



# HiCommand® Tuning Manager Server Administration Guide



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# Preface

The *HiCommand® Tuning Manager Server Administration Guide* contains information about the administration and configuration of the HiCommand Tuning Manager server. It is intended for system/account administrators who are responsible for tasks such as:

- Establishing temporary, permanent, and emergency licenses,
- Maintaining users and user permissions,
- Maintaining the monitoring agents,
- Adjusting system configuration settings, and
- Troubleshooting server issues.

This document also assumes that the intended audience has read and understood the contents of the HiCommand Tuning Manager user documentation.

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## Software Version

This document revision applies to HiCommand Tuning Manager version 5.5.

## Convention for Storage Capacity Values

Storage capacity values displayed by HiCommand Tuning Manager are calculated based on the following values:

- 1 KB (kilobyte) = 1,024 bytes
- 1 MB (megabyte) = 1,024<sup>2</sup> bytes
- 1 GB (gigabyte) = 1,024<sup>3</sup> bytes
- 1 TB (terabyte) = 1,024<sup>4</sup> bytes

## Referenced Documents

- *HiCommand Tuning Manager Agent Administration Guide*, MK-92HC013
- *HiCommand Tuning Manager User's Guide*, MK-92HC022
- *HiCommand Tuning Manager Hardware Reports Reference*, MK-95HC111
- *HiCommand Tuning Manager Operating System Reports Reference*, MK-95HC112
- *HiCommand Tuning Manager Application Reports Reference*, MK-95HC113
- *HiCommand Tuning Manager Messages Reference*, MK-95HC114
- *HiCommand Tuning Manager Command Line Interface Guide*, MK-96HC119

- *HiCommand Tuning Manager Installation Guide*, MK-96HC141

## Readme and Release Notes Contents

These files can be found on the installation CD. They contain requirements and notes for use of HiCommand Tuning Manager that may not be fully described in the manual. Be sure to review these files before installing HiCommand Tuning Manager.

## Comments

Please send us your comments on this document. Make sure to include the document title, number, and revision. Refer to specific section(s) and paragraph(s) whenever possible.

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# Contents

## Chapter 1 Server Administration and Configuration

1.1	Settings for the User Property File .....	2
1.2	Introducing the Administrative GUI.....	4
1.2.1	Reviewing Data Entry Guidelines .....	6
1.3	Logging In .....	10
1.3.1	Login Modes and Case Sensitivity .....	10
1.3.2	Initial Administrator Login .....	11
1.4	Logging Out.....	12
1.5	Starting Tuning Manager.....	13
1.6	Stopping Tuning Manager.....	15
1.7	Restricting Web Terminals that can be Connected to Tuning Manager .....	17
1.8	Setting Data Retention Periods.....	19
1.8.1	About Metrics Data Retention .....	19
1.8.2	Data Collection and Default Metrics Retention.....	19
1.8.3	Disabling Metrics Data Retention .....	20
1.8.4	Setting Metrics Data Retention.....	21
1.8.5	Setting Alerts Retention.....	21
1.9	Assigning a Subnetwork Alias .....	22
1.10	Notes on Operations in a Cluster System .....	23
1.10.1	Copying the Definition Information Settings .....	23
1.10.2	Performance Reporter Settings for a New Agent.....	23
1.10.3	Errors Resulting from an Immediate Login After Starting the Tuning Manager Service .....	23
1.10.4	Errors Resulting from Failover during Data Polling.....	23
1.10.5	Errors Resulting after a Failure from an Initial Startup of the Tuning Manager Service .....	23
1.10.6	Deleting an Agent .....	24
1.10.7	Backing up Repository Information .....	24
1.10.8	Starting and Stopping Services Registered in the Cluster Software .....	25
1.10.9	Notes on Repair Installation and Uninstallation .....	25
1.10.10	Collecting Required Data After an Error Occurs .....	25
1.10.10.1	Tuning Manager Data.....	26
1.10.10.2	Performance Reporter Data.....	26
1.10.10.3	Cluster Software Data .....	26
1.10.10.4	Operating System Data .....	26
1.11	Limiting the Metrics Stored in the Database .....	27

## Chapter 2 Working with Licenses

2.1	Managing Licenses.....	30
2.2	License Modes.....	31
2.3	Entering Your License Key.....	33
2.4	Viewing Login Mode, Tuning Manager Version, and License Information .....	34
2.5	Re-entering Your License Key when Upgrading Tuning Manager .....	35

## Chapter 3 Managing the Tuning Manager Database

3.1	Overview .....	38
3.2	Backing up the Database .....	39
3.2.1	Backup Procedure.....	40
3.3	Restoring the Database .....	41
3.3.1	Restoration Procedure .....	41
3.4	Expanding the Database .....	43
3.4.1	Selecting the Scale of the Database .....	43
3.4.2	Database Space Required After Expansion.....	43
3.4.3	Expansion Procedure .....	44
3.5	Operating InterBase® .....	46
3.5.1	Starting InterBase.....	46
3.5.1.1	In Windows.....	46
3.5.1.2	In Solaris .....	46
3.5.2	Stopping InterBase .....	47
3.5.2.1	In Windows.....	47
3.5.2.2	In Solaris .....	47
3.5.3	Using InterBase to Back up a Database.....	47
3.5.4	Using InterBase to Restore a Database .....	48
3.5.5	Uninstalling InterBase (Windows) .....	48
3.5.5.1	Deleting the InterServer Service .....	49
3.5.5.2	Uninstalling InterClient .....	50
3.5.5.3	Uninstalling InterBase.....	50
3.5.6	Uninstalling InterBase (Solaris) .....	51
3.5.6.1	Uninstalling InterBase Server .....	51
3.5.6.2	Uninstalling InterClient .....	52
3.6	Migrating a Database .....	53
3.7	Identifying Unnecessary Data Accumulation Conditions and Deleting the Data.....	55
3.7.1	Unnecessary Data Accumulation Conditions and Problems: Case 1 .....	55
3.7.2	Unnecessary Data Accumulation Conditions and Problems: Case 2 .....	55
3.7.3	Unnecessary Data Accumulation Conditions and Problems: Case 3 .....	56
3.7.4	Deleting Unnecessary Data .....	56
3.7.4.1	Deleting Unnecessary Data by Batch Handling (Cases 1 to 3) .....	56
3.7.4.2	Deleting Unnecessary Data on a Per-Case Basis (Cases 1 to 3) .....	57
3.8	Migrating the Server Database .....	60
3.8.1	Notes When Migrating the Database .....	60
3.8.2	Procedure for Checking the Disk Space Used in the Database.....	62
3.8.3	Procedure for Migrating Databases.....	63
3.8.4	Installing the HiCommand Suite Products on the Migration Destination Server .....	63
3.8.5	Exporting the Database at the Migration Source Server .....	64
3.8.6	Importing the Database at the Migration Destination Server .....	66

## Chapter 4 Managing Users

4.1	Reviewing Login Modes.....	70
4.2	Administrating Users in Standalone Mode .....	71
4.2.1	Reviewing User Permissions .....	71
4.2.2	Adding Users .....	72
4.2.3	Editing Users.....	73

4.3	Administrating Users in Single Sign-on Mode .....	74
4.3.1	About User Privileges .....	74
4.3.2	Reviewing GUI Differences .....	74
4.4	Switching the Login Mode .....	76
4.4.1	Conditions for Using Single Sign-On Mode .....	76
4.4.2	Switching to Single Sign-On Mode.....	76
4.4.3	Switching to Standalone Mode .....	79

## Chapter 5 Configuring Launch and Initial Settings

5.1	Configuring Launch Settings for HiCommand Device Manager .....	82
5.2	Configuring Launch Settings for Storage Navigator .....	83
5.3	Configuring Initial Settings for Performance Reporter .....	85
5.3.1	Date Format Specified in the Initialization Settings File (config.xml) .....	88
5.3.1.1	Display Format for Date Tag Specifications .....	89
5.3.1.2	Example of Specifying the Date Format .....	90
5.3.2	Repository for Storing Bookmark Definition Information.....	91
5.3.2.1	Changing the Repository Storage Location .....	91
5.3.2.2	About Corrupted Repository Files .....	91
5.3.2.3	Backing up and Restoring Repository Files .....	92
5.3.2.4	Managing Repository Files Before Uninstalling .....	92
5.3.3	Data Caching for Displaying a Real-time Report.....	92
5.3.4	Reviewing a Sample Initialization Settings File.....	93
5.3.5	Editing the Initialization Settings File (Windows) .....	96
5.3.6	Editing the Initialization Settings File (Solaris).....	97
5.3.7	Setting the Environment Variables (Solaris).....	98
5.4	Changing the Default Window for Performance Reporter.....	99
5.5	Settings for Launching HSSM.....	101

## Chapter 6 Setting up and Managing Agents

6.1	Reviewing the Data Acquisition Functions.....	104
6.2	Reviewing Agent Management Policies.....	105
6.2.1	Connecting to an Agent .....	105
6.2.2	Disconnecting from an Agent .....	107
6.2.3	Avoiding Automatic Disconnection.....	109
6.3	Setting Connection and Disconnection Policies .....	110
6.3.1	Specifying the Automatic Disconnection Threshold.....	110
6.3.2	Disconnecting Agents Manually.....	111
6.3.3	Connecting Agents Manually .....	111
6.4	Refreshing Agent Lists .....	112
6.4.1	GUI Display Problems for the Connected and Available Agents Lists.....	112
6.5	Checking an Agent's Operational Status.....	114
6.6	Checking an Agent's Configuration.....	115
6.7	Monitoring Targeted Logical Disks .....	116
6.7.1	Viewing Monitored Logical Disks .....	116
6.7.2	Adding and Removing Monitoring of Storage Subsystem Logical Disks .....	117
6.7.3	Adding and Removing Monitoring of Server Logical Disks .....	117
6.8	Accessing Agent Configuration Details .....	119
6.8.1	Viewing Agent Configuration .....	120
6.8.2	Agent Parameters .....	121

6.8.3	Store Parameters .....	121
6.9	Working with Agent Polling.....	122
6.9.1	From Collection to Display .....	122
6.10	Polling Processing .....	123
6.10.1	Initial Data Collection.....	123
6.10.2	Setting Polling Times .....	123
6.10.3	Setting Polling Offset Options .....	124
6.10.4	Setting Polling Retry Options .....	124
6.10.5	Starting Polling .....	125
6.10.6	Interrupting Polling.....	126
6.10.7	Polling Data Recorded During Daylight Savings Time Changes.....	127
6.11	About the Polling Status Report .....	129
6.11.1	Checking Agents' Historical Polling Status .....	129
6.11.2	Checking Agents' Recent Polling Status .....	130
6.12	About Agent Polling Status Alerts .....	131
6.13	Configuring Agent Polling Status Alerts.....	132
6.14	Time-Axis Aggregation .....	133
6.14.1	Total selection of time metric.....	134
6.15	Removing Agents .....	135

## Chapter 7 Addressing Server Issues

7.1	Correcting Non-Displayed Metric Values.....	138
7.1.1	Monitoring an Oracle Server that is Handling a Database Containing Many Segments .....	138
7.2	Identifying Data Collection Problems and Causes.....	139
7.3	Enabling Alerts to be Output to Syslog (Solaris).....	140
7.4	Addressing Timing Issues.....	141
7.4.1	Correcting Delayed Data Updates from Lagging Machine Clocks .....	141
7.4.2	Changing the System Clock During Tuning Manager Operations.....	141
7.5	Addressing Agent Configuration Errors .....	142
7.6	Troubleshooting Steps .....	143
7.7	Preparing to Receive Support .....	144
7.7.1	Using hcmdsgetlogs to Submit Key Data .....	144
7.7.2	Manual Data Dumps.....	144
7.7.3	Saving Windows Event Logs.....	145
7.7.4	Saving Windows Services Information .....	145
7.8	Locating Tuning Manager Log Files.....	146
7.9	Specifying an e-mail Address when an e-mail is not Sent .....	147
7.10	Troubleshooting for Performance Reporter.....	148
7.10.1	Checking for Error and Log Information .....	148
7.10.2	Collecting Windows Data After an Error.....	153
7.10.3	Collecting Solaris Data After an Error .....	156

## Chapter 8 Working with the HiCommand Suite Common Component

8.1	Services Registered for HiCommand Suite Common Component (Windows Only) ..	160
8.2	Managing Ports Used by HiCommand Suite Common Component .....	160
8.2.1	Changing a HiCommand Suite Common Component Port in Windows .....	161
8.2.1.1	Changing the Port for HiCommand Suite Common Web Service in Standalone Mode.....	161

8.2.1.1	Changing the Port for HiCommand Suite Common Web Service in Standalone Mode .....	161
8.2.1.2	Changing the Port for HiCommand Suite Common Web Service in SSO Mode .....	161
8.2.2	Changing a HiCommand Suite Common Component Port in Solaris .....	163
8.2.2.1	Changing the Port for HiCommand Suite Common Web Service in Standalone Mode .....	163
8.2.2.2	Changing the Port for HiCommand Suite Common Web Service in SSO Mode .....	163
8.3	Resident Processes of HiCommand Suite Common Component .....	166
8.4	Troubleshooting.....	167
8.5	Changing the Host Name of a Management Server.....	168
8.5.1	Changing the HiCommand Device Manager Host Name When Tuning Manager Is in Standalone Mode.....	168
8.5.2	Changing the HiCommand Device Manager Host Name When Tuning Manager Is in Single Sign-On Mode.....	169
8.5.3	Changing the Setting in the HiCommand Common Component Database ...	169
8.5.4	Changing the Tuning Manager Host Name When Tuning Manager Is in Single Sign-On Mode.....	171
8.5.5	Changing the Name of the Tuning Manager Host Server .....	172
8.6	Displaying a Warning Banner Message.....	173
8.6.1	Editing the Message .....	173
8.6.2	Registering the Message .....	174
8.6.3	Deleting the Message .....	175

Acronyms and Abbreviations.....	177
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# List of Figures

Figure 1.1	Administrator View .....	4
Figure 4.1	User Profile Window for User with Admin Rights .....	75
Figure 4.2	User Profile Window for User with Manager or User Rights .....	75
Figure 5.1	Sample Initialization Settings File (config.xml) .....	94
Figure 5.2	Sample DTD File (config.dtd) File Defining Parameter Entries .....	95
Figure 5.3	Displaying the Main Window for Performance Reporter .....	99
Figure 5.4	Displaying the Report Tree Selection Window for Performance Reporter .....	99
Figure 6.1	Logical Flow Diagram: Adding Data Connections .....	106
Figure 6.2	Logical Flow Diagram: Disconnecting Agents .....	108
Figure 6.3	Agent Configuration Details .....	119
Figure 6.4	Example of DST Adjustment from Pacific Standard Time to Pacific Daylight Time .....	127
Figure 6.5	Example of DST Adjustment from Pacific Daylight Time to Pacific Standard Time .....	128
Figure 7.1	Log File Output .....	150

# List of Tables

Table 1.1	Properties for the user.properties File .....	2
Table 1.2	Menus Displayed in the Navigation Area .....	5
Table 1.3	Tuning Manager Administrator Field Entry Guidelines .....	6
Table 1.4	Initial Administrative Login Account Information .....	11
Table 1.5	Default Retention Periods for Metric Data .....	19
Table 1.6	Relationship Between the Values Related to Metrics Data Retention .....	20
Table 1.7	Metrics that are not Collected by Changing the Settings in the User Property File.....	27
Table 3.1	Data Capacity Required for Tuning Manager.....	39
Table 3.2	Database Space Required After Expansion Based on Transition (Windows).....	43
Table 3.3	Database Space Required After Expansion Based on Transition (Solaris).....	44
Table 3.4	Return Values of the htm-db-convert Command .....	53
Table 3.5	Combination of Databases that Can Be Migrated.....	61
Table 3.6	RD Area Names and Physical File Names .....	62
Table 3.7	Maximum Size of the RD Area Allowed for Database Migration.....	63
Table 3.8	Action to Be Taken When an Error Message Is Output (During an Export).....	65
Table 3.9	Action to Be Take When an Error Message Is Output (During an Import).....	67
Table 4.1	Login Modes and User Management .....	70
Table 4.2	Tuning Manager User Permissions.....	71
Table 4.3	Correspondence Between Tuning Manager Groups and HiCommand Device Manager Groups.....	74
Table 5.1	Firmware Version.....	83
Table 5.2	Initialization Settings Files (config.xml) .....	85
Table 5.3	Patterns and Formats for the Display of Dates Corresponding to Locales.....	88
Table 5.4	Tags of the Display Format for Date .....	89
Table 5.5	Environment Variables.....	98
Table 6.1	Resources with Restrictions on Name Length.....	104
Table 6.2	Agent Management Policies.....	105
Table 6.3	Agent Operational Status Values.....	114
Table 6.4	Agent Configuration Status Values.....	115
Table 6.5	Polling Status Report Data .....	129
Table 6.6	Contents of Each Column in Agents Status .....	130
Table 6.7	Resources that can be Selected for Aggregation for Each Agent .....	133
Table 7.1	Application Log Files.....	146
Table 7.2	Tuning Manager Log Files .....	146
Table 7.3	Log File Output Items.....	148
Table 7.4	Syslog Log File Output Items .....	149
Table 7.5	Log Initialization Settings .....	149
Table 7.6	Details of the Trace Levels .....	150
Table 7.7	Log File Output Format.....	151
Table 7.8	Log File Event Type Codes .....	151
Table 7.9	Message Log ID Format .....	151
Table 7.10	Performance Reporter Event Type Codes .....	152

Table 7.11	Operating System Information .....	154
Table 7.12	Performance Reporter Information .....	155
Table 7.13	Operating System Information .....	157
Table 7.14	Performance Reporter Information .....	157
Table 8.1	Ports Used by HiCommand Suite Common Component .....	160
Table 8.2	Changing HiCommand Suite Common Component Ports (Windows) .....	162
Table 8.3	Changing HiCommand Suite Common Component Ports (UNIX) .....	164
Table 8.4	Resident Processes of HiCommand Suite Common Component (Windows) ....	166
Table 8.5	Resident Processes of HiCommand Suite Common Component (Solaris).....	166
Table 8.6	Causes and Countermeasures .....	167

# Chapter 1 Server Administration and Configuration

This chapter provides an overview of key system administration tasks including configuring and operating Tuning Manager server components. For details on the GUI framework described in this manual, see the *HiCommand® Tuning Manager User's Guide*.

- Settings for the User Property File (see section 1.1)
- Introducing the Administrative GUI (see section 1.2)
- Logging In (see section 1.3)
- Logging Out (see section 1.4)
- Starting Tuning Manager (see section 1.5)
- Stopping Tuning Manager (see section 1.6)
- Restricting Web Terminals That Can Be Connected to Tuning Manager (see section 1.7)
- Setting Data Retention Periods (see section 1.8)
- Assigning a Subnetwork Alias (see section 1.9)
- Notes on Operations in a Cluster System (see section 1.10)
- Limiting the Metrics Stored in the Database (see section 1.11)

## 1.1 Settings for the User Property File

After installing and setting up Tuning Manager, you might need to specify settings in the `user.properties` file. For example, you can select the emergency e-mail address and the window to be displayed by changing the settings in the `user.properties` file. Following is the storage location of the `user.properties` file:

- Windows®:

```
Tuning-Manager-installation-directory\inst\user.properties
```

- Solaris™ :

```
/opt/HiCommand/TuningManager/inst/user.properties
```

To change the settings in the `user.properties` file:

1. Stop the HiCommand Suite TuningManager service.  
For details on how to stop Tuning Manager, see section 1.6.
2. Open the `user.properties` file with a text editor, and specify the settings in the following format:

```
[key]=[value]
```

**Notes:**

- If there is a hash mark (#) at the beginning of a line, the line is considered to be a comment.
  - If the same key name is specified more than once, the value specified last in the file is applied.
  - If you specify the installation directory in a Windows environment, use a forward slash (/) as a directory separator, not a backslash (\).
3. Start the HiCommand Suite TuningManager service.  
For details on how to start Tuning Manager, see section 1.5.

For details on the settings in the `user.properties` file, see the following table.

Table 1.1 Properties for the `user.properties` File

Property Name	Description
<code>alert.email.from</code>	Specify the e-mail sender address if you want to send emails from Tuning Manager with the specified address. <b>Note:</b> Even if a Tuning Manager alert occurs, sometimes an e-mail is not sent because of the settings of the e-mail sender address. In such a case, see section 7.9.

Property Name	Description
ignore.metric.0500	<p>Specify whether to use the function for limiting the metrics stored in the database.</p> <p>For details on this function, see section 1.11.</p> <p>If you want to use the function for limiting the metrics stored in the database, add the following line. To stop using this function, delete the added line.</p> <pre>ignore.metric.0500=true</pre> <p>If you specify a value other than the above, an error message is output to the log file.</p>
pr.incontextlaunch.mode	<p>When you start Performance Reporter from Advanced Information by specifying an agent, you can use this property to select which window to display, such as the Main window or the Report Tree Selection window.</p> <p>The specifiable values are:</p> <p><code>main</code>: Displays the Main window.</p> <p><code>tree</code>: Displays three pages in the Report Tree Selection window.</p> <p>The default value is <code>tree</code>. If a value other than a specifiable value is specified, an error message is output to the log file and the default value is set.</p>
subres.table.size.compat.0500	<p>This property specifies whether the subresource section displays 10 items, which is the number set by default in this version, or 5 items, which is the number of items that were displayed in version 5.0 or earlier.</p> <p>The specifiable values are:</p> <p><code>true</code>: Displays 5 items.</p> <p><code>false</code>: Displays 10 items.</p> <p>The default is <code>false</code>. If you specify a value other than these, an error message is output to the log file, and the default (<code>false</code>) is assumed.</p>

## 1.2 Introducing the Administrative GUI

The Administrator View of Tuning Manager has the same five-frame design used in all HiCommand programs.

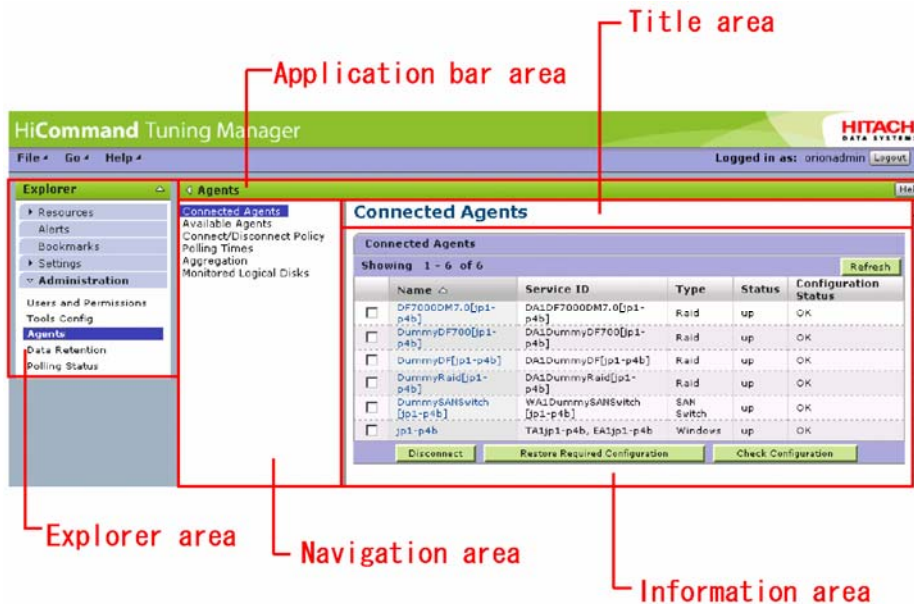


Figure 1.1 Administrator View

### ■ Explorer area

The vertical area at the left of the page. The explorer area provides links to the functions of Tuning Manager. For details on the functions linked from the explorer area, see the *HiCommand Tuning Manager User's Guide*.

- Resources  
Displays a resource tree in the navigation area and resource information in the information area.
- Alerts  
Displays alerts and information about definitions, actions, bindings, and resets.
- Bookmarks  
Saves your commonly used Tuning Manager pages for future access.
- Settings  
Provides information about your login account.
- Administration  
Displays the administration functionality for Tuning Manager, which is described in this manual.

- **Application bar area**  
The horizontal area at the top of the page where the **Help** button is displayed. The application bar area contains a button for displaying the online Help. Click the **Help** button to view the online Help.
- **Navigation area**  
The vertical area to the right of the explorer area. The navigation area contains the menus for the administration task that you selected in the explorer area. The displayed menus differ for each administration task. Some tasks do not have menus.

Table 1.2 Menu Displayed in the Navigation Area

Administration Task	Menus Displayed in the Navigation Area
Users and Permissions ( <i>Note 1</i> )	None displayed
Tool Config	HiCommand Device Manager and Storage Navigator ( <i>Note 2</i> )
Agents	Connected Agents, Available Agents, Connect/Disconnect Policy, Polling Times, Aggregation, and Monitored Logical Disks
Data Retention	None displayed
Polling Status	Report, Agents Status, and Alert

**Note 1:** This administration task is not displayed in single sign-on mode.

**Note 2:** In single sign-on mode, the navigation area does not appear. Storage Navigator information appears in the information area.

- **Title area**  
The title area is at the top right of the page. The title area displays the name of the menu you selected in the navigation area, or the name of the task you selected in the explorer area if the task has no menus. The usual Crumb Trail displayed in the title area does not appear in Administrator View.
- **Information area**  
The area is at the bottom right of the page. The information area displays various functions to display or manipulate management data of Tuning Manager. Error messages and warning messages might also appear here.

**Notes:**

- If your browser suppresses popup Windows or if you have an installed utility that suppresses them, be sure to disable popup suppression when using Tuning Manager.
- The most recent information cannot be displayed when polling is being performed by Tuning Manager. In this case, if you select **Agent information** in the explorer area, a polling warning message is displayed. For details, see section 6.4.
- For login information, see section 1.3.

## 1.2.1 Reviewing Data Entry Guidelines

This section specifies valid data entry values for Administrator tasks. For detailed information about allowable field entries in other areas of the user interface, see *"Using The Graphical User Interface (GUI)"* in the *HiCommand Tuning Manager User's Guide*.

Table 1.3 Tuning Manager Administrator Field Entry Guidelines

Name of Tuning Manager Component	Entry Field	Allowable Values	Maximum Field Length	Minimum Field Length	Notes
User Profile:	User ID	No restrictions	25	4	Must begin with any of the allowed characters except a hyphen (-).
	Password	No restrictions	25	4	<ul style="list-style-type: none"> <li>• Must begin with any of the allowed characters except a hyphen (-).</li> <li>▪ If the password is not entered, the password that is already set remains the same.</li> <li>• When a user is added, a password must be entered for that user.</li> </ul>
	Confirm Password	No restrictions	25	4	<ul style="list-style-type: none"> <li>• Must begin with any of the allowed characters except a hyphen (-).</li> <li>▪ If the password is not entered, the password that is already set remains the same.</li> <li>• When a user is added, a password must be entered for that user.</li> </ul>
	First Name	No restrictions	40	1	-
	Last Name	No restrictions	40	1	-

Name of Tuning Manager Component	Entry Field	Allowable Values	Maximum Field Length	Minimum Field Length	Notes
User Profile:	Email	a to z, A to Z, 0 to 9 and these special characters: - _ . @	60	1	<ul style="list-style-type: none"> <li>▪ Must begin with an alphanumeric character.</li> <li>▪ The format of the e-mail address must be valid.</li> </ul>
Connect/Disconnect Policy	Automatic Disconnect Threshold (in days)	1 to 99	2	1	-
	Automatic Disconnect Threshold (in hours)	1 to 24	2	1	-
Polling Times	Max Retry Attempts	0 to 2	1	1	-
	Retry Delay (in minutes)	1 to 5	1	1	-
	Maximum Polling Backdate Offset (in hours)	Whole number from 1 to 999	3	1	-
Data Retention	Hourly Metric Data	24 to 99	2	2	-
	Daily Metric Data	0, or 31 to 99	2	1	A zero value disables this metric.
	Weekly Metric Data	0 to 99	2	1	<ul style="list-style-type: none"> <li>▪ A zero value disables this metric.</li> <li>▪ If the daily value is 0, this field must also be 0.</li> </ul>
	Monthly Metric Data	0, or 12 to 99	2	1	<ul style="list-style-type: none"> <li>▪ A zero value disables this metric.</li> <li>▪ If the daily value is 0, this field must also be 0.</li> </ul>

Name of Tuning Manager Component	Entry Field	Allowable Values	Maximum Field Length	Minimum Field Length	Notes
Data Retention	Quarterly Metric Data	0 to 99	2	1	<ul style="list-style-type: none"> <li>A zero value disables this metric.</li> <li>If the daily value is 0, this field must also be 0.</li> <li>If the monthly value is 0, this field must also be 0.</li> </ul>
	Yearly Metric Data	0 to 99	2	1	<ul style="list-style-type: none"> <li>A zero value disables this metric.</li> <li>If the daily value is 0, this field must also be 0.</li> <li>If the monthly value is 0, this field must also be 0.</li> </ul>
	Alerts Retention Period-days (in days)	1 to 99	2	1	-
Alert	Agent Status Monitoring	2 to 99	2	1	-
	Polling Time Monitoring	1 to 99	2	1	-
	Email Host	a to z, A to Z, 0 to 9, and the following special characters: . : / & = ? - _ % @ #	40	1	<ul style="list-style-type: none"> <li>Must begin with an alphanumeric character.</li> <li>Must be a valid e-mail hostname</li> </ul>
	Email To	a to z, A to Z, 0 to 9, and the following special characters: . @ _ - , ;	500	1	<ul style="list-style-type: none"> <li>Must begin with an alphanumeric character.</li> <li>Must be a valid e-mail address.</li> </ul>

Name of Tuning Manager Component	Entry Field	Allowable Values	Maximum Field Length	Minimum Field Length	Notes
Alert	Username	No restrictions	40	1	<ul style="list-style-type: none"> <li>Must begin with an alphanumeric character.</li> <li>Must be a valid user ID.</li> <li>When the SMTP authorization checkbox is selected the user ID must be specified.</li> </ul>
	Password	No restrictions	40	1	<ul style="list-style-type: none"> <li>If the password is not entered, the password that is already set remains the same.</li> <li>When the SMTP authorization checkbox is selected the password must be specified.</li> </ul>
Storage Navigator	IP Address or Host Name	No restrictions	40	1	-
	User ID	No restrictions	16	1	-
	User Password	No restrictions	16	1	<ul style="list-style-type: none"> <li>If the password is not entered, the previously set password is applied.</li> <li>If the user password is not specified, set it.</li> </ul>
Device Manager	Device Manager URL	a to z, A to Z, 0 to 9, and the following special characters: : / . _ - ? = % @ # &	60	7	URL must begin with http:// or https://

## 1.3 Logging In

To log in as an Administrator in Tuning Manager:

1. Launch Tuning Manager by typing a URL consisting of the name of the host in which Tuning Manager is installed, and the port number.

