HITACHI
Inspire the Next

Hitachi Tuning Manager 8.1.4-03 Release Notes

Contents

About this document

This document (RN-00HS262-66, June 2015) provides late-breaking information about the Hitachi Tuning Manager 8.1.4-03. It includes information that was not available at the time the technical documentation for this product was published, as well as a list of known problems and solutions.

Intended audience

This document is intended for customers and Hitachi Data Systems partners who license and use the Hitachi Tuning Manager.

Getting help

The Hitachi Data Systems Support Center staff is available 24 hours a day, seven days a week. To reach us, please visit the support website at https://portal.hds.com for current telephone numbers and other contact information. If you purchased this product from an authorized HDS reseller, contact that reseller for support.

About this release

This release resolves multiple known problems.

Product package contents

Medium	Components	Revision	Release Type	Prerequisite version of Service Pack
Software	Hitachi Tuning Manager	8.1.4-00	Full Package	-
	Hitachi Tuning Manager - Agent for Server System	8.1.4-00	Full Package	-
	Hitachi Tuning Manager - Agent for Oracle	8.1.2-00	Full Package	-
	Hitachi Tuning Manager - Agent for RAID	8.1.4-03	Full Package	-
	Hitachi Tuning Manager - Agent for Network Attached Storage	8.1.4-00	Full Package	-
	Hitachi Tuning Manager - Agent for SAN Switch	8.1.4-00	Full Package	-
	Hitachi Tuning Manager - Agent for Microsoft(R) SQL Server	8.1.0-00	Full Package	-
	Hitachi Tuning Manager - Agent for IBM DB2	8.1.2-00	Full Package	-
	Hitachi Tuning Manager - Agent for Enterprise Applications	8.1.4-00	Full Package	-
Documents	Hitachi Command Suite Tuning Manager Installation Guide	MK-96HC141-28		
	Hitachi Command Suite Tuning Manager Server Administration Guide	MK-92HC021-39		
	Hitachi Command Suite Tuning Manager Agent Administration Guide	MK-92HC013-37		
	Hitachi Command Suite Tuning Manager Application Reports Reference	MK-95HC113-18		
	Hitachi Command Suite Tuning Manager User Guide	MK-92HC022-40		
	Hitachi Command Suite Tuning	MK-95HC111-26		

	Manager Hardware Reports Reference	
	Hitachi Command Suite Tuning Manager Operating System Reports Reference	MK-95HC112-19
	Hitachi Command Suite Tuning Manager Messages	MK-95HC114-28
	Hitachi Command Suite Tuning Manager CLI Reference Guide	MK-96HC119-28
	Hitachi Command Suite Tuning Manager Getting Started Guide	MK-96HC120-23
	Hitachi Command Suite Tuning Manager API Reference Guide	MK-92HC218-04

New features and important enhancements

For 8.1.4-00

#	New Features and Enhancements	Applied products	Applied OS
1	The following Operating System is now supported. - Red Hat Enterprise Linux 7.1	Tuning Manager server Agent for Server System Agent for RAID Agent for DB2	Linux
2	The following Operating System is now supported. - Oracle Linux 7.1	Agent for Server System	Linux
3	The following Operating Systems are now supported as monitoring targets: - Red Hat Enterprise Linux 7.1 - Oracle Linux 7.1	Tuning Manager server	All[1]
4	The following Operating System is now supported. - SUSE Linux Enterprise Server 12	Tuning Manager server	Linux
5	The following storage systems are now supported as monitoring targets: - VSP G1000 (Firmware version: v02+2) - VSP G600 (Firmware version: v01a) - VSP G400 (Firmware version: v01a) - VSP G200 (Firmware version: v01a)	Tuning Manager server Agent for Server System Agent for RAID	All[1]
6	The following HNAS are supported as management targets: - HNAS4100 (Firmware version: 12.3) - HNAS4080 (Firmware version: 12.3) - HNAS4060 (Firmware version: 12.3) - HNAS4040 (Firmware version: 12.3)	Agent for NAS	All[1]

	- HNAS3090 (Firmware version: 12.3) - HNAS3080 (Firmware version: 12.3)		
7	The following Virtualization System is now supported. - Windows Server 2012 R2 on KVM	Tuning Manager server Agent for RAID Agent for NAS Agent for Switch Agent for SQL Server	Windows
8	The following Virtualization Systems are now supported. - VMware ESXi 5.5 Update 2 - VMware ESXi 5.5 Update 1 - VMware ESXi 5.5 - VMware ESXi 5.1 Update 3 - VMware ESXi 5.1 Update 2 - VMware ESXi 5.1 Update 1 - VMware ESXi 5.1 - VMware ESXi 5.0 Update 3 - VMware ESXi 5.0 Update 2 - VMware ESXi 5.0 Update 1 - VMware ESXi 5.0	Tuning Manager server Agent for Server System Agent for RAID Agent for NAS Agent for Switch Agent for Oracle Agent for DB2	Linux
9	The following virtual environment is now supported as a monitoring target: - VMware ESXi 6.0	Tuning Manager server	All[1]
10	The following Virtualization System is now supported. - VMware ESXi 6.0	Tuning Manager server Agent for Server System Agent for RAID Agent for SAN Switch Agent for NAS Agent for Oracle Agent for SQL Server Agent for Exchange Server	Windows
11	The following Virtualization System is now supported. - VMware ESXi 6.0	Tuning Manager server Agent for Server System Agent for RAID Agent for NAS Agent for Switch Agent for Oracle Agent for DB2	Linux

12	The following NAS system is now supported as a monitoring target: - Hitachi File Services Manager v5.2	Agent for NAS	All[1]
13	The following SQL Server Systems are now supported as operating environments. - Microsoft SQL Server 2008 R2 SP3 - Microsoft SQL Server 2008 R2 SP2	Agent for SQL	All[1]
14	The following fields are now added: - Virtual Volume Configuration (PD_VVC) Record Attribute Reserved Capacity - Pool Configuration (PD_PLC) Record Reserved Capacity - Storage Summary (PI) Record CHA Cache Path Usage % DKA Cache Path Usage %	Agent for RAID	All[1]
15	The following reports are now added: - Status Reporting - Daily Trend folder Access Path Usage Status(9.0) - Status Reporting - Real-Time folder Access Path Usage Status(9.0) Virtual Volume Configuration(9.0) Pool Configuration(9.0) - Monthly Trend folder Pool Usage Trend(9.0) - Monthly Trend - Drilldown Only folder Virtual Volume Usage Trend(9.0) - Troubleshooting - Recent Past folder Access Path Usage Details(9.0)	Agent for RAID	All[1]
16	For monitoring of VSP Gx00, operation of Agent for RAID that uses a command device connected via iSCSI is now supported.	Agent for RAID	All[1]
17	Viewing of the Tuning Manager server window is now supported in a Flash Player 17 environment.	Tuning Manager server	Windows

Note1: Applies to all supported operating systems

System requirements

The system requirements for Tuning Manager can be found *in Hitachi Command Suite System Requirements* (MK-92HC209).

Resolved problems

For 8.1.4-03

- Tuning Manager server

  None.

