

Hitachi Virtual Storage Platform Release Notes

DKCMAIN version 70-06-33-00/00, SVP 70-06-23/00

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About this document

This document provides information about the Hitachi Virtual Storage Platform microcode (DKCMAIN and SVP), including new features and functions and changes.

Revision	Date
RN-700633-M236-04	October 20 th , 2016

Intended audience

This document is intended for Hitachi Data Systems customers and authorized service providers who install, configure, operate, and maintain the Hitachi Virtual Storage Platform storage system.

Getting help

Hitachi Data Systems Support Connect is the destination for technical support of products and solutions sold by Hitachi Data Systems. To contact technical support, log on to Hitachi Data Systems Support Connect for contact information:

https://support.hds.com/en_us/contact-us.html.

About this release

This document describes the differences between the following versions:

Firmware	New version	Previous version
DKCMAIN	70-06-33-00/00	70-06-32-00/00
SVP	70-06-23/00	70-06-23/00

Supported features and functions

(1) For Open and Mainframe systems

1-1	Improvement for MPB assignment
Description	<p>An operation to allocate processor blade when "Current MPB" and "Setting MPB" are different is improved as follows.</p> <p>Before improvement: Even though the MPB same as "Current MPB" is assigned, "Current MPB" and "Setting MPB" cannot be the same.</p> <p>After improvement: By assigning the MPB same as "Current MPB", "Current MPB" and "Setting MPB" can be the same.</p>
Documented	None

1-2	Improvement for Storage Navigator CLI Readme.txt
Description	The manual for reference described in Readme.txt in the Storage Navigator CLI installation media is changed from Storage Navigator User Guide to System Operations Using Spreadsheets.
Documented	System Operations Using Spreadsheets

1-3	Support for interface to collect FFI dump information
Description	An interface to enable Hi-Track to collect FFI (Field Failure Information) dump created on SVP at HDD or PCB replacement is provided.
Documented	None

1-4	Improvement for microcode downgrade using FC wizard
Description	<p>At microcode exchange with FC wizard, if the microcode version to be replaced is lower than the current version, the microcode is not taken in SVP for the items listed below.</p> <p>In the case of microcode exchange with other than FC wizard, SVP message SMT4380W is displayed to call attention before taking the microcode in SVP.</p> <ul style="list-style-type: none"> - DKU/HDD - SCHIP - SSW - Expander - Expander (FMU) - CMBK - CMSSD
Documented	None

1-5	Improvement for SVP messages
Description	<p>SVP messages 1099 E, 1100W, and 1248 E that are displayed when an error occurs in communication between SVP and SSVP, are improved.</p> <p>In particular, SSVPMN-0 and parts to be replaced are added to Action.</p>
Documented	Maintenance Manual (16 SVP MESSAGE)

1-6	Improvement for performance limitation of data allocation to SSD/FMD/NL-SAS
Description	<p>The performance limitation for data allocation to SSD/FMD/NL-SAS is improved so that more data can be stored in an SSD/FMD/NL-SAS for a pool that uses the SSD/FMD/NL-SAS whose usage rate is over 60%.</p> <p>New System Option Mode 1013 is available to disable the above improvement.</p> <p>Restricted Mode – Technical Support Permission Required to Use</p>
Documented	NewModeList

1-7	Improvement for management information collection by dump
Description	The management information of device groups and copy groups can be collected from dump.
Documented	None

1-8	Support for dump collection from Hi-Track
Description	<p>Dump collection from Hi-Track is supported.</p> <p>Dump is collected by a request from Hi-Track using the Auto Dump function internally.</p> <p>Supported dump types are as follows.</p> <ul style="list-style-type: none"> - Normal dump - Rapid dump - Detail dump - FMD dump - 100-generation backup - SVP monitoring (regular monitor)
Documented	None

1-9	Support for disabling SSL/TLS communication Cipher Suites RC4 DHE_EXPORT
Description	<p>SSL/TLS communication Cipher Suites RC4 DHE_EXPORT is disabled as a measure for the following vulnerabilities.</p> <ul style="list-style-type: none"> - CVE-2013-2566: Plaintext-recovery attacks for the RC4 algorithm that is used in the TLS protocol and SSL protocol. - CVE-2015-2808: Plaintext-recovery attacks against the initial bytes of a stream for the RC4 algorithm that is used in the TLS protocol and SSL protocol. - CVE-2015-4000: Cipher-downgrade attacks of encryption algorithm in the TLS protocol.
Documented	None



1-10	Change for firewall setting
Description	The firewall setting is changed so as not to be detected from outside (security scanning).
Documented	None

1-11	Support for Apache 2.2.29 (openssl 1.0.1p)
Description	<p>Apache 2.2.29 (openssl 1.0.1p) is supported.</p> <p>If Apache is used with OSS firmware version earlier than 70-06-10/00, the vulnerability below may exist.</p> <p>CVE-2014-3570: The BN_sqr implementation does not properly calculate the square of a BIGNUM value, which might make it easier for remote attackers to defeat cryptographic protection mechanisms.</p> <p>To address the above vulnerability, upgrade to Apache 2.2.29 (openssl 1.0.1p).</p> <p>To apply the support, remove the existing Apache and then install Apache 2.2.29 (openssl 1.0.1p). For the procedure, refer to Maintenance Manual (08 WEB CONSOLE).</p>
Documented	Maintenance Manual (08 WEB CONSOLE)