In the following example, the host name is `host01` and the port number is `23015`:

```
Example: http://host01:23015/TuningManager/index.jsp
```

2. Click the **Login** button.
3. Enter the user ID and password of an account assigned to the Admin group.
4. Click the **Login** button.
5. To access the Administrator View, click **Administration** in the explorer area.

A submenu of administration tasks appears.

*Note:* Before logging in for the first time, you must activate your license key. For detailed information, see Chapter 2. If you have just installed Tuning Manager, use the default login. For details, see section 1.3.2. For further information about authentication, see section 1.3.1.

### 1.3.1 Login Modes and Case Sensitivity

Tuning Manager provides two login modes. User ID and password authentication differs depending on the login mode.

- **Standalone mode:**

This is the default login mode of Tuning Manager. In this mode, Tuning Manager permits only user accounts that Tuning Manager itself manages. User IDs are not case-sensitive, but passwords are.
- **Single sign-on (SSO) mode:**

This login mode allows HiCommand series products to share the user accounts managed by HiCommand Device Manager. In HiCommand Device Manager, the case-sensitivity of user IDs and passwords can be set. By default, they are not case-sensitive. For details about user accounts managed by HiCommand Device Manager, see the *HiCommand Device Manager Web Client User's Guide*.

For details on the login modes and how to switch between them, see Chapter 4.

## 1.3.2 Initial Administrator Login

During installation, two user accounts are provided for initial administrative access to Tuning Manager in the default standalone mode after installation:

Table 1.4 Initial Administrative Login Account Information

User ID	Password	Group
orionadmin	orion	Admin
system	manager	Admin

**Note:** We recommend that you change the default user accounts as soon as possible after you have logged in to Tuning Manager. (For more information, see section 4.2.3). We also recommend that you delete the default administrative accounts to avoid security problems. You can delete both of the default administrative accounts after creating at least one other login account with Admin group permissions.

When you run Tuning Manager in single sign-on (SSO) mode, use a user account managed by HiCommand Device Manager. Before accessing Tuning Manager, add user accounts common to all HiCommand applications from HiCommand Device Manager. For details about adding new user accounts, see the *HiCommand Device Manager Web Client User's Guide*.

## 1.4 Logging Out

Click the **Logout** link in the global tasks bar area.

*Note:* When you want to start Performance Reporter, you can select which Performance Reporter window to display: the Main window or the Report Tree Selection window. If the Main window of Performance Reporter is displayed, the Performance Reporter window remains open even after you log out of Tuning Manager. For details about starting Performance Reporter and its windows, see section 5.4 or see the *HiCommand Tuning Manager User's Guide*.

## 1.5 Starting Tuning Manager

Tuning Manager automatically starts when the server starts. HiCommand Performance Reporter and Collection Manager also start at the same time. However, the HiCommand Suite TuningService service does not automatically start when the server starts. It can only be started manually.

To use the HiCommand Suite TuningService service, start it manually using the following command:

### Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /start /server TuningService
```

### Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -start -server TuningService
```

To manually start Tuning Manager, start the services in the following order. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

1. Execute the following command to start the HiCommand Suite TuningManager service:

#### Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /start /server TuningManager
```

#### Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -start -server TuningManager
```

**Note:** When you execute this command immediately after executing the stop command of Tuning Manager, the KAPM05007-I message might appear. This occurs because it takes time to stop the Tuning Manager service. In this case, wait a while, re-execute the command, and then start the Tuning Manager service.

2. If necessary, execute the following command to start the HiCommand Suite TuningService service:

#### Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /start /server TuningService
```

#### Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -start -server TuningService
```

#### Notes:

- For details on starting agents, see the *HiCommand Tuning Manager Installation Guide*.
- If Tuning Manager has already collected data for a resource over a range of time periods, restarting the Tuning Manager will not result in data loss, replacement, or redundancy of previously collected data.

- When performing an installation on a server that has HiCommand Device Manager 3.5 or earlier already installed, the HiCommand Device Manager HiCommandServer service might not start automatically after the system is rebooted. In this case, start the service manually. If HiCommand Device Manager is upgraded to version 4.0 or later, this problem does not occur.
- Do not execute the stop command until the HiCommand Suite Common Component service has started.

If you do this, you might not be able to stop a service even if the resident process of the service is running.

In such a case, reboot the system.

- When the startup command `hcmdssrv` is used to start the Tuning Manager service, the `KAPM06443-E` is output. If HiRDB fails to start, check the syslog file.

If the `KAPO00107-E` message is output to the syslog file, the continuous shared memory required for starting HiRDB is insufficient. If any unused product is running, stop it, and then reboot the system.

## 1.6 Stopping Tuning Manager

To stop Tuning Manager, stop the services in the following order. To stop only the HiCommand Suite TuningService service, perform just step 3. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

1. Execute the following command to stop the HiCommand Suite TuningManager service:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /stop  
/server TuningManager
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop -server TuningManager
```

2. Execute the following command to make sure the HiCommand Suite TuningManager service has stopped.

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /status  
/server TuningManager
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -status -server TuningManager
```

Make sure that the following message is displayed:

```
KAPM05009-I Already stopped service. service-name=HiCommand Suite  
TuningManager
```

3. When the HiCommand Suite TuningService service is being used, execute the following command to stop it:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /stop  
/server TuningService
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop -server TuningService
```

4. Execute the following command to stop the HBase Storage Mgmt Web Service service.

**Notes:**

- When other HiCommand Suite products are using HBase Storage Mgmt Web Service, this step is not required.
- When you attempt to stop HBase Storage Mgmt Web Service, the KAPM06445-E message is output if it takes a long time to stop HiRDB. If this message is output, wait for a while and then re-execute the command.

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /stop
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop
```

*Notes:*

- For details on stopping agents, see the *HiCommand Tuning Manager Installation Guide*.
- Do not stop the `HiRDB/EmbeddedEdition HD0` service if it is registered in the Services panel. This service must be active at all times.
- Do not stop the service when polling is being performed. If scheduled polling is set for every hour, avoid stopping the service during the period 10 minutes before and after the specified polling time, and make sure that `Polling in progress` is not displayed in the status column.
- If the HiCommand Suite Common Component service has not completely started, do not stop the service. If you do this, you might not be able to stop the service by using the stop option even if the resident process of the service is running. In such a case, reboot the system.

## 1.7 Restricting Web Terminals that can be Connected to Tuning Manager

To restrict terminals that can be connected to Tuning Manager:

1. Execute the following commands to stop the services of HBase Storage Mgmt Web Service, Tuning Manager, and Performance Reporter:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /stop
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop
```

2. Open the `httpsd.conf` file.

The `httpsd.conf` file is located in the following directory.

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\httpsd\conf\httpsd.conf
```

Solaris:

```
/opt/HiCommand/Base/httpsd/conf/httpsd.conf
```

3. Register hosts that can be connected to the Tuning Manager, in the last line of the `httpsd.conf` file.

The following shows the format for registering hosts in the `httpsd.conf` file.

```
<Location /TuningManager>  
    order allow,deny  
    allow from host [host...]  
</Location>
```

Make sure that hosts are written in one of the following formats:

- The domain name (example: *hitachi.datasystem.com*)
- Part of the domain name (example: *hitachi*)
- The whole IP address (example: *10.1.2.3 127.0.0.1*)
- Part of the IP address (example: *10.1* which, in this case, means *10.1.0.0/16*)
- Network/Netmask format (dot notation) (example: *10.1.0.0/255.255.0.0*)
- Network/n (CIDR notation: n is the number of bits for identifying a network) (example: *10.1.0.0/16*)

**Notes on the registration format:**

- If you want to specify two or more hosts in a command line for `allow from`, delimit the hosts with a space.
- Multiple lines can be used to specify hosts for `allow from`.
- If you attempt to connect from a machine which has Tuning Manager installed, you must also specify the local loop-back address (*127.0.0.1* or *localhost*).
- Make sure that you specify `order` in the specified format. If extra spaces or tabs are inserted, operation will fail.

**Example of host registration:**

```
<Location /TuningManager>  
  order allow,deny  
  allow from 127.0.0.1 10.0.0.1  
  allow from 10.0.0.0/26  
</Location>
```

4. Execute the following commands to start the services of HBase Storage Mgmt Web Service, Tuning Manager, and Performance Reporter:

**Windows:**

*HiCommand-Suite-Common-Component-installation-directory*\bin\hcmdssrv /start

**Solaris:**

/opt/HiCommand/Base/bin/hcmdssrv -start

## 1.8 Setting Data Retention Periods

### 1.8.1 About Metrics Data Retention

The Metrics Data Retention series of settings determines how long Tuning Manager will hold data points for each time period before purging data from its database. For details on valid field values, see section 1.2.1.

### 1.8.2 Data Collection and Default Metrics Retention

To conserve resources and maximize performance, Tuning Manager purges legacy data. Table 1.5 shows the default values for retaining collected metrics:

Table 1.5 Default Retention Periods for Metric Data

Resource	Hourly	Daily	Weekly	Monthly	Quarterly	Yearly
Whole Network	72 hours	31 days	See <i>Note 2</i>	12 months	See <i>Note 2</i>	5 years
Subnetworks						
Servers						
Filesystems	72 hours	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>
Device Files						
Storage	72 hours	31 days	See <i>Note 2</i>	12 months	See <i>Note 2</i>	5 years
Subsystems						
SLPR						
CLPR	72 hours	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>	See <i>Note 2</i>	5 years
Array groups						
Ports	72 hours	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>
Logical Disks						
Whole Fabric	72 hours	31 days	See <i>Note 2</i>	12 months	See <i>Note 2</i>	5 years
Fabrics						
Switches	72 hours	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>
Ports						
Application	72 hours	31 days	See <i>Note 2</i>	12 months	See <i>Note 2</i>	5 years
Oracle®						
Oracle Instance						
Tablespace	72 hours	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>	See <i>Note 2</i>	See <i>Note 1</i>
Data Files						

**Note 1:** The metrics are not collected by default. If you want to collect the metrics, change the settings by referring to section 6.15.3.

**Note 2:** The metrics are not collected by default. Specify a valid value other than zero for metrics data retention.

### 1.8.3 Disabling Metrics Data Retention

You can enter a value of 0 (zero) to disable metrics data retention for the Daily, Weekly, Monthly, Quarterly or Yearly periods. (Hourly metrics cannot be disabled). To re-enable a disabled metric, enter a non-zero value. For details on valid field values, see section 1.2.1.

When you disable data retention for a metric, all data stored for the disabled metric will be removed at the next polling interval. Users cannot set a viewpoint or select disabled metric periods in an advanced report.

Tuning Manager checks for relationships between individual values in the configured data retention settings to determine whether the relevant metric is disabled or enabled, as described in Table 1.6.

Table 1.6 Relationship Between the Values Related to Metrics Data Retention

Metrics Data Retention Period	State	
	Enabled	Disabled
Hourly	Always enabled.	Cannot be disabled.
Daily	Daily value $\geq 1$	Daily value = 0 and Weekly, Monthly, Quarterly and Yearly values = 0
Weekly	Daily value $\geq 31$ and Weekly value $\geq 1$	Weekly value = 0
Monthly	Daily value $\geq 31$ and Monthly value $\geq 12$	Monthly value = 0 and Quarterly and Yearly values = 0
Quarterly	Monthly value is effective and Quarterly value $\geq 1$	Quarterly value = 0
Yearly	Monthly value is effective and Yearly value $\geq 1$	Yearly value = 0

## 1.8.4 Setting Metrics Data Retention

To set the retention periods for data in the Tuning Manager database:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Data Retention** in the submenu.  
*Note:* For information on default, minimum, and maximum values, see section 1.8.1.
4. Specify a value of 24 or more for **Hourly Metric Data**.
5. Specify a value of 31 or more for **Daily Metric Data**.
6. Specify a value of 1 or more for **Weekly Metric Data**.
7. Specify a value of 12 or more for **Monthly Metric Data**.
8. Specify a value of 4 or more for **Quarterly Metric Data**.
9. Specify a value of 1 or more for **Yearly Metric Data**.
10. To save the settings, click **Save**. (Click **Reset** to discard these settings).

## 1.8.5 Setting Alerts Retention

To set the maximum number of days for which Alerts will be retained:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Data Retention** in the submenu.
4. For **Alerts Retention Period**, specify an integer for the maximum number of days to keep alert information.
5. To save the settings, click **Save**. (Click **Reset** to discard these settings).

## 1.9 Assigning a Subnetwork Alias

*Note:* This functionality is available to users with Manager or Administrator privileges.

If you prefer a more friendly identification for a subnetwork instead of the default used by Tuning Manager, you can assign an alias.

To assign an alias:

1. In the Navigation area, navigate to the subnetwork to which you wish to assign an alias.
2. Click on the icon of the subnetwork.  
The appropriate resource is displayed in Information Area.
3. In Application Bar Area, click on the Rename link.  
A window appears requesting the new alias for this subnetwork.
4. Click on Save.  
A confirmation message appears.
5. Click on OK to dismiss the message and refresh the Navigation area.  
The Navigation area refreshes and displays the new alias.

## 1.10 Notes on Operations in a Cluster System

This section provides guidelines for operating in a cluster system.

### 1.10.1 Copying the Definition Information Settings

If you change the definition information settings of Performance Reporter or Tuning Manager, copy the definition information from the executing node to the standby node. For details, see the *HiCommand Tuning Manager Installation Guide*.

### 1.10.2 Performance Reporter Settings for a New Agent

When a new Agent is added, the `jpcpragtsetup` command must be executed to set up a description file for the icons and metrics of the new Agent for Performance Reporter. The `jpcpragtsetup` command must be executed in both the executing and standby nodes. For details about the `jpcpragtsetup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

### 1.10.3 Errors Resulting from an Immediate Login After Starting the Tuning Manager Service

After starting the service from the cluster software, if you log in to Tuning Manager and display **Administration** and then **Agents**, `web-ERROR-3004` might be displayed. This is not usually a problem because the scheduled automatic polling removes the error.

If this error occurs, however, manual polling cannot be performed. To perform manual polling, click **Administration**, **Agents**, **Connected Agents**, and then **Refresh** to clear the error, and then try again.

### 1.10.4 Errors Resulting from Failover during Data Polling

If a failover occurs while Tuning Manager is performing data polling, sometimes `web WARN-2201` is displayed in the main window of Tuning Manager after the failover finishes. Even if this error occurs, the information acquired by polling (immediately before the polling with the problem) is correctly displayed in the report.

Also, the data that could not be acquired during the first manual or automatic polling after the failover is acquired again, and the Tuning Manager repository is reconfigured correctly.

### 1.10.5 Errors Resulting after a Failure from an Initial Startup of the Tuning Manager Service

If the first startup of the Tuning Manager service fails, even if the service starts normally thereafter, error indication appears in the login window of Performance Reporter or Tuning Manager.

If this error occurs, delete the following directories, and then start the service from the cluster software.

- Windows:
  - *HiCommand-Suite-Common-Component-installation-directory*\hwc\containers\PerformanceReporter\webapps\PerformanceReporter
  - *HiCommand-Suite-Common-Component-installation-directory*\hwc\containers\TuningManager\webapps\TuningManager
- Solaris:
  - /opt/HiCommand/Base/hwc/containers/PerformanceReporter/webapps/PerformanceReporter
  - /opt/HiCommand/Base/hwc/containers/TuningManager/webapps/TuningManager

### 1.10.6 Deleting an Agent

Even if you display the Available Agents list by choosing **Administration** then **Available Agents**, select the Agent you want to delete from this list, and then click the **Remove** button below the agent list, the connection between the Agent and Tuning Manager will not end. If this operation is performed, `web-ERROR-3001` appears in Tuning Manager.

To end the connection between the Agent and Tuning Manager in a cluster system, use the `-l` option to specify the logical host in the `jpcctrl delete` command of Tuning Manager, and then execute the command. For details on the `jpcctrl delete` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

### 1.10.7 Backing up Repository Information

Performance Reporter and Tuning Manager inherit data when a file error occurs during failover, or when a failover occurs during data polling.

If the file is damaged, however, it might not be possible to inherit the data.

To prepare for cases such as the above, make sure that you back up important repository information. For details on how to back up and restore the Performance Reporter repository, see section 5.3.2.

For details on how to back up and restore the Tuning Manager repository, see Chapter 3.

### 1.10.8 Starting and Stopping Services Registered in the Cluster Software

To start and stop Performance Reporter or Tuning Manager after they have been registered in the cluster software, execute the operation from the cluster software. Otherwise, an error occurs (for example, a service managed by the cluster software is judged to have an error).

When Tuning Manager is used in a cluster configuration, specify a virtual host name or a virtual IP address for the Tuning Manager launch URL.

When the Tuning Manager operational environment is changed from single sign-on mode to a cluster configuration, check whether a virtual host name or a virtual IP address is specified in the Tuning Manager launch URL registered with the `hcndsrep` command. If a virtual host name or a virtual IP address is not used in the Tuning Manager launch URL, specify the Tuning Manager launch URL again. To modify the Tuning Manager launch URL in single sign-on mode, use the `delete` option of the `hcndsrep` command to delete the registered launch URL, and then register a new launch URL.

### 1.10.9 Notes on Repair Installation and Uninstallation

If the HiCommand Suite Common Component service or cluster group exists, exclude them from cluster management when performing a repair installation or uninstallation.

### 1.10.10 Collecting Required Data After an Error Occurs

When a problem occurs during the operation of Performance Reporter or Tuning Manager, the following data is required for troubleshooting:

- Tuning Manager data
- Performance Reporter data
- Cluster software data
- Operating system data

### 1.10.10.1 Tuning Manager Data

Execute the data-collection commands in the executing and standby nodes to collect the Tuning Manager data. The following lists the data-collection commands to be executed:

- `htm-dump` command
- `htm-getlogs` command
- `hcmdsgetlogs` command
- `jpcras` command

For details about the `htm-dump`, `htm-getlogs`, and `hcmdsgetlogs` commands, see the *HiCommand Tuning Manager Command Line Interface Guide*. For details about the `jpcras` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

If you execute a data-collection command in the standby node, an error message such as `api-ERROR-8004` might be output at processing to acquire a file on the shared disk. Ignore this message because, even though it is displayed, there is no problem.

### 1.10.10.2 Performance Reporter Data

Collect Performance Reporter data by executing the `jpcprras` command in the executing and standby nodes.

For details on the `jpcprras` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

### 1.10.10.3 Cluster Software Data

For details on how to collect the cluster software data, see the corresponding product documentation.

### 1.10.10.4 Operating System Data

For details on how to collect the operating system data, see the corresponding product documentation.

## 1.11 Limiting the Metrics Stored in the Database

In Tuning Manager, you can specify settings in the user property file so that the information of the nine metrics shown in Table 1.7 is not collected. This function allows you to continue operation without changing the database capacity after upgrading Tuning Manager from a version earlier than 5.0 to 5.0 or later.

For details on how to change the settings, see section 1.1.

Table 1.7 Metrics that are not Collected by Changing the Settings in the User Property File

Resource	Metric	Agent for RAID Field That Is the Data Source	
		Record	Field
Array Group	Disk Random IOPS	PI_RGS	RANDOM_TOTAL_IO_RATE
	Disk Sequential IOPS	PI_RGS	SEQUENTIAL_TOTAL_IO_RATE
	Disk Random Transfer	PI_RGS	RANDOM_TOTAL_XFER_RATE
	Disk Sequential Transfer	PI_RGS	SEQUENTIAL_TOTAL_XFER_RATE
Logical Disk	Disk Random IOPS	PI_LDS	RANDOM_TOTAL_IO_RATE
	Disk Sequential IOPS	PI_LDS	SEQUENTIAL_TOTAL_IO_RATE
	Disk Random Transfer	PI_LDS	RANDOM_TOTAL_XFER_RATE
	Disk Sequential Transfer	PI_LDS	SEQUENTIAL_TOTAL_XFER_RATE
Port	Port Role	PD_PTC	PORT_ROLE



## Chapter 2 Working with Licenses

This chapter covers key topics necessary for managing your Tuning Manager license.

- Managing Licenses (see section 2.1)
- License Modes (see section 2.2)
- Entering Your License Key (see section 2.3)
- Viewing Login Mode, Tuning Manager Version, and License Information (see section 2.4)
- Re-entering Your License Key when Upgrading Tuning Manager (see section 2.5)

## 2.1 Managing Licenses

Before logging in to and using Tuning Manager, you must enter a valid license key. License keys are available for using Tuning Manager on a trial or permanent basis.

Tuning Manager accepts three types of license keys:

- Temporary

A temporary license enables you to use Tuning Manager on a trial basis before committing to a permanent license key.

Temporary licenses are valid for Tuning Manager for 120 days after installation. After 120 days, you cannot log in to Tuning Manager or use command-line utilities to administer or view information collected by Tuning Manager.

Tuning Manager will continue to poll agents and collect data while you obtain a Permanent license key to enter.

*Note:* A temporary license cannot be reactivated once it has expired.

- Permanent

Permanent licenses are valid for using Tuning Manager on an ongoing basis. The permanent license key does not expire.

- Emergency

An emergency license enables you to extend an expired license for 30 days while you obtain a new permanent license key.

*Note:* Emergency licenses are valid for 30 days and can only be entered once.

## 2.2 License Modes

The Tuning Manager license can be in one of the modes described in the following subsections:

- Initial

After installation, Tuning Manager is in the Initial license mode. The following message is displayed on the login screen: `web-ERROR-3009: Please register license key.` Command-line utilities will also display an error message.

In this mode, you cannot log in to Tuning Manager. The **Login** button will not allow access. Only the **License** button is functional, allowing you to enter a Temporary, Permanent, or Emergency license key.

- Trial

If you enter a temporary license key, Tuning Manager is in the Trial license mode. While in Trial mode, the login screen and Resource screens will display a message warning you that the temporary key will expire in a decreasing number of days on a certain date.

While in Trial mode, you can log in to, manage, and use Tuning Manager. If you obtain and enter a permanent license key before the temporary key expires, Tuning Manager will be available to you without interruption. If the temporary license key expires before you receive a permanent license key, you can request a key to use Tuning Manager in Emergency License Mode.

- Expired

If the temporary or emergency keys have expired, Tuning Manager is in Expired license mode. In Expired mode, the login screen displays an error message informing you that the temporary or emergency license key has expired. Command-line utilities will also display an error message.

While in Expired mode, you cannot log in to Tuning Manager and you cannot use the command-line utilities to manage or view information collected by Tuning Manager.

Tuning Manager will continue to poll agents and collect data while you obtain a Permanent license key to enter. If you attempt to reenter the same temporary or emergency license key, an error message is displayed.

- Normal

If you enter a permanent license key, Tuning Manager is in Normal license mode. No license key warnings or error messages will be displayed, unless you exceed the capacity supported by the key you purchased. If the current capacity stored in the Tuning Manager database exceeds the level supported by the license key, an error message will display indicating that the permanent license key is not valid.

- Emergency

If you enter an emergency license key, Tuning Manager is in Emergency license mode. While in Emergency mode, the login screen and Resource screens will display a warning message indicating that the emergency key will expire in a decreasing number of days on a certain date.

An emergency license can enable you to continue using Tuning Manager without interruption while you obtain a new permanent license key.

- Initial or Expired Licenses in SSO Mode

While Tuning Manager is in the Initial or Expired mode, if you launch Tuning Manager from another HiCommand tool (for example, HiCommand Device Manager), the Tuning Manager login screen will be displayed. You can enter a valid license key using the **License** button.

Once a valid Tuning Manager license has been entered, you can successfully re-launch Tuning Manager from another HiCommand tool.

## 2.3 Entering Your License Key

To enter your license key:

1. Click the **License** button in the login window.

The License window appears.

2. Enter the license key information using one of the following methods:
  - Type your license key in the **License Key** field.
  - Click the **Browse** button to locate and select the license key file.

*Note:* License keys are case-sensitive. In addition, when using a system that supports multi-byte path names, such as Japanese editions of Microsoft Windows, you must store the file containing the license key, `license.txt`, in a root directory such as `C:\`. Click the **Browse** button, and then navigate to this directory.

3. Click **Save** to activate the license key.

A message shows whether your license key was entered successfully.

4. To close the window, click the **Close** button.
5. If the license key entry was unsuccessful, repeat steps 2-3 and re-enter the correct license key.
6. Once you have successfully entered the license key, proceed to log in to Tuning Manager. (For more information, see section 1.3).

## 2.4 Viewing Login Mode, Tuning Manager Version, and License Information

You can view information about your current license and the installed version of Tuning Manager by clicking the **License** button on the login screen.

When you click the **License** button, the Tuning Manager License window displays the following:

- **Message**-An error message is displayed if the entered license key or license key file contains an error.
- **Information**-Displays version information about the installed program, the license type, and the login mode.
- **Additional License Key**-Provides a field for entering new or additional license keys.
- **License Detail Information**-When you enter a new or different type of license key, the License Detail Information will be updated accordingly.

## 2.5 Re-entering Your License Key when Upgrading Tuning Manager

Depending on the version of Tuning Manager, there are the following differences on entering the license key:

- When upgrading from a version earlier than Tuning Manager 3.5, you must re-enter the license key.
- When upgrading from Tuning Manager version 3.5 or later, you do not need to re-enter the license key.



## Chapter 3 Managing the Tuning Manager Database

This chapter describes how to manage the Tuning Manager database.

- Overview (see section 3.1)
- Backing up the Database (see section 3.2)
- Restoring the Database (see section 3.3)
- Expanding the Database (see section 3.4)
- Operating InterBase® (see section 3.5)
- Migrating a Database (see section 3.6)
- Identifying Unnecessary Data Accumulation Conditions and Deleting the Data (see section 3.7)
- Migrating the Server Database (see section 3.8)

## 3.1 Overview

HiCommand Suite products use HiRDB as the database management system. Tuning Manager data is stored in a database managed by HiRDB.

When multiple HiCommand Suite products have been installed on the same host, the same HiRDB instance manages each database. When other HiCommand Suite products have been installed on the host where Tuning Manager has been installed, HiRDB manages the following databases:

- Tuning Manager database
- Databases for other HiCommand Suite products that have been installed on the host where Tuning Manager has been installed
- HiCommand Suite Common Component database

*Note:* When you upgrade from Tuning Manager 3.5 or earlier to Tuning Manager 4.0 or later, the database management system must be changed from InterBase to HiRDB before starting Tuning Manager operations. For details on how to migrate the database, see section 3.6. However, when the database is migrated during installation, this operation is not required.

## 3.2 Backing up the Database

Backing up a database by using Tuning Manager concurrently backs up all data in the HiCommand Suite products installed on the same host.

Note the following points about backup:

- Regardless of the backup method for each HiCommand Suite product, data for all the HiCommand Suite products that have been installed on the same host are backed up. On the same host, backup is required only once because, whether the product used is Tuning Manager or any other HiCommand Suite product, the same contents are backed up.
- When performing a backup operation, make sure that the backup destination directory has sufficient free space. Data capacity required for Tuning Manager is as follows:

Table 3.1 Data Capacity Required for Tuning Manager

Scale	Data Capacity Required (GB)
Small	Windows: 6, Solaris: 6
Medium	Windows: 6, Solaris: 6
Large	Windows: 8, Solaris: 8

To check the current scale, execute the following command. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

Windows:

```
Tuning-Manager-installation-directory\bin\htm-db-setup -status
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-setup -status
```

For details on the `htm-db-setup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

For details on data capacity for other HiCommand Suite products, see the manual for each product.

- In Tuning Manager, if polling starts during a backup operation, an error occurs when the polling data is stored into the database. Therefore, when performing a backup operation, stop the HiCommand Suite TuningManager service.
- When performing restoration, the HiCommand Suite product configuration on the host must be the same as when backup was performed. If you add or delete a HiCommand Suite product, backup data prior to adding or deleting the HiCommand Suite product cannot be restored. Back up data periodically.

### 3.2.1 Backup Procedure

To back up a database: For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

1. Stop the HiCommand Suite Tuning Manager services.

For details about how to stop Tuning Manager, see section 1.6.

**Notes:** Do not stop HBase Storage Mgmt Web Service. If you do this, the HiRDB service also stops.

When you need to stop other HiCommand Suite services, stop the services before backing up the database. To check whether the services need to be stopped during backup operations, see the manual for each product.

2. If HBase Storage Mgmt Web Service is not running, execute the `hcmdsdbsrv` command. Executing the `hcmdsdbsrv` command starts the HiRDB service.

Execute the `hcmdsdbsrv` command as follows:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdsdbsrv /start
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdsdbsrv -start
```

3. Execute the `hcmdsbackups` command.

Executing the `hcmdsbackups` command will start the backup operation. Execute the `hcmdsbackups` command as follows.

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdsbackups /dir directory-name
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdsbacups -dir directory-name
```

The following shows the options for the `hcmdsbackups` command. Change each parameter appropriately.

- `dir directory-name`

The backup data is saved in the directory you specify in *directory-name*. You must enclose the directory name with double quotation marks (") if it contains a space.

