



Engineering Change Notice

VSP Gx00 models, VSP Fx00 models

ECN # ECN DW800-M058
 Rev # 01
 FCB # n/a
 Date 2017.07.04

Classification	S/W or F/W Changes	Application	S/W or F/W Code Type
Hardware <input type="checkbox"/>	New Features <input type="checkbox"/>	Mandatory <input type="checkbox"/>	Q-Code (GA) <input checked="" type="checkbox"/>
Firmware <input checked="" type="checkbox"/>	Improvements <input checked="" type="checkbox"/>	Recommended <input checked="" type="checkbox"/>	T-Code (Test) <input type="checkbox"/>
Software / Maintenance Tool <input type="checkbox"/>	Bug-Fixes <input checked="" type="checkbox"/>	Optional <input type="checkbox"/>	I-Code (ICS) <input type="checkbox"/>
Documentation <input checked="" type="checkbox"/>	n/a <input type="checkbox"/>		n/a (H/W) <input type="checkbox"/>
(check all that apply)	(check all that apply)	(check only one)	(check only one)

Title

SVOS7.2.0 Q-code update
 G800, F800 : DKCMAIN Ver. 83-04-44-60/00, SVP/MPC Ver. 83-04-44-60/00
 G400, G600, F400, F600 : DKCMAIN Ver. 83-04-44-40/00, SVP/MPC Ver. 83-04-44-40/00
 G200 : DKCMAIN Ver. 83-04-44-20/00, SVP/MPC Ver. 83-04-44-20/00

Purpose

This document is notification about an SVOS7.2.0 Q-code update for HM800.

Description of Release

New microcode for DKC is composed of the following versions.

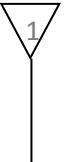
No.	Program	Model	New Version	Previous Version notified by ECN-M057	
1	DKCMAIN	G800, F800	83-04-44-60/00	83-04-42-60/00	
		G400, G600, F400, F600	83-04-44-40/00	83-04-42-40/00	
		G200	83-04-44-20/00	83-04-42-20/00	
2	CHB	FC16G	83-00-01-27	Same as left	
		iSCSI	83-01-01-25	Same as left	
		FC32G	83-03-01-08	Same as left	
3		DKB	83-30-10	Same as left	
4		BOOT(ROM)	-	Same as left	
5		BOOT(RAM)	83-00-05	Same as left	
6		Expander	90-0E-01	Same as left	
7		CONFIG	83-04-44/00	83-04-43/00	
8		CFM	01-44-00-00	Same as left	
			J3-HT-01-02	Same as left	
			00-13-00-00	Same as left	
			GX-M1-00-3Q	Same as left	
9	Drive	VSP Gx00 models only	DKS5C-K/DKS2E-H	00-7F-57/ 00-7F-A6	Same as left/ Same as left
			SLB5B-M/DKR5D-J	00-T2-N5/ 00-GJ-GJ	Same as left/ Same as left
			DKR5E-J/DKS5E-J	00-GC-GC/ 00-7F-0A	Same as left/ Same as left
			DKS5F-J/DKR2E-H	00-7F-08/ 00-GG-GG	Same as left/ Same as left
			NFH1A-P/NFH1B-P	00-K1-30/ 00-K1-30	Same as left/ Same as left
			NFH1C-P/DKR5C-K	00-K1-30/ 00-GK-GK	Same as left/ Same as left
			DKS2F-H/SLR5D-M	00-7F-A6/ 00-A7-A7	Same as left/ Same as left
			SLB5C-M/DKR5G-J	00-T3-07/ 00-HC-HC	Same as left/ Same as left
			DKS5D-K/DKS5H-J	00-7F-05/ 00-7F-A9	Same as left/ Same as left
			SLB5D-M/SLB5E-M	00-T3-08/ 00-T4-04	Same as left/ Same as left
			NFHAE-Q/ NFHAF-Q	00-F3-20/ 00-F3-21	Same as left/ Same as left
NFH1D-P/ DKS2H-H	00-L3-20/ 00-7F-07	Same as left/ -			
10		GUM	83-04-42/00	83-04-41/00	
11		Unified Hypervisor	01-03-06-00	Same as left	
12		NASFWINST	13.2.4527.04	13.2.4527.01	
13		NASFW	13.2.4527.04	13.2.4527.01	



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No.	Program	Model	New Version	Previous Version notified by ECN-M057
14	SVP/ MPC	G800, F800	83-04-44-60/00	83-04-42-60/10
		G400,G600, F400, F600	83-04-44-40/00	83-04-42-40/10
		G200	83-04-44-20/00	83-04-42-20/10
		CONFIG	83-04-44/00	83-04-43/00
15		OSS	83-04-02/00	Same as left
		JRE	1.8.0_74	Same as left
		Apache with SSL	2.4.16 (OpenSSL 1.0.2j)	Same as left
		Perl	5.18.1	Same as left
		Flash	20	Same as left
		Jetty	9.2.10	Same as left
		Putty	0.64	Same as left
Program Management Number		MPC	H8-MPC-04B-04	H8-MPC-04B-02A
		SVP	H8-SVP-04B-04	H8-SVP-04B-02A

*Hatched indicates the changed items from the previous release.

Related Program Versions

Refer to Appendix-G.

Related Document Versions

- (1) Refer to Appendix-B for Maintenance Manual and User's Guides.
- (2) This microcode ECN was verified against the following document revisions, which may not be the highest revision currently available when you need to install microcode or as a reference. Therefore please always obtain the highest revision available to ensure that you have the most current instructions and information.
 - Microcode Exchange Restrictions Rev.27
 - Microcode Exchange Wizard Tool Rev.42
 - Support and Interoperability Document Rev.26

Related Part #s or Products

None

Field Changes

None

Factory Shipment / Effective Date

None

Restrictions

- (1) It is required to judge whether the microcode replacement is available, collect the dump information and then contact the technical support center. (Bug-ID=HM800-0669)
 This restriction applies when:
 - upgrading the microcode from DKCMAIN 83-01-24-x0/00 or earlier to any version.
 - downgrading the microcode from DKCMAIN 83-01-24-x0/00 or earlier to any version.
- (2) When DKCMAIN microcode is upgraded or downgraded to 83-03-21-x0/01, make sure that all resources are not locked. For details, see HM800 Microcode Exchange Restrictions. (Bug-ID=HM800-1181)
- (3) If upgrading or downgrading the firmware online in any one of the following cases for a storage system with NAS modules and CHBs installed, the operation will fail and Unified Hypervisor will be blocked. To make the firmware upgrade or downgrade, perform the operation offline.
 - (a) DKCMAIN: within the version range between 83-03-21-x0/00 and 83-03-24-x0/00 (Unified Hypervisor: 01-02-09-00)
 - (b) DKCMAIN: within the version range between 83-03-25-x0/00 and 83-03-27-x0/00 (Unified Hypervisor: 01-02-0A-00)



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(c) DKCMAIN: from 83-04-01-x0/00 to 83-04-02-x0/00 or 83-04-02-x0/02, or vice versa (Unified Hypervisor: 01-03-04-00)

If offline firmware upgrade or downgrade cannot be performed and an online operation is required, collect a normal dump, and then contact customer support.

- (4) If NAS modules are mounted and NASFW is installed, make sure to enable the HTTP communication port setting first, and then replace the firmware including NASFW.
 If you perform the operation with the HTTP communication port setting disabled, message 33361-005021 is displayed and the firmware replacement ends abnormally. In this case, take the following actions:
- (a) Enable the HTTP communication port setting.
 - (b) After (a), GUM is rebooted. Wait for 5 minutes.
 - (c) Log into Maintenance Utility.
 - (d) Log into NAS Manager using the maintenance account.
 - (e) Retry the firmware replacement.

Export Regulation

HNAS OS and SMU Software (Ver. 12.6 and later): 5D002.c.1 Unrestricted ENC

HNAS specific tools: 5D002.c.1 Unrestricted ENC

DI Image (FPGA Configuration Data): 5D002.c.1 Unrestricted ENC

Unified Hypervisor: 5D992

(NASFW and NASFWINST include HNAS OS and SMU Software. NASFW includes DI Image (FPGA Configuration Data).)

For other items, refer to “The ECCN of the Program Product and Manual for RAID Series” as follows.

For microcode: HM800 P.P sheet

For Maintenance Manual and User Guide: HM800 manual sheet

List of Appendices

Appendix	Appendix Title	File Name	Updated
a	Supported Features and Functions	Apx-ao.docx	Yes
b	Related Documentation	Apx-bo.xlsx	Yes
c	NAS OS and SMU	Apx-co.docx	Yes
e	Change of Contents	Apx-eo-BugFix.xlsx	Yes
f	Program Versions Summary	Apx-fo.xlsx	Yes
g	Related Program Versions	Apx-go.docx	Yes
s	Antivirus Software Support	Apx-so.docx	No

ECN Revision History

Revision	Date	Written/Revised By	Description
0	2017.06.30	-	Initial Release
1	2017.07.04	-	Apx-e: Modified #2 and 5

Appendix-A Supported Features and Functions

1	Support for TI pair creation in DP pool
Description	In addition to a Thin Image pool, a Dynamic Provisioning pool can be specified as a pool used for TI pair creation. TI pairs cannot be created in a DT pool.
Supported Model	All models
Changed Part	DKCMAIN, SVP, Command Control Interface
Note	To downgrade the firmware to an unsupported version, take the steps below. (Online/Offline) <ol style="list-style-type: none"> (1) Delete all TI pairs created in the DP pool. (2) Set SOM 1120 to ON. (3) On the MPC window, change the setting from [Modify Mode] to [View Mode]. (4) Wait for about 30 minutes. <p>New system option mode 1120 is available to disable TI pair creation with DP pool specified and to release cache management device to downgrade the microcode to an unsupported version.</p> <p>Public Mode – No Permission Required to Use</p>
Documented	Maintenance Manual (03 MICRO-FC, 07 SVP, 11. SIM-RC, 14. TROUBLE SHOOTING,), Thin Image User Guide, Provisioning Guide for Open Systems

2	Support for online DKCMAIN replacement with RR part of 83-RR-XX-XX/XX downgraded
Description	When replacing the DKCMAIN firmware with the RR part of 83-RR-XX-XX/XX downgraded, the online operation is supported.
Supported Model	All
Changed Part	DKCMAIN
Note	None
Documented	Maintenance Manual (4 FIRMWARE)

3	Support for compatible drives
Description	The following HDDs are supported as compatible drives. <ul style="list-style-type: none"> - DKS5E-K300SS - DKS5E-K600SS <p>Note: This information is only intended to show microcode support for future drives (not yet shipped) that will be compatible with existing models. When the drives are shipped, hardware ECNs containing more details about shipping dates and drive compatibility will be issued.</p>
Supported Model	G200, G400, G600, G800
Changed Part	Config
Note	None
Documented	Maintenance Manual (3 OPTION & MICROVERSION, 5 THEORY OF

	OPERATION, 7 INSTALLATION, 10 ACC (ACTION CODE), 14 REPLACE, 17 PARTS CATALOG)
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4	Support for CCI version 01-41-03/05 (previous version 01-41-03/03)
Description	The following functions are supported: <ul style="list-style-type: none"> - TI pair creation with a DP pool specified is available. - The -t option is added to the pairsplit command.
Supported Model	All models
Changed Part	Command Control Interface
Note	None
Documented	Command Control Interface Command Reference

5	Support for drive microcode (DKS2H- H4R0SS/H6R0SS)
Description	DKS2H-H4R0SS/H6R0SS drive microcode (version 00-7F-07) is supported.
Supported Model	All models
Changed Part	Drive
Note	None
Documented	None

6	Support for stopping LDEV format by other than maintenance personnel
Description	Stopping an LDEV format operation, which currently only maintenance personnel can perform, is enabled for other users than maintenance personnel.
Supported Model	All models
Changed Part	SVP
Note	None
Documented	Provisioning Guide, Maintenance Manual (8 MAINTENANCE PC)

	Document Title	SVOS7.2.0		Remark
		PDF	Online Help	
1	Storage Navigator User Guide	stnHM8e044b.pdf	Available	FSD process
2	Provisioning User Guide (Open System)	pvoHM8e044d.pdf	Available	FSD process
3	Performance Manager User Guide	perHM8e044b.pdf	Available	FSD process
4	Volume Migration	vmiHM8e044a.pdf	Available	
5	Volume Shredder User Guide	vshHM8e042b.pdf	Available	FSD process
6	ShadowImage User Guide	sioHM8e044b.pdf	Available	FSD process
7	SNMP Agent User Guide	snmHM8e042c.pdf	Available	FSD process
8	Storage Navigator Messages	msgHM8e044b.pdf	-	No need for OLH.
9	Universal Volume Manager User Guide	uvmHM8e044b.pdf	Available	FSD process
10	Thin Image User Guide	htiHM8e044c.pdf	Available	FSD process
11	TrueCopy User Guide	tcoHM8e044b.pdf	Available	FSD process
12	Audit Log User and Reference Guide	audHM8e044c.pdf	Available	
13	Universal Replicator User Guide	uroHM8e044b.pdf	Available	FSD process
14	CCI Installation & Configuration User Guide	ccchM8e042d.pdf	-	No need for OLH.
	CCI User's Guide	cciHM8e044b.pdf	-	No need for OLH.
16	CCI Reference Guide	cmrHM8e044e.pdf	-	No need for OLH.
17	Document Map	mapHM8e042b.pdf	-	
18	Encryption License Key User Guide	darHM8e042d.pdf	Available	FSD process
19	Global-active device User Guide	gadHM8e044b.pdf	Available	FSD process
20	Nondisruptive Migrationn Operation Manual	ndmHM8e044a.pdf		

Maintenance Manual

Rev. 8.2 for DW800 Maintenance Manual

Document Title

Appendix-C NAS OS and SMU

To release NAS OS: 13.2.4527.04 and SMU: 13.2.4527.04 updated software for the following hardware platforms:

- Hitachi VSP G400, G600, G800 with NAS Module
- Hitachi VSP F400, F600, F800 with NAS Module

This release of NAS OS and SMU v13.2 includes server update (SU) 13.2.4527.04 and SMU 13.2.4527.04. This release includes new features and enhancements and addresses several issues.

