

## Hitachi Virtual Storage Platform G200, G400, G600, G800 Release Notes

## Hitachi Virtual Storage Platform F400, F600, F800 Release Notes

VSP G800, VSP F800:

DKCMAIN version 83-03-02-60/00, SVP version 83-03-02-60/00

VSP G400, G600, VSP F400, F600:

DKCMAIN version 83-03-02-40/00, SVP version 83-03-02-40/00

VSP G200:

DKCMAIN version 83-03-02-20/00, SVP version 83-03-02-20/00

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### About this document

This document provides information about the Hitachi Virtual Storage Platform G200, G400, G600, G800 and the Hitachi Virtual Storage Platform F400, F600, F800 microcode (DKCMAIN and SVP), including new features and functions and changes.

Revision	Date
RN-830302-M020-00	March 7 <sup>th</sup> , 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 G200, G400, G600, G800 and the Hitachi Virtual Storage Platform F400, F600, F800 storage systems.

### 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](https://support.hds.com/en_us/contact-us.html).

## About this release

This document describes the differences between the following versions:

Product	Version	DKCMAIN	SVP
VSP G800	New version	83-03-02-60/00	83-03-02-60/00
VSP F800	Previous version	83-03-01-60/00	83-03-01-60/00
VSP G400, G600	New version	83-03-02-40/00	83-03-02-40/00
VSP F400, F600	Previous version	83-03-01-40/00	83-03-01-40/00
VSP G200	New version	83-03-02-20/00	83-03-02-20/00
	Previous version	83-03-01-20/00	83-03-01-20/00

## Supported features and functions

1	Support for guard logic for microcode downgrade while NDM in use
Description	Guard logic for microcode downgrade while the nondisruptive data migration function is in use is supported.
Documented	Maintenance Manual (07 FIRMWARE)

2	Support for Command Control Interface Ver. 01-36-03/04
Description	Revisions from Ver. 01-36-03/03 - Fixed the problem in which the pairsyncwait command continued to display the "Changed" state for pairs in extended consistency groups whose resync operation had already completed. (R800-58447) - Fixed the problem in which CCI halted when the horctakeoff command was executed with inconsistent configuration files in 3DC configurations. (R700-39153)
Documented	None

3	Support for management information collection from dump
Description	Collecting management information of device groups and copy groups from dump is supported.
Documented	None

## Fixed problems

No	Item	Contents
1	Title	I/O response degradation
	Symptoms	<p>Phenomenon1</p> <p>When LDEV deletion and parity group deletion were performed, I/O response to a UR pair to which an I/O was issued might degrade.</p> <p>Phenomenon2</p> <p>When a cache maintenance operation was performed or a cache failure occurred, I/O response to a UR pair to which an I/O was issued might degrade.</p>
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) An I/O is issued to UR P site.</p> <p>(2) Universal Replicator configuration</p> <p>(3) One of the following operations is performed or the failure occurs.</p> <ul style="list-style-type: none"> <li>- LDEV CLPR migration</li> <li>- CLPR capacity change</li> <li>- Shared memory or cache installation or removal</li> <li>- LDEV deletion or addition</li> <li>- Parity group deletion or addition</li> <li>- Cache maintenance</li> <li>- Cache failure</li> </ul>
	Category	Universal Replicator
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: All</p> <p>G400, G600, F400, F600: All</p> <p>G200: All</p>

