

Hitachi Storage Command Portal Installation and Configuration Guide

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Preface

This preface includes the following information:

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Document Revision Level

This section provides a history of the revision changes to this document.

Revision	Date	Description
MK-98HSCP002-00	January 2009	Initial Release.
MK-98HSCP002-01	March 2009	Revision -01 supersedes and replaces MK-98HSCP002-00. Updated system requirements. Updated Modifying Command Portal Server Settings section by adding description for the job.process.timeout.in.min property in the trex.properties file. Removed Storage Performance Assessment (SPA) service references.
MK-98HSCP002-02	September 2009	Revision -02 supersedes and replaces MK-98HSCP002-01. Added installation prerequisites, server requirements, and supported platforms to each of the Windows and Solaris installation sections (i.e., License Server, Tuning Manager Data Collector, and the HSCP Server) for HSCP 6.1.
MK-98HSCP002-03	December 2009	Revision -03 supersedes and replaces MK-98HSCP002-02. Added the procedure for installing the HSCS Host Data Collector on network subnets provided in the HSCP 6.3 Release. Added the procedure for installing the HSCP Server on Solaris 10.
MK-98HSCP002-04	June 2010	Revision -04 supersedes and replaces MK-98HSCP002-03. Added HNAS Data Collector installation information for Windows and Solaris platforms.

Changes in this Revision

This section provides a list of the changes from the previous revision.

- Added description of the HSCS HNAS Data Collector installation process.
- Updated the server minimum requirements for each installation module (CPU, memory, and disk space) for License Server installation, Tuning Manager Data Collector installation, HSCS Host Data Collector, and the HSCP Server installation.

Intended Audience

This document is intended for users who are using the Storage Command Portal.

To use this document, you should have a working knowledge of the following:

- Hitachi Device Manager and Hitachi Tuning Manager

- Storage array and performance concepts
- Service Level Objectives (SLOs) and Service Level Agreements (SLAs)

Product Version

This document revision applies to Hitachi Storage Command Portal version 6.4.

Document Organization

The following table provides an overview of the contents and organization of this document. Click the [chapter title](#) in the first column to go to that chapter. The first page of every chapter or appendix contains a brief list of the contents of that section of the manual, with links to the pages where the information is located.

Chapter/Appendix Title	Description
Chapter 1, Introduction	This chapter describes the architectures for deploying HSCP components on separate servers and deploying Device Manager and Tuning Manager on the same server. It also describes the network architecture recommended for collecting data from multiple Device Manager, Tuning Manager, and Tiered Storage Manager instances.
Chapter 2, Installation	This chapter describes how to install the Hitachi Storage Command Portal 6.4 and its associated components on Windows and Solaris platforms. It also describes how to remove the installed HSCP components.
Chapter 3, Configuration	This chapter describes how to configure the Hitachi Storage Command Portal (HSCP) and associated components.
Appendix A, Server Minimum Requirements for HSCP Components	This appendix documents the server minimum requirements for the installed Hitachi Storage Command Portal 6.4 components—License Server, Tuning Manager Data Collector, HSCP Server, and HSCS Host Data Collector.
Appendix B, HSCS Host Data Collector Support Matrix	This appendix provides the HSCS Host Data Collector support matrix for the following network elements: <ul style="list-style-type: none"> • Server Support Matrix • Host Bus Adapter (HBA) Support Matrix • Storage Subsystem Support Matrix • Network Attached Storage (NAS) Support Matrix • Volume Manager Support Matrix
Glossary	Defines all special terms used in this document and includes acronyms.
Index	Provides a detailed and linked list of topics in this manual.

Related Documents

- *Hitachi Storage Command Portal User's Guide (MK-98HSCP004-03)*.
- Hitachi Storage Command Portal Online Help.

Document Conventions

The following table describes the typographic conventions used in this document.

Convention	Description
Bold	Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels. Example: Click OK.
Italic	Indicates a variable, which is a placeholder for actual text provided by the user or system. Example: copy source-file target-file. Note: Angled brackets (< >) are also used to indicate variables.
screen/code	Indicates text that is displayed on screen or entered by the user. Example: # pairdisplay -g oradb
< > angled brackets	Indicates a variable, which is a placeholder for actual text provided by the user or system. Example: # pairdisplay -g <group> Note: Italic font is also used to indicate variables.
[] square brackets	Indicates optional values. Example: [a b] indicates that you can choose a, b, or nothing.
{ } braces	Indicates required or expected values. Example: { a b } indicates that you must choose either a or b.
vertical bar	Indicates that you have a choice between two or more options or arguments. Examples: [a b] indicates that you can choose a, b, or nothing. { a b } indicates that you must choose either a or b.
underline	Indicates the default value. Example: [a b]

Convention for Storage Capacity Values

Storage capacity values for hard disk drives (HDDs) in Hitachi Ltd. and Hitachi Data Systems storage products are calculated based on the following values:

- 1 KB (KiloByte) = 1,024 bytes
- 1 MB (MegaByte) = 1,024 KiloBytes or $1,024^2$ bytes
- 1 GB (GigaByte) = 1,024 MegaBytes or $1,024^3$ bytes
- 1 TB (TeraByte) = 1,024 GigaBytes or $1,024^4$ bytes
- 1 PB (PetaByte) = 1,024 TeraBytes or $1,024^5$ bytes

Getting Help

The Hitachi Data Systems Support Center staff is available 24 hours a day, seven days a week. To reach us, please visit the support Web site for current telephone numbers and other contact information:

<http://www.hds.com/services/support/>. If you purchased this product from an authorized HDS reseller, contact that reseller for support.

Before calling the Hitachi Data Systems Support Center, please provide as much information about the problem as possible, including:

- Circumstances surrounding the error or failure
- Exact content of any error messages displayed on the host systems



NOTE: To help improve the quality of our service and support, your calls may be recorded or monitored.

Comments

Please send us comments on this document: doc.comments@hds.com. Include the document title, number, revision, and refer to specific sections and paragraphs when possible.

Thank you! (All comments become the property of Hitachi Data Systems.)

Introduction

This chapter contains the following sections:

- ❑ [Overview](#)
- ❑ [Server Minimum Requirements](#)
- ❑ [Deploying HSCP Components on Separate Servers \(Recommended\)](#)
- ❑ [Deploying HDvM and HTnM on the Same Server](#)
- ❑ [Collecting Data From Multiple HDvM, HTnM, and HTSM Instances](#)

Overview

The Hitachi Storage Command Portal (HSCP) centralizes storage management reporting across the Hitachi Storage Command management suite by providing custom business views of applications and reports on Hitachi storage usage by those applications. HSCP provides a way to easily align Hitachi storage assets with the applications and business functions that use them.

HSCP correlates subsystem configuration and performance data from the Hitachi Device Manager and the Hitachi Tuning Manager to provide a single point of access for the following tasks:

- Monitoring application storage. Define corporate-wide standard Service Level Objectives (SLOs) for all your applications and issue proactive alerts when application SLOs are at risk.
- Monitoring Hitachi enterprise storage health. Detect potential subsystem performance issues. You can also outsource the function of keeping your subsystems running optimally and finding root causes of problems if they arise.
- Generating Key Performance Indicator (KPI) reports that enables consolidated storage allocation, performance, and trend reporting by applications, and business units.
- Using the HSCS Host Discovery feature to discover hosts on your network and gather file system and storage utilization information from the hosts in your network. This allows HSCP to provide end-to-end mapping of the path from the hosts to the subsystem LDEVs.

To use the Storage Command Portal, install and configure the following components.

- **License Server.** The License Server is installed on your Hitachi Device Manager (HDvM) server to validate your Storage Command Portal license and retrieve Device Manager user accounts. The License Server can only be installed on one Device Manager server.
- **Hitachi Tuning Manager (HTnM) Data Collector.** The Tuning Manager Data Collector is installed on every host on which the Hitachi Tuning Manager is installed.
- **Hitachi Storage Command Portal (HSCP) Server.** The HSCP Server uses the Device Manager and Tuning Manager collectors to retrieve storage subsystem configuration and performance data.
- **HSCS Host Data Collector.** The HSCS Host Data Collector allows you to configure host probes that discover all the hosts in your network and provides end-to-end mapping of the path from the hosts to the subsystem LDEVs. You must install the Host Data Collector software on one server in each subnet in the network in which you wish to discover the hosts.

Note that the HSCS Host Data Collector installer also installs the HNAS Data Collector.

For more information about supported Storage Command Portal architectures, see [Supported System Configurations on page 2-2](#).

Notes

- You must use Device Manager and Tuning Manager software version 6.2 or later.
- To collect subsystem data, you must configure a Tuning Manager Data Collector on the HSCP server for each Tuning Manager instance that collects data from the corresponding subsystem.
- You must also install a Tuning Manager Data Collector module on each server where Tuning Manager is installed.

Server Minimum Requirements

For details on the server minimum requirements for each HSCP component, refer to:

[Appendix A, Server Minimum Requirements for HSCP Components](#)

Supported Platforms

For details on the supported platforms for each HSCP component, refer to:

Windows

- [Supported Platforms for the HSCP 6.4 License Server on page 2-3](#)
- [Supported Platforms for the HSCP 6.4 Tuning Manager Data Collector on page 2-9](#)
- [Supported Platforms for the HSCP Server on page 2-16](#)
- [Supported Platforms for the HSCP 6.4 HSCS Host Data Collector on page 2-23](#)

Solaris

[Supported Platform for the HSCP 6.4 Tuning Manager Data Collector \(Solaris\) on page 2-32](#)

Deploying HSCP Components on Separate Servers (Recommended)

Hitachi recommends that you install the Storage Command Portal server and the Device Manager and Tuning Manager instances on separate servers (see [Figure 1-1](#)).

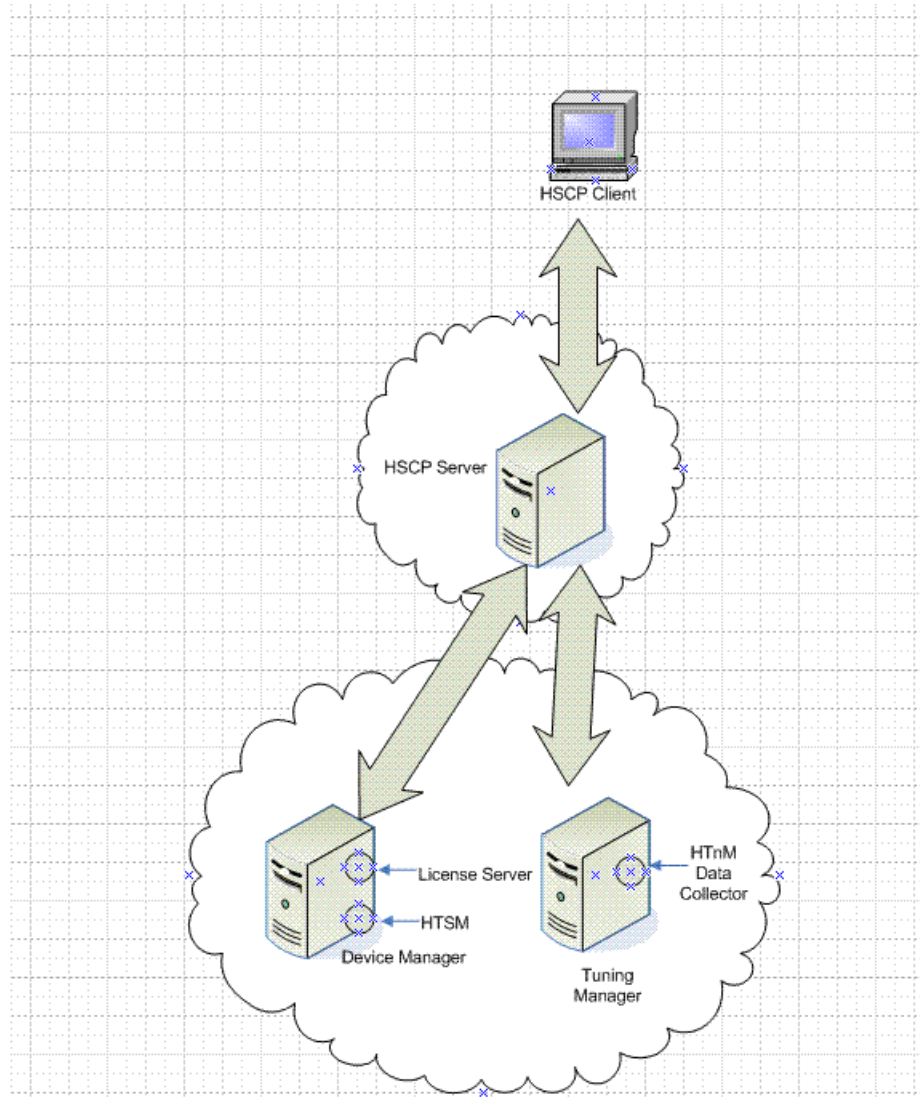


Figure 1-1: Deploying HSCP Components on Separate Servers

Deploying HDvM and HTnM on the Same Server

To use the same server for the Hitachi Device Manager (HDvM) and the Hitachi Tuning Manager (HTnM) instance, deploy the following configuration (see [Figure 1-2](#)).

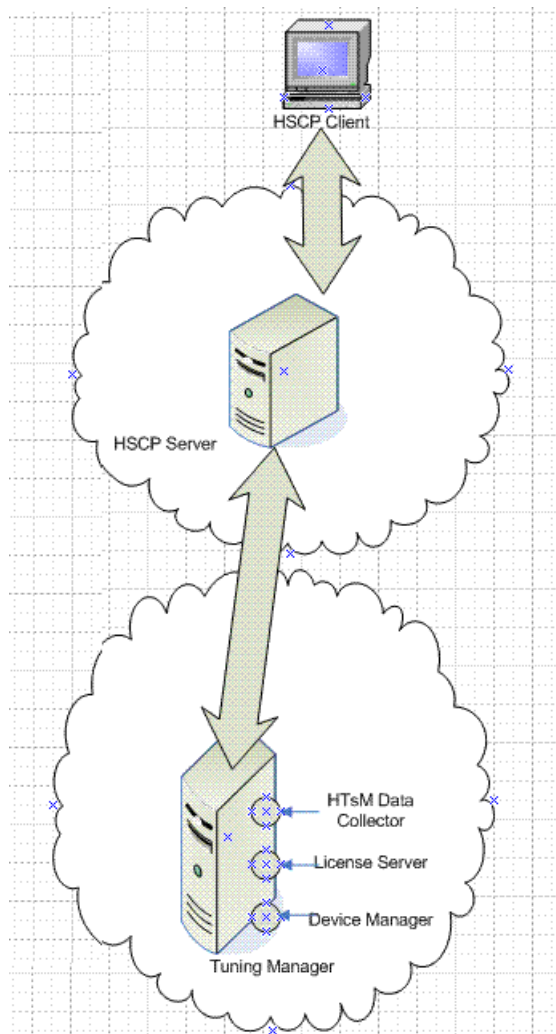


Figure 1-2: Deploying HDvM and HTnM on the Same Server



NOTE: Additional hardware requirements are imposed by the installed Device Manager instances. Hardware requirements vary depending on the number of subsystem resources.

For details, see the Hitachi Device Manager Installation and Configuration Guide and the Hitachi Tuning Manager Installation and Configuration Guide.

Collecting Data From Multiple HDvM, HTnM, and HTSM Instances

The Hitachi Storage Command Portal can collect storage subsystem data from multiple Hitachi Device Manager (HDvM), Hitachi Tuning Manager (HTnM), and Hitachi Tiered Storage Manager (HTSM) instances.

The Hitachi Storage Command Portal can discover and collect host data from multiple Solaris, Windows, Linux, VMWare, Hyper-V, and HNAS hosts. (see [Figure 1-3](#)).

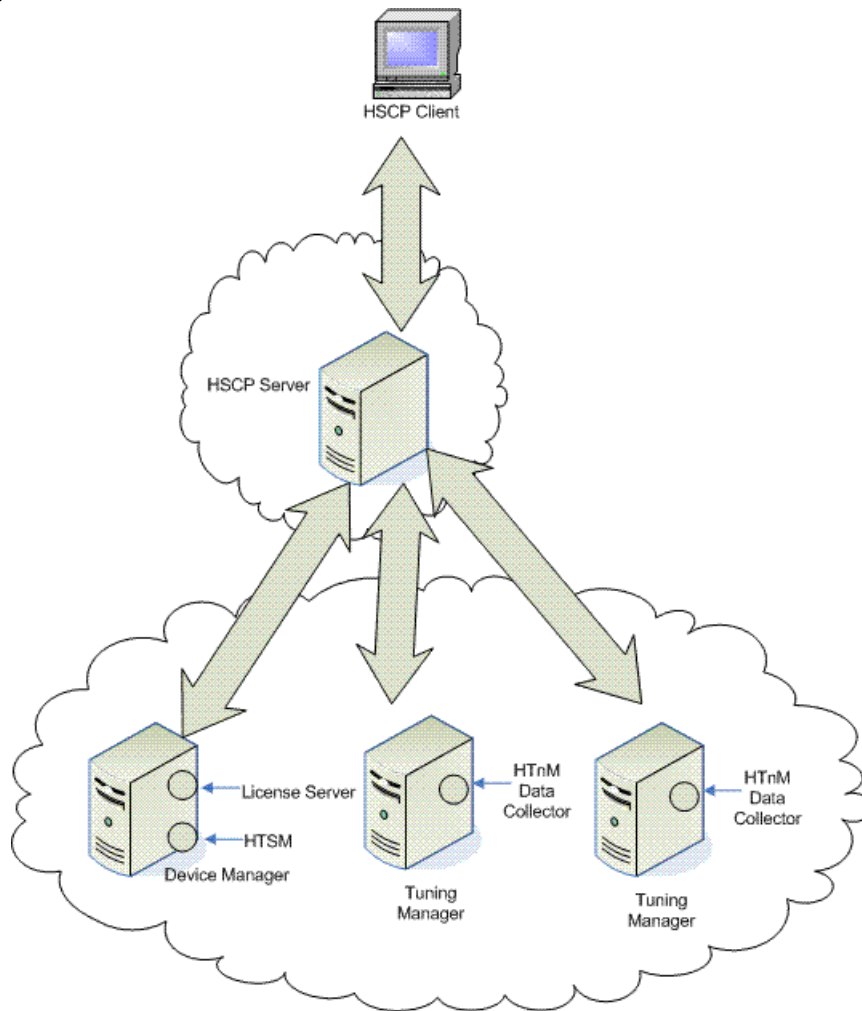


Figure 1-3: Multiple HDvM, HTnM, and HTSM Instances

Physical Requirements

This section points you to the system requirements for collecting data from multiple Device Manager and Tuning Manager instances.

- For the physical requirements of the HSCP License Server host, see [License Server Minimum Requirements on page 2-3](#)
- For the physical requirements of each Tuning Manager Data Collector host, see [Tuning Manager Data Collector Minimum Requirements on page 2-8](#).
- For the physical requirements of the HSCP Server host, see [HSCP Server Minimum Requirements on Windows on page 2-15](#) and [HSCP Server Minimum Requirements \(Solaris\) on page 2-34](#).

