IBM System Storage - DS8870 Disk Storage
Microcode Bundle 87.51.38.0 Release Note Information v1.2

Release Date: March 31, 2016

VRMF Level Data Results:

VRMF level From:	87.51.23.0
VRMF Level To:	87.51.38.0
Report for:	All DS8870

Code Bundle Contents

This table includes code component reference information.

DS8870 Code Bundle Level	SEA or LMC Version:	DS CLI Client	Easy Tier Client	STAT Tool	Heat Map Transfer Utility	Storage Manager
87.51.38.0	7.7.51.470	7.7.51.470	7.7.51.470	7.7.51.470	7.7.51.470	5.7.51.1041

Overview of new features and functions supported by this release on DS8870, 242x model 961

At a glance:

• DS GUI improvements

• REST API improvement

• Important bug fixes

This new microcode release supports only the DS8870.

Select Modifications Included in this Release Note:
This is a list of some modifications contained across one or more LIC (License Internal Code) or microcode release(s). The potential impact is variable. Specific environments may aggravate or degrade the potential impact. Problem(s) fixed and reported in this release note may not be in higher levels of code bundles.

Definition of Problem Severity:

1	High Impact	- Acute: An irrecoverable error with potential loss of data.
		- Serious: An irrecoverable error with potential loss of access to data.
2	Moderate	- A function not operational and/or performance might be degraded.
3	Service	- A recoverable error (no impact) and service improvements.
4	Improvements	- Improvement changes for better Usability and Serviceability.

HIPER: High Impact problem that is Pervasive: 3 or more occurrences

Acute: An irrecoverable error with potential loss of data.

HIPER Both V-RAID adapters fenced
1. **Problem Description:** A flash card can fail in such a way as to expose microcode logic errors, that lead to fencing both V-RAID adapters.
2. **Potential Impact of Problem:** loss of data and/or loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 312723, 313417

HIPER XRC suspend, abend 9C4-10, No Record Found
1. **Problem Description:** Write command with Bypass Extent Checking set, needs to still check for extent conflicts if prior I/Os did not also specify BEC.
2. **Potential Impact of Problem:** Loss of Data on secondary
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** No
ID#: 313493

Flashcopy target volume deleted
1. **Problem Description:** rmfbvol -force was issued to Flash Copy source devices with Extent Space Efficient targets. The relations were copy complete, persistent. The current design causes withdraw of the Flash Copy relations, releasing the space. Customer was using the target data and reported data loss.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 314380

Serious: An irrecoverable error with potential loss of access to data.

Array offline after Smart Rebuild abort
1. **Problem Description:** Source DDM hang during smart rebuild caused the DDM to be rejected from the smart rebuild array, but not from the parent RAID-5 array, causing ~10 second loss of access
2. **Potential Impact of Problem:** Loss of access
3. **Problem Severity:** Serious
4. **Pervasive Problem:** No
ID#: 289158

Device adapter hang during PCIe error recovery
1. **Problem Description:** Device adapter performing a DMA operation couldn't release it's lock during PCIe fabric recovery. Partner adapter had to wait for timeout and warmstarts to release the locks.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 309129

HIPER Device Adapter showstop

1. **Problem Description:** After smart rebuild abort, the disk deconfigure process hangs, causing DDM replacement failures. If a second DDM fails in the same adapter pair, the prior deconfigure hang can lead to showstop of both DAs, and temporary loss of access.
2. **Potential Impact of Problem:** Loss of Access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 309226

DA Takeover failed

1. **Problem Description:** Rank state changes were not processed because periodic DATO path test processes were queued in the partner LPAR
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 311068

HIPER Repeated V-RAID adapter resets

1. **Problem Description:** A flash card failed in a way that led to repeated V-RAID adapter resets. Fix will detect the condition, and immediately bypass the failing flash card.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** No
ID#: 312369

HIPER Track Format Descriptor mismatch

1. **Problem Description:** Improper setting of flags leads to corruption of the modified sector bitmap.
2. **Potential Impact of Problem:** Global Mirror suspend
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 312882

HIPER SVC mdisk offline

1. **Problem Description:** SAN Volume Controller managed disk went offline when a DS8870 microcode logic error caused fixed block task timeouts.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 313106

LPAR /var filesystem full

1. **Problem Description:** Essni logs were filling up /var
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 311943, 312189

Repeated warmstarts with iSeries linked command chains
1. **Problem Description:** A small timing window allows the next I/O in a linked command chain, before response was sent for the prior I/O.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 313424

DSI on Both LPARs
1. **Problem Description:** Define Subsystem Operation 0x77 (Manage Session Members) specifying an address range that contains 0xFF, will hold onto CPUs in an infinite loop.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 314452

Moderate: A system path is not operational and performance may be degraded.

0x9F1B MLE
1. **Problem Description:** An RPC communication error was not handled gracefully.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 262354

0x7D13 MLE
1. **Problem Description:** A function that checks for out-of-sync track bitmap corruption, caused an out-of-order locking exception
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 302086

PPRC full copy when Brocade fast write is enabled
1. **Problem Description:** A PPRC incremental operation performed a full copy, because Brocade fast write was not handled properly.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 307648

PPRC bad path caused suspend
1. **Problem Description:** Link errors on one PPRC path caused suspend, when other good paths were available
2. **Potential Impact of Problem:** PPRC Suspend
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 307668

Global Mirror long response time
1. **Problem Description:** Path errors while processing global copy collisions can result in long response times
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 308049

Long global mirror RPO times
1. **Problem Description:** Changes made for Multi-Target PPRC support exposed a microcode logic error that results in delays forming consistency groups. This can be seen most often when a large number of volumes have low activity.
2. **Potential Impact of Problem:** Increased RPO
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 309360