SU 13.2.4527.04 firmware replaces all earlier versions of the NAS OS firmware for the supported platforms.

The SMU release 13.2 uses the CentOS 6.2 operating system.

Estimated Installation Time: < 2 hours

System Restart Required: Yes, for both SU and SMU systems

Data Transfer Required: No

(1) Software

Software	New Version	Previous Version
NAS OS	13.2.4527.04	13.2.4527.01
SMU	13.2.4527.04	13.2.4527.01

(2) Restrictions

Point build upgrades do not require a complete cluster reboot and can be done as a rolling upgrade.

The SU and SMU firmware that comprise the NAS OS are interdependent. Newer versions of 13.x SMU code can manage predecessor versions of SU code or appropriately matched code levels as described in “(3) SMU Compatibility Chart”. The noted release levels should be installed on the storage server.

(3) SMU Compatibility Chart

SMU Code Level	Manageable NAS OS Code Level(s)
13.2	13.2 -> 13.0, 12.x
13.1	13.1 -> 13.0, 12.x
13.0	13.0 -> 12.x
12.7	12.7 -> 12.6
12.6	12.6

(4) NAS Module

NAS Module

Part Number	Product Descriptions
DW-F800-NAS.P	NAS Blade

NAS Module Media Kits

Part Number	Product Descriptions
044-236173-01.P	VSP G400-600 - NAS Enterprise Virtual Server - Media Kit
044-236154-01.P	VSP G400-600 - NAS Local Replication - Media Kit
044-236156-01.P	VSP G400-600 - NAS Mobility - Media Kit
044-236155-01.P	VSP G400-600 - NAS Remote Replication - Media Kit

Part Number	Product Descriptions
044-236153-01.P	VSP G400-600 - NAS SVOS - Media Kit
044-236166-01.P	VSP G400-600 - Unified Data Mobility - Media Kit
044-236164-01.P	VSP G400-600 - Unified Local Replication - Media Kit
044-236165-01.P	VSP G400-600 - Unified Remote Replication - Media Kit
044-236163-01.P	VSP G400-600 - Unified SVOS - Media Kit
044-236161-01.P	VSP G800 - NAS Data Mobility - Media Kit
044-236159-01.P	VSP G800 - NAS Local Replication - Media Kit
044-236160-01.P	VSP G800 - NAS Remote Replication - Media Kit
044-236158-01.P	VSP G800 - NAS SVOS - Media Kit
044-236171-01.P	VSP G800 - Unified Data Mobility - Media Kit
044-236169-01.P	VSP G800 - Unified Local Replication - Media Kit
044-236170-01.P	VSP G800 - Unified Remote Replication - Media Kit
044-236168-01.P	VSP G800 - Unified SVOS - Media Kit

(5) New features

None

(6) Issues Addressed in this Release**Customer Facing Issues**

The following list summarizes the higher severity customer reported issues addressed in this release.

Issue ID	Sev	Customer	Summary
130410	B	KABEG	Improved handling of cluster-join operation, avoiding a possible loss of Admin EVS configuration, including licensing.
129524	C	T-Systems	Fixed a stack overflow issue related to IPv6 cache flushing.
130531	C	Lancaster University	Fixed an issue where Data Migrator to Cloud EXCLUDE rules, with more than two sub directories, wrongly excluded the entire first element of the exclude statement.

Non-Customer Facing Issues

The following list summarizes the issues that have been addressed in this release.

Issue ID	Sev	Summary
130000	D	Free-space bitmap cache flushing now starts as soon as freed-blocks list processing is completed for a checkpoint even if the list is not processed in full.

Enhancements

The following list summarizes the enhancements addressed in this release.

Issue ID	Sev	Customer	Summary
86774	C	Citibank	It's now possible to use IBM Cloud Object Storage as a Data Migrator to Cloud provider. IBM Cloud Object Storage was previously known as CleverSafe.
130496	D	UBS	Introduces a new console command "krb5-nfs-principal-format", to provide a configuration option to support environments where the same user account is used from different machines, producing multiple Kerberos principals that need to map to a single user.

(7) Export Regulation

ECCN: 5D002 c.1

License Exception: ENC Unrestricted

Export Authorization: ERN R100166 under §740.17(b)(1)

No.	1
Product Name	VSP Gx00
BugID	HM800-1711
Title	When storage system is booted after replacing controller chassis, CFM is blocked, and SM is volatilized
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When the storage system is booted after replacing controller chassis, CFM is blocked, SM is volatilized, and all LDEVs are blocked. In a DP configuration, the mapping information of all DP volumes is lost.
Symptoms	When the storage system is booted after replacing controller chassis, CFM is blocked (SIM=30750X (X:CTL#)), SM is volatilized (SIM=FFE700), and all LDEVs are blocked. In a DP configuration, mapping information of all DP volumes is lost.
ConditionsOfOccurrence	The problem occurs when all the following conditions are met. (1) All models (VSP G200, G400, G600, G800, VSP F400, F600, F800) (2) All versions of microcode from initial release. (3) Replacing chassis is performed based on maintenance manual chapter 2.17 "Replacing a Controller Chassis/Drive Box".
CauseForFailure	Microcode guard logic failure at storage system boot-up after replacing controller chassis
SeverityOfFailure	High
ProbabilityOfFailure	High
BugImpact	Data inconsistency
RecoveryFromProblem	When SM is volatilized (SIM=FFE700) after replacing controller chassis, do not perform PSOFF operation. Forcibly stop the AC power supply (turn the circuit breaker to OFF), and replace the controller chassis with original controller chassis. Based on the failure state in the customer's configuration, collect the dump and contact the technical support organization.
TemporaryCircumvention	Do not perform replacing controller chassis. If replacing controller chassis is required, contact technical support.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	HM800-EN-H006
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open

AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	2
Product Name	VSP Gx00
BugID	HM800-1726
Title	When the capacity saving function is used, available pool capacity wrongly decreases, and data saving rate is reduced
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	The used capacity of a pool containing a virtual volume with Compression and Deduplication set increases and Saving Effect declines.
Symptoms	When the capacity saving function is used, the available capacity of the pool that contains a virtual volume with Deduplication and Compression enabled continues to decrease. As a result, SIM indicating the threshold of used pool capacity exceeded (Warning threshold exceeded: SIM=620XXX, Depletion threshold exceeded: SIM=626XXX) might be reported. If additional pool capacity is not installed after the threshold is exceeded, and the phenomenon continues to occur, the used pool capacity reaches 99%, and the access performance might be significantly degraded. Furthermore, when the pool capacity is full, write access from the host is disabled. In addition, the value of Saving Effect (%) that is displayed in the Storage Navigator window is reduced or becomes 0%.
ConditionsOfOccurrence	When all the following conditions (1), (2), and (3) are met, or when all the following conditions (1), (2), and (4) are met, the failure might occur. (1) HM800 DKCMAIN Ver. 83-04-01-x0/00 and later is used. (2) A virtual volume with Deduplication and Compression enabled is used. (It does not occur with a virtual volume with Compression enabled.) (3) Updated data comes in the area where data is newly written to the above virtual volume but since then no data is written to the same area for a certain period. (Note): Monitoring time until the compression and deduplication processing starts. With Ver. 83-04-41-x0/00 and later, it is five minutes. With earlier than Ver. 83-04-41-x0/00, it is one hour or more. (4) Dynamic Tiering is used.
CauseForFailure	The failure is caused by a microcode bug in the garbage collection processing in the capacity saving function.
SeverityOfFailure	High
ProbabilityOfFailure	High: 83-04-41-x0/00 and later Low: Earlier than 83-04-41-x0/00
BugImpact	Functional failure and performance degradation
RecoveryFromProblem	The modified code will be released in the following two phases. [Modified code (1)]: The problem is fixed, and no area in the pool is wrongly occupied after applying Modified code (1). [Modified code (2)]: In addition to [Modified code (1)], the area in the pool that is wrongly occupied is freed. The code is to be issued by the middle of July 2017. Until [Modified code (2)] is released, perform the following (1) to (3). (1) Disable the data reduction function for the volume with Deduplication and Compression enabled. (2) Replace the microcode with [Modified code (1)]. (3) Enable the data reduction function again.

TemporaryCircumvention	(a) When Deduplication and Compression is enabled for a virtual volume, and an update write I/O is issued to the volume, set SOM 1113 to ON until the modified microcode is applied. Note: To apply SOM1113, permission by Technical Support is required. (b) For virtual volumes whose capacity saving setting is not Compression and Deduplication, do not set Compression and Deduplication.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	1
ECN_ReleaseDate	07/04/2017
ESC_CTSC_APSC_LOG_ID	R800-101195
HDS_SupportCaseID	HDS04289810
RelatedOS	N/A
RelatedEarlyNoticeNumber	HM800-EN-M016
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	3
Product Name	VSP Gx00
BugID	HM800-1687
Title	In maintenance operation/Thin Image operation after parity group removal fails, shared memory blockage and PIN occur
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	<p>WCHK1(*1) occurs while a parity group is being removed. If CTL is replaced to recover the MP that is blocked due to WCHK1, CTL blockage fails.</p> <p>After that, if a maintenance operation/Thin Image operation is performed, shared memory blockage and PIN occur.</p>
Symptoms	<p>Shared memory blockage and PIN (hereinafter referred to as Phenomenon 2), which are critical problems, occur when one of the operations (1) to (10) in ConditionsOfOccurrence (Phenomenon 2) is performed after the following Phenomenon 1 occurs.</p> <p>The following describes Phenomenon 1 and Phenomenon 2 in the order they occur.</p> <p>(Phenomenon 1) When WCHK1(*1) occurs while a parity group is being removed, SSB=549C and 75C1 might be output frequently. If CTL is replaced to recover the MP that is blocked due to WCHK1, MSG#=30762-208330 is reported, and CTL blockage fails. At the time, SSB=985A, 9F02, and 3274 are output.</p> <p>(*1) If the operation that is described in (7.4) in ConditionsOfOccurrence (Phenomenon 1) is performed for LDEV that is defined in a parity group of drives larger than 8TB (DKR2H-H10RSS and NFHAF-Q13RSS), WCHK1 (SSB=1644) might occur.</p> <p>(Phenomenon 2) After Phenomenon 1 occurs, if one of the operations (1) to (10) in ConditionsOfOccurrence (Phenomenon 2) is performed, temporary blockage of the entire shared memory area (SIM=ffee0x, x=0 or 1) and blockage of the entire shared memory area (SIM=ffe20x, x=0 or 1) might occur, and PIN might occur (SIM=ff4xyy)</p>

ConditionsOfOccurrence	<p>(Phenomenon 1)</p> <p>When all the following conditions (1) to (4) are met, Phenomenon 1 might occur.</p> <p>(1) HM800 DKCMAIN 83-01-01-x0/00 and later</p> <p>(2) LDEV is installed in a parity group.</p> <p>(3) The parity group in (2) is removed.</p> <p>(4) While the parity group is being removed in (3), WCHK1(*3) occurs.</p> <p>(*3) A factor (hardware failure etc.) other than WCHK1 that occurs when all the following conditions (5) to (7) are met could be the cause of Phenomenon 1.</p> <p>WCHK1 might occur when all the following conditions (5) to (7) are met.</p> <p>(5) HM800 DKCMAIN 83-04-01-x0/00(SVOS7.0) and later</p> <p>(6) Quick Format is performed for LDEV that is defined in the parity group of drives larger than 8TB (DKR2H-H10RSS and NFHAF-Q13RSS)</p> <p>(7) One of (7.1) to (7.5) is performed for LDEV for which Quick Format is not complete.</p> <p>(7.1) Preparing Quick Format is stopped (*4)</p> <p>(7.2) LDEV for which Quick Format is running is removed (*4)</p> <p>(7.3) After LDEV for which Quick Format is running is blocked, normal LDEV format is performed (*4)</p> <p>(7.4) A parity group that contains LDEV for which Quick Format is running is removed</p> <p>(7.5) LDEV for which Quick Format is running is added to a pool (*4)</p> <p>(*4) If the parity group that contains the LDEV contains any LDEV for which Quick Format is running, there is no problem.</p> <p>If WCHK1 occurs when all the conditions (5), (6), (7.4) are met here, all the conditions (1) to (4) are always met.</p>
CauseForFailure	A failure of internal processing sequence at maintenance operation in failure recovery processing
SeverityOfFailure	High
ProbabilityOfFailure	Medium
BugImpact	Phenomenon 1: Performance degradation Phenomenon 2: Data inconsistency
RecoveryFromProblem	<p>(Phenomenon 1)</p> <p>Recover the CTL in which WCHK1 occurs by self-replacement. (MSG#=30762-208330 is reported, and CTL blockage fails, but the CTL can be recovered by performing CTL replacement again.) A shell batch is required for recovering the configuration information. Call the technical support organization. After the recovery is complete, replace the microcode with the modified one.</p> <p>(Phenomenon 2)</p> <p>A shell batch is required for recovering the configuration information. Call the technical support organization. After the recovery is complete, replace the microcode with the modified one.</p>
TemporaryCircumvention	<p>Perform both 1 and 2:</p> <p>1. For the storage system in which Phenomenon 1 occurs, do not perform the operations (1) to (10) in ConditionsOfOccurrence (Phenomenon 2) The tool to identify whether Phenomenon 1 occurs from the dump will be provided.</p> <p>2. Do not perform any operation that meets all the conditions of occurrence (5), (6), and (7.4) in ConditionsOfOccurrence (Phenomenon 1) To remove a parity group, remove all LDEVs in the parity group in advance.</p>
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0

ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	HM800-101215
HDS_SupportCaseID	HDS04306725
RelatedOS	N/A
RelatedEarlyNoticeNumber	HM800-EN-M013
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	4
Product Name	VSP Gx00
BugID	HM800-1672
Title	Frequent pinned slot error
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	After removing an SSW, pinned slot errors occur frequently.
Symptoms	After removing an SSW, the SAS port connected to the SSW was not blocked but pinned slot errors occurred frequently.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) One of 2 drive ports is blocked. (SAS port blockage or DKA blockage for example) (2) A SAS port failure (such as SSW removal) occurs, which should lead to SAS port blockage and then LDEV blockage, but the block processing is disabled incorrectly.
CauseForFailure	A failure in specification when addressing an SSW failure in back-end control
SeverityOfFailure	High
ProbabilityOfFailure	Low
BugImpact	Data inconsistency
RecoveryFromProblem	Restore the blocked SAS ports by following SIIM=CF12XX, and then restore the blocked LDEVs or failed tracks in accordance with the recovery procedure in TROUBLE SHOOTING SECTION of MM.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R700-100464
HDS_SupportCaseID	HDS03850915
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	5
Product Name	VSP Gx00
BugID	HM800-1721
Title	After SAS port blockage, host response is delayed, and system goes down
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	After SAS port blockage occurs, the host detects I/O timeout, and then access loss occurs.
Symptoms	After SAS port blockage (SIM RC=CF12XX) occurs, the host detects I/O timeout, and then access loss occurs.
ConditionsOfOccurrence	When all the following conditions (1) to (3) are met, the failure might occur. (1) DKCMAIN: 83-01-01-x0/00 and later (2) The SAS port blockage processing is performed. (SAS port blockage due to a failure (*1)) (3) A failure (SAS I/F failure, and so on) that causes the reset processing occurs under the SAS port that is paired with the SAS port which is blocked in (2). (*1) The SAS port blockage processing at the time of DKB replacement and ENC replacement is not applicable.
CauseForFailure	During the drive reset processing (a) that is performed because of SAS port blockage, the reset processing (b) that is performed because of a SAS I/F failure starts due to a microcode bug.
SeverityOfFailure	High
ProbabilityOfFailure	Low
BugImpact	Access loss
RecoveryFromProblem	Perform the following operations (1) and (2). (1) Replace ENC according to SIM indicating SAS port blockage. (2) Replace the ENC that is paired with the ENC which was replaced in (1).
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	1
ECN_ReleaseDate	07/04/2017
ESC_CTSC_APSC_LOG_ID	R800-101281, HM700-101335
HDS_SupportCaseID	HDS04339398, HDS04325117
RelatedOS	N/A
RelatedEarlyNoticeNumber	HM800-EN-M015
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	6
Product Name	VSP Gx00
BugID	HM800-1694
Title	Failure of SI pair split and failure suspension
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-01-21-60/00 and later G400, G600, F400, F600: 83-01-03-40/00 and later G200: 83-01-03-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	SI pair split with consistency specified fails and the SI pair is suspended due to failure.
Symptoms	During a split operation with a consistency containing a virtualized LDEV (*) specified for an SI pair, after a newly created LU (LDEV) was added to the config and a pair was created, pairsplit from CCI failed and the SI pair was suspended due to failure (PSUE). At the time SSB=20F4 or 20F5 was logged. (*) The virtualized LDEV is not a DP volume but an LDEV with a virtual ID that is different from the ID originally assigned to the LDEV.
ConditionsOfOccurrence	The problem occurs when all the following conditions are met. (1) ShadowImage (2) In the CCI config (horcm.conf), a P-VOL or/and S-VOL of a pair described in the top of an SI pair group are virtualized LDEVs. (3) A consistency group is set for the SI pair of (2). (4) After the SI pair of (2) is created, other SI pairs on the storage system are deleted, and then SI pairs are newly added to the SI pair group of (2). (5) Pair split with consistency group specified is performed for the SI pair group of (2).
CauseForFailure	A failure of internal processing sequence at SI pair split with CTG specified with SI function
SeverityOfFailure	Medium
ProbabilityOfFailure	High
BugImpact	Functional failure
RecoveryFromProblem	Resynchronize the suspended pair.
TemporaryCircumvention	To add a new pair to a consistency group, use LDEVs to which default virtual IDs are set to create a pair, add the pair to the top of an SI pair group in CCI config (horcm.conf), and then restart HORCM.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R800-101104
HDS_SupportCaseID	HDS04262768
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	ShadowImage
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	7
Product Name	VSP Gx00
BugID	HM800-1680
Title	SSB=9CDE and write PIN remaining
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	SSB=9CDE may be logged. If the SSB is logged and a pinned slot occurs in the target drive, write PIN remains.
Symptoms	SSB=9CDE, which was for Drive Copy or Copy Back completion, might be logged. Also, if SSB=9CDE was logged and the target drive had a pinned slot, the write PIN was not post-processed but remained.
ConditionsOfOccurrence	The problem occurs when Drive Copy or Copy Back is performed for a parity group that belongs to a pool associated with virtual volumes with capacity saving enabled.
CauseForFailure	A failure of internal processing sequence at maintenance operation on back-end control
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Functional failure
RecoveryFromProblem	Only SSB output: Apply the modified firmware. Write PIN remaining: Perform Correction Copy.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	8
Product Name	VSP Gx00
BugID	HM800-1685
Title	Data unreadable after stopping LDEV formatting
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When LDEV formatting for a virtual volume with capacity saving enabled is stopped, the data of a different virtual volume with capacity saving enabled that has duplicated data may become unreadable.
Symptoms	When LDEV formatting for a virtual volume with capacity saving enabled was stopped, the data in a different virtual volume with capacity saving enabled that had duplicated data might become unreadable. SSB=F497, F584, F51A
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Virtual volumes with capacity saving enabled are used. (2) LDEV formatting is stopped.
CauseForFailure	A failure of specification at maintenance operation with capacity saving
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Access loss
RecoveryFromProblem	Restore the LDEV for which LDEV formatting has been stopped from blockage.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	9
Product Name	VSP Gx00
BugID	HM800-1690
Title	WCHK1 and MP blockage at removal of LDEV in Quick Format process
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When an LDEV in Quick Format process is removed, WCHK1 occurs and an MP is blocked.
Symptoms	While Quick Format was performed for an LDEV defined in a parity group consisting of over-8TB drives, if the LDEV was removed before Quick Format was complete, WCHK1 occurred (SSB=1644) and an MP was blocked..
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Quick Format is performed for an LDEV defined in a parity group consisting of over-8TB drives. (2) One of the following operations is performed for the LDEV where Quick Format is not yet complete. - Cancelling Quick Format in preparation process (*) - Removing the LDEV in Quick Format process (*) - Blocking the LDEV in Quick Format process and then performing normal format for the LDEV (*) - Deleting the parity group containing the LDEV in Quick Format process - Adding the LDEV in Quick Format process to a pool * If there are any other LDEVs remaining in Quick Format process in the same parity group, the problem does not occur.
CauseForFailure	A failure of incorrect memory access at maintenance operation on back-end control
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Blockage
RecoveryFromProblem	Restore the blocked MP.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	HM800-101215
HDS_SupportCaseID	HDS04306725
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	10
Product Name	VSP Gx00
BugID	HM800-1701
Title	Difference in processing time of Quick/Steady Split/Normal Resync
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	There is up to 5 minutes difference in the processing time of Quick/Steady Split or Normal Resync even when the operation is performed under the same condition. The microcode is modified to shorten the difference in the processing time.
Symptoms	Even when Quick/Steady Split or Normal Resync was performed under the same condition, there was up to 5 minutes difference in the processing time.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) ShadowImage (2) Local replica option #24 (Quick/Steady Split Multiplexing) or #26 (Normal Resync Multiplexing) is enabled, or system option mode 791 is set to ON. (3) One of the following operations is performed. (a) Quick/Steady Split while the pair is in COPY (RD)/COPY status (b) Normal Resync while the pair is in COPY (SP)/COPY or PSUS (SP)/PSUS (c) Quick/Steady Split while the pair is in PAIR status
CauseForFailure	A failure of internal processing sequence at copy processing with local copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Performance degradation
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	ShadowImage
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	11
Product Name	VSP Gx00
BugID	HM800-1712
Title	GAD P-VOLs with different I/O modes
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	GAD P-VOLs whose I/O mode is Block and those whose I/O mode is Local coexist in GAD pairs of the same consistency group.
Symptoms	During I/O to GAD pairs, if all paths from P-VOLs to S-VOLs or from S-VOLs to P-VOLs were blocked and the pairs were suspended due to failure, P-VOLs whose I/O mode was Block and those whose I/O mode was Local coexisted in the GAD pairs of the same consistency group.
ConditionsOfOccurrence	The problem occurs when all the following conditions are met. (1) GAD CTG configuration (2) An I/O is issued to GAD pairs. (3) All paths from P-VOLs to S-VOLs or S-VOLs to P-VOLs are blocked.
CauseForFailure	A failure of specification at path failure between storage systems with remote copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Failure-processing failure
RecoveryFromProblem	Restore the GAD pairs in accordance with the procedure in the Global-Active Device User Guide.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R800-100919
HDS_SupportCaseID	HDS04209125
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Global-active device
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? Both (3) Recommendation of installing the modified code for TC. None

No.	12
Product Name	VSP Gx00
BugID	HM800-1713
Title	Failure of LU path definition
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-01-21-60/00 and later G400, G600, F400, F600: 83-01-21-40/00 and later G200: 83-01-21-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	LU path definition for an LDEV with ALU attribute fails with message 01005-208548.
Symptoms	When LU path definition was performed for an LDEV with ALU attribute on Storage Navigator, some of LU paths were not defined. Storage Navigator message 01005-208548
ConditionsOfOccurrence	The problem occurs when all the following conditions are met. (1) LU path definition is performed from Storage Navigator (*). (2) An LDEV with ALU attribute is specified for LU path definition. (3) Ports across 4 CHBBs are specified for LU path definition. * LU path definition for an LDEV with ALU attribute cannot be performed from CCI.
CauseForFailure	A failure of internal processing sequence at VASA pre-check with LU path definition
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Functional failure
RecoveryFromProblem	Dummy replace an arbitrary controller and then retry LU path definition for the ports whose path definition is not yet complete.
TemporaryCircumvention	Specify ports within 3 CHBBs.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	LUN Manager
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	13
Product Name	VSP Gx00
BugID	HM800-1723
Title	Failure suspension of UR pair
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	After UR pair creation, the pair is suspended due to failure. The firmware is modified to log SSB=F910 and/or F911 for information enhancement in this case.
Symptoms	After UR pair creation, NoJNCB occurred (SSB=EAE) and the pair was suspended due to failure.
ConditionsOfOccurrence	Occurrence condition is unknown because the cause is not yet clarified.
CauseForFailure	A failure of communication processing with remote copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Failure suspension
RecoveryFromProblem	Resynchronize the suspended pair.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R800-100927
HDS_SupportCaseID	HDS04211226
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Universal Replicator
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? Both (3) Recommendation of installing the modified code for TC. None