Client Computer Support Matrix

The support matrix for HSCP client systems is as follows:

Table 1-1: Client Support Matrix

Browser	Version	Operating System	Service Pack	Flash Player 9	Flash Player 10
Microsoft® Internet Explorer	6	Windows XP	SP2, SP3	Yes	Yes
		Windows 2000	SP4	Yes	Yes
	7	Windows XP	SP2, SP3	Yes	Yes
		Windows 2000	SP4	Yes	Yes
Mozilla® Firefox®	2	Windows XP	SP2, SP3	Yes	Yes
		Windows 2000	SP4	Yes	Yes
	3	Windows XP	SP2, SP3	Yes	Yes
		Windows 2000	SP4	Yes	Yes

Hitachi Storage Command Data Collection Products Support Matrix

The support matrix for Hitachi Storage Command data collection products is as follows:

Table 1-2: Data Collection Products Support Matrix

Product	Version	Data Collection
Hitachi Device Manager (HDvM)	6.2, 6.3, 6.4	Yes
Hitachi Tuning Manager (HTnM)	6.2, 6.3, 6.4	Yes
Hitachi Tiered Storage Manager (HTSM)	6.1, 6.2, 6.3, 6.4	Yes

Installation

This chapter describes how to install the Hitachi Storage Command Portal (HSCP) 6.4 and its associated components on Windows and Solaris platforms. It also describes how to remove the HSCP Server installation. This chapter contains the following sections:

- ❑ [Overview](#)
- ❑ [Installing the HSCP License Server on Windows](#)
- ❑ [Installing the Tuning Manager Data Collector on Windows](#)
- ❑ [Installing the HSCP Server on Windows](#)
- ❑ [Installing the HSCS Host Data Collector Server on Other Subnets](#)
- ❑ [Installing the HSCP License Server on Solaris](#)
- ❑ [Installing the Tuning Manager Data Collector on Solaris](#)
- ❑ [Installing the HSCP Server on Solaris](#)
- ❑ [Installing the HSCS Host Data Collector Server on Solaris](#)
- ❑ [Removing the HSCP Components](#)

Overview

The Hitachi Storage Command Portal (HSCP) consists of the following components, which are installed in this order:

- Hitachi Storage Command Portal License Server
- Hitachi Storage Command Portal Tuning Manager (HTnM) Data Collector
- Hitachi Storage Command Portal Server
- HSCS Host Data Collector Server (on other subnets)



NOTE: With this Hitachi Storage Command Portal 6.4 release, HSCP supports HSCP Server and License Server installation on Solaris 10 systems.

Installing the HSCP License Server on Windows

This section describes how to install the Hitachi Storage Command Portal (HSCP) License Server on Windows.

Installation Prerequisites

- Hitachi Device Manager must be installed on the same server and configured with the user accounts that will be used in HSCP.

Supported System Configurations

The License Server must be installed on the same server on which the Hitachi Device Manager is installed.



NOTE: You must use Device Manager software version 6.2 or later.

HSCP supports two system configurations:

- Deploying the Hitachi Device Manager on its own server. This is the recommended deployment method.
- Deploying the Hitachi Device Manager and the Hitachi Tuning Manager on the same server. For details, refer to the Hitachi Device Manager and the Hitachi Tuning Manager documentation.

License Server Minimum Requirements

The License Server minimum requirements are as follows:

- CPU: Dual-core x86 processor
- Memory: 512 MB RAM free memory
- Hard drive: 1 GB free space



NOTE: Additional hardware requirements are imposed by the installed HDvM instances. Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager and the Hitachi Tuning Manager Installation and Configuration Guides.

Supported Platforms for the HSCP 6.4 License Server

Table 2-1 lists the OS platforms on which the License Server can be installed.

Table 2-1: HSCP 6.4 License Server Platform Support Matrix

Operating System	Edition/ Service Pack	Versions of License Server
Windows 2008 R2 (64-bit)	Standard, Enterprise, Data Center (No SP)	6.3, 6.4
Windows 2008	Standard, Enterprise, Data Center (No SP, SP2)	6.3 6.4
Windows 2008 (64-bit)	Standard, Enterprise, Data Center (No SP, SP2)	6.3 6.4
Windows 2003 R2	Standard, Enterprise, Data Center (No SP, SP2)	6.3 6.4
Windows 2003 R2 (64-bit)	Standard, Enterprise, Data Center (No SP, SP2)	6.4
Windows 2003	Standard, Enterprise, Data Center (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (64-bit)	Standard, Enterprise, Data Center (SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Standard (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Enterprise (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Data Center (No SP, SP1, SP2)	6.3, 6.4
Solaris 9	SPARC	6.3, 6.4
Solaris 10	SPARC	6.3, 6.4

License Server Installation on Windows

To install the License Server on Windows:

1. Insert the Storage Command Portal CD in the Device Manager host. If the installer does not start automatically, browse the CD and open the HSCP-Install-License_Server_6.4<release>.exe file. The Welcome window appears (see [Figure 2-1](#)).

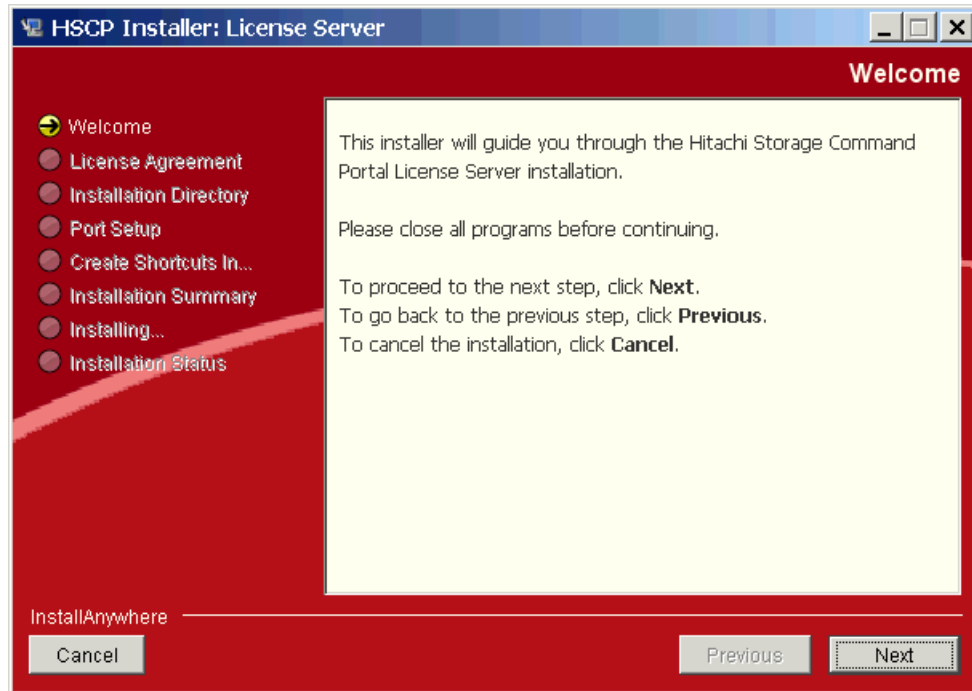


Figure 2-1: Installing the HSCP License Server

2. Ensure that all programs are closed, and click **Next**.
The License Agreement window appears.
3. To accept the license agreement terms, click **Next**.
The Installation Directory window appears ([Figure 2-2](#)).

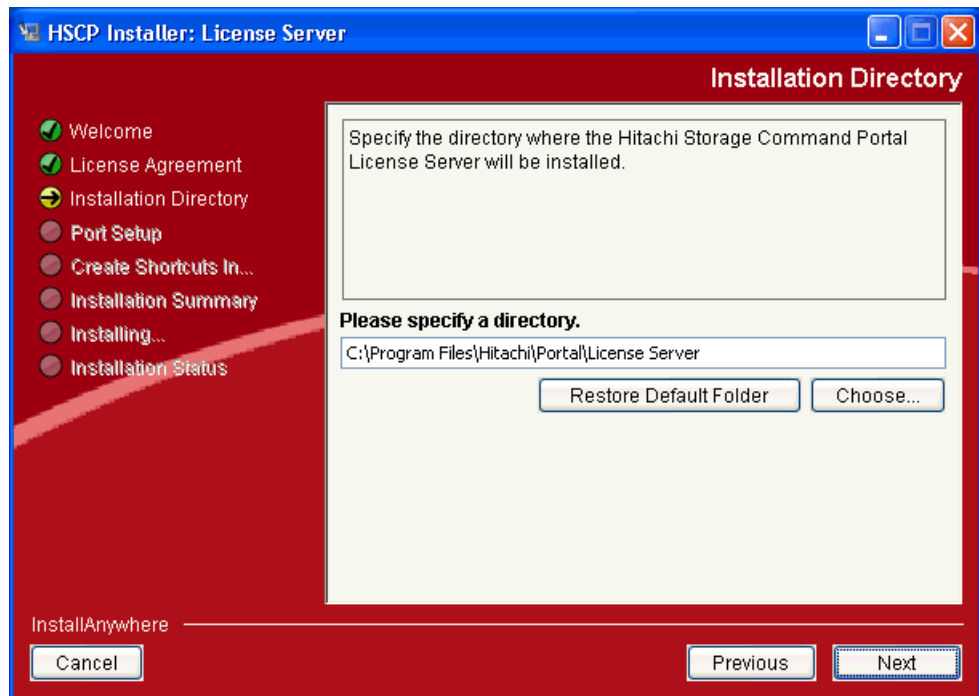


Figure 2-2: Specifying the License Server Installation Directory

4. Specify the folder (directory) where you want to install the License Server. The default directory is:
C:\Program Files\Hitachi\Portal\License Server
5. Click **Next**.
The Port Setup window appears (see [Figure 2-3](#)).

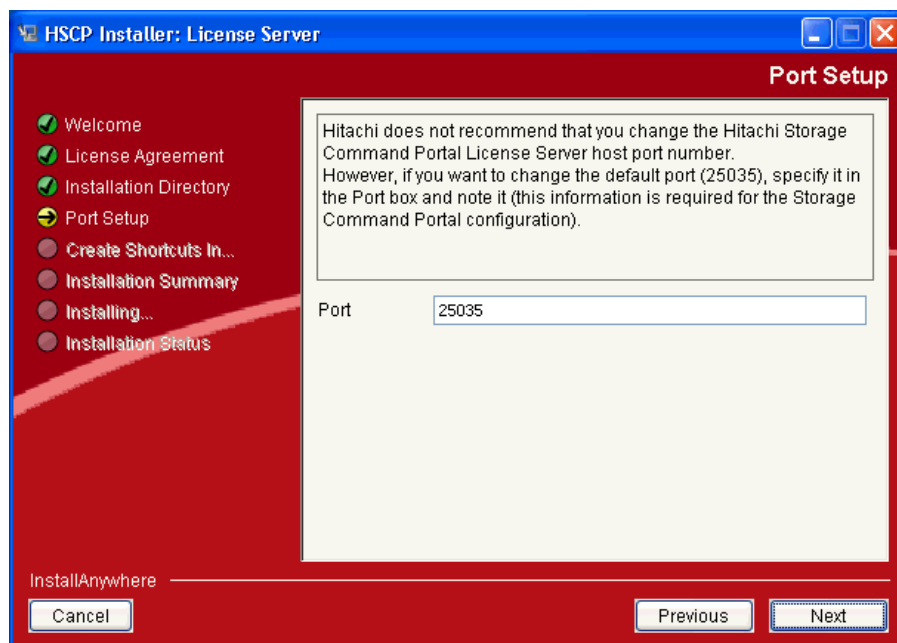


Figure 2-3: Specifying the License Server Default Port

- Hitachi does not recommend that you change the License Server default port number. However, if you want to change the default port (25035), specify the new port in the *Port* field and note it (this information is required for the Storage Command Portal configuration).
- Click **Next**.

The Create Shortcuts In window appears (see [Figure 2-4](#)).

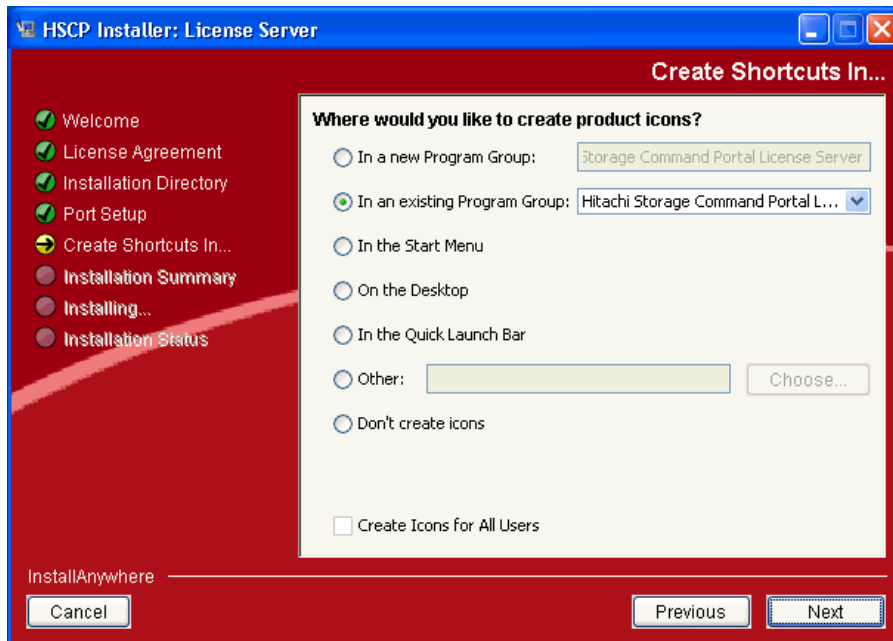


Figure 2-4: Specifying License Server Installation Shortcuts

- Select the appropriate shortcuts and then click **Next**.
The Installation Summary window appears (see [Figure 2-5](#)).

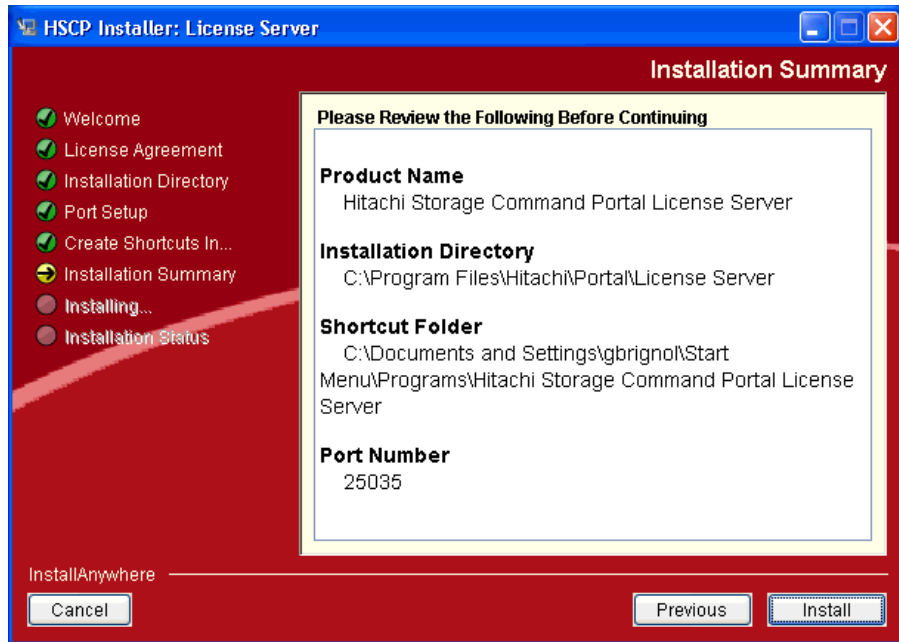


Figure 2-5: License Server Installation Summary

9. Review the summary to ensure the information is correct, and then click **Install**.

When the installation is completed, the Installation Completed Successfully window appears (see [Figure 2-6](#)).

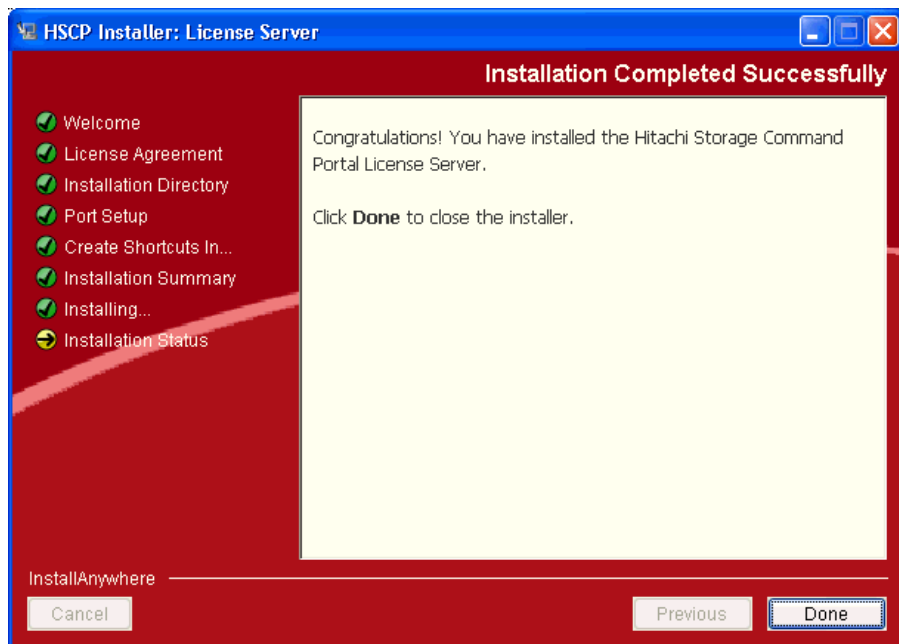


Figure 2-6: License Server Installation Completed

10. The License Server is installed. To close the installer, click **Done**.

Installed Services

After successfully installing the License Server, the following service runs:

- Hitachi Portal License Server

Installing the Tuning Manager Data Collector on Windows

Install a Tuning Manager Data Collector on every host on which Tuning Manager is installed.



TIP: To collect subsystem data, you must configure a Tuning Manager Data Collector on the HSCP Server for each Tuning Manager instance that collects data from the corresponding subsystem.

Installation Prerequisites

- The Hitachi Tuning Manager (HTnM) must be configured to collect data from the subsystems of interest.
- You must use Tuning Manager software version 6.2 or later.

Supported System Configurations

HSCP supports two system configurations:

- Deploying the Hitachi Device Manager on its own server. This is the recommended deployment method.
- Deploying the Hitachi Device Manager and the Hitachi Tuning Manager on the same server. For details, refer to the Hitachi Device Manager and the Hitachi Tuning Manager documentation.

Tuning Manager Data Collector Minimum Requirements

The Tuning Manager Data Collector minimum requirements are as follows:

- CPU: Dual-core x86 processor
- Memory: 2.0 GB RAM free memory
- Hard drive: 60 GB free space



NOTE: Additional hardware requirements are imposed by the installed Device Manager and Tuning Manager instances. Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager and the Hitachi Tuning Manager Installation and Configuration Guides.

Supported Platforms for the HSCP 6.4 Tuning Manager Data Collector

Table 2-2 lists the OS platforms on which the Tuning Manager Data Collector can be installed.

Table 2-2: HSCP 6.4 Tuning Manager Data Collector Platform Support Matrix

Operating System	Edition/ Service Pack	Versions of HTnM Data Collector
Windows 2008	Standard, Enterprise, Data Center (No SP, SP2)	6.3 6.4
Windows 2008 (64-bit)	Standard, Enterprise, Data Center (No SP, SP2)	6.3 6.4
Windows 2003 R2	Standard, Enterprise, Data Center (No SP, SP2)	6.3 6.4
Windows 2003 R2 (64-bit)	Standard, Enterprise, Data Center (No SP, SP2)	6.4
Windows 2003	Standard, Enterprise, Data Center (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (64-bit)	Standard, Enterprise, Data Center (SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit)	Standard (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit)	Enterprise (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit)	Data Center (No SP, SP1, SP2)	6.3, 6.4
Solaris 10	SPARC	6.3, 6.4

Tuning Manager Data Collector Installation on Windows

To install the HSCP 6.4 Tuning Manager Data Collector on Windows:

1. Insert the Storage Command Portal CD in the Tuning Manager host. If the installer does not start automatically, browse the CD and open the HSCP-Install-HTnM_Data_Collector_6.4<release>.exe file.