1-12	Support for TC-UR/TCz-URz delta resync without changing to COPY status
Description	When delta resync is performed in a TC-UR/TCz-URz configuration, the UR/URz pair status does not change to COPY but changes to PAIR.
Documented	Maintenance Manual (03 MICRO-FC)

1-13	Support for periodical SVP reboot
Description	Periodical SVP reboot is supported. In particular, SVP is rebooted once a month on a specified day.
Documented	Maintenance Manual (07 SVP)

(2) For Mainframe systems

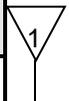
None

(3) For Open systems

3-1	Support for nondisruptive migration to VSP G1000
Description	Non-stop data migration to VSP G1000 using the nondisruptive migration function of VSP G1000 is available in the configuration where a host issues Reserve (SCSI2) and PGR (SCSI3).
Documented	Nondisruptive Migration Operations Manual

3-2	Support for Command Control Interface Ver. 01-34-03/04
Description	<p>Supported function from Ver. 01-33-03/07</p> <p>This release includes the following function:</p> <ul style="list-style-type: none"> - Added support to specify multiple parameters with -check_status/-check_status_not option. <p>Revision from Ver. 01-33-03/07</p> <ul style="list-style-type: none"> - Fixed the problem where the raidcom modify port command to FC ports failed with the error "EX_ENOSUP", when the command was executed on the platforms which do not support IPV6.
Documented	CCI Command Reference

3-3	Control class change of HMO025
Description	The control class of Host Mode Option 25 is changed from TS to Public. Public Mode – No Permission Required to Use
Documented	Maintenance Manual (06 INSTALLATION), Provisioning Guide for Open Systems, NewModelList



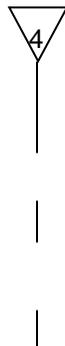
Change of contents

No	Item	Contents
1	Title	I/O to XRC LDEV disabled
	Symptoms	During MPB replacement or removal, an I/O to an LDEV used by XRC (UTILITY_LDEV) was disabled (MIH(S.P)).
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) XRC is in use. (2) An MPB is blocked by one of the following maintenance operations. (a) Replacement (b) Removal
	Category	Compatible XRC
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
2	Title	Delay in response and pair creation
	Symptoms	While being online from LPARs, when TCz, SIz, or URz pairs were created by a YKMAKE command from BCM for multiple copy groups and then the processing progress was monitored by a YKEWAIT command, the MP usage rate increased at the MP that received the YKMAKE and YKEWAIT commands, command responses were delayed, and the pair creation was delayed.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) The CU is online from multiple LPARs. (2) A YWKEWAIT command is run to the CU in (1). When the condition below is also met, the problem is more likely to occur. (3) Multiple copy groups are defined at the same time.
	Category	TrueCopy for Mainframe, ShadowImage for Mainframe, Universal Replicator for Mainframe
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
3	Title	Performance degraded at SIz pair split
	Symptoms	When a ShadowImage for Mainframe pair was split in TPF system environment, an I/O was delayed.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) TPF system (2) An SIz pair is split. (3) The SIz pair P-VOL is accessed.
	Category	TPF
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
4	Title	Percentage of synchronization for TCz pair not become 100%
	Symptoms	The percentage of synchronization for a TCz pair could not become 100% with the FlashCopy to PPRC Primary function.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) The FlashCopy to PPRC Primary function is used. (2) Other than above, there are 128 or more FC relationships in a system (in background copy processing) that function solely. (3) The MP usage rate exceeds the following values. (a) 80% if FC Ext. Slower Copy option is not applied. (b) 60% if FC Ext. Slower Copy option1 is applied. (c) 45% if FC Ext. Slower Copy option2 is applied.
	Category	FlashCopy version2
	Products and Versions Affected	DKCMAIN: All



