IBM System Storage - DS8880 Disk Storage
Microcode Bundle 88.24.6.0 Release Note Information v1.1

Release Date: November 7, 2017

VRMF Level Data Results:

VRMF level From:	**88.23.27.0**
VRMF Level To:	**88.24.6.0**
Report for:	**All DS8880**

Code Bundle Contents

DS8880 Code Bundle Level	SEA or LMC Version:	DSCLI Client	STAT Tool	Heat Map Transfer Utility	Storage Manager	Copy Services Manager
88.24.6.0	7.8.24.14	7.8.24.11	7.8.24.11	7.8.24.11	5.8.24.1007	6.1.5

Overview of new features and functions supported by this release

At a glance:

- Code fixes

This new microcode release supports DS8880 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.

None.

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

HIPER Failover and cluster reboot during PCIe error recovery
1. **Problem Description:** During PCIe error recovery, Device Adapter deconfiguration may hang while attempting to unload the device driver
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 300160

HIPER Metro/Global Mirror suspend, GDPS freeze
1. **Problem Description:** Systems running DB2 Castout Accelerator can expose a condition that results in a track access deadlock during I/O redrive.
2. **Potential Impact of Problem:** I/O timeout, Warmstart
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 326226

HPFE Gen1 logical disk failure
1. **Problem Description:** During command timeout recovery, the SAS expanders may cause both V-RAID adapters to disconnect from the flash drives at the same time. This then causes the V-RAID adapters to fail multiple flash drives.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 326271

Cache LRU scan deadlock
1. **Problem Description:** A microcode logic error caused the LRU list pointer to become stuck at the top of the list, rather than scanning up from the bottom.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 327821

HIPER Cache segment demote scan stalled
1. **Problem Description:** http://www.ibm.com/support/docview.wss?uid=ssg1S1010881
2. **Potential Impact of Problem:** Repeated warmstarts, loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 330499

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

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

0x109 MLE during failback to dual cluster
1. **Problem Description:** During failback, a PCIe fabric recovery action interrupted cross-cluster communication.
2. **Potential Impact of Problem:** Warmstart, re-IML offline cluster, and retry failback
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 322794

0x01B7 MLE scanloop timeout
1. **Problem Description:** CPU lock contention may cause task control block starvation in copy services environments.
2. **Potential Impact of Problem:** ODD dump
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 324202

0x166A MLE during DDM firmware update
1. **Problem Description:** During DDM firmware update, DDM exceeded the pre-emptive reconstruct timeout value
2. **Potential Impact of Problem:** ODD dump
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 325105

0x01B7 MLE
1. **Problem Description:** Global Mirror collision function incorrectly setting Extended Distance Consistency session locks.
2. **Potential Impact of Problem:** degraded performance, ODD dumps
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 325696

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Poor cache hit ratios
1. **Problem Description:** This defect addresses multiple issues:
   a.) SARC algorithm is not properly differentiating between random and sequential tracks on flash arrays.
   b.) Error in LRU scan list management
   c.) Error in scan stall management
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 327091

Easy Tier usage issue with small extents
1. **Problem Description:** Easy Tier mis-records usage stats for small extents with low usage
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 327563

Global Mirror suspend while removing a volume from the session
1. **Problem Description:** Volume removal exposed a timing window where a consistency group was beginning to form, but was not yet aware that the volume had been removed from the session.
2. **Potential Impact of Problem:** Global Mirror suspend
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 329059

LRC error incorrectly fenced a Host Adapter
1. **Problem Description:** Sector LRC was good across the 524-byte IBM i sector, but was not good across the 512-byte data portion. When the sector was subsequently read, the data area LRC was not checked until it got to the host adapter.
2. **Potential Impact of Problem:** loss of path
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 330688

Service: A recoverable error, Service improvements.

DSCLI lsarraysite, lsextpool, and lsioport fail with CMUN00015E
1. **Problem Description:** Command hang when failing internal query of fibre channel ports caused an out-of-memory condition.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 323754

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Slow DS GUI cache refresh
1. **Problem Description:** When large numbers of volumes are changed, DS GUI cache refresh may restart many times before it completes. During cache refresh, DS GUI is not usable.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 326848

Improvements: Improvements for better usability

None.

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