The following message is displayed:

NOTICE: Before proceeding with the HTnM Data Collector installation, the installation utility must modify the Tuning Manager Performance-Reporter config.xml file, and shut down and then restart the Tuning Manager PerformanceReporter service. No action is required on your part.

2. Press **Continue** to resume Tuning Manager Data Collector installation.

The Welcome window appears (see [Figure 2-7](#)).

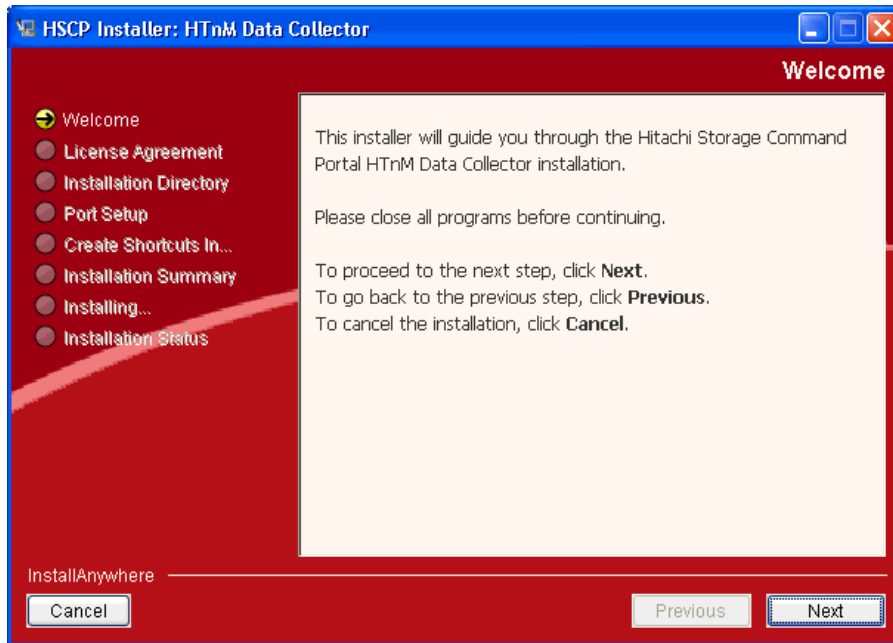


Figure 2-7: Installing the Tuning Manager Data Collector

3. Click **Next**.

The License Agreement window appears.

4. Accept the license agreement terms, then click **Next**.

The Installation Directory window appears (see [Figure 2-8](#)).

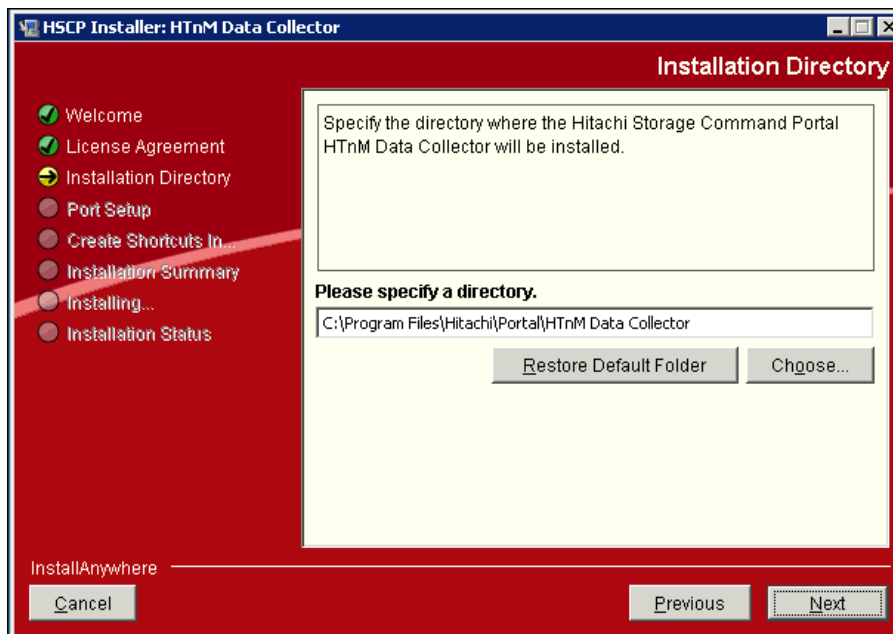


Figure 2-8: Specifying HTnM Data Collector Installation Directory

- Specify the folder (directory) where you want to install the Tuning Manager Data Collector. The default directory is:
C:\Program Files\Hitachi\Portal\HTnM Data Collector
- Click **Next**. The Port Setup window appears (see [Figure 2-9](#)).

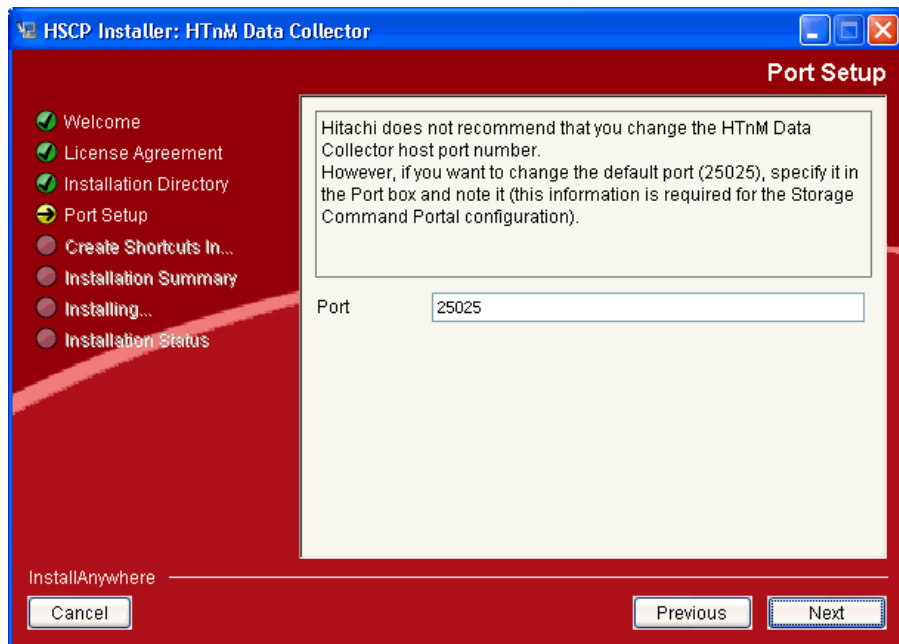


Figure 2-9: Specifying HTnM Data Collector Default Port

- Hitachi does not recommend that you change the Tuning Manager default port number. However, if you want to change the default port (**25025**), specify the new port in the *Port* field and note it (this information is required for the Storage Command Portal configuration).
- Click **Next**. The Create Shortcuts window appears (see [Figure 2-10](#)).

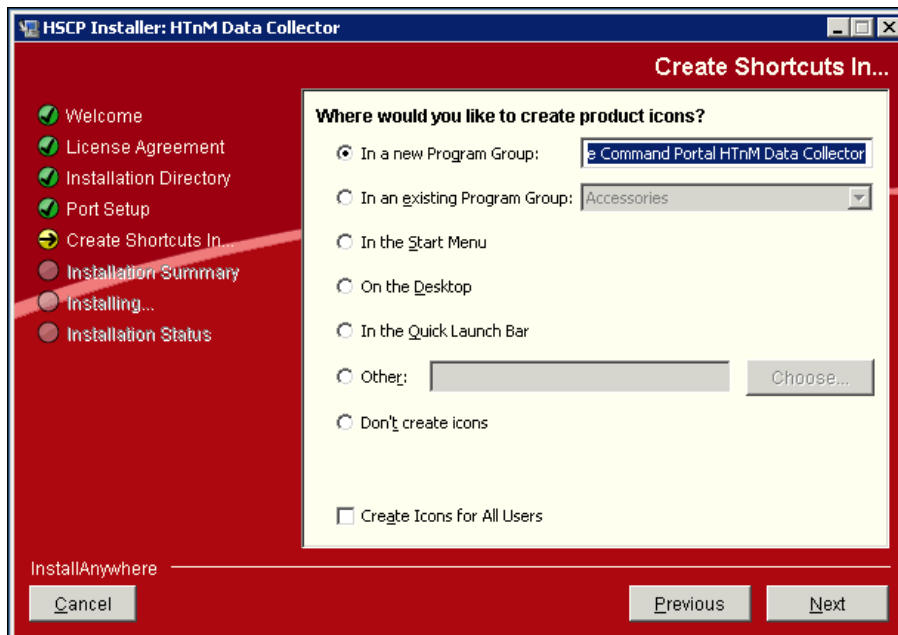


Figure 2-10: Specifying HTnM Data Collector Installation Shortcuts

9. Select the appropriate shortcuts, and then click **Next**.
The Installation Summary window appears (see [Figure 2-11](#)).

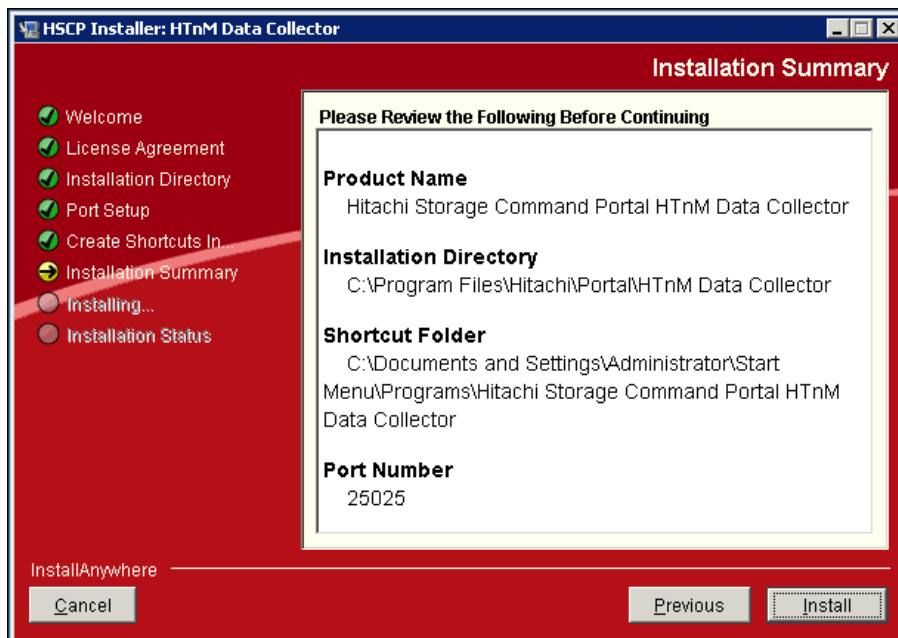


Figure 2-11: HTnM Data Collector Installation Summary

10. Review the summary to ensure the information is correct, and then click **Install**.

When the installation is completed, the Installation Completed Successfully window appears (see [Figure 2-12](#)).

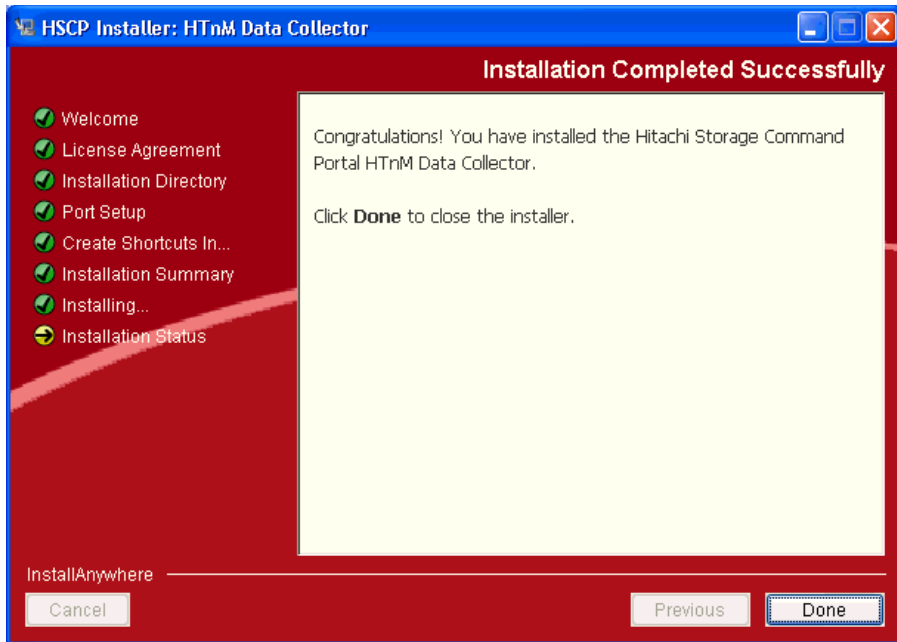


Figure 2-12: HTnM Data Collector Installation Completed

The Tuning Manager Data Collector is installed.

11. To close the installer, click **Done**.

Installed Services

After successfully installing the Tuning Manager Data Collector, the following services run:

- Hitachi Portal HTnM Data Collector (Storage Command Portal Tuning Manager data manager and server)

Installing the HSCP Server on Windows

The Hitachi Storage Command Portal server is the primary Hitachi Storage Command Portal component. The Hitachi Storage Command Portal server collects and correlates configuration and performance data, performs host discovery, and generates reports.

The HSCS Host Data Collector (HHDC) is installed with the HSCP Server. The HHDC software allows HSCP to discover hosts on your network and their mapping to subsystem storage.

By default, the HSCS Host Data Collector is disabled. For details on enabling HHDC, see Chapter 8, "Administering HSCP" in the Hitachi Storage Command Portal User's Guide.

For information on installing the HSCS Host Data Collector on one or more subnets, see [Installing the HSCS Host Data Collector Server on Other Subnets on page 2-22](#).



TIP: You must use Device Manager and Tuning Manager Server software version 6.2 or later.

Installation Prerequisites

- All Hitachi Device Manager instances from which you would like to collect data must be installed and configured.
- The License Server must be installed as described in [Installing the HSCP License Server on Windows on page 2-2](#).
- You must install a Tuning Manager Data Collector module on each server where the Tuning Manager is installed. The Tuning Manager Data Collector must be installed as described in [Installing the Tuning Manager Data Collector on Windows on page 2-8](#).
- Note the IP address, port number, user ID (which must have the Admin user role), and password of every Device Manager instance. This information is required for the Storage Command Portal configuration.
- To collect subsystem data, you must configure a Tuning Manager Data Collector on the HSCP server for each Tuning Manager instance that collects data from the corresponding subsystem.

Supported System Configurations

HSCP supports two system configurations:

- Deploying the Hitachi Device Manager and Hitachi Tuning Manager on separate servers is the recommended deployment method.
- Deploying the Hitachi Device Manager and the Hitachi Tuning Manager on the same server.



NOTE: Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager and the Hitachi Tuning Manager Installation and Configuration Guides.

HSCP Server Minimum Requirements on Windows

The minimum requirements for the Hitachi Storage Command Portal Server on Windows are as follows:

- CPU: Dual-core x86 processor
- Memory: 3.0 GB RAM free memory
- Hard drive: 60 GB free space

Supported Platforms for the HSCP Server

Table 2-3 lists the OS platforms on which the HSCP Server can be installed:

Table 2-3: HSCP Server Platform Support Matrix

Operating System	Edition/ Service Pack	Version of HSCP Server
Windows 2008 R2	No SP1, No SP2	6.3, 6.4
Windows 2008 R2 (64-bit)	Standard, Enterprise, Data Center	6.3, 6.4
Windows 2008	All editions	6.3, 6.4
Windows 2008 (64-bit)	All editions	6.3, 6.4
Windows 2003 R2	No SP1	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Standard (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Enterprise (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Data Center (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (64-bit)	All editions	6.3, 6.4
Solaris 10	SPARC	6.3, 6.4

HSCP Server Installation on Windows

To install the Storage Command Portal server on Windows:

1. Insert the Storage Command Portal CD in the host. If the installer does not start automatically, browse the CD and open the HSCP-Install-Server_6.4<release>.exe file.

The Welcome window appears (see [Figure 2-13](#)).

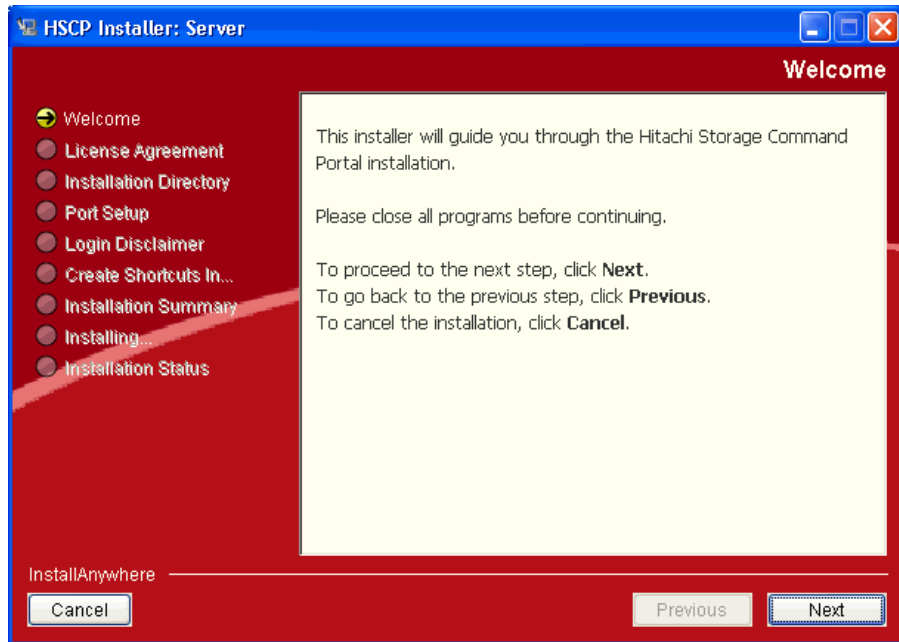


Figure 2-13: Installing the HSCP Server

2. Click **Next**.
The License Agreement window appears.
3. Accept the license agreement terms, then click **Next**.
The Installation Directory window appears (see [Figure 2-14](#)).

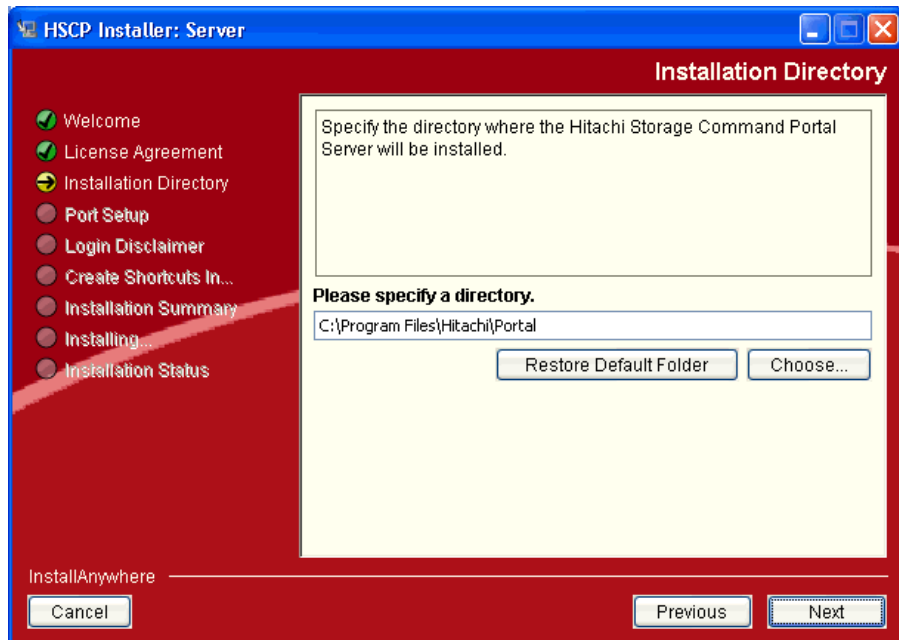


Figure 2-14: Specifying the HSCP Server Installation Directory

4. Specify the folder (directory) where you want to install the Storage Command Portal. The default directory is:
C:\Program Files\Hitachi\Portal

5. Click **Next**.

The Port Setup window appears (see [Figure 2-15](#)).