- Tuning Manager agents

#	Resolved problems	Applied products	Applied OS
1	The following symptoms occur by failure of Hybrid Store transferring when Agent for RAID upgrade installation or transferring command is executed and performance data retention period is changed from default settings. Symptom 1) When Agent for RAID upgrade installation is executed, migration to the Hybrid Store from Store database fails. By this influence, the services of Agent for RAID cannot be started. Symptom 2) When htmhsmigrate command is executed, performance data conversion to the Hybrid Store from Store database fails. By this influence, the services of Agent for RAID cannot be started. Symptom 3) When htmhsconvert command is executed, performance data conversion to the Hybrid Store from Store database fails. This problem occurs when all of the following conditions are met: 1) Agent for RAID before an upgrade installation is being used in Store database 2.0. Store database 2.0 is default before Agent for RAID 8.1.2-00. 2) The number of DB files stored in Store database is large. The larger setting for performance data retention period of Agent for RAID, the more numerous DB files is stored. The number of DB files stored in Store database becomes more numerous when performance data retention period setting of Agent for RAID is larger. The upper limit of environment (DB files number that can open at the same number) is different depending on environment and operational situation. If any of the following condition is met, DB files number may exceed upper limit of the environment.	Agent for RAID	Windows

	The instances of Agent for RAID which met the any of the following conditions. i) There exists more than 1 PI record type record, whose retention period of minute drawer or hour drawer is 359 days and more. ii) There exists more than 1 PI record type record, whose sum of retention period settings for minute drawer (day), hour drawer (day), day drawer (week), week drawer (week), month drawer (month) and year drawer (year) is over 498. iii) Retention period setting for PD record type records is changed. Note: The number of DB files occurrence can be counted as follows. 1) For the files under Store database folder, count the number of files whose file name matches "<Record Name>.DB" for each record. 2) For PI record type record whose files number of "<Record Name>.DB" is non-zero, and the last ordered record when sorting by alphabetic order, count the "<Record Name>.DB" files. 3) For PD record type record whose files number of "<Record Name>.DB" is non-zero, and the first ordered record when sorting by alphabetic order, count the "<Record Name>.DB" files. Judge 505 is large when the DB files number exceeds the following upper limit of Agent for RAID which can be processing.		

For 8.1.4-00

- Tuning Manager server

  None.

- Tuning Manager agents

#	Resolved problems	Applied products	Applied OS
1	If the aggregated data of the latest performance data of Hybrid Store (SnapShot method) is corrupted, the KATR13222-E message is output to htmRestDbEngineMessageN.log and the latest aggregated performance data cannot be updated or referenced. This problem might occur when all of the following conditions are met: (1) The Performance database is operated with Hybrid Store. (2) The aggregated data of the latest performance data	Agent for RAID	Windows, Linux

	(SnapShot method) is corrupted. (3) Tuning Manager Agent REST API component services are restarted.		
2	If the performance data in the PD_LDC record was acquired by using the Tuning Manager API, the RECORD_TIME field value is incorrect. This problem may occur when all of the following conditions are met: (1) The Performance database is operated with Store database. (2) Usage of the Tuning Manager API has been enabled. (3) Using the Tuning Manager API, performance data is acquired into the PD_LDC record.	Agent for RAID	All[1]
3	In an environment where OS locale is other than English or Japanese, Agent for RAID does not work correctly. This problem occurs when both of the following conditions are met: (1) The locale setting of the OS is other than English and Japanese. (2) Install the Agent for RAID with selecting the Hybrid Store as Performance databases.	Agent for RAID	Windows, Linux
4	On locales where a "," (comma) is used as decimal point symbol, data format in performance data that are retrieved through Tuning Manager API is invalid. This problem may occur when all of the following conditions are met: On Windows: (1) A locale where "," is used as decimal point symbol is set in Windows. (2) Start the AgentRESTService when performance database is used as Hybrid Store. (3) Performance data is retrieved through Tuning Manager API. On Linux: (1) A language which "," is used as decimal point symbol is set LANG environment value. (2) Start the AgentRESTService when performance database is used as Hybrid Store. (3) Performance data is retrieved through Tuning Manager API.	Agent for RAID	Windows, Linux

Note1: Applies to all supported operating systems

Known problems

- Tuning Manager server

  None.

- Tuning Manager agents

For 8.1.4-03

#	Temporary restrictions	Applied products	Applied OS
1	The following symptoms occur by failure of Hybrid Store transferring when Agent for RAID upgrade installation or transferring command is executed and performance data retention period is changed from default settings. Symptom 1) When Agent for RAID upgrade installation is executed, migration to the Hybrid Store from Store database fails. By this influence, the services of Agent for RAID cannot be started. Symptom 2) When htmhsmigrate command is executed, performance data conversion to the Hybrid Store from Store database fails. By this influence, the services of Agent for RAID cannot be started. Symptom 3) When htmhsconvert command is executed, performance data conversion to the Hybrid Store from Store database fails. This problem occurs when all of the following conditions are met: 1) Agent for RAID before an upgrade installation is being used in Store database 2.0. Store database 2.0 is default before Agent for RAID 8.1.2-00. 2) The number of DB files stored in Store database is large. The larger setting for performance data retention period of Agent for RAID, the more numerous DB files is stored. The number of DB files stored in Store database becomes more numerous when performance data retention period setting of Agent for RAID is larger. The upper limit of environment (DB files number that can open at the same number) is different depending on	Agent for RAID	Solaris, Linux, HP-UX, AIX

environment and operational situation. If any of the following condition is met, DB files number may exceed upper limit of the environment.

a) OS is Solaris

b) OS is HP-UX and physical memory is 1GB and less.

c) The environment other than mentioned above, instances of Agent for RAID which met the any of the following conditions.

i) There exists more than 1 PI record type record, whose retention period of minute drawer or hour drawer is 359 days and more.

ii) There exists more than 1 PI record type record, whose sum of retention period settings for minute drawer (day), hour drawer (day), day drawer (week), week drawer (week), month drawer (month) and year drawer (year) is over 498.

iii) Retention period setting for PD record type records is changed.

Note:

The number of DB files occurrence can be counted as follows.

1) For the files under Store database folder, count the number of files whose file name matches "<Record Name>.DB" for each record.

2) For PI record type record whose files number of "<Record Name>.DB" is non-zero, and the last ordered record when sorting by alphabetic order, count the "<Record Name>.DB" files.

3) For PD record type record whose files number of "<Record Name>.DB" is non-zero, and the first ordered record when sorting by alphabetic order, count the "<Record Name>.DB" files.

Judge the DB files number is large when the DB files number exceeds the following upper limit of Agent for RAID which can be processing.