No	Item	Contents
2	Title	Repeated staging and Check Condition report to host
	Symptoms	In a high load I/O environment, segments (cache) could not be reserved temporarily.  When a pinned slot (write error) received a read I/O, if a segment could not be reserved, staging was repeated so that SSB=9C1D was logged frequently, and eventually Check Condition was returned to the host.
	Conditions of Occurrence	The problem may occur when all the following conditions are met.  (1) High load I/O environment (2) A read command is received. (3) A pinned slot (write error) exists.
	Category	Open
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
3	Title	Failure of Performance Utilization display and increase in access frequency of lower tier
	Symptoms	If the performance utilization of tier became invalid, the following phenomena occurred.  (1) On the View Tier Properties window on Storage Navigator, the value of Performance Utilization for a tier containing the target drive was always 100%. The value of Performance Utilization in the case of Command Control Interface is "P(%)" in the information output by raidcom get dp_pool -key opt command.  (2) In a pool with active flash enabled, if access frequency was high in both upper and lower tiers, access frequency of lower tier further increased.
	Conditions of Occurrence	The problem occurs when all the following conditions are met.  (1) SAS 7.2K 6TB drive is used.  (2) The RAID level of RAID group using the above drive is 4D+1P, 6D+1P, 7D+1P, 6D+2P, 12D+2P, or 14D+2P.  (3) The above RAID group is used for a DT/DTz or active flash pool.

No	Item	Contents
	Category	Dynamic Tiering, active flash
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
4	Title	I/O performance degradation
	Symptoms	When inflow of host write I/Os to a TI pair P-VOL increased, I/O performance degraded. (Only one I/O could be received per second)
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) An environment meets the conditions below where high load I/O can be issued to a TI P-VOL.</p> <p>(1-1) The TI P-VOL is a DP, DT, or active flash volume.</p> <p>(1-2) Multiple flash drives (such as SSD and FMD/FMC) are used in a DP, DT, or active flash pool.</p> <p>(2) A configuration meets the conditions below and allows creation of large amount of CAW.</p> <p>(2-1) The volume used in the TI pair has large capacity.</p> <p>(2-2) Cache has large capacity.</p> <p>(2-3) SOM929 is set to OFF.</p> <p>(3) Host I/Os concentrate on the TI P-VOL in a short period of time, and Cache Write Pending exceeds 65%.</p>
	Category	Thin Image
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
5	Title	Over 100% of firmware upload progress rate
	Symptoms	When media file reading failed during firmware update, the update processing continued. As the update continued even though file reading and data transfer failed, the progress rate of upload exceeded 100%.
	Conditions of Occurrence	The problem occurs when a firmware update is performed. Specifically, it occurs if the media file is located in a network drive.
	Category	Open
	Products and Versions Affected	GUM: G800, F800: 83-02-01/00 and higher G400, G600, F400, F600: 83-02-01/00 and higher G200: 83-02-01/00 and higher

No	Item	Contents
6	Title	SSB=FC74 logged many times at GAD pair creation
	Symptoms	When creating 8,192 GAD pairs with a consistency group specified, SSB=FC74 was logged many times on RCU. * The pair creation ended normally.
	Conditions of Occurrence	The problem may occur when the following conditions (1) and (2), or (3) is met. (1) A consistency group contains 2 or more GAD pairs. (2) Pair resync is performed with the above consistency group specified to add the pairs to the consistency group. (3) Pair resync is performed for 257 or more GAD pairs at a time with a consistency group specified to add the pairs to the consistency group.
	Category	Global-active device
	Products and Versions Affected	DKCMAIN: G800, F800: 83-03-01-60/00 and higher G400, G600, F400, F600: 83-03-01-40/00 and higher G200: 83-03-01-20/00 and higher

No	Item	Contents
7	Title	Failure of FCHF microcode exchange
	Symptoms	When FCHF microcode was exchanged on a storage system where DKCMAIN microcode had been exchanged to a version earlier than 83-01-25-x0/00 (within 83-01-xx range) or earlier than 83-02-04-x0/00 (within 83-02-0x range), FCHF microcode exchange failed. (SSB=B39D)
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) G400, G600, F400, F600, G800, and F800 models</p> <p>(2) DW-F800-2HF16 is mounted on CHBxH (G400, G600, F400, F600 model) or on CHBxE, CHBxF, CHBxG, or CHBxH (G800, F800).</p> <p>(3) DKCMAIN microcode has been exchanged to a version earlier than 83-01-25-x0/00 (within 83-01-xx range) or earlier than 83-02-04-x0/00 (within 83-02-0x range) .</p> <p>(4) After the microcode exchange of (3), power cycle has never been performed.</p> <p>(5) Online FCHF microcode exchange is performed.</p>
	Category	Open
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All