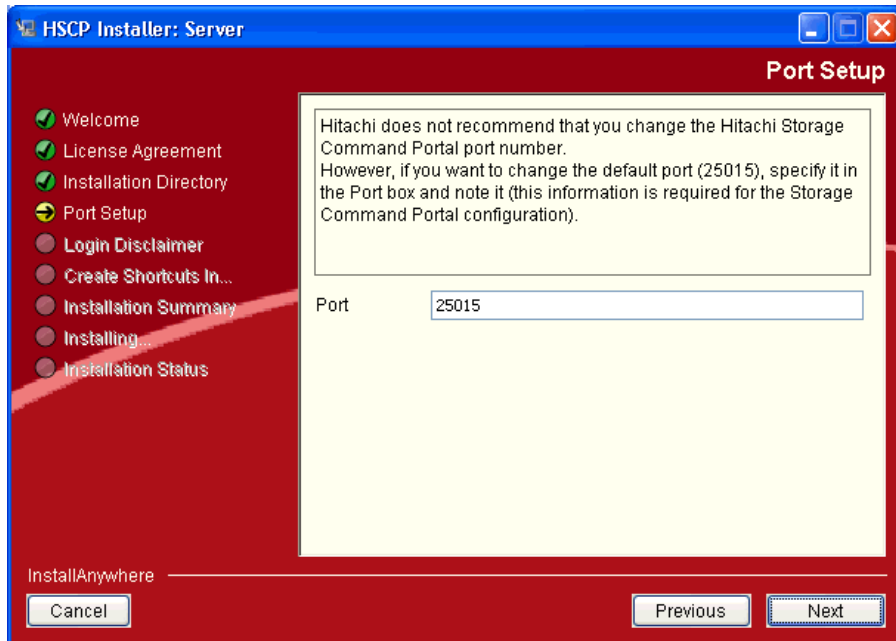


Figure 2-15: Specifying the HSCP Server Port

6. Hitachi does not recommend that you change the HSCP Server default port number. However, if you want to change the default port (25015), specify the new port in the *Port* field and note it (this information is required for accessing the Storage Command Portal).
7. Click **Next**.

The HSCS Host Data Collector Port Setup window is displayed (see [Figure 2-16](#)).

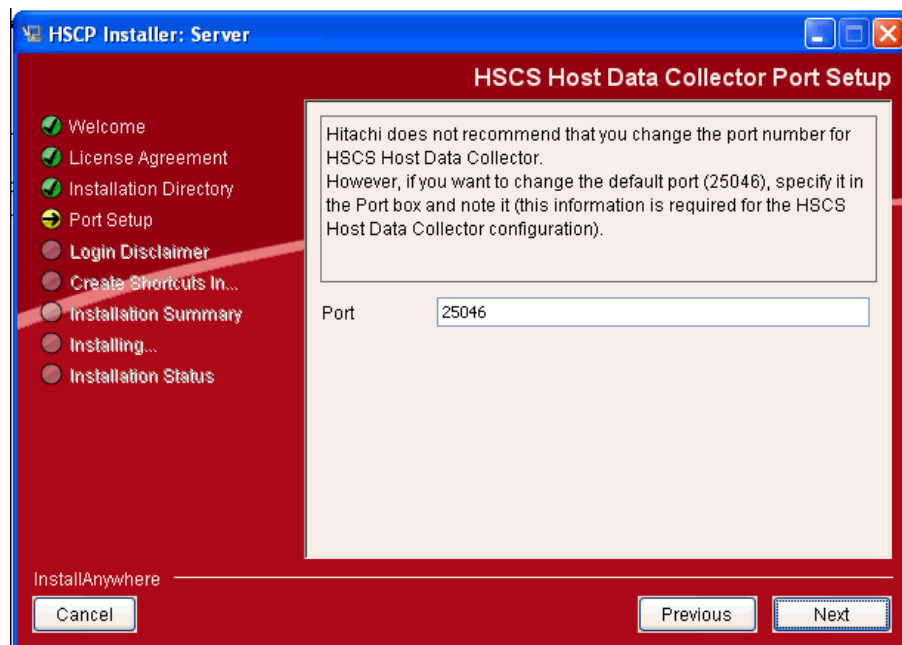


Figure 2-16: Specifying the HSCS Host Data Collector Port

The HSCS Host Data Collector Port you specify here (**25046**) is the service port on the HSCS Host Data Collector that communicates with the HSCP Server.

Hitachi does not recommend that you change the HSCS Host Data Collector port number. See also [Installing the HSCS Host Data Collector Server on Other Subnets on page 2-22](#) and [Figure 2-24 on page 2-25](#).

8. Click **Next**.

The HSCS HNAS Data Collector Port Setup window is displayed (see [Figure 2-17](#)).

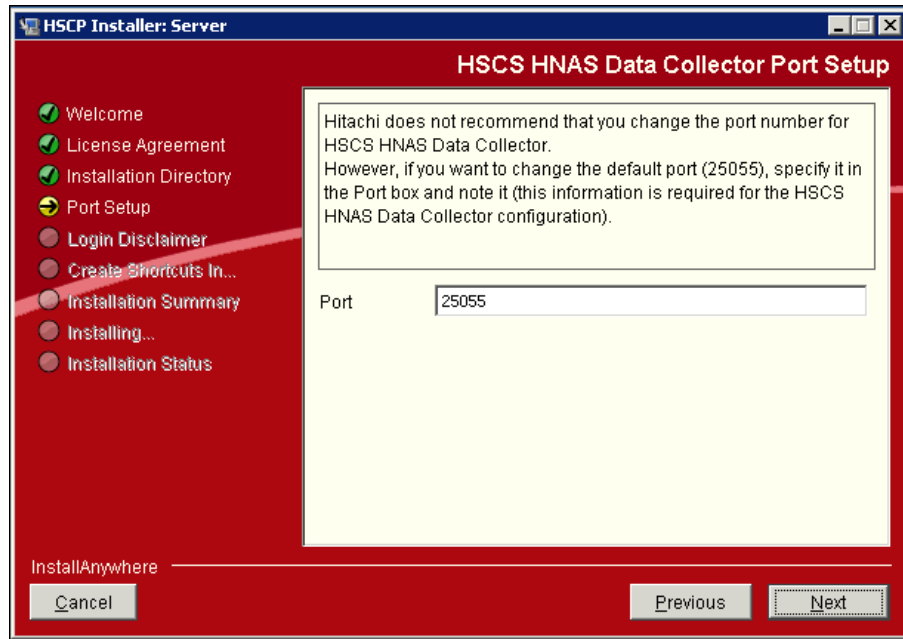


Figure 2-17: HNAS Data Collector Port Setup

The HSCS HNAS Data Collector Port you specify here (**25055**) is the service port on the HSCS HNAS Data Collector that communicates with the HSCP Server.



NOTE: Hitachi recommends that you do not change the HSCS HNAS Data Collector port number.

9. Click **Next**.

The Login Disclaimer window appears (see [Figure 2-18](#)).

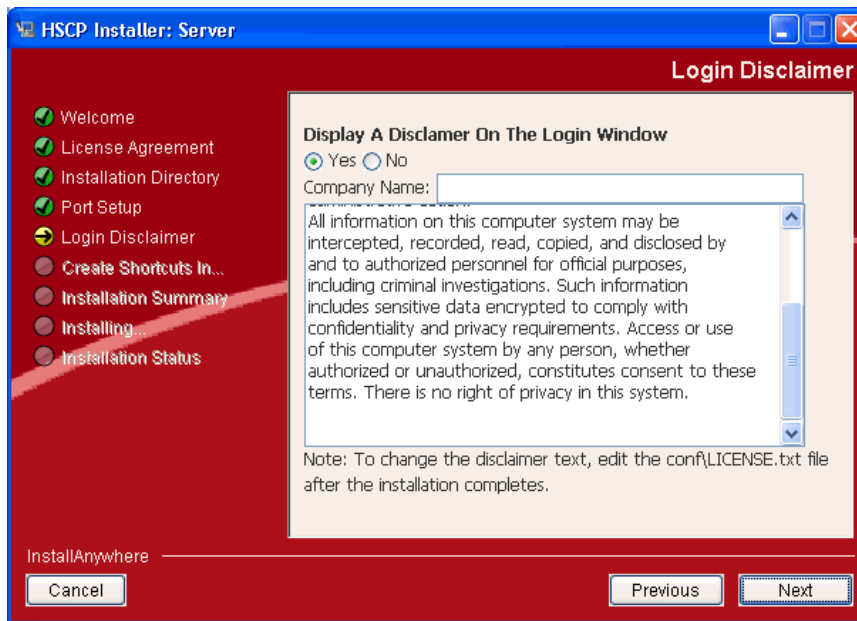


Figure 2-18: HSCP Login Disclaimer

10. To display a legal disclaimer on the Login window:
 - a. Click **Yes**.
 - b. Enter the name of your company in the *Company Name* field.
11. Click **Next**.

The Create Shortcuts window appears (see [Figure 2-19](#)).

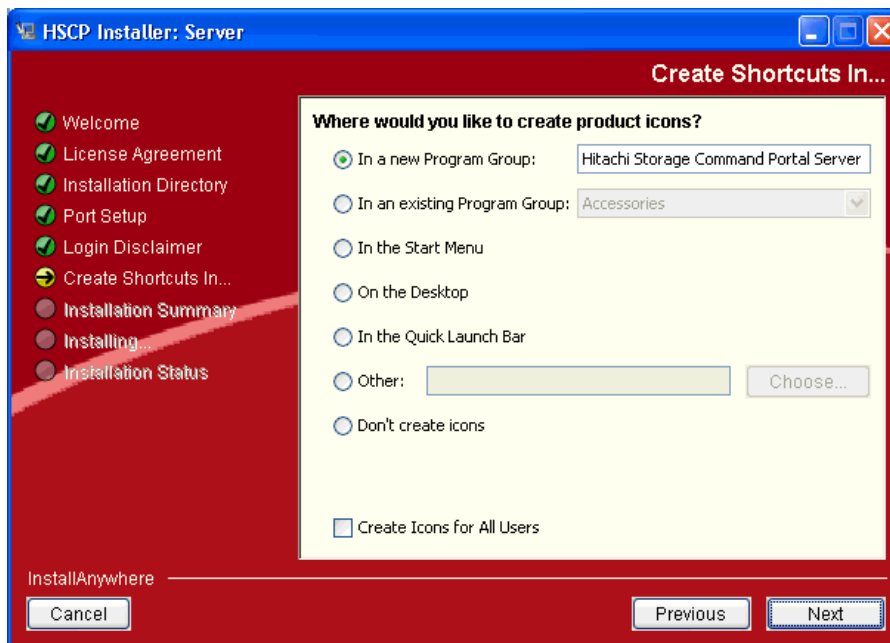


Figure 2-19: Specifying HSCP Server Shortcuts

12. If you wish to create product icons, select the appropriate shortcuts, and then click **Next**.

The Installation Summary window appears (see [Figure 2-20](#)).

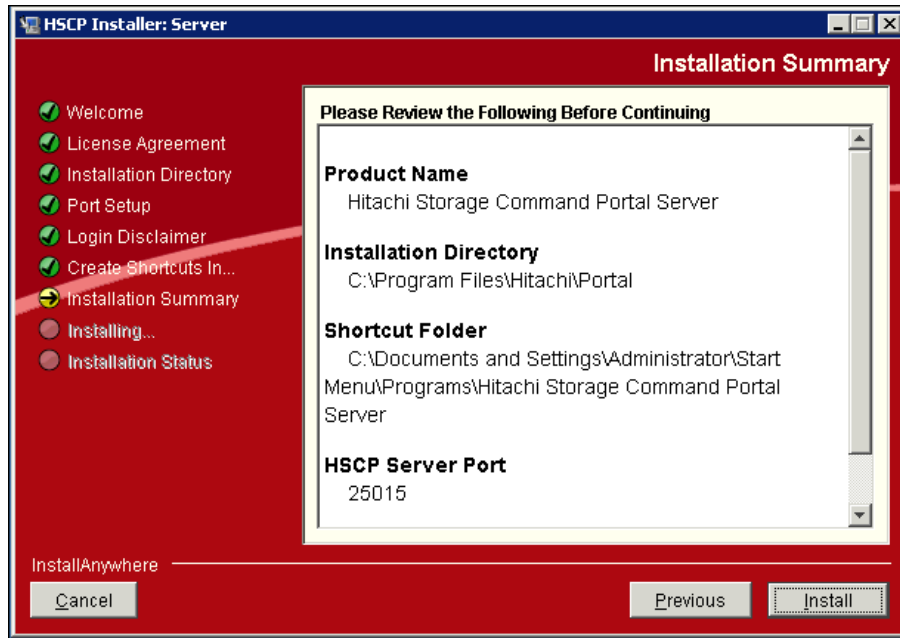


Figure 2-20: HSCP Server Installation Summary

13. Review the summary to ensure the information is correct, and then click **Install**.

When the installation is completed, the Installation Completed Successfully window appears (see [Figure 2-21](#)).

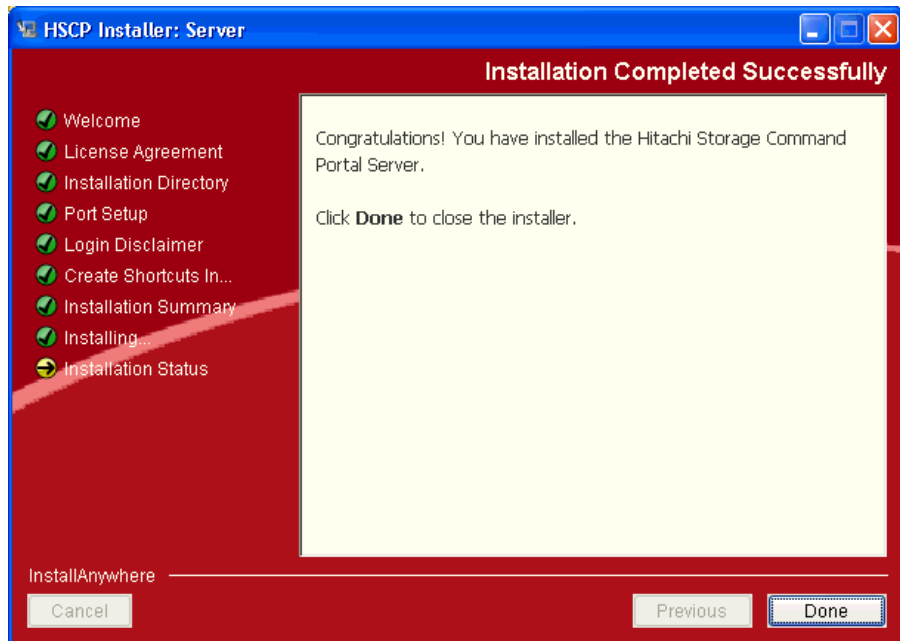


Figure 2-21: HSCP Server Installation Completed

14. The Hitachi Storage Command Portal server is installed. To close the installer, click **Done**.

Installing the HSCS Host Data Collector Server on Other Subnets

You can use HSCP's HSCS Host Discovery feature to agentlessly discover hosts on your network and gather file system and storage utilization information from the hosts in your network. This allows HSCP to provide mapping of a complete end-to-end path from the host to the subsystem LDEVs.

A default HSCS Host Data Collector is preconfigured and available to discover hosts on the HSCP Server's subnet. If you would also like to discover hosts on other subnets, you must install and configure an HSCS Host Data Collector for each subnet.

- If you need to discover hosts on the same network as the HSCP server, simply activate the HSCS Host Data Collector after you install the HSCP server. For information on activating the HSCS Host Data Collector, see Chapter 8, "Administering HSCP" in the Hitachi Storage Command Portal User's Guide.
- If you need to discover hosts on other subnets, you must install one instance of the HSCS Host Data Collector on every subnet containing hosts of interest. This section describes the procedure for installing an HHDC instance on a server in the subnet of interest.

All data on discovered hosts is forwarded to the HSCP server when all HSCS Host Data Collectors are properly configured.

The HSCS Host Data Collector Server can be installed on Windows and Solaris systems. The HSCS Host Data Collector Server discovers Windows, Solaris, Linux, VMWare, and Hyper-V hosts.

Installation Prerequisites

The HSCS Host Data Collector is installed as part of the HSCP Server installation. When the Host Data Collector is installed on its own server to discover hosts on a different subnet, the HSCP Server must already be installed and configured.

Supported System Configurations

HSCP supports two system configurations:

- Deploying the Hitachi Device Manager on its own server. This is the recommended deployment method.
- Deploying the Hitachi Device Manager and the Hitachi Tuning Manager on the same server.

HSCS Host Data Collector Minimum Requirements (Windows)

The HSCS Host Data Collector server minimum requirements are as follows:

- CPU: Dual-core x86 processor
- Memory: 2.0 GB RAM free memory
- Hard drive: 60 GB free space

Supported Platforms for the HSCP 6.4 HSCS Host Data Collector

lists the OS platforms on which the HSCS Host Data Collector can be installed:

Table 2-4: HSCS Host Data Collector Platform Support Matrix

Operating System	Edition/ Service Pack	Version of HSCP Server
Windows 2008 R2	No SP1, No SP2	6.3, 6.4
Windows 2008 R2 (64-bit)	Standard, Enterprise, Data Center	6.3, 6.4
Windows 2008	All editions	6.3, 6.4
Windows 2008 (64-bit)	All editions	6.3, 6.4
Windows 2003 R2	No SP1	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Standard (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Enterprise (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (32-bit and 64-bit)	Data Center (No SP, SP1, SP2)	6.3, 6.4
Windows 2003 (64-bit)	All editions	6.3, 6.4
Solaris 10	SPARC	6.3, 6.4

To install the HSCS Host Data Collector on Windows:

1. Close all other programs before installing the HSCS Host Data Collector.
2. Insert the Storage Command Portal CD in the host. If the installer does not start automatically, browse the CD and open the HSCS-Install-Host_Data_Collector_6.4<release>.exe file.

The Welcome window appears (see [Figure 2-22](#)).

