under VMware ESX, VMware ESXi, or Microsoft Hyper-V on HP ProLiant hosts	• HP ProLiant server running Microsoft Windows • HP BladeSystem c-Class ProLiant server blade running Microsoft Windows • Microsoft Windows virtual machine running under VMware ESX or Microsoft Hyper-V on HP ProLiant or selected non-HP host
HP Insight Dynamics suite for non-HP servers	• Virtual machines and VM hosts running under VMware ESX, VMware ESXi, or Microsoft Hyper-V on selected non-HP hosts • Selected non-HP servers running Microsoft Windows or Linux	
HP Insight Dynamics – VSE suite for Integrity	• HP Integrity servers running HP-UX, HP OpenVMS, Integrity Linux, or Microsoft Windows for Integrity • HP Integrity server blades running HP-UX, HP OpenVMS, Integrity Linux, or Microsoft Windows for Integrity • *nPartitions* running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • Virtual machines running under HP Integrity Virtual Machines • *virtual partitions* running under a *vPars monitor*.	• HP ProLiant server running Microsoft Windows • HP BladeSystem c-Class ProLiant server blade running Microsoft Windows • Microsoft Windows virtual machine running under VMware ESX or Microsoft Hyper-V on HP ProLiant or selected non-HP host • HP Integrity server running HP-UX • HP Integrity server blade running HP-UX • HP-UX virtual machine running under HP Integrity Virtual Machines

Features of Insight Dynamics

The specific features supported by Insight Dynamics depend on the type of CMS on which the software is running.

- Table 1-2 (page 12) summarizes the features supported for different types of managed systems using a CMS running Microsoft Windows.
- Table 1-3 (page 13) summarizes the features supported for different types of managed systems using a CMS running HP-UX.

Table 1-2 Insight Dynamics Features on Windows CMS

Feature	Managed systems supported
Visualize and monitor physical and virtual resources and workloads using HP Insight Virtualization Manager software	• HP ProLiant servers running Microsoft Windows or Linux • HP BladeSystem c-Class ProLiant server blades running Microsoft Windows or Linux • Virtual machines and *VM Hosts* running under VMware ESX, VMware ESXi, or Microsoft Hyper-V on HP ProLiant and supported non-HP servers • Selected non-HP servers running Microsoft Windows or Linux • HP Integrity servers running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • HP Integrity server blades running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • Virtual machines running under HP Integrity Virtual Machines • *virtual partitions* running under a *vPars monitor*.
Perform capacity analysis and planning using HP Insight Capacity Advisor software	• HP ProLiant servers running Microsoft Windows or Linux • HP BladeSystem c-Class ProLiant server blades running Microsoft Windows or Linux • Virtual machines and VM Hosts running under VMware ESX, VMware ESXi, or Microsoft Hyper-V on HP ProLiant and supported non-HP servers • Selected non-HP servers running Microsoft Windows or Linux • HP Integrity servers running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • HP Integrity server blades running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • Virtual machines running under HP Integrity Virtual Machines • virtual partitions running under a vPars monitor. • Servers licensed for HP Insight Capacity Advisor Consolidation software
Visualize and monitor *logical servers*: server profiles that can be easily created and freely moved	• HP BladeSystem c-Class ProLiant server blades running Microsoft Windows[1] • Virtual machines running Microsoft Windows under VMware ESX, VMware ESXi, or Microsoft Hyper-V on HP ProLiant and supported non-HP servers • HP Integrity server blades running HP-UX, Integrity Linux, or Microsoft Windows for Integrity [1] • Virtual machines running under HP Integrity Virtual Machines [2]
Provision logical servers using HP Insight Orchestration software	• HP BladeSystem c-Class ProLiant server blades running Microsoft Windows[1] • Virtual machines running Microsoft Windows under VMware ESX, VMware ESXi, or Microsoft Hyper-V on HP ProLiant and supported non-HP servers • HP Integrity server blades[1] running HP-UX, Integrity Linux, or Microsoft Windows for Integrity [3]

Table 1-2 Insight Dynamics Features on Windows CMS *(continued)*

Feature	Managed systems supported
Enable site-to-site fault recovery of logical servers using HP Insight Recovery software	• HP BladeSystem c-Class ProLiant server blades running Microsoft Windows or Linux[1] • Virtual machines running Microsoft Windows or Linux under VMware ESX or VMware ESXi on HP ProLiant and supported non-HP servers • Virtual machines running Microsoft Windows under Microsoft Hyper-V on HP ProLiant and supported non-HP servers
Identify and monitor running applications and processes using Application Discovery	• HP Integrity servers running HP-UX or Integrity Linux • HP Integrity server blades running HP-UX or Integrity Linux • Virtual machines running under HP Integrity Virtual Machines • virtual partitions running under a vPars monitor.
Manage workloads with automated *policies* using HP Insight Global Workload Manager software for Integrity	• HP Integrity servers running HP-UX • HP Integrity server blades running HP-UX • Virtual machines running under HP Integrity Virtual Machines
Manage HP Integrity virtual machines using Integrity Virtual Machines Manager	• Virtual machines running under HP Integrity Virtual Machines • HP Integrity Virtual Machines VM Hosts
Manage *nPartitions* and *cell-based servers* using Partition Manager	• HP Integrity cell-based servers and nPartitions
Monitor HP Instant Capacity resources (*iCAP*, *GiCAP*, and *TiCAP*) using HP Instant Capacity Manager	• HP Integrity servers with HP Instant Capacity products installed
Manage *HP Serviceguard clusters* using Serviceguard Manager	• HP Integrity servers with HP Serviceguard installed

1   Requires HP Virtual Connect Enterprise Manager software on BladeSystem enclosure
2   Logical server operations on virtual machines under HP Integrity Virtual Machines are limited to: import, on-line guest migration via logical server moves, power on/off, and unmanage.
3   Requires HP Insight Orchestration software for Integrity

Table 1-3 Insight Dynamics Features on an HP-UX CMS

Feature	Managed systems supported
Visualize and monitor physical and virtual resources and workloads using HP Insight Virtualization Manager software	• HP Integrity servers running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • HP Integrity server blades running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • Virtual machines running under HP Integrity Virtual Machines • *virtual partitions* running under a *vPars monitor*.
Perform capacity analysis and planning using HP Insight Capacity Advisor software	• HP Integrity servers running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • HP Integrity server blades running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • Virtual machines running under HP Integrity Virtual Machines • virtual partitions running under a vPars monitor.

Table 1-3 Insight Dynamics Features on an HP-UX CMS *(continued)*

Feature	Managed systems supported
Identify and monitor running applications and processes using Application Discovery	• HP Integrity servers running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • HP Integrity server blades running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • Virtual machines running under HP Integrity Virtual Machines • virtual partitions running under a vPars monitor.
Manage workloads with automated *policies* using HP Insight Global Workload Manager software for Integrity	• HP Integrity servers running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • HP Integrity server blades running HP-UX, Integrity Linux, or Microsoft Windows for Integrity • Virtual machines running under HP Integrity Virtual Machines • virtual partitions running under a vPars monitor.
Manage HP Integrity virtual machines using Integrity Virtual Machines Manager	• Virtual machines running under HP Integrity Virtual Machines • HP Integrity hosts running HP Integrity Virtual Machines
Manage *nPartitions* and *cell-based servers* using Partition Manager	• HP Integrity cell-based servers and nPartitions
Monitor HP Instant Capacity resources (*iCAP*, *GiCAP*, and *TiCAP*) using HP Instant Capacity Manager	• HP Integrity servers with HP Instant Capacity products installed
Manage *HP Serviceguard clusters* using Serviceguard Manager	• HP Integrity servers with HP Serviceguard installed

2 License management

This chapter describes the licensing model, the types of licenses available for Insight Dynamics, and how to add and apply licenses. The tables in the following sections summarize the hardware platforms and operating systems supported for each Insight Dynamics license. For detailed hardware and software configurations supported by Insight Dynamics, see the *HP Insight Software 6.2 Support Matrix*, available at http://www.hp.com/go/insightdynamics/docs.

Insight Dynamics licensing model

Insight Dynamics is licensed for use on *managed systems* as shown in the following table. Licenses are managed from the Central Management Server (CMS), using the HP SIM License Manager database.

📝 **NOTE:** Additional product licenses may be required, depending on the details of your installation.

System type	License requirement[1]
HP Integrity Server	License per CPU *socket* or *core*[2]
HP 9000 Server	License per CPU socket or core [2]
HP ProLiant ML/DL Server	License per system
HP BladeSystem c-Class enclosure	No enclosure license required or available. Licenses apply to individual server blades.
HP BladeSystem c-Class ProLiant server blade	License per blade
HP Integrity server blade	License per CPU socket or core [2]
Virtual machines running under any of the following: • HP Integrity Virtual Machines • VMware ESX • VMware ESXi • Microsoft Hyper-V	Covered by host server license

1   The HP Insight Capacity Advisor Consolidation software license is always licensed per system, regardless of system type. See "HP Insight Capacity Advisor Consolidation software" (page 18).

2   Trial licenses are licensed per system. See "Trial licenses" (page 15).

To obtain a permanent License To Use (LTU) for Insight Dynamics, contact your HP sales representative, your HP services representative, or your authorized HP reseller. The available licenses are listed in the sections that follow.

To use a purchased license, it must be added to the HP SIM License Manager database on the CMS and then applied to a managed system. For more information, see "Adding and applying licenses" (page 18).

Trial licenses

When Insight Dynamics is installed on the CMS, 10 trial licenses for the HP Insight Dynamics – VSE suite for Integrity are included in the License Manager database. These licenses can be applied to HP Integrity and HP 9000 systems. Each trial license is valid for 90 days after it is applied to a managed system. To continue to manage these systems beyond the trial period, permanent licenses must be purchased.

These trial licenses can be applied to managed systems by the Insight managed system setup wizard or by the `vselicense` command. They cannot be applied through HP SIM License

Manager. For information about the managed system setup wizard, see the *Insight Managed System Setup Wizard Getting Started Guide*. For information about vselicense, see vselicense(1M) [p. 41].