No	Item	Contents
8	Title	Command reject even when pair is successfully deleted
	Symptoms	<p>When deleting a pair from CCI, the pair was deleted but the command was rejected.</p> <p>* SSBs, which were logged at command reject, varied depending on the program product in use and timing.</p>
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) TC, UR, GAD, SI, TI</p> <p>(2) The pair is created with consistency group specified.</p> <p>(3) Pair deletion is performed from CCI.</p>
	Category	Command Control Interface



No	Item	Contents
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
9	Title	SSB logged or failure suspension
	Symptoms	Phenomenon1 After a write I/O was issued to P-VOL of a GAD pair (PAIR status), if forcible power OFF and then non-volatile PS ON were performed, SSB=9687 or 8871 was logged.  Phenomenon2 After a write I/O was issued to P-VOL of a TI pair (PSUS status), if forcible power OFF and then non-volatile PS ON were performed, the TI pair was suspended due to failure.
	Conditions of Occurrence	The problem may occur when all the following conditions are met.  Phenomenon1 (1) A write I/O is issued to P-VOL or S-VOL of a GAD pair in PAIR status. (2) An MP failure, path removal between Initiator and RCU Target, or a host reset takes place. (3) There is dirty data in cache. (4) Forcible power OFF and then non-volatile PS ON are performed.  Phenomenon2 (1) A write I/O is issued to P-VOL of a TI pair in PSUS status. (2) There is dirty data in cache. (3) Forcible power OFF and then non-volatile PS ON are performed.
	Category	Global-active device, Thin Image
	Products and Versions Affected	DKCMAIN: G800, F800: 83-01-21-60/00 and higher (GAD), all (TI) G400, G600, F400, F600: 83-01-21-40/00 and higher (GAD), all (TI) G200: 83-01-21-20/00 and higher (GAD), all (TI)

No	Item	Contents
10	Title	Incorrect messages displayed at HUB reset
	Symptoms	<p>When the HUB of the controller being operated was specified and then [Reset HUB] was clicked on the Controller Chassis window of Maintenance Utility of G400, G600, F400, F600, G800, or F800 model, the message "You can not do this operation from CTL that are currently connected. Please follow them connected to other CTL." was displayed.</p> <p>One the other hand, when the HUB of the controller that was not operated was specified and then [Reset HUB] was clicked on the Controller Chassis window of Maintenance Utility of G400, G600, F400, F600, G800, or F800 model, the message "To reset the HUB, click [Reset]." was displayed.</p> <p>* Messages displayed in two cases were opposite as only the HUB of controller being operated could be reset.</p>
	Conditions of Occurrence	<p>The message occurs when all the following conditions are met.</p> <p>(1) G400, G600, F400, F600, G800, and F800 models</p> <p>(2) A HUB of a controller being operated or not operated is specified on the LANBs tab of the Controller Chassis window opened by selecting Controller Chassis from Hardware on the Maintenance Utility window, and then [Reset HUB] is clicked.</p>
	Category	Open
	Products and Versions Affected	<p>GUM:</p> <p>G800, F800: 83-02-01/00 and higher</p> <p>G400, G600, F400, F600: 83-02-01/00 and higher</p>

No	Item	Contents
11	Title	Invalid status of GAD pairs
	Symptoms	<p>After the processing to stop a consistency group continues for 2 minutes, SSB=FB0B is logged and one of the following occurred.</p> <p>(1) The processing was complete, and the GAD pairs in the consistency group became PSUS (P-VOL)/SSWS (S-VOL) status.</p> <p>(2) SSB=FB64 was logged, the processing was not complete, and then the GAD pairs in the consistency group became invalid status (P-VOL=PSUS, S-VOL=PAIR).</p>

No	Item	Contents
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) GAD pairs are registered to a consistency group.</p> <p>(2) A processing to stop the consistency group is performed.</p> <p>Phenomenon (1) only:</p> <p>(3) LDEV ownership of GAD pairs in the consistency group belongs to multiple controllers.</p>
	Category	Global-active device
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: 83-03-01-60/00 and higher</p> <p>G400, G600, F400, F600: 83-03-01-40/00 and higher</p> <p>G200: 83-03-01-20/00 and higher</p>