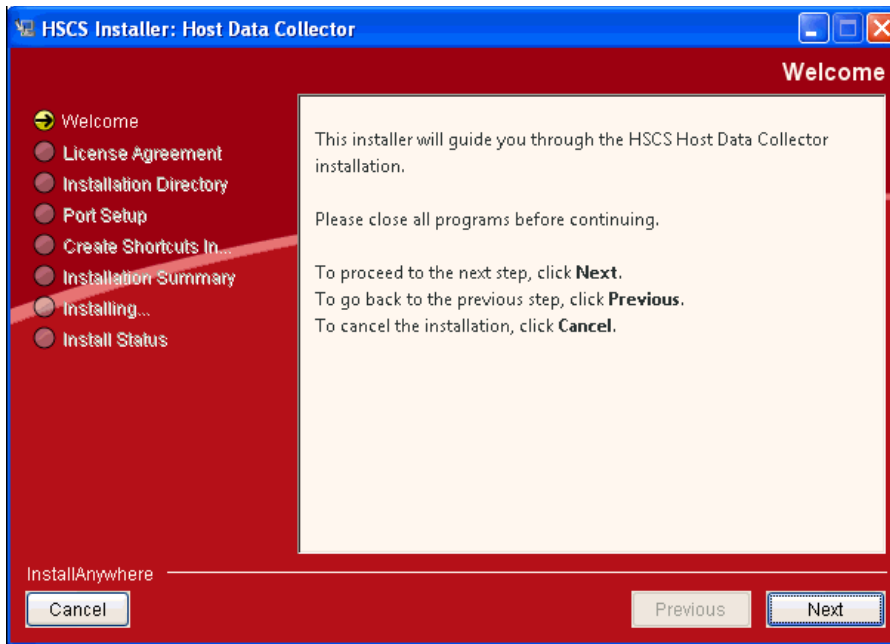


Figure 2-22: Installing the HSCS Host Data Collector

3. Click **Next**.
The License Agreement window appears.
4. Accept the license agreement terms, then click **Next**.
The Installation Directory window appears (see [Figure 2-23](#)).

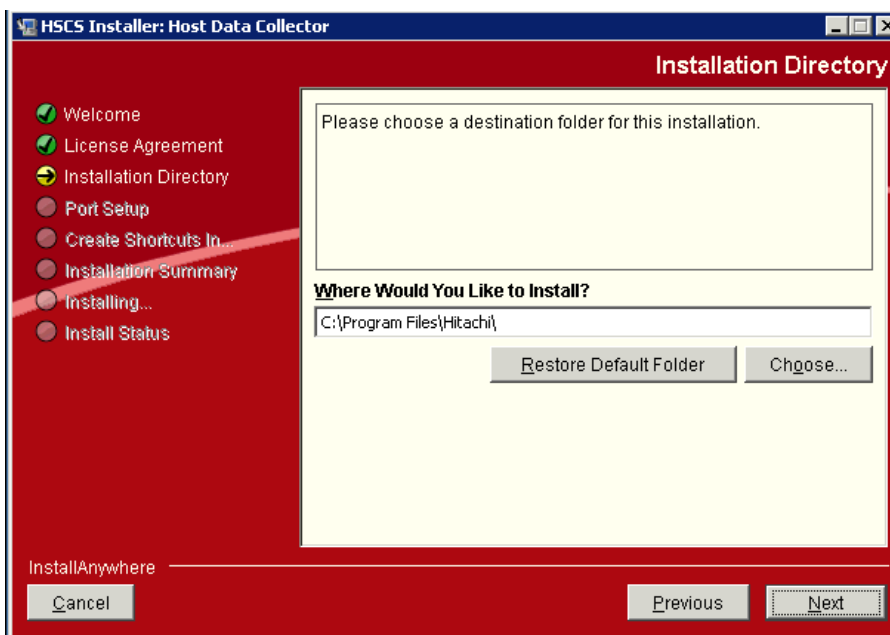


Figure 2-23: Specifying the Installation Directory

5. Specify the folder (directory) where you want to install the HSCS Host Data Collector. The default directory is:
C:\Program Files\Hitachi\

6. Click **Next**.

The Port Setup window appears (see [Figure 2-24](#)).

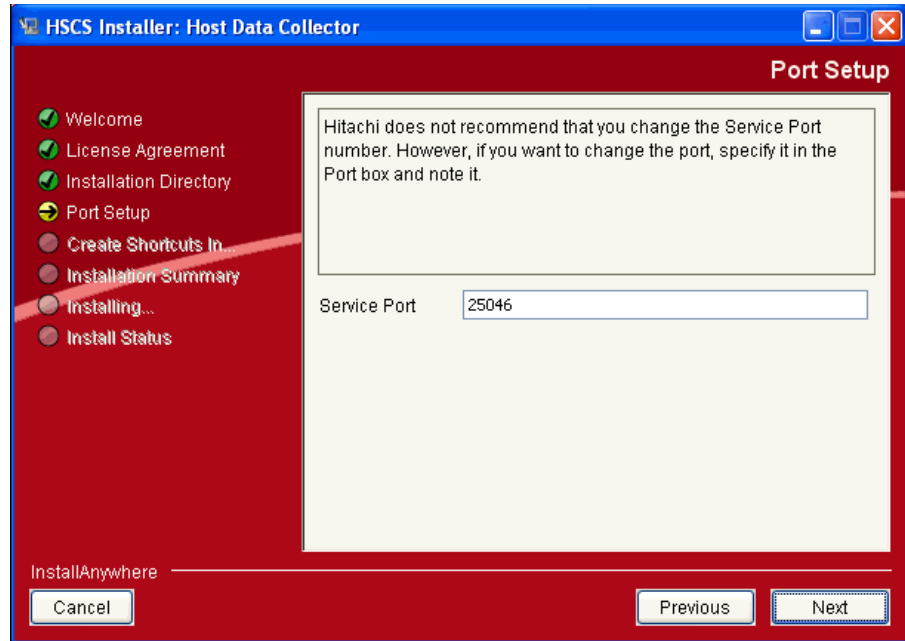


Figure 2-24: Specifying HSCS Host Data Collector Service Port

7. Note that the default Service port number is **25046**.

The Service port is the port on the HSCS Host Data Collector server that communicates with the HSCP Server.

Hitachi does not recommend that you change the HSCS Host Data Collector default port numbers. However, if you want to change the default ports, specify the new port numbers in the appropriate field and note it. This information is required for the Storage Command Portal configuration.

8. Click **Next**.

The HSCS HNAS Data Collector Port Setup window is displayed (see [Figure 2-25](#)).

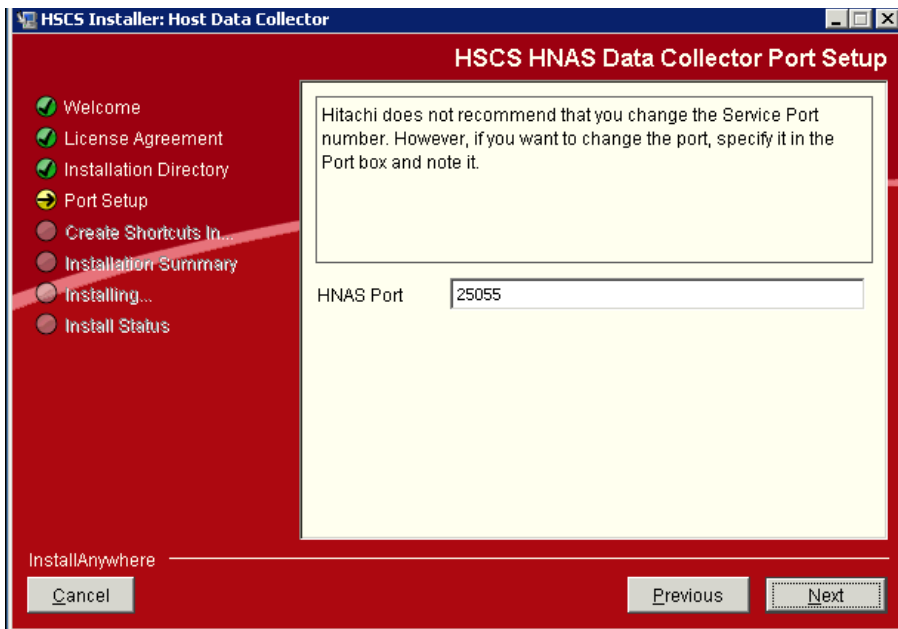


Figure 2-25: HNAS Data Collector Port Setup

The HSCS HNAS Data Collector port you specify here (**25055**) is the service port on the HSCS HNAS Data Collector that communicates with the HSCP Server.



NOTE: Hitachi recommends that you do not change the HSCS HNAS Data Collector port number.

9. Click **Next**.

The Create Shortcuts window appears (see [Figure 2-26](#)).

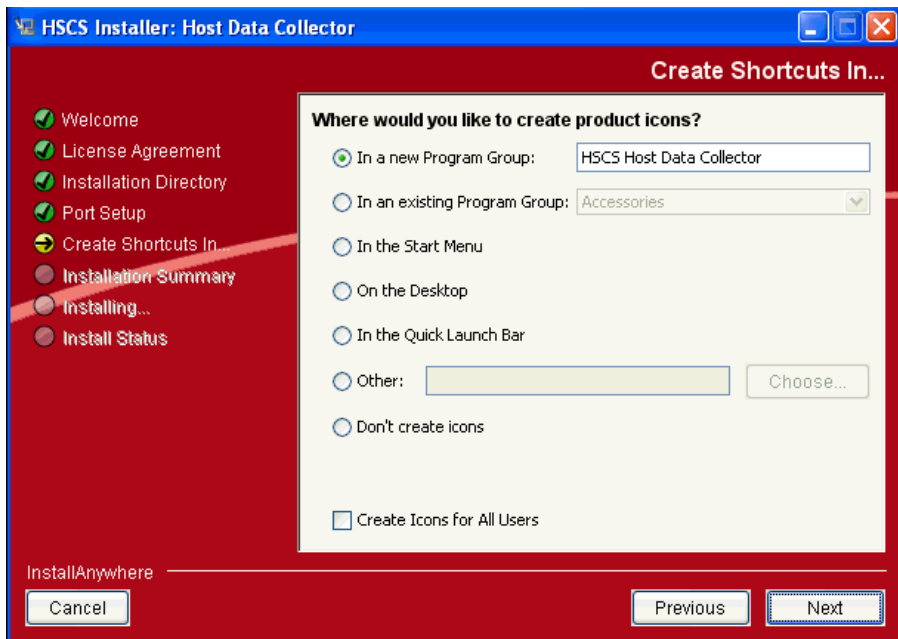


Figure 2-26: Specifying HSCS Host Data Collector Shortcuts

10. Select the appropriate shortcut option, then click **Next**.
The Installation Summary window appears (see [Figure 2-27](#)).

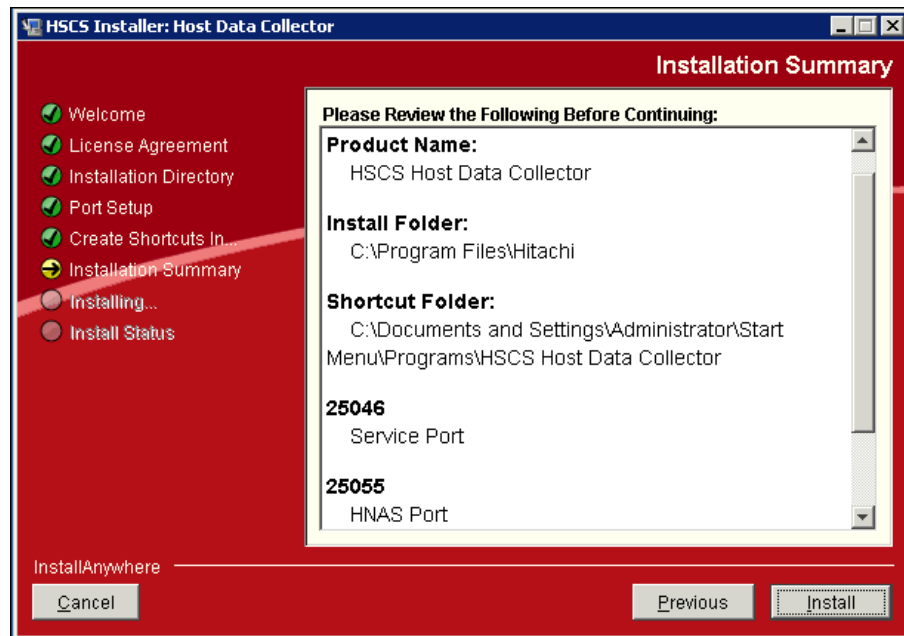


Figure 2-27: Host Data Collector Installation Summary

11. Review the summary to ensure the information is correct, and then click **Install**.

When the installation is completed, the Installation Completed Successfully window appears.(see [Figure 2-28](#)).

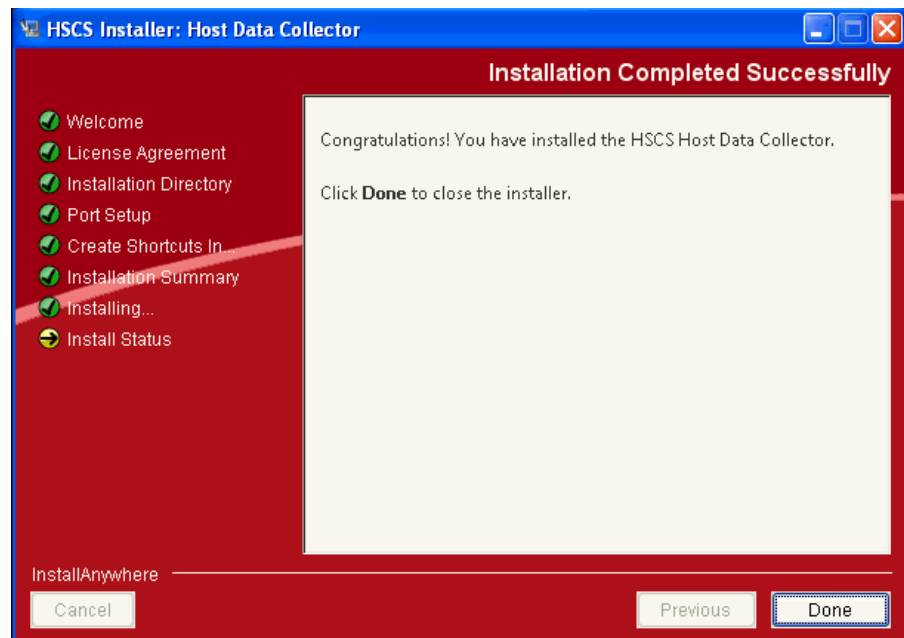


Figure 2-28: HSCS Host Data Collector Installation Completed

12. Click **Done**.

The HSCS Host Data Collector is installed and running.

13. Repeat this installation procedure on a server in each subnet where you need to discover the hosts.

Installed Services

After successfully installing the Hitachi Storage Command Portal server, the following services run:

- Hitachi Portal (Storage Command Portal Server)
- Hitachi Portal Database (Storage Command Portal database)
- Hitachi HSCS Host Data Collector

Installing the HSCP License Server on Solaris

To validate your Hitachi Storage Command Portal license key and user accounts, the LicenseServer must be installed on the same server that is used by the Hitachi Device Manager instance.



TIP: To install the components of the Hitachi Storage Command Portal (HSCP) on Solaris, you must have root privileges.



NOTE: The user accounts from the Device Manager instance where the License Server is installed are also used by HSCP. To utilize user accounts from a different Device Manager instance, install the License Server on the corresponding Device Manager instance host.

Only one running instance of the License Server is supported at a time.

To view related screen shots (for Windows), see [Installing the HSCP License Server on Windows on page 2-2](#).

Installation Prerequisites

Hitachi Device Manager (HDvM) must be installed on the same server and configured with the user accounts that will be used in HSCP.

Supported System Configurations

The License Server must be installed on the same server on which the Hitachi Device Manager is installed.



NOTE: You must use Hitachi Device Manager software version 6.2 or later.

HSCP supports two system configurations:

- Deploying the Hitachi Device Manager on its own server. This is the recommended deployment method.
- Deploying the Hitachi Device Manager and the Hitachi Tuning Manager on the same server. For details, refer to the Hitachi Device Manager and the Hitachi Tuning Manager documentation.

License Server Minimum Requirements (Solaris)

The HSCP License Server minimum requirements are as follows:

- CPU: SPARC
- Memory: 512 MB RAM free memory
- Hard drive: 1 GB free space



NOTE: Additional hardware requirements are imposed by the installed HDvM instances. Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager and the Hitachi Tuning Manager Installation and Configuration Guides.

Supported Platforms for the HSCP 6.4 License Server (Solaris)

**Table 2-5: HSCP 6.4 License Server Solaris
Platform Support Matrix**

Operating System	Edition/ Service Pack	Version of License Server
Solaris 9	SPARC	6.3, 6.4
Solaris 10	SPARC	6.3, 6.4

License Server Installation on Solaris

This section provides the installation procedures for using the command line and using X-Windows to install the License Server on Solaris:

Using the Command Line

To install the License Server on Solaris using the command line:

1. Ensure that all programs are closed.
2. Insert the Storage Command Portal CD in the Device Manager host and open the HSCP-Install-License-Server_<version>.bin -i console file.
3. Follow the on-screen instructions.

Using X-Windows

To install the License Server on Solaris using X-Windows:

1. Insert the Storage Command Portal CD in the Device Manager host and open the HSCP-Install-License-Server_6.4<release>.bin file. The Welcome window appears.
2. Press **Enter**. The License Agreement appears.
3. To accept the license agreement terms, type **Y**. The Installation Directory set up appears.
4. Specify the folder (directory) where you want to install the License Server. The default directory is:
/opt/Hitachi/Portal/LicenseServer
5. Press **Enter**. The Port Setup appears.
6. Hitachi does not recommend that you change the License Server default port number. However, if you want to change the default port (25035), specify the new port number and note it (this information is required for the Hitachi Storage Command Portal configuration).
7. Press **Enter**. The Login Disclaimer appears.
 - a. To display the login disclaimer, enter **1**.
 - b. To not display the login disclaimer, enter **2**.
8. Press **Enter**. The Installation Summary appears.
9. Review the summary to ensure the information is correct, and then press **Enter**.

When the installation is completed, the Installation Completed Successfully window appears. The License Server is installed on the Solaris system.

Installed Processes

After successfully installing the License Server, the following process runs:

- /opt/Hitachi/Portal/LicenseServer/bin/jsvc

Installing the Tuning Manager Data Collector on Solaris

Install a Tuning Manager Data Collector on every host on which Tuning Manager is installed.

To view related screen shots (for Windows), see [Installing the Tuning Manager Data Collector on Windows on page 2-8](#).



TIP: To collect subsystem data, you must configure a Tuning Manager Data Collector for the corresponding Tuning Manager instances that collect data from that subsystem.

Installation Prerequisites

- The Hitachi Tuning Manager must be configured to collect data from the subsystems of interest.
- You must use Hitachi Device Manager and Hitachi Tuning Manager software version 6.2 or later.

Supported System Configurations

HSCP supports two system configurations:

- Deploying the Hitachi Device Manager on its own server. This is the recommended deployment method.
- Deploying the Hitachi Device Manager and the Hitachi Tuning Manager on the same server. For details, refer to the Hitachi Device Manager and the Hitachi Tuning Manager documentation.

Tuning Manager Data Collector Minimum Requirements (Solaris)

The Tuning Manager Data Collector minimum requirements are as follows:

- CPU: SPARC
- Memory: 2.0 GB RAM free memory
- Hard drive: 60 GB free space



NOTE: Additional hardware requirements are imposed by the installed Hitachi Device Manager and Hitachi Tuning Manager instances. Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager and the Hitachi Tuning Manager Installation and Configuration Guides.