> **IMPORTANT:** Integrity trial licenses that have already been activated from previous versions of the software (VSE Management Software 4.*) will not be retained when upgrading to the current release. Managed systems that were licensed with older Integrity trial licenses will appear unlicensed after the upgrade. To re-license the system with the new trial license, use the Insight managed system setup wizard or the vselicense command.

Trial licenses for the HP Insight Dynamics suite for ProLiant for a limited number of managed systems can be obtained by registering with HP on the Infrastructure software evaluation download center (http://www.hp.com/go/tryinsightsoftware).

You can view the status of your trial licenses using the HP SIM License Manager. For information about License Manager, see "Alternative Process: Use HP SIM License Manager" (page 18).

End-user license agreement

Your use of Insight Dynamics is subject to the terms of the end-user license agreement included with the software. Please read this document at its installed location on the CMS:

HP-UX CMS	/opt/vse/src/README
Microsoft Windows CMS	*installation-directory*\src\README

The default installation directory is C:\Program Files\HP\ Virtual Server Environment, but this directory can be changed at installation time.

HP ProLiant servers and ProLiant server blades

License name	Licensed products	Managed system OS
HP Insight Dynamics suite for ProLiant	• HP Insight Virtualization Manager software • HP Insight Capacity Advisor software • HP Insight Control server migration • HP Insight Orchestration software • HP Insight Recovery software	• Microsoft Windows • Linux

Notes

- A license for HP Insight Control suite is also required. The Insight Control license includes HP Insight Control virtual machine management, HP Insight Control server migration, HP Insight Control power management, and HP Integrated Lights-Out Advanced.
- Logical server management is only supported on a CMS running Microsoft Windows.
- A license for HP Virtual Connect Enterprise Manager software is required for BladeSystem enclosures in order to manage logical servers on server blades.

HP Integrity and HP 9000 servers and Integrity server blades

License name	Licensed products	Managed system OS
HP Insight Dynamics – VSE suite for Integrity	• HP Insight Virtualization Manager software • HP Insight Capacity Advisor software • HP Insight Global Workload Manager software for Integrity • HP Insight Control virtual machine management	• HP-UX
HP Insight Virtualization Manager software	• HP Insight Virtualization Manager software • HP Insight Control virtual machine management	• HP-UX • Microsoft Windows for HP Integrity • Linux for HP Integrity
HP Insight Capacity Advisor software	• HP Insight Virtualization Manager software • HP Insight Capacity Advisor software • HP Insight Control virtual machine management	• HP-UX • Microsoft Windows for HP Integrity • Linux for HP Integrity
HP Insight Global Workload Manager software for Integrity	• HP Insight Virtualization Manager software • HP Insight Global Workload Manager software for Integrity • HP Insight Control virtual machine management	• HP-UX

Notes

- Logical server management is only supported on a CMS running Microsoft Windows.
- A license for HP Virtual Connect Enterprise Manager software is required for BladeSystem enclosures in order to manage logical servers on server blades.
- A license for HP Insight Orchestration software for Integrity is included with the HP-UX VSE and DC Operating Environments.
- A license for Integrity iLO 2 Advanced is recommended in order to collect advanced power information for Virtualization Manager meters and capacity planning.

Non-HP servers

License name	Licensed products	Managed system OS
HP Insight Dynamics suite for non-HP servers	• HP Insight Virtualization Manager software • HP Insight Capacity Advisor software • HP Insight Control virtual machine management • HP Insight Orchestration software • HP Insight Recovery software	• Microsoft Windows • Linux

Notes

- Logical server management is only supported on a CMS running Microsoft Windows.
- License for HP Insight Recovery software is included in the suite, but Insight Recovery is not supported on non-HP servers in this release of Insight Dynamics.

HP Insight Capacity Advisor Consolidation software

The HP Insight Capacity Advisor Consolidation software license allows you to collect and analyze data from systems that are planned to be consolidated. This license is only needed on managed systems that do not have a license for HP Insight Capacity Advisor software or Insight Dynamics.

License name	Licensed products	Managed systems
HP Insight Capacity Advisor Consolidation software	HP Insight Capacity Advisor software	Servers running HP-UX 11i, Microsoft Windows for Integrity, *x86*–based Microsoft Windows Server, or Linux.

Notes
- License is valid for six months after it is assigned to a system.
- Does *not* include license for HP Insight Virtualization Manager software. Systems with only this license will not be visible in Virtualization Manager.

Adding and applying licenses

To use a purchased license, you must first add it to the HP SIM License Manager database on the CMS, then apply the license to a specific managed system. The CMS keeps track of how many of each type of license are available to be applied to managed systems. As you apply licenses, the number of available licenses decreases.

NOTE: Unlicensed systems will not be displayed by HP Insight Virtualization Manager software. At startup, Virtualization Manager displays an alert in the toolbar if there are unlicensed systems. Clicking this alert displays the following text:

```
The following systems were ignored by Virtualization
Manager because they are not licensed or have an
expired license …
```

The licensing status of Virtual machines that are no longer associated with their VM Host cannot be determined by Insight Dynamics. In this case, the following message is displayed:

```
The licensing status for the following Virtual Machines
could not be determined because they are not associated with
a VM host.  They will be ignored by Virtualization Manager …
```

To add and apply licenses, you must have administrative rights on the CMS and you must be authorized for the `All Tools` toolbox on the managed systems that you want to license. To assign administrative rights to an HP SIM user, select the **Users** tab under **Options**→**Security**→**Users and Authorizations...** and enable the "Configure CMS Security" option. To authorize users for toolboxes, use the **Authorizations** tab under **Options**→**Security**→**Users and Authorizations...**.

Recommended Process: Use the managed system setup wizard

HP recommends using the Insight managed system setup wizard to add and apply licenses for Insight Dynamics. To start the managed system setup wizard, select **Configure**→**Managed System Setup Wizard...** from the HP SIM top menu. Help is available in each step of the wizard. For more information about the managed system setup wizard, see the *Insight Managed System Setup Wizard Getting Started Guide*.

Alternative Process: Use HP SIM License Manager

If you choose not to use the managed system setup wizard, you can use HP SIM License Manager to add and apply most types of licenses. You can also use License Manager to view the available

and applied licenses for all products in the HP SIM License Manager database. To use HP SIM License Manager, you must have administrative rights on the CMS.

Some licenses cannot be applied through License Manager:

- Trial licenses can only be applied to managed systems by the Insight managed system setup wizard or by the vselicense command. For information about vselicense, see vselicense(1M) [p. 41].
- LTUs from earlier versions of the VSE Management Software for Integrity or from the HP-UX VSE or DC Operating Environments are managed using the vselicense command or the "Scan for HP-UX Licenses" tool. For more information, see "Scan for HP-UX licenses" (page 19).

To start License Manager, select **Deploy→License Manager...** from the HP SIM menu. This menu selection will only be available if you have administrative rights on the CMS. Online help is available to guide you through the use of License Manager.

The "Deploy: HP Insight Dynamics – VSE suite for Integrity Licenses" screen performs the final step of assigning or un-assigning licenses for Insight Dynamics to Integrity managed systems. This screen is not used to apply licenses for the HP Insight Capacity Advisor Consolidation software, the HP Insight Dynamics suite for ProLiant, or the HP Insight Dynamics suite for non-HP servers. Online help is available to guide you in using this screen.

For systems that will be managed by a CMS running Microsoft Windows, applying licenses in the proper order will simplify the process and reduce errors. Apply licenses to each managed system in the order shown for each system type:

HP BladeSystem c-Class ProLiant blades	1.	HP iLO Advanced
	2.	VCEM (enclosure license required for logical server management of server blades)
	3.	Insight Control
	4.	Insight Dynamics
HP ProLiant ML/DL servers	1.	HP iLO Advanced
	2.	Insight Control
	3.	Insight Dynamics
HP BladeSystem c-Class Integrity Blades	1.	VCEM (enclosure license required for logical server management of server blades)
	2.	Insight Dynamics

Scan for HP-UX licenses

Use the "Scan for HP-UX Licenses" task to perform the following functions:

- Enable the HP Insight Dynamics – VSE suite for Integrity licenses that are included in the HP-UX Operating Environments.
- Migrate unused licenses that were purchased for release 3.*x* or earlier of the VSE Management Software to the HP SIM License Manager database and apply them to your managed systems (if permitted by your licensing agreement with HP).

To launch the task, click **Scan for HP-UX Licenses...** on the "Deploy: HP Insight Dynamics – VSE suite for Integrity Licenses" screen. On the "Task Confirmation" screen, click **Run Now**. Online help is available to guide you through the operation. This task scans for licenses for any VSE Management Software for Integrity LTU that is installed on the managed systems. It is not restricted to the type of license that was originally selected in License Manager. It will only discover licenses on HP-UX systems, even if other types of systems were included in the License Manager system selection. For more information about scanning for HP-UX licenses and migrating unused licenses from earlier software versions, see vselicense(1M) [p. 41].

License requirements for systems with HP Instant Capacity products

For systems using HP Instant Capacity products (including *iCAP*, *GiCAP*, and *TiCAP*), the total number of licenses assigned across all *nPartitions* within the *complex* (or across multiple complexes when using GiCAP) must be equal to or greater than the total number of processors that you have purchased.

3 Getting Started

Installing the software

This document does not cover installation of the software or upgrade from previous versions of the software. For installation and upgrade on a CMS running Microsoft Windows, see *HP Insight Software 6.2 Preinstallation Worksheet*, *HP Insight Software 6.2 Quick Installation Guide*, and *HP Insight Software 6.2 Installation and Configuration Guide*. For installation and upgrade on a CMS running HP-UX, see *HP Insight Dynamics 6.2 Integrity CMS Installation and Configuration Guide*.

Configuring privilege elevation

Some Insight Dynamics management functions require privileged (`root`) access from the CMS to HP-UX, Linux, and VMware ESX managed systems. Privilege elevation allows you to use your preferred mechanism for acquiring `root` permissions as needed (for example, using `sudo` or `PowerBroker`), without having to allow login through the `root` account.

