IBM System Storage - DS8870 Disk Storage
Microcode Bundle 87.51.81.0 Release Note Information v1.1

Release Date: March 31, 2017

VRMF Level Data Results:

VRMF level From:	**87.51.63.0**
VRMF Level To:	**87.51.81.0**
Report for:	**All DS8870**

Code Bundle Contents

DS8000 Code Bundle	SEA or LMC	DSCLI Client	STAT Tool	Easy Tier Client	Heat Map Transfer Utility	Storage Manager Code Level
87.51.81.0	7.7.51.1990	7.7.51.1990	7.7.51.1990	7.7.51.1990	7.7.51.1990	5.7.51.1092

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

At a glance:

- Improvements
- Bug fixes

This new microcode release supports DS8870 systems only.

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

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Acute: An irrecoverable error with potential loss of data.

XRC data miscompare
1. **Problem Description:** A channel error occurred while processing a bitmap toggle command. The command was redriven, resetting bitmap values that should not have been reset.
2. **Potential Impact of Problem:** loss of data on XRC secondary
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 324307

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

Call Home on first instance of a Host Adapter MLE
1. **Problem Description:** Original design of DS8K was not to call home for HA Microcode Logic Errors until the third occurrence. These are normally recoverable by warmstart, but in some cases, temporary loss of access can occur.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 310655

0x7F91 TCB manager deadlock
1. **Problem Description:** Cache was out of free segments, and a deadlock condition did not allow demote to free up additional cache segments.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 318029

Copy Services TCB manager detected a deadlock
1. **Problem Description:** Deadlock caused Cluster reboot. Subsequent deadlock could then cause the partner Cluster to reboot.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 319838

Array offline, pinned data
1. **Problem Description:** During device adapter recovery, function to disable adapter ports can take > 2 minutes to complete, causing temporary loss of access to arrays.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 320850

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Operating LPAR DSI during resume of partner LPAR

1. **Problem Description:** A PCIe failure caused a warmstart during failback, exposing a timing condition that caused Cache Directory Control Block corruption. A second warmstart then hit the corruption, causing DSI.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 321939

0xE50 MLEs

1. **Problem Description:** Failed cleanup of Task Control Block for task that was being retried
2. **Potential Impact of Problem:** Repeated warmstarts
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 321944

TPC-R freeze caused by HMC internal network adapter issue

1. **Problem Description:** Internal network issue between HMC and LPARs caused TPC-R missed heartbeats, and led TPC-R to issue a freeze, which in turn caused access loss to applications. Fix will lower the threshold to call home for the network adapter issue.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 324396

IBM i LUN discovery problem

1. **Problem Description:** IBM i serial number prefix is captured incorrectly if it has a leading zero
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 324682

I/O error when withdrawing FlashCopy relationship

1. **Problem Description:** Withdraw issued to FLC relationship with multi-incremental change recording, can hit a timing window where the target volume is withdrawn, and an I/O occurs before the source has also been withdrawn.
2. **Potential Impact of Problem:** I/O error, could trigger Hyperswap
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 324943

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

Inactive Multi-Target incremental out-of-sync tracks do not decrease
1. **Problem Description:** When an inactive MTIR relationship shares a target with an active global copy, the OOS bitmap does not decrease, even if there is no write activity
2. **Potential Impact of Problem:** Longer sync times
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 297591

0x7003 MLE
1. **Problem Description:** Cache attempts to read or write the csStatus member of a Task Control Block after the TCB has been reallocated
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 310235

Host Adapter MLE
1. **Problem Description:** Host adapter reported TX_DMA error on an inactive link
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 312819

Host reports sense F019 and stalled modules
1. **Problem Description:** Under certain conditions, a smart rebuild abort on a RAID-10 array may pause I/O to the array for ~5 seconds.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 315393

0x7D0E MLE
1. **Problem Description:** XRC tried to release a lock that was not being held, causing a microcode logic error.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 316139

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No failover to remaining TPC Auth server after one TPC server failed
1. **Problem Description:** Process to authenticate via LDAP became hung after one TPC Authentication server went down.
2. **Potential Impact of Problem:** Unable to manage DS8K via TPC
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 317761

0xB02C MLE
1. **Problem Description:** During live reset while processing an ODD, FICON operations do not terminate, and as a result, the live reset times out and forces a warmstart.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 317775

0x1C92 MLE
1. **Problem Description:** Device Adapter completion polling hit a DA spinlock timeout, which resulted in a Microcode Logic Error.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 320420

0x4B05 MLE
1. **Problem Description:** zHPF write I/O with > 55 records in a track is split into two DMAs. An error during the first DMA exposed a microcode logic error when attempting to process the second DMA.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 320670

DDM media errors caused performance impact
1. **Problem Description:** Fix lowers correctable media error thresholds
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 321413

0x1321 MLE
1. **Problem Description:** Device Adapter config request structure was cleared by the partner adapter
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 322736

Performance degraded on workloads dependent on hw reserves
1. **Problem Description:** Hardware device reserve processing may delay allowing a disconnected device to reconnect
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 324961

Service: A recoverable error, Service improvements.