HMC /var filesystem full
1. **Problem Description:** dmesg log file was not being rotated
2. **Potential Impact of Problem:** Unable to control system/CS relations
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 311539

0x629 MLE
1. **Problem Description:** Microcode logic error caused by cross-cluster mail locking exception
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 311562

PPRC extended query reports volume pending status
1. **Problem Description:** When performing flashcopy to a Global Mirror volume pair, the volume status always shows as 'pending'. The underlying state was intended to only be used for Metro Mirror pairs.
2. **Potential Impact of Problem:** May cause DR test to fail
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 311653

Virtual Command Ring full
1. **Problem Description:** Size of VCR is not large enough for very large FICON read I/O chains
2. **Potential Impact of Problem:** Interface Control Checks
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 311893

Battery End-of-Life detection
1. **Problem Description:** Weekly proactive check for battery EoL date fails to properly detect battery age
2. **Potential Impact of Problem:** No early warning of battery EoL
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 312447

0xB40B MLE
1. **Problem Description:** I/O responses can be put on the wrong response queue when processing linked command chains on IBM i hosts
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 314765

Service: A recoverable error, Service improvements.

Flash enclosure midplane repair failure
1. **Problem Description:** Intermittent illegal memory access when expected DDM count does not equal current DDM count.
2. **Potential Impact of Problem:** Extended repair action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 308532

TPC reports higher write response times than expected
1. **Problem Description:** Performance routines were including stats collection as write activity
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 308840

DS GUI fails to refresh VOLSER info
1. **Problem Description:** After changing volume label on CKD volumes, GUI continues to display the old label.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 309143

Secure Data Overwrite failure
1. **Problem Description:** SDO fails if too many DDMs on a DA pair are failing, leading to multiple reruns to complete the process.
2. **Potential Impact of Problem:** Extended SDO duration
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 310914

Unable to configure LCUs
1. **Problem Description:** If HMC or LPARs change internal IP addresses, and an IP address was reused, commands may go to the wrong target.
2. **Potential Impact of Problem:** Unable to perform config changes
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311065

Timeout deleting multiple volume aliases
1. **Problem Description:** When deleting a single CKD volume that has multiple aliases, a microcode timeout caused failure to delete the aliases.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311403

CMUN00014E error in legacy DS GUI
1. **Problem Description:** DS GUI fails opening "Copy Services" page, when no LSSs have been created yet.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311405

SRC BE19BDA1 callhome
1. **Problem Description:** Box called home when AC input power was restored to a DC-UPS
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311534

Improve data collection for SRC BE34CA11
1. **Problem Description:** Change trace file directory so that traces will be collected in a PE package, change order of collection for adapter and storage enclosure statesaves
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311549

SRC=BE1E1405 displays improper text
1. **Problem Description:** Remove improper "Corrective Action" text
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311606

Error replacing Flash Card
1. **Problem Description:** Flash card was a member of an array where rank creation had previously failed.
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311783

Heartbeat callhome failure on 2x2 systems
1. **Problem Description:** Internal callhome array size may not be large enough to contain data from both storage facilities.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312120

Improve first-time data capture for DDM deconfigure
1. **Problem Description:** Live dump during DDM deconfigure can fail when recovery actions are in progress. Fix will verify that the deconfigure dump is valid, and if not, we will capture another.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312265

SRC BEB30001 HMC filesystem size check failed
1. **Problem Description:** During PE package collection, the process that collects HMC traces produced corrupted output.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312273

Unable to remove High Performance Flash Enclosure
1. **Problem Description:** Enclosure removal process stalls when the enclosure is powered off
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312706

PE package only collects HMC data
1. **Problem Description:** Change to the file compresson method created some incompatibilities when the HMC and LPARs are at different code levels.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312718

No Customer email notification for SRC=BE310B01
1. **Problem Description:** Email notification did not occur because the SRC flag was not set for email notification.
   This fix will also clarify the options on the Customer notify configuration setup pane. The first option will change from "Call home problem events only" to "Serviceable Event Notification only"
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312939

Health status message was not sent after data loss
1. **Problem Description:** When a data loss event occurs, a health status message is sent, conditioned by a warmstart. If a second event occurs within a 24 hour period, the warmstart may be suppressed, and the health status messsage does not get sent.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 313335

Incorrect AOS status in callhome data
1. **Problem Description:** Code is not correctly parsing Assist Onsite version 4 config information
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 313586

HMC failed to callhome a problem
1. **Problem Description:** After a reboot, the storage facility object was refreshed with corrupted machine type/serial number data
2. **Potential Impact of Problem:** Unable to call home for problems
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 313761

HMC LDAP Create Authentication failed
1. **Problem Description:** When configuring LDAP authentication, user can not upload trust store file
2. **Potential Impact of Problem:** Unable to configure LDAP
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 314385

Add certificate to HMC AOS config file
1. **Problem Description:** Ensure HMC will only communicate with a legitimate broker
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 314702

Assist On Site cannot connect
1. **Problem Description:** After AOS service pack update, permissions are incorrect on the configuration file
2. **Potential Impact of Problem:** Unable to connect for remote support
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 315566

Improvements: Improvement for better usability

Add REST API function to display VRMF
1. **Problem Description:**
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID#: 312621

Add info to GUI and DSCLI display of DDMs
1. **Problem Description:** Add Manufacturer Serial Number info, as printed on DDM labels, to facilitate tracking of DDMs that are removed from a system.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID#: 309120

Update HMC AOS fixpack version
1. **Problem Description:** HMC AssistOnSite v4 FP 2 update
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID#: 311281

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