Procedure 3-1 Configure privilege elevation for use with Insight Dynamics

1. Select **Options→Security→Privilege Elevation...** from the HP SIM top menu.
2. Select **Enable privilege elevation for Linux & HP-UX** (or VMware ESX, according to the type of managed system OS).
3. Select the elevation tool type from the menu.

> **IMPORTANT:** Insight Dynamics does not support the option **A password is required for this privilege elevation tool**. Make sure that option is not checked.

4. Select **use this user** and enter a user name that will be used to access all managed systems with this type of OS. You will need to enable the selected user login on the managed systems.

Additional configuration may also be needed. For example, you may need to configure SSH access using **Configure→Configure or Repair Agents...**, and you may need to configure the managed system to allow host authentication for non-`root` users. For more information, see the HP SIM help, *mxagentconfig*(1M), and the Insight Dynamics installation and configuration guides. Links to these documents can be found in "Related information" (page 29).

Using the Insight managed system setup wizard

Insight managed system setup wizard configures systems to enable them to be managed by HP SIM and its plug-in applications, including Insight Dynamics. Use the managed system setup wizard for initial configuration or reconfiguration of any selected set of systems. After you specify which management features you want to use on the selected systems, the wizard will analyze the current configuration of each system and perform the following functions:

- Install any agents necessary to enable the selected management features
- Apply any required licenses from the set of licenses available in the License Manager database
- Complete additional configuration steps required by the features that you selected

After initial configuration, you can run the managed system setup wizard again at any time to modify the selected management features and change the configuration.

For more information about the managed system setup wizard, see the *Insight Managed System Setup Wizard 6.2 Getting Started Guide*, available at http://www.hp.com/go/insightdynamics/docs

Configuring user authorizations

Users must be authorized in HP SIM in order to use Insight Dynamics tools and features. Information about Insight Dynamics user authorizations is available in the online help. From

Virtualization Manager, click the ⬚ button in the upper right of the screen. Select the "Logical servers" help topic from the help navigation links on the left, then select the "Authorizations and configuration" link at the top of this page.

Configuring data collection credentials

Systems that are to be managed using Capacity Advisor or Virtualization Manager must be configured to allow data collection from the CMS. In general, this data collection can be enabled either through the Utilization Provider (UP) installed on the managed system, or through agentless data collection. For a description of the two methods, see the section "Comparison of agentless and UP data collection" in the *HP Insight Capacity Advisor 6.2 User Guide*.

Authentication is required to enable data collection using either UP or agentless data collection. The required credentials are summarized in Table 3-1 (page 22). You can verify or modify the WBEM or SSH credentials for a system that has been discovered in HP SIM by selecting **Options→Security→Credentials→System Credentials...** from the HP SIM menu.

Table 3-1 Data collection credentials requirements

Managed system OS / Data Collection Method	Required access credentials	Required access level
HP-UX UP	WBEM credentials must be configured (or discovered) in HP SIM for these systems	Non-root or root
Integrity Windows, (physical server or VM), from an HP-UX CMS UP	WBEM credentials must be configured (or discovered) in HP SIM for these systems	Does not require Administrator level access
Windows physical server or Hyper-V VM from a Windows CMS Agentless	WBEM credentials must be configured (or discovered) in HP SIM for these systems	WBEM login must be a member of the Administrators group on these systems
Physical x86 or Integrity Linux system Agentless	SSH credentials or certificate-based SSH authentication must be configured (or discovered) in HP-SIM for these systems	Non-root or root credentials, or certificate-based authentication may be used

NOTE: On a Windows CMS, any VMware ESX and Microsoft Hyper-V hosts must be properly registered in HP Insight Control virtual machine management (VMM) to allow data collection from these hosts and their virtual machines. For information about registering the hosts in VMM, see *HP Insight Control 6.2 Virtual Machine Management User Guide*.

Removing unneeded agent software

If you have upgraded from a previous installation of Insight Dynamics or the VSE Management Software, there may be agents installed on some of your managed systems that are no longer needed. This will occur on managed systems that previously used the Utilization Provider for data collection and are now configured for agentless data collection. The following types of systems are affected:

- Integrity Linux or x86 Linux managed systems. In releases prior to version 6.0, these systems needed the Utilization Provider for data collection. In the current release, these systems will be configured to use agentless data collection. The Utilization Provider is no longer supported by Insight Dynamics on Linux managed systems.
- Microsoft Windows managed systems, but only if you are using a CMS that is also running Microsoft Windows (agentless data collection from Windows systems is not supported on an HP-UX CMS).

In these cases, when you use the managed system setup wizard to configure the system, the following message will be displayed:

```
Agentless data collection is not configured; it will be configured.
An HP Utilization Provider has been detected; it will not be used
for data collection.
You should remove any sub-OS workloads defined on this system.
```

NOTE: Any sub-OS workloads are automatically removed during the upgrade to Insight Dynamics 6.0.

You may choose to remove the Utilization Provider from the affected systems after they have been configured for agentless data collection.

IMPORTANT: Even though Insight Dynamics will no longer use the Utilization Provider for data collection, there may be other software installed on the system that still uses it (for example, HP Insight Control power management). Do not remove the agent if it is still in use.

Procedure 3-2 Remove the Utilization Provider from a Windows 2003 system

1. From Control Panel, select **Add or Remove Programs**.
2. Select "HP WMI Util Provider v1.8.1.1" (or the current installed version).
3. Click **Remove**.

Procedure 3-3 Remove the Utilization Provider from a Windows 2008 system

1. From Control Panel, select **Program and Features**.
2. Select "HP WMI Util Provider v1.8.1.1" (or the current installed version).
3. Click **Uninstall**.

Procedure 3-4 Remove the Utilization Provider from a Linux system

1. Open a command shell with `root` privileges.
2. Execute the following command:

    `rpm -e hp-utilprovider`

For more information about agentless data collection, see the section "Comparison of agentless and UP data collection" in the *HP Insight Capacity Advisor 6.2 User Guide*.

4 Troubleshooting

This chapter describes some of the tools and procedures that can be used to troubleshoot problems in Insight Dynamics. Additional troubleshooting information can be found in the user guides listed in "Manuals and white papers" (page 29). For information about known issues and workarounds in this release, see the *HP Insight Dynamics 6.2 Release Notes*.

Memory and other system requirements

Make sure that your *CMS* and *managed systems* meet the requirements specified in the *HP Insight Software 6.2 Support Matrix*. In particular, note the recommended and minimum supported memory requirements. This document is available at http://www.hp.com/go/insightdynamics/docs

If error messages about exceeding heap space are displayed, you may need to increase the heap size of the HP SIM Java Virtual Machine (JVM). On 64–bit systems, HP SIM sets the heap size to 4096MB (4GB). You can specify a different heap size by setting the `JVMMAXHEAP` value (in MB) in the `globalsettings.props` file. On HP-UX, this file is at `/etc/opt/mx/config/globalsettings.props`. On Windows, it is at `installation-directory\config\globalsettings.props`. The default installation directory is `C:\Program Files\HP\Virtual Server Environment`, but this directory can be changed at installation time.

Insight managed system setup wizard

Many configuration issues can be avoided by using the Insight managed system setup wizard to configure managed systems for use with Insight Dynamics. The wizard automates the installation of required licenses, *agent* software, and other configuration settings to support the management capabilities intended for use on the system.

To start the managed system setup wizard, select **Configure→Managed System Setup Wizard...** from the HP SIM top menu. Help is available in each step of the wizard.

Diagnose menu actions

There are three tasks available from the **Diagnose→Troubleshoot Insight Dynamics** menu, described in the following sections. These tasks use the `vseassist` command to perform configuration checks. For examples of the output from these checks, see vseassist(1M) [p. 36].

Check CMS configuration

This task performs a number of configuration checks on the CMS. When troubleshooting your Insight Dynamics configuration, perform this task first. Once you have resolved any CMS configuration issues, you can diagnose issues with specific managed systems using the "Check CMS to managed node communication" (page 26) and "Check managed node configuration" (page 27) tasks described below.

Procedure 4-1 Check the configuration of your CMS

1. From the HP SIM menu bar, select **Diagnose→Troubleshoot Insight Dynamics→Check CMS Configuration...**.
2. To schedule this task to run periodically or at a set time, click **Schedule**. The *Schedule Task* screen is displayed. Help on scheduling options is available from that screen. After the task executes, you can view the results by selecting **Tasks & Logs→View Task Results...** from the HP SIM menu bar.

   To run this task immediately, click **Run Now**. This executes the `vseassist` command on the CMS and displays the results in the **Stdout** tab.

3. For each check performed by this task, one of the following status indicators is displayed:

PASS	No configuration problem was found
FAIL	A serious configuration problem was found. You must resolve the problem for correct operation of Insight Dynamics.
WARN	A configuration problem was found. The problem will not necessarily prevent correct operation of Insight Dynamics, but it may limit or restrict operation of some features.
N/A	Not Applicable: the check does not apply to this type of system.

4. Optional: To print a copy of the output, click **View Printable Report**, then click **Print**.

This task writes detailed information to the log file (`/var/adm/syslog/vseassist.log` on an HP-UX CMS, *installation-directory*`\logs\vseassist.log` on Microsoft Windows systems). Check the log file for details of any problems encountered.

☼ **TIP:**   The `vseassist` command line that was executed by this task is displayed on this screen above the output box. This command is also displayed in the printable version of the report. You can use this information to create your own diagnostic scripts that can be run from the command line.

You can review these results again later by selecting **Tasks & Logs**→**View Task Results...** from the HP SIM menu bar.

Check CMS to managed node communication

This task checks the communication between the CMS and selected managed systems. When troubleshooting your Insight Dynamics configuration, perform the "Check CMS configuration" (page 25) task first, to make sure that you do not have any unresolved CMS configuration issues. Then use this task to resolve communication issues with managed systems where you are having problems. Some of the problems detected with this option include expired licenses, no open WBEM ports, and improperly configured SSH authentication. These checks will verify whether the CMS can communicate with the managed systems in order to perform management functions.

Procedure 4-2 Check the communication between the CMS and managed systems

1. Optional: Select the managed systems where you are having problems. You can select systems by checking the selection box next to each system name in the Visualization View in Virtualization Manager. If you prefer, you can start this task with no systems selected. In that case, you are prompted to select the systems from the available HP SIM system collections after the next step below.