No	Item	Contents
5	Title	Unable to recognize storage system from Windows host
	Symptoms	When RAID700 was connected to a host with Windows OS in cluster ware (WSFC) environment, the host did not recognize LDEVs for a while. The Windows host detected that the value of Additional Length in parameter data that was a response value for Persistent Reserve IN command S.A.00 (Read Keys) was wrongly large.
	Conditions of Occurrence	The problem may occur in SCSI-3 Reserve environment.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
6	Title	Unable to reject request for LDEV recovery for unformatted LDEV
	Symptoms	When LDEV recovery was performed from Command Control Interface to an LDEV that was not formatted, LDEV recovery was not rejected and the LDEV became normal status. As a result, if an I/O was issued to the unformatted area, an LA error occurred, the HDD and LDEV were blocked, and pinned slots occurred.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) There is an LDEV that is not formatted. (2) For the above LDEV, LDEV recovery is performed from CCI. (3) A host issues an I/O to the above recovered LDEV.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
7	Title	Failure of external group creation/deletion from CCI
	Symptoms	<p>When creating or deleting an external group from Command Control Interface, the configuration information of the external group became invalid.</p> <p>As a result, the following phenomena occurred.</p> <p>(1) When the window was refreshed from Storage Navigator, the status of the external group could not be collected and Storage Navigator message 20123-107008 was displayed.</p> <p>(2) The command for external group creation was complete successfully but the external group was not created.</p> <p>(3) The command for external group deletion was complete successfully but the external group was not deleted.</p>
	Conditions of Occurrence	The problem may occur when external group creation or deletion is performed from CCI.
	Category	Command Control Interface
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
8	Title	Link-down with SSB=B64A logged during online microcode exchange
	Symptoms	<p>During online microcode exchange, a link-down occurred between the storage system and switch.</p> <p>SSB=B64A</p>
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) Port attribute: Target or RCU Target</p> <p>(2) Topology: Fabric ON and Point-to-Point</p> <p>(3) Login is received from 2 or more hosts.</p> <p>(4) Any DKCMAIN version from 70-06-25-00/00 to 70-06-27-00/00</p> <p>(5) Online microcode exchange from the above version</p>
	Category	N/A
	Products and Versions Affected	SVP: All

No	Item	Contents
9	Title	Help for unsupported option available and time stamp one hour faster
	Symptoms	Phenomenon1 Explanations for unsupported options (-pid) and (-SM) were described respectively in the help for paircreate command and that for paircreate, pairresync, and pairsplit commands. Phenomenon2 While the TZ environment variable of Windows for x64 was set to JST-9, the time stamp of Command Control Interface log was one hour faster than the actual local time.
	Conditions of Occurrence	The problem occurs when the following condition is met. Phenomenon1 The help of HORC for paircreate, pairresync, or pairsplit command is displayed. Phenomenon2 CCI is started in an environment where the Windows for x64 TZ environment variable is set to JST-9.
	Category	N/A
	Products and Versions Affected	CCI: All

No	Item	Contents
10	Title	Reserve Conflict for host I/O
	Symptoms	While an open host I/O was running on a LUN in Persistent Reserve status, if a command to clear Persistent Reserve is received via the same path, Reserve Conflict might occur (SSB=D45D).
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) Open host connection. (2) Persistent Reserve status (3) An I/O is running on the LUN of (2). (4) A command to clear Persistent Reserve for the LUN of (3) is received.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
11	Title	Reserve Conflict returned wrongly if SCSI-2 Reserve remains wrongly
	Symptoms	SCSI-2 Reserve wrongly remained in a NDM migration source VOL and Reservation Conflict might be returned.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) Host mode is 0x0C or 0x2C. (2) The host and storage system are connected directly. (Port setting is FC-AL) (3) NDM VOL is in TM (Through Mode) status. (4) Logout is detected.
	Category	N/A
	Products and Versions Affected	DKCMAIN: 70-03-32-00/00 and higher

No	Item	Contents
12	Title	Failures of PS OFF and MPB blocking
	Symptoms	Phenomenon1 PS OFF failed and SIM=388F00 was reported. Phenomenon2 During MPB maintenance, SVP message ONL2788E was reported and the MPB blocking failed.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) Ownership migration is performed. (2) There is any LDEV to which no I/O is issued.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
13	Title	No collection of command parameter causing difficulty in problem investigation
	Symptoms	When a Hyper PAV Alias volume received a command, contents of command parameter were not collected so that problem investigation might be difficult in some cases.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) Mainframe connection (2) Hyper PAV is installed.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
14	Title	ICC detection after CHK1B
	Symptoms	When cache segment control information wrongly became NULL, CHK1B occurred so that the host detected ICC.
	Conditions of Occurrence	The problem may occur when an I/O is issued from a Mainframe host.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
15	Title	Failure of data set deletion with SSB=6D41 logged
	Symptoms	When a data set was deleted while the Erase on Scratch (EOS) function enabled on a Mainframe host, SSB=6D41 was logged and the operation might fail.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) Mainframe host connection (2) The EOS function is enabled on a Mainframe host. (3) A target data set is deleted. (4) z/OS V2.2 or higher.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
16	Title	Unintentional change of threshold for MLC/NF lifetime
	Symptoms	After setting the threshold for MLC/NF lifetime with "Setting for all Flash Drive ORM Values" selected on the Set Flash Drive ORM Value window, when cache was installed, the setting for MLC/NF lifetime threshold became invalid. When PDEV installation maintenance was performed after that, the default value was set to the threshold.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) The threshold for MLC/NF lifetime is set with "Setting for all Flash Drive ORM Values" selected on the Set Flash Drive ORM Value window. (2) After (1), one of the following maintenance operations is performed on SVP. (a) Define Configuration and Install (b) Installation -> Cache Capacity (c) Removal -> Cache Capacity (d) System Tuning
	Category	N/A
	Products and Versions Affected	SVP: 70-05-02/00 and higher