No.	14
Product Name	VSP Gx00
BugID	HM800-1705
Title	Failure of clone copy and TI pair deletion
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-23-60/00 and later G400, G600, F400, F600: 83-04-23-40/00 and later G200: 83-04-23-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	Clone copy and TI pair deletion performed while the cache write pending rate exceeds 60% are disabled.
Symptoms	While the cache write pending rate exceeded 60%, if clone copy was performed for multiple TI pairs, or some of TI pairs (PSUP status) in clone copy process were deleted, the operation was disabled.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) The operating rate of an MPU that has the ownership of the P-VOL is 80% or higher, the operating rate of an MPU that has the ownership of the S-VOL is 80% or higher, or the cache write pending rate is 60% or higher. (2) Clone copy for TI pairs or deletion of TI pairs in PSUP status is performed.
CauseForFailure	A failure of internal processing sequence at maintenance operation with local copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Medium
BugImpact	Functional failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Perform clone copy or delete TI pairs while the operating rate of MPUs that have the ownership of P-VOL and S-VOL is lower than 80%, and the cache write pending rate is lower than 60%.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Thin Image
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	15
Product Name	VSP Gx00
BugID	HM800-1675
Title	De-staging disabled after pool full
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-03-01-60/00 and later G400, G600, F400, F600: 83-03-01-40/00 and later G200: 83-03-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	De-staging is disabled after a pool becomes full in a configuration of FMC drives with Accelerated Compression enabled.
Symptoms	After a pool became full, the cache write pending rate rose and the data that could not be de-staged was piled up in cache.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) A parity group where Accelerated Compression is enabled for FMC drives is used for a pool. (2) The pool is physically full.
CauseForFailure	A failure of internal processing sequence with processing when pool is full with DP/DT function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Operate while preventing the pool from being physically full.
WhereFailureWasIdentified	Evaluation
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dynamic Provisioning, Dynamic Tiering
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	16
Product Name	VSP Gx00
BugID	HM800-1677
Title	No SIM=7FFA00 report
Products_and_Versions_Affected	SVP/MPC: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	SVP/MPC: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When only GUM1 is connected from SVP but GUM1 and CTL2 are not connected, SIM=7FFA00 cannot be reported.
Symptoms	When only GUM1 was connected from SVP but GUM1 and CTL1 were not connected, SIM=7FFA00 could not be reported.
ConditionsOfOccurrence	The problem may occur when one of the following conditions is met. (1) Only GUM1 is connected from SVP and the connection between GUM1 and CTL1 is cut off. (2) Only GUM2 is connected from SVP and the connection between GUM2 and CTL2 is cut off. (3) Both of GUM1 and GUM2 are not connected from SVP.
CauseForFailure	A failure of specification at maintenance operation on SVP
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	SVP/MPC
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	17
Product Name	VSP Gx00
BugID	HM800-1678
Title	No warning message displayed at DKB blockage
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	<p>When a DKB is blocked during battery replacement while a different DKB on the other controller is blocked, a parity group is blocked, half of pool volumes of a pool are blocked, and access from a host to the pool is disabled.</p> <p>The firmware is modified to display message 30762-208194 to prompt the user to restore the blocked parts first before continuing the battery replacement.</p>
Symptoms	<p>During battery replacement of controller board 1, DKB-1F was blocked (SIM=2140XX), but the battery replacement was continued without being aware of the blockage.</p> <p>When battery replacement of controller board 2 was performed after that, DKB-2F was blocked (SIM=2140XX)</p> <p>As a result, a parity group was blocked, half of pool volumes constituting a pool were blocked, and access from a host to the pool was disabled.</p>
ConditionsOfOccurrence	The problem may occur when a maintenance operation is performed for a battery on a controller while the DKB on the other controller is in Failed or Warning status.
CauseForFailure	A failure of specification at maintenance operation
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Restore the blocked DKB, and then replace the battery.
TemporaryCircumvention	First restore the DKB and then replace the battery.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	HM700-100372
HDS_SupportCaseID	HDS04002207
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	18
Product Name	VSP Gx00
BugID	HM800-1681
Title	Failure suspension of GAD pair
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-01-21-60/00 and later G400, G600, F400, F600: 83-01-21-40/00 and later G200: 83-01-21-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	SSB=D36C is logged for multiple LDEVs and a GAD pair is suspended due to failure.
Symptoms	When GAD was used in an Open Reserve environment, SSB=D36C was logged for multiple LDEVs and the GAD pair was suspended due to failure.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Open Reserve environment (2) GAD configuration (3) A host reset or failure reset occurs.
CauseForFailure	A failure of internal processing sequence at host reset with remote copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Resynchronize the pair.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	XP7-100707
HDS_SupportCaseID	SIE122089
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Global-active device
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? RCU (3) Recommendation of installing the modified code for TC. None

No.	19
Product Name	VSP Gx00
BugID	HM800-1682
Title	Failure suspension of SI pair at capacity saving setting change
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When the capacity saving setting is changed during SI pair copy processing, the SI pair is suspended due to failure.
Symptoms	When the capacity saving setting was changed (enable/disable) during SI pair copy processing, the SI pair was suspended due to failure. SIM=47DXYY
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) SI pair copy is in process. (2) During (1), the capacity saving setting is changed (enable/disable) for an LDEV that is different from those of (1)
CauseForFailure	A failure of internal process conflict at maintenance operation with local copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Restore the SI pair in accordance with the procedure in TROUBLE SHOOTING SECTION in Maintenance Manual.
TemporaryCircumvention	Do not perform SI copy and capacity saving setting change at the same time.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	20
Product Name	VSP Gx00
BugID	HM800-1683
Title	Temporary stop of UR copy
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-01-21-60/00 or later G400, G600, F400, F600: 83-01-03-40/00 or later G200: 83-01-03-20/00 or later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	UR copy processing stops temporarily.
Symptoms	UR copy processing stopped temporarily. (The length of stop time varies depending on the internal cache usage by DKCMAIN (such as write pending rate))
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) The microcode version of the UR secondary side is 83-01-03-x0/00 or later. (2) The drives used for journal volumes of the secondary side are not SSD drives. (3) Initial copy or resync copy is performed, or an update I/O is issued to a volume in PAIR status.
CauseForFailure	A failure of internal processing sequence at copy with remote copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Performance degradation
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Use SSD drives for journal volumes on the UR secondary side.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Universal Replicator
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	21
Product Name	VSP Gx00
BugID	HM800-1691
Title	ABEND of Data migration to a virtual volume with capacity saving (Inline)
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-41-60/00 and later G400, G600, F400, F600: 83-04-41-40/00 and later G200: 83-04-41-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	Data migration to a virtual volume with capacity saving (Inline) ends abnormally.
Symptoms	During shrinking of a pool volume with system area, data migration to a virtual volume with capacity saving (Inline) ended abnormally.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Shrinking of a pool volume with system area (2) Data writing to an unallocated area of virtual volume to which capacity saving with Inline mode is enabled
CauseForFailure	A failure of internal processing sequence at maintenance operation with DP/DT function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Access loss
RecoveryFromProblem	As data migration to the virtual volume with capacity saving (Inline) enabled may end abnormally, retry the data migration.
TemporaryCircumvention	To shrink a pool volume with system area, first release the Inline setting for the virtual volume with capacity saving enabled.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	22
Product Name	VSP Gx00
BugID	HM800-1692
Title	MP blockage at simultaneous resource lock and unlock
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When resource group lock and unlock are performed for a locked resource group almost at the same time, an MP is blocked. In addition to the modification of BugID=1650, the microcode is modified to retry the operation when a resource group is not locked to reduce the occurrence frequency of the error.
Symptoms	When resource group lock and resource group unlock were performed for a locked resource group from CCI or RAID Manager Library almost at the same time, invalid access to the memory occurred and an MP was blocked. SSB=2E11, 8303
ConditionsOfOccurrence	The problem may occur when one of the following conditions is met. (1) Resource group lock and resource group unlock are performed from CCI or RAID Manager Library for a locked resource group almost at the same time. (2) Resource group unlock and resource group unlock are performed from CCI or RAID Manager Library for a locked resource group almost at the same time.
CauseForFailure	A failure of internal processing sequence on CCI
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Blockage
RecoveryFromProblem	Recover the blocked MP.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	M055 BugID=1650
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Command Control Interface
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	23
Product Name	VSP Gx00
BugID	HM800-1693
Title	Initial copy tasks exceeding set multiplicity available
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-01-22-60/00 and later G400, G600, F400, F600: 83-01-22-40/00 and later G200: 83-01-22-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	Initial copy tasks exceeding the set multiplicity work.
Symptoms	Even when the multiplicity of initial copy for GAD pairs was set, initial copy tasks exceeding the setting value worked.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Initial copy (all-data copy) or resync (including swap resync) of more GAD pairs than the set multiplicities is performed. (2) There is a TC, UR, or GAD pair in queuing status.
CauseForFailure	A failure of internal process conflict with remote copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R800-101026
HDS_SupportCaseID	HDS04217076
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Global-active device
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? MCU (3) Recommendation of installing the modified code for TC. None

No.	24
Product Name	VSP Gx00
BugID	HM800-1697
Title	Failure suspension of TI pair
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When ownership migration or controller replacement is performed in a configuration where an SI pair and a TI pair are combined, the TI pair is suspended due to failure.
Symptoms	In a configuration where an SI pair and a TI pair were combined, if ownership migration or controller replacement was performed during SI pair copy processing, SSB=9713 was logged and the TI pair was suspended due to failure.
ConditionsOfOccurrence	The problem may occur when the following conditions (1) to (4) or (5) to (8) are met. (1) SI pair P-VOL and TI pair P-VOL are combined. (2) The TI pair of (1) is in PSUS status. (3) The SI pair of (1) is in COPY (RS-R)/RCOPY status. (4) The ownership of an LDEV used for the combined SI or TI pair is migrated or a controller that has the ownership is replaced. (5) SI pair S-VOL and TI pair P-VOL are combined. (6) The TI pair of (5) is in PSUS status. (7) The SI pair of (5) is in PAIR, COPY (SP)/COPY, PSUS (SP)/PSUS, or COPY (RS)/COPY status. (8) The ownership of an LDEV used for the combined SI or TI pair is migrated or a controller that has the ownership is replaced.
CauseForFailure	A failure of interface between internal functions at maintenance operation in SI and TI combination
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Delete the suspended TI pair and then create it again.
TemporaryCircumvention	If the problem occurs when the conditions (1) to (4) are met: Migrate the ownership or replace the controller with the ownership after the Reverse Resync for the SI pair is complete. If the problem occurs when the conditions (5) to (8) are met: Migrate the ownership or replace the controller with the ownership while the SI pair is in PSUS status.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	

HDS_ChangeRequest	
SSD_ChangeRequest	
Category	ShadowImage, Thin Image
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	25
Product Name	VSP Gx00
BugID	HM800-1699
Title	Capacity saving status remains Rehydrating or controller maintenance fails
Products_and_Versions_Affected	DKCMAIN: G800, F800: Phenomenon (1) 83-04-01-60/00 and later, Phenomenon (2) All G400, G600, F400, F600: Phenomenon (1) 83-04-01-40/00 and later, Phenomenon (2) All G200: Phenomenon (1) 83-04-01-20/00 and later, Phenomenon (2) All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	The processing to disable the data in a virtual volume with capacity saving enabled remains in Rehydrating status or the pre-check at controller maintenance turns to NG.
Symptoms	When an MP was reset due to CHK1B, the job wrongly remained and the following phenomena occurred. (1) The processing to disable the data in a virtual volume with capacity saving enabled remained in Rehydrating status. (2) The pre-check at controller maintenance turned to NG. SSB=1607, 1608, 1609, or 160F
ConditionsOfOccurrence	Phenomenon (1) may occur when the following conditions (1) to (4) are met. Phenomenon (2) may occur when the following conditions (3) and (5) are met. (1) 83-04-01-x0/00 or later (2) A virtual volume with capacity saving enabled is defined on a storage system. (3) A failure reset that does not lead to blocking MPs (CHK1B, CHK3, hang-up) occurs. (4) The deduplicated or compressed data status of the virtual volume is released or the virtual volume is removed. (5) A controller maintenance operation is performed.
CauseForFailure	A failure of reset processing at controller failure with capacity saving function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Forcibly remove the controller (for controller maintenance) or forcibly turn the power off and then perform nonvolatile power on.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	26
Product Name	VSP Gx00
BugID	HM800-1700
Title	SSB=01FA logged wrongly when failure slot occurs
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-42-60/00 and later G400, G600, F400, F600: 83-04-42-40/00 and later G200: 83-04-42-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a failure slot occurs during update write I/O, SSB=01FA may be logged wrongly.
Symptoms	When an update write I/O was issued to a virtual volume with capacity saving enabled, if a failure slot occurred in an area to store the update data in cache, SSB=01FA might be logged wrongly.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) The capacity saving function is used. (2) An update write I/O is issued to a virtual volume with capacity saving enabled. (3) A failure slot occurs in an area to store the update data in cache.
CauseForFailure	A failure of internal processing sequence at cache failure with capacity saving function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Message failure
RecoveryFromProblem	Solve the PIN failure by taking the recovery actions in the Maintenance Manual.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	27
Product Name	VSP Gx00
BugID	HM800-1706
Title	UR pair failure suspension and inconsistent pair status
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When UR failover is performed, the pair is suspended due to failure and the pair status becomes inconsistent.
Symptoms	When UR failover was performed, the pair was suspended due to failure and the pair status became inconsistent (P-VOL=PSUE, S-VOL=COPY). SSB=3743, 8F04
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Universal Replicator (2) Failover is performed.
CauseForFailure	A failure of internal processing sequence at maintenance operation with remote copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	For JNL VOLs of MCU and RCU, delete mirrors by specifying Force for Delete Mode on Storage Navigator, and then create the pairs again. If Storage Navigator is not in use, there is no recovery procedure.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	HM800-100396, HM800-100920
HDS_SupportCaseID	HDS04013361, HDS04142397
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Universal Replicator
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? MCU (3) Recommendation of installing the modified code for TC. None