2. Select **Diagnose**→**Troubleshoot Insight Dynamics**→**Check CMS to Managed Node Communication...** from the HP SIM menu bar.

3. Optional: If no systems have been selected yet, you are prompted to select from the available HP SIM system collections. If you have already selected systems, then those systems are displayed in the *Verify targets* screen. HP SIM provides several options for adding or removing systems on this screen. For help, select **Help**→**For HP Systems Insight Manager** from the HP SIM menu bar, then select the "Operations" topic and the "Managing with tasks" subtopic.

4. To schedule this task to run periodically or at a set time, click **Schedule**. The *Schedule Task* screen is displayed. Help on scheduling options is available from that screen. After the task executes, you can view the results by selecting **Tasks & Logs**→**View Task Results...** from the HP SIM menu bar.

   To run this task immediately, click **Run Now**. This executes the `vseassist` command on the CMS and displays the results in the **Stdout** tab.

5. For each check performed by this task, one of the following status indicators is displayed:

PASS	No configuration problem was found
FAIL	A serious configuration problem was found. You must resolve the problem for correct operation of Insight Dynamics.
WARN	A configuration problem was found. The problem will not necessarily prevent correct operation of Insight Dynamics, but it may limit or restrict operation of some features.
N/A	Not Applicable: the check does not apply to this type of system.

6. Optional: To print a copy of the output, click **View Printable Report**, then click **Print**.

This task writes detailed information to the log file (`/var/adm/syslog/vseassist.log` on HP-UX systems, `installation-directory\logs\vseassist.log` on Microsoft Windows systems). Check the log file for details of any problems encountered.

TIP: The `vseassist` command line that was executed by this task is displayed on this screen above the output box. This command is also displayed in the printable version of the report. You can use this information to create your own diagnostic scripts that can be run from the command line.

You can review these results again later by selecting **Tasks & Logs→View Task Results...** from the HP SIM menu bar.

Check managed node configuration

This task checks the configuration of HP-UX, Microsoft Windows or Linux managed systems by using `mxexec` to copy the `vseassist` command to selected managed systems, and remotely execute it there. When troubleshooting your Insight Dynamics configuration, perform the "Check CMS configuration" (page 25) task first, to make sure that you do not have any unresolved CMS configuration issues. Then use the "Check CMS to managed node communication" (page 26) task to resolve communication issues with managed systems where you are having problems. Once you have resolved the communication issues, use this task to resolve configuration issues for any managed systems where you are still having problems.

Procedure 4-3 Check the configuration of managed systems

1. Optional: Select the managed systems where you are having problems. You can select systems by checking the selection box next to each system name in the Visualization View in Virtualization Manager. If you prefer, you can start this task with no systems selected. In that case, you are prompted to select the systems from the available HP SIM system collections after the next step below.

2. Select **Diagnose→Troubleshoot Insight Dynamics→Check Managed Node Configuration...** from the HP SIM menu bar.

3. Optional: If no systems have been selected yet, you are prompted to select from the available HP SIM system collections. If you already selected systems, then those systems are displayed in the *Verify targets* screen. HP SIM provides several options for adding or removing systems on this screen. For help, select **Help→For HP Systems Insight Manager** from the HP SIM menu bar, then select the *Managing with tasks* topic..

4. To schedule this task to run periodically or at a set time, click **Schedule**. The *Schedule Task* screen is displayed. Help on scheduling options is available from that screen. After the task executes, you can view the results by selecting **Tasks & Logs→View Task Results...** from the HP SIM menu bar.

To run this task immediately, click **Run Now**. This executes the `vseassist` command on the CMS and displays the results in the **Stdout** tab.

5. For each check performed by this task, one of the following status indicators is displayed:

PASS	No configuration problem was found
FAIL	A serious configuration problem was found. You must resolve the problem for correct operation of Insight Dynamics.
WARN	A configuration problem was found. The problem will not necessarily prevent correct operation of Insight Dynamics, but it may limit or restrict operation of some features.
N/A	Not Applicable: the check does not apply to this type of system.

6. Optional: To print a copy of the output, click **View Printable Report**, then click **Print**.

This task writes detailed information to the log file (`/var/adm/syslog/vseassist.log` on HP-UX systems, `installation-directory\logs\vseassist.log` on Microsoft Windows systems). Check the log file for details of any problems encountered.

TIP: The `vseassist` command line that was executed by this task is displayed on this screen above the output box. This command is also displayed in the printable version of the report. You can use this information to create your own diagnostic scripts that can be run from the command line.

You can review these results again later by selecting **Tasks & Logs**→**View Task Results...** from the HP SIM menu bar.

vseassist command

The `vseassist` command, which implements the Diagnose menu actions described in the previous section, can also be executed directly from the command line on the CMS. If you are unable to resolve communication issues with one of your managed systems, you can install or copy this command to the managed system and run it from the command line there.

For details of the command line options, suggested diagnostic procedure, and examples, see vseassist(1M) [p. 36]. On an HP-UX CMS, this reference page can also be viewed from the command line using the `man` command.

5 Support and other resources

Contacting HP

Your comments and suggestions regarding product features will help us develop future versions of Insight Dynamics. Use the following email address to send feedback directly to the product development team: **vse@hpuxweb.fc.hp.com**.

To send comments and suggestions regarding the documentation for Insight Dynamics, use the following email address: **docsfeedback@hp.com**.

HP cannot provide product support through these email addresses. To obtain product support, contact your HP Support Representative, your HP Services Representative, or your authorized HP reseller. For more information about support services, visit http://www.hp.com/go/support.

For other ways to contact HP, visit http://welcome.hp.com/country/us/en/contact_us.html.

Related information

For information about open-source products included with Insight Dynamics (including license constraints, updates, and security information), see the end-user license agreement included with Insight Dynamics. This document is installed on the CMS at the following locations:

HP-UX CMS   `/opt/vse/src/README`

Microsoft Windows CMS   *`installation-directory`*`\src\README`

The default installation directory is `C:\Program Files\HP\` `Virtual Server Environment`, but this directory can be changed at installation time.

Manuals and white papers

The latest versions of manuals and white papers for Insight Dynamics and related products can be downloaded from the HP Web. The manuals and white papers listed below can all be found at the Insight Dynamics information library (http://www.hp.com/go/insightdynamics/docs). The information library includes direct links to the English versions of these manuals. For manuals in other languages, visit http://www.hp.com/go/insightdynamics-manuals or http://www.hp.com/go/insightcontrol-manuals, select from the list of products, and then select from the available languages.

The following tables list the manuals and white papers available at this site. Some documents appear in multiple tables.

Installation and configuration: Microsoft Windows CMS

Topic	Document
Requirements, feature support, compatibility	• *HP Insight Software 6.2 Support Matrix* • *HP Operations Orchestration Software System Requirements*
Release notes	• *HP Insight Dynamics 6.2 Release Notes* • *HP Insight Control 6.2 Release Notes* • *Virtual Connect Enterprise Manager Release Notes*
Installation and configuration	• *HP Insight Software 6.2 Installation and Configuration Guide* • *HP Insight Software 6.2 Preinstallation Worksheet* • *HP Insight Software 6.2 Quick Installation Guide* • *HP Operations Orchestration Software Installation Guide*

Installation and configuration: HP-UX CMS

Topic	Document
Requirements, feature support, compatibility	• *HP Insight Software 6.2 Support Matrix*
Release notes	• *HP Insight Dynamics 6.2 Release Notes*
Installation and configuration	• *HP Insight Dynamics 6.2 Integrity CMS Installation and Configuration Guide*

Using Insight Dynamics

Topic	Document
Getting started	• *HP Insight Dynamics 6.2 Getting Started Guide* • *HP Insight Software 6.2 Getting Started Guide* • *Insight Managed System Setup Wizard 6.2 Getting Started Guide* • *HP Operations Orchestration Software Concepts Guide*
User and administrator guides	• *HP Insight Virtualization Manager 6.2 Software with Logical Server Management User Guide* • *HP Insight Capacity Advisor 6.2 User Guide* • *Application Discovery 6.2 User Guide* • *HP Insight Global Workload Manager 6.2 User Guide* • *HP Integrity Virtual Machines Manager 4.1.1 Software: User Guide* • *HP Insight Control 6.2 User Guide* • *HP Insight Control 6.2 Server Migration User Guide* • *HP Insight Control 6.2 Virtual Machine Management User Guide* • *HP Insight Control 6.2 Performance Management User Guide* • *HP Storage Provisioning Manager User Guide* • *HP Insight Recovery 6.2 User Guide* • *HP Insight Orchestration 6.2 User Guide* • *HP Operations Orchestration Software Central User Guide* • *HP Operations Orchestration Software Studio Guide to Authoring Flows* • *HP Operations Orchestration Software Administrator Guide* • *HP Insight Control 6.2 Power Management User Guide* • *HP Insight Control 6.2 Remote Management User Guide* • *HP Insight Control 6.2 Server Deployment User Guide* • *Virtual Connect Enterprise Manager User Guide*
White papers Not a complete list. Visit the Insight Dynamics information library for additional white papers.	• *Backing up and restoring HP Insight Software v6.00 Central Management System (Windows)* • *HP Insight Recovery Technical White Paper* • *HP Insight Orchestration Software White Paper: Enabling automated IT infrastructure provisioning and repurposing* • *Insight Dynamics – VSE without OpenSSH on HP ProLiant and Integrity Servers Running Microsoft Windows* • *HP Logical Server Management Best Practices* • *Using Logical Servers* • *Defining Storage for Logical Servers* • *Upgrading Logical Servers to HP Insight Dynamics 6.2* • *Capacity Advisor: Importing OVPA Data from Non-VSE Nodes* • *Server and Storage Workflows for HP Insight Dynamics* • *Insight Dynamics — Automated Storage Provisioning: "Static" SAN volume automation via multi-initiator NPIV*

Websites

Information and solutions

Reference Architectures for Application Deployment in Virtualized Environments	http://www.hp.com/go/idvsera
HP Business Support Center	http://www.hp.com/go/bizsupport
Large Enterprise Business	http://www.hp.com/go/enterprise
Enterprise Library	http://www.hp.com/go/enterpriselibrary

Products

HP Insight Dynamics suite	http://www.hp.com/go/insightdynamics
HP Insight Dynamics suite for ProLiant	http://www.hp.com/go/insightdynamics/proliant
HP Insight Dynamics – VSE suite for Integrity	http://www.hp.com/go/insightdynamics/integrity
HP Insight Dynamics suite information library	http://www.hp.com/go/insightdynamics/docs
HP Insight software	http://www.hp.com/go/insight
HP Insight Control suite	http://www.hp.com/go/insightcontrol
HP Insight Orchestration software	http://www.hp.com/go/insightorchestration
HP Insight Recovery software	http://www.hp.com/go/insightrecovery
HP Insight Control server migration	http://www.hp.com/go/migrate
HP Insight Control virtual machine management	http://www.hp.com/go/vmmanage
HP Virtual Connect Enterprise Manager software	http://www.hp.com/go/vcem
HP Systems Insight Manager software	http://www.hp.com/go/hpsim
HP BladeSystem Matrix	http://www.hp.com/go/matrix
HP VSE Managed Node Software Update	http://vsemgmt.external.hp.com

Command references (manpages)

Insight Dynamics and related products include manpages for HP-UX and Linux systems and command reference pages for Microsoft Windows systems. These pages provide details about commands, file formats, and related information. See "Command reference" (page 35) for command reference pages included with this document. The following tables list additional reference pages related to Insight Dynamics.