OS		The number of DB files Agent for RAID can process	Default upper limit of File descriptor
Linux		508(*)	1024
Solaris		124(*)	256
HP-UX	Physical memory is smaller than 1GB	252(*)	512
	Physical memory is larger than 1GB	1020(*)	2048
AIX		996(*)	2000

	(*)Upper limit of file descriptor can be changed. In an environment where the upper limit of file descriptor is changed, the number of DB file Agent for RAID can process also changed to the following expression. (The upper limit of file descriptor) / 2 – 4 [Temporary Circumvention] Perform the following temporary solution after Store database is backed up. Temporary Solution for symptom 1) and 2) Perform recovery method for symptom 1) and 2). Temporary Solution for symptom 3) Perform recovery method for symptom 3). [Recovery from Problem] Perform the following recovery method after Store database is backed up. Recovery method for symptom 1) and 2) Perform the following steps. a) To restore the setting to the beginning after recovery method, confirm upper limit setting of file descriptors by the following command and record the value ulimit -n b) By root user, execute the following command to increase upper limit of file descriptor. ulimit -n 5000 c) Migrate to Hybrid Store by executing the htmhsmigrate command. d) Return upper limit setting of file descriptor to a value recorded in step a). ulimit -n a-value-confirmed-by-step-a) Recovery method for symptom 3) Perform the following steps. a) To returning setting to the beginning after recovery method, confirm upper limit setting of file descriptors by the following command and record the value ulimit -n b) By root user, execute the following command to increase upper limit of file descriptor. ulimit -n 5000 c) Convert to Hybrid Store by executing the htmhsconvert command. d) Restore upper limit setting of file descriptor to a		

	value recorded in step a). ulimit -n a-value-confirmed-by-step-a) The way of converting to Hybrid Store from Store database: The problem of conversion to Hybrid Store can avoid by dividing Store database and convert each data separately. In the followings, the way of converting to Hybrid Store from Store database is described. 0) Backup Backup the Store database. 1) Divide Store database Copy the following 400 files which met the condition a) or b). In addition, the folder structure under copy destination should be same as the structure under the copy source folder. But for a folder unrelated to a file of a copy target is unnecessary to create. a) The files whose file extension is ".DB" below under the STPI folder and STPD folder of target instance to be converted. b) The files whose file extension is ".IDX" and the filename except file extension is same as a) and the folder path where the file is stored is same as a). Moreover, copy the files under Store database stored folder. 2) Execute htmhsconvert command for the folder created in step 1) 3) Execute step 1) and 2) until all .DB files are processed. 4) Merge folders which is output folder of htmhsconvert command		

Resolved known problems

For 8.1.4-00

#	Resolved known problems	Applied products	Applied OS
1	When you use Hybrid Store as a performance database, it may take a long time (several minutes to several ten minutes. It depends on the number of resources on monitoring systems and the number of Agent instances) to start Tuning Manager Agent REST API components. The following problems occur during the Tuning Manager Agent REST API components startup. - When you request the performance data by using Tuning Manager API, the system responds status code 500 (Internal Server Error). - When you execute the htmsrv status command, it displays Tuning Manager - Agent REST Application Service was stopped. - When you execute the htmsrv stop command, it displays Tuning Manager - Agent REST Application Service was stopped, but the service keeps running a certain time period, then the service stops. You can check the state of Tuning Manager - Agent REST Application service by using the OS command (wmic command for Windows, ps command for Linux) and confirm whether the process (cjstartsv) started by the following executable file is running or not. - On Windows <Installation Directory>\htnm\HBasePSB\CC\server\bin\cjstartsv.exe - On Linux /opt/jp1pc/htnm/HBasePSB/CC/server/bin/cjstartsv	Agent for RAID	Windows, Linux
2	When you use Hybrid Store as a Performance database, if one of the following conditions is satisfied and you start Tuning Manager Agent REST API component then stop it within a day and start it again, it takes a long time (several tens of minutes to several hours. It depends on the number of resources on monitoring systems performance data and Collection Interval) to start Tuning Manager Agent REST API Component - Agent instances are active for hours while Tuning Manager Agent REST API component is not running. - Agent instances are active for hours while the update of Hybrid Store is not working because of an error In this case, "Resolved known problems#1" may occur. When "Resolved known problems#1" occurs, please do not stop Tuning Manager Agent REST API component at least 24 hours.	Agent for RAID	Windows, Linux

Installation precautions

- Tuning Manager server

#	Installation Precautions	Applied products	Applied OS
1	After installing the Tuning Manager server 8.1.4, if the database of the Tuning Manager server which had been exported on version 6.0.0 to 6.4.0 was imported, the Tuning Manager server might take approximately 1 hour to start at the first time after the import.	Tuning Manager server	All[1]
2	After an installation or removal, shortcut folder named "programs" might be incorrectly created under the Windows Start menu. This symptom is temporary, and this shortcut folder will no longer appear after you log off and log on to Windows.	Tuning Manager server	Windows
3	If the following message is recorded in the Common Component installation log file, the installation file is registered to be updated as a pending file for next start up. Restart the server machine, and then start the installer again. Log file location: <system drive> File name: hcmdsist.log ---------- [hh:mm:ss] Installation result: [hh:mm:ss] 02 ----------	Tuning Manager server	Windows
4	The following library was added as a prerequisite library for Red Hat Enterprise Linux 6.5. Apply this patch if you use Red Hat Enterprise Linux 6.5. - upstart-0.6.5-13.el6_5.3.x86_64 or later	Tuning Manager server	Linux

Note1: Applies to all supported operating systems

- Tuning Manager agents

#	Installation Precautions	Applied products	Applied OS
1	If you install the Tuning Manager agent version 7.4.1 or earlier in an environment that already contains a Tuning Manager agent product of version 7.5.0 or later, the following items are displayed in the Start menu:(*) - Administrator Console - Administrator Console - HTnM (*)Coexistence of these menu items does not affect program operations. Use either of them to start Administrator Console.	Tuning Manager agents	Windows

Upgrade precautions

- Tuning Manager server

#	Upgrade Precautions	Applied products	Applied OS
1	If you upgraded the Tuning Manager server from version 6.0.0 to 6.4.0 to version 8.1.4, the Tuning Manager server might take approximately 1 hour to start at the first time after upgrade.	Tuning Manager server	All[1]
2	If following products are installed, upgrade them to 8.0.0 or later. - Device Manager - Tiered Storage Manager - Replication Manager - Tuning Manager - Compute Systems Manager - Global Link Manager	Tuning Manager server	All[1]
3	If you upgrade Hitachi Command Suite products from 7.6.1 or earlier to 8.0.0 or later, confirm the following services are running in the Services window in Windows. If both or one of them is not running, start them. - HiRDB/EmbeddedEdition _HD0 - HiRDB/EmbeddedEdition _HD1 Upgrade Installation fails message with KATN00231-E if both or one of them is not running. KATN00231-E An attempt to start the HiRDB database has failed. Processing will be stopped.	Tuning Manager server	Windows
4	About the lapse of time for upgrade installation. When upgrading the version from 7.6.1 or earlier to 8.0.0 or later, the upgrade installation may take a long time to move the place of database from 32 bit to 64 bit. The estimate time for the upgrade installation depends on the size of the database. The following shows criterion of a configuration with which might take more than three hours for the installation of Hitachi Command Suite products. An environment of installation CPU: vCPU * 2 (4GHz) HDD: SATA drive 7200rpm 1TB The estimate time for installation (upgrade from V7.6.1 to V8.0.0) The estimate time for products first installation (1)The estimate time for the installation is the total time of the Backup-time (*1) of every Hitachi Command Suite	Tuning Manager server	All[1]

products that had already been installed which shown in Table 1 or Table 2, and the Import-time of the installing product, and etc. in the tables.

*1: The first upgrade installation takes longer time because backup of every installed Hitachi Command Suite products have to take place.

(2)The estimate time for the products installation after (1)

The estimate time for the installation is the total time of the Import-time of the products shown in Table1 and Table2, and etc. in the tables.