No.	28
Product Name	VSP Gx00
BugID	HM800-1707
Title	Host I/O disabled
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	An error occurs on a host and host I/Os are disabled for 20 minutes in a UR configuration.
Symptoms	In a UR configuration, an error occurred on a host and host I/Os to the storage system were disabled for 20 minutes. The active flash attribute was set for the pool to which journal volumes belonged.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Universal Replicator (2) One of the following events takes place. (a) Rebalance works in a journal volume. (b) Cache or shared memory maintenance operation is performed. (c) Cache or shared memory failure occurs. (d) A read journal command takes a long time (about 100 msec or longer) due to a delay on a path between storage systems.
CauseForFailure	A failure of internal processing sequence at maintenance operation with remote copy function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Performance degradation
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Universal Replicator
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? MCU (3) Recommendation of installing the modified code for TC. None
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No.	29
Product Name	VSP Gx00
BugID	HM800-1709
Title	Wrong access to failure slot
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	A failure slot is accessed wrongly
Symptoms	A failure slot was accessed wrongly.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Capacity saving is used. (2) Accelerated compression is enabled for an FMC drive. (3) A failure slot occurs in an area to store update data.
CauseForFailure	A failure of internal processing sequence at cache failure with capacity saving function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Failure-processing failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	30
Product Name	VSP Gx00
BugID	HM800-1710
Title	Increase in write pending rate and write performance degradation
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-41-60/00 and later G400, G600, F400, F600: 83-04-41-40/00 and later G200: 83-04-41-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a write I/O is issued to a virtual volume with capacity saving enabled, the write pending rate rises and the write response performance may degrade.
Symptoms	When an update write I/O was issued to a virtual volume with capacity saving enabled, the write pending rate rose and the write response performance might degrade.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) The capacity saving function is used. (2) An update write I/O is issued to a virtual volume with capacity saving enabled. (3) Within the area that is used for the previous data writing, update data is written.
CauseForFailure	A failure of internal processing sequence at update write with capacity saving function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Performance degradation
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	31
Product Name	VSP Gx00
BugID	HM800-1715
Title	Wrong controller blockage by correctable error
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-03-01-60/00 and later G400, G600, F400, F600: 83-03-01-40/00 and later G200: 83-03-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	A controller is blocked when correctable errors are detected due to a DIMM failure.
Symptoms	When correctable errors were detected due to a DIMM failure in a controller, even though these errors did not cause the operation to stop so that the operation could continue, the controller was blocked wrongly. SIM=CF88XX, SSB=347A
ConditionsOfOccurrence	The problem may occur when correctable errors are detected frequently due to a DIMM failure.
CauseForFailure	A failure of internal process conflict at controller failure in failure recovery processing
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Blockage
RecoveryFromProblem	Replace the DIMM in accordance with the action code of SIM=FFFOXY that is reported before the controller is blocked.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	32
Product Name	VSP Gx00
BugID	HM800-1717
Title	Abend of host I/O with SSBs logged
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-23-60/00 and later G400, G600, F400, F600: 83-04-23-40/00 and later G200: 83-04-23-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a cache failure occurs during Open host I/O to a pinned slot, SSBs are logged and the I/O ends abnormally.
Symptoms	During Open host I/O to a pinned slot, if a cache failure occurred, SSB=D2B6, D2B7, D2B9, and D2BD were logged, and the I/O ended abnormally.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Open host connection (2) A host I/O is issued to an already existing pinned slot. (3) A cache failure occurs.
CauseForFailure	A failure of internal management table processing at cache failure in open I/O processing
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	To restore the pinned slot, expand the area to which data is written to include one more slot before and after the pinned slot.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	33
Product Name	VSP Gx00
BugID	HM800-1720
Title	Repeated failures of automatic recovery and reboot of MPC Web Console
Products_and_Versions_Affected	SVP/MPC: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	SVP/MPC: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	Automatic recovery and reboot of MPC Web Console that work when there is a failure in the process or window of MPC Web Console may fail 3 times in a row. The firmware is modified as follows in this case: (1) The retry times for the automatic recovery is changed from 3 to 6. (2) The trace information is enhanced in dump.
Symptoms	If there was a failure in the process or window of MPC Web Console, automatic recovery worked, but the automatic recovery failed 3 times in a row, each causing MPC Web Console reboot to fail. Message SVP2631E was reported.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) There is a failure in the process or window of MPC Web Console. (2) Automatic recovery works. (3) The automatic recovery fails 3 times in a row, each causing MPC Web Console reboot to fail.
CauseForFailure	A failure of restart processing with MPC Web Console monitoring on MPC
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Failure-processing failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R800-59074
HDS_SupportCaseID	HDS03577676
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	SVP/MPC

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	34
Product Name	VSP Gx00
BugID	HM800-1722
Title	Failure of controller maintenance
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a controller maintenance operation fails if a volume with capacity saving enabled exists.
Symptoms	When a controller maintenance operation was started while a volume with capacity saving enabled existed, the maintenance operation could not be completed after 4 hours and might fail. SSB=3272
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) The capacity saving function is used. (2) There is a volume with capacity saving enabled. (3) A controller maintenance operation is performed.
CauseForFailure	A failure of internal processing sequence at maintenance operation with capacity saving function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Maintenance failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	35
Product Name	VSP Gx00
BugID	HM800-1727
Title	WCHK1 during I/O to virtual volume with capacity saving enabled
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-41-60/00 and later G400, G600, F400, F600: 83-04-41-40/00 and later G200: 83-04-41-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	During write I/O to a virtual volume with capacity saving enabled, WCHK1 may occur.
Symptoms	During write I/O to a virtual volume with capacity saving enabled, WCHK1 (SSB=1644) might occur.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) An I/O is issued to a virtual volume with capacity saving enabled. (2) The total allocation capacity of all virtual volumes with capacity saving enabled exceeds 7.75 TB.
CauseForFailure	A failure of internal processing sequence with increase in duplicated data with capacity saving function
SeverityOfFailure	Medium
ProbabilityOfFailure	Low
BugImpact	Blockage
RecoveryFromProblem	Restore the blocked MP, and then apply the modified firmware.
TemporaryCircumvention	Set system option mode 1113 to ON.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	36
Product Name	VSP Gx00
BugID	HM800-1679
Title	Failure of controller board replacement
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	Controller board replacement while a CFM is blocked fails.
Symptoms	When a controller board was replaced while a CFM was blocked, message 30762-208182 was displayed and the operation failed.
ConditionsOfOccurrence	The problem occurs when a controller board is replaced while a CFM is blocked.
CauseForFailure	A failure of specification at maintenance operation
SeverityOfFailure	Low
ProbabilityOfFailure	High
BugImpact	Functional failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Perform the controller board replacement while selecting "Forcibly run without safety checks".
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	HM800-100770
HDS_SupportCaseID	HDS04134753
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	37
Product Name	VSP Gx00
BugID	HM800-1689
Title	Insufficient information in dump
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	The information collected in a dump is partially insufficient. The firmware is modified to collect the information necessary for failure analysis in a dump.
Symptoms	The information collected in a dump when a failure occurred was partially insufficient.
ConditionsOfOccurrence	The problem occurs when Auto Dump or WCHK1 DUMP collection takes place.
CauseForFailure	A failure of internal management table processing
SeverityOfFailure	Low
ProbabilityOfFailure	High
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	38
Product Name	VSP Gx00
BugID	HM800-1696
Title	Inappropriate SIM message
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	The message of SIM=AF410X is not appropriate. The message is modified as follows. Before modification: Battery Life Warning After modification: Battery replacement should be scheduled
Symptoms	The message of SIM=AF410X that was a battery lifetime warning was not appropriate.
ConditionsOfOccurrence	The problem occurs when the end of battery lifetime is coming.
CauseForFailure	A failure of specification of SIM message for battery lifetime
SeverityOfFailure	Low
ProbabilityOfFailure	High
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Evaluation
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	ESC-100725
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	39
Product Name	VSP Gx00
BugID	HM800-1698
Title	Unable to solve SFP failure by SFP replacement
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When SIM=21AAXX is reported, replacing the SFP cannot solve the failure. CHB is added to SIM=21AAXX as the second possible failure item.
Symptoms	When SIM=21AAXX that indicated an SFP failure was reported, replacing the SFP did not solve the failure but the failure could be solved by CHB replacement.
ConditionsOfOccurrence	The problem occurs when SIM=21AAXX is reported.
CauseForFailure	A failure of specification at CHB failure in SIM action code
SeverityOfFailure	Low
ProbabilityOfFailure	High
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	When SIM=21AAXX is reported, if the failure cannot be solved by SFP replacement, replace a CHB.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	40
Product Name	VSP Gx00
BugID	HM800-1714
Title	Unavailable dump collection during investigation
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	During investigation using a shell patch, dump cannot be collected in a timely manner. The microcode is modified to report SIM=1C0000 as well in this case, and then the dump cannot be collected automatically in a timely manner.
Symptoms	During investigation using a shell patch, only SSB=3265 was logged but dump could not be collected in a timely manner.
ConditionsOfOccurrence	The problem occurs when an investigation using a shell patch takes place.
CauseForFailure	A failure of specification of function for investigation in failure recovery processing
SeverityOfFailure	Low
ProbabilityOfFailure	High
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Evaluation
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	HM800-100791
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	41
Product Name	VSP Gx00
BugID	HM800-1716
Title	Failure of displaying Add New Monitored WWNs window/Add to Ports window
Products_and_Versions_Affected	SVP/MPC: G800, F800: 83-02-01-60/00 and later G400, G600, F400, F600: 83-02-01-40/00 and later G200: 83-02-01-20/00 and later
Products_and_Versions_Fixed	SVP/MPC: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	The Add New Monitored WWNs window and Add to Ports window cannot be opened.
Symptoms	Even when the monitor support port was mounted, the Add New Monitored WWNs window and Add to Ports window could not be opened. Storage Navigator message: 05122-105108
ConditionsOfOccurrence	The problem occurs when the Add New Monitored WWNs window or Add to Ports window is opened.
CauseForFailure	A failure of internal processing sequence at maintenance operation on Storage Navigator
SeverityOfFailure	Low
ProbabilityOfFailure	High
BugImpact	Functional failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Add WWN using Server Priority Manager on MPC.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	SVP/MPC
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	42
Product Name	VSP Gx00
BugID	HM800-1724
Title	Incorrect error level of SIM=AF41XX at Battery Life Warning
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a battery life warning occurs, the error level of SIM=AF41XX shows "Service".
Symptoms	When a battery life warning occurred, the error level of SIM=AF41XX showed "Service" instead of "Moderate".
ConditionsOfOccurrence	The problem occurs when a battery life warning occurs.
CauseForFailure	A failure of internal control table processing for error level at Battery Life Warning
SeverityOfFailure	Low
ProbabilityOfFailure	High
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	43
Product Name	VSP Gx00
BugID	HM800-1676
Title	Taking 1 hour to report path failure
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-01-21-60/00 and later G400, G600, F400, F600: 83-01-21-40/00 and later G200: 83-01-21-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	Reporting a path failure for a quorum disk takes up to 1 hour.
Symptoms	Reporting a path failure for a quorum disk took up to 1 hour.
ConditionsOfOccurrence	The problem occurs when all the following conditions are met. (1) A quorum disk is used. (2) External paths are alternative paths. (2 or more paths) (3) iSCSI connection (4) Switches are connected. (5) A link-down occurs on one of external paths while the external path does not receive any I/O and is between a switch and Target.
CauseForFailure	A failure of specification at quorum disk access with UVM function
SeverityOfFailure	Low
ProbabilityOfFailure	Medium
BugImpact	Failure-processing failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R800-100195
HDS_SupportCaseID	HDS03926033
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Universal Volume Manager, global-active device
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? Both (3) Recommendation of installing the modified code for TC. None