No	Item	Contents
17	Title	Failure suspension of SI/SIz pair or failure of volume migration
	Symptoms	When SI/SIz pair creation, split, resync, or restore was performed while the copy source or target was a DP/DPz VOL, or volume migration was performed, if a time-out due to resource conflict occurred, the SI/SIz pair was suspended due to failure or volume migration failed. SSB: 21E2/21E0/2115/221B/2296/2021/2151 SIM: SI/SIz: 47DXXX、VM: 47FXXX
	Conditions of Occurrence	The problem may occur when one of the following operations is performed. (1) SI/SIz pair creation, split, resync, or restore using DP/DPz VOL (2) Volume migration
	Category	ShadowImage, ShadowImage for Mainframe, Volume Migration
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
18	Title	Failure of maintenance due to uncompleted LDEV ownership migration
	Symptoms	When an MPB maintenance operation or LDEV ownership migration was performed, the LDEV ownership was not complete, SSB=F011 was logged, and the maintenance operation might fail.
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) The following failure occurs or one of the following operations is performed.</p> <ul style="list-style-type: none"> - Cache memory maintenance - Cache failure - LDEV removal - CVS (VLL) removal - Volume migration - LDEV format (low speed, high speed, or quick format) <p>(2) After (1), one of the following operations is performed.</p> <ul style="list-style-type: none"> - MPB maintenance operation - LDEV ownership migration - SI/SIz pair creation - TI pair creation
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
19	Title	SSB=B2FF and 89A0 logged
	Symptoms	After an ECC/LRC error occurred for some reason at a host write processing following TI pair split, SSB=B2FF and 89A0 indicating ECC/LRC error for the same slot might be logged again.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) TI configuration (2) The TI P-VOL is an external VOL or a DP-VOL in a pool that contains an external VOL. (3) The TI pair is suspended. (4) A write I/O is issued to the TI P-VOL. (If the P-VOL is a DP-VOL, the write I/O is issued to a page allocated to the external VOL) (5) During write processing, an ECC/LRC error occurs for some reason.
	Category	Universal Volume Manager
	Products and Versions Affected	DKCMAIN: 70-05-02-00/00 and higher

No	Item	Contents
20	Title	Difficulty in analysis if multiple shelbat.exe files run
	Symptoms	When multiple shelbat.exe files were run, it was not clear that which dump file was for which shelbat.exe result, causing analysis to be difficult.
	Conditions of Occurrence	The problem occurs when multiple shelbat.exe files are run.
	Category	N/A
	Products and Versions Affected	SVP: All

No	Item	Contents
21	Title	SVP reboot at startup
	Symptoms	At SVP startup, if event object creation failed and the LOGOUT function that was a background task did not start, the monitoring task found the no start of LOGOUT function so that SVP rebooted.
	Conditions of Occurrence	The problem occurs if an event object is wrongly released when event object creation and release are performed repeatedly.
	Category	N/A
	Products and Versions Affected	SVP: All

No	Item	Contents
22	Title	WCHK1 or SIM=FFEE0X report
	Symptoms	Phenomenon 1 During recovery processing in CM PCB replacement, WCHK1 occurred. (SSB=1353, 1355, 1688) Phenomenon 2 After CM PCB replacement was complete, SIM=FFEE0X was reported.
	Conditions of Occurrence	Phenomenon 1 may occur when the following conditions (1), (2), (3) and (4) are met. Phenomenon 2 may occur when the following conditions (1), (2), (3) and (5) are met. (1) Cache memory maintenance (installation, removal, replacement) (2) A failure is detected (SSB=3272, 3274) during cache memory maintenance blockage. (3) An I/O is issued. (4) 4 or more MPBs are mounted. (5) 2 or less MPBs are mounted.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
23	Title	LA error and HDD blockage with SSBs and SIMs
	Symptoms	During I/O to DP/DPz-VOL, if data was read from 0 data area of the system pool-VOL, an LA error occurred and the HDD might be blocked. SSB=A443, B2FF, 3289, ABF9 SIM=EF0XXX, EF1XXX
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) DP/DPz, DT/DTz, or TI VOL is used. (2) A pool is created without performing LDEV format for pool VOLs. (3) SOM896 is set to ON. (4) Sequential I/Os are issued.
	Category	Dynamic Provisioning, Dynamic Provisioning for Mainframe, Dynamic Tiering, Dynamic Tiering for Mainframe, Thin Image
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
24	Title	Pinned slot due to invalid cache data on one cluster
	Symptoms	If the data on cache of one cluster became invalid due to a failure, such as a hardware failure, a pinned slot occurred. SSB=13AE
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) RAID6 configuration (2) The cache data on one cluster is not valid but the cache is not blocked (such as hardware failure).
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
25	Title	Parity group usage rate exceeds 100%
	Symptoms	The parity group usage rate obtained via RAID Manager Library might exceed 100%. On Storage Navigator Performance Monitor, a specific calculation method is used and the rate is averaged by the total sum of PDEVs in concatenated parity groups so that the problem does not occur.
	Conditions of Occurrence	The problem may occur when the usage rate of concatenated parity groups is obtained via RAID Manager Library.
	Category	RAID Manager Library
	Products and Versions Affected	DKCMAIN: 70-03-32-00/00 and higher

