

Hitachi Virtual Storage Platform Gx00 and Fx00 Release Notes

DKCMAIN 83-03-22, SVP 83-03-22, NAS OS 12.6.4150.06, SMU 12.6.4150.06, SVOS 6.4.1a

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About this document

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

Revision	Date
RN-830322-M028-00	June 3 rd , 2016

Intended audience

This document is intended for Hitachi Data Systems customers and authorized service providers who install, configure, operate, and maintain the Hitachi Virtual Storage Platform G200, G400, G600, G800 and the Hitachi Virtual Storage Platform F400, F600, F800 storage systems.

Getting help

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

About this release

This document describes the differences between the following versions:

Product	Firmware	New Version	Previous Version
SVOS	-	6.4.1a	6.4.1
VSP G800 VSP F800	DKCMAIN	83-03-22-60/00	83-03-21-60/01
	SVP	83-03-22-60/00	83-03-21-60/00
VSP G400, G600 VSP F400, F600	DKCMAIN	83-03-22-40/00	83-03-21-40/01
	SVP	83-03-22-40/00	83-03-21-40/00
VSP G200	DKCMAIN	83-03-22-20/00	83-03-21-20/01
	SVP	83-03-22-20/00	83-03-21-20/00
NAS Module	NAS OS	12.6.4150.06	12.6.4150.02
	SMU	12.6.4150.06	12.6.4150.02

Note: An external SMU is not required; however, an external SMU can be used to manage VSP Gx00 models with NAS modules.

Supported features and functions

DKCMAIN and SVP firmware

The following table lists the new features and functions in this DKCMAIN firmware release. For additional details (for example, affected components, operational notes), contact your Hitachi Data Systems representative.

No	Title and description
2	Support for SOM 1068. New system option mode 1068 is available to detect and report slight delay in response from a drive at an early point of time. Restricted Mode – Restricted-by-Engineering Permission Required to Use
3	Control class change of system option mode 833. The control class of system option mode 833 is changed from RBE to TS. Restricted Mode – Technical Support Permission Required to Use
4	Improvement for SVP availability. SVP availability is improved by using VMware vSphere Fault Tolerance.
5	Control class change of host mode option 93. The control class of host mode option 93 is change from RBE to TS. Restricted Mode – Technical Support Permission Required to Use
6	Control class change of host mode option 94. The control class of host mode option 94 is changed from RBE to TS. Restricted Mode – Technical Support Permission Required to Use
7	Support for Report Configuration Tool on RHEL6 and RHEL7. Report Configuration Tool is available on Red Hat Enterprise Linux(RHEL) 6.x and 7.x.

NAS OS and SMU firmware

None.

Fixed problems

DKCMAIN and SVP firmware

The following table lists the bug fixes in this DKCMAIN firmware release. For additional details (for example, conditions of occurrence, severity, probability), contact your Hitachi Data Systems representative.

No	Category	Title and symptoms
1	Server Priority Manager	Difference in IOPS between the SPM upper limit and the total of measured IOPS. When the SPM upper limit was set to 35,000 IOPS from an SPM group and then I/Os of 40,000 IOPS were issued, the IOPS only reached 22,000. (The host whose OS was RHEL used the VERITAS VxVM striping function.)
2	Universal Replicator	Performance degradation due to SEQ# management area depletion. When UR SEQ# management area depletion and recovery occurred repeatedly, the performance degradation due to the depletion might continue.
3	Command Control Interface	MP blockage and WCHK1 at operation with cinder driver. When an operation, such as volume creation, volume deletion, or volume mapping, was performed using cinder driver, MPs were blocked and WCHK1 occurred (SSB=1644).
4	Open	Display failure of RAID group in system dump. When a system dump was output using the Dx-ray tool Analyze function, a hyphen (-) was displayed for all RAID groups.
5	Universal Replicator	Unable to complete UR pair status change at delta resync failure. In UR-UR cascade delta configuration or TC-UR multi-target delta configuration, a delta resync operation failed and the pair status change was not complete (SSB=8E11).
6	Universal Replicator	Failure of mirror deletion with UR pair specified. On the UR Pairs tab of the Remote Replication window, when UR pairs were specified and then mirror deletion was performed, Storage Navigator message 06505-058040 was displayed and the operation failed.
7	Open	LOGO wrongly issued as response. When RLS was received, if an external storage system did not log in to the storage system, a LOGO command was issued as a response.
8	Global-active device	Unintentional GAD pair I/O mode change. When paths between a quorum disk and RCU and from RCU to MCU were blocked at the same time, or paths between a quorum disk and MCU and from MCU to RCU were blocked at the same time, the I/O mode of GAD pairs belonging to a consistency group might become Block/Block.