Supported Platform for the HSCP 6.4 Tuning Manager Data Collector (Solaris)

Table 2-6: HSCP 6.4 Tuning Manager Data Collector Solaris Platform Support Matrix

Operating System	Edition	Versions of HTnM Data Collector
Solaris 10	SPARC	6.3, 6.4

Tuning Manager Data Collector Installation on Solaris

This section provides the installation procedures for using the command line and using X-Windows to install the Tuning Manager Data Collector on Solaris:

Using the Command Line

To install the Tuning Manager Data Collector on Solaris using the command line:

1. Ensure that all programs are closed.
2. Insert the Storage Command Portal CD in the Tuning Manager host and open the HSCP-Install-HTnM_Data_Collector_6.4<release>.bin -i console file.
3. Follow the on-screen instructions.

Using X-Windows

To install the Tuning Manager Data Collector on Solaris using X-Windows:

1. Insert the Storage Command Portal CD in the Tuning Manager host. If the installer does not start automatically, browse the CD and open the HSCP-Install-HTnM_Data_Collector_6.4<release>.bin file.

The following message is displayed:

NOTICE: Before proceeding with the HTnM Data Collector installation, the installation utility must modify the Tuning Manager Performance-Reporter config.xml file, and shut down and then restart the Tuning Manager PerformanceReporter service. No action is required on your part.

2. Press **Continue** to resume Tuning Manager Data Collector installation. The Welcome window appears.
3. Press **Enter**. The License Agreement appears.
4. To accept the license agreement terms, type **Y**. The Installation Directory window appears.
5. Specify the folder (directory) where you want to install the Tuning Manager Data Collector. The default directory is:
`/opt/Hitachi/Portal/HTnMDataCollector`
6. Press **Enter**. The Port Setup appears.
7. Hitachi does not recommend that you change the Tuning Manager default port number. However, if you want to change the default port (25025), specify the new port number and note it (this information is required for the Hitachi Storage Command Portal configuration).
8. Press **Enter**. The Installation Summary appears.
9. Review the summary to ensure the information is correct, and then press **Enter**.
When the installation is completed, the Installation Completed Successfully message appears. The Hitachi Tuning Manager Data Collector is installed on the Solaris system.

Installed Processes

After successfully installing the Tuning Manager Data Collector, the following process runs:

```
/opt/Hitachi/Portal/HTnMDataCollector/bin/jsvc
```

Installing the HSCP Server on Solaris

The Hitachi Storage Command Portal server is the primary Hitachi Storage Command Portal component. The Hitachi Storage Command Portal server collects and correlates configuration and performance data, performs host discovery, and generates reports.

The HSCS Host Data Collector is installed with the HSCP Server. The HSCS Host Data Collector software allows HSCP to discover hosts on your network and their mapping to subsystem storage.



NOTE: The HSCS Host Data Collector on Solaris can discover only Unix hosts on your network and their mapping to subsystem storage.

By default, the HSCS Host Data Collector is disabled. For details on enabling the HSCS Host Data Collector, see Chapter 8, “Administering HSCP” in the Hitachi Storage Command Portal User’s Guide.

For information on installing the HSCS Host Data Collector on one or more subnets, see [Installing the HSCS Host Data Collector Server on Other Subnets on page 2-22](#).



TIP: You must use Device Manager and Tuning Manager Server version 6.2 or later.

Installation Prerequisites

- All Hitachi Device Manager instances from which you would like to collect data must be installed and configured.
- The License Server must be installed as described in [Installing the HSCP License Server on Windows on page 2-2](#) and [Installing the HSCP License Server on Solaris on page 2-28](#).
- You must install a Tuning Manager Data Collector module on the same server where the Tuning Manager is installed. The Tuning Manager Data Collector must be installed as described in [Installing the Tuning Manager Data Collector on Windows on page 2-8](#) and [Installing the Tuning Manager Data Collector on Solaris on page 2-31](#).
- Note the IP address, port number, user ID (which must have the Admin user role), and password of every Device Manager instance. This information is required for the Storage Command Portal configuration.
- To collect subsystem data, you must configure a Tuning Manager Data Collector on the HSCP server for each Tuning Manager instance that collects data from the corresponding subsystem.

Supported System Configurations

HSCP supports two system configurations:

- Deploying the Hitachi Device Manager and Hitachi Tuning Manager on separate servers is the recommended deployment method.
- Deploying the Hitachi Device Manager and the Hitachi Tuning Manager on the same server.



NOTE: Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager and the Hitachi Tuning Manager Installation and Configuration guides.

HSCP Server Minimum Requirements (Solaris)

The minimum requirements for the Hitachi Storage Command Portal Server on the Solaris SPARC system are as follows:

- CPU: SPARC
- Memory: 3.0 GB RAM free memory
- Hard drive: 60 GB free space

Supported Platform for the HSCP Server (Solaris)

Table 2-3 lists the Solaris platform on which the HSCP server can be installed:

Table 2-7: HSCP Server Platform Support Matrix

Operating System	Edition	Version of HSCP Server
Solaris 10	SPARC	6.3, 6.4

HSCP Server Installation on Solaris

This section provides the installation procedures for using the command line and using X-Windows to install the HSCP Server on Solaris:

Using the Command Line

To install the HSCP Server on Solaris using the command line:

1. Ensure that all programs are closed.
2. Insert the Storage Command Portal CD in the host and open the HSCP-Install-Server_6.4<release>.bin -i console file. The Welcome message appears.
3. Follow the on-screen instructions.

Using X-Windows

To install the HSCP Server on Solaris using X-Windows:

1. Insert the Storage Command Portal CD in the host and open the HSCP-Install-Server_6.4<release>.bin file. The Welcome window appears.
2. Press **Enter**. The License Agreement appears.
3. To accept the license agreement terms, type **Y**. The Installation Directory set up appears.
4. Specify the folder (directory) where you want to install the HSCP Server. The default directory is:

/opt/Hitachi/Portal

5. Press **Enter**. The Port Setup appears.

Hitachi does not recommend that you change the HSCP Server default port number. However, if you want to change the default port (25015), specify the new port and note it (this information is required for the Hitachi Storage Command Portal configuration).

6. Press **Enter**.

The HSCS Host Data Collector Port Setup is displayed.

The HSCS Host Data Collector Port you specify here (**25046**) is the service port on the HSCS Host Data Collector that communicates with the HSCP Server.

Hitachi does not recommend that you change the HSCS Host Data Collector port number. See also [Installing the HSCS Host Data Collector Server on Other Subnets on page 2-22](#) and [Figure 2-24 on page 2-25](#).

7. Press **Enter**.

The HSCS HNAS Data Collector Port Setup window is displayed.

The HSCS HNAS Data Collector Port you specify here (**25055**) is the service port on the HSCS HNAS Data Collector that communicates with the HSCP Server.



NOTE: Hitachi recommends that you do not change the HSCS HNAS Data Collector port number.

8. Press **Enter**.

9. The Login Disclaimer appears.

a. To display the login disclaimer, enter **1**.

b. To not display the login disclaimer, enter **2**.

10. Press **Enter**. The Installation Summary appears.

11. Review the summary to ensure the information is correct, and then press **Enter**.

When the installation is completed, the Installation Completed Successfully message appears. The HSCP Server is installed on the Solaris system.

Starting and Stopping the HSCP Server on Solaris

In Solaris, you can start and stop the HSCP Server by using the *hscpPortallauncher* script, which can be found under <INSTALL_HOME>/bin.

- To start the HSCP Server under Solaris, execute the following command:

sh hscpPortallauncher.sh start

- To stop the HSCP Server under Solaris, execute the following command:

sh hscpPortallauncher.sh stop

Installing the HSCS Host Data Collector Server on Solaris

A default HSCS Host Data Collector is preconfigured and available to discover hosts on the HSCP server's subnet. If you would also like to discover hosts on other subnets, you must install and configure an HSCS Host Data Collector for each subnet.

- If you need to discover hosts on the same network as the HSCP server, simply activate the HSCS Host Data Collector after you install the HSCP server.
- For information on activating the HSCS Host Data Collector, see Chapter 8, "Administering HSCP" in the Hitachi Storage Command Portal User's Guide.
- If you need to discover hosts on other subnets, you must install one instance of the HSCS Host Data Collector on every subnet containing hosts of interest. This section describes the procedure for installing an HHDC instance on a server in the subnet of interest.

All data on discovered hosts is forwarded to the HSCP server when all HSCS Host Data Collectors are properly configured.

The HSCS Host Data Collector Server can be installed on Windows and Solaris systems. The HSCS Host Data Collector Server discovers Windows, Solaris, Linux, VMWare, and Hyper-V hosts.

Installation Prerequisites

The HSCS Host Data Collector is installed as part of the HSCP Server installation.

When the Host Data Collector is installed on its own server to discover hosts on a different subnet, the HSCP Server must already be installed and configured.

HSCS Host Data Collector Minimum Requirements

The HSCS Host Data Collector server minimum requirements are as follows:

- CPU (Windows): Dual-core x86 processor
- CPU (Solaris): Solaris 9 or Solaris 10 on SPARC
- Memory: 2.0 GB RAM free memory
- Hard drive: 60 GB free space

Supported Platforms for the HSCP 6.4 HSCS Host Data Collector (Solaris)

Table 2-4 lists the Solaris platforms on which the HSCS Host Data Collector can be installed:

Table 2-8: HSCP 6.4 HSCS Host Data Collector Platform Support Matrix

Operating System	Edition	HTnM Data Collector	Version of Host Data Collector
Solaris 9	SPARC	Yes	6.3, 6.4
Solaris 10	SPARC	Yes	6.3, 6.4

HSCS Host Data Collector Installation on Solaris

This section provides the installation procedures for using the command line and using X-Windows to install the HSCS Host Data Collector on Solaris:

Using the Command Line

To install the HSCS Host Data Collector on Solaris using the command line:

1. Insert the Storage Command Portal CD in the host and open the HSCS-Install-Host-Data-Collector_6.4<release>.bin -i console file. The Welcome window appears.
2. Follow the on-screen instructions.

Using X-Windows

To install the HSCS Host Data Collector on Solaris using X-Windows:

1. Insert the Storage Command Portal CD in the host. If the installer does not start automatically, browse the CD and open the HSCS-Install-Host-Data-Collector_6.4<release>.bin file.

The Welcome message appears.

2. Press **Enter**.

The License Agreement appears.

3. To accept the license agreement terms, press **Enter**.

The Installation Directory set up appears.

4. Specify the folder (directory) where you want to install the Host Data Collector. The default directory is:

/opt/Hitachi/Portal

5. Press **Enter**.

The HSCS Host Data Collector Port Setup is displayed.

The HSCS Host Data Collector Port you specify here (**25046**) is the service port on the HSCS Host Data Collector that communicates with the HSCP Server.

Hitachi does not recommend that you change the HSCS Host Data Collector port number. See also [Installing the HSCS Host Data Collector Server on Other Subnets on page 2-22](#).

6. Specify the service port number, then press **Enter**.

The HSCS HNAS Data Collector Port Setup window is displayed.

The HSCS HNAS Data Collector Port you specify here (**25055**) is the service port on the HSCS HNAS Data Collector that communicates with the HSCP Server.



NOTE: Hitachi recommends that you do not change the HSCS HNAS Data Collector port number.

7. Press **Enter**.

The Installation Summary appears.

8. Review the Installation Summary to ensure the information is correct, and then press **Enter**.

When the installation is completed, the Installation Completed Successfully message appears. The HSCS Host Data Collector is installed on the Solaris system.

Starting and Stopping the HSCS Host Data Collector on Solaris

After installing the HSCS Host Data Collector, you will need to start it as described below. Should you need to stop it at some point, you can do so by performing the action described below.

Starting a Standalone Host Data Collector on Solaris

To start a standalone Host Data Collector, execute the command:

```
sh <INSTALL_HOME>/Host Data Collector/tomcat/bin startup.sh
```

Stopping a Standalone Host Data Collector on Solaris

To stop a standalone Host Data Collector, execute the command:

```
sh <INSTALL_HOME>/Host Data Collector/tomcat/bin shutdown.sh
```

Removing the HSCP Components

Removing the Storage Command Portal server software and its components also deletes logs and database files. To preserve this information, use the Database Backups feature to back up your data before you proceed.

For more information about backing up and restoring data, see Chapter 8, "Administering HSCP" in the Hitachi Storage Command Portal User's Guide.

Remove the HSCP components in the following order:

1. Hitachi Storage Command Portal Tuning Manager Data Collector
2. Hitachi Storage Command Portal Server
3. Hitachi Storage Command Portal License Server
4. Hitachi HSCS Host Data Collector Server

Removing the HSCP Components on Windows

To remove the Hitachi Storage Command Portal and associated components on Windows, do the following in the order listed.

Deleting a Tuning Manager Data Collector from HSCP

To delete a Tuning Manager Data Collector from HSCP:

1. Log into the Storage Command Portal with the Admin user role.
2. On the Navigation Pane, click **Administration**.
3. Under Command Portal Management, click **Data Collectors**.
4. Select the check box next to the Tuning Manager (HTnM) Data Collector, and click **Delete**.

For more information about deleting Tuning Manager Data Collectors, see the Hitachi Storage Command Portal User's Guide or Online Help.

Removing a Tuning Manager Data Collector From an HTnM Server

To remove a Tuning Manager Data Collector from a Tuning Manager server:

1. On the Start menu, select **Control Panel**.
2. Open **Add or Remove Programs** and select **Hitachi Command Portal HTnM Data Collector**.
3. Follow the on-screen instructions.
4. When you have finished, restart your computer.

Removing the HSCP Server

To remove the HSCP Server:

1. On the Start menu, select **Control Panel**.
2. Open **Add or Remove Programs** and select **Hitachi Command Portal Server**.
3. Follow the on-screen instructions.
4. When you have finished, restart your computer.

Removing the Storage Command Portal License Server

To remove the Storage Command Portal License Server:

1. On the Start menu, select **Control Panel**.
2. Open **Add or Remove Programs** and select **Hitachi Command Portal License Server**.
3. Follow the on-screen instructions.
4. When you have finished, restart your computer.

Removing the HSCP Components on Solaris

To remove the Hitachi Storage Command Portal server software and associated components installed on Solaris systems, do the following tasks in the order listed.



NOTE: To perform this task, you must have *root* privileges.

Deleting a Tuning Manager Data Collector from the HSCP Server (Solaris)

To delete a Tuning Manager Data Collector from the HSCP Server:

1. Log into the Storage Command Portal with the Admin user role.
2. On the Navigation Pane, click **Administration**.
3. Under Command Portal Management, click **Data Collectors**.
4. Select the check box next to the Tuning Manager Data Collector, and click **Delete**.

For more information about Tuning Manager Data Collectors, see the Hitachi Storage Command Portal User's Guide or check Online Help.

Removing a Tuning Manager Data Collector From an HTnM Server (Solaris)

To remove a Tuning Manager Data Collector from a Tuning Manager server:

Using the Command Line

If you are using the command line, open the *-i console* file in the following directory:

```
/opt/Hitachi/Portal/HTnMDataCollector/Uninstall_HTnMDataCollector/  
Uninstall_HTnM_Data_Collector
```

and then follow the on-screen instructions.

Using X-Windows

If you are using X-Windows, open the *Uninstall_HTnM_Data_Collector* file in the following directory:

```
/opt/Hitachi/Portal/HTnMDataCollector/Uninstall_HTnMDataCollector/
```

and then follow the on-screen instructions.

When you have finished, restart your computer.

Removing the Storage Command Portal License Server (Solaris)

To remove the Storage Command Portal License Server:

Using the Command Line

If you are using the command line, open the *-i console* file in the following directory:

```
/opt/Hitachi/Portal/LicenseServer/Uninstall_LicenseServer/  
Uninstall_License_Server
```

and then follow the on-screen instructions.

Using X-Windows

If you are using X-Windows, open the *Uninstall_License_Server* file in the following directory:

```
/opt/Hitachi/Portal/LicenseServer/Uninstall_LicenseServer/
```

and then follow the on-screen instructions.

When you have finished, restart your computer.

Configuration

This chapter describes how to configure the Hitachi Storage Command Portal (HSCP) and associated components. This chapter also includes information about troubleshooting host discovery timeout issues, as well as providing Host Data Collector, subsystem, performance data, and status data timeout properties.

This chapter contains the following sections:

- ❑ [Overview](#)
- ❑ [Specifying License Keys](#)
- ❑ [Modifying HSCP Server Settings](#)
- ❑ [Restarting or Stopping the HSCP Server](#)
- ❑ [About Configuring Data Collectors](#)
- ❑ [Troubleshooting License Server or HTnM Data Collector Firewall Issues](#)
- ❑ [Troubleshooting Host Discovery Timeout Issues](#)
- ❑ [Host Data Collector Timeout Properties](#)
- ❑ [Subsystem Data Collector Timeout Properties](#)
- ❑ [Performance Data Retention Timeout Properties](#)
- ❑ [Status Data Retention Timeout Properties](#)
- ❑ [Configuring Email Servers](#)
- ❑ [Viewing Logs](#)

Overview

After deploying the Storage Command Portal, configure it so that it can communicate with its components (License Server and HTnM Data Collector). This includes configuring:

- License Server addresses for validating license keys.
- Hitachi Device Manager (HDvM) instances for gathering configuration data.



NOTE: The HNAS Data Collector is installed automatically when you install the HSCP Server on Windows or Solaris.

- Hitachi Tiered Storage Manager Data Collectors.
- Hitachi Tuning Manager (HTnM) Data Collectors for gathering performance data.

Note that configuration settings are accessed in the Hitachi Storage Command Portal Graphical User Interface (GUI).

Configuration Prerequisites

- Every relevant Device Manager instance must be running. Note the IP address, port number, username, and password of every Device Manager instance (this information is required for the Storage Command Portal configuration). You must have administrator privileges for every Device Manager resource.
- A Tuning Manager Data Collector must be installed on every host on which Tuning Manager is installed.

Note the IP address and port number of every Tuning Manager Data Collector (this information is required for the Storage Command Portal configuration).

- The License Server must be running on only one Device Manager host. Note the IP address and port number of the License Server (this information is required for the Storage Command Portal configuration).

Specifying License Keys

Upon initial login to the Hitachi Storage Command Portal for the first time, you must specify a valid license key. After the license key is initially specified, it does not have to be updated unless it expires or you add data collector licenses.

To specify the license key:

1. Log into HSCP.
2. On the Menu bar, click **License**.

The License Configuration window appears (see [Figure 3-1](#)).

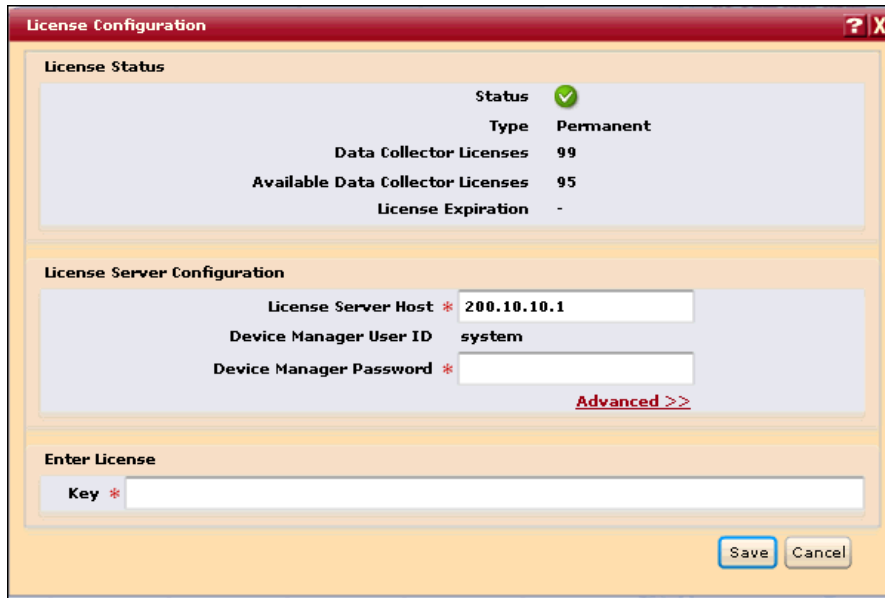


Figure 3-1: License Configuration Dialog Box

3. Under **License Server Configuration**, specify the appropriate information:

- **License Server Host.** The IP address or name of the Device Manager server where the License Server is installed.