No	Item	Contents
26	Title	Display failure of PG usage rate
	Symptoms	When multiple parity groups were concatenated, the parity group usage rate on the performance monitor was always 100%.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) A configuration where parity groups are concatenated is created. (2) An I/O is issued to the multiple parity groups concatenated.
	Category	Performance Monitor
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
27	Title	CHA maintenance disabled at failure in all MPs
	Symptoms	When an individual failure occurred in each of all MPs in an MPB at the same time, CHA maintenance was disabled. SIM=FFEE01 SVP message= SVP0734W
	Conditions of Occurrence	The problem may occur in rare cases when an individual failure occurs at the same time in each of all MPs in an MPB.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
28	Title	Inadequate messages
	Symptoms	<p>(1) When a reserved Volume Migration volume was deleted from Command Control Interface, the operation turned to error as per specification, but SSB=2E30 and 4108 were logged even though the specified LDEV was not an external volume.</p> <p>(2) When DPz VOL was added from CCI while Mainframe PCB was not installed, SSB= 2E21 and 8300 were logged and the operation turned to error as per specification, but a message "Please see User's Guide" was displayed.</p> <p>(3) When a DP VOL with Data Retention Utility set was deleted from CCI, SSB=2E30 and 0018 were logged and the operation turned to error as per specification, but a message "Please see User's Guide." was displayed.</p> <p>(4) When a DP VOL with Volume Retention Manager set was deleted from CCI, SSB=2E30 and 0053 were logged and the operation turned to error as per specification, but a message "Please see User's Guide." was displayed.</p> <p>(5) When a DP VOL volume used by FlashCopy version2 was deleted from CCI, SSB=2E30 and 0054 were logged and the operation turned to error as per specification, but a message "Please see User's Guide." was displayed.</p> <p>(6) When a volume used as TrueCopy P-VOL was deleted from CCI, the operation turned to error as per specification but SB=2E30 and 4102 were logged even though the specified LDEV was not an external volume.</p> <p>(7) When a volume used as TC S-VOL was deleted from CCI, the operation turned to error as per specification but SSB=2E30 4103 were logged even though the specified LDEV was not an external volume.</p>

	<p>(8) When a volume used as ShadowImage P-VOL was deleted from CCI, the operation turned to error as per specification but SSB=2E30 and 4104 were logged even though the specified LDEV was not an external volume.</p> <p>(9) When a volume used as an SI S-VOL was deleted from CCI, the operation turned to error as per specification but SSB=2E30 and 4105 were logged even though the specified LDEV was not an external volume.</p> <p>(10) When a DP VOL used by SI was deleted from CCI, the operation turned to error as per specification but SSB=2E30 and 4107 were logged even though the specified LDEV was not an external volume.</p>
Conditions of Occurrence	<p>The problem occurs when the following condition is met.</p> <p>(1) A command to delete a DP/DPz VOL that is a VM reserved volume is run from CCI.</p> <p>(2) A command to add DPz VOL is run from CCI while Mainframe PCB is not installed.</p> <p>(3) A command to delete a DP/DPz VOL with Data Retention Utility set is run from CCI.</p> <p>(4) A command to delete a DP/DPz VOL with Volume Retention Manager set is run from CCI.</p> <p>(5) A command to delete a DPz VOL used by FCv2 pair is run from CCI.</p> <p>(6) A command to delete a DP/DPz VOL that is used as TC/TCz P-VOL is run from CCI.</p> <p>(7) A command to delete a DP/DPz VOL that is used as TC/TCz S-VOL is run from CCI.</p> <p>(8) A command to delete a DP/DPz VOL that is used as SI/SIz P-VOL is run from CCI.</p> <p>(9) A command to delete a DP/DPz VOL that is used as SI/SIz S-VOL is run from CCI.</p> <p>(10) A command to delete a DP/DPz VOL that is SI/SIz reserved volume is run from CCI.</p>
Category	Command Control Interface
Products and Versions Affected	DKCMAIN: 70-03-01-00/00 and higher

No	Item	Contents
29	Title	Failure of PGR key release with SN message 01022-107001
	Symptoms	When a PGR key was released from Storage Navigator Release Host Reserved LUNs window, Storage Navigator message 01022-107001 was displayed and the operation turned to error.
	Conditions of Occurrence	The problem occurs when a PGR key is released on the Storage Navigator Release Host Reserved LUNs window.
	Category	Storage Navigator
	Products and Versions Affected	SVP: 70-06-16/00 and higher