Incomplete lost frame analysis
1. **Problem Description:** Fibre Channel Lost Data Frame counters also include counts for Lost Non-Data Frames. Also there is no summary for lost non-data frame counts
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 298786

Incomplete FRU list for DC-UPS failure
1. **Problem Description:** An error against the DC Supply Unit was found to be cause by a defective Battery Service Module
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 304092

HMC repeatedly trying to update LPAR IP addresses
1. **Problem Description:** In dual HMC configuration, one HMC may repeatedly try to update LPAR private IP addresses after the partner has already performed the update.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 315151

Unable to resume LPAR after CDA suspend
1. **Problem Description:** CDA suspended because of a procedural problem, but once the issue was found and corrected, multiple recovery actions were queued, and had to be manually cleared.
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 315378

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Frequent SNMP Trap202
1. **Problem Description:** SNMP reporting large numbers of PPRC Freeze and Pause With Consistency events.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 316458

Memory warning after p7 memory riser replacement
1. **Problem Description:** Repair path for memory riser replacement did not perform all steps necessary to reactivate deconfigured memory
2. **Potential Impact of Problem:** Extended repair action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 318083

No serviceable event generated for DDM failure
1. **Problem Description:** DDM was rejected by DAHP while in the process of being spared out using smart rebuild.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 319400

Unable to remove key server using DS GUI
1. **Problem Description:** DS GUI did not allow removal of a key server definition when only two are defined
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 321108

CMUN00015E command execution timeout
1. **Problem Description:** DSCLI "lshostconnect -l" command timeout with large numbers of host connections. Fix implements a faster query method.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 321112

Some SRC=BE14EAFx events do not auto-close
1. **Problem Description:** Serviceable events for Key Server connection problems should auto-close when the connection is restored.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 321483

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Array and Rank creation slow or may time out
1. **Problem Description:** Problem caused by internal server hard drive contention with a data scrubbing process.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 321536

Host map still exists after volume deletion
1. **Problem Description:** After deleting a logical volume, the volume host mapping persists.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 322093

Invalid heat map data from ESS01
1. **Problem Description:** EasyTier produces invalid heat map data for LPAR ESS01, if extent 0 of LUN 0 is performing I/O
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 322390

No SNMP alert after system firehose dump shutdown
1. **Problem Description:** Check for power mode was done before HMC had established communication to the system.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 322408

Secure Data Overwrite false pre-check failure
1. **Problem Description:** Drives were in a good state for SDO, but failed pre-check because a service state flag was not reset.
2. **Potential Impact of Problem:** Extended SDO duration
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 322705

SRC=BE193001 did not call home
1. **Problem Description:** SRC was incorrectly flagged as a temporary condition, with call home not required
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 323169

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False V-RAID adapter fan errors
1. **Problem Description:** Increase error thresholds to reduce serviceable events for false fan errors.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
ID#: 323259

Incorrect translation in DS GUI
1. **Problem Description:** DS GUI incorrectly translates "KIOPS" for French language implementations.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 323848

Incorrect Key Manager path status with single HMC
1. **Problem Description:** Path status was being incorrectly reported as degraded on HMC2, when there was no HMC2
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 323996

Change Assist OnSite Access Control List group
1. **Problem Description:** Change to allow only the single AOS ACL group IBM/BLUE/GTS/EMEA/STORAGE/DS8000 for EMEA systems.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 324050

SRC=BE14EAF1 does not auto-close
1. **Problem Description:** HMC Key Manager communication errors should auto-close when communication is restored.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 324091

Security scan flags SLPd service active
1. **Problem Description:** Service Location Protocol service was left active when CIM Agent was not running
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 324342

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AllProblems file generation failed
1. **Problem Description:** AllProblems generation failed because a required socket service was not running
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 324464

Unable to install HPFEs in rack 2
1. **Problem Description:** High Performance Flash Enclosure install in Business-Class rack 2 fails, because of incorrect plugOrder files
2. **Potential Impact of Problem:** Extended install duration
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 325113

No serviceable event for HMC ethernet adapter failure
1. **Problem Description:** Add detection code for adapter interface errors, and generate callhome
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 325469

Improvements: Improvements for better usability

Collect PE package from both HMCs
1. **Problem Description:** In dual-HMC systems, PE package collection on one HMC will automatically collect data from both HMCs
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID#: 319477

Update AOS to latest 4.0.1
1. **Problem Description:** Assist OnSite maintenance release
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID#: 320543

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'Delete pool with Volumes' function
1. **Problem Description:** Enable DS GUI function to delete a segment pool, and the associated volumes, if they exist.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID#: 320927

Export CSV for "Volumes by LSS" function
1. **Problem Description:** Add function in DS GUI to export volumes by LSS data to CSV file
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID#: 320935

Remote Support Console
1. **Problem Description:** Add support for RSC method for remote access.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID#: 325539

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