NOTE: The License Server must be installed on the same server that the Hitachi Device Manager (HDvM) uses for its user account information.

- **Device Manager User ID.** The Device Manager instance user account used by the License Server. The user ID is always *system* (you cannot change it).
 - **Device Manager Password.** The password of the *system* user account in the Device Manager instance used by the License Server.
 - **Device Manager HTTP (Web) Server Port** (optional). Click **Advanced** and specify the Device Manager HTTP port if you changed it in Device Manager. The default port is **2001**. The Device Manager HTTP port is used by Device Manager for Extensible Markup Language (XML) Application Programming Interface (API) requests.
 - **License Server Port** (optional). Click **Advanced** and specify the license server port if you changed it during installation. The default port is **25035**.
4. Under **Enter License**, in the *Key* field, specify the Hitachi Storage Command Portal license key.
5. When you have finished, click **OK**. The first time you log in, you are also prompted for your email address. This is the email used to send alerts and reports.

After your license information is validated, you are logged in and your User ID (*system*) appears on the Menu bar.

Modifying HSCP Server Settings

This section describes how to change the following HSCP Server settings: [Data Retention](#), [Data Refresh Timeout](#), [Login Window Legal Disclaimer](#), and [Storage Command Portal Email Address](#).

Please note the following:

- The directories and values listed in the examples are defaults.
- Storage Command Portal server settings can only be accessed on Windows.

Data Retention

Data retention settings are stored in the `trex.properties` file and the default Windows directory is:

```
<HSCP_INSTALL_HOME>\conf\trex.properties
```

Device Manager Configuration Data Retention

By default, the configuration data files retrieved from Device Manager instances are deleted after two days. To change the number of days that the configuration data is retained, modify the following property:

`hscp.conf-data.files.cleanup.qualifying.age.in.days` property in the `trex.properties` file.

Performance Data Retention

By default, the performance data files retrieved from Tuning Manager instances are deleted after two days. To change the number of days that the performance data is retained, modify the following property:

`hscp.perf-data.files.cleanup.qualifying.age.in.days` property in the `trex.properties` file.

Tuning Manager Database Performance Data Retention

By default, the database performance data retrieved from Tuning Manager instances is deleted after seven days. To change the number of days that the performance data is retained in the Storage Command Portal database, modify the following property:

hscp.db.perf-data.cleanup.qualifying.age.in.days property in the *trex.properties* file.



NOTE: This setting affects only the I/O Utilization Trend report.

Data Refresh Timeout

The data refresh timeout (time allowed for the performance and configuration data to be gathered, processed, and refreshed) setting is stored in the *trex.properties* file and the default Windows directory is `C:\Program Files\Hitachi\Portal\conf\trex.properties`

By default, the data refresh timeout is 7 hours. To change this timeout, modify the following property:

job.process.timeout.in.min property in the *trex.properties*

Login Window Legal Disclaimer

The login window legal disclaimer settings are stored in the *trex.properties* file and the default Windows directory is:

`<HSCP_INSTALL_HOME>\conf\trex.properties`

Hiding or Showing the Legal Disclaimer on the Login Window

By default, the legal disclaimer appears when you log in.

- To hide the legal disclaimer, set the *show.license.agreement=false* property.
- To show the legal disclaimer, set the *show.license.agreement=true* property.

Changing the Legal Disclaimer Text

To change the legal disclaimer text, edit the `LICENSE.txt` file.

Storage Command Portal Email Address

When alerts or scheduled reports are sent, the email address that appears in the From box of the Storage Command Portal email messages is `noreply@hscp.tcc` by default. This setting is stored in the `trex.properties` file and the default Windows directory is:

```
<HSCP_INSTALL_HOME>\conf\trex.properties
```

Changing the Storage Command Portal Email Address

To change the email address that appears in the From box of the Storage Command Portal email messages, modify the `hscp.email.from.address` property.

See also [Configuring Email Servers on page 3-11](#).

Restarting or Stopping the HSCP Server

To put these timeout value changes in effect, restart the HSCP Server as follows:

Restarting Services on Windows

For Windows, restart the services from the service panel in the following order:

1. HSCS Host Data Collector
2. HSCP Server

Restarting Services on Solaris

Use the `hscpPortallauncher` script under `<HSCP_INSTALL_HOME>/bin` to restart the services under Solaris. The following command should be executed in the specified order:

1. To restart the HSCS Host Data Collector:
sh hscpPortallauncher -restart hostdc
2. To restart the HSCP Server:
sh hscpPortallauncher -restart hscp

About Configuring Data Collectors

- After you specify a valid Storage Command Portal license, configure the Device Manager and Tuning Manager Data Collectors to retrieve configuration and performance subsystem data from the corresponding Device Manager and Tuning Manager instances.
- After you configure the Device Manager, Tuning Manager, and Tiered Storage Data Collectors, the Storage Command Portal starts to retrieve your storage information. This can take up to a couple of hours.

- For information about configuring Device Manager, Tuning Manager, and Tiered Storage Manager Data Collectors or updating your settings, see “Configuring Subsystem Data Collection” in Chapter 8, “Administering HSCP” in the Hitachi Storage Command Portal User’s Guide.
- For information about configuring Host Data Collectors, see “Configuring and Launching HSCS Host Data Collectors” in Chapter 8, “Administering HSCP” in the Hitachi Storage Command Portal User’s Guide.

Troubleshooting License Server or HTnM Data Collector Firewall Issues

Trouble connecting to the License Server or the Tuning Manager Data Collector may be caused by a firewall blocking IP traffic to the port on which the License Server and Tuning Manager Data Collector are listening.

To troubleshoot this problem:

1. Make sure that the Tuning Manager Data Collector and the License Server service is up and running.

For Windows:

Check that the following services are running in the Services Control Panel:

- “Hitachi Portal HTnM Data Collector” for the Tuning Manager Data Collector
- “Hitachi Portal HTnM Collector” for the Tuning Manager Data Collector
- “Hitachi Portal License Server” for the License Server

For Solaris:

Check that the following services are running in the Services Control Panel:

Use the **ps** command to check that the following processes are running:

- `<HSCP_INSTALL_HOME>/HTnMDataCollector/bin/jsvc` for the Tuning Manager Data Collector
 - `<HSCP_INSTALL_HOME>/LicenseServer/bin/jsvc` for the License Server
2. Make sure that your firewall settings allow communication with the License Server and Tuning Manager Data Collector services.
 - For the License Server, make sure your firewall allows communication on the port you configured during installation (default = 25035) using the TCP protocol.
 - For the Tuning Manager Data Collector, make sure your firewall allows communication on the port you configured during installation (default = 25025) using the TCP protocol.

Troubleshooting Host Discovery Timeout Issues

The host discovery process starts with the HSCP Server instructing the HSCS Host Data Collector to discover the information for a particular host. The Host Data Collector then proceeds to perform four operations, each of which have a certain number of seconds by default to perform these operations before the operation times out:

- Discovering the presence of the target host on the network.
- Logging in to the target host.
- Gathering the target host's file system and storage utilization configuration data.
- Sending the target host's discovery data to the HSCP Server.

Adjusting the Host Discovery Timeout Properties

You may need to adjust these default timeout property settings to be longer if the host discovery or data collection process times out. Note that doing so may extend the amount of time the Host Data Collector will need in order to gather data from the hosts of interest on your network.

You can adjust these timeout settings by editing the following properties:

- **Discovering the presence of the target host on the network**
 - Property: *jobEngineThreadAliveTimeInSecForHostDiscovery*
 - Default = 120 seconds
 - Location: *<HSCP_INSTALL_HOME>\conf\trex.properties* file
- **Logging in to the target host**
 - Property: *jobEngineThreadAliveTimeInSecForHostCapabilities*
 - Default = 60 seconds
 - Location: *<HSCP_INSTALL_HOME>\conf\trex.properties* file
- **Gathering the target host's file system and storage utilization configuration data**
 - Property: *jobEngineThreadAliveTimeInSecForHostDataGather*
 - Default = 120 seconds
 - Location: *<HSCP_INSTALL_HOME>\conf\trex.properties* file
- **Sending the target host's discovery data to the HSCP Server**
 - Property: *process.timeout.limit.sec*
 - Default = 60 seconds

- Location (Windows): <HSCP_INSTALL_HOME>\Host Data Collector\conf\alps.properties file
- Location (Solaris): <HSCP_INSTALL_HOME>/HostDataCollector/conf\alps.properties file



NOTE: If you increase the timeout value for any of the other timeout properties listed here, you must also increase the timeout value for the *process.timeout.limit.sec* property.

Host Data Collector Timeout Properties

This section describes the Host Data Collector timeout properties. The location for these properties is:

<HSCP_INSTALL_HOME>\conf\trex.properties file

- **Host scan**

- Property: jobEngineThreadAliveTimeInSecForHostScan
- Default = 120 seconds

- **Host validation**

- Property: jobEngineThreadAliveTimeInSecForHostValidation
- Default = 120 seconds

- **Host Data Collector lock and unlock**

- Property: jobEngineThreadAliveTimeInSecForHostCollectorLockUnlock
- Default = 120 seconds

- **HNAS/SMU enable/disable**

- Property: jobEngineThreadAliveTimeInSecForHnasSmuEnableDisable
- Default = 120 seconds

Subsystem Data Collector Timeout Properties

This section describes the Subsystem Data Collector timeout properties. The location for these properties is:

<HSCP_INSTALL_HOME>\conf\trex.properties file

- **Subsystem scan**

- Property: jobEngineThreadAliveTimeInSecForScan
- Default = 60 seconds

- **Data gather operation**
 - Property: jobEngineThreadAliveTimeInSecForDataGather
 - Default = 120 seconds
- **Device Manager refresh**
 - Property: jobEngineThreadAliveTimeInSecForHdvmRefresh=120
 - Default = 120 seconds

Performance Data Retention Timeout Properties

This section describes the performance data retention timeout properties. The location for these properties is:

<HSCP_INSTALL_HOME>\conf\trex.properties file

- **LDEV I/O data retention**
 - Property: ldev.io.data.retention.days
 - Default = 7 days
- **Channel microprocessor performance data retention**
 - Property: champ.perf.data.retention.days
 - Default = 7 days
- **Parity group I/O data retention**
 - Property: paritygroup.io.data.retention.days
 - Default = 7 days
- **Subsystem cache busy data retention**
 - Property: clpr.busy.data.retention.days
 - Default = 7 days
- **HNAS performance data retention**
 - Property: hnas.perf.data.retention.days=7
 - Default = 7 days

Status Data Retention Timeout Properties

This section describes the status data retention timeout properties. The location for these properties is:

<HSCP_INSTALL_HOME>\conf\trex.properties file

- **SLO status data retention**
 - Property: slo.status.data.retention.days=30
 - Default = 30 days
- **Data collector proxy status data retention**
 - Property: collector.proxy.status.data.retention.days=7
 - Default = 7 days

Configuring Email Servers

The Simple Mail Transfer Protocol (SMTP) server is used to email Service Level Objective (SLO) alerts and scheduled reports.

To modify your email server:

1. On the Navigation Pane, click **Administration**.
2. Under Settings, click **Email Server** and modify the appropriate information.
 - **Host**. The IP address or Domain Name System (DNS) of the host using the email server.
 - **Port** (optional). The email server port number. The default is **25**.
3. To authenticate users and encrypt emails sent from the Hitachi Storage Command Portal, select the **Log in using account** checkbox, and specify the appropriate information.
 - **User ID**. The user ID associated with the SMTP server.
 - **Password**. The password associated with the SMTP server.
 - **Confirm Password**.
4. When you have finished, click **Save**.

Viewing Logs

Every basic user action is logged so that you can view changes made in the Storage Command Portal. For example, you can view when a user logged in, when the data collection started, and who modified business views, folders, applications, and reports.

Please note the following:

- Logs only capture Storage Command Portal actions. You cannot view changes made on Device Manager instances.
- New log files are started daily.
- Logs can only be accessed on Windows.

To view Storage Command Portal logs:

In Windows, open the hscp_audit.log file. The default directory is:

C:\Program Files\Hitachi\Portal\logs\hscp_audit.log

Server Minimum Requirements for HSCP Components

This appendix documents the server minimum requirements for the installed Hitachi Storage Command Portal 6.4 components.

License Server Minimum Requirements

The License Server minimum requirements are as follows:

- CPU (Windows): Dual-core x86 processor
- CPU (Solaris): SPARC
- Memory: 512 MB RAM free memory
- Disk space: 1 GB free space



NOTE: Additional hardware requirements are imposed by the installed HDvM instances. Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager Installation and Configuration Guide and the Hitachi Tuning Manager Installation and Configuration Guide.

Tuning Manager Data Collector Minimum Requirements

The Tuning Manager Data Collector minimum requirements are as follows:

- CPU (Windows): Dual-core x86 processor
- CPU (Solaris): SPARC
- Memory: 2.0 GB RAM free memory
- Disk space: 60 GB free space



NOTE: Additional hardware requirements are imposed by the installed HDvM instances. Hardware requirements vary depending on the number of subsystem resources. For more information, see the Hitachi Device Manager Installation and Configuration Guide and the Hitachi Tuning Manager Installation and Configuration Guide.

Hitachi Storage Command Portal Server Minimum Requirements

The minimum requirements for the Hitachi Storage Command Portal Server are as follows:

- CPU (Windows): Dual-core x86 processor
- CPU (Solaris): SPARC
- Memory: 3.0 GB RAM free memory
- Disk space: 60 GB free space

HSCS Host Data Collector Minimum Requirements

The HSCS Host Data Collector server minimum requirements are as follows:

- CPU (Windows): Dual-core x86 processor
- CPU (Solaris): SPARC
- Memory: 2.0 GB RAM free memory
- Disk space: 60 GB free space

HSCS Host Data Collector Support Matrix

This appendix provides the HSCS Host Data Collector support matrix for the following network elements:

- [Server Support Matrix](#)
- [Host Bus Adapter \(HBA\) Support Matrix](#)
- [Storage Subsystem Support Matrix](#)
- [Network Attached Storage \(NAS\) Support Matrix](#)
- [Volume Manager Support Matrix](#)

Server Support Matrix

Table B-1 provides the support matrix for the servers supported by the HSCS Host Data Collector.

Table B-1: HSCS Host Data Collector Server Support Matrix

OS Name	Server Version	Service Pack	Architecture
Windows			
Windows 2000	<ul style="list-style-type: none"> Professional Server Advanced Server 	SP2	IA32
		SP3	IA32
	<ul style="list-style-type: none"> Datacenter Server 	SP4	IA32
Windows Server 2003	<ul style="list-style-type: none"> Standard Edition Web Edition 	No SP	x86 / IPF
	<ul style="list-style-type: none"> Enterprise Edition Datacenter Edition 	SP1	x86 / IPF
		SP3	x86 / IPF
	<ul style="list-style-type: none"> R2 Standard Edition R2 Enterprise Edition 	No SP	x86
		SP1	x86
	<ul style="list-style-type: none"> R2 Datacenter Edition 	SP2	x86
	<ul style="list-style-type: none"> R2 Standard x64 Edition R2 Enterprise x64 Edition 	No SP	x86
			x64
	<ul style="list-style-type: none"> R2 Datacenter x64 Edition 		
Windows Vista	<ul style="list-style-type: none"> Business Edition Enterprise Edition Ultimate Edition 	No SP	<ul style="list-style-type: none"> x86 x64
Windows Server 2008	<ul style="list-style-type: none"> Standard Edition Enterprise Edition Datacenter Edition 	No SP	<ul style="list-style-type: none"> x86 x64
	<ul style="list-style-type: none"> Itanium-based systems 	No SP	<ul style="list-style-type: none"> IPF
Solaris			
Solaris	7, 8, 9		SPARC 32 bit, 64 bit
	10		AMD 64 64 bit
Linux			
Red Hat ELAS or ELES	3	<ul style="list-style-type: none"> x86 IPF x64 	
	4	<ul style="list-style-type: none"> x86 IPF x64 	
	5		

Table B-1: HSCS Host Data Collector Server Support Matrix (Continued)

OS Name	Server Version	Service Pack	Architecture
VMWare			
ESX	3.5		
Hyper-V			
Hyper-V			
AIX			
AIX	5.1		POWER <ul style="list-style-type: none"> • 32 bit • 64 bit
	5.2		POWER <ul style="list-style-type: none"> • 32 bit • 64 bit
	5.3		POWER <ul style="list-style-type: none"> • 32 bit • 64 bit
HP-UX			
HP-UX	11		PA-RISC <ul style="list-style-type: none"> • 32 bit • 64 bit
	11iv1		PA-RISC <ul style="list-style-type: none"> • 32 bit • 64 bit
	11iv2		IPF
			PA-RISC 64 bit
	11iv3		IPF
		PA-RISC 64 bit	
Tru64			
Tru64			
Hypervisor			
Hypervisor			

Host Bus Adapter (HBA) Support Matrix

Specific OS version information is not needed as the HBA Gather utility has been developed based on an SNIA-compliant API.

HBA information gathering operations work if the HBA vendor provides an HBA LIBRARY that is SNIA compliant. Refer to the following link for information about HBA APIs (Host Bus Adapter Application Programming Interfaces):

http://www.snia.org/tech_activities/hba_api/

Table B-2 provides the HBA support matrix for the HSCS Host Data Collector.

Table B-2: HSCS Host Data Collector HBA Support Matrix

OS	Host Bus Adapter	Additional Information
Solaris (SPARC)	JNI FCI-1063	When you use JNI HBAs, the API library accompanying the driver is required. The HBA API library (JNI SNIA Fibre Channel HBA LIBRARY v1.0.0.0.b.011205-15 or later) provided by the HBA vendor is required.
	JNI FC64-1063	
	JNI FCE-6410	
	JNI FCE-6460	
	QLogic QLA2200	When you use QLogic HBAs, the API library accompanying the driver is required. The HBA API library (QLogic SDM Library 1.25 or later) provided by the HBA vendor is required.
	Sun HBA	
Solaris (x64)	QLogic QLA2310	
	Sun HBA	
HP-UX	HP A3404A	
	HP A3591B	
	HP A3636A	
	HP A3740A	
	HP A5158A	
	HP A6684A	
	HP A6685A	
	HP A6795A	
	HP A6826A	
	HP A9784A	
AIX	IBM6227	
	IBM6228	
Linux	QLogic QLA2200F	When you use QLogic HBAs, the API library accompanying the driver is required. The HBA API library provided by the HBA vendor is also required.
	QLogic QLA23xx	
	QLogic QLA24xx	
	Hitachi GV-CC62G1	

Table B-2: HSCS Host Data Collector HBA Support Matrix

OS	Host Bus Adapter	Additional Information
Windows	Emulex LP8000	When you use Emulex HBAs, the API library accompanying the driver is required. The HBA API library provided by the HBA vendor is also required.
	Emulex LP9002L	
	Emulex LP9002DC	
	Emulex LP9802	
	QLogic QLA23xx	Download the Fibre Channel Information Tool from the URL below to acquire WWN information about the HBA, and then perform the installation. Refer to the following URL for the supported HBA: http://www.microsoft.com/downloads/details.aspx?Family
	QLogic QLA24xx	
	Hitachi GV-CC62G1	

Storage Subsystem Support Matrix

The storage arrays listed in [Table B-3](#) indicates that the HSCS Host Data Collector can collect data on devices coming from the listed storage arrays.