No	Item	Contents
30	Title	SSBs logged when cancelling volume migration and VM pair remaining in deletion process
	Symptoms	When volume migration being performed for a pair was cancelled, if the cancellation and internal migration failure processing conflicted, SSB=22A0, 2118, and 2115 might be logged. (In addition to the above SSBs, SSB=21D4, 1479, 1480, 21D1, 21E1 might be logged too.) Also, the migration cancellation could not be complete and the VM pair in deletion process might remain.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) Volume migration fails. (2) Volume migration is cancelled.
	Category	Volume Migration
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
31	Title	Pinned slot in TCz/URz S-VOL
	Symptoms	When a failure occurred in a CHA PCB, MPB, or CM PCB on RCU of TCz or URz, a pinned slot might occur in the TCz or URz S-VOL.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) A failure occurs in a CHA PCB, MPB, or CM PCB on RCU of TCz or URz. (2) RCU has one of the following versions. (a) RCU of TCz: RAID700 70-02-54-00/00 or later (b) RCU of URz: RAID700 70-01-01-00/00 or later
	Category	TrueCopy for Mainframe, Universal Replicator for Mainframe
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
32	Title	Failure of copy back with SVP message
	Symptoms	Copy back processing failed with SVP message 2288W displayed.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) The storage system is in login status from a host before performing PS OFF. (2) PS OFF is performed within 5 minutes (*) after PS ON. * The time varies a little depending on the storage system status.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
33	Title	Multiple-drive blockage due to media-relating failure
	Symptoms	Multiple drives were blocked due to a media-relating failure. SIM=434XYY SSB=A403
	Conditions of Occurrence	The problem may occur when a media-relating failure occurs during read-ahead processing and no read I/O is issued to the same area.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
34	Title	Multiple-drive blockage due to media-relating failure detected by ORM
	Symptoms	When ORM detected a media-relating failure, multiple drives were blocked. SSB=AE60
	Conditions of Occurrence	The problem may occur when ORM detects one of the following failures. (a) A media-relating failure in an unformatted area with DP/DPz, DT/DTz, or TI page allocated (b) A media-relating failure in an unformatted area in quick formatting process
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
35	Title	UR/URz pair creation ended normally even though pair is not created
	Symptoms	When a UR/URz pair was created during recovery from a dual-failure situation that occurred during cache maintenance, even though the UR/URz pair was not created, the operation ended normally.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) A recovery from a dual failure during cache (Basic) maintenance (including installation/removal) is in process. (2) UR/URz pair creation is performed.
	Category	Universal Replicator, Universal Replicator for Mainframe
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
36	Title	Unable to delete pair during status change
	Symptoms	When a pair whose status was changing (deleting) was forcibly deleted as a part of mirror deletion, Storage Navigator message 06505-058073 was displayed and the pair could not be deleted.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) There is a UR/URz pair whose status is changing. (2) Forcible deletion is performed for the UR/URz pair as a part of mirror deletion.
	Category	N/A
	Products and Versions Affected	SVP: 70-02-03/00 and higher

No	Item	Contents
37	Title	WHCK1 or invalid SSB at uncorrectable error
	Symptoms	During I/O to a DP/DPz, DT/DTz, or TI VOL that was associated with a pool that used a parity group in RAID1 configuration, if ORM detected an uncorrectable error in the parity group, WCHK1 (SSB=32FE) might occur or an invalid SSB (such as 982B, 982C) might be logged.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) ORM detects an uncorrectable error. (2) A parity group used by a pool is in RAID1 configuration (3) DP/DPz, DT/DTz, or TI VOL (4) A host write I/O is issued. (5) The uncorrectable error occurs in the slot that is the same as the one to which the host write I/O is issued.
	Category	Dynamic Provisioning, Dynamic Provisioning for Mainframe, Dynamic Tiering, Dynamic Tiering for Mainframe, Thin Image
	Products and Versions Affected	DKCMAIN: 70-03-32-00/00 and higher

No	Item	Contents
38	Title	Taking time to display wizard when multiple DP VOLs selected
	Symptoms	When 100 DP VOLs were selected and then Reclaim Zero Pages or Stop Reclaiming Zero Pages was performed from Storage Navigator, displaying the wizard window took about 3 minutes.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) Multiple DP VOLs are selected. (2) One of the following operations is performed from Storage Navigator. - Reclaim Zero Pages - Stop Reclaiming Zero Pages
	Category	Storage Navigator
	Products and Versions Affected	SVP: 70-06-21/00 and higher

No	Item	Contents
39	Title	Invalid SSB=980A logged
	Symptoms	During I/O to a DP/DPz, DT/DTz, or TI VOL that was associated with a pool that used a parity group in RAID1 configuration, if ORM detected an uncorrectable error in the parity group and a failure occurred in the read processing of ORM, an invalid SSB (980A) might be logged.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) ORM detects an uncorrectable error. (2) A parity group used by a pool is in RAID1 configuration (3) DP/DPz, DT/DTz, or TI VOL (4) A host write I/O is issued. (5) A failure occurs during drive reading. (6) The uncorrectable error occurs in the slot that is the same as the one to which the host write I/O is issued.
	Category	Dynamic Provisioning, Dynamic Provisioning for Mainframe, Dynamic Tiering, Dynamic Tiering for Mainframe, Thin Image
	Products and Versions Affected	DKCMAIN: 70-03-32-00/00 and higher