No.	44
Product Name	VSP Gx00
BugID	HM800-1684
Title	Copy performance degradation at UR pair creation
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a UR pair is created using a virtual volume with capacity saving enabled for the S-VOL while Faster is selected for Copy Pace, SSBs are logged and the copy performance may degrade.
Symptoms	When a UR pair was created using a virtual volume with capacity saving enabled for the S-VOL while Faster was selected for Copy Pace, SSB=14DC and 14FF were logged unexpectedly and the copy performance might degrade. The copy performance might be lower than that when Medium was selected for Copy Pace depending on the hardware configuration and load condition.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) UR pair creation or resync is performed. (2) Faster is selected for Copy Pace of journal option. (3) During (1), no write I/O is issued to the UR pair P-VOL.
CauseForFailure	A failure of time-out processing sequence with remote copy function
SeverityOfFailure	Low
ProbabilityOfFailure	Medium
BugImpact	Performance degradation
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Create a UR pair while Slower or Medium is selected for Copy Pace. If Faster is selected for Copy Pace and a virtual volume with capacity saving enabled is used as the S-VOL, disable the capacity saving function before initial copy starts, and then enable the function after the initial copy is complete.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Universal Replicator
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? RCU (3) Recommendation of installing the modified code for TC. None
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No.	45
Product Name	VSP Gx00
BugID	HM800-1688
Title	Frequent SSB=D0F6 and D0FA when LDEV blockage occurs
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When an LDEV blockage occurs during PS OFF, SSB=D0F6 and D0FA were logged frequently.
Symptoms	When an LDEV blockage occurred during PS OFF performed while the data that was not yet written on a drive was in cache, SSB=D0F6 and D0FA might be logged frequently.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Data that is not yet written on a drive is in cache. (2) Under the condition of (1), PS OFF is performed. (3) During PS OFF of (2), while the data in LDEV is being written on a drive, an LDEV blockage occurs.
CauseForFailure	A failure of internal processing sequence at maintenance operation in open I/O processing
SeverityOfFailure	Low
ProbabilityOfFailure	Medium
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	46
Product Name	VSP Gx00
BugID	HM800-1704
Title	SSB=D1F3 logged during synchronous write processing
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-23-60/00 and later G400, G600, F400, F600: 83-04-23-40/00 and later G200: 83-04-23-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	During the synchronous write processing to cache in the log structure area, SSB=D1F3 may be logged.
Symptoms	During the synchronous write processing to cache in the log structure area, SSB=D1F3 might be logged.
ConditionsOfOccurrence	The problem may occur when the following conditions (1) or (2), and (3) or (4) are met. (1) The write pending rate of a CLPR is 50% or higher. (2) The Inline mode is selected. (3) The capacity saving setting for a virtual volume with capacity saving enabled is disabled. (4) The compression and deduplication processing is performed again.
CauseForFailure	A failure of specification at synchronous write processing to cache in the log structure area with capacity saving
SeverityOfFailure	Low
ProbabilityOfFailure	Medium
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	47
Product Name	VSP Gx00
BugID	HM800-1708
Title	Taking long time to delete TI clone pairs
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-23-60/00 and later G400, G600, F400, F600: 83-04-23-40/00 and later G200: 83-04-23-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When multiple TI pairs are in clone copy process, if some of them are deleted, the delete operation take a long time.
Symptoms	While there were multiple TI pairs in clone copy process, when some of the pairs were deleted, the delete operation took a long time.
ConditionsOfOccurrence	The problem occurs when all the following conditions are met. (1) There are 3 or more TI clone pairs in PSUP status. (2) Some of the above pairs are deleted.
CauseForFailure	A failure of internal processing sequence at maintenance operation with local copy function
SeverityOfFailure	Low
ProbabilityOfFailure	Medium
BugImpact	Performance degradation
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Perform clone copy for up to 2 TI pairs at a time.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	HM800/SOBD-101199
HDS_SupportCaseID	HDS04293532
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Thin Image
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	48
Product Name	VSP Gx00
BugID	HM800-1718
Title	SSB is logged and link-down occurs after controller replacement
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	After controller replacement, SSB=B6BE is logged and a link-down occurs.
Symptoms	After controller replacement, SSB=B6BE was logged and a link-down occurred.
ConditionsOfOccurrence	The problem occurs when all the following conditions are met. (1) Host mode option 67 is set to ON. (2) The PCB type is 4HF8, 2HF16, or 4HF32R. (3) CHB replacement is performed. (4) A controller that is different from the one that contains the CHB of (3) is replaced.
CauseForFailure	A failure of internal processing sequence at maintenance operation on front-end control
SeverityOfFailure	Low
ProbabilityOfFailure	Medium
BugImpact	Functional failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	Set HMO67 to OFF, and then replace the CHB and controller.
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	49
Product Name	VSP Gx00
BugID	HM800-1673
Title	CFM/controller blockage
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	CFM blockage and controller blockage occur when Toshiba Hawk 120GB CFM is used.
Symptoms	When Toshiba Hawk 120GB CFM was used, the following phenomena might occur. - CFM blockage at CFM periodical diagnosis - CFM blockage at online configuration backup - CFM blockage at copy processing between CFMs during CFM replacement - Controller blockage due to a failure of microcode loading at PS ON
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Toshiba Hawk 120GB BM10, or BM20 is mounted. (2) CFM access occurs. (The phenomenon does not occur by block store or restore)
CauseForFailure	A failure of time-out processing sequence at command processing on CFM
SeverityOfFailure	Low
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Replace the CFM.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	50
Product Name	VSP Gx00
BugID	HM800-1686
Title	SSB=F488 and 01FF logged at volume blockage
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a virtual volume with capacity saving enabled is blocked, SSB=F488 and 01FF are logged.
Symptoms	When a virtual volume with capacity saving enabled was blocked, SSB=F488 and 01FF were logged.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) A virtual volume with capacity saving enabled is used. (2) The virtual volume is blocked.
CauseForFailure	A failure of specification at drive failure with capacity saving
SeverityOfFailure	Low
ProbabilityOfFailure	Low
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	51
Product Name	VSP Gx00
BugID	HM800-1695
Title	Failure of swap suspend per CTG with SSB logged
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-01-60/00 and later G400, G600, F400, F600: 83-04-01-40/00 and later G200: 83-04-01-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	Swap suspend per CTG for GAD S-VOL side fails with SSB=FB64.
Symptoms	Swap suspend per consistency group for GAD S-VOL side failed with SSB=FB64 logged.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) A GAD pair with GAD Active-Active at quorum disk blockage. (2) Failure suspension occurs due to a communication error between storage systems. (3) After (2), per-volume resync or pair creation is performed and there are suspended pairs and pairs that are not suspended (PAIR/COPY) in the CTG. (4) Under the condition of (3), suspend per CTG (including swap suspend) is performed for the pairs that are not suspended.
CauseForFailure	A failure of internal processing sequence with GAD
SeverityOfFailure	Low
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Take the steps below after SSB=FB64 is logged. (1) Forcibly delete pairs whose P-VOLs and S-VOLs are in PSUE and PAIR status respectively due to the failure of swap suspend per CTG for the S-VOL side. (2) Resynchronize the suspended pairs one by one. (I/O mode of S-VOLs is Local: swap resync, I/O mode of P-VOLs is Local: resync), (3) Perform suspend per pair for pairs (new P-VOL by the operation of (2)) where I/O mode of S-VOLs is Local in (2). (4) Perform swap suspend per pair for pairs (S-VOLs) where I/O mode of P-VOL is Local in (2). (5) Perform swap resync per pair for pairs (S-VOLs) where I/O mode of P-VOLs is Local in (3) (6) Perform resync per group for new P-VOLs.
TemporaryCircumvention	Perform resync per volume for pairs where I/O mode of P-VOL is Local, and then perform swap suspend per pair for pairs where I/O mode of S-VOL is Local.
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	R800-100237
HDS_SupportCaseID	HDS03951281
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	

Category	Global-active device
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? Both (3) Recommendation of installing the modified code for TC. None

No.	52
Product Name	VSP Gx00
BugID	HM800-1702
Title	Firmware update normal end even when no version change
Products_and_Versions_Affected	GUM: G800, F800: 83-04-41/00 and later G400, G600, F400, F600: 83-04-41/00 and later G200: 83-04-41/00 and later
Products_and_Versions_Fixed	GUM: G800, F800: 83-04-42/00 G400, G600, F400, F600: 83-04-42/00 G200: 83-04-42/00
ProblemDescription	Firmware update ends normally on the window but the firmware version may not change.
Symptoms	Firmware update ended normally on the window but the firmware version might not change when checked. In this case, SSB=39C5 and 39BA were logged.
ConditionsOfOccurrence	The problem may occur when an internal LAN communication error occurs during firmware update.
CauseForFailure	A failure of microcode logic contradiction at maintenance operation on GUM
SeverityOfFailure	Low
ProbabilityOfFailure	Low
BugImpact	Maintenance failure
RecoveryFromProblem	(1) Check the firmware version before update. (2) Update the firmware. (3) After the update, check SSB output. If SSB=39C5 and 39BA are logged, check the firmware version. (4) Update only the firmware whose version does not change.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	GUM
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	53
Product Name	VSP Gx00
BugID	HM800-1703
Title	LOGO with wrong port FCID set for Payload
Products_and_Versions_Affected	DKCMAIN: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	LOGO with an FCID of a wrong port set for Payload is issued.
Symptoms	LOGO with an FCID of a wrong port set for Payload was issued for login sequence between a host and a port.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) 4HF8, 2HF16, or 4HF32 is used. (2) A host is connected to the port.
CauseForFailure	A failure of internal processing sequence at host reset on front-end control
SeverityOfFailure	Low
ProbabilityOfFailure	Low
BugImpact	Functional failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Open
AreaChangedInFirmware	DKCMAIN
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

No.	54
Product Name	VSP Gx00
BugID	HM800-1719
Title	SSB=01FE logged and then TC/GAD pair suspended
Products_and_Versions_Affected	DKCMAIN: G800, F800: 83-04-41-60/00 and later G400, G600, F400, F600: 83-04-41-40/00 and later G200: 83-04-41-20/00 and later
Products_and_Versions_Fixed	DKCMAIN: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	When a cache failure occurs during I/O, SSB=01FE is logged (SIM=680001), and after that a TC or GAD pair is suspended.
Symptoms	Phenomenon 1 When a cache failure occurred during a read or write I/O to a virtual volume with capacity saving enabled, SSB=01FE was logged (SIM=680001). Phenomenon 2 After phenomenon 1, a TC or GAD pair was suspended.
ConditionsOfOccurrence	The problem may occur when all the following conditions are met. (1) Capacity saving is enabled for a virtual volume. (2) A write I/O is issued (3) A failure reset occurs during the write I/O. (4) After (3), a read I/O is issued, or TC or GAD initial copy takes place.
CauseForFailure	A failure of microcode logic contradiction at cache failure with capacity saving
SeverityOfFailure	Low
ProbabilityOfFailure	Low
BugImpact	Message failure
RecoveryFromProblem	Phenomenon 1: Apply the modified firmware. Phenomenon 2: Resynchronize the suspended pair.
TemporaryCircumvention	None
WhereFailureWasIdentified	Factory
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Dedupe and compression
AreaChangedInFirmware	DKCMAIN

SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None
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No.	55
Product Name	VSP Gx00
BugID	HM800-1725
Title	SVP failure
Products_and_Versions_Affected	SVP/MPC: G800, F800: All G400, G600, F400, F600: All G200: All
Products_and_Versions_Fixed	SVP/MPC: G800, F800: 83-04-44-60/00 G400, G600, F400, F600: 83-04-44-40/00 G200: 83-04-44-20/00
ProblemDescription	An SVP failure occurs.
Symptoms	An SVP failure (SIM=7C0700) occurred.
ConditionsOfOccurrence	The problem occurs about 38 days after SVP is started in a configuration containing no LDEV.
CauseForFailure	A failure of internal management table processing at maintenance operation on SVP
SeverityOfFailure	Low
ProbabilityOfFailure	Low
BugImpact	Message failure
RecoveryFromProblem	Apply the modified firmware.
TemporaryCircumvention	None
WhereFailureWasIdentified	Customer
ECN_Number	ECN DW800-M058
ECN_Revision	0
ECN_ReleaseDate	06/30/2017
ESC_CTSC_APSC_LOG_ID	None
HDS_SupportCaseID	-
RelatedOS	N/A
RelatedEarlyNoticeNumber	None
RelatedECN	None
OS_Name	
OS_Version	
HostServerHardware	
StorageSubSystemHardware	
FiberSwitchHardware	
HostBusAdapterHardware	
OthersHardware	
OtherSoftware	
HDS_ChangeRequest	
SSD_ChangeRequest	
Category	Storage Navigator
AreaChangedInFirmware	SVP/MPC
SpecialInstructionsForApplyingFix	(1) Restriction of micro-program exchange None (2) Which one has this problem, MCU or RCU or Both MCU and RCU ? None (3) Recommendation of installing the modified code for TC. None

Program Versions Summary

HM800 Function Release Q-code				
Release Number	Microcode Version	Date of issue	ECN #	Comments
V01	83-01-01-40/00(G400, G600) 83-01-01-20/00(G200)	Feb. 27th, 2015	M001	Q-code
V01a	83-01-03-40/00(G400, G600) 83-01-03-20/00(G200)	Apr. 3rd, 2015	M002	Q-code <ul style="list-style-type: none"> - Support for JRE 1.8.0_31 for SVP and MPC programs - Improvement for completion notice of CTL replacement - Support for time zone list based on Windows Zones.xml (2015a) - Support for AIX ODM - Support for display of ongoing maintenance operation in message box - Improvement for Main reset request - Support for summer time for time zone of Santiago - Support for offline firmware downgrade - Support for HMO94 - Support for HMO93 - Support for closing unnecessary IPv6 ports - Improvement for condition of spare drive assignment
V01a	83-01-04-40/00(G400, G600) 83-01-04-20/00(G200)	May 15th, 2015	M003	Q-code update
V01a	83-01-04-40/00(G400, G600) 83-01-04-20/00(G200)	May 28th, 2015	M005	MM update
V01a	83-01-20-40/00(G400, G600) 83-01-20-20/00(G200)	Jun. 18th, 2015	M006	MM update