NOTE: The HSCS Host Data Collector does not support configuration gathering operations on the storage arrays themselves.

Table B-3: HSCS Host Data Collector Storage Subsystem Support Matrix

Vendor	Model
Compaq	EMA
	MA
EMC	Clariion
	Symmetrix
Hitachi	Universal Storage Platform V
	Universal Storage Platform VM
	Adaptable Modular Storage
	Workgroup Modular Storage
	Simple Modular Storage
HP	MSA
	Storageworks
IBM	

Network Attached Storage (NAS) Support Matrix

Table B-4 provides the NAS support matrix for the HSCS Host Data Collector.

Table B-4: HSCS Host Data Collector NAS Support Matrix

Vendor	Product	Model
Hitachi	Hitachi High-performance NAS (HNAS)	2000 / 2000R
		2100
		2200
		3100
		3200
	Hitachi Essential NAS Platform (HENP)	
BlueArc	Titan	

Volume Manager Support Matrix

Table B-5 provides the Volume Manager support matrix for the HSCS Host Data Collector.

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
Windows 2000				
<ul style="list-style-type: none"> • Professional Server • Advanced Server • Datacenter Server 	SP2	X86	Basic	2.7, 3.0
			Dynamic	
			VxVM	
	SP3	X86	Basic	<ul style="list-style-type: none"> • 2.7 • 3.0
			Dynamic	
			VxVM	
	SP4	x86	Basic	<ul style="list-style-type: none"> • 2.7 • 3.0 • 3.5 • 4.0 • 4.1 • 4.3
			Dynamic	
			VxVM	

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
Windows Server 2003				
<ul style="list-style-type: none"> • Standard Edition • Enterprise Edition • Datacenter Edition • Web Edition 	No SP	x86	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.0 • 4.1 • 4.3
	SP1	x86	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.0 • 4.1 • 4.3
		IPF	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3
	SP2	x86	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.1 • 4.3
IPF		<ul style="list-style-type: none"> • Basic • Dynamic 		
		<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3 	
<ul style="list-style-type: none"> • Standard x64 Edition • Enterprise x64 Edition • Datacenter x64 Edition 	No SP	x64	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3
	SP2	x64	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3
Windows Server 2003				
<ul style="list-style-type: none"> • R2 Standard Edition • R2 Enterprise Edition • R2 Datacenter Edition 	No SP	x64	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3
	SP2	x64	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3
<ul style="list-style-type: none"> • R2 Standard x64 Edition • R2 Enterprise x64 Edition • R2 Datacenter x64 Edition 	No SP	x64	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3
	SP2	x64	<ul style="list-style-type: none"> • Basic • Dynamic 	
			<ul style="list-style-type: none"> • VxVM 	<ul style="list-style-type: none"> • 4.3
Windows Server 2008				

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
<ul style="list-style-type: none"> • Standard 32-bit Edition • Enterprise 32-bit Edition • Datacenter 32-bit Edition • Standard without Hyper-V 32-bit Edition • Enterprise without Hyper-V 32-bit Edition • Datacenter without Hyper-V 32-bit Edition 	No SP	x64	<ul style="list-style-type: none"> • Basic • Dynamic • VxVM 	
Itanium-based systems	No SP	IPF	<ul style="list-style-type: none"> • Basic • Dynamic • VxVM 	
<ul style="list-style-type: none"> • Standard Edition • Enterprise Edition • Datacenter Edition • Standard without Hyper-V Edition • Enterprise without Hyper-V Edition • Datacenter without Hyper-V Edition 	No SP	x64	<ul style="list-style-type: none"> • Basic • Dynamic • VxVM 	
<ul style="list-style-type: none"> • Standard 32-bit Edition • Enterprise 32-bit Edition • Datacenter 32-bit Edition • Standard without Hyper-V 32-bit Edition • Enterprise without Hyper-V 32-bit Edition • Datacenter without Hyper-V 32-bit Edition 	SP2	x86	<ul style="list-style-type: none"> • Basic • Dynamic • VxVM 	
Itanium-based systems	SP2	IPF	<ul style="list-style-type: none"> • Basic • Dynamic • VxVM 	

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
<ul style="list-style-type: none"> • Standard Edition • Enterprise Edition • Datacenter Edition • Standard without Hyper-V Edition • Enterprise without Hyper-V Edition • Datacenter without Hyper-V Edition 	SP2	x64	<ul style="list-style-type: none"> • Basic • Dynamic • VxVM 	
Solaris				
7		SPARC Kernel mode: 32-bit or 64-bit	None	
			SDS	<ul style="list-style-type: none"> • 4.2
			VxVM	<ul style="list-style-type: none"> • 3.1.1 • 3.2 • 3.5 • 4.0
8		SPARC Kernel mode: 32-bit or 64-bit	None	
			SDS	<ul style="list-style-type: none"> • 4.2.1
			VxVM	<ul style="list-style-type: none"> • 3.1.1 • 3.2 • 3.5 • 4.0 • 4.1
9		SPARC Kernel mode: 32-bit or 64-bit	None	
			SVM	<ul style="list-style-type: none"> • 1.0
			VxVM	<ul style="list-style-type: none"> • 3.5 • 4.0 • 4.1 • 5
10		SPARC Kernel mode: 32-bit or 64-bit	None	
			SVM	<ul style="list-style-type: none"> • 1.0
			VxVM	<ul style="list-style-type: none"> • 4.1 • 4.1MP2 • 5 • 5.0MP1
		AMD64 Kernel mode: 64-bit	None	
			SVM	<ul style="list-style-type: none"> • 1.0
			VxVM	<ul style="list-style-type: none"> • 4.1 • 4.1MP2 • 5.0MP1

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
11		SPARC Kernel mode: 64-bit	None SVM VxVM	
		AMD64 Kernel mode: 64-bit	None SVM VxVM	
HP-UX				
11.0		PA-RISC Kernel mode: 32-bit	None LVM	independent
		PA-RISC Kernel mode: 64-bit	None LVM	independent
11iv1		PA-RISC Kernel mode: 32-bit	None	
			VXvM	3.5
			LVM	independent
		MirrorDisk/UX	independent	
		PA-RISC Kernel mode: 64-bit	None	
			VXvM	3.5
LVM	independent			
MirrorDisk/UX	independent			
11iv2		IPF	None	
			VxVM	<ul style="list-style-type: none"> • 3.5 • 4.1
			LVM	independent
			MirrorDisk/UX	independent
		PA-RISC Kernel mode: 64-bit	None	
			VxVM	<ul style="list-style-type: none"> • 3.5 • 4.1
			LVM	independent
			MirrorDisk/UX	independent

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
11iv3		IPF	None	
			VxVM	• 4.1
			LVM	independent
			LVM2	independent
			LVM2.1	independent
			MirrorDisk/UX	independent
		PA-RISC Kernel mode: 64-bit	None	
			VxVM	• 4.1
			LVM	independent
			LVM2	independent
			LVM2.1	independent
				MirrorDisk/UX
AIX				
5.1		POWER Kernel mode: 32-bit or 64-bit	LVM	independent
5.2		POWER Kernel mode: 32-bit or 64-bit	LVM	independent
5.3		POWER Kernel mode: 32-bit or 64-bit	LVM	independent
6.1		POWER Kernel mode: 32-bit or 64-bit	LVM	independent
Linux RedHatELAS				
2.1		x86 Kernel ver: independent	None	
			VxVM	
			LVM	1.0.1-rc4
		IPF Kernel ver: independent	None	
			VxVM	
			LVM	independent

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
Linux RedHatELAS or RedHatELES				
3		x86 Kernel ver: independent	None	
			VxVM	
			LVM	independent
		IPF Kernel ver: independent	None	
			VxVM	
			LVM	independent
		x64 Kernel ver: independent	None	
			VxVM	
			LVM	independent

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
4		x86 Kernel ver: <Update1> independent	None	
			VxVM	
			LVM2	independent
		IPF Kernel ver: <Update1> independent	None	
			VxVM	
			LVM2	independent
		x64 Kernel ver: <Update1> independent	None	
			VxVM	
			LVM2	independent
		x86 Kernel ver: <Update2> independent	None	
			VxVM	
			LVM2	independent
		IPF Kernel ver: <Update2> independent	None	
			VxVM	
			LVM2	independent
		x64 Kernel ver: <Update2> independent	None	
			VxVM	
			LVM2	independent
		x86 Kernel ver: <Update3> independent	None	
			VxVM	
			LVM2	independent
		IPF Kernel ver: <Update3> independent	None	
			VxVM	
			LVM2	independent
x64 Kernel ver: <Update3> independent	None			
	VxVM			
	LVM2	independent		
x86 Kernel ver: <Update4> independent	None			
	VxVM			
	LVM2	independent		
IPF Kernel ver: <Update4> independent	None			
	VxVM			
	LVM2	independent		

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
		x64 Kernel ver: <Update4> independent	None	
			VxVM	
			LVM2	independent
4.5		x86 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent
4.6		x86	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent
4.7		x86	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
Linux RedHatEL or RedHatELAP				
5		x86	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent
5.1		x86	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent
5.2		x86	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
5.3		x86	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent
Linux SUSELES				

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
9	SP1	x86 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent
	SP2	x86 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
		x64	None	
			VxVM	
			LVM2	independent
	SP3	x86 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		IPF	None	
			VxVM	
			LVM2	independent
x64		None		
		VxVM		
		LVM2	independent	
SP4	x86 Kernel ver: independent	None		
		VxVM		
		LVM2	independent	
	IPF	None		
		VxVM		
		LVM2	independent	
	x64	None		
		VxVM		
		LVM2	independent	

Table B-5: HSCS Host Data Collector Volume Manager Support Matrix (Continued)

OS Version	Service Pack	Architecture	Volume Manager	Vol. Mgr. Version
10	No SP	x86 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		IPF Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		x64 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
	SP1	x86 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		IPF Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		x64 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
	SP2	x86 Kernel ver: independent	None	
			VxVM	
			LVM2	independent
		IPF Kernel ver: independent	None	
			VxVM	
			LVM2	independent
x64 Kernel ver: independent		None		
		VxVM		
		LVM2	independent	



Glossary

This glossary provides storage networking terms related to the Hitachi Storage Command Portal. Click the letter of the glossary section to display that page.

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
---	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------

A

AIX (Advanced Interactive Executive)

A Unix-based operating system from IBM.

Alert

An event that is generated when a SLO is violated. You can also set up email notifications with the event details.

Application

In the Hitachi Storage Command Portal, applications represent the actual applications in your environment.

Array group

A set of hard disk drives that have the same capacity and are treated as one RAID unit. An array group contains user data and parity information, which ensures user data integrity in the event of a disk drive failure in the array group.

B

BPS (Bits Per Second)

The standard measure of data transmission speeds.

Business view

A business hierarchy that organizes applications for reporting purposes. Storage capacity and storage type utilization, I/O operations Per Second (IOPS), and SLO status is summarized for the application and for every folder in the hierarchy. The same applications can be organized according to multiple hierarchies. For example, the Systems and Application Products (SAP®) application can reside in the /America Data Center/California/Production/ and in the /Payroll/California/ folders.

C

Capacity

The maximum amount of information that can be stored on a disk drive.

Chargeback

The storage cost that storage administrators charge their clients. This storage is allocated to the client's applications.

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

CLI (Command Line Interface)

A method of interacting with an operating system or software using a command line interpreter. With Hitachi's Storage Navigator Modular Command Line Interface, CLI is used to interact with and manage Hitachi storage and replication systems.

D

Data Collection

A data collection consists of discovering and gathering information from the data collectors on the Hitachi Device Manager and Hitachi Tuning Manager servers.

Data Refresh

A data refresh consists of collecting information from the data collectors on the Hitachi Device Manager and Hitachi Tuning Manager servers, and then updating the information displayed in the Hitachi Storage Command Portal GUI.

Dynamic Provisioning (DP)

Presents a virtual pool of shared capacity that is larger than the actual amount of physical storage available. Storage capacity can be allocated to an application without it actually being physically mapped until it is needed, so storage allocations can exceed the amount of storage that is physically installed.

For example, system administrators can deliver capacity on demand by provisioning storage from a virtual pool. This not only reduces administration costs by cutting the time to provision new storage, but also improves application availability by reducing the downtime needed for storage provisioning.

G

GSS (Global Solution Services)

GSS is an Hitachi organization that maximizes customer success by using industry-leading technology, field-proven methodologies, and cost-saving delivery tools.

H

HACMP (High Availability Clustered Multiprocessing)

An IBM RS/6000 product designed to provide a high-availability configuration by enabling automated failover from one RS/6000 to another.

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
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HBA (Host Bus Adapter)

A circuit board and/or integrated circuit adapter installed in a workstation or server that provides input/output processing and physical connectivity between a server and a storage device. An iSCSI HBA implements the iSCSI and TCP/IP protocols in a combination of a software storage driver and hardware.

HDvM (Hitachi Device Manager)

Allows you to consolidate storage operations and management functionality in a system that contains multiple Hitachi storage subsystems.

Device Manager quickly discovers the key configuration attributes of storage subsystems and allows your organization to begin managing complex and heterogeneous storage environments using a browser-based GUI.

Host

One or more host bus adapter (HBA) world wide name (WWN) servers.

HP-UX (Hewlett-Packard's Unix)

Based on the System V (a Unix operating system introduced by AT&T) with real-time extensions added.

HSCP (Hitachi Storage Command Portal)

An intuitive, easy-to-use GUI for storage backup and capacity management environments. You can access detailed and easily customized reports to see how you are meeting your SLOs.

HSD (Host Storage Domain)

Host storage domain.

HTnM (Hitachi Tuning Manager)

A real-time software monitor that can view the current state of the host, file system, database, storage area network, and storage resources. In Tuning Manager, a resource indicates any object that is used by an application. You can compare this information with the normal behavior or the baseline performance stored in the database. The ability to query a historical database for performance and capacity trend analysis on each component of the storage area network lets you correlate the current changes in performance with recent changes to the physical configuration, software, workload, or other environmental changes that may be causing changes in an application's performance.

The Tuning Manager series consists of Agents that collect the performance data for each monitored resource and the Tuning Manager program that manages all the Agents.

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
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I

I/O (Input/Output)

Input/output.

IOPS (Inputs/Outputs Per Second)

I/Os (inputs/outputs) per second

IP (Internet Protocol)

Specifies the format of packets and addressing scheme. Most networks combine IP with a higher-level protocol called Transmission Control Protocol (TCP), which establishes a virtual connection between a destination and a source.

IP address

An identifier for a computer or device on a TCP/IP network. Networks using the TCP/IP protocol route messages based on the IP address of the destination. The format of an IP address is a 32-bit numeric address written as four numbers separated by periods. Each number can be zero to 255 (for example, 192.168.0.200).

K

KPI (Key Performance Indicator)

KPIs are metrics used to help an organization define and measure progress toward organizational goals. KPIs are used in Business Intelligence to assess the present state of the business and to prescribe a course of action. KPIs are typically tied to an organization's strategy.

L

LAN (Local Area Network)

A computer network that spans a relatively small area, such as a single building or group of buildings.

LDEV (Logical Device)

A volume on a storage subsystem. Unallocated LDEVs are not mapped to LUNs (no access path), while allocated LDEVs have one or more access paths (LUNs).

Logical volume

An area on a disk consisting of device files that are logically integrated using a volume manager. Also referred to as LDEV.

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
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LU (Logical Unit)

A provisioned unit that can be referred to as a LUN (logical unit number (LUN) or a logical device (LDEV).

LUN (Logical Unit Number)

A logical unit that has a number assigned to it.

A LUN is an address for a disk drive, and the disk device itself. LUNs are used in SCSI protocols to differentiate disk drives within a common SCSI target device, like a disk array. LUNs are normally not entire disk drives but virtual partitions (or volumes) of a RAID set.

M

Monitoring Window

Specifies when the application is monitored by the SLO profile. Multiple schedules (time periods) can be assigned to the same monitoring window.

MS IIS (Microsoft Internet Information Services)

A set of Internet-based services in a web server, for servers using Microsoft Windows.

O

Owner Group

A logical unit (LU) group provisioned to the same set of WWNs.

P

P-VOL (Primary Volume)

The storage volume in a volume pair. It is used as the source of a copy operation. In copy operations a copy source volume is called the P-VOL while the copy destination volume is called S-VOL (secondary volume).

R

RAID (Redundant Array of Independent Disks)

A group of disks where part of the physical storage capacity is used to store redundant information about user data stored on the remainder of the storage capacity. The redundant information enables regeneration of user data in the event that a disk, or the access path to it, fails.

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S

SAN (Storage Area Network)

A network of shared storage devices that contain disks for storing data.

SATA (Serial ATA)

A computer bus technology primarily designed for the transfer of data to and from hard disks and optical drives. SATA is the evolution of the legacy Advanced Technology Attachment (ATA) interface from a parallel bus to serial connection architecture.

SLA (Service Level Agreement)

SLAs are agreements specifying what service is provided and how it is supported, and the responsibilities of the parties involved. These parties are storage administrators (who provide storage) and their clients (application administrators who request storage).

SLO (Service Level Objective)

SLOs can specify the levels of availability, serviceability, performance, operation, or other attributes of a service (for example, billing and penalties for violations).

In the Hitachi Storage Command Portal, a SLO is an observed or calculated metric that is compared to a red or yellow threshold. If the SLO is below its threshold (not in jeopardy) then it is not a violation and it has a green status.

SLOs are intended as an operational guideline for the implementation of the service negotiated under the SLA. SLOs comprise SLAs containing service parameters and goals.

SLO profile

A SLO profile allows you to assign multiple SLO types to an application. You can name a standard set of SLOs (for example, Gold storage type SLOs) and assign them to multiple applications. Only SLO profiles can be assigned to applications.

SMTP (Simple Mail Transfer Protocol)

A protocol used to receive and store email data directly from email servers.

SPARC (Scalable Processor Architecture)

A reduced instruction set computer (RISC) architecture developed by Sun Microsystems and used in the Sun workstation family.

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Subsystem

The Hitachi enterprise storage box for the Universal Storage Platform (USP, USP-V, USP-VM) and the Network Storage Controller (NSC). Subsystems are also referred to as "storage arrays."

S-VOL (Secondary volume)

A replica of the primary volume (P-VOL) at the time of a backup and is kept on a standby storage system. Recurring differential data updates are performed to keep the data in the S-VOL consistent with data in the P-VOL.

Switch

A network infrastructure component to which multiple nodes attach. Unlike hubs, switches typically have internal bandwidth that is a multiple of link bandwidth, and the ability to rapidly switch node connections from one to another. A typical switch can accommodate several simultaneous full link bandwidth transmissions between different pairs of nodes. A switch is a Layer 2 device.

T

Tier

A user-friendly descriptor that summarizes the type of storage hardware on which a logical volume resides. Typical storage hardware characteristics that are referred to by a tier are: disk speed, disk capacity, disk type (e.g., FC, SCSI), RAID level, subsystem model, virtualization level (e.g., internal vs. external), and pool type (if relevant). All LDEVs that share the characteristics summarized by the tier are annotated with that tier's name.

W

WWN (World Wide Name)

A unique identifier for an open systems host. It consists of a 64-bit physical address (the IEEE 48-bit format with a 12-bit extension and a 4-bit prefix). The WWN is essential for defining the SANTinel™ parameters because it determines whether the open systems host is to be allowed or denied access to a specified logical unit or a group of logical units.

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
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