No	Item	Contents
40	Title	Transfer Config (manual transfer) or Switch SVP takes longer time
	Symptoms	In SVP High Reliability Kit configuration, when Transfer Config (manual transfer) or Switch SVP (switching SVP) was performed, it usually took 30 to 40 minutes but might take 1 to 1.5 hours.
	Conditions of Occurrence	The problem occurs when Transfer Config or Switch SVP is performed in SVP High Reliability Kit configuration.
	Category	N/A
	Products and Versions Affected	SVP: All

No	Item	Contents
41	Title	I/O wrongly enabled during PS OFF
	Symptoms	When PS OFF was performed during PS ON, the host and DKC were linked up even though PS OFF was in process and I/Os might be enabled.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) The host and DKC are in login state before PS OFF. (2) PS OFF is performed within 5 minutes (*1) after PS ON. *1: The time may vary depending on storage system condition.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

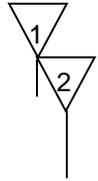
No	Item	Contents
42	Title	SSB=B73F logged frequently due to path blockage
	Symptoms	When an MPB failure occurred, a path was blocked and SSB=B73F was logged frequently.
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) The DKC contains Initiator/External ports (TC/UR/UVM) (2) A path is created. (3) WCHK1 occurs multiple times in a short period of time (1 to 2 seconds), or an MPB failure occurs.
	Category	N/A
	Products and Versions Affected	DKCMAIN: All

No	Item	Contents
43	Title	Abend of SVP microcode exchange
	Symptoms	SVP microcode exchange might end abnormally after rebooting SVP. (SVP message SMT2433E)
	Conditions of Occurrence	The problem may occur when a delay occurs in the processing to decompress a file, which takes place in SVP microcode exchange.
	Category	N/A
	Products and Versions Affected	SVP: All

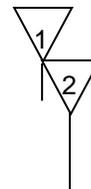
No	Item	Contents
44	Title	HDD microcode enhanced to reduce replacements and recovery 1/3
	Symptoms	The following phenomena occurred so that frequency of HDD replacement or recovery increased. (1) After continuous Head Health Check error, a drive always reported error for any command. (2) The probability of weak write might increase.
	Conditions of Occurrence	The problem may occur on DKR5C-J with HDD microcode Rev. 00-00-AP.
	Category	HDD
	Products and Versions Affected	DKR5C-J: 00-00-AP



No	Item	Contents
45	Title	HDD microcode enhanced to reduce replacements and recovery 2/3
	Symptoms	<p>The following phenomena occurred so that frequency of HDD replacement or recovery increased.</p> <p>(1)After continuous Head Health Check error, a drive always reported an error for any command.</p> <p>(2) Head health Check was performed in the reserved area when required.</p> <p>(3) Internal workload of HDD was relatively high.</p> <p>(4) When OpenRejectRetry/AIP was continued in a single port, the port on the other end cannot proceed command/Reset.</p> <p>(5) Even after detecting an error by ORM, the location could not be reassigned if the error was recovered by rewrite.</p>
	Conditions of Occurrence	<p>The problem may occur on;</p> <p>DKS5B-J with HDD microcode Rev. 00-4F-0E, DKS5B-K with HDD microcode Rev.00-4F-5E, DKS5C-J with HDD microcode Rev. 00-5F-0B, and DKS5D-J with HDD microcode Rev. 000-5F-0D.</p>
	Category	HDD
	Products and Versions Affected	DKS5B-J: 00-4F-0E DKS5B-K: 00-4F-5E DKS5C-J: 00-5F-0B DKS5D-J: 00-5F-0D



No	Item	Contents
46	Title	HDD microcode enhanced to reduce replacements and recovery 3/3
	Symptoms	<p>The following phenomena occurred so that frequency of HDD replacement or recovery increased.</p> <p>(1) Workload of ORM was relatively high.</p> <p>(2) Head health Check was performed in the reserved area when required.</p> <p>(3) Internal workload of HDD was relatively high.</p> <p>(4) When OpenRejectRetry/AIP was continued in a single port, the port on the other end could not proceed command/Reset.</p> <p>(5) Even after detecting an error by ORM, the location could not be reassigned if the error was recovered by rewriting.</p> <p>(6) ORM progress was slow when an uncorrectable error was detected.</p>
	Conditions of Occurrence	This phenomenon may occur on DKS5E-J with HDD microcode Rev. 00-4F-09.
	Category	HDD
	Products and Versions Affected	DKS5E-J: 00-4F-09