V01+1	83-01-21-60/00(G800) 83-01-21-40/00(G400, G600) 83-01-21-20/00(G200)	July 3rd, 2015	M007	<p>Q-code</p> <ul style="list-style-type: none"> - Support for global active device - Support for SML-S provider - Support for TC/UR pair creation between HM800/HM700 - Support for Command Control Interface version 01-34-03/04 - Support for iSCSI connection for TC, UR, UVM, and GAD - Support for CHB HT-F40SB-2HS10C - Support for multiple-DKC management from SVP/MPC - Support for pair creation using volumes of over 4 TB - Support for active flash - Support for SNMP v3 - Support for LVDC and NEBS - Support for forced skip of system status check - Support for simplified firmware/ software exchange tool - Support for power and temperature display/report/output/collection - Support for per-pool setting from CCI or SN - Enhancement for data encryption function - Support for Offload Data Transfer of Window Server 2012 - Modification for behavior when SOM729 and HMO63 or HMO73 are ON - Support for Windows Server 2012 Thin Provisioning for GAD - Improvement for DKCMAIN microcode exchange - Improvement for CCI performance - Support for backup of 100-generation configuration information - Support for restarting tier location after pool VOL deletion - Support for list of OSS version output on SVP/MPC - Support for port WWN confirmation - Improvement for operability at TI pair operation - Support for ALUA mode - Support for Oracle storage as external storage system - Support for 3 data center multi-target configuration - Support for coexisting external VOLs with cache mode enabled/disabled - Support for Full Allocation setting from Storage Navigator and CCI - Improvement for behavior when all even-numbered MPs are blocked - Support for guard logic to disable operators other than maintenance personnel to update firmware - Support for maintenance personnel mode on the microcode exchange window - Support for new and compatible drives - Support for new Initial Startup window size - Support for displaying and entering IPv4-mapped IPv6 address - Update interval change of WARNING LED status window - Change of message managing method - Support for Performance Monitor on maintenance PC - Support for Round Trip reduction with DW-F800-2HF16 - Support for firmware update check - Support for GUM diagnosis function processed in one-minute cycle - Added hardware location names in hardware images - Support for automatic PS OFF following ADC setting - Improvement for Storage Navigator specification to correctly display monitoring data - Support for VSP G800 model - Support for SIM=468XXX report - Support for confirmation window display - Support for reading image files at a time - Support for specifying dump file name - Support for new API - Support for message indicating status of ongoing maintenance operation - Support for user account management function on VSP G200 - Improvement to display specification on window - Support for CCI in IPv6 environment - Support for outputting information of result of multi-connection attempt and IP address of already-connected SVP/MAP - Support for SOM update check and SVP message [INS4587E] display - Support for Command Control Interface Ver.01-20-03/02 - Support for new GUM messages 1/2 - Support for new GUM message 2/2 - Elimination of GUM firmware update at shipping settings - Support for new method to indicate storage system status - Change of target area to output error trace - Improvement for wordings in Storage Navigator messages - Improvement for wordings in Replace ENC window on Maintenance Utility - Improvement for performance limitation of data allocation to SSD/FMD - Support for release lock without restarting storage system service - Support for running replication command by unauthenticated user - Control class change of SOM1000
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V01+1	83-01-22-60/00(G800) 83-01-22-40/00(G400, G600) 83-01-22-20/00(G200)	July 24th, 2015	M008	Q-code update
V01+1	83-01-23-60/00(G800) 83-01-23-40/00(G400, G600) 83-01-23-20/00(G200)	Aug. 28th, 2015	M009	Q-code update
V01+1	83-01-24-60/00(G800) 83-01-24-40/00(G400, G600) 83-01-24-20/00(G200)	Sep. 29th, 2015	M010	Q-code update
SVOS6.3.1	83-02-01-60/00(G800, F800) 83-02-01-40/00(G400, G600, F400, F600) 83-02-01-20/00(G200)	Nov. 2nd, 2015	M011	<p>Q-code</p> <ul style="list-style-type: none"> - Support for encryption status display for DP/DT volumes - Support for API as IOPH propagation - Support for UVM volume creation of over 4 TB - Support for 256 TB DP volume - Support for New Flash Module Drive and SOM1078 - Support for CHBB in G800 and F800 - Support for new port information displayed on CCI - Support for CHB installation in slots E to G in G400, G600, F400, F600 - Support for TI0 PI for connection with Oracle Linux - Support for HMO 97 - Support for LDEV operations on Host Groups/iSCSI Targets window - Support for drive status report by SMI-S - Support for Command Control Interface Ver.01-35-03/04 - Support for Export Tool download - Support for collecting analysis information in dump file - Change for random number generation method - Improvement of process priority of lighttpd - Change for font in image data displayed on GUI - Support for I/F to collect detailed information of cache - Support for flow control (pause control) with GUM microcode - Support for skipping LDEV format - Change for condition to disable PDEV installation maintenance - Support for SIM=FFD400 report - Improvement for MP Unit ID assignment - Improvement for performance limitation of data allocation - Support for display of used capacity for each pool volume - Improvement for used memory of GUM Linux - Support for port check - Support for operations performed exclusively between GUM/SVP and CCI - Support for Storage Navigator messages - Improvement for Offline Configuration Definition Tool - Support for monitoring receiving process in GUM - Support for alert information output in Windows event log - Support for fixing vulnerability in Net-SNMP - Support for dump collection from Maintenance Utility - Improvement for firmware update retry - Support for status information collection via RMI API - Changes for HTTPS and L7sw to address vulnerabilities in SSL/TLS - Support for JSON APIs - Support for compatible drives - Improvement for cooling during maintenance replacement of DBF PS - Support for SIM information collection via RMI API - Support for port type filtering and attribute column display - Change for setting from Maintenance Utility - Support for Apache 2.4.16, OpenSSL 1.0.1p, JRE 1.8.0_51, and Flash 18 - Support for function and tool for China rebranding - Support for disabling RC4 during RMI server SSL communication - Support for drive blockage prevention (SOM1008) - Support for HTML format for messages displayed by SVP service programs - Support for RAID Manager LIB 01-20-03/03 - Improvement for wording in audit log - Support for HDD microcode SLR5D-M - Support for Hitachi Virtual Storage Platform F400/F60/F800 - Control class change of HMO025

SVOS6.3.1	83-02-03-60/00(G800, F800) 83-02-03-40/000(G400, G600, F400, F600) 83-02-03-20/00(G200)	Dec. 28th, 2015	M012	Q-code update
SVOS6.3.1	83-02-04-60/00(G800, F800) 83-02-04-40/000(G400, G600, F400, F600) 83-02-04-20/00(G200)	Jan. 15th, 2016	M016	Q-code update
SVOS6.4.0	83-03-01-60/00(G800, F800) 83-03-01-40/000(G400, G600, F400, F600) 83-03-01-20/00(G200)	Jan. 31st, 2016	M017	Q-code <ul style="list-style-type: none"> - Improvement for SI background copy performance - Support for Temperature Monitor window - Support for ALUA function - Support for UR 3DC multi target/cascade configuration - Support for NDM in combination with different RAID models - Support for Accelerated Compression - Support for consistency group function for GAD - Support for normal VOL as GAD pair VOL - Improvement for behavior at GAD quorum disk blockage - Support for GAD+HUR delta - Support for TC-UR connection between HM800 and RAID800 - Support for SOM1069 - Support for using TLS1.2 as default in SSL/TLS communication - Support for NDM data consistency option - Enhancement for LDEV operations on Storage Navigator - Support for parameter of resource group - Support for external consistency group - Support for encryption on G200 - Support for help button on Maintenance Utility window - Improvement for analysis information collection in dump - Support for NDM port consolidation - Enhancement for VSP F400, F600 - No-brand wording for China rebranding - Support for iSCSI error information on MPC monitoring - Support for periodical performance data storing on SVP - Support for EMC VNX ALUA connection - Change for window display of HP storage from HP to HPE - Improvement for wordings of messages on GUI - Support for preceding JNL data staging - Support for TC-UR delta resync without changing to COPY status - Change for unavailable characters used for DNS domain name and suffix - Support for Storage Device List on web browser - Support for Command Control Interface Ver. 01-36-03/03 - Support for FMD capacity expansion function - Support for compatible drives - Improvement for GUM security - Support for RAID Manager Library Ver. 01-21-03/01 - Support for display of up to 16 factors disabling maintenance operation - Support for message corresponding to error part - Support for HDD microcode of SLB5C-MxxxSS and DKR5G-
SVOS6.4.0	83-03-01-60/00(G800, F800) 83-03-01-40/000(G400, G600, F400, F600) 83-03-01-20/00(G200)	Feb. 22nd, 2016	M021	Drive update (NFHAE-Q Ver. 00-C1-20)
SVOS6.4.0	83-03-02-60/00(G800, F800) 83-03-02-40/000(G400, G600, F400, F600) 83-03-02-20/00(G200)	Mar. 2nd, 2016	M020	Q-code update
SVOS6.4.0	83-03-03-60/00(G800, F800) 83-03-03-40/000(G400, G600, F400, F600) 83-03-03-20/00(G200)	Mar. 28th, 2016	M022	Q-code update

SVOS6.4.1	83-03-21-60/01(G800, F800) 83-03-21-40/01(G400, G600, F400, F600) 83-03-21-20/01(G200)	Apr. 28th, 2016	M024	<p>Q-code</p> <ul style="list-style-type: none"> - Support for NAS module - Support for relocation log export from CCI - Support for Tiering Policy in increments of 1 percent - Support for iSCSI connection between RAID800 and HM800 for TC/UR - Support for tiering policy name setting function - Support for setting SPM information from CCI and RAID Manager Library - Support for Force Delete for GAD pair - Support for new drive box and expander buffering off for AFA - Support for remaining battery lifetime display on Maintenance Utility - Support for SOMI097 - Support for Google Chrome - Improvement for messages displayed at GUM/HUB reboot - Support for unread alert indication - Improvement for wording in audit log - Support for error code 21841-007008 - Support for Supervisor software version display - Change to one time password for maintenance login - Support for warning message at firmware update with media without NASFW - Change for program product name of Remote Replication Extended - Support for new chip equipped FMC - Patch available for vulnerability of Bug 8411 - Support for Openssl 1.0.1r, JRE 1.8.0_74, and Flash 20 - Support for RAID Manager/ LIB Ver. 01-22-03/00 - Support for Command Control Interface Ver. 01-37-03/04 - Support for SOMI021 - Addition of Normal End (Optimization remains) to Result Status - Support for drive microcode (DKSSH-J) - Enhancement for storage model display on SMI-S Provider
SVOS6.4.1a	83-03-22-60/00(G800, F800) 83-03-22-40/00(G400, G600, F400, F600) 83-03-22-20/00(G200)	May 31st, 2016	M028	<p>Q-code</p> <ul style="list-style-type: none"> - SSD 1.9 TB drive support for VSP G200 - Support for SOMI068 - Control class change of system option mode 833 - Improvement for SVP availability - Control class change of host mode option 93 - Control class change of host mode option 94 - Support for Report Configuration Tool on RHEL6 and RHEL7
SVOS6.4.1a	83-03-23-60/00(G800, F800) 83-03-23-40/00(G400, G600, F400, F600) 83-03-23-20/00(G200)	June 10th, 2016	M031	Q-code update
SVOS6.4.1a	83-03-24-60/00(G800, F800) 83-03-24-40/00(G400, G600, F400, F600) 83-03-24-20/00(G200)	June 30th, 2016	M033	Q-code update
SVOS6.4.1a	83-03-25-60/00(G800, F800) 83-03-25-40/00(G400, G600, F400, F600) 83-03-25-20/00(G200)	Sep. 1st, 2016	M036	Q-code update
SVOS7.0.0	83-04-01-60/00(G800, F800) 83-04-01-40/00(G400, G600, F400, F600) 83-04-01-20/00(G200)	Oct. 3rd, 2016	M038	<p>Q-code</p> <ul style="list-style-type: none"> - Improvement for microcode exchange performance - Support for Task Set Full response - Update for SMI-S Provider - Support for GAD Active-Active at quorum disk blockage - Support for capacity saving (data deduplication and compression) - Improvement for audit log - Support for requirement for iSCSI UNH IPv6 certification - Support for 4HF32R CHB - Removal of restriction on NAS module for Fx00 models - Support for Quick Format for over 8TB drives - Support for external storage systems - Support for 10TB NL-SAS drive - Support for new FMC drives - Message update due to reduction in time for SN initial startup - Support for Widows Server 2012 - Support for packet transfer to port #202 of NAS module - Change to NAS platform login condition - Support for new flash module drive - Support for Command Control Interface Ver. 01-39-03/04 - Enhancement for combining HCS REST API with VSP Gx00, Fx00 - Improvement for TI CTG ID reservation method - Support for OpenSSL 1.02h - Support for RAID Manager Library Ver. 01-22-03/01 - Support for shortest_queue attribute - Support for storage management software installation in CCI