Table1 estimating time for installation (Windows)

units: minutes

#	Product name	Composition	Backup	Import	etc.
1	-Device Manager, -Tiered Storage Manager, -Replication Manager	-Volumes: 128,000 -Paths: 512,000 -Hosts: 1,000	11	35	49
2	-Tuning Manager		14	9	48
3	-Global Link Manager	-Paths/hosts: 1,000 -Hosts: 60 -Pathstatuslog: 4GB (total capacity)	2	7	43
4	-Compute Systems Manager	-Chassis: 200 -Blades: 1,000 -Hosts: 1,000	2	2	21

Table2 estimating time for installation (Linux)

units: minutes

#	Product name	Composition	Backup	Import	etc.
1	-Device Manager, -Tiered Storage Manager, -Replication Manager	-Volumes: 128,000 -Paths: 512,000 -Hosts: 1,000	4	36	35
2	-Tuning Manager		3	7	17

Note1: Applies to all supported operating systems

- Tuning Manager agents

  None.

Removal precautions

- Tuning Manager server

  None.

- Tuning Manager agents

#	Upgrade Precautions	Applied products	Applied OS
1	The menu item Administrator Console - HTnM is not removed from the Start menu if both of the following conditions are met: (1) The Tuning Manager agent is not installed on the host on which the Tuning Manager server is installed. (2) The version of the last uninstalled Tuning Manager agent is 7.4.1 or earlier. Preventive measures: Uninstall the Tuning Manager agent first. Action to be taken if the problem has occurred: After the Tuning Manager agent has been uninstalled from all hosts, manually remove Administrator Console - HTnM if it remains in the Start menu.	Tuning Manager agents	Windows

Usage precautions

Notes on using in the built-in Administrator account when using Internet Explorer 11.0

#	Usage Precautions	Applied products	Applied OS
1	When you click a button or anchor on the screen to open a new tab or new window, an extra blank window or transitional window might be displayed at the same time. In such a case, please close the unnecessary window. If this problem occurs, create a new Windows user account, and then use the new user account to operate the browser.	Tuning Manager server	Windows

Notes on the use of Performance Reporter when using Internet Explorer 9 or later on Windows Server 2008:

#	Usage Precautions	Applied products	Applied OS
1	If you move the Message dialog box in the browser, an image of the Message dialog box might remain displayed in the pre-move location. If this displayed image remains, close the Message dialog box by clicking the [OK] or [Cancel] button in the Message dialog box.	Tuning Manager server	Windows

Notes on the use of Performance Reporter when using Internet Explorer 11.0:

#	Usage Precautions	Applied products	Applied OS
1	When you select any record in [All Fields] in the [New Report > Field] window of the Report Wizard, the text box for the description may appear with its lower edge cut off. If this happens, adjust the display width of the frame information by adjusting the window size or position dividers.	Tuning Manager server	Windows

Precautions for displaying a list of installed programs

- Tuning Manager server

#	Usage Precautions	Applied products	Applied OS
1	When the **Add or Remove Programs** dialog box is opened, the displayed icon of this product might switch from an icon displayed initially to the other icon (*1). *1: Any of the icons registered in Windows	Tuning Manager server	Windows

	Even if this symptom occurs, the Tuning Manager server is operational normally.		

- Tuning Manager agents

  None.

Precautions for monitoring Brocade SAN switches

- Tuning Manager server

  None.

- Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	If Brocade(R) SMI Agent v120.6.0x (x is "a" or later) or v120.7.1 is used for monitoring a fabric consisting of only Brocade switches whose firmware versions are v5.2.0 or later, a blank might appear for **Model Name** and **Vendor Name** for these switches. Brocade has corrected this problem in Brocade SMI Agent v120.7.2. To monitor Brocade switches, use Brocade SMI Agent v120.7.2 or later.	Agent for SAN Switch	Applies to all supported operating systems
2	If Brocade SMI Agent v120.8.0 or v120.9.0 is used for monitoring a fabric including Brocade switches whose firmware versions are v5.2.x, Agent for SAN Switch might fail to collect the data necessary to create a record. Upgrade the firmware version of all switches in the same fabric to v5.3.x or later.	Agent for SAN Switch	Applies to all supported operating systems

Notes for trouble on an operation of Agent for SAN Switch

- Tuning Manager server

  None.

- Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	When Agent for SAN Switch causes a trouble while monitoring CISCO switches, we might ask to gather material for investigation with the packet capture tool etc.	Agent for SAN Switch	Applies to all supported operating systems

Precautions for displaying a correlation reports

- Tuning Manager server

#	Usage Precautions	Applied products	Applied OS
1	Even if a system failover is performed by High Availability Manager functionality for the Universal Storage Platform V/VM series, Virtual Storage Platform, Virtual Storage Platform G1000 or Virtual Storage Platform Gx00 series, the Tuning Manager server continues to display the active volume, not the standby volume, as related to the relevant device file.	Tuning Manager server	Applies to all supported operating systems

- Tuning Manager agents

  None.

Precautions for monitoring a storage system

- Tuning Manager server

#	Usage Precautions	Applied products	Applied OS
1	If LDEVs are being configured by combining various LDEVs in multiple parity groups in a LUSE configuration, the [Write Hit Ratio] of the parity groups might temporarily exceed 100% depending on the level of measurement error used by the storage system. (In such a case, treat the value that exceeds 100% as 100%.) This problem might occur while the Thunder 9200 series, the Thunder 9500V series, or the Hitachi AMS/WMS series is being monitored.	Tuning Manager server	Applies to all supported operating systems

- Tuning Manager agents

  None.

Precautions for monitoring again a Storage System or a Server which had been monitored in the past

- Tuning Manager server

#	Usage Precautions	Applied products	Applied OS
1	If users accidentally delete a storage device or host from the list of targets to be monitored by Tuning Manager, or if users accidentally change the storage configuration, the Tuning Manager server might not properly display information even if the status of the storage device or host is restored. Table-1 describes the relationship	Tuning Manager server	Applies to all supported operating systems

between the devices monitored by the Tuning Manager server and the information that cannot be properly displayed.

Table-1 Devices monitored by the Tuning Manager server and related error

Item	Devices monitored by the Tuning Manager server				Error
	Storage	Host	Virtualization server	Oracle	
(a)	*				Relevant information between storage components is not properly displayed.
(b)	*	*			Relevant information between storage devices and hosts is not properly displayed.
(c)	*		*		Relevant information between storage devices and virtualization servers is not properly displayed.
(d)		*		*	Relevant information between hosts and Oracle is not properly displayed.

Legend: *: Monitored devices for which the error occurs

Blank: Monitored devices for which the error does not occur

The conditions that cause the error and the recovery procedure are as follows:

1. Conditions

This error might occur if either of the following operations is performed:

(a) Operation 1:

(i) Add the devices indicated by * in Table-1 (b), (c), or (d) to the list of targets to be monitored by the Tuning Manager server. Then, refresh the list of Agents on the Tuning Manager server.

(ii) From the Tuning Manager server, perform automatic or manual polling on the monitoring targets that were added in step (i).