No	Item	Contents
12	Title	Display failure of FMC drive capacity
	Symptoms	When an FMC drive was used, the drive capacity was not 8 times larger than the actual capacity but was equal to the actual capacity.
	Conditions of Occurrence	<p>The problem occurs when all the following conditions are met.</p> <p>(1) An FMC drive is installed, but the compression function is not used.</p> <p>(2) One of the following processing is run.</p> <ul style="list-style-type: none"> <li>- RMI API: getLHDDCapa() at PDEV detailed information collection (Robj_interface_DKCgetPDEVInfoEntry2)</li> <li>- RMI API: getLPDEVSize() at parity group detailed information collection (Robj_interface_RJiPGInfoDetail_IN)</li> <li>- RMAPI: storage system information collection (dsvp_GetStorageData()) with "DRIVE_INFORMATION" specified</li> <li>- RMAPI: configuration information collection (dsvp_Get_COREFEx()) with TID_PDEVINF0 to TID_PDEVINF3 specified</li> <li>- Print out Tool or configuration report creation</li> </ul>
	Category	Open

No	Item	Contents
	Products and Versions Affected	SVP/MPC: G800, F800: 83-02-01-60/00 and higher G400, G600, F400, F600: 83-02-01-40/00 and higher G200: 83-02-01-20/00 and higher

No	Item	Contents
13	Title	UR pair failure suspension due to delay in write I/O processing
	Symptoms	In UR configuration, when a delay occurred in write I/O processing due to a failure, such as a line failure, releasing reserved internal resource did not make progress, the internal resource area was depleted by following I/Os, and the UR pair might be suspended due to failure. (SSB=EDCD)
	Conditions of Occurrence	The problem may occur when all the following conditions are met. (1) Universal Replicator configuration (2) A delay occurs in write I/O processing due to a line failure etc.(*) (3) A volume in a JNL containing the above volume continuously receives write I/Os. *: A failure such as a delay in data transfer between host and storage, and packet loss between GAD pair volumes.
	Category	Universal Replicator
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
14	Title	Incorrect cache capacity displayed and cache removal disabled on cache removal window
	Symptoms	Phenomenon1 On the window to remove cache, the displayed cache capacity was smaller than the actual capacity. Phenomenon2 On the window to remove cache, cache removal that should be operable was disabled.

No	Item	Contents
	Conditions of Occurrence	The problem may occur in rare cases when Removal Cache Capacity is performed on maintenance PC.
	Category	Open
	Products and Versions Affected	SVP/MPC: G800, F800: 83-03-01-60/00 and higher G400, G600, F400, F600: 83-03-01-40/00 and higher G200: 83-03-01-20/00 and higher

No	Item	Contents
15	Title	Failure of specifying failure DIMM in SIM=CF88XX
	Symptoms	When a DIMM uncorrectable error occurred, the failure DIMM could not be identified from the action code of SIM=CF88XX.
	Conditions of Occurrence	The problem occurs when all the following conditions are met. (1) G400, G600, F400, F600, G800, and F800 models (2) An uncorrectable error occurs on DIMM10, DIMM11, DIMM02, DIMM03, DIMM12, or DIMM13.
	Category	Open
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All

No	Item	Contents
16	Title	UR pair failure suspension or SSB=B2FF for TI pair during I/O
	Symptoms	Phenomenon1 During I/O to a UR pair, the UR pair might be suspended due to failure. (SSB=BB52) Phenomenon2 During I/O to a TI pair, SSB=B2FF was logged frequently.