Reference pages installed on the CMS

Reference page	Description
capagentlesscfg(1M)	Set advanced options for Capacity Advisor agentless data collection, and view a list of systems configured for agentless data collection
capcustombenchmark(1M)	Configure Capacity Advisor benchmark CPU scaling to normalize collected data
capcustombenchmark(4)	Format of Capacity Advisor custom benchmark database files

Reference page	Description
capcollect(1M)	Collect Capacity Advisor data from systems
capovpaextract(1M)	Export HP Performance Agent (formerly HP OpenView Performance Agent, or OVPA) system data from managed systems and import into Capacity Advisor
cappmpextract	Export HP Performance Management Pack (PMP) system data from specified managed systems and import the data into Capacity Advisor (Windows CMS only)
capprofile(1M)	Import, export, display, invalidate and remove Capacity Advisor data for workloads or systems
capprofile(4)	Format of Capacity Advisor import and export files
gwlm(1M)	Global Workload Manager
gwlm(5)	Overview of Global Workload Manager
gwlmcmsd(1M)	Global Workload Manager (gWLM) daemon
gwlmreport(1M)	Produce advanced textual summary reports for workload resource utilization
gwlmsslconfig(1M) *gwlmimportkey*(1M) *gwlmexportkey*(1M)	Secure network communications for Global Workload Manager
msswinitconfig(1M)	Configure or unconfigure the Insight managed system setup wizard
gwlmxml(4)	Overview of XML file structure for Global Workload Manager
vseassist(1M) [p. 36]	Help resolve Insight Dynamics configuration problems
vseinitconfig(1M)	Configure or unconfigure the Insight Dynamics software
vselicense(1M) [p. 41]	Manage licenses to use (LTUs) on HP Integrity and HP 9000 systems

Reference pages installed with agent software on managed systems

Reference page	Description
agent_config(1M)	Control Application Discovery certificates from the managed node
amgrd(1M)	Control or modify the operation of the Application Discovery agent
gwlmagent(1M)	Global Workload Manager (gWLM) agent
gwlmplace(1M)	Place a process in a gWLM workload
gwlmsend(1M)	Send metric data to gWLM for use in a custom policy
gwlmsslconfig(1M) *gwlmimportkey*(1M) *gwlmexportkey*(1M)	Secure network communications for Global Workload Manager
gwlmstatus(1M)	Display status for the managed node's agent, SRD and license Manager
utild(1M)	(HP-UX) system utilization data collection daemon
utild(8)	(Linux) system utilization data collection daemon

Reference page installed on cell-based complexes

Reference page	Description
parmgr(1M)	Start Partition Manager

Reference pages installed on systems running HP Integrity Virtual Machines

Reference page	Description
hpvm(5)	About HP Integrity Virtual Machines
hpvmclone(1M)	Create a cloned copy of an Integrity virtual machine
hpvmcollect(1M)	Collect crash dumps, logs, system status, and configuration on guests and the Integrity VM Host
hpvmconsole(1M)	Connect to the console of an Integrity virtual machine
hpvmcreate(1M)	Create a new Integrity virtual machine
hpvmdevmgmt(1M)	Manage the Integrity VM device database
hpvminfo(1M)	Display information about the Integrity VM environment
hpvmmodify(1M)	Rename or modify the attributes of an Integrity virtual machine
hpvmmigrate(1M)	Move a virtual machine to another Integrity VM Host system
hpvmnet(1M)	Configure virtual network devices
hpvmremove(1M)	Remove an Integrity virtual machine
hpvmstart(1M)	Start an Integrity virtual machine
hpvmstatus(1M)	Display status of one or more Integrity virtual machines
hpvmstop(1M)	Stop an Integrity virtual machine

Selected HP Systems Insight Manager software reference pages

Reference page	Description
mxagentconfig(1M)	Configure the agent to work with a CMS
mxauth(1M)	Add, remove or list authorizations in Systems Insight Manager
mxglobalsettings(1M)	Manage global settings in Systems Insight Manager
mxinitconfig(1M)	Perform initial configuration of the server
mxnode(1M)	Add, modify, identify, remove or list nodes in Systems Insight Manager
mxstart(1M)	Start Systems Insight Manager and the TomCat webserver
mxstatus(1M)	Display or return (via exit code) the current ready/not-ready state of Systems Insight Manager
mxstop(1M)	Stop Systems Insight Manager and the TomCat webserver
mxuser(1M)	Add, modify, remove or list users in Systems Insight Manager

Typographic conventions

This document uses the following typographic conventions.

Book Title	Title of a book or other document.
[Linked Title](#)	Title that is a hyperlink to a book or other document.
http://www.hp.com	A Web site address that is a hyperlink to the site.
`Command`	Command name or qualified command phrase.
`user input`	Commands and other text that you type.
`computer output`	Text displayed by the computer.

Enter	The name of a keyboard key. Note that **Return** and **Enter** both refer to the same key. A sequence such as **Ctrl+A** indicates that you must hold down the key labeled **Ctrl** while pressing the **A** key.
term	A term that is defined in the glossary and links to a glossary definition.
`variable`	The name of an environment variable, for example `PATH` or `errno`.
`value`	A value that you may replace in a command or function, or information in a display that represents several possible values.
find(1)	HP-UX manpage. In this example, "find" is the manpage name and "1" is the manpage section.

Command reference

vseassist(1M)

NAME

vseassist -- Help Resolve Insight Dynamics Configuration Problems

SYNOPSIS

Path (HP-UX): `/opt/vse/bin/vseassist`

Path (Windows): `install-path\bin\vseassist.exe`

```
vseassist -a [-q] [-n nodename | -g collectionname]...
vseassist -c [-q]
vseassist {-l | -r} [-q] {-n nodename | -g collectionname}...
vseassist -s [-q] -h cms
```

DESCRIPTION

The `vseassist` command performs a number of checks to identify configuration problems in HP Insight Dynamics. This command checks the software configuration on the HP SIM Central Management Server (CMS), the communication between the CMS and managed systems, and the configuration of the software on managed systems. A summary of results is displayed and detailed results are written to a log file, along with recommendations for resolving any problems found.

You can execute `vseassist` from the HP SIM graphical user interface, from the command line on the CMS, or from the command line on a managed system. HP recommends the following diagnostic procedure:

1. If you have Administrator (`root`) access to the CMS, execute the following command from the command line:

    `vseassist -a`

    This will check the configuration of the CMS, communication with all systems in the `All VSE Resources` collection, and the configuration on those systems. Refer to the summary output and examine the log file for any problems. Follow the resolution steps in the log file to fix any problems that were found.

    Fix problems in the CMS configuration first. You can verify that you have fixed those problems by executing the following command from the CMS command line:

    `vseassist -c`

    You can also run this command directly from the HP SIM user interface. From the `Diagnose` menu, select `Troubleshoot Insight Dynamics`, then select `Check CMS Configuration`.

2. After you have resolved all problems with the CMS configuration, check to see if there are any remaining communication issues with the managed systems. From the CMS command line, specify the HP SIM nodenames or system collection names of your managed systems using the following command:

    `vseassist -l {-n nodename | -g collectionname ...}`

    Or, from the HP SIM user interface, select the managed systems, then from the `Diagnose` menu, select `Troubleshoot Insight Dynamics`, then select `Check CMS to Managed Node Communication`.

3. After you have resolved the communication issues between the CMS and your managed systems, check the configuration on those systems. From the CMS command line, specify the HP SIM nodenames or system collection names of your managed systems using the following command:

    `vseassist -r {-n nodename | -g collectionname ...}`

Or, from the HP SIM user interface, select the managed systems, then from the `Diagnose` menu, select `Troubleshoot Insight Dynamics`, then select `Check Managed Node Configuration`.

4. If you are unable to resolve issues with one of your managed systems, you can install or copy `vseassist` to the managed system and run it from the command line there. In the following command, replace *cms* with the fully qualified domain name of the CMS:

```
vseassist -s -h cms
```

Options

If no options are specified, the command syntax is displayed and the command exits with return code 3.

The `vseassist` command recognizes the following options. For each option, a mnemonic is shown in parentheses to help you remember the option letter.