(iii) After polling, delete the storage devices or hosts

	from the list of targets to be monitored by the Tuning Manager server by using one of the following operations: [For storage devices] - Delete Agent for RAID from the list of targets to be monitored by the Tuning Manager server. - Remove the storage devices from Device Manager. [For hosts] - Delete Agent for Server System from the list of targets to be monitored by the Tuning Manager server (if the host is monitored in Agent mode). - Remove the host from Device Manager (if the host is monitored in agentless mode). (iv) Refresh the list of Agents on the Tuning Manager server. (v) Add the monitoring targets that were deleted in step (iii) and whose configurations have not been changed since step (iii) to the list of targets to be monitored by the Tuning Manager server again by using one of the following operations: [For storage devices] - Add Agent for RAID to the list of targets to be monitored by the Tuning Manager server. - Add the storage devices to Device Manager. [For hosts] - Add Agent for Server System to the list of targets to be monitored by the Tuning Manager server (if the host is monitored in Agent mode). - Add the host to Device Manager (if the host is monitored in agentless mode). (vi) Refresh the list of Agents on the Tuning Manager server. (vii) From the Tuning Manager server, perform automatic or manual polling again on the monitoring targets on which polling was performed in step (ii). (b) Operation 2: (i) Add the devices indicated by * in Table-1 (a), (b), or (c) to the list of targets to be monitored by the Tuning Manager server. Then, refresh the list of Agents on the Tuning Manager server. (ii) From the Tuning Manager server, perform automatic or manual polling on the monitoring targets that were added in step (i). (iii) For the monitored storage devices, one of the following operation is performed: - Remove the hardware (port or disk) - Delete the SLPR or CLPR - Change SLPR that belongs to the command device. (iv) From the Tuning Manager server, perform automatic or manual polling again on the monitoring targets on which polling was performed in step (ii). (v) For the monitored storage devices indicated in step (iii), restore them to their status before step (iii).		

(vi) From the Tuning Manager server, perform automatic or manual polling again on the monitoring targets on which polling was performed in step (ii).

Table-2 lists the information that is not properly displayed after Operation 1 or Operation 2 is performed.

Table-2 Operations that cause this error and the information that is not properly displayed

#	Operation	Information that is not properly displayed
1	Operation 1	Table-1 (b), (c), and (d)
2	Operation 2	Table-1 (a), (b), and (c)

2. Recovery procedure

Perform one of the procedures below (from 1 to 3) indicated in Table-3 depending on the monitored device on which the error occurred.

Table-3 Procedures for recovering from the error

#	Condition	Recovery procedure
1	The error occurs on a host that is being monitored in agentless mode.	Procedure 1
2	The error occurs on a virtualization server.	Procedure 2
3	In cases other than 1 and 2.	Procedure 3

(a) Procedure 1:

(i) Remove from Device Manager the storage device that contains volumes that are connected to the host.

(ii) Use Device Manager to refresh the host indicated in step (i).

(iii) From the Tuning Manager server, perform manual polling on Device Manager.#1

(iv) Add the storage device that was removed from Device Manager in step (i) to Device Manager again.

(v) Use Device Manager to refresh the host indicated in step (i) again.

(vi) From the Tuning Manager server, perform manual polling on Device Manager.#1

#1: Be sure to wait at least one hour after the last polling was performed before you perform manual polling.

(b) Procedure 2:

(i) Delete the storage device that contains volumes being

	used as a datastore of the virtualization server from the list of targets to be monitored by the Tuning Manager server by using one of the following operations: - Delete Agent for RAID from the list of targets to be monitored by the Tuning Manager server. - Remove the storage devices from Device Manager. (ii) From the Tuning Manager server, perform manual polling on the Device Manager that manages the virtualization server indicated in step (i).#1 (iii) Add the storage device that was removed from the list of targets to be monitored by the Tuning Manager server in step (i) to the list of monitoring targets again. - Add Agent for RAID to the list of targets to be monitored by the Tuning Manager server. - Add the storage devices to Device Manager. (iv) From the Tuning Manager server, perform manual polling on Device Manager.#1 #1: Be sure to wait at least one hour after the last polling was performed before you perform manual polling. (c) Procedure 3: (i) Delete the monitoring targets whose information is not properly displayed from the list of targets to be monitored by the Tuning Manager server. (ii) Add the monitoring targets that were removed in step (i) to the list of targets to be monitored by the Tuning Manager server again. (iii) From the Tuning Manager server, perform manual polling on the Tuning Manager Agents that monitor the added targets.#1 #1: Be sure to wait at least one hour after the last polling was performed before you perform manual polling.		

- Tuning Manager agents

  None.

Precautions for displaying a report with the Tuning Manager server

- Tuning Manager server

#	Usage Precautions	Applied products	Applied OS
1	When all of the following conditions are met, the hyperlink for a related host is not displayed on a report displayed by procedures described in the [How to display a report].	Tuning Manager server	Applies to all supported operating systems

	[Conditions] (1) Connect the Agent for Oracle to the Tuning Manager server. (2) Monitor the host in which the Agent for Oracle has been installed by the Agent for Server System. (3) The hostname mentioned in (2) contains a lower-case letter. [How to display a report] (a) Select the **Resources** - **Applications** in the Explorer area. (b) Select the **Oracle** in the Navigation area. (c) Select the **Oracle Instances** tab in the Information area (Correlation View). If you want to display a report for the host related to an Oracle instance, select the host from the resource tree.		

- Tuning Manager agents

  None.

Precautions for collecting the record with Agent for Oracle

- Tuning Manager server

  None.

- Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	When all of the following conditions are met, store the listener.ora file of Oracle Database under the ORACLE_HOME/network/admin directory of Oracle Client 32bit, and restart Agent for Oracle service. (1) Oracle Database 11gR2 or Oracle Database 12cR1 for Solaris, AIX or Linux(x64) is monitored. (2) The listener is monitored with the SQL*Net Listener (PD_PDNL) record or SQL*Net Listeners (PD_PDLS) record. (3) The monitored listener is not a default listener, and the name of listener or port number has been changed.	Agent for Oracle	Linux, AIX, Solaris
2	To monitor Oracle Database on Oracle Linux 7.0, you must apply the OS patch glibc-2.17-55.0.4.el7.i686.rpm. After applying glibc-2.17-55.0.4.el7.i686.rpm, you must install Oracle Client 32-bit. If you do not install Oracle Client 32-bit after applying glibc-2.17-55.0.4.el7.i686.rpm, a segmentation fault might occur when you start sqlplus in Oracle Client 32-	Agent for Oracle	Linux

	bit or Agent for Oracle.		

Precautions for starting or stopping a service automatically on SUSE Linux Enterprise Server 11

- Tuning Manager server and Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	When registering or deleting an automatic start/stop script file for OS by using the **chkconfig** command on SUSE Linux Enterprise Server 11, a warning message might be output. The following shows an example of an warning message: insserv: warning: script 'jp1_pc' missing LSB tags and overrides insserv: Default-Start undefined, assuming default start runlevel(s) for script 'jp1_pc' There is no problem by this warning message, and disregard it. For procedure about starting a service automatically, refer the following section in the manual *Hitachi Command Suite Tuning Manager Agent Administration Guide*: - "Managing Collection Manager and Agent services" - "Starting and stopping Collection Manager and Agent services" + "Starting a service automatically"	Tuning Manager server, Tuning Manager agents	SUSE Linux Enterprise Server 11

Precautions for changing a command device name in an AIX environment

- Tuning Manager server

  None.

- Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	In an environment where AIX v6.1 or AIX v7.1 is installed, if the command device name specified to the "Command Device File Name" item is changed to other than the following format, the performance information cannot be collected from Storage System. Therefore, specify the name according to the following format to the **rendev** command as the command device name after change. [Format of the command device name] "hdisk" + (Arbitrary half-width alphanumeric characters)	Tuning Manager agents	AIX

Notes applying when Load Reduction for Changing Configuration Mode is enabled in a Hitachi AMS2000 series or Hitachi SMS series storage system

- Tuning Manager server and Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	When the Tuning Manager server is monitoring a Hitachi AMS2000 series or Hitachi SMS series storage system with "Load Reduction for Changing Configuration Mode" enabled, the following problems might occur if the configuration of the system is changed: (1) Collection of performance data fails. (2) Polling fails. To prevent these problems from occurring, before you change the storage system configuration, stop the services of the Tuning Manager server and the Agent for RAID instance that is monitoring the storage system, and restart these services after the configuration has been changed.	Tuning Manager server, Agent for RAID	All[1]

Note1: Applies to all supported operating systems

Precautions for displaying a vendor name of the switch

- Tuning Manager server and Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	When all of the following conditions are met, **Unknown** might be displayed for the switch's vendor name on the tree. (1)In Agent for SAN Switch, Vendor Name field of PD record for some instance is empty string. (2)The combination of the version of the prerequisite program, such as SMI Agent for FOS/EOS and DCFM, and the firmware version of the switch is not supported. The recovery procedure is as follows: a) Stop the instance of Agent for SAN Switch for which Vendor Name field of PD record includes empty string. b) Confirm the version of the following prerequisite program for the switch which is monitored by the Agent for SAN Switch in a). - SMI Agent for FOS/EOS or DCFM (For the Brocade switch only) - firmware version of the switch For details about the supported version of the prerequisite programs for Agent for SAN Switch., see the *Hitachi Command Suite System Requirements* (MK-92HC209).	Tuning Manager server, Agent for SAN Switch	All[1]

	c) Start the service of Tuning Manager server. d) Execute the following command on the Tuning Manager server host to delete the instance of the Agent for SAN Switch from the monitoring target. jpcctrl delete "<service ID of the Agent for SAN Switch instance in a)>" e) Click **Refresh** button on the screen of **Administration** - **Data Polling**. f) Start the service of Agent for SAN Switch which is stopped in a). g) Click **Start Polling** button on the screen of **Administration** - **Data Polling**. h) Confirm the Navigation area of the **Fabrics** and make sure that the switch which is monitored by the Agent for SAN Switch of a) is displayed under the vendor name other than **Unknown**.		

Note1: Applies to all supported operating systems

Precautions when rebooting OS

- Tuning Manager server and Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	When the available IPv6 address has been set in windows system, the symptom such as the following might occur, because the Tuning Manager service has been started abnormally after rebooting the OS. - The report might not be displayed by using Performance Reporter. If the above symptom has occurred, perform the following actions after rebooting OS. - Stop the Tuning Manager services by executing the **hcmds64srv /stop** command and the **jpcstop** command. - Restart Tuning Manager services by the **hcmds64srv /start** command and the **jpcstart** command. If the Tuning Manager services have failed to stop, stop all Tuning Manager services manually whose names are started with "PFM -" from Service Control Manager. To start Service Control Manager, from the Windows **Start** menu, select **Administrative Tools**, and then select **Services**.	Tuning Manager server, Tuning Manager agents	Windows

Precautions for installation folder

- Tuning Manager server and Tuning Manager agents

#	Usage Precautions	Applied products	Applied OS
1	Do not put files or folders other than provided by Tuning Manager under the following folder. <Tuning-Manager-installation-folder>\jp1pc\tools If you put files or folders other than provided by Tuning Manager to the above folder, executing of commands or starting of the Tuning Manager services might fail.	Tuning Manager server, Tuning Manager agents	Windows

Notes on InPrivate Browsing of Internet Explorer 9.0

#	Usage Precautions	Applied products	Applied OS
1	During InPrivate Browsing Mode, the browsing history might remain in the browser.	Tuning Manager server	Windows

Notes on enabling SSL(*1) between the Tuning Manager server and management clients when using Firefox

#	Usage Precautions	Applied products	Applied OS
1	To enable SSL between the Tuning Manager server and management clients by using Firefox, perform the following operations: (1) Disable SSL between the Tuning Manager server and management clients. (2) register the license files (3) Enable SSL between the Tuning Manager server and management clients.	Tuning Manager server	Linux

Note1: For details about enabling SSL, see "Security settings for Common Component (communication with the GUI)" in the *Hitachi Command Suite Administrator Guide*.

Notes of using Firefox ESR 17, Firefox ESR 24 or Firefox ESR 31

#	Usage Precautions	Applied products	Applied OS
1	When using Firefox ESR 17, Firefox ESR 24 or Firefox ESR 31 to browse Tuning Manager GUI, the following Flash Player is required. - Flash Player 10.3 to earlier than 11	Tuning Manager server	Linux

	- Flash Player 11.2		

Notes of the Server Core option of Windows Server 2008 and Windows Server 2012

#	Usage Precautions	Applied products	Applied OS
1	Server Core mode is not supported.	Tuning Manager server, Tuning Manager agents	Windows

Notes of the Minimal Server Interface of Windows Server 2012

#	Usage Precautions	Applied products	Applied OS
1	Minimal Server Interface is not supported.	Tuning Manager server, Tuning Manager agents	Windows

When the Tuning Manager service does not start or stop

#	Usage Precautions	Applied products	Applied OS
1	When the Tuning Manager service starts, the following message may be output to the common message log, syslog(for UNIX) or event log(for Windows), causing a disk space shortage or some other factors. KAVE00201-E An attempt to access the configuration file failed. (file=<file path of jpcns.ini>) In this case, the following symptoms may occur: a) An attempt to stop the service fails outputting the following message to the common message log: KAVE05034-E A service could not stop. (service=service-name, rc=maintenance-code) b) An attempt to start the service fails outputting the following message to the common message log, syslog(for UNIX) or event log(for Windows): KAVE00100-E An error occurred in an OS API(bind). (en=os-detailcode, arg1=argument-1, arg2=argument-2, arg3=argument-3) KAVE00107-E The network environment is invalid. (rc=maintenance-code) KAVE00160-E An attempt to initialize a service failed. (rc=maintenance-code) When these symptoms occur, check whether processes of the Tuning Manager services remain with the Task	Tuning Manager server, Tuning Manager agents	All

	Manager (for Windows) or the **ps** command (for UNIX).If these processes remain, kill them and restart the service.		

