IBM System Storage - DS8870 Disk Storage
Microcode Bundle 87.31.38.0 Release Note Information v1.1

Release Date: August 28, 2015

VRMF Level Data Results:

VRMF level From:	87.31.24.0
VRMF Level To:	87.31.38.0
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
87.31.38.0	7.7.31.90	7.7.31.90	7.7.31.90	7.7.31.90	7.7.31.90	5.7.31.1035

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

At a glance:

• SSLv3 'Poodle' fix enhancement
• Bug fixes

This new microcode release only supports 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.

Error in GM collision handling
1. **Problem Description:** A microcode logic error handling a GM collision may result in 0x7618 MLE, or incomplete data sent to secondary, depending on timing.
2. **Potential Impact of Problem:** Warmstart, or corrupted consistency group
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 303510

0x7178 MLE, SEFLC target volume in failed state
1. **Problem Description:** Track-Space-Efficient secondary volumes in failed state because of a microcode logic error
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 303700

Provide new warning when replacing DDMs in an offline array
1. **Problem Description:** SSR may replace a DDM that is needed to recover an offline array.
2. **Potential Impact of Problem:** Extended loss of access, or loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 305037

Enable PCIe ECRC checking for High Performance Flash
1. **Problem Description:** End-to-end PCIe ECRC checking was disabled.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 309255

Failing DDM was not rejected
1. **Problem Description:** Failed DDM is not rejected when Device Adapter is in takeover state.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 309406

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

LPAR fails to fence during dual IML
1. **Problem Description:** In Dual IML, an LPAR cannot fence itself if it gets marked "fence pending"
2. **Potential Impact of Problem:** Increased outage duration
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 294445

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Loss of access during CDA when repository size > 50TiB
1. **Problem Description:** Insufficient metadata table space for repositories > 50TiB, but this limit was not enforced.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 295123

HIPER I/O timeout during failed DDM deconfigure
1. **Problem Description:** Operation in process hangs because the DDM is unresponsive, thus preventing quiesce of the DDM.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 298041

Repeated 0xE716 MLE after failover
1. **Problem Description:** NVS data for the failed CEC was being processed, which should have been cleared.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 301554

HIPER Loop errors caused multiple DDM rejections
1. **Problem Description:** Degraded loop led to array members being marked 'Security Degraded', which then caused them to be rejected from the array.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 303528

MLE during dynamic HCD changes
1. **Problem Description:** A microcode error may allow processing of zHPF I/O without first obtaining an SMP lock.
2. **Potential Impact of Problem:** Repeated warmstarts
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 304265

Persistent false HPFE error indication
1. **Problem Description:** High Performance Flash Enclosure surfaced a false error, that could not be cleared.
2. **Potential Impact of Problem:** Disruptive repair
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 304850

CRC errors cause fenced VRA pair
1. **Problem Description:** V-RAID adapter pair was fenced after multiple unit checks caused by bad CRC from one of the RAID managers
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 305143

FB background task timeout
1. **Problem Description:** Cache running out of segments leads to deadlock.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 306339

HIPER Cluster hang during failover
1. **Problem Description:** When cluster failover is preceded by quickstart, the 'surviving' cluster fails to get the statesave lock, causing it to hang in "Cluster Failover" state.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 308404

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

Unbalanced Global Copy path utilization
1. **Problem Description:** Path selection algorithm behaves incorrectly if the SMP bandwidth counters are higher than the host adapter bandwidth counters. This leads to unbalanced path usage, and degraded copy rates.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 271451

MLE during background copy
1. **Problem Description:** The same in-memory relation entry was queued on two different background copy rank queues, causing a microcode logic error.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 291579

Host Adapter Virtual Command Ring too small

1. **Problem Description:** Running large read I/O chains, the channel detects missing IUs from the control unit via IUCount mismatches. The CU is not sending all the IUs it says it is, because the VCR (virtual command ring) has become full.
2. **Potential Impact of Problem:** IFCCs
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 295152

Easy Tier appfw MLE

1. **Problem Description:** After CDA, we have a small window that data persistency between the LPARs is out of sync. Volume deletions during this window can take too long to process, causing repeated microcode logic errors.
2. **Potential Impact of Problem:** Easy Tier unable to function
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 298455

CS Task Timeout caused GM Suspend

1. **Problem Description:** A microcode logic error caused a deadlock condition between cache and copy services functions.
2. **Potential Impact of Problem:** Global Mirror Suspend
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 303225

Easy Tier warm demote after DB2 reorg

1. **Problem Description:** Reorg can trigger demote of active DB2 data to nearline tier
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 305524

Service: A recoverable error, Service improvements.

0x05E0 MLE during SF IML

1. **Problem Description:** A microcode logic error during Storage Facility IML caused the SF to DSI and perform another dual IML. The exposure only exists during full SF IML.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 302748

Prevent accidental LIC downgrade
1. **Problem Description:** SSR was able to accidentally start a CDA process to a lower level of LIC.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 303230

Increase maximum number of TPC-R server connections allowed
1. **Problem Description:** Environments with multiple TPC-R servers may exceed the maximum client logins to the DS8K. This change increases the default maximum client logins from 10 to 64.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 303459

DS Storage Manager GUI hangs
1. **Problem Description:** The GUI server hit an Out-of-Memory Java error
2. **Potential Impact of Problem:** Unresponsive GUI
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 304096

Option to disable 240-byte performance data
1. **Problem Description:** Code levels that supply 240-byte performance data to zOS are problematic for Customers that are running versions of zOS older than 1.12, or z/VM without VM65248. This fix provides the option to revert to the older 192-byte device performance stats.
2. **Potential Impact of Problem:** Abends
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 305219

Unable to run commands to VRAID adapter when in service mode
1. **Problem Description:** Could not run low-level VRAID commands
2. **Potential Impact of Problem:** Extended maintenance window
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 305254

Missing heartbeat callhome
1. **Problem Description:** After spring Daylight Saving Time change, heartbeat fails to collect data until HMC is returned to standard time.
2. **Potential Impact of Problem:** Missing heartbeats
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
ID#: 305698

Enhanced VRAID soft error isolation
1. **Problem Description:** Soft error analysis does not always correctly identify the failing component
2. **Potential Impact of Problem:** Multiple repair actions
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 305894

DDM replacement failure
1. **Problem Description:** Map 4970 enhancement for SRC BE340027 where DDM is bypassed by FCIC firmware.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 307067

Improvements: Improvement for better usability

SSLv3 'Poodle' fix enhancement
1. **Problem Description:** Current implementation leaves Customers with problems accessing systems that do not yet have the 'Poodle' fix.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID#: 305745

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