`-a`	(All) Perform all checks:
	1. Check the configuration of the CMS (as with the `-c` option).
	2. Check the communication between the CMS and the specified managed systems (as with the `-l` option). If no managed systems are specified, then perform this check on all systems in the `All VSE Resources` collection.
	3. Check the configuration of the specified managed systems (as with the `-r` option). If no managed systems are specified, then perform this check on all compatible systems in the `All VSE Resources` collection.
`-c`	(CMS) Check the configuration of the CMS.
	Note: For a Windows CMS, if IOAssist is installed, additional IOAssist resource and CMS configuration checks will be launched.
`-l`	(Link) From the CMS, check the communication between the CMS and the managed systems specified by the `-n` and `-g` options. Some of the problems detected with this option include expired licenses, no open WBEM ports, and improperly configured SSH authentication. These checks will verify that the CMS can communicate with the managed systems in order to perform management functions.
	This option requires one or more `-n` or `-g` options.
	Note: On Windows and HP-UX CMS, `vseassist` will obtain the port on which to attempt managed node communication from the file `globalsettings.props` (see FILES section below). If no port configuration is present, port 22 will be used.
`-r`	(Remote) From the CMS, check the configuration of the HP-UX or Windows managed systems specified by the `-n` and `-g` options (`vseassist` does not provide configuration checks for Linux managed systems). This option uses mxexec to copy the `vseassist` command to the managed systems, where it is executed with the `-s` option.
	In order for the `-r` option to succeed, the CMS must be able to communicate with the managed systems (as checked by the `-l` option).
	This option requires one or more `-n` or `-g` options.
`-n` *nodename*	(Node) Specifies the name of a VSE managed system using the node name by which the system is known to the CMS (as reported by

	mxnode(1M)). Multiple `-n` and `-g` options can be used to specify multiple systems.
	Note: This command is only designed to diagnose problems with sytems that are part of the `All VSE Resources` collection. Applying this command to other resources using `-n` or `-g` options will not produce useful results.
`-g` *collectionname*	(Group) Specifies the name of a collection of systems known to the CMS. The specified checks will be performed for each of the managed systems in the collection. Multiple `-n` and `-g` options can be used to specify multiple systems.
	Note: System or collection names that include spaces must be enclosed in quotes.
	Refer to *mxquery*(1M) for more information about collections under HP SIM.
`-q`	(Quiet) No output will be generated on `stdout` or `stderr`. The results will still be logged to the `vseassist.log` file.
`-s`	(System) This option is used when running `vseassist` directly on HP-UX or Windows managed systems (`vseassist` does not provide configuration checks for Linux managed systems). Some of the problems detected with this option include missing WBEM providers, stalled WBEM process, and missing required patches. On an HP-UX managed system, WBEM services checks will be performed by wbemassist if wbemassist version 1.1 or later is installed. Otherwise `vseassist` will use its own built-in WBEM checks.
	Note: wbemassist checks for problems in HP-UX WBEMServices and recommends solutions. It does not perform checks on WBEM Providers or other services that use the CIM server. For more information, see *wbemassist*(1M).
	When you use `vseassist` with the `-r` option on the CMS, mxexec will remotely execute `vseassist` on the managed systems using the `-s` option.
`-h` *cms*	(Host) Specifies the fully qualified domain name of the CMS that is managing the system. This option is passed to the remote execution of `vseassist` when you use the `-r` option on the CMS.

Installation

The `vseassist` command is installed on the CMS when Insight Dynamics is installed.

RETURN VALUES

0   The command completed successfully and no FAIL results were found.

1   The command completed successfully and one or more FAIL results were found.

2   Warnings, but no FAIL results were found.

3   Incorrect options were specified; the command syntax is displayed.

4   An unexpected internal error occurred. Contact your HP Support Representative, your HP Services Representative, or your authorized HP reseller for assistance.

EXAMPLES

The specific checks performed may vary by operating system and system type of the CMS and managed systems. The following examples show the kind of output that is produced, but the details may be different in your environment.

Check the configuration of a CMS named `unixsys`:

```
# vseassist -c
```

```
Version: A.6.2.0.*

+------------------------------------------------------------------------------------------+
|                          Performing CMS configuration verification                       |
+------------------------------------------------------------------------------------------+

  unixsys:
    HP SIM running...........................................................................[PASS]
    HP SIM memory configuration..............................................................[PASS]
    HP Insight Dynamics - VSE suite running..................................................[PASS]
    Localhost name resolution................................................................[PASS]
    ID-VSE manageable systems discovered in HP SIM...........................................[PASS]
    Application Discovery server running......................................................[PASS]
    File system free space...................................................................[PASS]
    Java JRE installed.......................................................................[PASS]
    Virtual Machine Management runnning......................................................[PASS]
    VMM responsive...........................................................................[WARN]
       WARNING:     HP SIM has discovered one or more virtual machine hosts
                    servers, but the VMM plugin is not fully configured to
                    manage the following servers: palacio .
     RESOLUTION: - Verify if the HP Management Agents are installed (for
                    SNMP and proper HP SIM discovery);

                  - Verify if VMM agent has been installed; It's possible to
                    install that via the "Deploy -> Deploy Drivers,
                    Firmwares and Agents -> Install VMM Agent" menu;

                  - Verify if the system is licensed for VMM;

                  - Verify if the system is registered for VMM, if not
                    register the VM host via the "Configure -> Virtual
                    Machine Host Registration" menu or register the VM via
                    the native virtualization console and Identify the
                    system using "Options->Identify Systems" menu.
    Virtual Connect Enterprise Manager responsive............................................[PASS]
    Logical Server Automation installed......................................................[PASS]

    Running Insight Orchestration (HP IO) Checks.............................................[PASS]

Result Summary:
  13 verification check(s) performed on 1 system(s)
  12 check(s) passed
  0 check(s) failed
  1 check(s) warned
  0 check(s) not applicable

See log for details: C:\Program Files\HP\Virtual Server Environment\logs\vseassist.log
```

Check the communication from the CMS to the managed system named `system`:

```
# vseassist -l -n system
Version: A.6.2.0.*


+------------------------------------------------------------------------------------------+
|           Performing link verification of managed system(s) from the CMS                 |
+------------------------------------------------------------------------------------------+

  system:
    Managed system hostname resolution.......................................................[PASS]
    WBEM port open...........................................................................[PASS]
    WBEM authentication......................................................................[PASS]
    SSH port open............................................................................[PASS]
    SSH authentication.......................................................................[PASS]
    SNMP port open...........................................................................[PASS]
    Trial or permanent license applied.......................................................[PASS]
    VMM accessibility........................................................................[N/A ]
    Capacity Advisor data collection.........................................................[PASS]
    Check VMware ESX version.................................................................[N/A ]

Result Summary:
  8 verification check(s) performed on 1 system(s)
  8 check(s) passed
  0 check(s) failed
  0 check(s) warned
  2 check(s) not applicable

See log for details: C:\Program Files\HP\Virtual Server Environment\logs\vseassist.log
```

AUTHORS

vseassist was developed by Hewlett-Packard Company.

DOCUMENT LAST UPDATED

July 2010

MESSAGES

The following message may be displayed when running managed system configuration checks on a 64–bit Windows managed system:

```
'chcp' is not recognized as an internal or external command,
operable program or batch file.
```

This is an issue with the remote command execution facility of HP SIM. The message can be ignored.

FILES

Configuration settings, including communication port settings, are read from the following file:

HP-UX: `/etc/opt/mx/config/globalsettings.props`

Windows: `install-path\config\globalsettings.props`

Detailed results of the checks performed by `vseassist` are written to the log file. Examine the log file for recommended steps to resolve any problems found.

Note: The log file is not automatically pruned.

HP-UX: `/var/adm/syslog/vseassist.log`

Windows: `install-path\logs\vseassist.log`

Linux: `/var/log/vseassist.log`

The default `install-path` on a Windows CMS is `C:\Program Files\HP\Virtual Server Environment`, but this directory can be changed at installation time.

SEE ALSO

Insight Dynamics help

Insight Dynamics information library (http://www.hp.com/go/insightdynamics/docs)

capcollect(1M), *mxexec*(1M), *mxnode*(1M), *mxquery*(1M), *vseinitconfig*(1M), *vselicense*(1M), *wbemassist*(1M)

vselicense(1M)

NAME

vselicense – Manage licenses to use (LTUs) on HP Integrity and HP 9000 Systems

SYNOPSIS

Path (HP-UX): `/opt/vse/bin/vselicense`

Path (Windows): `installation-directory\bin\vselicense`

`vselicense { -? | --help }`
(Show command help)

`vselicense --usage`
(Show command syntax)

`vselicense { -t | --tempLicense } { -n sys | --sys=sys }...`
(Apply temporary trial licenses)

`vselicense { -l key | --key=key } { -n sys | --sys=sys }... { -p prod | --prod=prod }`
(Migrate and apply Integrity Windows/Linux LTUs)

`vselicense { -m | --migrate } [ -g | --gwlm ] { -n sys | --sys=sys }...`
(Scan and migrate HP-UX LTUs)

`vselicense { -m | --migrate } { -c count | --count=count } { -n sys | --sys=sys }`
(Correct the number of per-core/socket licenses assigned to a system)

`vselicense { -m | --migrate } { -c 0 | --count=0 } { -n sys | --sys=sys }`
(Remove all the licenses applied to a system)

`vselicense { -s | --show }`
(List the managed systems with migrated LTUs)

DESCRIPTION

The `vselicense` command is installed on the Central Management Server (CMS) with Insight Dynamics. This command installs and removes Licenses to Use (LTUs) for the HP Insight Dynamics – VSE suite for Integrity. It can also be used to correct the number of per-core or per-socket licenses that are applied for LTUs.

This command applies only to HP Integrity systems running HP-UX, Linux, or Microsoft Windows operating systems, and HP 9000 systems running HP-UX. It is not used for licenses based on "5x5" keys (introduced with VSE Management Software version 4.0). It is only used for trial licenses included with Insight Dynamics and for the LTUs in the following list. You may have these LTUs installed from a previous version of the VSE Management Software, or from the HP-UX VSE or DC Operating Environments.

T2786AC   HP VSE Suite for HP-UX 11i LTU

T2784AC   HP Capacity Advisor for HP-UX LTU

T2782AC   HP Virtualization Manager for HP-UX LTU

T2762AA   HP Global Workload Manager Agent LTU

T2807AC   HP Capacity Advisor for Integrity Windows

T2806AC   HP Virtualization Manager for Integrity Windows

T2785AC   HP Capacity Advisor for Integrity Linux

T2783AC   HP Virtualization Manager for Integrity Linux

Starting with VSE Management Software version 4.0 (A.04.00.07.*xx*), licenses are now managed in the HP Systems Insight Manager (SIM) License Manager database on the CMS. These licenses are encoded in a "5x5" key consisting of 5 blocks of 5 numbers or characters. These licenses are added to the CMS and applied to managed systems through HP SIM.