Monitoring Windows hosts

#	Usage Precautions	Applied products	Applied OS
1	CPU information can be collected only for up to 64 CPUs. Therefore, if a host that has 65 or more CPUs is monitored, record instances exceeding 64 cannot be acquired for the PI_PCSR record of Agent for Platform. In addition, the value of the Active CPUs field in the PI record is always 64. Note that, when a host with Windows Server 2012 is monitored, CPU information might not be able to be collected for more than 40 CPUs.	Agent for Server System	Windows

Operating in a Red Hat Enterprise Linux 6.2 or Oracle Linux 6.2 environment

#	Usage Precautions	Applied products	Applied OS
1	In a Red Hat Enterprise Linux 6.2 or Oracle Linux 6.2 environment, the "jpcras<YYMMDD>.tar.Z" file created by the **jpcras** command may be unable to be extracted. This is because there is a problem in the ncompress package shown below. - ncompress-4.2.4-54.el6 Therefore, when you use this product in a Red Hat Enterprise Linux 6.2 or Oracle Linux 6.2 environment, perform either of the following procedures: (1) Do not install the ncompress package. Or when the ncompress package is already installed, remove it. Note: If the ncompress package does not exist, the **jpcras** command compresses the files by the **gzip** command. (2) When the following fixed version can be obtained, update it. - ncompress-4.2.4-54.el6_2.1	Tuning Manager server, Agent for RAID , Agent for Server System, Agent for Switch, Agent for DB2, Agent for Oracle	Linux

Precautions when installing on Windows Server 2012

#	Usage Precautions	Applied products	Applied OS
1	Immediately after performing installation, invalid menu	Tuning Manager	Windows

	"Performance Management" may be displayed in Apps windows, and Administrator Console may not be started. In this case, sign-in to your host again.	server, Tuning Manager agents	

Precautions for monitoring the HUS100 series

#	Usage Precautions	Applied products	Applied OS
1	When the monitoring target storage system is the HUS100 series with "packet filtering" function enabled, perform either of the following procedures: - Disable "NetBIOS over TCP/IP" on Windows. - When "NetBIOS over TCP/IP" on Windows cannot be disabled, before executing the maintenance-material-acquisition command, stop Agent for RAID and Device Manager. Wait for 5 minutes, and then execute the command. And when executing the **netstat** command, specify "-n" option.	Agent for RAID	Windows

Note on using Tuning Manager on a Linux server

#	Usage Precautions	Applied products	Applied OS
1	To use Tuning Manager on a Linux server, configure and start X server. - In Main Console of Tuning Manager, the performance chart is not displayed.	Tuning Manager server	Linux

Precautions for collecting the record with Agent for Microsoft Exchange Server

#	Usage Precautions	Applied products	Applied OS
1	To use Agent for Microsoft Exchange Server for monitoring, Mailbox Role for the Microsoft Exchange Server must be installed.	Agent for Microsoft Exchange Server	All[1]

Note1: Applies to all supported operating systems

Precautions for monitoring the HNAS

#	Usage Precautions	Applied products	Applied OS
1	HNAS in a single node configuration used with an internal SMU is not supported by Agent for NAS as a monitoring target.	Agent for NAS	All[1]

Note1: Applies to all supported operating systems

Notes on using Hybrid Store

#	Usage Precautions	Applied products	Applied OS
1	When the amount of memory that is available on the system is less than the memory usage by this software, the installation on Hybrid Store may fails, or the service may not start at after the installation or converting to Hybrid Store. To avoid these cases, install the software on a system that has enough memory. For details about the amount of memory for Agent for RAID, see the *Hitachi Command Suite System Requirements* (MK-92HC209).	Agent for RAID	Windows, Linux
2	When the amount of physical memory that is available on the system is less than the memory used by this software, A delay to collect performance data might happens or performance data might be dropped because of the processing capacity shortage. To avoid these cases, please try one of the following methods. - Set longer collection interval. - Install the software on a system that has enough physical memory. For details about the amount of memory for Agent for RAID, see the *Hitachi Command Suite System Requirements* (MK-92HC209).	Agent for RAID	Windows, Linux

Notes on using SUSE Linux Enterprise Server

#	Usage Precautions	Applied products	Applied OS
1	When a file system setting is btrfs that is default setting on SUSE Linux Enterprise Server 12, value of PD_FSL and PD_FSR record might be incorrect.	Agent for Server System	Linux

Temporary restrictions

For 8.1.4-00

#	Temporary restrictions	Applied products	Applied OS
1	To delete an instance that is operated by using Hybrid Store, execute the htmsrv stop -webservice command to	Agent for RAID	Windows, Linux

	stop the Tuning Manager Agent REST API component before deleting the instance. If you attempt to delete an instance while an Tuning Manager Agent REST API component is running, the deletion of the instance might fail with the KAVE05052-E message.		
2	When you use Hybrid Store as a performance database and change time zone, the following problems will happen: - It takes a long time (several tens of minutes to several hours. It depends on the number of resources on monitoring systems) to start Tuning Manager Agent REST API component. - Latest values of performance data that was aggregated are incorrect.	Agent for RAID	Windows, Linux
3	When using Hybrid Store on Linux, the service fails to start and the message indicating incorrect property value is not output to the log. The following property files are affected: - <installation-directory>/htnm/agent/config/dbdataglobalconfig.ini - <installation-directory>/agtx#/store/<instance-name>/dbconfig.ini #: x is replaced with the Agent product ID. If the service fails to start, review the value set for the property, and then start the service again.	Agent for RAID	Linux
4	When you upgrade Agent for RAID in an environment where an agent of a cluster configuration exists, if you select Hybrid Store in upgrading process while the shared disk (that is, the environment directory of the logical host) cannot be connected, the process will be failed. Always execute the following procedure when an agent of a cluster configuration exists in the target installation environment: (a) In Windows (a-1) If all data is inherited: 1. Stop the Tuning Manager services from the clustering software. 2. Make sure that the execution host can connect to the shared disk. 3. Start the upgrade in the execution host. 4. Select [Hybrid Store (recommended)] when you select the Performance database. 5. Select [Transfer all performance data] and finish installation. 6. Make sure the standby host can connect to the shared disk. 7. Start the upgrade in the standby host. 8. Select [Hybrid Store (recommended)] when you select the Performance database.	Agent for RAID	Windows, Linux

	9. Select [Do not transfer any performance data] and finish installation. 10. Stop the Tuning Manager Agent REST API Component services. Execute the command "htmsrv stop -webservice". (* If there are multiple standby hosts, execute steps 6-10 for all standby hosts) 11. Start the Tuning Manager services from the clustering software, and start operation. (a-2) If data is not inherited: 1. Stop the Tuning Manager services from the clustering software. 2. Make sure that the host that executes the upgrade can connect to the shared disk. 3. Start the upgrade. 4. Select [Hybrid Store (recommended)] when you select the Performance database. 5. Select [Do not transfer any performance data] and finish installation. 6. Stop the Tuning Manager Agent REST API Component services. Execute the command "htmsrv stop -webservice". (Execute steps 2-6 for all hosts.) 7. Start the Tuning Manager services from the clustering software, and start operation. (a-3) If data is inherited after installation: 1. Stop the Tuning Manager services from the clustering software. 2. Make sure that the host that executes the upgrade can connect to the shared disk. 3. Start the upgrade. 4. Select [Hybrid Store (recommended)] when you select the Performance database. 5. Select [Transfer performance data after installation] and finish installation. (Execute steps 2-5 for all hosts.) 6. Change the Performance databases of all hosts to Hybrid Store. For details, see "Migrating the Store database to the Hybrid Store" in the manual *Hitachi Command Suite Tuning Manager Agent Administration Guide*. 7. Start the Tuning Manager services from the clustering software, and start operation. (b) In Linux (b-1) If all data is inherited: 1. Stop the service from the clustering software. 2. Remove the script registered in the clustering software. 3. Make sure that the execution host can connect to		