No	Item	Contents
	Conditions of Occurrence	<p>The problem may occur when the following conditions (1) to (3), or (1) and (4) are met.</p> <p>(1) A UR P-VOL is defined (Phenomenon1) or a TI pair (PSUS status) is defined (Phenomenon2).</p> <p>(2) An operation (*1) is performed for a TC, UR, or GAD pair from a host (CCI (using command device)).</p> <p>(3) During the above operation, one of the following failures occurs.</p> <p>(a) The request of the above operation is reset due to a time-out on CCI. (SSB=1699)</p> <p>(b) The request of the above operation is reset due to disconnection of host path. (SSB=1699)</p> <p>(c) The above operation does not end normally due to a time-out of processing on DKC. (SSB=DDAF, B97F)</p> <p>(d) CHK1x, CHK3, or CHK4 that does not cause MP blockage occurs. (SSB=1607, 160D, 160F)</p> <p>(4) SSB=DD84 is logged because a drive is overloaded.</p> <p>*1: Pair creation (No Copy/All-data copy), pair resync (normal/swap), pair suspension, pair deletion, pair option change, freeze request (consistency group), RUN request (consistency group)</p>
	Category	Universal Replicator, Thin Image
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: All</p> <p>G400, G600, F400, F600: All</p> <p>G200: All</p>

No	Item	Contents
17	Title	MPC login window title displayed in Japanese
	Symptoms	When the MPC login window was displayed, the window title was displayed in Japanese (MPC software + product name).
	Conditions of Occurrence	The problem occurs when the MPC login window is displayed.
	Category	Open

No	Item	Contents
	Products and Versions Affected	SVP/MPC: G800, F800: 83-03-01-60/00 and higher G400, G600, F400, F600: 83-03-01-40/00 and higher G200: 83-03-01-20/00 and higher

No	Item	Contents
18	Title	PIN occurs because of conflict between page migration processing and drive copy processing
	Symptoms	During page migration processing of DP-VOL, if drive copy/correction copy (hereinafter referred to as DC/CC) runs, PIN might occur. PIN occurs in DP-VOL that is defined in the pool to which the parity group in which DC/CC runs belongs. When PIN occurs, SIM:ff4xyy (x: Last digit of CU#, yy: LDEV#) is reported. In the part in which PIN occurs, read is disabled/write is enabled in OPEN system. DC/CC ends normally.
	Conditions of Occurrence	The failure might occur when all the following conditions (1) to (4) are met. (1) The initial version or later of HM800 is used (2) DP/DT/active flash/TI pool is used. (3) The page migration processing is running. DP/TI : Rebalance, shrink pool DT : Rebalance, shrink pool, tier relocation active flash : Rebalance, shrink pool, tier relocation, real-time promotion (*1), real-time demotion (*2) (*1) Tier relocation that moves pages in Tier 2 or Tier 3 in which the number of I/Os is increased suddenly to Tier 1. (*2) Tier relocation that moves pages in Tier 1 that have a few I/Os to Tier 2 or Tier 3 to reserve the capacity of Tier 1. (4) DC/CC runs in the parity group that belongs to the pool in Condition of occurrence (2).
	Category	Dynamic Provisioning, Dynamic Tiering, active flash, Thin Image
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
19	Title	Failure of system lock processing for maintenance operation
	Symptoms	<p>When the time synchronizing processing worked during a maintenance operation, the following phenomena occurred.</p> <p>Phenomenon1</p> <p>System lock was released if an hour passed after starting the maintenance operation, so that a maintenance operation from Maintenance Utility on a different browser was enabled and the ongoing and upcoming maintenance operations might fail.</p> <p>Phenomenon2</p> <p>If a different user logged into Maintenance Utility on a different browser, a message indicating that there was an ongoing maintenance operation was not displayed.</p>
	Conditions of Occurrence	The problem occurs when the time synchronizing processing works during a maintenance operation.
	Category	Open
	Products and Versions Affected	<p>GUM:</p> <p>G800, F800: 83-01-21/00 and higher</p> <p>G400, G600, F400, F600: 83-01-21/00 and higher</p> <p>G200: 83-01-21/00 and higher</p>

No	Item	Contents
20	Title	MP blockage at I/O to TI S-VOL
	Symptoms	When an I/O was issued to a TI S-VOL, an MP was blocked and SSB=1644 and 32FE and SIM=3073XX were reported.
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) TI configuration</p> <p>(2) A read or write I/O is issued to a TI S-VOL.</p> <p>(3) 16 x 1024 LDEVs are defined.</p>
	Category	Thin Image
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: All</p> <p>G400, G600, F400, F600: All</p> <p>G200: All</p>