Licenses from previous versions of the software and licenses included in the HP-UX VSE or DC Operating Environments are automatically migrated to the License Manager database if they were previously in use (the license had already been installed and scanned). If these licenses were never installed or have not yet been scanned, you may be able to migrate them to License Manager database using vselicense (see "Migrating previously unused licenses" below).

Correcting the number of licensed cores or sockets

Insight Dynamics – VSE for Integrity products are licensed per core or socket on managed HP Integrity and HP 9000 systems. When licenses from a previous release or from the HP-UX Operating Environments are migrated to the current version, the number of cores or sockets on the managed system is determined via a WBEM query. The value returned is used as the number of licenses assigned to that system. If the WBEM query is unsuccessful at determining the correct number, one license is assigned.

You are responsible for verifying that the correct number of licenses are applied to your managed systems, based on the number of cores or sockets in use. In order to remain in compliance with your End User Licensing Agreement, you may need to correct the count assigned during the license migration process. To correct the count assigned during migration, enter the following command on the CMS:

```
vselicense -m -c count -n sys
```

where *count* is the correct number of per-core or per-socket licenses to assign for system *sys*.

Migrating previously unused licenses

If permitted by your licensing agreement with HP, unused licenses that were purchased for an earlier release but have not yet been installed or scanned can be migrated to the License Manager database and applied to a managed system by the vselicense command, using the following procedures. These procedures should also be used to enable the LTUs included with the HP-UX VSE or DC Operating Environments.

To scan for HP-UX LTUs to migrate and apply, follow these steps (this scan can also be performed by the Insight managed system setup wizard and from the Insight Dynamics GUI):

1. Install the HP-UX LTUs that have unused licenses, or install the VSE or DC Operating Environment, on the managed system.

2. Establish common WBEM credentials for communication between the CMS and the managed systems, or configure SSH for use in HP SIM. In previous versions of the software, SSH was required in order to scan for HP-UX LTUs. Starting with Insight Dynamics 6.0, this scan will now be attempted using WBEM. SSH will only be used if scanning via WBEM fails. For information about configuring WBEM credentials and SSH, see the *HP Insight Dynamics 6.2 Integrity CMS Installation and Configuration Guide*.

   It is also possible to scan for the gWLM LTU (T2762AA) by communicating directly with the gWLM agent if it is running on the managed system. However, this will provide no information about the other LTUs. To perform this type of scan, use the -g or --gwlm option.

   NOTE: The gWLM scanning option is only supported for gWLM agent versions earlier than version 4.0.

3. Execute one of the following commands on the CMS (note that multiple -n *sys* options can be specified):

   • Scan for T2786AC, T2784AC, T2782AC, and T2762AA LTUs using WBEM or SSH:

     ```
     vselicense -m -n sys
     ```

   • Scan for T2762AA LTU by communicating with the running gWLM agent:

     ```
     vselicense -m -g -n sys
     ```

> **NOTE:** This operation may take a long time to complete.

4. If necessary, correct the number of per-core or per-socket licenses assigned to the systems using `vselicense` with the `-m` and `-c` options, as described above.

To migrate and apply unused HP Integrity Linux or HP Integrity Windows LTUs, follow these steps:

1. Execute the following command on the CMS (note that multiple `-n` *sys* options can be specified):

   `vselicense -l key -n sys -p prod`

   where *key* is the license key provided with the LTU product *prod*.

> **NOTE:** This operation may take a long time to complete.

2. If necessary, correct the number of per-core or per-socket licenses assigned to the systems using `vselicense` with the `-m` and `-c` options, as described above.

> **NOTE:** Changes made by `vselicense` may not show up in the product's user interface until you refresh the data (click the Refresh Data link in Capacity Advisor, or the Refresh Data icon in the Visualization tab).

After migration to the License Manager database, your previously purchased LTUs will appear in the HP SIM License Manager under the following new license names:

HP Insight Dynamics - VSE suite for Integrity

> Migrated from:
> T2786AC HP VSE Suite for HP-UX 11i LTU

HP Insight Virtualization Manager software

> Migrated from:
> T2782AC HP Virtualization Manager for HP-UX LTU
> T2806AC HP Virtualization Manager for Integrity Windows
> T2783AC HP Virtualization Manager for Integrity Linux

HP Insight Capacity Advisor software

> Migrated from:
> T2784AC HP Capacity Advisor for HP-UX LTU
> T2807AC HP Capacity Advisor for Integrity Windows
> T2785AC HP Capacity Advisor for Integrity Linux

HP Insight Global Workload Manager software for Integrity

> Migrated from:
> T2762AA HP Global Workload Manager Agent LTU

Use the HP SIM License Manager to view the status of these licenses (select `Deploy -> License Manager...` from the HP SIM menu, then select one of the new license names, as shown in the preceding list).

Options

The `vselicense` command recognizes the following options.

`-t|--tempLicense`   Apply a trial license for Insight Dynamics - VSE for Integrity to the systems identified by the `-n` options. When Insight Dynamics is installed on the CMS, 10 trial licenses for the HP Insight Dynamics - VSE suite for Integrity are included in the License Manager database. These licenses can be applied to HP Integrity and HP 9000 systems. Each trial license is valid for 90 days after it is applied to a managed system. To

	continue to manage these systems beyond the trial period, permanent licenses must be purchased.
`-l` *key*`|`--key=*key*	Install the license *key* for the LTU product identified by the `-p` option on the systems identified by the `-n` options.
`-n` *sys*`|`--sys=*sys*	The system name, as identified in HP SIM.

> **NOTE:**   HP Integrity virtual machines are licensed through the VM Host. You cannot specify a virtual machine as the target of a `vselicense` command. Instead, apply the command to the VM Host system.

`-p` *prod*`|`--prod=*prod*	The product number of the LTU being installed or migrated. For example, `T2783AC` is the product number for the Virtualization Manager LTU for HP Integrity managed systems running Linux.
`-g|`--gwlm	Communicate directly with the gWLM agent running on the managed system when scanning for the gWLM LTU. This option should only be used if WBEM and SSH are not configured for use. When using this option, the scan can only detect the gWLM LTU (T2762AA). No information will be returned about other LTUs. This option is only supported for gWLM agent versions earlier than version 4.0.
`-m|`--migrate	Migrate LTUs to the HP SIM License Manager database.
`-c` *count*`|`--count=*count*	Set the number of per-core or per-socket licenses to apply to the system identified by the `-n` option. This option is only valid for previously migrated LTUs on the specified system. A *count* value of `0` removes all migrated LTUs for that system from the License Manager database.
`-s|`--show	List the managed systems that have licenses that have been migrated from previous software releases.

RETURN VALUES

0   The command completed successfully; no errors were detected.

1   An error occurred and the command did not complete successfully.

2   A warning occurred. See command output for details.

EXAMPLES

Apply licenses for the HP Integrity Linux Virtualization Manager (product `T2783AC`) on the managed system that is identified in HP SIM as `linsys1`. The *key* value was obtained from HP when the LTU was purchased.

```
vselicense -l key -n linsys1 -p T2783AC
```

Apply licenses for LTUs installed on an HP-UX managed system named `uxsys2`. The command uses WBEM (or SSH if WBEM scan fails) to scan for the LTU(s) installed on the system.

```
vselicense -m -n uxsys2
```

Use gWLM to scan and apply T2762AA licenses on an HP-UX managed system.

```
vselicense -m -g -n uxsys3
```

Correct the number of per-core or per-socket licenses to `4` for a system with previously migrated licenses.

```
vselicense -m -c 4 -n uxsys2
```

Remove all the licenses that were previously migrated and assigned to the managed system `winsys4`.

```
vselicense -m -c 0 -n winsys4
```

AUTHORS

vselicense was developed by Hewlett-Packard Company.

DOCUMENT LAST UPDATED

July 2010

SEE ALSO

Additional information is available in the "License Management" topic of the Insight Dynamics help, and in the following documents:

vseinitconfig(1M), *HP Insight Dynamics 6.2 Getting Started Guide*, *HP Insight Dynamics 6.2 Integrity CMS Installation and Configuration Guide*, *HP Insight Software 6.2 Installation and Configuration Guide*.

Glossary

active logical server
A *logical server* that has been bound to both an HP SIM managed system and a *workload*, and is bound to specific storage. Active logical servers can be in one of two states: powered on or powered off.

agent
A program that regularly gathers information or performs some other service without the user's immediate presence. Insight Dynamics relies on agents on managed systems to provide in-depth hardware and software information. Some systems can also be configured for agentless data collection.

BladeSystem
HP BladeSystem is an infrastructure in a box that can support a combination of *virtual machines*, storage blades, and *server blades*. It comprises server blade compute nodes, integrated connectivity to data and storage networks, and shared power subsystems.

BladeSystem enclosure
Hardware solution for consolidating *server blades* and all supporting infrastructure elements (such as storage, network, and power) into a single unit.

BladeSystem Integrated Manager
A component in HP Systems Insight Manager (SIM) that provides streamlined management for the entire HP *BladeSystem* product family. It enables users to quickly navigate their HP *BladeSystem* environments, including *server blades*, enclosure infrastructures, racks, and integrated switches through automatically generated blade-rack picture views and hierarchical trees.

cell
A circuit board that contains processors and memory, all controlled by a cell controller (CC). A cell is the basic building block of an *nPartition* in a *complex*.

cell-based server
A server in which all *cores* and memory are contained in *cells*, each of which can be assigned for exclusive use by an *nPartition*. Each nPartition runs its own instance of an operating system.

CMS
Central management server. A system in the management domain that executes the HP SIM software. All central operations within HP SIM are initiated from this system.

compartment
An *nPartition*, *virtual partition*, *virtual machine*, or *resource partition* whose resources are allocated by HP Insight Global Workload Manager software for Integrity (gWLM).