The return values of the `hcmdsbackups` command are as follows:

- 0: Normal termination
- 1: Argument error
- 255: Abnormal termination

In the following example, the command stores a backup file into `d:\htmbakup` in a Windows environment:

```
C:\Program Files\HiCommand\Base\bin\hcmdsbackups /dir d:\htmbakup
```

### 3.3 Restoring the Database

Restoring the database by using Tuning Manager can be performed by specifying the following information:

- Tuning Manager data
- HiCommand Suite Common Component data

Following are database restoration notes:

- If the database is accessed during a restoration, an error occurs. Therefore, stop all HiCommand Suite products before starting a restoration.
- When performing restoration, the HiCommand Suite product configuration on the host must be the same as when backup was performed. If you add or delete a HiCommand Suite product, backup data prior to adding or deleting the HiCommand Suite product cannot be restored.

#### 3.3.1 Restoration Procedure

To restore the database:

1. Stop all HiCommand Suite services.

For details about how to stop Tuning Manager, see section 1.6. For details on how to stop other HiCommand Suite products, see the manual for each product.

2. Execute the `hcmdsdb` command.

Executing the `hcmdsdb` command will start the restore operations. Execute the `hcmdsdb` command as follows. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdsdb /restore  
backup-file-name /type {TuningManager | All}
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdsd -restore backup-file-name -type  
{TuningManager | All}
```

The following shows options for the `hcmdsdb` command. Change each parameter appropriately:

– restore *backup-file-name*

Specify the backup file name.

– type {*TuningManager* | *All*}

If you specify *TuningManager*, the command restores only the Tuning Manager data.

If you specify *All*, the command restores the data of all HiCommand products that have been installed.

The return values of the `hcmdsdb` command are as follows:

0: Normal termination

255: Abnormal termination

In the following example, the command restores Tuning Manager data from the backup file `d:\htmbackup\database\backup.hdb` in a Windows environment:

```
C:\Program Files\HiCommand\Base\bin\hcmsdb /restore d:\htmbackup\database\backup.hdb  
/type TuningManager
```

## 3.4 Expanding the Database

In cases when the number of resources being monitored increases, for example, the amount of information to be managed by Tuning Manager increases. For these cases, you must expand the database configuration that was specified during Tuning Manager installation.

*Note:* You cannot reduce the Tuning Manager database configuration. To reduce it, re-install Tuning Manager.

### 3.4.1 Selecting the Scale of the Database

The scale of the HiRDB database can be set to `small`, `medium`, or `large`. The criteria for selecting the scale depend on the total number of resources that are monitored by the current Tuning Manager and the total number of resources that used to be monitored in the past.

For details on the criteria for selecting the database scale and the method for calculating the number of resources, see the *HiCommand Tuning Manager Installation Guide*.

### 3.4.2 Database Space Required After Expansion

The following describes the database space needed after expansion. Note that this required database space includes the current database space.

To check the current scale, execute the following command. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

Windows:

```
Tuning-Manager-installation-directory\bin\htm-db-setup -status
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-setup -status
```

For details on the `htm-db-setup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

Table 3.2 Database Space Required After Expansion Based on Transition (Windows)

Scale Before Expansion	Scale After Expansion	Database Space Required After Extension (GB)
Small	Medium	6.0
	Large	8.0
Medium	Large	8.0

Table 3.3 Database Space Required After Expansion Based on Transition (Solaris)

Scale Before Expansion	Scale After Expansion	Database Space Required After Extension (GB)
Small	Medium	6.0
	Large	8.0
Medium	Large	8.0

### 3.4.3 Expansion Procedure

Expand the database as follows. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

**Note:** Before expanding the database, make sure that the database is backed up. For details on how to back up the database, see section 3.2.

To expand the database:

1. Execute the `htm-db-setup` command with the `-status` option to check the current database configuration.

Windows:

```
Tuning-Manager-installation-directory\bin\htm-db-setup -status
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-setup -status
```

This command displays the current database scale and other information on the console.

For details on the `htm-db-setup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

2. Stop all HiCommand Suite services.

For details about how to stop Tuning Manager, see section 1.6.

For details about how to stop other HiCommand Suite products, see the manual for each product.

3. Execute the `htm-db-setup` command to expand the database and start the database configuration change, as follows:

Windows:

```
Tuning-Manager-installation-directory\bin\htm-db-setup [-scale new-database-configuration] [-areapath database-directory-path]
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-setup [-scale new-database-configuration] [-areapath database-directory-path]
```

The following describes the options for the `htm-db-setup` command. When you specify these options, specify the appropriate information for each parameter.

- `-scale new-database-scale`

Specifies `medium` or `large` as the new database scale.

- `-areapath database-directory-path`

This parameter is effective only when `large` is specified for the `-scale` option.

Specifies the absolute path name of the directory for storing the database files.

If you omit this parameter, the directory for storing the database files will be the directory in which the database files are created, which you selected during installation.

For details on the `htm-db-setup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

**Notes:**

- You cannot change to a large-scale configuration if HiCommand Device Manager is installed on the same machine.
- You cannot make the size of the current HiRDB database smaller by using this command.

4. Start the HiCommand Suite products.

- For details on how to start Tuning Manager, see section 1.5.
- For details on how to start other HiCommand Suite products, see the manual for each product.

## 3.5 Operating InterBase®

To manage databases, Tuning Manager 3.5 and earlier versions used InterBase while Tuning Manager 4.0 or later versions use HiRDB. If you upgrade from Tuning Manager 3.5 or an earlier version to Tuning Manager 4.0, you must operate InterBase so that the database management system can be migrated from InterBase to HiRDB. For details on how to migrate the database, see section 3.6.

This section describes how to operate and uninstall InterBase.

### 3.5.1 Starting InterBase

#### 3.5.1.1 In Windows

To start InterBase:

1. Display the Services window.  
*Note:* To display the Services window in Windows 2000, choose **Start, Settings, Control Panel, Administrative Tools**, and then **Services**. To display the Services window in Windows Server® 2003, choose **Start, Administrative Tools**, and then **Services**.
2. Start InterBase Server. Double-click the **InterBase Server** service to display the service Properties dialog box.
3. Click **Start**.
4. Click **OK** to close the service Properties dialog box.
5. Start InterServer. Double-click the **InterServer** service to display the service Properties dialog box.
6. Click **Start**.
7. Click **OK** to close the service Properties dialog box.
8. Start **InterBase Guardian**. Double-click the **InterBase Guardian** service to display the service Properties dialog box.
9. Click **Start**.
10. Click **OK** to close the service Properties dialog box.

#### 3.5.1.2 In Solaris

Execute the following command to start InterBase:

```
/etc/init.d/interbaseserver start
```

## 3.5.2 Stopping InterBase

### 3.5.2.1 In Windows

To stop InterBase:

1. Display the Services window.

*Note:* To display the Services window in Windows 2000, choose **Start, Settings, Control Panel, Administrative Tools**, and then **Services**. To display the Services window in Windows Server 2003, choose **Start, Administrative Tools**, and then **Services**.

2. Double-click the **InterBase Server** service to display the service Properties dialog box.
3. Click **Stop**.
4. Click **OK** to close the service Properties dialog box.
5. Double-click the **InterServer** service to display the service Properties dialog box.
6. Click **Stop**.
7. Click **OK** to close the service Properties dialog box.
8. Double-click the **InterBase Guardian** service to display the service Properties dialog box.
9. Click **Stop**.
10. Click **OK** to close the service Properties dialog box.

### 3.5.2.2 In Solaris

Execute the following command to stop InterBase:

```
/etc/init.d/interbaseserver stop
```

## 3.5.3 Using InterBase to Back up a Database

*Note:* If you want to back up data for technical support, see section 7.7. Only the SYSDBA users and the database owner can back up a database.

To back up a database by using InterBase:

1. Stop the HiCommand Suite TuningManager service.
2. Make sure that the InterBase services are currently running.
3. At the command line, enter the following as a one-line command:

```
InterBase-installation-directory/bin/gbak -user sysdba -password masterkey -backup  
Tuning-Manager-installation-directory/data/db/htm_live.gdb backup-file-name
```

**Notes:**

- For *backup-file-name*, specify a full path to a directory other than the InterBase installation directory, so that the backup file can be identified easily. If you specify a backup file that already exists, it will be overwritten. To avoid overwriting the file, specify a unique name for *backup-file-name*.
- In Windows, executing the `gbak` command as is will cause an error because the path to *Tuning-Manager-installation-directory* contains spaces. To prevent the error, enclose the full path to the `htm_live.gdb` file in double quotation marks (") as follows:  
" *Tuning-Manager-installation-directory*/data/db/htm\_live.gdb"

### 3.5.4 Using InterBase to Restore a Database

**Note:** InterBase allows any user to restore a database. However, only the SYSDBA users and the database owner can restore a database by overwriting the existing one.

To restore a database by using InterBase:

1. Make sure that the InterBase services are currently running.
2. To restore the data by overwriting the existing database, make sure that the HiCommand Suite TuningManager service has stopped.
3. At the command line, enter the following as a one-line command:

```
InterBase-installation-directory/bin/gbak -user sysdba -password masterkey  
full-path-including-backup-file-name -replace  
Tuning-Manager-installation-directory/data/db/htm_live.gdb
```

**Notes:**

- When specifying the name of the backup file to be restored, you must include the full path to the backup file.
- In Windows, executing the `gbak` command as is will cause an error because the path to *Tuning-Manager-installation-directory* contains spaces. To prevent the error, enclose the full path to the `htm_live.gdb` file in double quotation marks (") as follows:  
" *Tuning-Manager-installation-directory*/data/db/htm\_live.gdb"

### 3.5.5 Uninstalling InterBase (Windows)

Uninstalling InterBase requires the following steps:

- Deleting the InterServer service
- Uninstalling InterClient®
- Uninstalling InterBase

**Notes:** When you uninstall InterBase, make sure that no other application is using InterBase. Before you uninstall InterBase, make sure that the database managed by InterBase has been backed up.

### 3.5.5.1 Deleting the InterServer Service

To delete the InterServer service:

1. Stop InterServer by carrying out the following procedure:
  - a. Display the Services window.
  - b. Double-click the **InterServer** service to display the service Properties dialog box.
  - c. Click **Stop**.
  - d. Click **OK** to close the service Properties dialog box.
2. Open the InterServer Configuration Utility.  
(The utility is located in the **Start Menu** under InterBase InterClient).  
The InterServer Configuration Utility window appears.
3. Click the **Advanced** tab to display Service Configurations for InterServer.
4. Click the **Remove** button. The deletion confirmation window for the InterServer service appears.
5. Click the **Yes** button to delete the InterServer service.
6. Delete the following line from the `services` file (located in, for example, `c:\WinDir\System32\Drivers\ETC\services`):

```
interserver      3060/tcp          # InterBase InterServer
```

### 3.5.5.2 Uninstalling InterClient

To uninstall InterClient:

1. From the Windows **Control Panel**, choose **Add/Remove Programs**.
2. In the Add/Remove Programs window, select **InterBase InterClient**, and then click the **Change/Remove** button.
3. Click the **Yes** button to uninstall InterClient. A window appears, showing the progress of the uninstallation.
4. When a message (Uninstall successfully completed) appears, indicating that uninstallation of InterClient has completed, click the **OK** button to finish the uninstallation of InterClient.

### 3.5.5.3 Uninstalling InterBase

To uninstall InterBase:

1. Stop InterServer according to the following procedure:
  - a) Display the Services window.
  - b) Double-click the **InterBase Server** service to display the service Properties dialog box.
  - c) Click **Stop**.
  - d) Click **OK** to close the service Properties dialog box.
  - e) Double-click the **InterBase Guardian** service to display the service Properties dialog box.
  - f) Click **Stop**.
  - g) Click **OK** to close the service Properties dialog box.
2. From the Windows **Control Panel**, choose **Add/Remove Programs**.
3. In the Add/Remove Programs window, select **InterBase**, and then click the **Change/Remove** button.

The InterBase uninstallation start window appears.
4. Click the **Uninstall** button to uninstall InterBase. The InterBase uninstallation completion window appears.
5. Click the **Done** button to finish the uninstallation of InterBase.

## 3.5.6 Uninstalling InterBase (Solaris)

Uninstalling InterBase requires the following steps:

- Uninstalling InterBase Server
- Uninstalling InterClient

### *Notes:*

- When you uninstall InterBase, make sure that no other application is using InterBase.
- Before you uninstall InterBase, make sure that the database managed by InterBase has been backed up.

### 3.5.6.1 Uninstalling InterBase Server

To uninstall InterBase Server, you must log in as a root user. Before you start uninstallation, make sure that you have logged in as a root user, or use the `su` command to change yourself to a root user.

To uninstall InterBase Server:

1. Stop the InterBase service.

```
/etc/init.d/interbaseserver stop
```

2. Use the `pkgrm` command to delete InterBase.

```
pkgrm IBCSN60
```

3. If you neither re-install InterBase nor use the existing database, use the following command to delete the InterBase directory (if this directory is a symbolic link, also delete the physical directory):

```
rm -Rf /opt/interbase
```

### 3.5.6.2 Uninstalling InterClient

To uninstall InterClient:

1. Use the following command to delete the InterClient directory (if this directory is a symbolic link, also delete the physical directory):

```
rm -Rf /usr/interclient
```

2. In the `/etc/services` file, delete the following line:

```
interserver 3060/tcp
```

3. In the `/etc/inetd.conf` file, delete the following line:

```
interserver stream tcp nowait root  
/usr/interclient/bin/interserver interserver
```

4. Use the following command to check the process ID (PID) of the `inetd` daemon:

```
ps -ef | grep inetd
```

5. Use the following command to restart the `inetd` daemon:

```
kill -HUP PID
```

Where *PID* is the process ID (PID) you found in step 4.

6. Use the following command to delete the `interbaseserver` script:

```
rm -f /etc/init.d/interbaseserver
```

7. Use the following command to delete the symbolic link to `interbaseserver`:

```
rm -f /etc/rc*.d/*interbaseserver
```

## 3.6 Migrating a Database

If you upgrade from Tuning Manager 3.5 or earlier to Tuning Manager 4.0 or later, you need to migrate the database management system for HiCommand Suite products from InterBase to HiRDB.

Use the `htm-db-convert` command to migrate a database. This command migrates Tuning Manager data.

### Notes:

- This operation is unnecessary if you have performed an upgrade installation to migrate the database.
- Execution of database migration using the `htm-db-convert` command can only be performed when the host for Tuning Manager before the upgrade installation is the same as the host used after the upgrade installation.

To migrate the database:

1. Stop the HiCommand Suite TuningManager service. For details about how to stop this service, see section 1.6.
2. Make sure that InterBase is running. For details about how to start InterBase, see section 3.5.1.
3. Execute the `htm-db-convert` command.

The database migration starts. Execute the `htm-db-convert` command as follows. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

### Windows:

```
Tuning-Manager-installation-directory\bin\htm-db-convert.bat
```

### Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-convert.sh
```

Table 3.4 shows the return values of the `htm-db-convert` command.

Table 3.4 Return Values of the `htm-db-convert` Command

Return Value	Meaning
0	Normal termination
1	The InterBase service has stopped.
2	The HiRDB service has stopped.
3	InterBase authentication error
4	HiRDB authentication error
102	User operation error
103	Error due to the incorrect environment

Return Value	Meaning
255	Abnormal termination

4. When the command processing finishes, start Tuning Manager.  
For details about how to start Tuning Manager, see section 1.5.
5. If you no longer use InterBase, uninstall InterBase.  
For details about how to uninstall InterBase, see section 3.5.5 or section 3.5.6.

### 3.7 Identifying Unnecessary Data Accumulation Conditions and Deleting the Data

Unnecessary data might accumulate when Tuning Manager is used under the following conditions, and if one or more of the associated problems occur. Execute the `htm-db-cleanup` command, and delete any unnecessary data.

#### 3.7.1 Unnecessary Data Accumulation Conditions and Problems: Case 1

<Conditions>

- You are using Tuning Manager version 4.0.0-00 to 4.0.0-03, or 4.1.0-00 to 4.1.0-01.
- You are using Agent for RAID 3.5.0 or later.
- You are monitoring an LDEV that is not externally connected.

*Note:* Unnecessary data might accumulate if Tuning Manager 4.0.0-04 or 4.1.0-02 was used in the past, and its database was migrated during an upgrade installation.

<Problems>

- Polling takes longer each time.
- Polling is set to execute on the hour, but fails to complete within the hour, so you can only view data for every second hour.
- Data aggregation fails and `api-ERROR-0515` is output to `htm.log`.

#### 3.7.2 Unnecessary Data Accumulation Conditions and Problems: Case 2

<Conditions>

- Tuning Manager version 4.0.0-00 to 4.0.0-01 is being used.
- Agent for RAID 4.0.0-00 or later is being used.

*Note:* Unnecessary data might accumulate if Tuning Manager 4.0.0-02 or 4.1.0 was used in the past, and its database was migrated during an upgrade installation.

<Problems>

- Tuning Manager version 4.0.0-00 to 4.0.0-01 is being used, and port resources do not appear on the resource tree.
- Tuning Manager version 4.0.0-00 to 4.0.0-01 is being used, and not all of the data of resources under the subsystem gets updated.
- Although the problem described in (Situation 1) has been fixed, `KFPA11713-E` is output to `htm.log`.

### 3.7.3 Unnecessary Data Accumulation Conditions and Problems: Case 3

#### <Conditions>

- You are using Tuning Manager 4.0.0-00 to 5.1.0-01.
- Both the hosts connected to the following storage devices and their LDEVs (regardless of OS) are being monitored by Tuning Manager.
  - Thunder 9200
  - Thunder 9500V Series
  - TagmaStore AMS
  - TagmaStore WMS
- In the monitoring target storage subsystem, one or more logical disks are being monitored by Tuning Manager.

*Note:* Unnecessary data might accumulate if Tuning Manager 5.1.0-02 or later was used in the past, and its database was migrated during an upgrade installation.

#### <Problems>

- Data aggregation fails during polling, and the performance data needed for daily, weekly, or yearly data aggregation is not displayed, or is displayed incorrectly.
- `api-ERROR-0515` is output to `htm.log`.

### 3.7.4 Deleting Unnecessary Data

You can delete any unnecessary data by batch handling or on a case-by-case basis. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

#### 3.7.4.1 Deleting Unnecessary Data by Batch Handling (Cases 1 to 3)

If you want to check the number of unnecessary data items in advance, execute the `htm-db-cleanup` command with the `-count` option specified. For details about the `-count` option, see the *HiCommand Tuning Manager Command Line Interface Guide*.

1. Stop all HiCommand Suite services.
  - For details on how to stop Tuning Manager, see section 1.6.
  - For details on how to stop other HiCommand Suite products, see the manual for each product.
2. If possible, stop other applications. Depending on the amount of data to be deleted, the performance of other products or applications might degrade.
3. Execute the `hcmdsdbsrv` command.
  - Executing the `hcmdsdbsrv` command starts HiRDB.
  - Execute the `hcmdsdbsrv` command as follows:

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmsdsbsrv  
/start
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmsdsbsrv -start
```

4. Check the size of the area to which the database is backed up.

For details about the size of the backup destination, see section 3.2.

5. Execute the `htm-db-cleanup` command as shown below.

For details on the `htm-db-cleanup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

Windows:

```
Tuning-Manager-installation-folder\bin\htm-db-cleanup -all -dir  
folder-name
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-cleanup -all -dir  
directory-name
```

6. After you execute the `htm-db-cleanup` command, a confirmation message shows the number of records to be deleted and asks if you are sure you want to delete them. Type `y`. If you type any other letter, `n` is assumed and command execution stops. When you type `y`, the database is backed up, and a message showing deletion progress appears on the screen.

Another message appears when deletion processing is successfully completed.

7. Restart the HiCommand Suite services.

For details on restarting Tuning Manager, see section 1.5.

For details on restarting other HiCommand Suite services, see the manual for each product.

### 3.7.4.2 Deleting Unnecessary Data on a Per-Case Basis (Cases 1 to 3)

1. Stop all HiCommand Suite services.

For details on how to stop Tuning Manager, see section 1.6.

For details on how to stop other HiCommand Suite products, see the manual for each product.

2. If possible, stop other applications. Depending on the amount of data to be deleted, the performance of other products or applications might degrade.

3. Execute the `hcmsdsbsrv` command.

Executing the `hcmsdsbsrv` command starts HiRDB.

Execute the `hcmsdsbsrv` command as follows.

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmdsdbsrv  
/start
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdsdbsrv -start
```

4. Back up the database.

For details on how to back up the database, see section 3.2.

5. Execute the `htm-db-cleanup` command as shown below.

For details on the `htm-db-cleanup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

Unnecessary data accumulation conditions and problems: Measures for handling case 1:

Windows:

```
Tuning-Manager-installation-folder\bin\htm-db-cleanup
```

or

```
Tuning-Manager-installation-folder\bin\htm-db-cleanup -target N
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-cleanup
```

or

```
/opt/HiCommand/TuningManager/bin/htm-db-cleanup -target N
```

Unnecessary data accumulation conditions and problems: Measures for handling case 2:

Windows:

```
Tuning-Manager-installation-folder\bin\htm-db-cleanup -target D
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-cleanup -target D
```

Unnecessary data accumulation conditions and problems: Measures for handling case 3:

Windows:

```
Tuning-Manager-installation-folder\bin\htm-db-cleanup -target W
```

```
Tuning-Manager-installation-folder\bin\htm-db-cleanup -target S
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-db-cleanup -target W
```

```
/opt/HiCommand/TuningManager/bin/htm-db-cleanup -target S
```

6. After you execute the `htm-db-cleanup` command, a confirmation message shows the number of records to be deleted and asks if you are sure you want to delete them. Type `y`. If you type any other letter, `n` is assumed and command execution stops. When you type `y`, a message showing deletion progress appears on the screen.

Another message appears when deletion processing is successfully completed.

7. Execute the commands below in the order in which they are written. Executing these commands concatenates non-contiguous free-space blocks into a contiguous free space.

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmsdbreclaim  
-k table -t U5648567.all -o
```

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmsdbreclaim  
-k table -t U5648567.all -j
```

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmsdbreclaim  
-k index -t U5648567.all
```

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmsdbreclaim  
-k index -t U5648567.all -j
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmsdbreclaim -k table -t U5648567.all -o
```

```
/opt/HiCommand/Base/bin/hcmsdbreclaim -k table -t U5648567.all -j
```

```
/opt/HiCommand/Base/bin/hcmsdbreclaim -k index -t U5648567.all
```

```
/opt/HiCommand/Base/bin/hcmsdbreclaim -k index -t U5648567.all -j
```

8. Restart the HiCommand Suite services.
  - For details on restarting Tuning Manager, see section 1.5.
  - For details on restarting other HiCommand Suite services, see the manual for each product.

## 3.8 Migrating the Server Database

If HiCommand Suite products are used for an extended period of time, you may need a higher performance machine in order to accommodate product version upgrades and the increased number of objects to be managed. If this occurs, database migration will be one important component of the machine replacement process. In HiCommand Suite products, you can migrate the database by using the `hcmdsdbtrans` command. The `hcmdsdbtrans` command migrates all information stored in the database of each HiCommand Suite product as well as user information managed by the HiCommand Suite Common Component.

You can use the `hcmdsdbtrans` command to migrate the Tuning Manager database to a machine that has a different environment than the currently operating server machine, as shown in the following cases:

- Migration to a different platform machine
- Migration to a machine on which the installation locations for HiCommand Suite products are different from the ones on the migration source
- Migration to a machine on which the versions of HiCommand Suite products are newer than the ones on the migration source

### 3.8.1 Notes When Migrating the Database

The following are notes for the types, versions, and user information of the HiCommand Suite products on the migration source and migration destination servers.

Notes for types and versions of the HiCommand Suite products on the migration source and migration destination servers:

- The database of a HiCommand Suite product that is not installed on the migration destination server cannot be migrated. Install all necessary HiCommand Suite products on the migration destination server.
- If any of the versions of the HiCommand Suite products installed on the migration destination server is older than the ones on the migration source server, the database cannot be migrated. On the migration destination server, install the HiCommand Suite products whose versions are the same as or higher than the ones on the migration source server.
- The databases for Tuning Manager 3.5 or earlier cannot be migrated. If you need to migrate such a database, in advance, upgrade Tuning Manager to version 4.0 or later on both the migration source and destination servers.
- If the size of the disk space used in the database filesystem (RD area) for Tuning Manager installed on the migration source server exceeds the maximum size indicated in Table 3.7, database migration might fail. In this case, do not migrate a database. For details on how to check the disk space used in the database filesystem, see section 3.8.2.

- If the size of the database for Tuning Manager installed on the migration destination server is smaller than that for Tuning Manager installed on the migration source server, you cannot migrate a database. For the migration destination server, select a database size that is equal to or larger than that of the migration source server, and then install Tuning Manager.

Table 3.5 Combination of Databases that Can Be Migrated

Migration Source Server		Migration Destination Server					
		Windows			Solaris		
		Small	Medium	Large	Small	Medium	Large
Windows	Small	Yes	Yes	Yes	Yes	Yes	Yes
	Medium	No	Yes	Yes	No	Yes	Yes
	Large	No	No	Yes	No	No	No (See <i>Note</i> )
Solaris	Small	Yes	Yes	Yes	Yes	Yes	Yes
	Medium	No	Yes	Yes	No	Yes	Yes
	Large	No	No	Yes	No	No	Yes

**Note:** Windows databases whose size is **large** cannot be migrated to a Solaris database whose size is **large**.

Notes for user information of the HiCommand Suite products on the migration source and migration destination servers:

- If there is user information on the migration destination server, this user information will be replaced with the user information from the migration source server. Therefore, do not perform a migration to the machine on which user information for the HiCommand suite products already exists.
- If the databases of several HiCommand Suite products installed on a management server are migrated in multiple operations, the user information is replaced with new information at each operation, and eventually only the user information for the products migrated during the last operation will remain. When you perform migration for multiple products, be sure to migrate the databases in one operation so that user information for every product can be migrated.
- You cannot perform migration to integrate the HiCommand Suite products that were running on multiple management servers on to one management server because user information will be overwritten with each successive migration.

### 3.8.2 Procedure for Checking the Disk Space Used in the Database

To check the status of the disk space used in the database RD area, perform the procedure below. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

1. Execute the following command to make sure that Tuning Manager service is not running:

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmdssrv /status /server TuningManager
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -status -server TuningManager
```

If the Tuning Manager service is running, the following message is displayed:

```
KAPM05007-I Already started service. service-name=HiCommand Suite TuningManager
```

2. Execute the following command if the Tuning Manager service is running:

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmdssrv /stop /server TuningManager
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop -server TuningManager
```

3. Check the size of the physical files saved in the folder for storing the Tuning Manager database, specified during installation. This physical file size is used for the corresponding RD area.

For details on the physical file names and corresponding RD area names, see Table 3.6.

If Tuning Manager was installed using the default settings, the folder for storing the Tuning Manager database is as follows:

Windows:

```
Tuning-Manager-installation-folder\data\rd\TuningManager
```

Solaris:

```
/opt/HiCommand/TuningManager/data/rd/TuningManager
```

Table 3.6 RD Area Names and Physical File Names

RD Area Name	Physical File Name
RDUSAGE (See <i>Note 1</i> )	USAGE_SYSFILE
	USAGE_SYSFILE_EX (See <i>Note 2</i> )
RDSTATIC	RDSTATIC_SYSFILE
RDTRANSIENT	RDTRANSIENT_SYSFILE

**Note 1:**

The size of PDUSAGE is the sum of the USAGE\_SYSFILE and USAGE\_SYSFILE\_EX sizes.

**Note 2:**

- This file is created only when the database size is changed to `Large`.
  - When the database size has already been expanded to `Large`, this file is saved in the folder for storing the Tuning Manager database, which was specified during database expansion.
4. Check whether the size of the disk space used for the RD area, which was checked in the above steps, exceeds the size shown in Table 3.7. If any of the disk space used for RD area (GB) exceeds the maximum size shown in the table, the database migration might fail.

**Table 3.7** Maximum Size of the RD Area Allowed for Database Migration

Target RD Area Name	Maximum Size of the RD Area Allowed for Database Migration that Corresponds to the Scale of the Tuning Manager Database		
	Small	Medium	Large
RDUSAGE	1.2 GB	1.2 GB	2.5 GB
RDSTATIC	1.2 GB	1.2 GB	1.2 GB
RDTRANSIENT	1.2 GB	1.2 GB	1.2 GB

### 3.8.3 Procedure for Migrating Databases

To migrate databases:

1. Install, on the migration destination server, the HiCommand Suite products whose databases will be migrated.
2. Export the databases at the migration source server by using the `hcmandsdbtrans` command.
3. Transfer the archive file from the migration source server to the migration destination server.
4. Import the database at the migration destination server by using the `hcmandsdbtrans` command.

The following subsections describe the details of each procedure.

### 3.8.4 Installing the HiCommand Suite Products on the Migration Destination Server

Install, on the migration destination server, the HiCommand Suite products whose databases will be migrated. The version of each HiCommand Suite product installed on the migration destination server must be the same as or higher than the one on the migration source server.

### 3.8.5 Exporting the Database at the Migration Source Server

To export the database of Tuning Manager, a directory for temporarily storing the information of the database, and a directory for storing the archive file are required. Each of these directories requires as much space as the total size of the following two directories:

- The directory storing the Tuning Manager database
- The directory storing the HiCommand Suite Common Component database (excluding the `SYS` directory and the directories beneath it)

This capacity is a guideline value applied when only the Tuning Manager database is installed. If HiCommand Suite products other than Tuning Manager are also installed, take the capacities of those databases into account as well.

**Caution:** When the total capacity of the database exceeds 2 GB, if you create an archive file by specifying the file option of the `hcmsdbtrans` command during export of the database, creation of the archive file fails at its destination and the `KAPM05923-E` message is output. In this case, instead of using the archive file, transfer to the migration destination the database information collected when exporting the database.