No	Category	Title and symptoms
9	Open	<p>Unable to display failure ENC if it is sixth or later from SAS port.</p> <p>When an ENC failure occurred (SIM=CF12XX, SSB=A4B1), up to 8 parts were displayed in an ACC of SIM in the following order.</p> <p>(1) 5 ENCs from the first ENC under an SAS port including the failure ENC</p> <p>(2) 1 DKB</p> <p>(3) 1 SAS cable</p> <p>(4) A section of Maintenance Manual for reference</p> <p>As shown above, 5 ENCs were displayed in an ACC, but if a failure occurred in the sixth or later ENC, the failure ENC could not be displayed in the ACC.</p>
10	Dynamic Provisioning, active flash	<p>Hyphen displayed for TL_RANGE and TD_RANGE.</p> <p>While there were DP volumes whose tiering policies were ALL and other than ALL, if the CCI command raidcom get dp_pool -key opt was run, a hyphen (-) was output as the result of TL_RANGE and TD_RANGE.</p>
11	Open	<p>No display of message 32261-209064 for CFM failure blockage.</p> <p>At the completion of CFM replacement, even if a CFM on a different controller (not the one where CFM replacement was performed) was in the warning status (failure blockage), message 32261-209064 was not displayed.</p>
12	Command Control Interface	<p>Planned migration operable even when UR pair in PFUS status.</p> <p>When "planned migration" was performed from SRM, the horctakeover command was run internally.</p> <p>In this case, if a UR pair was in PFUS status, the horctakeover command turned to error and the planned migration should turn to error, but the horctakeover command was wrongly able to be run so that the planned migration did not turn to error.</p>
13	Global-active device	<p>Unintentional I/O mode change at failure suspension.</p> <p>While pairs that used the same quorum disk were in COPY and PAIR status respectively, if all paths between DKCs were blocked and the pairs were suspended due to failure, the P-VOL of the pair in COPY status might change to PSUE (Block) status. After that, the I/O mode of the pair became Block/Block.</p>
14	Dynamic Provisioning, Dynamic Tiering, Thin Image	<p>Drive blockage at LA error during rebalance processing.</p> <p>While an ECC/LRC pin existed in a parity slot, an LA error occurred during rebalance processing (*) and a drive might be blocked.</p> <p>SSB=B2FF, A443, SIM=EF1XXX</p> <p>* The rebalance processing works at pool volume addition or deletion, page migration by tier relocation (when DT is used), or zero data page reclamation.</p>

No	Category	Title and symptoms
15	Dynamic Provisioning, Dynamic Tiering, Thin Image	Delay in write I/O with page allocation. A write I/O with page allocation was delayed. In the case of high load I/O, SSB=1607 might be logged.
16	Open	Delay in response at ATS miscompare. At ATS miscompare, a response was delayed.
17	Open	Blockage of external path. When an RNID was received, an external path was blocked. SIM=21D0XX
18	Open	Setting change with lock disabled if system/resource lock remains wrongly. Releasing system lock or resource lock failed so that the lock remained and setting changes that required lock were disabled after that.
19	Open	Hitachi Device Manager -Storage Navigator disappeared. On SVP/MPC, Hitachi Device Manager -Storage Navigator disappeared from the list of Programs and Features in Control Panel.
20	Open	PS OFF unavailable and failure of system start-up after that. PS OFF could not be performed (SIM=388F00) while CFMs of both controllers were blocked (SIM=307500, SIM=307501, SSB=00A2). After that, if the storage system was forcibly turned off and then PS ON was performed, the storage system did not start up.
21	Global-active device	I/O mode change of GAD pair to Block/Block. When a write I/O was issued to a GAD pair belonging to a CTG while a pool that the GAD pair used was full, the I/O mode of the GAD pair became Block/Block.
22	Universal Replicator	Failure of copy processing restart after path failure recovery. In UR MxN configuration, after path failure recovery, the copy processing did not restart but remained in stopped state.
23	Open	Display failure of drive type in SIM. When a drive failure occurred, the following phenomena occurred. Phenomenon 1: A drive type that should be displayed along with an action code was not displayed in a SIM. Phenomenon 2: An incorrect drive type might be displayed in a SIM.
24	Open	Remaining lock obtained disabling setting operation. A lock could not be released so that setting operations that required obtaining a lock were disabled.

No	Category	Title and symptoms
25	ShadowImage	Failure of SI pair creation and MP blockage. SI pair creation failed and an MP was blocked. SSB=2322
26	Global-active device	Unintentional I/O mode change to Block/Block resulting in access loss. After a quorum disk failure occurred, if all paths from MCU to RCU were disconnected while an I/O was running to GAD pairs belonging to a CTG, and then the pairs were suspended from RCU side, the I/O mode of some GAD pairs in the CTG became Block/Block and accesses were disabled.
27	Global-active device	Unintentional I/O mode change to Block/Block. After a quorum disk failure occurred, if all paths from MCU to RCU were disconnected and then GAD pairs were suspended from the RCU side, the I/O mode of some GAD pairs became Block/Block.
28	Global-active device	Suspending operation wrongly performed per CTG. The suspending processing that worked due to a path failure between storage systems after quorum disk blockage was performed per pair, but the suspending processing that worked when a write I/O was issued to the volume paired with the one where the suspending processing was performed might be performed per CTG.
29	Open	Illegal Request returned. After upgrading the microcode, the storage system returned Illegal Request for an I/O issued to an LDEV that did not support T10 PI. SSB=D095 or D060
30	TrueCopy, Universal Replicator, global-active device, Universal Volume Manager	Failure of FCHF microcode exchange and CHB blockage. FCHF microcode exchange failed. If the FCHF microcode exchange was retried 4 times within 24 hours, a CHB port was blocked. SSB=B3D4, B3D3, B39D, 39AA SIM=2120XX
31	TrueCopy, Universal Replicator, global-active device	Failure of CHB replacement after port blockage. After a port was blocked due to a failure on the 2HF16 port protocol chip, CHB replacement failed with message 30762-208204.
32	Open	Failure or taking time of LU deletion. LU deletion from Hitachi Block Storage Driver (HBSD) in Open Stack Cinder connection environment took a long time or failed. SSB=DCD1