No	Item	Contents
21	Title	SIM=7D08XX reported
	Symptoms	After GUM reboot, SIM=7D08XX might be reported.
	Conditions of Occurrence	<p>The problem may occur when GUM is rebooted due to one of the following reasons.</p> <p>(1) GUM reboot operation on Maintenance Utility (Selecting Reboot GUM from System Management)</p> <p>(2) Network setting operation on Maintenance Utility (Selecting Network Settings)</p> <p>(3) GUM firmware update</p> <p>(4) Controller or CFM replacement</p> <p>(5) GUM reset using LAN-RST switch</p> <p>(6) Turning the breaker off and on</p>
	Category	Open
	Products and Versions Affected	<p>GUM:</p> <p>G800, F800: All</p> <p>G400, G600, F400, F600: All</p> <p>G200: All</p>

No	Item	Contents
22	Title	Failure of FC-SP audit log display
	Symptoms	Audit logs of FC-SP were not displayed.
	Conditions of Occurrence	<p>The problem occurs when all the following conditions are met.</p> <p>(1) FC-SP authentication is enabled. (DW-F800-2HF16 and DW-F800-4HF8 only)</p> <p>(2) The target port is linked up.</p>
	Category	Open
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: 83-03-01-60/00 and higher</p> <p>G400, G600, F400, F600: 83-03-01-40/00 and higher</p> <p>G200: 83-03-01-20/00 and higher</p>

No	Item	Contents
23	Title	Failure of sending audit log to SYSLOG server
	Symptoms	After an audit log was issued, the audit log was not sent to the SYSLOG server so that the log was not stored in the SYSLOG server.
	Conditions of Occurrence	The problem occurs when dirty data remains in internal I/F table due to a communication that takes place before an audit log is issued.
	Category	Open
	Products and Versions Affected	DKCMAIN: G800, F800: 83-03-01-60/00 and higher G400, G600, F400, F600: 83-03-01-40/00 and higher G200: 83-03-01-20/00 and higher

No	Item	Contents
24	Title	Unintentional release of system lock/resource lock
	Symptoms	At an operation that required obtaining a lock, such as LDEV creation from SVP, MPC, or Storage Navigator, the obtained system lock or resource lock was unintentionally released.
	Conditions of Occurrence	The problem may occur when the following operations conflict. (1) An operation that requires obtaining lock, such as LDEV creation from SVP, MPC, or Storage Navigator (2) Processing synchronous with lock status of DKC, that SVP or MPC runs automatically
	Category	Open
	Products and Versions Affected	SVP/MPC: G800, F800: 83-01-21-60/00 and higher G400, G600, F400, F600: 83-01-21-40/00 and higher G200: 83-01-21-20/00 and higher

No	Item	Contents
25	Title	Failure of manual DT relocation
	Symptoms	DT relocation manually performed could not be completed but continued to work.
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) DT or active flash pool</p> <p>(2) Tier relocation is in the manual execution mode.</p> <p>(3) Tiering policy set to DP volume is any of Level 6 to Level 31.</p> <p>(4) The total number of allocated pages of the pool is larger than the total tier capacity excluding the lowest tier (*).</p> <p>* If there are 2 tiers, Tier1, if there are 3 tiers, Tier1 and Tier2.</p> <p>(5) Performance monitoring is complete and tier relocation takes place.</p> <p>(6) The number of allocated pages for tiers except the lowest tier varies after the monitoring is complete.</p> <p>* The amount of variation is 1% or greater to the number of allocated pages for a tiering policy.</p>
	Category	Dynamic Tiering
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
26	Title	Failure of shared memory installation
	Symptoms	After capacity expansion of DP volume failed and then a retry (with less capacity than the first expansion) was successfully completed, shared memory installation was performed but failed. (SSB=AF2C, SIM=624000)