	the shared disk. 4. Start the upgrade in the execution host. 5. Select [Hybrid Store (recommended)] when you select the Performance database. 6. Select [Transfer all performance data] and finish installation. 7. Make sure the standby host can connect to the shared disk. 8. Start the upgrade in the standby host. 9. Select [Hybrid Store (recommended)] when you select the Performance database. 10. Select [Do not transfer any performance data] and finish installation. 11. Stop the Tuning Manager Agent REST API Component services. Execute the command "htmsrv stop -webservice". (* If there are multiple standby hosts, execute steps 7-11 for all standby hosts) 12. Stop the service from the clustering software. 13. In the clustering software, register the script that registers the Tuning Manager agents service. 14. Start the service from the clustering software, and start operation. (b-2) If data is not inherited: 1. Stop the service from the clustering software. 2. Remove the script registered in the clustering software. 3. Make sure that the host that executes the upgrade can connect to the shared disk. 4. Start the upgrade. 5. Select [Hybrid Store (recommended)] when you select the Performance database. 6. Select [Do not transfer any performance data] and finish installation. 7. Stop the Tuning Manager Agent REST API Component services. Execute the command "htmsrv stop -webservice". (Execute steps 3-7 for all hosts.) 8. Stop the service from the clustering software. 9. In the clustering software, register the script that registers the Tuning Manager agents service. 10. Start the service from the clustering software, and start operation. (b-3) If data is inherited after installation: 1. Stop the service from the clustering software. 2. Remove the script registered in the clustering software. 3. Make sure that the host that executes the		

	upgrade can connect to the shared disk. 4. Start the upgrade. 5. Select [Hybrid Store (recommended)] when you select the Performance database. 6. Select [Transfer performance data after installation] and finish installation. (Execute steps 3-6 for all hosts.) 7. Change the Performance databases of all hosts to Hybrid Store. For details, see "Migrating the Store database to the Hybrid Store" in the manual *Hitachi Command Suite Tuning Manager Agent Administration Guide*. 8. Stop the service from the clustering software. 9. In the clustering software, register the script that registers the Tuning Manager agents service. 10. Start the service from the clustering software, and start operation.		
5	When you execute the following commands in an environment where an agent of a cluster configuration exists, if the commands are executed while the shared disk (that is, the environment directory of the logical host) cannot be connected, the conversion process of the performance database of the agent on a logical host fails with the KATR00124-E message. Make sure that the shared disk can be connected when you perform the following operations: - Executing the htmhsmigrate command - Executing the htmhsconvert command Also, when changing the Performance database by using the htmhsmigrate command, do not start the Agent for RAID service until migration of all the physical hosts to Hybrid Store has finished.	Agent for RAID	Windows, Linux
6	When obtaining performance data by using Tuning Manager API, you cannot obtain the corresponding performance data in the case of sending the request message that includes "+" in the query-string. For example, you cannot obtain the corresponding performance data in the case of specifying "RAID_TYPE=RAID5(3D+1P)" in the query-string.	Tuning Manager server	All[1]

Note1: Applies to all supported operating systems

Documentation

Available documents

Document name	Document number	Issue Date
Hitachi Command Suite Tuning Manager Installation Guide	MK-96HC141-28	May 2015
Hitachi Command Suite Tuning Manager Server	MK-92HC021-39	May 2015

Administration Guide		
Hitachi Command Suite Tuning Manager Agent Administration Guide	MK-92HC013-37	May 2015
Hitachi Command Suite Tuning Manager Application Reports Reference	MK-95HC113-18	February 2015
Hitachi Command Suite Tuning Manager User Guide	MK-92HC022-40	May 2015
Hitachi Command Suite Tuning Manager Hardware Reports Reference	MK-95HC111-26	May 2015
Hitachi Command Suite Tuning Manager Operating System Reports Reference	MK-95HC112-19	May 2015
Hitachi Command Suite Tuning Manager Messages	MK-95HC114-28	May 2015
Hitachi Command Suite Tuning Manager CLI Reference Guide	MK-96HC119-28	May 2015
Hitachi Command Suite Tuning Manager Getting Started Guide	MK-96HC120-23	January 2015
Hitachi Command Suite Tuning Manager API Reference Guide	MK-92HC218-04	March 2015

Documentation errata

For 8.1.4-00

Contents of corrections of the *Hitachi Command Suite Tuning Manager API Reference Guide*:

<table>
<tr><th>No.</th><th>Location
to be corrected</th><th colspan="2">Corrections</th></tr>
<tr><td>1</td><td>3. List of resources
List of Tuning Manager API resources
API functions
Obtaining performance data
Table 3-19 Error responses for acquisition of performance data</td><td>Add</td><td>
<table>
<tr><th rowspan="2">Error</th><th colspan="3">HTTP response</th></tr>
<tr><th rowspan="2">Status code</th><th colspan="2">Header</th><th rowspan="2">Error ID included in the body</th></tr>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>The Agent instance is currently being initialized.</td><td>503</td><td colspan="2">There is no header to be added.</td><td>KATR11024-E</td></tr>
</table>
</td></tr>
</table>

Copyrights and licenses

HP and StorageWorks are trademarks of Hewlett-Packard Development Company, L.P. in the U.S. and other countries.

HP-UX is a product name of Hewlett-Packard Development Company, L.P. in the U.S. and other countries.

IBM is trademark of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, AIX are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, AS/400 are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, DB2 are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, DB2 Universal Database are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, Domino are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, DS8000 are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, Lotus are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, MVS are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, OS/390 are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, PowerHA are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, PowerVM are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, S/390 are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, Tivoli are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, WebSphere are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, z/OS are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, zSeries are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

IBM, z/VM are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

Internet Explorer is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

Itanium is a trademark of Intel Corporation in the United States and other countries.

Java is a registered trademark of Oracle and/or its affiliates.

Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

Microsoft is either a registered trademark or a trademark of Microsoft Corporation in the United States and/or other countries.

Mozilla is a trademark of the Mozilla Foundation in the U.S and other countries.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

RC2 is either a registered trademark or a trademark of EMC Corporation in the United States and/or other countries.

RC4 is either a registered trademark or a trademark of EMC Corporation in the United States and/or other countries.

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England. The original software is available from ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/

Red Hat is a trademark or a registered trademark of Red Hat Inc. in the United States and other countries.

RSA is either a registered trademark or a trademark of EMC Corporation in the United States and/or other countries.

SilkWorm is a trademark or a registered trademark of Brocade Communications Systems, Inc. in the United States and/or in other countries.

SUSE is a registered trademark or a trademark of SUSE LLC in the United States and other countries.

VMware, VMware vSphere ESX and VMware vSphere ESXi are registered trademarks or trademarks of VMware, Inc. in the United States and/or other jurisdictions.

Windows Server is either a registered trademark or a trademark of Microsoft Corporation in the United States and/or other countries.

This product includes software developed by Andy Clark.

This product includes software developed by Ben Laurie for use in the Apache-SSL HTTP server project.

This product includes software developed by Daisuke Okajima and Kohsuke Kawaguchi (http://relaxngcc.sf.net/).

This product includes software developed by IAIK of Graz University of Technology.

This product includes software developed by Ralf S. Engelschall <rse@engelschall.com> for use in the mod_ssl project (http://www.modssl.org/).

This product includes software developed by the Apache Software Foundation (http://www.apache.org/).

This product includes software developed by the Java Apache Project for use in the Apache JServ servlet engine project (http://java.apache.org/).

This product includes software developed by the University of California, Berkeley and its contributors.

This software contains code derived from the RSA Data Security Inc. MD5 Message-Digest Algorithm, including various modifications by Spyglass Inc., Carnegie Mellon University, and Bell Communications Research, Inc (Bellcore).

Other company and product names mentioned in this document may be the trademarks of their respective owners.