No	Category	Title and symptoms
33	Open	Firmware update unavailable. When multiple parity group IDs were specified and parity group deletion was performed, SSB=1831 and 157F were logged and the deletion failed. After that, DKCMAIN could not be selected at firmware update and firmware update could not be performed.

NAS OS and SMU firmware

The following table lists the bug fixes and known issues in this NAS OS and SMU firmware release.

No	Issue ID	Description
1	121074	The following error messages from McAfee virus scan server have been added and are now recognized and actioned appropriately: (1) 453 "Error, file not found._" (2) 291 "Error reading file, the scanner does not have rights to open/read file._" (3) 994 "Error the file is locked and could not be scanned._" (4) 476 "The scan exceeded the maximum scan time allowed_"

Acronyms and abbreviations

3DC	three data center
AMS	Hitachi Adaptable Modular Storage
ASP	authorized service provider
BEM	back-end module (also called disk adapter)
CCI	command control interface
CL	cluster
CLI	command line interface
CM	cache memory
CRC	cyclical redundancy checking
CSV	Cluster Shared Volumes
CTG	consistency group
CU	control unit
CUDG	control unit diagnosis
DB	drive box
DF700	factory model number for Hitachi Adaptable Modular Storage 200, 500, 1000
DF800	factory model number for Hitachi Adaptable Modular Storage 2000
DF850	factory model number for Hitachi Unified Storage
DKA	disk adapter (another name for back-end director)
DKAF	DKA firmware
DKC	disk controller (refers to the entire storage system)
DKCMAIN	disk controller main (refers to the microcode/firmware)
DP	Hitachi Dynamic Provisioning
DP-VOL	Dynamic Provisioning V-VOL
DRU	Hitachi Data Retention Utility
DS	dynamic sparing
DT	Hitachi Dynamic Tiering
DW700	factory model number for Hitachi Unified Storage VM
DW800	factory model number for Hitachi Virtual Storage Platform Gx00 and Fx00
ECC	error checking and correction
ECN	engineering change notice
EQC	equipment check
FC	fibre channel
FCoE	fibre channel over ethernet
FEM	front-end module (also called channel adapter)
FMC	flash module compression (another name for the FMD DC2 drives)
FMD	flash module drive
FRS	Feature Release Schedule
GPFS	General Parallel File System
GUM	gateway for unified management (another name for the maintenance utility)
HA	high availability
HAM	Hitachi High Availability Manager

HCS	Hitachi Command Suite
HDD	hard disk drive
HDS	Hitachi Data Systems
HDP	Hitachi Dynamic Provisioning
HDT	Hitachi Dynamic Tiering
HDVM	Hitachi Device Manager
HM700	factory model number for Hitachi Unified Storage VM
HM800	factory model number for Hitachi Virtual Storage Platform Gx00 and Fx00
HMO	host mode option
HNAS	Hitachi Network-Attached Storage
HTI	Hitachi Thin Image
HUS VM	Hitachi Unified Storage VM
JNL	journal
JNLG	journal group
LBA	logical block address
LDEV	logical device
LU	logical unit
LUSE	logical unit size expansion
MCU	main control unit
MP	microprocessor
MPC	maintenance PC
MSCS	Microsoft Cluster Server
NASFW	NAS module firmware
PDEV	physical device
PS, P/S	power supply
P-VOL	primary volume
RAID600	factory model number for Hitachi Universal Storage Platform V/VM
RAID700	factory model number for Hitachi Virtual Storage Platform
RAID800	factory model number for Hitachi Virtual Storage Platform G1000
RC	reference code
RCU	remote control unit
SAS	serial-attached SCSI
SI	Hitachi ShadowImage
SIM	service information message
SMU	system management unit
SOM	system option mode
SPM	Hitachi Server Priority Manager
SSB	sense byte
SSD	solid-state drive (also called flash drive)
S-VOL	secondary volume
SVOS	Storage Virtualization Operating System
SVP	service processor
TC	Hitachi TrueCopy
TI	Hitachi Thin Image
TOV	time-out value
TS	Technical Support

UR	Hitachi Universal Replicator
UVM	Hitachi Universal Volume Manager
VM	Volume Migration
VSP	Hitachi Virtual Storage Platform
VSP Fx00	Hitachi Virtual Storage Platform F400, F600, F800
VSP G1000	Hitachi Virtual Storage Platform G1000
VSP Gx00	Hitachi Virtual Storage Platform G200, G400, G600, G800
V-VOL	virtual volume
WWN	worldwide name

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