No	Item	Contents
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) DP volume capacity expansion is performed.</p> <p>(2) The above capacity expansion fails due to insufficient shared memory capacity. At that time, SSB=AF2C or SIM=624000 is reported.</p> <p>(3) The value of detailed information Byte40-43 of SIM624000 is 0x00000056 (SIM report case)*, or the value of detailed information Byte46-49 of SSB=AF2C is 0xea0e4000 and Byte 2a is 0x56 (SSB report case).</p> <p>*: It can be confirmed with DX-ray only.</p>
	Category	Dynamic Provisioning, Dynamic Tiering
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: All</p> <p>G400, G600, F400, F600: All</p> <p>G200: All</p>

No	Item	Contents
27	Title	Inadequate messages displayed at sending test with notice function disabled
	Symptoms	<p>The messages below, which were displayed when an Email/Syslog sending test was performed on the Email and Syslog alert notification window while the notice function was disabled, did not mention that the setting was not valid for performing a sending test.</p> <p>Email sending test: 32561-209001</p> <p>Syslog sending test: 32561-209101</p>
	Conditions of Occurrence	<p>The problem occurs when all the following conditions are met.</p> <p>&lt;Email&gt;</p> <p>(1) Email Notice is disabled.</p> <p>(2) [Send Test Email] of the Email tab on the Alert Notifications is clicked.</p> <p>&lt;Syslog&gt;</p> <p>(1) Syslog Server Notice is disabled.</p> <p>(2) [Send Test Message to Syslog Server] of the Syslog tab on the Alert Notifications is clicked.</p>

No	Item	Contents
	Category	Open
	Products and Versions Affected	GUM: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
28	Title	Failures at conflict of Refresh All with specific operation
	Symptoms	The following phenomena occurred due to a conflict with Refresh All.  (1) At an operation with a resource lock, such as LDEV creation, the lock for resource group0 was not released.  (2) At creation of parity group containing FMC drives with accelerated compression enabled, an error occurred.  (3) At display of the LDEV list window, ALU ID and SLU ID were not displayed.
	Conditions of Occurrence	The problem may occur when one of the following operations conflicts with Refresh All.  (1) An operation with a resource lock, such as LDEV creation (2) Creation of parity group containing FMC drives with accelerated compression enabled (3) Display of the LDEV list window
	Category	Open
	Products and Versions Affected	SVP/MPC G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
29	Title	Unintentional I/O mode of GAD pairs change to Block
	Symptoms	When 2 minutes or more has passed after starting consistency group suspension and a path failure occurred between storage systems, SSB=FB0B was logged and the I/O mode of GAD pairs in the CTG might change to Block for both P-VOL and S-VOL.

No	Item	Contents
	Conditions of Occurrence	<p>The problem may occur when all the following conditions are met.</p> <p>(1) One of the following configurations</p> <p>(a) There are multiple CTGs</p> <p>(b) There is one CTG and there are GAD pairs that are not registered to this CTG.</p> <p>(2) A path failure occurs between storage systems.</p> <p>(3) A suspend operation per CTG is performed or a failure suspension per CTG occurs.</p>
	Category	Global-active device
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: 83-03-01-60/00 and higher</p> <p>G400, G600, F400, F600: 83-03-01-40/00 and higher</p> <p>G200: 83-03-01-20/00 and higher</p>

No	Item	Contents
30	Title	Increase in maximum I/O response time
	Symptoms	When the ORM function worked in a configuration where FMC drives were installed, the maximum response time of I/O became 600 msec or longer. (It occurred 12 times with 5-minute interval every 6 hours)
	Conditions of Occurrence	<p>The problem occurs when FMC drives are installed and an I/O (*) is issued to the FMC drives.</p> <p>*: - In the case of read I/O, the probability is high if cache miss occurs.</p> <p>- In the case of write I/O, the probability is low.</p>
	Category	Open
	Products and Versions Affected	<p>DKCMAIN:</p> <p>G800, F800: 83-03-01-60/00 and higher</p> <p>G400, G600, F400, F600: 83-03-01-40/00 and higher</p> <p>G200: 83-03-01-20/00 and higher</p>