Acronyms and abbreviations

3DC	three data center
ABTS	ASCII Block Terminal Services
AOU	allocation on use (another name for Dynamic Provisioning)
ASP	authorized service provider
BCM	Hitachi Business Continuity Manager
CCI	Command Control Interface
CHA	channel adapter (another name for front-end director)
CL1/2	cluster 1/2
CLI	command line interface
CLPR	cache logical partition
CM	cache memory
CMA	cache memory adapter
COW	copy on write
CPC	cache path control adapter
CPK	cache package
CRM	Cache Residency Manager
CSV	Cluster Shared Volumes
CTG	consistency group
CU	control unit
CUDG	control unit diagnosis
CVS	custom volume size (another name for Virtual LVI/LUN)
DCR	dynamic cache residency (another name for Cache Residency Manager)
DF850	Hitachi Unified Storage
DKA	disk adapter (another name for back-end director)
DKAF	DKA firmware
DKC	disk controller (also used to refer to the entire storage system)
DKU	disk unit
DP	Dynamic Provisioning
DP-VOL	Dynamic Provisioning virtual volume (V-VOL used for Dynamic Provisioning)
DPz	Dynamic Provisioning for Mainframe
DRU	Hitachi Data Retention Utility
DS	dynamic sparing
DT	Dynamic Tiering
DTz	Dynamic Tiering for Mainframe
DW700	another name for Hitachi Unified Storage VM
DW800	another name for Hitachi Virtual Storage Platform Gx00 and Fx00
ECC	error checking and correction
EQC	equipment check
ESW	express switch
FC	fibre channel, FlashCopy
FCA	fibre control adapter
FCoE	fibre channel over ethernet
FCSE	FlashCopy Space Efficient
FCU	File Conversion Utility

FCv2	FlashCopy version 2
FD	floppy disk
FDM	FICON® data migration
FMD	flash module drive
FOEF	FCoE firmware
FRS	Feature Release Schedule
grp	group
HA	high availability
HAM	Hitachi High Availability Manager
HCS	Hitachi Command Suite
HDD	hard disk drive
HDEV	host device
HDS	Hitachi Data Systems
HDvM	Hitachi Device Manager
HLDE	hold-error
HM700	another name for Hitachi Unified Storage VM
HM800	factory model number for Hitachi Virtual Storage Platform Gx00 and Fx00
HMO	host mode option
HPAV	Hitachi Parallel Access Volume (another name for Hitachi Compatible PAV)
HPF	High Performance FICON®
HPtM	Hitachi Protection Manager
HPvM	Hitachi Provisioning Manager
HRpM	Hitachi Replication Manager
HTP	hyper transfer program (controls the FICON channel links)
HTSM	Hitachi Tiered Storage Manager
HUS	Hitachi Unified Storage
HUS VM	Hitachi Unified Storage VM
I-site	intermediate site
JNL	journal
JNLG	journal group
LDEV	logical device
LDKC	logical disk controller
Lib	Library
LRC	longitudinal redundancy check
LSI	large-scale integration, refers to an integrated circuit (IC)
L-site	local site
LU	logical unit
LUN	logical unit number
LUSE	logical unit size expansion
LVI	logical volume image
MCU	main control unit
MDKC	main storage system (contains MCUs)
MIH	missing interrupt handler
MP	microprocessor
MPB	MP blade
MSCS	Microsoft Cluster Server

MTO	mainframe-to-open
NDM	non-disruptive migration
OTM	open-to-mainframe
PAV	Parallel Access Volume
PCB	printed circuit board
PDEV	physical device
PP	program product
PPC	prioritized port control
PS	power supply
P-site	primary site
P-VOL	primary volume
RC	remote console
RCU	remote control unit
RDKC	remote storage system (contains RCUs)
RIO	remote I/O
RM	RAID Manager (another name for Command Control Interface)
RSCN	registered state-change notification
RSD	Hitachi RAID Systems Division
R-site	remote site
SAS	serial-attached SCSI
SATA	serial Advanced Technology Attachment
SCP	state change pending
SFP	small form-factor pluggable
SI	Hitachi ShadowImage
SIM	service information message
SIz	ShadowImage for Mainframe
SM	shared memory
SMPL	simplex
SN	Storage Navigator
SOM	system option mode
SPM	Hitachi Server Priority Manager
SSB	sense byte
SSD	solid-state device (another name for flash drive)
SSID	storage subsystem identifier
SSL	secure socket layer
SSW	standard switch adapter
SUS	suspended
S-VOL	secondary volume, source volume
SVP	service processor
TC	Hitachi TrueCopy
TCz	Hitachi TrueCopy for Mainframe
TI	Hitachi Thin Image
TOV	time-out value
TPF	Transaction Processing Facility
TS	Technical Support
TSE-VOL	track-space-efficient volume
T-VOL	target volume

UR	Hitachi Universal Replicator
URz	Hitachi Universal Replicator for Mainframe
USP V/VM	Hitachi Universal Storage Platform V/VM
UVM	Universal Volume Manager
VSP	Hitachi Virtual Storage Platform
VSP Fx00	Hitachi Virtual Storage Platform F400, F600, F800
VSP G1000	Hitachi Virtual Storage Platform G1000
VSP Gx00	Hitachi Virtual Storage Platform G200, G400, G600, G800
V-VOL	virtual volume

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