Multiple compartments are grouped to form a *shared resource domain (SRD)*. The compartments all share the resources of the SRD. A compartment can be in only one SRD. Each compartment holds a *workload*. gWLM manages each workload's resource allocation by adjusting the resource allocation of its compartment.

complex
A complex includes one or more cabinets that are cabled together and all of the hardware resources that they contain. A complex has a single *Service Processor*.

core
The actual data-processing engine within a processor. A single processor might have multiple cores, and a core might support multiple execution threads.

EVA
HP StorageWorks Enterprise Virtual Array. EVA provides designed-in virtualization to support your most critical applications as well as your bulk storage needs.

FSS group
Fair-Share Scheduler group. A group of processes that has its CPU allocation managed by the HP-UX FSS. FSS groups allow you to allocate fractions of cores, rather than only whole cores, to the processes in the group.

GiCAP
HP Global Instant Capacity. Software that enables you to move usage rights for Instant Capacity components within a group of servers.

iCAP
HP Instant Capacity. The HP Utility Pricing Solutions product that allows you to purchase and install additional processing power through the use of a two-step purchase model. Initially, you purchase system components (*cores*, *cell* boards, memory) at a fraction of the regular price because the usage rights are not included. These Instant Capacity components are inactive but installed and ready for use. When extra capacity is needed, you pay the remainder of the regular price for the usage rights to activate the components. If the regular price for the component is reduced by the time the usage rights are purchased, the remainder price is proportionally reduced, providing additional savings.

Earlier versions of iCAP were referred to as Instant Capacity on Demand, or iCOD.

logical server
A feature provided by HP Insight Virtualization Manager software, a logical server is a set of configuration and metadata that you create, activate, and assign to operate within a physical

or *virtual machine*. An *active logical server* can be moved from one location to another and its characteristics can be modified. This feature allows you to populate an enclosure, load balance servers, and evacuate servers in case of disaster; it allows you to *provision* resources only when needed and increase utilization of limited compute resources.

LTU	License to use.
managed system	A server or other *system* that can be managed by HP SIM from a *CMS*. A managed system can be managed by more than one CMS.
managed workload	A *workload* that is managed by HP Insight Global Workload Manager software for Integrity (gWLM).
management domain	A *CMS* and its *managed systems*.
monitored workload	A *workload* that can be monitored by HP Insight Virtualization Manager software but has no *policy* associated with it. Monitored workloads are not managed by HP Insight Global Workload Manager software for Integrity (gWLM).
MSA	HP StorageWorks Modular Smart Array. MSA is a direct attach, external shared storage solution that helps customers easily transition from direct attached to centralized storage. It allows departmental and small- to medium- business customers to grow capacity as demands increase.
nPartition	A *partition* in a *cell-based server* that consists of one or more *cells* and one or more I/O components. Each nPartition operates independently of other nPartitions and either runs a single instance of an operating system or is further divided into *virtual partitions*.
	nPartitions can be used as *compartments* managed by HP Insight Global Workload Manager software for Integrity (gWLM) as long as several requirements are met. Refer to the gWLM online help for a description of nPartition requirements.
parked workload	A *workload* that is not currently associated with a system. A workload becomes parked if its system is set to "none" when it is created or later modified. A parked workload that was previously associated with a system may have historical data associated with it from HP Insight Capacity Advisor software or HP Insight Global Workload Manager software for Integrity (gWLM). As with any workload, the historical data will be lost if the workload is deleted.
	When migrating a workload from one system to another, it may be useful to park the workload (removing the association with the original system) until the new system becomes available. This preserves the historical data for the workload across the migration.
partition	1. A subset of server hardware that includes *core*, memory, and I/O resources on which an operating system (OS) can be run. This type of partitioning allows a single server to run an OS independently in each partition with isolation from other partitions.
	2. A *resource partition*, made up of either a *Fair-Share Scheduler (FSS) group* or a *processor set*, that runs within a single OS. This type of partitioning controls resource allocations within an OS.
policy	A collection of rules and settings that control *workload* resources managed by HP Insight Global Workload Manager software for Integrity (gWLM). For example, a policy can indicate the minimum and maximum amount of CPU resources allowed for a workload, and a target to be achieved.
	A single policy can be associated with multiple workloads.
provision	A function that makes a component operational. Provisioning might include installing, upgrading, loading, and configuring a software or hardware component. Provisioning a server includes loading the appropriate software (operating system and applications), customizing and configuring the system, and starting the server and its newly-loaded software. This makes the system ready for operation.
PSET	Processor set. A collection of processors grouped together for exclusive access by applications assigned to that processor set. Each application runs only on processors in its assigned processor set.
resource partition	A subset of the resources available to an operating system instance, isolated for use by specific processes. A resource partition has its own process scheduler. CPU resources in the partition may be allocated using *Fair-Share Scheduler groups* or *processor sets*. Policies for controlling the

	allocation of resources to the partition can be set using HP Insight Global Workload Manager software for Integrity (gWLM).
server blades	Thin, modular, self-contained computer servers, containing one or more microprocessors and memory. Server blades are designed for high density and eliminate many components such as power cords and network cables that are present in traditional rack-mount systems. HP *BladeSystem* supports technologies such as hot-plug hard-drives, multiple I/O cards, multi-function network interconnects and Integrated Lights Out.
Service Processor	An independent support processor for HP servers that support *nPartitions*. The Service Processor provides a menu of service-level commands, plus commands to reset and reboot nPartitions and configure various parameters. The Service Processor in HP servers is sometimes called the Management Processor (MP) or the Guardian Service Processor (GSP).
Serviceguard cluster	An HP Serviceguard cluster is a networked grouping of HP 9000 or HP Integrity servers (host systems known as nodes) having sufficient redundancy of software and hardware that a single point of failure will not significantly disrupt service.
Serviceguard package	Packages are the means by which HP Serviceguard starts and halts configured applications. A package is a collection of services, disk volumes and IP addresses that are managed by Serviceguard to ensure they are available.
Serviceguard workload	A *monitored workload* associated with a *Serviceguard cluster* and a particular *package* within the cluster. The workload (and the utilization data reported) follows the package it is associated with as it moves between the nodes of the cluster.
SMI-S	Storage Management Initiative Specification. SMI-S delivers open storage network management interface technology in order to have "all storage managed by the SMI interface" as the unifying factor between all objects that must be managed in a storage area network and the tools used to manage them.
socket	(CPU socket). The physical chip carrier on the circuit board that houses a CPU chip. The CPU may consist of multiple *cores*.
SRD	Shared resource domain. A collection of *compartments* that share system resources managed by HP Insight Global Workload Manager software for Integrity (gWLM). The compartments can be *nPartitions*, *virtual partitions*, *virtual machines*, *processor sets (PSETs)* or *Fair-Share Scheduler (FSS) groups*. A server containing nPartitions can be an SRD as long as nPartition requirements are met. These requirements are detailed in the *gWLM Getting the Most out of gWLM* topic. A server or an nPartition divided into virtual partitions can be an SRD for its virtual partition compartments. A *VM Host* can be an SRD to its virtual machines. Similarly, a server, an nPartition, or a virtual partition containing PSETs can be an SRD for its PSET compartments. Finally, 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.
SSL	*Secure Sockets Layer.* Protocol for validating identity and for creating an encrypted connection between a server and a Web browser.
system	1. A server, *nPartition*, *virtual partition*, or *virtual machine* that is running an instance of an operating system. 2. Entities on the network that communicate through TCP/IP or IPX. To manage a system, some type of management protocol (for example, SNMP, DMI or *WBEM*) must be present on the system. Examples of systems include servers, workstations, desktops, portables, routers, switches, hubs and gateways.
TiCAP	Temporary Instant Capacity. An HP product that enables customers to purchase prepaid core activation rights for a specified (temporary) period of time. Temporary capacity is sold in 30 processing-day increments. TiCAP was formerly known as "TiCOD".

Utilization Provider	The *WBEM* services provider for real-time utilization data from *managed systems*.
VCEM	Virtual Connect Enterprise Manager. A management tool for defining a server connection profile for each server bay. This profile establishes the Media Access Control (MAC) addresses for all Network Interface Controllers (NICs), the World Wide Names (WWNs) for all host bus adapters (HBAs), and the SAN boot parameters. If the server blade in the server bay is replaced, the configuration and connection profile stays constant.
virtual machine	A software entity provided by HP Integrity Virtual Machines, VMware ESX, VMware ESXi, or Microsoft Hyper-V. This technology allows a single server or *nPartition* (with Integrity Virtual Machines) to act as a *VM Host* for multiple individual virtual machines, each running its own instance of an operating system (referred to as a guest OS). Virtual machines are managed systems under Insight Dynamics.
virtual partition	A software partition of a server, or of a single *nPartition*, where each virtual partition can run its own instance of an operating system. A virtual partition cannot span an nPartition boundary.
VM Host	A server running HP Integrity Virtual Machines, VMware ESX, VMware ESXi, or Microsoft Hyper-V that provides multiple *virtual machines*, each running its own instance of an operating system.
vPars	An HP software product that provides *virtual partitions*.
vPars monitor	The program that manages the assignment of resources to *virtual partitions* in a *vPars*-enabled system. To enable virtual partitions, the vPars monitor must be booted in place of a normal HP-UX kernel. Each virtual partition running under the monitor then boots its own HP-UX kernel.
WBEM	Web-Based Enterprise Management. A set of web-based information services standards developed by the Distributed Management Task Force, Inc. A WBEM provider offers access to a resource. WBEM clients send requests to providers to get information about and access to the registered resources.
WMI	Windows Management Instrumentation. Insight Dynamics uses WMI for data collection from managed systems running Microsoft Windows. WMI queries and responses are converted to WBEM through the WMI Mapper.
workload	The collection of processes in a stand-alone server, *nPartition compartment*, *virtual partition* compartment, or *virtual machine* compartment. HP Insight Global Workload Manager software for Integrity (gWLM) extends this concept to include *processor set (PSET)* compartments and *Fair-Share Scheduler (FSS) group* compartments. gWLM enables you to monitor and manage workloads by automatically adjusting the resource allocations of compartments based on *policies*.

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