No	Item	Contents
31	Title	WCHK1 due to continuous detection of remaining job
	Symptoms	A wrongly remaining job was continuously detected and CHK1B (SSB=1606) continuously occurred.  The continuous detection of remaining job caused the MP to be determined as invalid status and WCHK1 occurred (SSB=32FB, SIM=3080XY (*)) in the MP.  X= MPU#, Y=MP# in MPU
	Conditions of Occurrence	The problem may occur when all the following conditions are met.  (1) TC, UR, UVM, or GAD configuration (2) A job remains for some reasons. (Internal condition)
	Category	TrueCopy, Universal Replicator, Universal Volume Manager, global-active device
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

No	Item	Contents
32	Title	Failure reset at I/O to a TC or GAD pair
	Symptoms	During I/O to a TC or GAD pair, a failure reset (CHK1B) occurred. (SSB=1606, 1607)
	Conditions of Occurrence	The problem may occur when all the following conditions are met.  (1) TC or GAD configuration with HMO51 set to ON (2) CHB used for a remote path of TC or GAD configuration is (a) or (b) (a) 8F FC (DW-F800-4HF8) (b) 16G FC (DW-F800-2HF16)
	Category	TrueCopy, global-active device
	Products and Versions Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All

## Acronyms and abbreviations

3DC	three data center
ASP	authorized service provider
CCI	Command Control Interface
CL	cluster
CLI	command line interface
CM	cache memory
CRC	cyclical redundancy checking
CSV	Cluster Shared Volumes
CTG	consistency group
CU	control unit
CUDG	control unit diagnosis
DB	drive box
DKA	disk adapter (another name for back-end director)
DKAF	DKA firmware
DKC	disk controller (refers to the entire storage system)
DKCMAIN	disk controller main (refers to the microcode/firmware)
DP	Hitachi Dynamic Provisioning
DP-VOL	Dynamic Provisioning V-VOL
DRU	Hitachi Data Retention Utility
DS	dynamic sparing
DT	Hitachi Dynamic Tiering
DW700	another name for the Hitachi Unified Storage VM
DW800	another name for the Hitachi Virtual Storage Platform Gx00 and Fx00
ECC	error checking and correction
ECN	engineering change notice
EQC	equipment check
FC	fibre channel
FCoE	fibre channel over ethernet
FMC	flash module compression (another name for the FMD DC2 drives)
FMD	flash module drive
FRS	Feature Release Schedule
GPFS	General Parallel File System
GUM	gateway for unified management (another name for the maintenance utility)
HA	high availability
HAM	Hitachi High Availability Manager
HCS	Hitachi Command Suite
HDD	hard disk drive
HDS	Hitachi Data Systems
HDP	Hitachi Dynamic Provisioning
HDT	Hitachi Dynamic Tiering
HDVM	Hitachi Device Manager
HM700	factory model number for Hitachi Unified Storage VM
HM800	factory model number for Hitachi Virtual Storage Platform Gx00 and Fx00



HMO	host mode option
HNAS	Hitachi Network-Attached Storage
HTI	Hitachi Thin Image
HUS VM	Hitachi Unified Storage VM
JNL	journal
JNLG	journal group
LBA	logical block address
LDEV	logical device
LU	logical unit
LUSE	logical unit size expansion
MCU	main control unit
MP	microprocessor
MSCS	Microsoft Cluster Server
PDEV	physical device
PS, P/S	power supply
P-VOL	primary volume
RC	reference code
RCU	remote control unit
SAS	serial-attached SCSI
SI	Hitachi ShadowImage
SIM	service information message
SOM	system option mode
SPM	Hitachi Server Priority Manager
SSB	sense byte
SSD	solid-state drive (also called flash drive)
S-VOL	secondary volume
SVP	service processor
TC	Hitachi TrueCopy
TI	Hitachi Thin Image
TOV	time-out value
TS	Technical Support
UR	Hitachi Universal Replicator
UVM	Hitachi Universal Volume Manager
VM	Volume Migration
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
WWN	worldwide name

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