To export the database at the migration source server (for details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*):

1. Stop the Tuning Manager service and HiCommand Suite Common Component using the following procedure:

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmdssrv /stop
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop
```

**Important:** If other HiCommand Suite products are running, stop them all.

2. Execute the following command to start the database:

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmsdbsrv /start
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmsdbsrv -start
```

3. Execute the `hcmdsdbtrans` command:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdsdbtrans  
/export /workpath working-folder /file archive-file
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdsdbsdbtrans -export -workpath working-directory  
-file archive-file
```

In the `hcmdsdbtrans` command, you can specify the following options:

`workpath`

Specify the absolute path to the directory where you wish to temporarily store database information. In Solaris, do not specify a path that includes a space character. Specify a directory on your local disk.

**Caution:** Specify an empty directory for the `workpath` option. If you specify a folder other than an empty directory, export processing will be cancelled. If this occurs, specify an empty directory and execute the `hcmdsdbtrans` command again.

`file`

Specify the absolute path to the archive file of the database to be exported. In Solaris, do not specify a path that includes a space character.

The following table lists the actions to be taken when an error message is output. If a message that does not have one of the following message IDs is output, take actions according to the message.

Table 3.8 Action to Be Taken When an Error Message Is Output (During an Export)

Message ID	Action
KAPM05909-E	Collect maintenance information, and then contact Customer Support.
KAPM05910-E	Make sure that the products have been properly installed, and if necessary, take actions to satisfy this condition. If an error still occurs after taking the above actions, collect maintenance information, and then contact Customer Support.
KAPM05922-E	Make sure that you secure sufficient space in the disk that is to store the archive file. If an error still occurs even after securing the disk space, collect maintenance information, and then contact Customer Support.
KAPM05923-E	Instead of the archive file, transfer the data stored in the folder specified by the <code>workpath</code> option to the migration destination server.

4. Transfer the exported file to the migration destination server.

If the archive file cannot be created, transfer all the files stored in the directory specified by the `workpath` option. In that case, do not change the file structure in the directory specified by the `workpath` option.

### 3.8.6 Importing the Database at the Migration Destination Server

To import the database at the migration destination server (for details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*):

1. Stop the Tuning Manager service and HiCommand Suite Common Component as follows:

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmdssrv /stop
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop
```

**Important:** If other HiCommand Suite products are running, stop them all.

2. Execute the following command to start the database:

Windows:

```
HiCommand-Suite-Common-Component-installation-folder\bin\hcmdsdbsrv /start
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdsdbsrv -start
```

3. Execute the `hcmdbdbtrans` command:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdbdbtrans  
/import /workpath working-folder [/file archive-file] /type {All |  
name-of-the-HiCommand-Suite-product-whose-database-is-migrated}
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdbdbtrans -import -workpath working-directory  
[-file archive-file] -type {All |  
name-of-the-HiCommand-Suite-product-whose-database-is-migrated}
```

In the `hcmdbdbtrans` command, you can specify the following options:

`workpath`

When using an archive file during the import:

Specify the absolute path to the directory used to extract the archive file. In Solaris, do not specify a path that includes a space character. Specify a directory on your local disk. If you use an archive file, the `file` option must be specified.

**Caution:** Specify an empty directory for the `workpath` option. If you specify a directory other than an empty directory, export processing will be cancelled. If this occurs, specify an empty directory, and then execute the `hcmdbdbtrans` command again.

When not using the archive file during the import:

Specify the directory that stores the database information transferred from the migration source server. Do not change the file structure in the transferred directory. Also, do not specify the `file` option.

`file`

Specify the absolute path to the archive file of the databases transferred from the migration source server. In Solaris, do not specify a path that includes a space character. If the database information transferred from the migration source server is stored in the directory specified by `workpath`, you do not need to specify this option.

`type`

Specify the names of the HiCommand Suite products whose databases will be migrated. Only the databases of the specified products are migrated.

You can use the `type` option to migrate the databases only when the databases of all the specified products exist in the directory specified by the archive file or the `workpath` option, and all the specified products are installed on the migration destination server. If any of the products do not meet the conditions above, migration will not performed.

The following product names can be specified: `DeviceManager`, `GlobalLinkAvailabilityManager`, `ReplicationMonitor`, `TieredStorageManager`, and `TuningManager`. To specify multiple product names, use a comma as the delimiter between the names.

To migrate the databases of all the installed HiCommand Suite products at a time, specify `ALL`. The databases of the HiCommand Suite products installed on the migration destination server are automatically selected and migrated.

The following table lists the actions to be taken when an error message is output. If a message that does not have one of the following message IDs is output, take actions according to the message.

Table 3.9 Action to Be Take When an Error Message Is Output (During an Import)

Message ID	Action
KAPM05909-E	Collect maintenance information, and then contact Customer Support.
KAPM05910-E	Make sure that the products have been properly installed, and if necessary, take actions to satisfy this condition. If an error still occurs after taking the above actions, collect maintenance information, and then contact Customer Support.
KAPM05911-E	Check the version of the products. If migration is not supported for the version of the products, use the <code>type</code> option to import all products other than the unsupported products.
KAPM05913-E	Perform one of the following operations: <ul style="list-style-type: none"><li>▪ Install the products that are not installed on the migration destination.</li><li>▪ Use the <code>type</code> option to import only the products installed on the migration destination.</li></ul>
KAPM05914-E	Use the <code>type</code> option to specify only the products that are included in the archive file or in the folder specified by the <code>workpath</code> option.
KAPM05915-E	Check the data to be imported.
KAPM05916-E	Check the data to be imported and the setting of the server to which the data is to be imported.

Message ID	Action
KAPM05921-E	<p>Make sure the following conditions are satisfied, and if necessary, take actions to satisfy them:</p> <ul style="list-style-type: none"> <li>▪ The capacity of the disk used for the folder specified by the <code>workpath</code> option is sufficient.</li> <li>▪ The archive file is for the <code>hcmsdbtrans</code> command.</li> </ul> <p>If an error still occurs after taking the above actions, collect maintenance information, and then contact Customer Support.</p>
KAPM05926-E	<ul style="list-style-type: none"> <li>▪ When the <code>file</code> option is specified</li> <li>▪ Check whether the specified file is the archive file for the <code>hcmsdbtrans</code> command.</li> <li>▪ When the <code>file</code> option is not specified</li> <li>▪ Check whether all the contents of the folder specified by the <code>workpath</code> option when exporting are stored in the folder specified by the <code>workpath</code> option.</li> </ul> <p>If an error still occurs after taking the above actions, collect maintenance information, and then contact Customer Support.</p>

4. Restart the Tuning Manager service and HiCommand Suit Common Component on the migration destination as follows:

Windows:

*HiCommand-Suite-Common-Component-installation-folder*\bin\hcmdssrv /start

Solaris:

/opt/HiCommand/Base/bin/hcmdssrv -start

## Chapter 4 Managing Users

This chapter covers key topics for creating and managing Tuning Manager user accounts.

- Reviewing Login Modes (see section 4.1)
- Administrating Users in Standalone Mode (see section 4.2)
- Administrating Users in Single Sign-on Mode (see section 4.3)
- Switching the Login Mode (see section 4.4)

## 4.1 Reviewing Login Modes

When logging in to Tuning Manager, select one of the two login modes, which differ by how users are managed.

Table 4.1 Login Modes and User Management

Login Mode	Explanation
Standalone mode	<ul style="list-style-type: none"><li>▪ This is the default login mode for Tuning Manager.</li><li>▪ Tuning Manager maintains its own user account table in its local repository. The user administration interface is provided within Tuning Manager.</li></ul>
Single sign-on (SSO) mode	<ul style="list-style-type: none"><li>▪ Tuning Manager uses user accounts managed by HiCommand Device Manager.</li><li>▪ Tuning Manager logins are authenticated against HiCommand Device Manager.</li><li>▪ A user can use both Tuning Manager and HiCommand Device Manager after being authenticated once.</li><li>▪ An administrator can reduce management work-hours by using HiCommand Device Manager to centrally manage the users.</li><li>▪ For details about user accounts managed by HiCommand Device Manager, see the <i>HiCommand Device Manager Web Client User's Guide</i>.</li></ul>

## 4.2 Administrating Users in Standalone Mode

This section describes user administration and authentication for installations relying on standalone mode.

### 4.2.1 Reviewing User Permissions

In standalone mode, the tasks displayed in Tuning Manager differ depending on the group to which the user belongs.

Table 4.2 Tuning Manager User Permissions

Permitted Tasks	Group		
	User	Manager	Admin
<ul style="list-style-type: none"> <li>▪ View Performance</li> <li>▪ View Capacity</li> <li>▪ View Alerts</li> <li>▪ View online Help</li> <li>▪ Bookmark help topics</li> <li>▪ Launch Performance Reporter</li> <li>▪ Launch HiCommand Device Manager</li> <li>▪ Edit account password and contact information</li> </ul>	Yes	Yes	Yes
<ul style="list-style-type: none"> <li>▪ Alert settings</li> <li>▪ Storage Navigator applications launch in single sign-on mode</li> <li>▪ Assigning a Subnetwork Alias</li> </ul>	No	Yes	Yes
<ul style="list-style-type: none"> <li>▪ Add, delete and edit users</li> <li>▪ HiCommand Device Manager launch URL configuration</li> <li>▪ Storage Navigator applications launch settings</li> <li>▪ Agent administration</li> <li>▪ Server configuration</li> </ul>	No	No	Yes

## 4.2.2 Adding Users

To create a user in standalone mode:

1. Log in with Admin rights. For details, see section 1.3.
2. Click **Administration** in the explorer area.
3. Click **Users and Permissions** in the submenu.
4. Click the **Add User** button.

The User Profile form appears.

5. Enter user information in the following fields (all are required).

For details on the entry rules for each field, see section 1.2.1.

- **User ID**
  - **Password**
  - **Confirm Password**
  - **Group** (select from **admin**, **manager**, or **user**)
  - **First name**
  - **Last name**
  - **Email address**
6. Click the **Save** button to save the information you specified. To reset the information in the window to the initial status, click the **Reset** button.

### 4.2.3 Editing Users

To change user information in standalone mode:

1. Log in with Admin rights. For details, see section 1.3.
2. Click **Administration** in the explorer area.
3. Click **Users and Permissions** in the submenu.
4. Select the user you wish to edit.
5. Click **Edit** to display the **User Profile** form.
6. Modify user profile information as required. For details on valid field values, see section 1.2.1.
7. Click the **Save** button to edit the user information. Click the **Reset** button to reset the information in the window to the initial status.
8. To abandon your changes and redisplay the user list window, click the **Users and Permissions** submenu.

### 4.2.4 Deleting Users

To remove a user in standalone mode:

1. Log in with Admin rights. For details, see section 1.3.
2. Click **Administration** in the explorer area.
3. Click **Users and Permissions** in the submenu.
4. Select the user you wish to delete.
5. Click **Delete**. A dialog appears confirming this action will delete the user.
6. Click **OK**.

*Note:* A user with Administrator privileges can remove other users with Administrator privileges, and can even remove `orionadmin` and `system`, the initial administrator users provided by Tuning Manager.

*Note:* A logged-in user who has Administrator privileges cannot delete their own account.

## 4.3 Administrating Users in Single Sign-on Mode

This section describes how user privileges are mapped when Tuning Manager is in SSO mode. When Tuning Manager is in SSO mode, HiCommand Device Manager manages users.

When a version of HiCommand Device Manager is 5.1 or later, due to the account lock function, sometimes you cannot log in from Tuning Manager in SSO mode. In this case, ask a HiCommand Device Manager user with Administrator privileges for assistance. For details on the account lock function, see the *HiCommand Device Manager Server Installation and Configuration Guide*.

### 4.3.1 About User Privileges

When Tuning Manager is operated in single sign-on (SSO) mode, users are mapped with the following privileges:

Table 4.3 Correspondence Between Tuning Manager Groups and HiCommand Device Manager Groups

Tuning Manager Groups	HiCommand Device Manager Groups	
	Local rights	Global rights
User	Guest	Guest
Manager	StorageAdmin, Admin	StorageAdmin
Admin	n/a	Admin

### 4.3.2 Reviewing GUI Differences

When Tuning Manager is run in single sign-on (SSO) mode, user management and HiCommand Device Manager URL configuration features do not appear in Tuning Manager.

- **User with Admin right:** If you click **User Profile** in the explorer area when Tuning Manager is in the SSO mode, the **User Profile** window is displayed. **Account Info** is displayed in the information area, but you cannot edit the displayed information from Tuning Manager while it is in the SSO mode.

## Standalone Mode



## SSO Mode



Figure 4.1 User Profile Window for User with Admin Rights

- User with Manager or User right: If you click **User Profile** in the explorer area while Tuning Manager is in the SSO mode, the **User Profile** window is displayed. **Account Info** is displayed in the information area, but you cannot edit the displayed information from Tuning Manager while it is in the SSO mode.

## User Group (SSO Mode)



## Manager Group (SSO Mode)



Figure 4.2 User Profile Window for User with Manager or User Rights

## 4.4 Switching the Login Mode

This section describes how to switch the Tuning Manager login mode. In the initial status, Tuning Manager is in standalone mode. To switch to single sign-on (SSO) mode, the conditions described below must be satisfied.

### 4.4.1 Conditions for Using Single Sign-On Mode

- HiCommand Device Manager must be installed on the same host as Tuning Manager or on another server available on the network. (To run HiCommand Device Manager on a remote host, you must be running HiCommand Device Manager version 3.0 or later).
- Single sign-on (SSO) might fail if the SSO environment is configured with Tuning Manager and HiCommand Device Manager installed on different server machines whose system times differ by five minutes or longer. Make sure that there is no system time discrepancy of this length in environments configured with Single sign-on (SSO).
- To log in from Tuning Manager to HiCommand Device Manager in SSO mode, you must install Web Client on the HiCommand Device Manager operation terminal. For details on installing Web Client for HiCommand Device Manager, see the *HiCommand Device Manager Web Client User's Guide*.
- To uninstall HiCommand Device Manager from an environment in which Tuning Manager is in SSO mode, switch to standalone mode before uninstalling HiCommand Device Manager. If Tuning Manager is set to SSO mode when you uninstall HiCommand Device Manager, the following message appears the next time you attempt to log in to Tuning Manager:

```
web-FATAL-0103:Unable to authenticate.
```

In this case, switch the login mode to standalone mode. For details on how to switch to standalone mode, see section 4.4.3.

### 4.4.2 Switching to Single Sign-On Mode

To switch to SSO mode in a Windows environment (for details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*):

1. Stop the HiCommand Suite TuningManager service. For details, see section 1.6.  
*Note:* You do not need to stop any services other than the HiCommand Suite TuningManager service to switch to single sign-on mode.
2. Start the following HiCommand Device Manager-related services. If they are already running, skip this step.
  - HBase Storage Mgmt Common Service
  - HBase Storage Mgmt Web Service
  - HiCommand Server

For details on how to start these services, see the *HiCommand Device Manager Server Installation and Configuration Guide*.

3. If HiCommand Device Manager has been installed on a host other than the Tuning Manager server, execute the following command on the host where Tuning Manager is installed. For details on the command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

**Windows:**

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssup /host Device-Manager-host-name /port Device-Manager-port-number
```

**Solaris:**

```
/opt/HiCommand/Base/bin/hcmdssup -host Device-Manager-host-name -port Device-Manager-port-number
```

Specify the appropriate information for each parameter:

- *Device-Manager-host-name*

Specifies the host name of the host on which HiCommand Device Manager has been installed.

- *Device-Manager-port-number*

Specifies the port number used by HiCommand Device Manager.

4. To register the Tuning Manager launch URL, execute the following command on the host where Tuning Manager is installed.

**Windows:**

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmsrep /add /type TuningManager /url http://Tuning-Manager-host-name | Tuning-Manager-IP-address:23015/TuningManager/login.do /user Device-Manager-user-ID /pass Device-Manager-user-password
```

**Solaris:**

```
/opt/HiCommand/Base/bin/hcmsrep -add -type TuningManager -url http://Tuning-Manager-host-name | Tuning-Manager-IP-address:23015/TuningManager/login.do -user Device-Manager-user-ID -pass Device-Manager-user-password
```

Specify the appropriate information for each parameter:

- *Tuning-Manager-host-name* | *Tuning-Manager-IP-address*

The host name or IP address of the Tuning Manager server. This parameter is case sensitive and must be entered correctly. The `hcmsrep` command does not check the specified IP address, host name, or URL.

- Port number 23015

The default port number for Tuning Manager is 23015 and cannot be changed.

- *Device-Manager-user-ID*

The user ID for logging in with Admin rights to HiCommand Device Manager. The default is `system`. Case sensitivity of the user ID depends on the setting in the HiCommand Device Manager server. No case sensitivity is set by default, but you can enable case sensitivity in HiCommand Device Manager.

- *Device-Manager-user-password*

The password for the user ID with Admin rights for HiCommand Device Manager. The default is `manager`. Case sensitivity of the password depends on the setting in the HiCommand Device Manager server. No case sensitivity is set by default, but you can enable case sensitivity in HiCommand Device Manager.

**Note:** When registering startup information for Tuning Manager by using the `hcndsrep` command, make sure that HiCommand Device Manager is running. If you execute the `hcndsrep` command while HiCommand Device Manager is inactive, the following message is displayed at the console and the `hcndsrep` command returns an error:

```
KAPM04557-E A single sign-on server exception has occurred.
```

In this case, start HiCommand Device Manager, and then re-execute the `hcndsrep` command. For details on how to start and check the start status of HiCommand Device Manager, see the *HiCommand Device Manager Server Installation and Configuration Guide*. For details on the `hcndsrep` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

5. Run the `htm-switch-mode` script to run Tuning Manager in SSO mode. For details on the `htm-switch-mode` script, see the *HiCommand Tuning Manager Command Line Interface Guide*.

Windows:

```
Tuning-Manager-installation-directory\bin\htm-switch-mode -sso
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-switch-mode -sso
```

6. Start the HiCommand Suite Tuning Manager services.  
For details on how to start the HiCommand Suite Tuning Manager services, see section 1.5.
7. Launch your browser and enter the following address to start Tuning Manager:

```
http://Tuning-Manager-host-name |  
Tuning-Manager-IP-address:23015/TuningManager/index.jsp
```

Specify the appropriate information for each parameter:

- *Tuning-Manager-host-name* | *Tuning-Manager-IP-address*

Specifies the host name or IP address of the Tuning Manager server. Because the host name or IP address is case-sensitive, specify it correctly.

8. Log in to Tuning Manager using a HiCommand Device Manager user account (the default HiCommand Device Manager administrative user ID is `system` and the password is `manager`).

**Note:** If you switch to SSO mode while your Tuning Manager license is in the initial state (immediately after installation) or has expired, you must enter a valid license key before attempting to log in. For details, see Chapter 2.

9. When you change to single sign-on (SSO) mode, **SSO** appears as the current login mode in the About window and in the License window.

### 4.4.3 Switching to Standalone Mode

To switch to standalone mode in the Windows environment (for details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*):

1. Stop the HiCommand Suite TuningManager service.

For details on how to stop the HiCommand Suite Tuning Manager services, see section 1.6.

**Note:** You do not need to stop any services other than the HiCommand Suite TuningManager service to switch to standalone mode.

2. Start the following HiCommand Device Manager-related services. If they are already running, skip this step.
  - HBase Storage Mgmt Common Service
  - HBase Storage Mgmt Web Service
  - HiCommand Server

For details on how to start these services, see the *HiCommand Device Manager Server Installation and Configuration Guide*.

3. Execute the command shown below to remove the Tuning Manager launch URL.

**Windows:**

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmsdrep /delete /type TuningManager /user Device-Manager-user-ID /pass Device-Manager-user-password
```

**Solaris:**

```
/opt/HiCommand/Base/bin/hcmsdrep -delete -type TuningManager -user Device-Manager-user-ID -pass Device-Manager-user-password
```

Specify the appropriate information for each parameter:

- *Device-Manager-user-ID*

The user ID for logging in with Admin rights to HiCommand Device Manager. The default is `system`. Case sensitivity of the user ID depends on the setting in the HiCommand Device Manager server. No case sensitivity is set by default, but you can enable case sensitivity in HiCommand Device Manager.

- *Device-Manager-user-password*

The password for the user ID with Admin rights for HiCommand Device Manager. The default is `manager`. Case sensitivity of the password depends on the setting in the HiCommand Device Manager server. No case sensitivity is set by default, but you can enable case sensitivity in HiCommand Device Manager.

**Notes:**

- When deleting startup information for Tuning Manager by using the `hcmsdrep` command, make sure that HiCommand Device Manager is running. If you execute the `hcmsdrep` command while HiCommand Device Manager is inactive, the following message is displayed at the console and the `hcmsdrep` command returns an error:

```
KAPM04557-E A single sign-on server exception has occurred.
```

In this case, start HiCommand Device Manager, and then re-execute the `hcndsrep` command. For details on how to start and check the start status of HiCommand Device Manager, see the *HiCommand Device Manager Server Installation and Configuration Guide*. For details on the `hcndsrep` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

- If you uninstall HiCommand Device Manager before Tuning Manager when switching the login mode to standalone mode, you will no longer be able to remove the launch URL by using the `hcndsrep` command. Because the URL registration information remains in the system, you must make sure the setting is correct when you next use Tuning Manager in SSO mode. After you change the login mode to SSO mode, use the following procedure to check the URL registration information:
  1. Execute the `hcndsrep` command with the `print` option specified, and check the displayed information.
  2. Execute the `hcndsrep` command with the `delete` option specified to delete any old URL information.
- 4. Execute the following command to switch the login mode to standalone mode. For details, see the *HiCommand Tuning Manager Command Line Interface Guide*.

Windows:

```
Tuning-Manager-installation-directory\bin\htm-switch-mode -standalone
```

Solaris:

```
/opt/HiCommand/TuningManager/bin/htm-switch-mode -standalone
```

5. Start the HiCommand Suite Tuning Manager services.  
For details on how to start the HiCommand Suite Tuning Manager services, see section 1.5.
6. Launch your browser and enter the following address to open the Tuning Manager home page:  

```
http://HTM-host-name|HTM-IP-address|local-host:23015/TuningManager/index.jsp
```
7. Log in to Tuning Manager with a Tuning Manager user account (the default Tuning Manager standalone administrative user ID is `orionadmin` and the case-sensitive password is `orion`).
8. After you switch to standalone mode, the About window and License window display the current login mode as **Standalone**:

## Chapter 5 Configuring Launch and Initial Settings

Tuning Manager can launch related applications. This chapter describes the settings needed to launch related applications.

- Configuring Launch Settings for HiCommand Device Manager (see section 5.1)
- Configuring Launch Settings for Storage Navigator (see section 5.2)
- Configuring Initial Settings for Performance Reporter (see section 5.3)
- Changing the Default Window for Performance Reporter (see section 5.4)
- Settings for Launching HSSM (see section 5.5)

## 5.1 Configuring Launch Settings for HiCommand Device Manager

If you want to launch HiCommand Device Manager from Tuning Manager in:

- SSO mode, launch settings for HiCommand Device Manager are not required.
- Standalone mode, launch settings for HiCommand Device Manager are required.

The following provides notes on the launch settings for HiCommand Device Manager.

- To launch HiCommand Device Manager, HiCommand Device Manager must be installed on either the same server as Tuning Manager, or on another server on the network. For details on installing HiCommand Device Manager, see the *HiCommand Device Manager Server Installation and Configuration Guide*.
- A window for specifying launch settings for HiCommand Device Manager does not appear in the SSO mode.

To configure launch settings for HiCommand Device Manager:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Tools Config** in the submenu.
4. Click **Device Manager** in the navigation area.

The configuration window appears.

Enter the URL of the HiCommand Device Manager login window.

If HiCommand Device Manager is installed, enter the URL to the HiCommand Device Manager server. See the *HiCommand Device Manager Server Installation and Configuration Guide* for more information.

## 5.2 Configuring Launch Settings for Storage Navigator

Observe the following guidelines about the launch settings for Storage Navigator:

- To start Storage Navigator, Storage Navigator must be installed on the same server as Tuning Manager or on a server connected via a network to the server on which Storage Navigator runs. For details on installing Storage Navigator, see the Storage Navigator documentation.
- To start Storage Navigator from Tuning Manager, set the firmware version as follows:

Table 5.1 Firmware Version

Storage Subsystem	Firmware (Microcode)#
Lightning 9900™V Series	SVP: Version 21-12 or later
TagmaStore® USP	SVP: Version 50-03 or later

**Note:** If the version is not appropriate, update the firmware.

- The launch settings for Storage Navigator cannot be configured in a TagmaStore™ USP subsystem monitored by an Agent for RAID that is running in SLPR restricted mode. In this case, Tuning Manager displays the following message:

web-WARN-2205: Cannot configure to launch Storage Navigator's applications, as only SLPR number <SLPR-number> is available for the subsystem.

The SLPR number monitored by Agent for RAID is displayed in *SLPR-number*.

When the launch settings for the Storage Navigator for this storage subsystem are configured, cancel the SLPR restricted mode by using Agent for RAID. Then, in the Administrator View, choose **Tools Configuration, Storage Navigator**, and then the **Refresh** button. Alternatively, in the Administrator View, choose **Agents, Connected Agents**, and then the **Refresh** button. For details on the SLPR restricted mode and its configuration, see the *HiCommand Tuning Manager Installation Guide*.

- The launch settings for Storage Navigator must be re-configured in the following cases:
  - When the launch settings for Storage Navigator have been configured and then the IP address, user ID, or password for Storage Navigator is changed
  - When the launch settings for Storage Navigator have been configured and then Performance Monitor is installed or uninstalled in Storage Navigator

To configure launch settings for Storage Navigator:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Tools Config** in the submenu.
4. Click **Storage Navigator** in the navigation area.

The list of storage subsystems for which launch settings for Storage Navigator applications can be configured appears.

Each storage subsystem entry in the list has the following option(s):

- **Edit**

When the user clicks this link, a new window for specifying launch settings will pop up. In the corresponding fields in the popped-up window, enter the IP address or host name (for the host on which the Storage Navigator for the storage subsystem is running), and user ID and password (which are needed to log in to Storage Navigator).

- **Delete**

This option is available only if the launch settings for Storage Navigator have already been defined. When the user clicks this link, the defined launch settings will be deleted.

### 5.3 Configuring Initial Settings for Performance Reporter

The initialization settings file (`config.xml`) is read from the initialization module that is executed during Performance Reporter startup.

- The Windows initialization settings file (`config.xml`) is located in:

```
Performance-Reporter-installation-directory\conf\
```

- The Solaris initialization settings file (`config.xml`) is located in:

```
/opt/HiCommand/TuningManager/PerformanceReporter/conf/
```

Table 5.2 shows the initialization settings files. All files listed in the table are editable.

Table 5.2 Initialization Settings Files (`config.xml`)

Item	Description
logDir	Specify the directory to which the Performance Reporter log file is to be output. The default directories are as follows: For Windows: <code>Performance-Reporter-installation-directory\log</code> For Solaris: <code>/opt/HiCommand/TuningManager/PerformanceReporter/log</code> If an invalid directory is specified, an error occurs. For information about this error, see the Windows event log or syslog. If no directory is specified, the default is assumed.
logFileNumber	Specify (as an integer) the number of log files the Performance Reporter can output. Value range: 1-16 Default: 10 If the specified value is outside the permitted range, the default is assumed.
logFileSize	Specify the size of a log file in megabytes. Value range: 1-100. Default: 10 If the specified value is outside the permitted range, the default is assumed.
logLevel	Specify one of the following as the log output level: FATAL: Output log information in the event of a significant event, significant exception, or unresumable error. WARN: Output log information before or after a call to another program or in the event of a warning. DEBUG: Output log information during creation of a Performance Reporter main class, during start or end of a main method, or during execution. TRACE: Output detailed log information during creation of a Performance Reporter normal class, during start or end of a normal method, or during execution. This information is for analysis purposes. The default is DEBUG. If a value other than the above value is specified, the default is assumed.

Item	Description
logFileRetention	Use an integer to specify the number of days to retain the log files. This item sets the retention period for the log files that are output using the jpcrpt command. Value range: 1 - 30 Default: 30 If the specified value is outside the permitted range, the default is assumed.
lineSeparator	Specify one of the following as the end-of-line symbol to be output by the Export facility: CRLF: Linefeed code supported by Windows. LF: Linefeed code supported by Solaris. The default value is CRLF. If a value other than the above value is specified, the default is assumed.
characterCode	Specify one of the following as the character code set for files to be output by the Export facility: US-ASCII, windows-1252, ISO-8859-1, UTF-8, UTF-16, UTF-16BE, UTF-16LE, Shift_JIS, EUC-JP, EUC-JP-LINUX, MS932. The default is US-ASCII. If a value other than the above value is specified, the default is assumed.
csvFileName	Specify the file name to be output by the Export facility. No more than 100 characters can be specified. You can specify the following characters: <ul style="list-style-type: none"> <li>▪ Numeric characters 0 to 9</li> <li>▪ Period (.)</li> <li>▪ Underscore (_)</li> <li>▪ Half size space</li> <li>▪ Alphabetic characters A to Z and a to z</li> </ul> The default is Export.csv. If a value other than the above value is specified, the default is assumed.
host	Specify the logical host name or the logical IP address of the Collection Manager to be connected. A logical host name can be 1 to 32 characters. The following characters are available: <ul style="list-style-type: none"> <li>▪ Numeric characters 0 to 9</li> <li>▪ Period (.)</li> <li>▪ Hyphen (-)</li> <li>▪ Alphabetic characters A to Z and a to z</li> </ul> If this specification is omitted or outside the range, localhost is set. The following characters are available for a logical IP address: <ul style="list-style-type: none"> <li>▪ Value range: 0.0.0.0 to 255.255.255.255</li> </ul> This item is available only when a cluster system is used.
port	Specify the port number of the Collection Manager to be collected. Value range: 1-65,535. Default: 22,286. If the specified value is outside the permitted range, the default is assumed.
maxFetchCount (under the <vsa> tag)	Specify (as an integer) the maximum number of records that can be collected from the Collection Manager. Value range: 1-2,147,483,647 Default: 1,440 If the specified value is outside the permitted range, the default is assumed.