SVOS7.0.0	83-04-01-60/00(G800, F800) 83-04-01-40/00(G400, G600, F400, F600) 83-04-01-20/00(G200)	Nov.7th, 2016	M042	Q-code update (GUM Ver. 83-04-01/10)
SVOS7.0.0	83-04-02-60/00(G800, F800) 83-04-02-40/00(G400, G600, F400, F600) 83-04-02-20/00(G200)	Nov. 29th, 2016	M044	Q-code update
SVOS7.0.0	83-04-02-60/02(G800, F800) 83-04-02-40/02(G400, G600, F400, F600) 83-04-02-20/02(G200)	Dec. 28th, 2016	M045	Q-code update
SVOS7.0.0	83-04-03-60/00(G800, F800) 83-04-03-40/00(G400, G600, F400, F600) 83-04-03-20/00(G200)	Feb. 21st, 2017	M047	Q-code update
SVOS7.1.0	83-04-23-60/01(G800, F800) 83-04-23-40/01(G400, G600, F400, F600) 83-04-23-20/01(G200)	Mar. 17th, 2017	M050	<p>Q-code update</p> <ul style="list-style-type: none"> - Support for cascade and clone attribute TI pairs - Support for Hi-Track RMI API to collect capacity saving rate - Improvement for deleting virtual volume with Compression/Deduplication and Compression - Support for MSA 1020/2040 as external storage - Support for TI snapshot group name change - Improvement for read/write I/O performance while capacity saving enabled - Support for BlazeDS Ver. 4.7 and Flex SDK Ver. 3.6 - Support for new RMI API commands - Support for remote firmware update - Support for starting SN service before completion of firmware update - Support for Windows Server 2012 iSCSI Target as external storage - Increasing free capacity by compressing GUM firmware - Support for ENC reuse function and SOM1118 - Support for compatible drives - Improvement for usage accuracy of parity group - Control class change of host mode option 91 - Support for SIM=641XXX - Support for Command Control Interface Ver. 01-40-03/03 - Update for SMI-S Provider - Addressing DoS vulnerability of Apache Commons FileUpload - Support for drive firmware of SLBSE-M - Control class change of system option mode 1043 - Control class change of system option mode 1105 - Support for using host disk as quorum disk - Improvement for processing at DRAM error - Improvement for drive firmware to prevent I/O performance degradation - Improvement for processing at memory error in controller - Support for display of Capacity Saving and Capacity Saving Status columns - Control class change of system option mode 1108
SVOS7.1.0	83-04-24-60/00(G800, F800) 83-04-24-40/00(G400, G600, F400, F600) 83-04-24-20/00(G200)	Mar. 30th, 2017	M052	Q-code update
SVOS7.1.0	83-04-26-60/00(G800, F800) 83-04-26-40/00(G400, G600, F400, F600) 83-04-26-20/00(G200)	Apr. 24th, 2017	M054	Q-code update

SVOS7.2.0	83-04-41-60/00(G800, F800) 83-04-41-40/00(G400, G600, F400, F600) 83-04-41-20/00(G200)	Apr. 28th, 2017	M055	Q-code - Support for iSCSI virtual port mode - Support for SAN Boot in Point-to-Point connection - Improvement for quorum disk replacement from CCI - Support for parallel online firmware update - Support for RMI API to collect usable physical capacity - Update for SMI-S Provider - Support for SSDs - Improvement for capacity saving function - Measure for CVE-1999-0524 - Support for Command Control Interface Ver. 01-41-03/03 - Specification improvement for the case of quorum path failure - Support for CentOS iSCSI Enterprise Target as external storage - Support for SI option (#26) - Control class change of system option mode 1015 - Support for GAD long distance connection in cross-path configuration - Improvement for message displayed when installing or updating Device Manager - Storage Navigator - Support for concurrent firmware update - Easing requirement for RAM capacity of maintenance PC and SVP - Support for terminating Storage Navigator service on maintenance PC
SVOS7.2.0	83-04-42-60/00(G800, F800) 83-04-42-40/00(G400, G600, F400, F600) 83-04-42-20/00(G200)	May 17th, 2017	M056	Q-code update
SVOS7.2.0	83-04-42-60/00(G800, F800) 83-04-42-40/00(G400, G600, F400, F600) 83-04-42-20/00(G200)	June 2nd, 2017	M057	Q-code update (SVP Ver. 83-40-42-x0/10)
SVOS7.2.0	83-04-44-60/00(G800, F800) 83-04-44-40/00(G400, G600, F400, F600) 83-04-44-20/00(G200)	June 30th, 2017	M058	Q-code update

Appendix-G Related Program Versions

(1) RAID Manager

NO	Product Name	New Version	Previous Version
1	RAID Manager for HP-UX	01-41-03/05	01-41-03/03
2	RAID Manager for Windows NT *	01-41-03/05	01-41-03/03
3	RAID Manager for Solaris	01-41-03/05	01-41-03/03
4	RAID Manager for AIX	01-41-03/05	01-41-03/03
5	RAID Manager for Tru64 UNIX	01-41-03/05	01-41-03/03
6	RAID Manager for DYNIX	01-19-03/04	Same as left
7	RAID Manager for Linux	01-41-03/05	01-41-03/03
8	RAID Manager for IRIX	01-34-03/04	Same as left
9	RAID Manager for Open VMS	01-30-03/03	Same as left
10	RAID Manager for zLinux	01-41-03/05	01-41-03/03
11	RAID Manager for Solaris/x86	01-41-03/05	01-41-03/03
12	RAID Manager for Open VMS/IA	01-41-03/04	01-41-03/03
13	RAID Manager for Linux/IA64	01-41-03/05	01-41-03/03
14	RAID Manager for Windows NT/x64	01-41-03/05	01-41-03/03
15	RAID Manager for Linux/x64	01-41-03/05	01-41-03/03

* Windows2000/2003/2008 are also supported.

(2) RAID Manager Library (RL)

NO	Product Name	New Version	Previous Version
1	RL for Solaris	01-23-03/00	Same as left
2	RL for Solaris/x86	01-23-03/00	Same as left
3	RL for HP-UX	01-23-03/00	Same as left
4	RL for Windows NT *	01-23-03/00	Same as left
5	RL for Windows/IA64	01-23-03/00	Same as left
6	RL for Windows/x64	01-23-03/00	Same as left
7	RL for AIX	01-23-03/00	Same as left
8	RL for Linux	01-23-03/00	Same as left
9	RL for IRIX	01-20-03/02	Same as left
10	RL for Tru64 UNIX	01-23-03/00	Same as left
11	RL for zLinux	01-23-03/00	Same as left
12	RL for Open VMS	01-17-03/01	Same as left
13	RL for Open VMS/IA	01-23-03/00	Same as left

* Windows2000/2003/2008 are also supported.

* Hatched indicates the changed items from the previous release.

(3) Off-Line Configuration and Print Out Tools: Special Tool for CE

NO	Program name		New Version	Previous Version
1	Off_def_conf	G800, F800	83-04-44-60/00	83-04-42-60/10
		G400, G600, F400, F600	83-04-44-40/00	83-04-42-40/10
		G200	83-04-44-20/00	83-04-42-20/10
2	Off_tool	G800, F800	83-04-44-60/00	83-04-42-60/10
		G400, G600, F400, F600	83-04-44-40/00	83-04-42-40/10
		G200	83-04-44-20/00	83-04-42-20/10

(4) Monitor

NO	Program name	New Version	Previous Version
1	Export Tool	83-04-44-FF/00	83-04-42-FF/10

(5) SNMP

NO	Program name	New Version	Previous Version
1	SNMP MIB File	6.2	Same as left

(6) RMI PS ON/OFF TOOL

NO	Program name	New Version	Previous Version
1	rmtpstool	83-00-00-FF/00	Same as left

(7) ODM

NO	Program name	New Version	Previous Version
1	HTC_ODM	5.0.52.3	Same as left
2	HTC_MPIO_ODM	5.4.1.2	Same as left

(8) Config Report CLI

NO	Program name	New Version	Previous Version
1	Config Report CLI	01-02-03/05	Same as left

(9) NAS

NO	Program name	New Version	Previous Version
1	HNAS specific tools	13.2.4527.04	13.2.4527.01
2	NAS sources	13.2.4527.04	13.2.4527.01

* Hatched indicates the changed items from the previous release.

Appendix-S Antivirus Software Support**Installation Procedure**

Installing antivirus software may affect SVP performance. Therefore, make sure to install the antivirus software according to the following procedures.

- (1) Log into the SVP.**
- (2) Install the antivirus software.**
- (3) During installation of the antivirus software, as the SVP is rebooted, log into SVP again. If the SVP is not rebooted, log into the SVP after the SVP is manually rebooted.**
- (4) Open the Maintenance Utility window to confirm that there is no failure part.**
- (5) Installation is completed.**

Note

- Do not perform any other maintenance operations during installation. It may cause a delay in processing or an error.**
- Do not make access or perform operations from remote site such as Storage Navigator during installation. It may cause a delay in processing or an error.**
- As SVP is rebooted during installation, monitoring data and/or logs such as SIM/SSB generated during installation may be partially lost.**

Setting for each antivirus software**1. Symantec Endpoint Protection**

Symantec Endpoint Protection has been supported as follows:

(1) Software version:

Symantec Endpoint Protection 12.1.5 / 12.1.6

(2) Conditions:

- DKC model: VSP Gx00 models and VSP Fx00 models (all SVP versions)
- Procedure required to applying the support:
 - Right click the Symantec Endpoint Protection icon on Task Bar and select "Open Symantec Endpoint Protection", open the menu, then select "Change Settings",
 - In Virus and Spyware Protection, select "Configure Settings", next select "Selected:" in "Auto-Protect" tab, and then check "Determine file types by examining file contents" in the "File Types" block in the "File System Auto-Protect" and uncheck "Scan files on remote computers" in "Options" block.
 - In Exceptions, select "Configure Settings", select "Add...", and select "Security Risk Exception"- "Folder",
 - Input "<Storage Navigator install folder>\wk" in "Folder:", and select "Auto-Protect" in "Exception Type:", and check "Include Subfolders", then select "OK".
 - Memo: <Storage Navigator install folder>: "C:\Mapp", etc.
 - Make sure there is "<Storage Navigator install folder>\wk" folder in "Exception Item", and select "Close".
 - Click "LiveUpdate"
 - After the completion of LiveUpdate, Confirm if the definition files have been updated successfully.
 - Reboot SVP.
 - Disable all scheduled scans.

(3) Update:

By default, "Symantec Endpoint Protection" definition files are updated via a push to the SVP. (Symantec Endpoint Protection Managers update the clients (SVP) that they manage.)

(4) Uninstallation:

- At the end of the uninstallation procedure, the software pops up a dialog window to choose reboot the software automatically (Yes) or manually (No). Choose "No" and then manually reboot the software.

2. Sophos Endpoint Security and Control

Sophos Endpoint Security and Control has been supported as follows:

(1) Software version:

Sophos Endpoint Security and Control 10.3 / 10.6

(2) Conditions:

- DKC model: VSP Gx00 models and VSP Fx00 models (all SVP versions)
- Procedure required to applying the support:
 - Right click the Sophos icon on Task Bar, and open the menu, then select "Open Sophos Endpoint Security and Control",
 - Select "On-access scanning",
 - Select "Add" in "Exclusions" tab,
 - Select "Folder" in Item type and input "<Storage Navigator install folder>\wk" in Item name and select "OK",
 - Memo: <Storage Navigator install folder>: "C:\Mapp", etc.
 - Close the window.
- Use default security policy.
- Do not install except Anti-Virus (e.g. Firewall or NAC).
- Use manual installation if you install Sophos Anti-Virus from Enterprise Console.

3. Trend Micro OfficeScan Corporate Edition

Trend Micro OfficeScan Corporate Edition has been supported as follows:

(1) Software version:

Trend Micro OfficeScan Corporate Edition 11.0 / 11.0 SP1

(2) Conditions:

- DKC model: VSP Gx00 models and VSP Fx00 models (all SVP versions)
- Don't reboot SVP before the completion of the following settings.
- Procedure required to applying the support:
 - Right click the TREND MICRO icon on Task Bar and select "Open OfficeScan Agent Console".
 - Unlock Settings window, and then select "Settings" - "Real-time Scan".
 - Select "Exclusions", and then check "Enable exclusion", and input "<Storage Navigator install folder>\wk" in "Directories", then select "Add".
 - Memo: <Storage Navigator install folder>: "C:\Mapp", etc.
 - Make sure that "<Storage Navigator install folder>\wk" folder is listed.
 - Select "OK" in "Settings" window.
 - Select "Exit" in "OfficeScan Agent Console" window.
 - Reboot SVP

(3) Creation of Client Package:

If you use Client Packager to create a client package, create the package with Prescan disabled.

If Prescan is enabled, Prescan is executed first at installation. If the Prescan processing takes time, the installation may fail.

- Procedure required for applying the support:
 - Select "Disable Prescan (only for fresh install)" in "Options" in the "Client Packager" window.

4. McAfee VirusScan Enterprise

McAfee VirusScan Enterprise has been supported as follows:

(1) Software version:

McAfee VirusScan Enterprise 8.8

(2) Conditions:

- DKC model: VSP Gx00 models and VSP Fx00 models (all SVP versions)
- Recommend un-checking "Run On-Demand Scan" in the installation procedure. Since it requires several hours, the pre-execution of the following settings is recommended.
- Don't reboot SVP before the completion of the following settings.
- Procedure required to applying the support:
 - Right click the Virus Scan icon on Task Bar, and open the menu, then select "VirusScan Console ...",
 - Right click the "On-Access Scanner" in "Task", and open the menu, then select "Properties",
 - Select the "Scan Items" tab from "All Processes",
 - Select "Default+Additional file types[0]" for "What to scan",
 - Select "Exclusions..." in "What not to scan" on the "Exclusions" tab,
 - Select "Add..." in the "Set Exclusions" window,
 - Select " By name/location(can include wildcards * or ?):" for "What to exclude" in the "Add Exclusion Item" window, and then type "<Storage Navigator install folder>\wk",
Memo: <Storage Navigator install folder>: "C:\Mapp", etc.
 - Select "Also exclude subfolders" for "What to exclude" in the "Add Exclusion Item" window,
 - Click [OK] in the "Add Exclusion Item" window,
 - Confirm that "<Storage Navigator install folder>\wk" is added in the "Set Exclusions" window, and then Click [OK] in the "Set Exclusions" window,
 - Click [OK] in the "On-Access Scan Properties" windows,
 - Close "VirusScan Console" window.
 - Reboot SVP if needed.