Item	Description
maxFetchCount (under the <command> tag)	Use an integer to specify the maximum number of records to be acquired from View Server and that are output to a report by using the jpcrpt command. Value range: 1 - 2,147,483,647 Default: Value of maxFetchCount under the <vsa> tag If the specified value is outside the permitted range or no value is specified, the default is assumed.
displayCountPerPage	Specify (as an integer) the number of records that can be displayed per page when a table is displayed in the Report window. Value range: 1-2,147,483,647. Default: 20. If the specified value is outside the permitted range, the default is assumed.
maxRealtimeCache	Specify (as an integer) the maximum number of records that can be stored in the data cache for one real-time report. Value range: 1-360 Default: 30 If the specified value is outside the permitted range, the default is assumed.
realtimeCacheInterval (see <i>Note 1</i> )	Specify the time limit (milliseconds) of the request interval for auto-refresh of real-time reports. The request interval is checked every 10 seconds to see if it exceeds the time limit. When the time limit of the auto-refresh request interval is exceeded, the server and agent determine that the report processing finished without notification and terminate the processing. Value range: 60000 - 3600000 Default: 600000 If the specified value is outside the permitted range or omitted, the default is assumed.
selectFormat	Specify the display format for the date as follows: pattern-ddMMyyyy pattern-MMddyyyy pattern-yyyyMMdd The default is pattern-ddMMyyyy. If a value other than the above value is specified, the default is assumed.
bookmarkRepository (see <i>Note 1</i> )	Specify the storage location of the repository (see <i>Note 2</i> ) with an absolute path. This repository saves the definition information of the bookmark function. If the specified directory does not exist, the directory is created when starting the service of Performance Reporter. The maximum length of the path: 150 characters The default directories are as follows: For Windows: <i>Performance-Reporter-installation-directory</i> \bookmarks For Solaris: /opt/HiCommand/TuningManager/PerformanceReporter/bookmarks
maxFetchCount (under the <command> tag)	Use an integer to specify the maximum number of records to be acquired from View Server and that are output to a report by using the jpcrpt command. Value range: 1 - 2,147,483,647 Default: Value of maxFetchCount under the <vsa> tag If the specified value is outside the permitted range or no value is specified, the default is assumed.

**Note 1:** The items `realtimeCacheInterval` and `bookmarkRepository` are not set in the default initialization settings file (`config.xml`). To add `realtimeCacheInterval` and `bookmarkRepository`, see section 5.3.4 and add in the following default `config.xml`:

- Windows: `Performance-Reporter-installation-directory\conf\config.xml`
- Solaris: `/opt/HiCommand/TuningManager/PerformanceReporter/conf/config.xml`

**Note 2:** For information about the repository, see section 5.3.2

### 5.3.1 Date Format Specified in the Initialization Settings File (`config.xml`)

For the display format for data, the default date format is set by the locale setting of the browser or the language and locale setting of the server OS.

You can change this date format by coding the pattern of the display format, the separator, and the locale in the `format` tag of the initialization file, `config.xml`.

Table 5.3 lists the patterns and formats for the display format of dates corresponding to locales.

Table 5.3 Patterns and Formats for the Display of Dates Corresponding to Locales

Locale	Pattern	Format
en_US	pattern-MMddyyyy	MMΔddΔyyyy
en	pattern-ddMMyyyy	ddΔMMΔyyyy
ja	pattern-yyyyMMdd	yyyyΔMMΔdd
other than the above	pattern-ddMMyyyy	ddΔMMΔyyyy

Legend:

dd: date

MM: month

yyyy: year

Δ: separator string. This indicates the default value, a space.

The separator string is specified in the `separator` tag of `config.xml`. A space " ", slash "/", hyphen "-", or period "." can be specified.

### 5.3.1.1 Display Format for Date Tag Specifications

To set the display format of the date in the initialization-setting file, `config.xml`, use the tag specifications in Table 5.4.

Table 5.4 Tags of the Display Format for Date

Tag	Attribute	Contents
<code>format</code>	Not applicable	Indicates the <code>route</code> tags specifying the display format for the date.
<code>locale-format</code>		Specifies the locale, the pattern and the separator corresponding to the locale. The following tags are valid in the <code>locale-format</code> tag. <code>date-format</code> <code>locale</code> <code>locale-format</code> If the <code>locale</code> tag is omitted, the <code>locale-format</code> will be invalid.
<code>modify-format</code>		Specifies a change in the pattern and separator corresponding to the locale. The following tags are valid in the <code>modify-format</code> tag. <code>date-format</code> <code>locale</code>
<code>date-format</code>	Not applicable	Specifies the pattern and separator. Priority is given to the <code>date-format</code> tag when both the <code>date-format</code> tag and the <code>selectFormat</code> tag are specified directly under the <code>format</code> tag.
	<code>pattern</code>	The specification values are as follows: <code>pattern-MMddyyyy</code> <code>pattern-ddMMyyyy</code> <code>pattern-yyyyMMdd</code>
	<code>separator</code>	The specification values are as follows: <code>space</code> <code>slash</code> <code>hyphen</code> <code>period</code> If no value is specified, the default value will be used as follows: <ul style="list-style-type: none"> <li>▪ Directly under the <code>format</code> tag: <code>space</code></li> <li>▪ Directly under the <code>locale-format</code> tag: the separator for the base format pattern of the <code>locale-format</code> tag</li> <li>▪ Directly under the <code>modify-format</code> tag: <code>none</code></li> </ul>
	<code>export-separator</code>	The same specification value as the <code>separator</code> .
<code>locale</code>	Not applicable	Specifies the locale.

Legend:

dd: date

MM: month

yyyy: year

### 5.3.1.2 Example of Specifying the Date Format

The following are examples of `config.xml` coding using each tag:

#### Example 1

Specifies `pattern-MMddyyyy` for the pattern of the default date format. The date is displayed as `MM dd yyyy`.

```
<format>
  <param name="selectFormat" value="pattern-MMddyyyy"/>
</format>
```

#### Example 2

Specifies `pattern-MMddyyyy` for the pattern of the default date format and slash for the separator. The date is displayed as `MM/dd/yyyy`.

```
<format>
  <date-format pattern="pattern-MMddyyyy"
              separator="slash"/>
</format>
```

#### Example 3

Specifies `pattern-MMddyyyy` for the pattern of the default date format and hyphen for the separator of the Export output. The date is displayed as `MM dd yyyy`. In addition, the date is displayed as `MM-dd-yyyy`.

```
<format>
  <param name="selectFormat" value="pattern-MMddyyyy" />
  <date-format export-separator="hyphen"/>
</format>
```

#### Example 4

Specifies `en` for the locale and `pattern-ddMMyyyy` for the pattern corresponding to the locale. The separator is omitted in the `locale-format` tag, so slash, specified in the `date-format` tag, is applied as the separator corresponding to the locale. The date for the locale `en` is displayed as `dd/MM/yyyy`.

```
<format>
  <date-format pattern="pattern-MMddyyyy"
              separator="slash"/>
  <locale-format>
    <date-format pattern="pattern-ddMMyyyy"/>
    <locale>en</locale>
  </locale-format>
</format>
```

### Example 5

Specifies period for the separator of the Export output in the case of the locale ja and en.

As the date for the Export output in the case of the locale ja and en, dd.MM.yyyy is displayed.

The locale de is ignored because the locale de is not defined.

```
<format>
  <modify-format>
    <date-format pattern="pattern-ddMMyyyy"
      export-separator="period"/>
    <locale>ja</locale>
    <locale>en</locale>
    <locale>de</locale>
  </modify-format>
</format>
```

**Note:** If the same tag specification is duplicated, the last specification is valid.

## 5.3.2 Repository for Storing Bookmark Definition Information

The configuration information of bookmarks and bookmark folders is stored in the file system of the OS as a flat file. This is called the repository. The storage location of the default repository created when installing is as follows:

- **Windows:** *Performance-Reporter-installation-directory*\bookmarks
- **Solaris:** /opt/HiCommand/TuningManager/PerformanceReporter/bookmarks

### 5.3.2.1 Changing the Repository Storage Location

The directory that stores the bookmark repository can be changed by using `bookmarkRepository` in the initialization settings file (`config.xml`). You need to reboot the Performance Reporter service to apply the changed value.

If the directory specified in the initialization settings file (`config.xml`) does not exist when you start the Performance Reporter service, the directory will be created automatically.

### 5.3.2.2 About Corrupted Repository Files

The bookmark repository consists of multiple files. If an error occurs during creation, update, or deletion of the repository information and processing cannot be continued, the consistency of the repository files will be lost. In this case, the corrupted information is repaired or discarded, the log is output, and the system is rebooted.

Part of the bookmark information may be lost during repair or discarding. In this case, restore the bookmark repository information from a backup. The status of information will be the same as when the backup was made.

### 5.3.2.3 Backing up and Restoring Repository Files

Because part of the bookmark information may be lost as described in 5.3.2.2 we recommend that you back up the bookmark information when necessary each time you modify the information.

To back up or restore the bookmark repository information, you must first stop the Performance Reporter service, and then save the files and directories manually to a location of your choice. You must back up and restore the entire repository installation directory at one time because the repository recognizes the directory format also as part of the information.

Also, if the repository installation directory was changed during bookmark operation, to pass on the repository information from the directory used before the change to the directory used after the change, you must first stop the Performance Reporter service, and then copy the repository files manually.

### 5.3.2.4 Managing Repository Files Before Uninstalling

If you did not change the installation directory of the repository from the default directory, when uninstalling, the installation directory and the repository files are deleted automatically. If you changed the installation directory, the installation directory and the repository files are not deleted automatically, therefore, delete them manually if necessary.

## 5.3.3 Data Caching for Displaying a Real-time Report

The following provides notes on setting the items that affect data caching for displaying a real-time report.

- The maximum interval for issuing a request to update each real-time report is set using `realtimeCacheInterval` in the `config.xml` file.

If a new request cannot be issued within the maximum interval, processing on the server and agents may terminate. If a request to update a real-time report is issued after such processing has terminated, an error occurs. If the number of records to be collected has increased because there are many Agent instances, the error message (KAVJS4012-E) appears in the window that displays a real-time report. If such an error occurs frequently, you can lower the frequency by increasing the `realtimeCacheInterval` value. Note, however, that if the value is too large, the processing on the server and agents remain for a longer time. As a result, the server and agents are busier, and the overall speed of report drawing is reduced.

- The maximum number of records that can be cached for each real-time report is set using `maxRealtimeCashe` in the `config.xml` file.

The `maxRealtimeCashe` value specifies the number of records to be collected for displaying one real-time report at the minimum data collection intervals. You can set an integer from 1 to 360 in `maxRealtimeCashe`. If the number of records automatically sent from an agent exceeds the `maxRealtimeCashe` value, the oldest record in the cache is deleted and the newest one is cached.

### 5.3.4 Reviewing a Sample Initialization Settings File

Figure 5.1 shows an example of an initialization settings file (config.xml).

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!DOCTYPE application SYSTEM "config.dtd">
<!--
* Title: Performance Reporter Configuration File
* Copyright: Copyright (c) 2003, Hitachi, Ltd.
* Licensed Material of Hitachi, Ltd. Reproduction, use,
  modification or disclosure
  otherwise than permitted in the License Agreement
  is strictly prohibited.
* Note: Original
* Version: 3.0.0
* $Revision: 32 $
* $Modtime: 03/06/22 17:05 $
-->

<application name="PerformanceReporter">
  <logging>
    <!-- Path of log files directory-->
    <param name="logDir" value="C:\Program Files\
      HiCommand\TuningManager\PerformanceReporter\log"/>

    <!-- Maximum number of log files
      Specifiable values: 1 to 16
      Default          : 10
    -->
    <param name="logFileNumber" value="10"/>

    <!-- Size of a log file (unit: MB=1024x1024byte)
      Specifiable values: 1 to 100
      Default          : 10
    -->
    <param name="logFileSize" value="10"/>

    <!-- Logging level of a log file
      Specifiable values: FATAL/WARN/DEBUG/TRACE
      Default          : DEBUG
    -->
    <param name="logLevel" value="DEBUG"/>
    <!-- Retention period of a log file
      Specifiable values: 1 to 30
      Default          : 30
    -->
    <param name="logFileRetention" value="30"/>
  </logging>

  <export>
    <!-- lineSeparator
      Specifiable values: CRLF,LF
      Default          : CRLF
    -->
    <param name="lineSeparator" value="CRLF"/>

    <!-- characterCode
      Specifiable values: US-ASCII, windows-1252,ISO-8859-1,
        UTF-8,UTF-16,UTF-16BE,
        UTF-16LE,Shift_JIS,EUC-JP,
        EUC-JP-LINUX,MS932
    -->
    <param name="characterCode" value="US-ASCII"/>
    <!-- Export filename -->
    <param name="csvFileName" value="Export.csv"/>
  </export>

  <vsa>
    <vsserver-connection>
```

```

<!-- The host computer name to which
      PFM View Server operates. -->
<param name="host" value="127.0.0.1"/>
<!-- The port number which PFM View Server uses.
      Specifiable values: 1 to 65535
      Default           : 22286
-->
<param name="port" value="22286"/>
</vserver-connection>

<!-- The maximum limits of the records.
      Specifiable values: 1 to 2,147,483,647
      Default           : 1,440
-->
<param name="maxFetchCount" value="1440"/>
<!-- The display count per a page.
      Specifiable values: 1 to 2,147,483,647
      Default           : 20
-->
<param name="displayCountPerPage" value="20"/>

<!-- Maximum data receiving count per report.
      Specifiable values: 1 to 360
      Default           : 30
-->
<param name="maxRealtimeCache" value="30"/>

<!-- The limit of realtime report request interval.
      If the interval between each request exceeds
      this value, system consider that realtime
      report was closed without notification and
      the resources will be freed.
Specifiable values: 60000 to 3600000
      Default           : 600000
-->
<param name="realtimeCacheInterval" value="600000"/>
<format>
<!-- Format set is specified.
      Specifiable values : pattern-ddMMyyyy,
                          pattern-MMddyyyy,
                          pattern-yyyyMMdd
-->
      <param name="selectFormat" value=""/>
</format>
<bookmark>
<!-- The directory where bookmark repository is stored.
      Default   : <install directory>\bookmarks
-->
      <param name="bookmarkRepository"
value="c:\Program Files\HiCommand\TuningManager\PerformanceReporter\bookmarks"/>
</bookmark>
</vsa>
<command>
<export>
<!-- The maximum limits of the records.
      Specifiable values: 1 to 2,147,483,647
      Default           : The value of maxFetchCount
                          of the <vsa> tag is applied.
-->
      <param name="maxFetchCount" value="1440"/>
</export>
</command>
</application>

```

Figure 5.1 Sample Initialization Settings File (config.xml)

Figure 5.2 shows a sample DTD file (config.dtd).

```

<!--
* Title: Performance Reporter Configuration File DTD
* Copyright: Copyright (c) 2003, Hitachi, Ltd.
* Licensed Material of Hitachi, Ltd. Reproduction, use,
  modification or disclosure otherwise than permitted
  in the License Agreement is strictly prohibited.
* Note:
* Version: 3.0.0
* $Revision: 1 $
* $Modtime: 03/05/08 10:59 $
-->
<!ELEMENT application (logging,export,vsa,draw?,command?,common)>
  <!ATTLIST application name ID #REQUIRED>
<!ELEMENT param (#PCDATA)>
  <!ATTLIST param name CDATA #REQUIRED>
  <!ATTLIST param value CDATA #REQUIRED>

<!-- common parameters -->
<!ELEMENT common (param*)>

<!-- logging parameters -->
<!ELEMENT logging (param+|separately?)* >
<!ELEMENT separately (param*)>

<!-- export parameters -->
<!ELEMENT export (param*)>

<!-- vsa parameters -->
<!ELEMENT vsa (vserver-connection,param*,vsa-factory?,format,bookmark?)>
<!ELEMENT vserver-connection (param*)>
<!ELEMENT vsa-factory (param*)>
<!ELEMENT format (param?,date-format?,locale-format*,modify-format*)>
<!ELEMENT date-format (#PCDATA)>
  <!ATTLIST date-format
    pattern (pattern-yyyyMMdd |
             pattern-ddMMyyyy |
             pattern-MMddyyyy ) #IMPLIED
    separator (space |
              slash |
              hyphen |
              period ) #IMPLIED
    export-separator (space |
                     slash |
                     hyphen |
                     period ) #IMPLIED>
<!ELEMENT locale-format (date-format?,locale*,locale-format*)>
<!ELEMENT locale (#PCDATA)>
<!ELEMENT modify-format (date-format?,locale*)>

<!--bookmark parameters -->
<!ELEMENT bookmark (param*)>

<!-- command parameters -->
<!ELEMENT command (export*)>

<!-- draw parameters -->
<!ELEMENT draw (chart-style|error-image)*>
<!ELEMENT chart-style (param*)>
  <!ATTLIST chart-style id CDATA #REQUIRED>
<!ELEMENT error-image (param*)>
  <!ATTLIST error-image id CDATA #REQUIRED>

```

Figure 5.2 Sample DTD File (config.dtd) File Defining Parameter Entries

### 5.3.5 Editing the Initialization Settings File (Windows)

1. Edit the initialization settings file.

The directory that contains the initialization settings file (`config.xml`) is *Performance-Reporter-installation-directory\conf\*.

2. Log out from Performance Reporter if you are logged in.
3. Stop the Performance Reporter service.

To stop the service:

- a) In **Administrative Tools** of **Control Panel**, double-click the **Services** icon to open the **Service** applet.
- b) Select the service name **HiCommand Performance Reporter**, and then right-click to display the pull-down menu.
- c) Choose **Stop**.

To stop the service using a command, execute the following command (for details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*):

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /stop  
/server PerformanceReporter
```

4. Start the Performance Reporter service:
  - a) In **Administrative Tools** of **Control Panel**, double-click the **Services** icon to open the **Service** applet.
  - b) Select the service name **HiCommand Performance Reporter**, and then right-click to display the pull-down menu.
  - c) Choose **Start**.

To start the service using a command, execute the following command:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /start  
/server PerformanceReporter
```

5. Log in to Performance Reporter.

The initialization settings file (`config.xml`) is read from the initialization module when Performance Reporter starts, and the new settings take effect.

For details about the setup items in the initialization settings file (`config.xml`) and an example, see section 5.3.4.

*Note:* Upgrading may change the structure of the initialization settings file. To apply the edits of the initialization settings file (`config.xml`) to the new initialization settings file after upgrading:

1. Compare the edits in the *Performance-Reporter-installation-directory\conf\config.xml* file with those in 5.3 to confirm that the edited file is correct.
2. Create a backup of the *Performance-Reporter-installation-directory\conf\config.xml* file.

3. In the installation directory, replace the *Performance-Reporter-installation-directory*\conf\config.xml file with the *Performance-Reporter-installation-directory*\sample\conf\config.xml file.
4. Apply the edits in the backup you created in step 1 to the new *Performance-Reporter-installation-directory*\conf\config.xml file.

### 5.3.6 Editing the Initialization Settings File (Solaris)

1. Edit the initialization settings file.

The directory that contains the initialization settings file (config.xml) is `/opt/HiCommand/TuningManager/PerformanceReporter/conf/`.

2. Log out from Performance Reporter if you are logged in.
3. Stop the Performance Reporter service.

Execute the following command:

```
/opt/HiCommand/Base/bin/hcmdssrv -stop -server PerformanceReporter
```

If the command for stopping the Performance Reporter service is executed, the command will terminate before the stop processing of the Performance Reporter service is complete. Therefore, wait a sufficient amount of time before executing the next operation.

4. Start the Performance Reporter service.

Execute the following command:

```
/opt/HiCommand/Base/bin/hcmdssrv -start -server PerformanceReporter
```

If the command for starting the Performance Reporter service is executed, the command will terminate before the start processing of the Performance Reporter service is complete. Therefore, wait a sufficient amount of time before executing the next operation.

5. Log in to Performance Reporter.

The initialization settings file (config.xml) is read from the initialization module when Performance Reporter starts and the new settings take effect.

For details about the setup items in the initialization settings file (config.xml) and an example, see section 5.3.4.

**Note:** Upgrading may change the structure of the initialization settings file. To apply the edits of the initialization settings file (config.xml) to the new initialization settings file after upgrading:

1. Compare the edits in the `/opt/HiCommand/TuningManager/PerformanceReporter/conf/config.xml` file with those in 5.3 to confirm that the edited file is correct.
2. Back up `/opt/HiCommand/TuningManager/PerformanceReporter/conf/config.xml`.

3. Copy `/opt/HiCommand/TuningManager/PerformanceReporter/sample/conf/config.xml` to `/opt/HiCommand/TuningManager/PerformanceReporter/conf/config.xml`.
4. Apply the edits confirmed in Step 1 to the new `/opt/HiCommand/TuningManager/PerformanceReporter/conf/config.xml`.

### 5.3.7 Setting the Environment Variables (Solaris)

After installing Performance Reporter, you must set the Solaris environment variables.

Table 5.5 Environment Variables

Environment Variable	Value
PR_HOME	<code>/opt/HiCommand/TuningManager/PerformanceReporter</code>
PR_BASEHOME	<code>/opt/HiCommand/Base</code>
PR_CONFIG	<code>/opt/HiCommand/TuningManager/PerformanceReporter/conf/config.xml</code>

If you are using a shell such as `sh` or `ksh`, set the environment variable as shown in the following example:

```
PR_HOME=/opt/HiCommand/TuningManager/PerformanceReporter
export PR_HOME
```

If you are using a shell such as `csh` or `tcsh`, set the environment variable as shown in the following example:

```
setenv PR_HOME /opt/HiCommand/TuningManager/PerformanceReporter
```

## 5.4 Changing the Default Window for Performance Reporter

You can start Performance Reporter by using either of the following methods:

- From the **Start** global menu with no agent specified.
- From the Advanced Information with an agent specified.

When you start Performance Reporter from the Advanced Information by specifying an agent, you can select whether you want to display the Main window or the Report Tree Selection window.



Figure 5.3 Displaying the Main Window for Performance Reporter

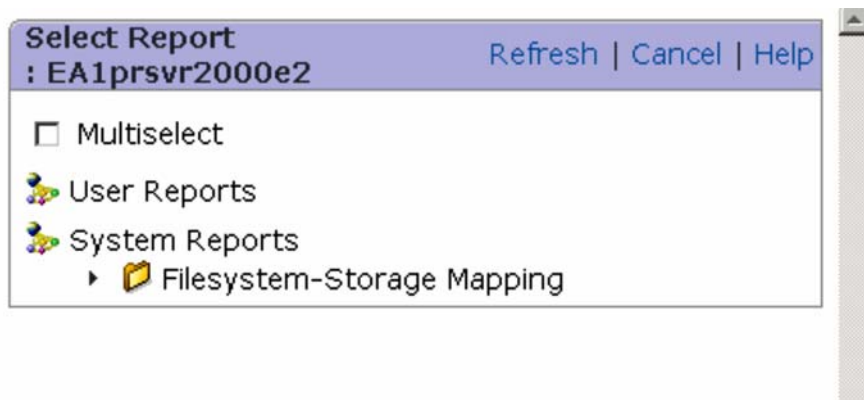


Figure 5.4 Displaying the Report Tree Selection Window for Performance Reporter

The default setting displays the Report Tree Selection window.

For details on Performance Reporter, see the *HiCommand Tuning Manager User's Guide*.

To change the starting window:

1. Stop Tuning Manager. For details on stopping Tuning Manager, see section 1.6.

2. Use a text editor to open the `user.properties` file.

The following shows where the `user.properties` file is stored.

Windows: *Tuning-Manager-installation-directory*\inst\user.properties

Solaris: /opt/HiCommand/TuningManager/inst/user.properties

3. Add the `pr.incontextlaunch.mode` item to the `user.properties` file.

For details on the `user.properties` file, see section 1.1.

4. Restart Tuning Manager.

For details on restarting Tuning Manager, see section 1.5.

## 5.5 Settings for Launching HSSM

This section describes the settings required to launch HSSM from the **Dashboard** menu by linking with HSSM. To start HSSM from the **Dashboard** menu, create the `StorageServicesManager.conf` file in the following location, and then specify the `LaunchURL` parameter.

Windows: `HiCommand-Suite-Common-Component-installation-directory\common`

Solaris: `/opt/HiCommand/Base/common`

LaunchURL parameter format: `LaunchURL=HSSM-URL`

In HSSM-URL, specify the URL used to start HSSM. For details about this URL, see the HSSM documentation.

For example, if the name of the HSSM management server is `machinename`, configure the `StorageServicesManager.conf` as follows:

For Secure Connections: `LaunchURL=https://machinename`

For No Secure Connections: `LaunchURL=http://machinename`



## Chapter 6 Setting up and Managing Agents

This chapter describes how Tuning Manager accesses data collected by agents, and it describes the interrelationship between Tuning Manager and agents. For details on how to install and set up agents, see the *HiCommand Tuning Manager Installation Guide*.

- Reviewing the Data Acquisition Functions (see section 6.1)
- Reviewing Agent Management Policies (see section 6.2)
- Setting Connection and Disconnection Policies (see section 6.3)
- Refreshing Agent Lists (see section 6.4)
- Checking an Agent's Operational Status (see section 6.5)
- Checking an Agent's Configuration (see section 6.6)
- Monitoring Targeted Logical Disks (see section 6.7)
- Accessing Agent Configuration Details (see section 6.8)
- Working with Agent Polling (see section 6.9)
- Polling Processing (see section 6.10)
- About the Polling Status Report (see section 6.11)
- About Agent Polling Status Alerts (see section 6.12)
- Configuring Agent Polling Status Alerts (see section 6.13)
- Time-Axis Aggregation (see section 6.14)
- Removing Agents (see section 6.15)

## 6.1 Reviewing the Data Acquisition Functions

Tuning Manager connects to agents to monitor resources, acquires data from the agents, and stores the data in the Tuning Manager repository. Tuning Manager automatically detects agents that can be monitored.

### Notes:

- Tuning Manager 5.5 can recognize and monitor Agent for Platform (UNIX), Agent for Platform (Windows), Agent for RAID Map, Agent for RAID, Agent for SAN Switch, and Agent for Oracle. Other agents appear in the subresource section under **NASs/Others Apps**. Tuning Manager does not collect metrics from the agents that appear under **NASs/Others Apps**. To monitor the agents that appear under **NASs/Others Apps**, launch Performance Reporter from Tuning Manager.
- Tuning Manager cannot monitor a single target to be monitored, from multiple agent instances.
- If the version of a connected agent is not supported by Tuning Manager 5.5, **OK** still appears in the **Configuration Status** field of the **Available Agents** page. In this case, however, Tuning Manager cannot collect data for the agents. Upgrade the agent to a version supported by this release.

Tuning Manager version 5.5 does not support the following agents:

- Agent for RAID 1.0
  - Agent for RAID 1.1
  - Agent for Oracle 1.0
  - Agent for Oracle 1.1
- When monitoring the resources for agents in Table 6.1, make sure that the length of the name of the monitoring target is 80 bytes or less.

Table 6.1 Resources with Restrictions on Name Length

Monitored Agent	Monitored Resource
Agent for Platform	Name of the host on which the monitored agent is running
Agent for Platform (UNIX) Agent for RAID Map	Mount point of the file system of the host on which the monitored agent is running (absolute path)
Agent for Platform (UNIX)	Name of the device special file or instance of the host on which the monitored agent is running
Agent for Oracle	Data file of the Oracle instance monitored by the monitored agent (absolute path)

- For details on how to install and set up agents, see the *HiCommand Tuning Manager Installation Guide*.

## 6.2 Reviewing Agent Management Policies

Tuning Manager uses agents to monitor resources and to update its database. Tuning Manager automatically detects the availability of agents through ongoing polling.

The policies by which Tuning Manager connects to and disconnects from agents are set on the server. For details on how to set a policy, see section 6.3.

Tuning Manager provides these policies:

Table 6.2 Agent Management Policies

Policy	Explanation
Automatic Connection	When Tuning Manager detects an available agent, it automatically connects to the agent and displays it in the <b>Connected Agents</b> list.
Manual Connection	Tuning Manager displays, in the <b>Available Agents</b> list, all agents it detects. The Tuning Manager administrator must specify the agent to be connected to, from those displayed in the <b>Available Agents</b> list.
Automatic Disconnection	When an agent has not communicated for a specified amount of time, Tuning Manager will automatically disconnect from it.
Manual Disconnection	Even if a connected agent has not communicated for a specified amount of time, the agent is not disconnected automatically and remains displayed in the <b>Connected Agents</b> list. The Tuning Manager administrator must manually disconnect these agents from the <b>Connected Agents</b> list.

The following four patterns can be selected by combining the available policies:

- Automatic connection / automatic disconnection
- Manual connection / manual disconnection
- Automatic connection / manual disconnection
- Manual connection / automatic disconnection

We strongly recommend evaluating all of the available policy combinations before deciding on your connection and disconnection policies. For most sites, the Automatic Connection/Automatic Disconnection combination simplifies administration and provides the best reporting on monitored resources.

### 6.2.1 Connecting to an Agent

To introduce new agent data connections, choose one of these options:

- **Automatic Data Connection**  
Tuning Manager adds all detected agents to the **Connected Agents** list.
- **Manual Data Connection**  
You selectively add agents by selecting them from the **Available Agents** list.

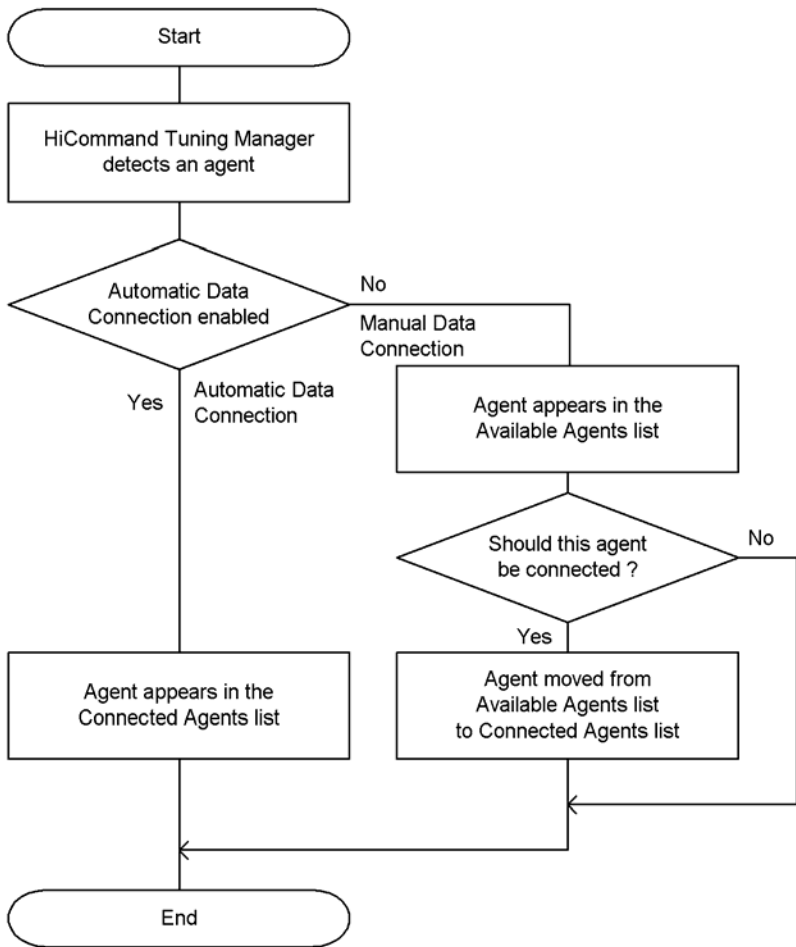


Figure 6.1 Logical Flow Diagram: Adding Data Connections

*Note:* If an agent has a configuration error, the agent cannot be automatically or manually connected. Before an agent with a configuration error can be connected, you must first resolve the condition causing the error.

## 6.2.2 Disconnecting from an Agent

Tuning Manager provides these options for disconnecting an Agent Data Connection:

- Automatic Agent Disconnection

When automatic agent disconnection is set in Tuning Manager, if there has been no communication between an agent and Tuning Manager for more than a given time, the agent is deleted from the **Connected Agents** list. (Set the threshold for disconnecting agents in the Administration interface).

*Note:* If you have opted for Automatic Agent Connection, Tuning Manager will re-register any rediscovered agents. This will result in resumed data collection.

- Manual Agent Disconnection

To stop monitoring a resource, you can selectively disconnect its agent manually. If you have opted for Manual Disconnection, non-communicating agents will not be disconnected automatically and will remain displayed in the **Connected Agents** list.

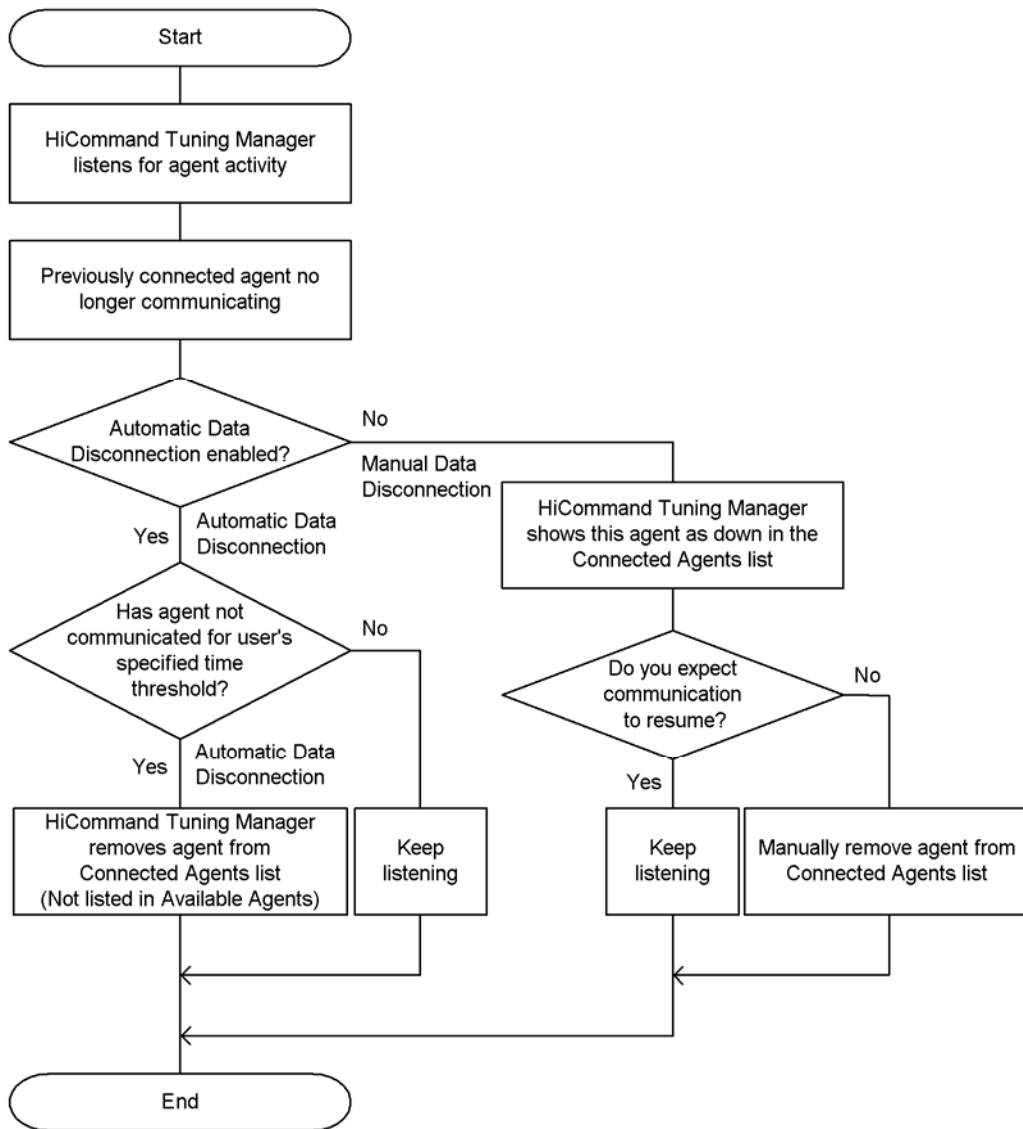


Figure 6.2 Logical Flow Diagram: Disconnecting Agents

**Notes:**

- In the event that the agent does not reconnect to Tuning Manager, and the administrator has set Tuning Manager to disconnect automatically (Disconnect Agents = Automatic), the agent will be dropped automatically based upon your threshold setting. (For more information, see section 6.3.1).
- If you have chosen manual disconnect (Disconnect Agents = Manual), you must manually remove the agent from Tuning Manager's active agent list. (For more information, see section 6.3.2).

### 6.2.3 Avoiding Automatic Disconnection

To exclude agents from being automatically connected when you have an Automatic Connection policy, keep them in the **Available Agents** list. To keep agents in the **Available Agents** list, manually disconnect the agents. For details, see section 6.3.2.

*Note:* If you delete an agent from the **Available Agents** list under the Automatic Connection policy, the Tuning Manager Automatic Connection policy will reinstate that agent every time it resumes communicating. Therefore, if you want to prevent an agent from being automatically reconnected, keep them in the **Available Agents** list.

## 6.3 Setting Connection and Disconnection Policies

To set connection and disconnection policies (automatic and/or manual):

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Connect/Disconnect Policy** in the navigation area.
5. Click **Automatic** or **Manual** under **Connect Detected Agents**.
6. Click **Automatic** or **Manual** under **Disconnect Agents**. If you chose automatic removal, specify the time threshold for Tuning Manager to use. (For more information, see section 6.3.1).
7. Click **Save**. (Or click on **Reset** to abandon changes).

### 6.3.1 Specifying the Automatic Disconnection Threshold

If you specify the Automatic Disconnection policy, Tuning Manager will watch for agents that stop communicating. The value you specify for the automatic disconnection threshold governs how long Tuning Manager will wait before automatically disconnecting an agent.

To set the automatic disconnection threshold for automatic agent removal:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Connect/Disconnect Policy** in the navigation area.
5. Specify an integer value in the **Automatic Disconnect Threshold** field.  
*Note:* For details on valid field values, see section 1.2.1.
6. Select the time interval (**Days** or **Hours**).
7. Click **Save**. (Or click **Reset** to abandon changes). A confirmation dialog box appears indicating the changes were successfully saved.

## 6.3.2 Disconnecting Agents Manually

An agent continues to monitor a given resource as long as that resource is available. If you are not interested in collecting data on this resource, you can choose to manually disconnect the agent.

*Note:* To manually reconnect an agent, see section 6.3.3.

To manually disconnect an agent:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Connected Agents** in the navigation area.  
Tuning Manager displays a list of active agents.
5. Click the checkbox for each agent you wish to disconnect.
6. Click **Disconnect**.

The disconnected agents no longer appear on the **Connected Agents** page, but now appear in the **Available Agents** list as available agents.

## 6.3.3 Connecting Agents Manually

Agents do not monitor resources and report to Tuning Manager until you make them active.

To make one or more agents active:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Available Agents** in the navigation area.  
Tuning Manager displays a list of available inactive agents.
5. Click the checkbox for any agent(s) you wish to connect.

*Note:* Do not monitor the same fabric with more than one available SAN Switch agent. If several SAN Switch agents monitor the same fabric, Tuning Manager will display the fabric resource multiple times in the Resource tree, since each SAN Switch agent has a different node ID.

6. Click **Connect**.

The connected agents no longer appear in the **Available Agents** list, but now appear in the **Connected Agents** list as newly connected agents.

## 6.4 Refreshing Agent Lists

Tuning Manager periodically refreshes the information for connected and available agents. While the **Connected Agents** list or **Available Agents** list is displayed, you can click the **Refresh** button to manually refresh and display the current information about the connection status of Agents.

*Note:* If an agent has been deleted using the `jpcctrl delete` command, Tuning Manager will remove it from the **Connected Agents** list or **Available Agents** list the next time you click the **Refresh** button.

While Tuning Manager is polling, the system is unable to obtain the latest agent information. In these cases, Tuning Manager displays an information message in the message bar:

You cannot refresh, add, or delete agents while polling is in progress. You may resume with full functionality after polling concludes.

For details on polling, see section 6.10.

*Note:* You can estimate how long polling will typically require by examining the system log. Tuning Manager notes the beginning and end of each polling series. For more information, see section 7.8.

If you perform the following window operations while Tuning Manager is polling, a window will not be displayed until the polling finishes and the operations will not complete. Perform these window operations after polling concludes.

- Click the **Check Configuration** button in the **Connected Agents** list or **Available Agents** list.
- Click the agent's name in the **Connected Agents** list or **Available Agents** list.
- Click the agent's name in the **Agent Status** list.

### 6.4.1 GUI Display Problems for the Connected and Available Agents Lists

An agent may remain displayed in the **Connected Agents** or **Available Agents** list, even after being stopped.

This problem is only a GUI display issue, and does not affect Tuning Manager operation.

This problem occurs when either condition 1 or 2 exists for the relationship between the following target agents and Collection Manager.

Target agent

- Agent for Platform
- Agent for RAID Map
- Agent for RAID
- Agent for SAN Switch

- Agent for Oracle

#### Condition 1

- The agent is able to establish a connection with Collection Manager at least once, but then stops.
- The agent is stopped when Collection Manager starts, but then starts once Collection Manager is started, and then stops again.

#### Condition 2

The agent service is force to stop without using the `jpcstop` command, such as by OS termination on the agent server.

To recover from this condition:

- When the agent and Collection Manager are run on separate servers:
  - a) Stop Collection Manager.
  - b) Start the agent, and then start Collection Manager.
- When the agent and Collection Manager are run on the same server:
  - a) With only Collection Manager running, execute the `jpcctrl delete` command to delete the corresponding agent information.
  - b) Execute the `jpcstart all` command to start the agent.

To avoid this problem, keep the following in mind:

- When the agent and Collection Manager are run on separate servers:
  - a) Start the agent before starting Collection Manager.
  - b) If the agent server OS is stopped, use the `jpcstop` command to stop the agent service, and then stop the OS.
- When the agent and Collection Manager are run on the same server, no workaround exists.

## 6.5 Checking an Agent's Operational Status

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Connected Agents** or **Available Agents** in the navigation area.

The agent's current status is displayed in the **Status** column.

Table 6.3 describes the displayed **Status** values.

Table 6.3 Agent Operational Status Values

Displayed Status	Meaning
up	Tuning Manager can successfully contact the agent.
down	Tuning Manager cannot contact the agent.
down: <i>agent-name</i>	The specified HTM Agent <sup>(Note)</sup> is down. The other HTM Agent is still up.
down: both	Both HTM Agents are down.

**Note:** HTM Agent indicates the following two Agents: Agent for Platform and Agent for RAID Map.

If the status indicates that an agent is down, see section 7.2 and correct the cause of the error.

**Note:** The configuration of an agent displayed in the Administrator view of Tuning Manager might differ from the actual operation status of the agent if the agent is stopped by a forced termination or if a communication error occurred between the Agent and Manager. In this case, refresh the agent lists.

## 6.6 Checking an Agent's Configuration

Tuning Manager checks an agent's configuration when the agent is first detected. When displaying the **Connected Agents** list or **Available Agents** list, you can click the **Check Configuration** button to manually recheck the agents and display the current configuration information.

The agent status, as shown in the **Configuration Status** column, indicates whether the agent is configured correctly. Table 6.4 lists and describes the values displayed under **Configuration Status** and their meaning.

Table 6.4 Agent Configuration Status Values

Displayed Status	Meaning
OK	The agent is configured correctly.
Error	There is a problem with the configuration of the agent.
Error: <i>agent-name</i>	Click <b>Restore Required Configuration</b> to reset the Agent parameters to their default values (See <i>Note</i> ).
Error: both	
Error: cannot access <i>agent-name</i>	Tuning Manager cannot contact the agent to determine its current configuration state. For possible causes and solutions, see section 7.2.

**Note:** Clicking **Restore Required Configuration** resets the setting values to their defaults. If you changed these values from their defaults while running an agent, make sure that you really want to reset all the values to their defaults, and then click **Restore Required Configuration**.

Tuning Manager 05-50 does not support the following agents:

- Agent for RAID 1.0
- Agent for RAID 1.1
- Agent for Oracle 1.0
- Agent for Oracle 1.1

The settings for availability for these agents might be displayed as **OK**. However, when an attempt is made to connect to an unsupported agent, the following message is output to `htm.log` of Tuning Manager:

```
pwproxy-WARN-2008:Agent agent-name:Cannot get data, Data Model Version 3.3 not supported.
```

Note that since Tuning Manager cannot collect data for the agent displayed for *agent-name*, no information is displayed.

## 6.7 Monitoring Targeted Logical Disks

Storage subsystems often host large numbers of logical disks. In most networks the quantity of devices could significantly impact performance of the Tuning Manager server if data is collected and aggregated for all available logical disks. To speed processing, you can configure Tuning Manager to poll only selected logical disks for each server platform and storage subsystem agent. During polling, data will be collected solely for those selected logical disks.

*Note:* When upgrading from Tuning Manager 1.0 or Tuning Manager 1.1, first select the logical disks that will be monitored by Tuning Manager.

### 6.7.1 Viewing Monitored Logical Disks

To view the installed server platform and storage subsystem agents for monitored logical disks:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Monitored Logical Disks** in the navigation area.  
Tuning Manager displays a list of monitored storage subsystem agents and servers.
5. To refresh the screen display with the latest state of agents, click the **Refresh** button.
6. To view details about a specific subsystem agent, click the agent's **Name** displayed in the **Per Storage Subsystems** section.  
If the selected Agent for RAID monitors TagmaStore™ USP, an SLPR row appears in this window.
7. To view details about a specific server, click the agent's **Name** displayed in the **Per Servers** section.
8. To refresh the current view, click the **Reload** button. (The message area above the table of connected logical disks displays the time the data was last refreshed).
9. Click the **Close** button to close the server details window.

#### *Notes:*

- The list of connected devices for each agent is automatically reinitialized when Tuning Manager is started. When you log in to the Tuning Manager server after restarting the services and view the details for a specific agent, the list of connected devices for each agent is initially empty. Click the **Reload** button to display the list of connected devices available for monitoring by the agent.
- If polling is in process the message `web-WARN-2611 Polling in progress. Cannot reload list of logical disk. will display when you click the Reload button.` Retry the operation after polling completes.

## 6.7.2 Adding and Removing Monitoring of Storage Subsystem Logical Disks

To add or remove monitoring for a storage subsystem agent:

1. Display the latest monitoring status, seeing to steps 1 to 6 in section 6.7.1.
2. To add monitoring for a specific logical disk, perform the following steps:
  - a) Either click the check box next to a connected logical disk whose **Monitored** status is **No** or select the check box in the header to select all check boxes displayed on the page.
  - b) Click the **Add** button.  
The **Monitored** status of the selected logical disk now appears as **Yes**.
3. To monitor all logical disks, including those that are not displayed on the page, click the **Add All LDEVs** button.
4. To remove monitoring for a specific logical disk, perform the following steps:
  - a) Either click the check box next to a connected logical disk whose **Monitored** status is **Yes** or select the check box in the header to select all check boxes displayed on the page.
  - b) Click the **Remove** button.  
The **Monitored** status of the selected logical disk now appears as **No**.
5. To stop monitoring all logical disks, including those that are not displayed on the page, click the **Remove All LDEVs** button.
6. Click the **Close** button to dismiss the agent details window.

## 6.7.3 Adding and Removing Monitoring of Server Logical Disks

To add or remove monitoring for a server:

1. Display the latest monitoring status, seeing to steps 1 to 5 and 7 in section 6.7.1.
2. To add monitoring for a specific logical disk, perform the following steps:
  - a) Either click the check box next to a connected logical disk whose **Monitored** status is **No** or select the check box in the header to select all check boxes displayed on the page.
  - b) Click the **Add** button.  
The **Monitored** status for the logical disk you added changes to **Yes**.
3. To monitor all logical disks, including those that are not displayed on the page, click the **Add All LDEVs** button.

4. To remove monitoring for a specific logical disk, perform the following steps:
  - a) Either click the check box next to a connected logical disk whose **Monitored** status is **Yes** or select the check box in the header to select all check boxes displayed on the page.
  - b) Click the **Remove** button.  
The **Monitored** status for the logical disk you removed changes to **No**.
5. To stop monitoring all logical disks, including those that are not displayed on the page, click the **Remove All LDEVs** button.
6. Click the **Close** button to dismiss the agent details window.

## 6.8 Accessing Agent Configuration Details

The Agent Configuration details, available for agents in both the **Connected Agents** list and **Available Agents** list, display the current Agent and Store parameter values for the selected agent. The current parameter values are collected from the agent when the agent is detected or when the **Check Configuration** button is clicked. (For detailed information on checking an agent's current configuration, see section 6.6).

Agent Configuration								
Record Name	LOG		LOGIF		Collection Interval		Collection Offset	
	Current	Required	Current	Required	Current	Required	Current	Required
PI_LDS	Yes	Yes			300	300	0	n/a
PI_PTS	Yes	Yes			60	60	0	n/a
PD	Yes	Yes			3600	3600	0	0
PD_LDC	Yes	Yes			3600	3600	0	0
PI_LDA	Yes	Yes			300	300	0	n/a
PD_LSEC	Yes	Yes			3600	3600	0	0
PD_RGC	Yes	Yes			3600	3600	0	0
PI_RGS	Yes	Yes			300	300	0	n/a
PD_PTC	Yes	Yes			3600	3600	0	0
PI_CLPS	Yes	Yes			60	60	0	n/a
PD_CLPC	Yes	Yes			3600	3600	0	0

Store Configuration			
	Record Name	Retention Interval	
		Current	Recommended
PD	PD	200 records	200 records
	PD_LDC	600000 records	600000 records
	PD_LSEC	100000 records	100000 records
	PD_RGC	100000 records	100000 records
	PD_PTC	11000 records	11000 records
	PD_CLPC	10000 records	100000 records
PI	Hourly	Week	Week
	Daily	Year	Year
	Weekly	Year	Year
	Monthly	Year	Year
	Yearly	Year	Year

Figure 6.3 Agent Configuration Details

Tuning Manager cannot configure individual records for agents, but does provide a way to reset agent records specifically required by Tuning Manager to their recommended or required default values. For details on the agent parameters, see the *HiCommand Tuning Manager Application Report Reference*, *HiCommand Tuning Manager Hardware Reports Reference*, and *HiCommand Tuning Manager Operating System Reports Reference*.

You can view the configuration details applicable to Tuning Manager for individual agents.

**Note:** An agent can cause errors if it is not properly configured for use with Tuning Manager. For information on common agent configuration errors, see section 7.5.

## 6.8.1 Viewing Agent Configuration

To view an agent's configuration, follow these steps:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. To view the configuration for a specific connected agent, click the agent's listed Name.  
*Note:* Two agents (Platform agent and RAID map agent) are displayed for each server agent. The parameters for both HTM Agents will be displayed in sequence.
5. To view the configuration of a specific available agent, click **Available Agents** in the navigation area.
6. Click the specific agent's listed name to view its configuration.

*Notes:*

- Tuning Manager 05-50 can recognize and monitor Agent for Platform (UNIX), Agent for Platform (Windows), Agent for RAID Map, Agent for RAID, Agent for SAN Switch, and Agent for Oracle. Other agents are ignored, and not displayed in the information area for **Connected Agents** or **Available Agents**.
- Main Console does not acquire resource information that the following agents collect. To check this information, use Performance Reporter.
  - Agent for NAS
  - Agent for Microsoft SQL Server
  - Agent for Microsoft Exchange Server
  - Agent for DB2<sup>®</sup>

## 6.8.2 Agent Parameters

In this section of the Agent Configuration display, only agent records required by Tuning Manager are displayed. For PI records, the **Collection Offset** column displays n/a by default (If there is no default value, 0 is displayed). The values for **Collection Interval** and **Collection Offset** are displayed in seconds.

Tuning Manager requires the following parameter values in order to collect PI record data from agents:

- **LOG** must be set to **Y**
- Do not set any value for **LOGIF**

Tuning Manager requires the following parameter values to collect PD records from agents:

- **Collection Offset** must be set to less than or equal to **120**

*Notes:*

- Clicking **Restore Required Configuration** resets the setting values to their defaults. If you changed these from their defaults while running an agent, make sure that you really want to reset all the values to their defaults, and then click **Restore Required Configuration**.
- To confirm the newly reset values, you can revisit the agent configuration details.

## 6.8.3 Store Parameters

In the Store Parameters section of the Agent Configuration display, only the agent records required by Tuning Manager are displayed. The parameters displayed are only recommendations. Tuning Manager will not change the values for **Store Parameters** when you click the **Restore Required Configuration** button.

## 6.9 Working with Agent Polling

### 6.9.1 From Collection to Display

As described in section 6.10, Tuning Manager polls agents on the network according to your specified schedule. The collected data requires processing and therefore the result is not instantly available to clients:

- After you start up Tuning Manager for the first time, there is a minimum collection period for storing the collected data in the database.
- Tuning Manager reserves time for aggregating and posting data immediately after the most recent polling period. This allows time for lagging servers and data aggregation. Users should not expect to see data collected during the previous hourly data collection.
- Data updates to users will be further delayed if you schedule polling to be performed infrequently. For more information, see section 6.10.2.

## 6.10 Polling Processing

Tuning Manager performs polling processing according to a specified schedule, and hourly collects the data collected by agents. Polling processing involves the collection of resource data collected by agents since the last time polling processing was performed. Tuning Manager collects data from the agents and performs time-axis aggregation.

For details on how to set polling times, see section 6.10.2. For detailed information on aggregating time metrics, see section 6.15.

*Notes:* Note the following when changing the time setting on a machine polled by an agent:

- When the time is changed to a later time  
Performance information from the time before the change to the time after the change is not collected.
- When the time is changed to an earlier time  
If the time after the change is before the last polling time for Tuning Manager, performance information from the time after the change to the last polling time is not collected again.

### 6.10.1 Initial Data Collection

To collect the minimal dataset before displaying metrics to the user, Tuning Manager needs about 2 hours from the time at which the Agent started.

### 6.10.2 Setting Polling Times

In Tuning Manager, set the time at which polling processing is performed regularly.

To set the polling time:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Polling Times** in the navigation area.

The Polling window appears:

5. Click individual check boxes in the Polling Times section to select each polling time.  
(Or click on **Select All** to enable all polling times).

*Note:* From **Aggregation Times**, select at least one item corresponding to the selected polling time. For more information, see section 6.14.

6. Click **Save** to update Tuning Manager. (Click **Reset** to abandon changes).

### 6.10.3 Setting Polling Offset Options

Tuning Manager does not perform polling for agents during the time periods for which polling is set not to be performed in **Polling Times**, or when Tuning Manager is not running. Since Tuning Manager can be used to specify whether to collect data including the past data, you can collect the data for the above periods from agents. For example, assume that polling was not performed between 12:00 and 16:00 for some reason. In this case, specify 4 hours for **Maximum Polling Backdate Offset**, and then perform polling at 17:00. This operation collects the data for 16:00, as well as the data for 14:00 and 15:00.

The starting time for the collected data will be the more recent of the following:

- Most recent record
- Current system time minus the polling offset value

For example, if the current time is 1 pm, the polling offset value is 2 hours, and the most recent record time is 12 pm, the value of the most recent record time is used for the start time.

To set the values for a polling offset:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Polling Times** in the navigation area.
5. Specify an integer value for **Maximum Polling Backdate Offset**.  
For details on valid field values, see section 1.2.1.
6. Click **Save** to update Tuning Manager. (Click **Reset** to abandon changes).

### 6.10.4 Setting Polling Retry Options

Tuning Manager provides for cases when an initial polling attempt fails. You can specify the number of retry attempts and the time intervals between each attempt.

To set the values for retry attempts:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Polling Times** in the navigation area.
5. Specify an integer value for **Max Retry Attempts**. (Use 0 to prevent retries).  
For details on valid field values, see section 1.2.1.
6. Specify an integer value for **Retry Delay**.
7. Click **Save** to update Tuning Manager. (Click **Reset** to abandon changes).

## 6.10.5 Starting Polling

Tuning Manager provides a way to request polling on an ad hoc basis.

### Benefits

- Provides users with the most recent data possible for reporting purposes.
- Permits systems administrators to start polling when activity is relatively low.

When you click **Start Polling Now**, Tuning Manager requests data from all agents starting from the last uncollected time block up to and including the last complete hour block of available data.

### Example:

Assume that, when the last scheduled polling time is 9:00 pm of the previous day, you request polling at 6:15 am of the current day. In this case, Tuning Manager collects activity data from 9:00 pm of the previous day to 6:00 am of the current day.

To start polling now:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Polling Times** in the navigation area.
5. Click **Start Polling Now**.
6. Click any link to exit this page.

## 6.10.6 Interrupting Polling

This feature is available only during active polling sessions. When polling has been interrupted, the Resource view displays a message indicating that polling was interrupted before completion. The same message is displayed if you restart Tuning Manager after polling was interrupted.

*Note:* Response to your interruption command depends on the current phase of polling. It can take anywhere from a few seconds up to several minutes for polling to stop if agents are being consulted. If a database operation is already in process, polling will continue to conclusion.

To interrupt an active polling session:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Polling Times** in the navigation area.

If agents are currently being polled, the **Interrupt Polling** button is displayed.

5. Click the **Interrupt Polling** button to stop polling.

A warning dialog box appears.

6. Click **OK** to interrupt polling. (Click **Cancel** to continue polling without interruption).

An information message is displayed in the message bar and the **Interrupt Polling** button changes to a **Start Polling Now** button.

7. To restart polling before the next scheduled polling is performed, click the **Start Polling Now** button.

## 6.10.7 Polling Data Recorded During Daylight Savings Time Changes

Tuning Manager stores date-oriented data as local time rather than GMT. If the computer running Tuning Manager automatically adjusts its local time to account for daylight savings time changes during a scheduled polling time, the data collected at the point the time changes may be affected as follows:

Changing from standard time to daylight savings time:

- The viewpoint for the time the change occurred will not be available, since the local time on the computer is automatically advanced by one hour during the collection period.
- If you attempt to set the viewpoint to the time the change occurred, Tuning Manager will automatically adjust to display the next available viewpoint.
- The data points for the time the change occurred will not appear in any historical or forecast reports.
- When daylight savings time is used for a server, a one-hour blank period occurs when daylight savings time starts. Performance Reporter does not display the data for the blank period in reports.

The following figure provides an example of this behavior:

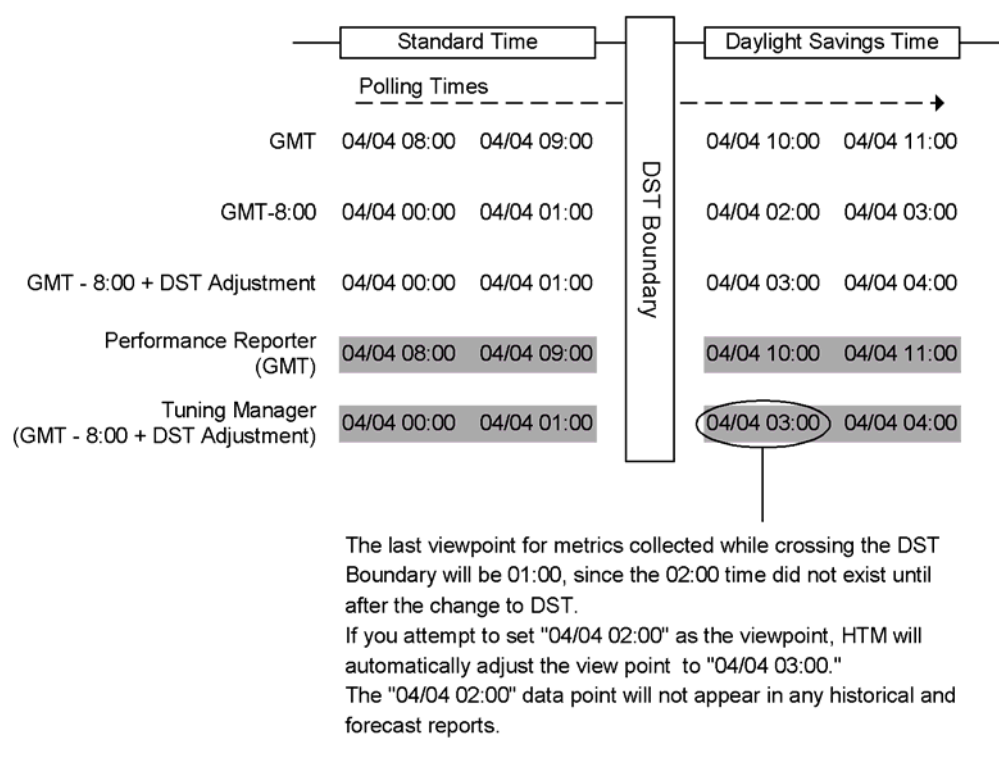


Figure 6.4 Example of DST Adjustment from Pacific Standard Time to Pacific Daylight Time

Changing from daylight savings time to standard time:

- A duplicate viewpoint is created, since the local time is automatically set back to the previous hour, for which Tuning Manager has already collected data.
- The duplicate viewpoint for the time the change occurred is deleted.
- The data points for the next period after the time change occurred will appear twice in reports, but only one instance will display the collected metrics.
- When daylight savings time is used for a server, the one-hour period from 1:00 occurs twice when daylight savings time ends. Performance Reporter displays only the data for the second one-hour period in reports.

The following figure provides an example of this behavior:

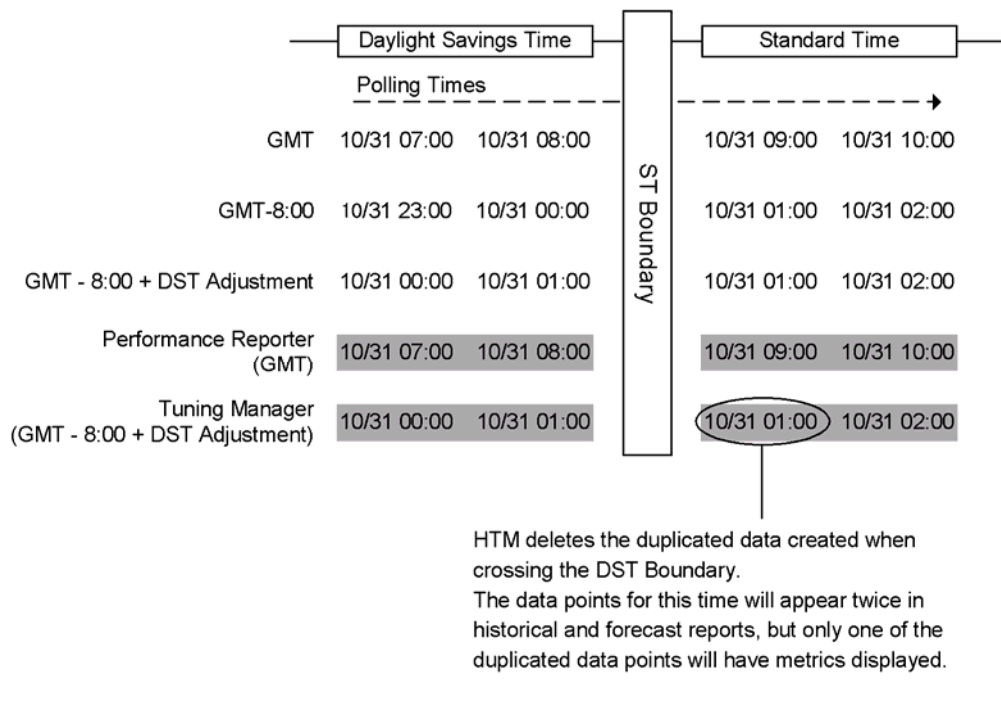


Figure 6.5 Example of DST Adjustment from Pacific Daylight Time to Pacific Standard Time

## 6.11 About the Polling Status Report

The Polling Status Report reports the following information for each polling time listed:

- How long the polling and aggregation took.
- How many agents from which Tuning Manager was able to gather data.
- How many resources detected by the agents were updated.

Table 6.5 describes the contents of each column in the Polling Status Report.

Table 6.5 Polling Status Report Data

Report Data	Description
Polling Times	Date and time the polling occurred.
Aggregation Type	Only Full Aggregation or Resource-axis Aggregation is performed.
Mode	Displays one of the following types of polling: Scheduled or Manual.
Status	Displays one of the following statuses of polling: Running, Done, Server Shutdown, Interrupted, Skipped, or Error.
Total Time	Total amount of time the polling operation took to complete. It includes the amount of time required to calculate GrowthRate and delete unnecessary data, as well as the total amount of time for Data gathering, Resource-axis Aggregation, and Time-axis Aggregation.
Agents Updated	Number of connected agents that were updated during the polling period.
Agents Not Updated	Number of connected agents that were not updated during the polling period.
Resources Updated	Number of resources that were updated during the polling period.

### 6.11.1 Checking Agents' Historical Polling Status

To check the historical polling status of an agent, follow these steps:

1. Log in with Admin rights (see section 1.3).
2. Click Administration in the explorer area.
3. Click **Polling Status** in the submenu.

The Polling Status Report is displayed.

The Polling Status Report displays the status of both in-process and completed polling. The entries shown in the report are retained for the number of days specified in the Polling Status Retention Period entry field (the default is 7 days). Table 6.6 describes the entries found in the Polling Status Report.

4. To view a report for a specific polling time, click the link for any entry in the **Polling Time** column.

## 6.11.2 Checking Agents' Recent Polling Status

To check on the most recent polling status for an agent, follow these steps:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Polling Status** in the submenu.
4. Click **Agents Status** in the navigation area.

The Agents Status view for connected agents is displayed, showing the last polling time, last record time and current operational status.

Table 6.6 Contents of Each Column in Agents Status

Displayed Item	Description
Name	Instance name of the agent
Service ID	Service ID of the agent
Type	Type of the agent
Status	Startup status of the agent
Last Record	Date and time of the latest data collected
Polling Time	Date and time the polling last occurred

## 6.12 About Agent Polling Status Alerts

You can configure Tuning Manager to monitor and send an e-mail alert for one or more of the following indications of polling failure:

- **Polling Status Monitoring**

This function notifies the administrator of agent problems when data cannot be obtained from an agent for a period longer than the specified time. This alert occurs once polling aggregation processing is completed. Notification is performed when the latest polling time is the same as the latest record time, or the monitoring time specified for the alert is exceeded.

*Note:* If polling does not complete because it was manually interrupted, an alert is not sent for the session.

- **Polling Skipped Monitoring**

This function notifies the administrator when polling that should be performed is skipped because previous polling processing has not terminated. Check the polling schedule and settings to make sure that polling can be completed before the next time polling starts.

- **Polling Time Monitoring**

This function notifies the administrator when the set polling processing time exceeds the specified time. This indicates that another process is affecting this polling.

## 6.13 Configuring Agent Polling Status Alerts

To configure e-mail alerts for agents, follow these steps:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Polling Status** in the submenu.
4. Click **Alert** in the navigation area.

The Alert Definition page opens.

*Note:* For details on valid values, see section 1.2.1.

5. To enable and configure **Agent Status Monitoring**, click the checkbox displayed for this option.  
The default for triggering this alert is 24 hours. Enter a different value if needed (valid values are whole numbers from 2 to 99).
6. To enable **Polling Skipped Monitoring**, click the checkbox displayed for this option.
7. To enable configure **Polling Time Monitoring**, click the checkbox displayed for this option.  
The default for triggering this alert is 3 hours. Enter a different value if needed (valid values are whole numbers from 1 to 99).
8. Enter a value for SMTP Server.
9. Enter a valid sender address.
10. (Optional) Click to enable **SMTP Authentication**.
  - a) Enter a valid SMTP server name for **Email Host**.
  - b) Enter a valid destination e-mail address for **Email To**.
11. Click **Save** to store the configured options and begin the alert service. (Click **Reset** to abandon changes).

## 6.14 Time-Axis Aggregation

Tuning Manager can provide metrics on all monitored resources on an hourly, daily, monthly, quarterly, and yearly basis. Data is collected for hourly activity according to your polling schedule.

Under typical circumstances the lowest level resources do not merit yearly, monthly and daily reports. To optimize performance, Tuning Manager provides administrators the ability to specify only the resources requiring extensive reporting and the time periods to best distribute the processing overhead.

By default, Tuning Manager does not aggregate data for the daily, monthly, quarterly and yearly intervals for the lowest level resources. You can configure Tuning Manager to aggregate data collected at specific points in time for selected lower-level resources that are monitored by specific agents.

Table 6.7 lists the resources that can be selected for aggregation for each agent.

Table 6.7 Resources that can be Selected for Aggregation for Each Agent

Monitoring Agent	Resource
HTM Agent	<ul style="list-style-type: none"><li>Local Filesystems</li><li>Imported Filesystems</li><li>Device Files</li></ul>
Agent for Oracle	<ul style="list-style-type: none"><li>Tablespaces</li><li>Datafiles</li></ul>
Agent for RAID	<ul style="list-style-type: none"><li>Ports</li><li>Logical Disks</li><li>Array Group</li><li>CLPR<sup>(Note)</sup></li></ul>
Agent for SAN Switch	<ul style="list-style-type: none"><li>Switches</li><li>Ports</li></ul>

**Note:** CLPRs are displayed only when the selected Agent for RAID monitors TagmaStore™ USP.

### 6.14.1 Total selection of time metric

To configure time-axis aggregation for specific lower-level resources that are monitored by specific agents, follow these steps:

1. Log in with Admin rights (see section 1.3).
2. Click **Administration** in the explorer area.
3. Click **Agents** in the submenu.
4. Click **Aggregation** in the navigation area.
5. Click the specific resource(s) monitored by the specific agent(s) for which you want collected data aggregated.
6. Click **Save** to update Tuning Manager. (Click **Reset** to abandon changes). A confirmation dialog box appears indicating the changes were successfully saved:
7. Click **OK** to dismiss the confirmation message.
8. Click **Polling Times** in the navigation area.
9. Select the **Polling Time** choices.
10. Select one or more **Aggregation Time** choices that correspond to the **Polling Time** choices you selected.

*Note:* An error message is displayed if you click the **Save** button without making at least one **Aggregation Times** selection. Also, Polling Time and the selected Aggregation Time must be the same. If you attempt to select a different Aggregation Time choice, an error dialog box is displayed.

11. To control polling offset, see section 6.10.3.
12. Enter the maximum number of retry attempts and retry delays. (For more information, see section 6.10.4).
13. Click **Save**. A confirmation dialog box appears indicating the changes were successfully saved.
14. Click **OK** to dismiss the confirmation message.
15. Click **Start Polling Now**.
16. Click any link to exit the page.

*Note:* To interrupt an active polling session, see section 6.10.6.

## 6.15 Removing Agents

*Caution:* Perform this function only when you want to permanently remove historical data for the resources being monitored by a given agent. All data for these resources will be permanently removed, and recovery cannot be performed.

To remove an agent:

1. Stop the agent service. (For details on how to stop agents, see the *HiCommand Tuning Manager Agent Administration Guide*).

*Note:* Before you can remove an agent from Tuning Manager, you must first stop the agent service. If you omit this step, the agent will reappear in the Tuning Manager agent list (**Available Agents** list).

2. Log in with Admin rights (see section 1.3).
3. Click **Administration** in the explorer area.
4. Click **Agents** in the submenu.
5. If the agent is currently connected within Tuning Manager, manually disconnect the agent before proceeding with the removal. (See section 6.3.2).
6. Click **Available Agents** in the navigation area.
7. Select the agent you want to remove.
8. Click **Remove**.
9. Click **Refresh** to redisplay the list.

The agent no longer appears in the **Available Agents** list.



## Chapter 7 Addressing Server Issues

Troubleshooting an application is most successful when you know how to find clues. This chapter provides insights into key areas of Tuning Manager server operations.

Troubleshooting for Main Console:

- Correcting Non-Displayed Metric Values (see section 7.1)
- Identifying Data Collection Problems and Causes (see section 7.2)
- Enabling Alerts to be Output to Syslog (Solaris) (see section 7.3)
- Addressing Timing Issues (see section 7.4)
- Addressing Agent Configuration Errors (see section 7.5)
- Troubleshooting Steps (see section 7.6)
- Preparing to Receive Support (see section 7.7)
- Locating Tuning Manager Log Files (see section 7.8)
- Specifying an e-mail Address when an e-mail is not Sent (see section 7.9)

Troubleshooting for Performance Reporter:

- Troubleshooting for Performance Reporter (see section 7.10)

## 7.1 Correcting Non-Displayed Metric Values

Displayed data values display as *n/a* when Tuning Manager encounters no routine conditions preventing Tuning Manager from inserting data into its repository for a given data point.

There are several underlying causes for unavailable data values:

- An agent may have been stopped.
- An agent is running but unable to communicate.
- The agent may have a configuration error.
- A resource may have been taken offline or moved.
- Tuning Manager is monitoring an Oracle server that is handling a database that has more than one million segments.

*Note:* In this case, for details on how to avoid the problem, see section 7.1.1.

### 7.1.1 Monitoring an Oracle Server that is Handling a Database Containing Many Segments

Add the following five property definitions to the user property file on the server in which Tuning Manager is installed:

- `pwproxy.config.pd.collectionOffset=2614`
- `pwproxy.agent.o.pidf.collectionInterval=3600`
- `pwproxy.agent.o.pdts.collectionOffset=2614`
- `pwproxy.agent.o.pdi.collectionInterval=3600`
- `pwproxy.agent.o.pdi.collectionOffset=77`

For details on how to specify settings in the user property file, see section 1.1.

## 7.2 Identifying Data Collection Problems and Causes

When there is a data collection problem, possible causes are as follows:

- Agent communication failures
- Collection Manager failure
- Database failure
- The agent exhibits slow response times, which results in lag in reporting data to later polling periods
- Network problems
- The host that Tuning Manager or the agent is installed on is unusable on this network
- Hardware malfunctions
- The clock on the host where the agent has been installed is slower than the clock on Tuning Manager. (For detailed information, see section 7.4.1).
- An agent connection/disconnection policy: If the agent does not report data for a long time, the agent connection policy might be the problem. For example, if Automatic Disconnection and Manual Connection are set up, Tuning Manager will stop communicating with the agent and will not reconnect. (For detailed information, see section 6.3).

### 7.3 Enabling Alerts to be Output to Syslog (Solaris)

Tuning Manager can permit users to direct Alert messages to the syslog. But this feature cannot function unless you first enable user logging at the operation system level.

To enable user-generated alerts, edit `/etc/syslog.conf` to add the following line:

```
user.info /var/adm/messages
```

After editing and saving `/etc/syslog.conf`, restart `syslogd`.

## 7.4 Addressing Timing Issues

### 7.4.1 Correcting Delayed Data Updates from Lagging Machine Clocks

An agent operates on the clock of the host where the agent is installed. If the clock on the host is slower than the clock on the machine executing the Tuning Manager server, data collection from the corresponding agent might be slower than the specified polling periods. This can happen because agents on a lagging machine do not report data for a time that has not yet occurred. (From the perspective of the agent on the lagging host, Tuning Manager is requesting a report for a point in the future).

*Example:* The clock on the host running Tuning Manager sees the current time as 2:00pm. The administrator has set 2:00pm as a polling time, so the polling period begins. The clock on a server named Saturn currently is set as 1:50pm. When Tuning Manager queries the agents monitoring Saturn and its resources, the agents have nothing to report because the local clock has not yet reached 2:00pm.

To identify a consistent lag problem, examine the Agents Status list for the Last Record. A host with a lagging clock will display a consistent pattern. This will be evident after every polling period: the timestamp for Last Record appears in a later polling period than other agents. (Examine the Last Polling Time column). Compare the Last Record and Last Polling Time columns for other connected agents to reveal any consistent lagging hosts.

*Note:* One practical solution is to implement NTP. This protocol can be installed on individual hosts or as a message broadcast protocol across entire networks.

To display the **Last Record** and **Last Polling Time** columns:

1. Click **Administration** in the explorer area.
2. Click **Polling Status** in the submenu.
3. Click **Agents Status** in the navigation area.
4. Examine the **Last Record** and **Last Polling Time** columns.

### 7.4.2 Changing the System Clock During Tuning Manager Operations

Tuning Manager supports time adjustments of the system time recorder (such as adjustments made by the NTP service). However, if you need to turn back the clock, do not specify a time earlier than the last time HBase Storage Mgmt Web Service was stopped. Also, if you need to adjust the clock by more than 10 minutes, we recommend that you restart Tuning Manager with the newly set time to ensure smooth resumption of polling schedules.

For more information on procedures for stopping and restarting, see sections 1.5 and 1.6.

## 7.5 Addressing Agent Configuration Errors

An agent can cause errors if it is not properly configured for use with Tuning Manager. These are common causes of configuration errors:

- Log is not set to Y
- For PI records: Collection Interval is set to a value that is greater than 3600
- For PD records: Collection Interval is set to a value that is not a divisor of 3600
- For PD records: Collection Offset is set to a value that is greater than 120
- LOGIF is set to a value

*Note:* If an agent configuration error appears in the Available Agents list, fix the configuration error without removing the agent from the list.

For information on how to configure agents, see the *HiCommand Tuning Manager Command Line Interface Guide*. For information on viewing an agent's current configuration, see section 6.8.

Even when Performance Reporter is used to change the parameter for an Agent monitored by Tuning Manager, the parameter value is reverted to the default when the **Restore Required Configuration** button is clicked in the Connected Agents window. For detailed information on agent parameters, see the *HiCommand Tuning Manager Application Reports Reference*, *HiCommand Tuning Manager Hardware Reports Reference*, and *HiCommand Tuning Manager Operating System Reports Reference*.

In this case, use Performance Reporter to re-set the Agent parameter whose value has been reverted to the default. For details on how to set parameters, in the *HiCommand Tuning Manager Command Line Interface Guide*, see the chapter explaining commands for Performance Reporter.

The following problems will occur if no appropriate value is set for the parameter:

- When no appropriate value is set for parameters of disconnected Agents  
Tuning Manager cannot connect to the corresponding Agent.
- When no appropriate value is set for parameters of connected Agents  
Tuning Manager cannot properly monitor the corresponding Agent.

## 7.6 Troubleshooting Steps

When you encounter unexpected problems while operating Tuning Manager, adopt the following diagnostic steps:

- Check whether there is a problem in the data collection results.  
Most questions about data collection are covered in section 7.2.
- Examine log files.  
Start by examining logs for the Tuning Manager application or the Tuning Manager agents. Often the log file reveals underlying causes for the problem. (See section 7.8).  
*Note:* For information about Log Files for agents, see the *HiCommand Tuning Manager Agent Administration Guide*.
- Use the manual to check the error message contents recorded in the log.  
See the *HiCommand Tuning Manager Messages Reference*.
- Examine operating system logs to determine whether an application-level or operating system-level event has been recorded.  
Under Windows, consult the Event Viewer. Also see section 7.7.3.
- Check on the state of processes for Tuning Manager and its components:
  - Windows: Examine the Services Panel.
  - Solaris: Run `ps`.
- Check the disk capacity to make sure there is sufficient free space. If the free space is insufficient, increase it by deleting the files that you created after the installation of Tuning Manager.

In most cases, following these steps will help you to determine the nature of the problem. If you are unable to locate the cause, see section 7.7.

## 7.7 Preparing to Receive Support

### 7.7.1 Using `hcmdsgetlogs` to Submit Key Data

By collecting log files and other data, you can receive more effective support. Tuning Manager provides the `hcmdsgetlogs` command to enable you to collect required data. We recommend that, before requesting support, you execute `hcmdsgetlogs` to collect the required data. Run this command and then contact the service desk.

If you initiate a support case, you will be instructed whether to transmit these files and provided further instructions as necessary.

*Note:* For details about the `hcmdsgetlogs` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

### 7.7.2 Manual Data Dumps

`htm-dump` simplifies the data file collection process. However circumstances may require you to perform manual steps. The following are manual steps you can perform to collect system information:

- Tuning Manager logs. (See section 7.8).
- The Tuning Manager database.
- Information about the state of Tuning Manager:
  - Windows:
    - Event logs for System, Security, Application. (For more information, see section 7.7.3).
    - Services Panel information. (For more information, see section 7.7.4).
  - Solaris:
    - Execute the `ps` command to output the process status to the file.

```
ps -ef > /home/<YourHomeDirectory>/psoutput.txt
```

### 7.7.3 Saving Windows Event Logs

To save event logs:

1. Launch the Event Viewer.

Windows 2000: Select **Start, Programs, Administrative Tools**, and then **Event Viewer**

Windows Server 2003: Select **Start, Administrative Tools**, and then **Event Viewer**

Command line: *Windows-directory\system32\eventvwr.msc /s*

2. Under the Tree tab, select **Application Log**.
3. Click **Action** in the menu.
4. Select **Save Log File As**.
5. Specify a filename including the log type, company and date.  
Example: `log-system-mycompany-20030729.evt`
6. Click **Save**.
7. Repeat these steps for Security Log and System Log.

### 7.7.4 Saving Windows Services Information

To save Services Panel information:

1. Launch the Services Panel by performing the appropriate steps:

Windows 2000: Select **Start, Programs, Administrative Tools**, and then **Services**

Windows Server 2003: Select **Start, Administrative Tools**, and then **Services**

Command line: *Windows-directory\system32\services.msc /s*

2. Click **Action** and then **Export List**. The Save As dialog box is displayed.
3. For **Save as type** specify **Text (Comma-Delimited) (\*.txt)**.
4. For **File name** include your company name and date.  
Example: `services-yourcompany-20030729.txt`
5. Click **Save**.

## 7.8 Locating Tuning Manager Log Files

Tuning Manager generates logs in the locations shown in Table 7.1.

Table 7.1 Application Log Files

Operating System	Path
Windows	<i>Tuning-Manager-installation-directory</i> \logs
Solaris	<i>/opt/HiCommand/TuningManager/logs</i> <i>Note:</i> If you upgraded from Tuning Manager version 01-00 to this release and chose to save the database as prompted during installation, the logs directory may be in a different location than shown above. Please see the <i>HiCommand Tuning Manager Installation Guide</i> provided with version 01-00 for information on the logs file location.

Table 7.2 shows the log file that Tuning Manager maintains.

Table 7.2 Tuning Manager Log Files

Log File	Notes
logs/htm.log	Contains Tuning Manager errors.

## 7.9 Specifying an e-mail Address when an e-mail is not Sent

When a Tuning Manager alert occurs and the e-mail action is performed, sometimes an e-mail is not sent. One of the possible reasons for this problem is that, when a filtering condition is specified for sender addresses on the SMTP server, the initial value (`htmlalert@er`) of the Tuning Manager e-mail sender address fulfills that condition.

If such a problem occurs, specify an e-mail address that does not fulfill the filtering condition in the user property file. Afterward, Tuning Manager will use the specified e-mail address.

For details on how to specify settings in the user property file, see section 1.1.

## 7.10 Troubleshooting for Performance Reporter

This section contains information about how to resolve Performance Reporter errors and verify log output information.

### 7.10.1 Checking for Error and Log Information

Check for error messages. For details on error messages, see the *HiCommand Tuning Manager Messages Reference*.

Check log information. Performance Reporter outputs the following three types of log information:

- Windows event log (for Windows)
- Syslog (for Solaris)
- Performance Reporter log

Each type of log information and its output format is provided in this section.

#### Windows Event Log Settings

The Windows event log contains Windows-related status and error information. Pending Performance Reporter events are displayed as an application log in the Windows Event Viewer, whereas issued events are displayed in the HiCommand log within the Source area of the Windows Event Viewer.

The Performance Reporter output information is formatted to the Windows event log as follows: **Program-id[process-id]: Δ message**

Following is an example of output information:

```
HTM-PR [0000038C]: KAVJA5001-I The activation process will now start.
```

Table 7.3 explains the content of the output information.

Table 7.3 Log File Output Items

Item	Output	Length (Bytes)
program-id	A program-symbolic name: HTM-PR	1-16
process-id	A process identifier as a decimal number	1-10
message	A message identifier and corresponding message. If an error occurred in Performance Reporter, a message log ID is added to the beginning of the message text.	1-1,023

#### Syslog Log Settings

Syslog contains Solaris status and error log information. The Solaris output information is formatted to the syslog as follows:

date-and-time Δ host-name Δ program-id [process-id] Δ : Δmessage

Following is an example of output information:

```
Jan 21 15:10:51 1A8GSolar is HTM-PR[9339]: KAVJA0001-I <installDir> is not correctly specified
in the configuration file.
```

Table 7.4 explains the content of the output information.

Table 7.4 Syslog Log File Output Items

Item	Output	Length (Bytes)
date-and-time	The date and time in month dd hh:mm:ss format: dd indicates the date hh indicates the hour mm indicates the minute ss indicates the second	15
host-name	A host name	1-255
program-id	A program-symbolic name: HTM-PR	1-16
process-id	A process identifier as a decimal number	1-10
message	A message identifier and corresponding message	1-1,023

## Performance Reporter Log Settings

After you install Performance Reporter, you must specify settings in the initialization settings file (conf/config.xml). For information about the config.xml file, see section 5.3. Table 7.5 lists the information related to the Performance Reporter log that may be specified.

Table 7.5 Log Initialization Settings

Setting	Description	Value Range	Default
Destination	Specifies the log's output destination.	Not applicable	For Windows: <i>Performance-Reporter-installation-directory</i> \log For Solaris: /opt/HiCommand/TuningManager/PerformanceReporter/log
Number of files	Specifies the number of output log files (See <i>Note</i> ).	1-16	10
Size	Specifies the size of one log file (in megabytes) (See <i>Note</i> ).	1-100	10
Trace level	Specifies the output trace level. For details, see Table 7.6.	Fatal/Warn/Debug/Trace	Debug



**Table 7.7 Log File Output Format**

Item	Settings
Number	Log serial number (4 bytes)
Date	Log collection date: yyyy/mm/dd (10 bytes)
Time	Log collection time: hh:mm:ss.sss Local time (JST) in milliseconds (12 bytes)
AP name	Process name: HTM-PR
pid	Process ID (8 bytes): Process ID assigned by the OS
tid	Thread identifier (8 bytes): Hash value of the <code>java.lang.Thread</code> object
message-id	Message ID (11 bytes): KAVJxmnnn-z (x = package ID, m = message type number, nnn = message number, z = message type)
Type	Event type code that determines the log output timing (4 bytes) For details, see Table 7.8.
Text	Message text For details, see Table 7.9.

**Table 7.8 Log File Event Type Codes**

Type Code	Description	Notes
"OC "	Object creation	There is a two-byte space after this command.
"OD "	Object deletion	
"FB "	Start of function	
"FE "	End of function	
"EC "	Occurrence of exception	
"ER "	Error message	
"PB "	Call from another program	
"PE "	Return to another program	
" "	Other	This is a four-byte space.

## Message Logs

At the beginning of each message, a message log ID is output in the following format: **[PRNNNN:%%:\$\$]&&&&**. Table 7.9 describes the message log ID format.

**Table 7.9 Message Log ID Format**

Item	Description	Settings
[	Start of message log ID	Opening bracket
PR	Prefix	Always PR

Item	Description	Settings
NNNN	Log output number	Four-digit decimal number indicating the number of log outputs (from 0000 to 9999). Once 9999 is reached, the number is reset to 0000.
:	Separator	Colon (:)
%%%	Performance Reporter event type code	Event type code (see Table 7.10)
:	Separator	Colon (:)
\$\$	Log level	Two-digit number indicating the trace level of the output message. This number enables you to search for messages in the log file by using the trace level. The following list indicates the relationship between the numbers and the levels. 00: FATAL 10: WARN 20: DEBUG 30: TRACE
]	End of message log ID	Closing bracket
&&&	Message text	Message text for the message ID

**Table 7.10 Performance Reporter Event Type Codes**

Type Code	Description	Notes
"FBI"	Start of main method	Not applicable
"FEI"	End of main method	
"FBS"	Start of method	
"FES"	End of method	
"EC "	Occurrence of exception	There is a two-byte space after this command.
"ER "	Error message (-E)	
"DP "	Debugging information	
"INF"	Information message (-I, -Q, -K)	Not applicable
"CAL"	Call to another program	
"RET"	Return from another program	

## 7.10.2 Collecting Windows Data After an Error

You will need to collect several types of information in the event of an error. Performance Reporter uses the `jpcprras` command to collect data in a batch mode. You will need to collect several types of data. To use the `jpcprras` command:

1. Log in as an administrator.
2. Execute the following command: `cd Performance-Reporter-installation-directory\tools`.

For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

3. Execute the `jpcprras` command. For example, if you want information that is stored in the `c:\tmp\jpc\prras` folder, the command would be: `jpcprras c:\tmp\jpc\prras`.

*Note:* If the folder specified in the argument contains any spaces, you must enclose the entire directory in double quotation marks, e.g., `jpcprras "c:\tmp\jpc prras"` Also, do not execute multiple `jpcprras` commands simultaneously from different prompts. Doing so results in abnormal data acquisition. If Performance Reporter is running in a cluster system, execute the `jpcprras` command on all the nodes in the cluster system.

You will also want to use the Windows Event Viewer to check the event log and save it to a file.

**Operation information** (see Table 7.11 and Table 7.12 for details)

- Details of the operation in progress when the error occurred
- Time the error occurred
- Machine configuration (OS, version, and host name of the machine running Performance Reporter and the operation machine)
- Whether the error is replicable
- User name logged in to the Main Console

**On-screen information**

- Printout of the Web browser
- Printout of the error message dialog box, including any detailed information
- Printout of the command prompt window, if the error occurred during command execution. Choose **Control Panel\Console**, then specify the following settings about the Command Prompt window:
  - Options page: select **QuickEdit Mode**.
  - Layout page: under **Screen Buffer Size**, set Height to 500.

**Other information**

- Contents of System Log and Application Log in the Event Viewer window
- System Information (found under Computer Management or Accessories\System Tools)
- Command arguments that were specified, if the error occurred during command execution

- Thread dump of JavaVM:
  1. Create a file named **dump** in the following folder:  
**C:\Program Files\HiCommand\Base\hwc\containers\PerformanceReporter**  
 The coding in the file is arbitrary. An empty file can also be specified.
  2. From the Control Panel's Service Applet, select HiCommand Performance Reporter, and then stop it. The thread dump, `javacore###.###.txt`, is output to the `C:\Program Files\HiCommand\Base\hwc\containers\PerformanceReporter` folder. The digit number and numeric value of `#` is optional. The file called "*dump*" is deleted after acquiring the thread dump.
  3. Restart the service. Restarting services of HiCommand Performance Reporter and HBase Storage Mgmt Web Service is required after acquiring the thread dump because the performance of JavaVM is unstable. For information about starting and stopping the services, see section 1.5 and 1.6.

In the following table, information that is listed in the "Type of Information" column can be collected by the `jcprras` command.

Table 7.11 Operating System Information

Type of Information	Overview	Default File Name
System log	Windows event log	Not applicable
System file	hosts file	%WINDIR%\system32\drivers\etc\hosts
	services file	%WINDIR%\system32\drivers\etc\services
Process information	List of processes	Not applicable
Program error information	Dr. Watson log file	For Windows 2000: %alluserprofile%\Documents\DrWatson\drwtsn32.log For Windows Server 2003: %userprofile%\Local Settings\Application Data\Microsoft\DrWatson\drwtsn32.log See <i>Note</i>
	Dr. Watson's crash dump file	For Windows 2000: %alluserprofile%\Documents\DrWatson\user.dmp For Windows Server 2003: %userprofile%\Local Settings\Application Data\Microsoft\DrWatson\user.dmp See <i>Note</i>
System information	Windows system information	Not applicable
Network information	Network status	
Environment variables	List of environment variables	

**Note:** You can collect the file using a command even if you have made settings so that the log file is output to another folder and file.

In the following table, information that is listed in the "Type of Information" column can be collected by the `jcprras` command.

**Table 7.12 Performance Reporter Information**

Type of Information	Overview	Default File Name
Common component information	Error information for common components	Not applicable
Registry information	Registry information for Performance Reporter	
	Registry information for UNINSTALL	
	Registry information for common components	
	Registry information for HNTRLib2	
	Registry information for Collection Manager	
	Registry information for COMMON_DLL	
File information	List of expanded war files	
	List of Performance Reporter installation files	
Setup information	Performance Reporter setup files	<i>Performance-Reporter-installation-directory\conf\*.*</i>
		<i>Performance-Reporter-installation-directory\sample\conf\*.*</i>
Log information	Performance Reporter log file	<i>Performance-Reporter-installation-directory\log\*.log</i>
	Installer, uninstaller log file	%SystemDrive%\htmpruninst.rtn
		%SystemDrive%\htmpruninst.log
		%SystemDrive%\htmprinst.rtn
	%SystemDrive%\htmprinst.log	

### 7.10.3 Collecting Solaris Data After an Error

To collect the data that is needed to determine the cause of the error, use the `jpcprras` command as follows:

1. Log in as root.
2. Change directories to the Performance Reporter command directory:  
`cd /opt/HiCommand/TuningManager/PerformanceReporter/tools.`
3. Execute the `jpcprras` command. For example, if you want information that is stored in the `/tmp/jpc/prras` directory, the command would be `jpcprras /tmp/jpc/prras.`

*Note:* Do not execute multiple `jpcprras` commands simultaneously from different prompts. Doing so results in abnormal data acquisition. If Performance Reporter is running in a cluster system, execute the `jpcprras` command on all the nodes in the cluster system.

You will also need the following information:

**Operation information** (see Table 7.13 and Table 7.14 for details)

- Details of the operation in progress when the error occurred
- Time the error occurred
- Machine configuration (OS, version, and host name of the machine running Performance Reporter and the operation machine)
- Whether the error is replicable
- User name logged in to the Main Console

**On-screen information**

- Printout of the Web browser
- Printout of the error message dialog box, including any detailed information
- The messages output to the console in the event of problems during command execution

**Other information**

- Command arguments that were specified, if the error occurred during command execution
- Thread dump of JavaVM:
  1. Execute `kill -3 PID` with a root user. (PID is a process ID that is stored in the `/var/opt/HiCommand/Base/tmp/PerformanceReporter.pid` file). The thread dump, `javacore###.####.txt` file, is output to the following directory:  
`$PR_BASEHOME/hwc/containers/PerformanceReporter.`  
The digit number and numeric value of # is optional.
  2. Restart service.  
Restarting services of HiCommand Performance Reporter and HBase Storage Mgmt Web Service is required after you have acquired the thread dump because the performance of JavaVM is unstable. For information about starting and stopping the

services, see section 1.5 and 1.6.

In the following table, information that is listed in the “Type of Information” column can be collected by the `jcprras` command.

**Table 7.13 Operating System Information**

Type of Information	Overview	Default File Name
System log	syslog	/var/adm/messages
System file	hosts file	/etc/hosts
	services file	/etc/services
Patch information	OS patch information	Not applicable
Kernel information	OS kernel information	
Process information	List of processes	
Environment variable	List of environment variables	
Network information	Output netstat	
Memory information	Output vmstat	

In the following table, information that is listed in the “Type of Information” column can be collected by the `jcprras` command.

**Table 7.14 Performance Reporter Information**

Type of Information	Overview	Default File Name
Common component information	Error information for common components	Not applicable
File information	List of expanded war files	
	List of Performance Reporter installation files	
Setup information	Performance Reporter setup files	/opt/HiCommand/TuningManager/PerformanceReporter/conf/*
		/opt/HiCommand/TuningManager/PerformanceReporter/sample/conf/*
Log information	Performance Reporter log file	/opt/HiCommand/TuningManager/PerformanceReporter/log/*.log
	Installer, uninstaller log file	/tmp/htmpruninst.rtn
		/tmp/htmpruninst.log
		/tmp/htmprinst.rtn
		/tmp/htmprinst.log
pkginfo information	Package information	Not applicable



## Chapter 8 Working with the HiCommand Suite Common Component

HiCommand Suite Common Component provides general functionality that is used by HiCommand Suite products. To use such functionality, each HiCommand Suite product bundles HiCommand Suite Common Component. Tuning Manager also bundles HiCommand Suite Common Component, which is installed when Tuning Manager is installed.

- Services Registered for HiCommand Suite Common Component (Windows Only) (see section 8.1)
- Managing Ports Used by HiCommand Suite Common Component (see section 8.2)
- Resident Processes of HiCommand Suite Common Component (see section 8.3)
- Troubleshooting (see section 8.4)
- Changing the Host Name of a Management Server (see section 8.5)
- Displaying a Warning Banner Message (see section 8.6)

## 8.1 Services Registered for HiCommand Suite Common Component (Windows Only)

In Windows, the following HiCommand Suite Common Component services are registered for use with Tuning Manager:

- Hitachi Network Objectplaza Trace Monitor 2- HiCommand Suite Common trace service
- HBase Storage Mgmt Web Service- HiCommand Suite Common Web service

## 8.2 Managing Ports Used by HiCommand Suite Common Component

Table 8.1 Ports Used by HiCommand Suite Common Component

Default Port Number	Purpose
23015	Access port of HBase Storage Mgmt Web Service (non-SSL)
23016	Access port of HBase Storage Mgmt Web Service (SSL)
23017	AJP port of HBase Storage Mgmt Common Service
23018	Stop request reception port of HBase Storage Mgmt Common Service
23019	AJP port of HiCommand Suite Tuning Manager
23020	Stop request reception port of HiCommand Suite Tuning Manager.
23021	AJP port of Tuning Manager SOAP-API service
23022	Stop request reception port of Tuning Manager SOAP-API service
23023	AJP port of HiCommand Performance Reporter
23024	Stop request reception port of HiCommand Performance Reporter
23025 to 23031	Reserved ports
23032	Access port for HIRDB

## 8.2.1 Changing a HiCommand Suite Common Component Port in Windows

### 8.2.1.1 Changing the Port for HiCommand Suite Common Web Service in Standalone Mode

To change the default port of HBase Storage Mgmt Web Service:

1. Stop the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager, and HiCommand Suite TuningService services.

2. Open the following file in a text editor:

```
HiCommand-Suite-Common-Component-installation-directory\httpsd\conf\httpsd.conf
```

3. Change the Listen directive to the new port value.
4. Restart the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager and HiCommand Suite TuningService services.

5. Open the Tuning Manager URL with the new port value. For example:

```
http://htm-hostname:new-port-number/TuningManager/
```

**Note:** If you change the port to the one on which SSL is enabled and then execute commands, specify the options as follows:

```
--port port-number  
Example: htm-storage -u user-ID -w password --port port-number
```

### 8.2.1.2 Changing the Port for HiCommand Suite Common Web Service in SSO Mode

To change the default port of HBase Storage Mgmt Web Service:

1. Stop the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager, and HiCommand Suite TuningService services.

2. Open the following file in a text editor:

```
HiCommand-Suite-Common-Component-installation-directory\httpsd\conf\httpsd.conf
```

3. Specify a new port number for the Listen directive of httpsd.conf.
4. Execute the hcmdssup command to change the registered repository location.

For details on the hcmdssup command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

**Note:** For the hcmdssup command, specify the same port number as that specified in the httpsd.conf file.

5. Execute the hcmdprep command to register the application startup information.

For details on the hcmdprep command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

6. Restart the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager, and HiCommand Suite TuningService services.

7. Open the Tuning Manager URL with the new port value. For example:

`http://htm-hostname:new-port-number/TuningManager/`

**Note:** If you change the port to the one on which SSL is enabled and then execute commands, specify the options as follows:

```
--port port-number
Example: htm-storage -u user-ID -w password --port port-number
```

The following table describes the items that need to be changed, other than those described in the above procedure.

**Table 8.2** Changing HiCommand Suite Common Component Ports (Windows)

Port	File to Modify
23015 Access port for HBase Storage Mgmt Web Service (non-SSL)	Change the Listen directive in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \httpsd\conf\httpsd.conf For a single-sign on, also change the port number for hssso.hostport in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \conf\hssso.conf
23019 AJP port of HiCommand Suite Tuning Manager	The same port number should be set for the worker.worker2.port value in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \CC\web\redirector\workers.properties and for the webserver.connector.ajp13.port value in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \CC\web\containers\TuningManager\usrconf\usrconf.properties
23020 Stop request reception port of HiCommand Suite Tuning Manager	Change the value for webserver.shutdown.port in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \CC\web\containers\TuningManager\usrconf\usrconf.properties
23021 AJP port of Tuning Manager SOAP-API service	The same port number should be set for the worker.worker3.port value in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \CC\web\redirector\workers.properties and for the webserver.connector.ajp13.port value in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \CC\web\containers\TuningService\usrconf\usrconf.properties
23022 Stop request reception port of Tuning Manager SOAP-API service	Change the value for webserver.shutdown.port in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \CC\web\containers\TuningService\usrconf\usrconf.properties

Port	File to Modify
23032 Access port for HIRDB	The same value must be set for the port number of PDNAMEPORT in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \HDB\CONF\emb\HiRDB.ini and for the port number of set pd_name_port in the following file: <i>HiCommand-Suite-Common-Component-installation-directory</i> \HDB\CONF\pdsys.

## 8.2.2 Changing a HiCommand Suite Common Component Port in Solaris

### 8.2.2.1 Changing the Port for HiCommand Suite Common Web Service in Standalone Mode

To change the default port of HBase Storage Mgmt Web Service:

1. Stop the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager, and HiCommand Suite TuningService services.
2. Open the following file in a text editor:  
`/opt/HiCommand/Base/httpsd/conf/httpsd.conf`
3. Change the `Listen` directive to the new port value.
4. Restart the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager, and HiCommand Suite TuningService services.
5. Open the Tuning Manager URL with the new port value. For example:

`http://htm-hostname:new-port-number/TuningManager/`

**Note:** If you change the port to the one on which SSL is enabled and then execute commands, specify the options as follows:

`--port port-number`

Example: `htm-storage -u user-ID -w password --port port-number`

### 8.2.2.2 Changing the Port for HiCommand Suite Common Web Service in SSO Mode

To change the default port of HBase Storage Mgmt Web Service:

1. Stop the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager, and HiCommand Suite TuningService services.
2. Open the following file in a text editor:  
`/opt/HiCommand/Base/httpsd/conf/httpsd.conf`
3. Specify a new port number for the `Listen` directive of `httpsd.conf`.
4. Execute the `hcmdssup` command to change the registered repository location.

For details on the `hcmdssup` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

**Note:** For the `hcmdssup` command, specify the same port number as that specified in the `httpsd.conf` file.

5. Execute the `hcmdsrep` command to register the application startup information.  
For details on the `hcmdsrep` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.
6. Restart the HBase Storage Mgmt Web Service, HiCommand Suite TuningManager, and HiCommand Suite TuningService services.
7. Open the Tuning Manager URL with the new port value. For example:

`http://htm-hostname:new-port-number/TuningManager/`

**Note:** If you change the port to the one on which SSL is enabled and then execute commands, specify the options as follows:

`--port port-number`

Example: `htm-storage -u user-ID -w password --port port-number`

The following table describes the items that need to be changed, other than those described in the above procedure.

**Table 8.3** Changing HiCommand Suite Common Component Ports (UNIX)

Port	File to Modify
23015 Access port for HBase Storage Mgmt Web Service (non-SSL)	Change the <code>Listen</code> directive in the following file: <code>/opt/HiCommand/Base/httpsd/conf/httpsd.conf</code> For a single-sign on, also change the port number for <code>hssso.hostport</code> in the following file: <code>/opt/HiCommand/Base/conf/hssso.conf</code> <b>Note:</b> For a single sign-on, the port number written in the <code>httpsd.conf</code> file and the file number written in the <code>hssso.conf</code> file should be the same.
23019 AJP port of HiCommand Suite Tuning Manager	The same port number should be set for the <code>worker.worker2.port</code> value in the following file: <code>/opt/HiCommand/Base/CC/web/redirector/workers.properties</code> and for the <code>webserver.connector.ajp13.port</code> value in the following file: <code>/opt/HiCommand/Base/CC/web/containers/TuningManager/usrconf/usrconf.properties</code>
23020 Stop request reception port of HiCommand Suite Tuning Manager	Change the value for <code>webserver.shutdown.port</code> in the following file: <code>/opt/HiCommand/Base/CC/web/containers/TuningManager/usrconf/usrconf.properties</code>
23021 AJP port of Tuning Manager SOAP-API service	The same port number should be set for the <code>worker.worker3.port</code> value found in the following file: <code>/opt/HiCommand/Base/CC/web/redirector/workers.properties</code> and for the <code>webserver.connector.ajp13.port</code> value in the following file: <code>/opt/HiCommand/Base/CC/web/containers/TuningService/usrconf/usrconf.properties</code>
23022 Stop request reception port of Tuning Manager SOAP-API service	Change the value for <code>webserver.shutdown.port</code> in the following file: <code>/opt/HiCommand/Base/CC/web/containers/TuningService/usrconf/usrconf.properties</code>

Port	File to Modify
23032 Access port for HIRDB	The same value must be set for the port number of PDNAMEPORT in the following file: /opt/HiCommand/Base/HDB/CONF/emb/HIRDB.ini and for the port number of set pd_name_port in the following file: /opt/HiCommand/Base/HDB/CONF/pdsys.

### 8.3 Resident Processes of HiCommand Suite Common Component

Table 8.4 describes the resident HiCommand Suite Common Component processes in Windows systems.

Table 8.4 Resident Processes of HiCommand Suite Common Component (Windows)

Process	Functionality
hntr2srv.exe	HiCommand Suite common trace service process (Processes the events from the service control panel).
hntr2mon.exe	HiCommand Suite common trace information collection process (Collects integrated trace information).
httpd.exe	HiCommand Suite common web service
rotatlogs.exe	Log separation utility for the HiCommand Suite common web service
hcmdssvmng.exe	HiCommand Suite servlet service The following services are started as servlets: <ul style="list-style-type: none"> <li>▪ HBase Storage Mgmt Common Service</li> <li>▪ Tuning Manager</li> <li>▪ Tuning Manager SOAP-API service</li> <li>▪ HiCommand Performance Reporter service</li> </ul>

Table 8.5 describes the resident HiCommand Suite Common Component processes in Solaris systems.

Table 8.5 Resident Processes of HiCommand Suite Common Component (Solaris)

Process	Functionality
hntr2mon	HiCommand Suite common trace information collection process (Collects integrated trace information). <code>/opt/hitachi/HNTRLib2/bin/hntr2mon</code>
httpd	HiCommand Suite common web service: <code>/opt/HiCommand/Base/httpd/sbin/httpd</code>
rotatlogs	Log separation utility for HiCommand Suite common web service: <code>/opt/HiCommand/Base/httpd/sbin/rotatlogs</code>
java™	HiCommand Suite servlet service: <code>/opt/HiCommand/Base/jdk/bin/java</code> The following services are started as servlets: <ul style="list-style-type: none"> <li>▪ HBase Storage Mgmt Common Service</li> <li>▪ Tuning Manager</li> <li>▪ Tuning Manager SOAP-API service</li> <li>▪ HiCommand Performance Reporter service</li> </ul>

## 8.4 Troubleshooting

The following explains causes and countermeasures when neither the HBase Storage Mgmt Web Service nor HBase Storage Mgmt Common Service services are able to start.

If the problem might be due to a cause not listed in the following table, use the `hcmdsras` command to collect maintenance information, and then contact technical support.

Table 8.6 Causes and Countermeasures

Cause	Countermeasure
The port number used by the service is already being used.	Change the port number of HBase Storage Mgmt Web Service or HBase Storage Mgmt Common Service. For more information, see section 8.2.
System resources are insufficient.	Increase the memory swap area or the amount of available memory.

## 8.5 Changing the Host Name of a Management Server

Note the following points when you change the host name of a machine (management server) on which Tuning Manager or HiCommand Device Manager is installed.

### Changing the host name of the HiCommand Device Manager server:

After changing the HiCommand Device Manager host name, complete the steps below. For details on changing the HiCommand Device Manager host name, see the *HiCommand Device Manager Server Installation and Configuration Guide*.

You do not need to change the settings as described below if HiCommand Device Manager and Tuning Manager are not launched from each other.

- If HiCommand Device Manager is started from the **Tools** menu with Tuning Manager running in standalone mode, complete the procedure described in section 8.5.1.
- If Tuning Manager is running in single sign-on mode, see section 8.5.2.

### To change the host name of the Tuning Manager server:

1. To change the setting in HiCommand Suite Common Component Database, complete the procedure described in section 8.5.3.
2. If Tuning Manager is running in single sign-on mode, complete the procedure described in section 8.5.4.
3. Change the settings in Tuning Manager and the Agents. For the procedure, see the *HiCommand Tuning Manager Installation Guide*.
4. Change the host name of the server on which Tuning Manager is installed, and then restart the server. Complete the procedure described in section 8.5.5.

### 8.5.1 Changing the HiCommand Device Manager Host Name When Tuning Manager Is in Standalone Mode

1. Log in with Admin rights. For details, section 1.3.
2. Click **Administration** in the explorer area.
3. Click **Tools Config** in the submenu.
4. Change and re-register the URL for launching HiCommand Device Manager.

## 8.5.2 Changing the HiCommand Device Manager Host Name When Tuning Manager Is in Single Sign-On Mode

Perform the following steps on the host where Tuning Manager is installed. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

1. Stop the Tuning Manager services.  
For details on how to do this, see section 1.6.
2. Make sure that the following services have stopped or started.
  - Services that must be started:
    - HBase Storage Mgmt Common Service
    - HBase Storage Mgmt Web Service
    - HiCommand Server
  - Services that must be stopped: HiCommand Suite Tuning Manager
3. Run the following command to change the host name for connecting to the HiCommand Device Manager repository.

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssup /host  
Device-Manager-host-name /port Device-Manager-port-number
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssup -host Device-Manager-host-name -port  
Device-Manager-port-number
```

4. Restart HiCommand-related services.  
For details on how to do this, see section 1.5.

## 8.5.3 Changing the Setting in the HiCommand Common Component Database

1. Stop all HiCommand Suite services.  
For details on how to do this, see the manual for each HiCommand program.
2. In the following configuration files, change the part specifying the management server's host name to the new host name. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

- `httpsd.conf` file

File location:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\httpsd\conf\http  
sd.conf
```

Solaris:

```
/opt/HiCommand/Base/httpsd/conf/httpsd.conf
```

Part to change:

Change the value of the `ServerName` parameter to the new host name.

- `pdsys` file and `def_pdsys` file

File location:

Windows:

*HiCommand-Suite-Common-Component-installation-directory*\HDB\CONF\pdsys

*HiCommand-Suite-Common-Component-installation-directory*\database\work\def\_pdsys

Solaris:

/opt/HiCommand/Base/HDB/conf/pdsys

/opt/HiCommand/Base/database/work/def\_pdsys

Part to change:

Change the value of the `-x` option in the `pdunit` operand to the new host name.

In a cluster configuration, specify the virtual host name.

- `pdutysys` file and `def_pdutysys` file

File location:

Windows:

*HiCommand-Suite-Common-Component-installation-directory*\HDB\CONF\pdutysys

*HiCommand-Suite-Common-Component-installation-directory*\database\work\def\_pdutysys

Solaris:

/opt/HiCommand/Base/HDB/conf/pdutysys

/opt/HiCommand/Base/database/work/def\_pdutysys

Part to change:

Change the value of the `pd_hostname` operand to the new host name. No editing is required if the `pd_hostname` operand is unspecified.

In a cluster configuration, specify the host name of the executing node in the configuration files for both the executing node and standby node.

- `HiRDB.ini` file

File location:

Windows:

*HiCommand-Suite-Common-Component-installation-directory*\HDB\CONF\emb\HiRDB.ini

Solaris:

/opt/HiCommand/Base/HDB/conf/emb/HiRDB.ini

Part to change:

Change the value of the `PDHOST` parameter to the new host name.

In a cluster configuration, specify the virtual host name.

- `cluster.conf` file (only in a cluster configuration)

File location:

Windows:

`HiCommand-Suite-Common-Component-installation-directory\conf\cluster.conf`

Solaris:

`/opt/HiCommand/Base/conf/cluster.conf`

Part to change: Change the relevant host name to the new host name.

3. Restart all HiCommand Suite services.

For details on how to do this, see the manual for each HiCommand program.

4. Run the following command and make sure that all HiCommand-related services have started. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

Windows:

`HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /status`

Solaris:

`/opt/HiCommand/Base/bin/hcmdssrv -status`

#### 8.5.4 Changing the Tuning Manager Host Name When Tuning Manager Is in Single Sign-On Mode

1. Stop Tuning Manager.

For details on how to do this, see section 1.6.

2. Make sure that the following services have stopped or started.

- Services that must be started:

- HBase Storage Mgmt Common Service
- HBase Storage Mgmt Web Service
- HiCommand Server

- Services that must be stopped: HiCommand Suite Tuning Manager

3. Run the following command to delete the URL for starting Tuning Manager, then register the new launch URL. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

Windows:

`HiCommand-Suite-Common-Component-installation-directory\bin\hcndsrep /delete /type TuningManager`

`HiCommand-Suite-Common-Component-installation-directory\bin\hcndsrep /add /type TuningManager /url`

`http://Tuning-Manager-host-name:23015/TuningManager/login.do /user Device-Manager-user-ID /pass Device-Manager-user-password`

Solaris:

`/opt/HiCommand/Base/bin/hcndsrep -delete -type TuningManager`

```
/opt/HiCommand/Base/bin/hcmdsrep -add -type TuningManager -URL  
http://Tuning-Manager-host-name:23015/TuningManager/login.do -user  
Device-Manager-user-ID -pass Device-Manager-user-password
```

For details on the `hcmdsrep` command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

### 8.5.5 Changing the Name of the Tuning Manager Host Server

1. Change the name of the Tuning Manager host server, and then restart the server.
2. Run the following command and make sure that all HiCommand-related services have started. For details about the default installation directory, see the *HiCommand Tuning Manager Installation Guide*.

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdssrv /status
```

Solaris:

```
/opt/HiCommand/Base/bin/hcmdssrv -status
```

3. Make sure that all Collection Manager-related services have started.
4. Restart Agent-related services on each agent host.
  - For details on checking whether Collection Manager-related services are active and on restarting agent services, see the *HiCommand Tuning Manager Installation Guide*.
  - Complete all the other changes before you change the name of the Tuning Manager host server. If you change the Tuning Manager host name before completing the other procedures, the system may not start successfully.

## 8.6 Displaying a Warning Banner Message

In HiCommand Suite Common Component version 5.1 or later, an optional message can be displayed as a security risk measure at login. Issuing a warning beforehand to third parties that might attempt invalid access can help reduce the risk of problems such as data loss or information leakage.

A user with Administrator permissions in Windows or root permissions in Solaris can freely set this message. The message displayable on the Login panel must be no more than 1,000 characters. If a message with the same content is registered in a different language for each locale, the message can be automatically switched to match the locale of the Web browser.

**Note:** Sample English and Japanese messages are provided in the following locations:

Windows: *HiCommand-Suite-Common-Component-installation-directory*\sample\resource

Solaris: /opt/HiCommand/Base/sample/resource

These sample files are overwritten at installation so, if you wish to use a sample file, copy it and then edit it.

### 8.6.1 Editing the Message

You edit the message in HTML format. No more than 1,000 characters can be used. In addition to the usual characters, you can use HTML tags to change font attributes or place line breaks in desired locations. (The tag characters are also counted in the number of characters). Usable characters are from the Unicode UTF-8 encoding. Following is an example of message editing.

```
<center><b>Warning Notice!</b></center>
This is a {Company Name Here} computer system, which may be accessed and used only for authorized
{Company Name Here} business by authorized personnel. Unauthorized access or use of this computer
system may subject violators to criminal, civil, and/or administrative action. <br>
All information on this computer system may be intercepted, recorded, read, copied, and disclosed
by and to authorized personnel for official purposes, including criminal investigations. Such
information includes sensitive data encrypted to comply with confidentiality and privacy
requirements. Access or use of this computer system by any person, whether authorized or
unauthorized, constitutes consent to these terms. There is no right of privacy in this system.
```

#### **Notes:**

- When the message is registered, the HTML syntax is neither checked nor corrected. Edit the message correctly in accordance with HTML syntax rules because the edited message will be registered as is. If there is an error in the HTML syntax in the message, the message might not display correctly in the Login panel.
- There are no restrictions on the characters usable in the message, other than that the character encoding must be Unicode (UTF-8). To display a character used in HTML syntax (e.g., <, >, ", ` , &), use the HTML escape sequence. For example, to display an ampersand (&) in the Login panel, write &amp; in the HTML file.

- To use line breaks to display the message in a desired location, use the HTML tag `<BR>`. Even if there are linefeed characters in the message, they will be ignored when the message is registered.

## 8.6.2 Registering the Message

You use the `hcmdsbanner` command to register an edited message.

To register a message:

1. Stop all services of HiCommand Suite products.

For details on how to stop Tuning Manager, see section 1.6.

For details on how to stop the services of other HiCommand Suite products, see the manual for each product.

2. Execute a following command:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdsbanner /add /file file-name [/locale locale-name]
```

Solaris:

```
# /opt/HiCommand/Base/bin/hcmdsbanner -add -file file-name [-locale locale-name]
```

file-name: Using an absolute path, specify the file that stores the message.

locale-name: Specify the locale of the language used for the message (e.g., `en` for English, or `ja` for Japanese). If omitted, the default locale of the browser will be specified.

### **Notes:**

If a message for the specified locale is already registered, it will be updated by being overwritten.

The execution results of the `hcmdsbanner` command are output to the file `hcmdsbannern.log`.

3. Start the HiCommand Suite product.

Message registration is enabled.

For details on how to start Tuning Manager, see section 1.5.

For details on how to start the services of other HiCommand Suite products, see the manual for each product.

### 8.6.3 Deleting the Message

You use the `hcmdsbanner` command to delete a registered message.

To delete a message:

1. Stop all services of HiCommand Suite products.

For details on how to stop Tuning Manager, see section 1.6.

For details on how to stop the services of other HiCommand Suite products, see the manual for each product.

2. Execute a following command:

Windows:

```
HiCommand-Suite-Common-Component-installation-directory\bin\hcmdsbanner /delete  
[/locale locale-name]
```

Solaris:

```
# /opt/HiCommand/Base/bin/hcmdsbanner -delete [-locale locale-name]
```

locale-name: Specify the locale of the message to be deleted (e.g., `en` for English, or `ja` for Japanese). If omitted, the default locale of the browser will be specified.

The execution results of the `hcmdsbanner` command are output to the file `hcmdsbannern.log`.

3. Start the HiCommand Suite product.

Message deletion is enabled.

- For details on how to start Tuning Manager, see section 1.5.
- For details on how to start the services of other HiCommand Suite products, see the manual for each product.



# Acronyms and Abbreviations

API	Application Programming Interface
ASCII	American Standard Code for Information Interchange
CLPR	Cache Logical PaRtition
DTD	Document Type Definition
GUI	Graphical User Interface
HTM	HiCommand Tuning Manager
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
ID	identifier, identification
IP	Internet Protocol
LDEV	Logical Device Unit
NAS	Network Attached Storage
OS	Operating System
RAID	redundant array of inexpensive disks
SAN	Storage Area Network
SLPR	Storage Logical Partition
SMTP	Simple Mail Transfer Protocol
SQL	Structured Query Language
SSO	Single Sign On
SVP	Service Processor
TCP	transmission control protocol
USP	Universal Storage Platform
XML	Extensible Markup Language