

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.1.40.0 Release Note Information v1

Release Date: July 31, 2016

VRMF Level Data Results:

| | |
|------------------|------------|
| VRMF level From: | 88.1.26.0 |
| VRMF Level To: | 88.1.40.0 |
| Report for: | All DS8880 |

Code Bundle Contents

| DS8880 Code Bundle Level | SEA or LMC Version: | DS CLI Client | STAT Tool | Heat Map Transfer Utility | Storage Manager |
|--------------------------|---------------------|---------------|-----------|---------------------------|-----------------|
| 88.1.40.0 | 7.8.1.95 | 7.8.1.95 | 7.8.1.95 | 7.8.1.95 | 5.8.1.1042 |

Overview of new features and functions supported by this release on DS8884 283x model 980, DS8886 283x model 981, and DS8888 283x model 982

At a glance:

- Support 1.8 TB 10K RPM 2.5" SAS drives
- Support 6 TB 7200 RPM 3.5" Nearline SAS drives
- Support RAID-10 on Flash Drives (SSDs)
- Support In-Release microcode back-level
- Cloud integration -
 - Power VC
 - OpenStack Liberty
 - Spectrum Control Base (SCB)
 - IBM Cloud Manager (ICM)
- Support for model conversion from DS8870 to DS8884 or DS8886 with single phase power
- Bug 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.

FlashCopy caused TFD mismatch on PPRC secondary

- 1. Problem Description:** Executing FlashCopy Establish to a target volume that is a PPRC primary, caused incorrect data to be written to the PPRC secondary.
 - 2. Potential Impact of Problem:** loss of data
 - 3. Problem Severity:** High Impact
 - 4. Pervasive Problem:** No
- ID#: 312069

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

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

V-RAID unit check did not reset the adapter

- 1. Problem Description:** A V-RAID adapter was issuing repeated unit checks because expected recovery actions were not done.
 - 2. Potential Impact of Problem:** loss of access
 - 3. Problem Severity:** High Impact
 - 4. Pervasive Problem:** No
- ID#: 312824

Repeated PCIe fabric errors caused LoA

- 1. Problem Description:** During LPAR failover/failback, PCIe fabric errors on the failing LPAR can cause a loss of the last Device Adapter path.
 - 2. Potential Impact of Problem:** loss of access
 - 3. Problem Severity:** High Impact
 - 4. Pervasive Problem:** No
- ID#: 312929

Loss of Access to RAID-6 arrays caused by DA NVRAM failure

- 1. Problem Description:** RAID-6 arrays may go offline for ~90 seconds after a Device Adapter NVRAM failure.
 - 2. Potential Impact of Problem:** loss of access
 - 3. Problem Severity:** High Impact
 - 4. Pervasive Problem:** No
- ID#: 313179

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Storage Manager CMUN0410E error

- 1. Problem Description:** After a storage system power up, if encryption key servers are not available, DS GUI does not allow access to enter the recovery key.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID#: 313345

GDPS freeze after Metro Mirror suspend

- 1. Problem Description:** Cache deadlock led to rank metadata prestage failures.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID#: 313714

Ranks created without spares

- 1. Problem Description:** Ranks that should have been created with spares (6+P+S) were created without (7+P). If this happens with only two ranks on a DA Pair, no spares will be available.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID#: 315128

Temporary loss of access and 0x14E MLE during failback

- 1. Problem Description:** A timing condition during cluster failback may result in NVS journal cleaner loop, that hangs the failback sequence for 30 seconds.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID#: 316421

Full copy required to recover from hyperswap in CFE mode

- 1. Problem Description:** Cascaded Failover Enhancement is a form of Multi-Target PPRC that allows failover to a 'B' copy. But the code did not allow recover from B -> A without doing a full copy.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID#: 316985

POR of host system may cause IFCCs on other hosts

- 1. Problem Description:** Power-On-Reset of System z host may result in DS8K 16Gb/S Host Adapters sending continuous Test Initialization (TIN) requests, until Host Adapters run out of exchanges.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID#: 317619

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ABORT VOL TASKS 2 error on nSeries systems

- 1. Problem Description:** Change the DS8K default QERR setting of 01 to 00 for nSeries hosts
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID#: 317746

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

0x1C3D MLE during flash rank create or delete

- 1. Problem Description:** VRAID adapter processing two Query Array Config commands at the same time, caused a microcode logic error.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes

ID#: 308351

0x5168 MLE with 145 ranks configured

- 1. Problem Description:** When 145 total ranks are configured, incorrect data transfer on Log sense 34h command can trigger a microcode logic error.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID#: 310447

I/O timeouts, transaction purge

- 1. Problem Description:** A failing DDM in a RAID-5 array may impact write performance, until it is rejected from the array.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID#: 311955

Bypass Extent Check not working

- 1. Problem Description:** Using the Change Recording bit as an indicator that FlashCopy is active, is no longer reliable.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID#: 312392

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0x01B7 MLE when establishing MT-PPRC

- 1. Problem Description:** Establishing Multi-Target PPRC relation fails with a locking exception.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes

ID#: 312779

Performance impact during host adapter update

- 1. Problem Description:** PPRC was continuing to use a path that was experiencing errors. Host adapter update recycled the good path, exposing the problem.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID#: 312808

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 Adapter MLE on zHPF write

- 1. Problem Description:** A zHPF write having more than 55 records exposes a microcode logic error
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID#: 312842

Device Adapter MLE

- 1. Problem Description:** Hot Spare flags were not properly initialized.
- 2. Potential Impact of Problem:** Adapter dump, Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID#: 314144

0x700B MLE

- 1. Problem Description:** A timing window exists when a Consistency Group fails, and a Global Copy collision was in flight, Global Mirror may think the GC collision is still in flight, triggering a microcode logic error.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID#: 314648

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Slow DB2 Reorg on System z.

- 1. Problem Description:** Unusual PAV configuration resulted in EasyTier heat data being presented to the host on an alias device. Fix will check that the device being used for offload is in an active path group, and that it is not an alias device.
 - 2. Potential Impact of Problem:** degraded performance
 - 3. Problem Severity:** Moderate
 - 4. Pervasive Problem:** No
- ID#: 314718

0x5E0 MLE, and fenced cluster

- 1. Problem Description:** A timing window exists where a V-RAID adapter is being configured and a periodic process to collect rank and adapter statistics receives invalid data, triggering an LPAR crashdump.
 - 2. Potential Impact of Problem:** degraded performance
 - 3. Problem Severity:** Moderate
 - 4. Pervasive Problem:** No
- ID#: 315779

0x1C3C MLE during array create

- 1. Problem Description:** Log sense timeout in davradisklist and davradiskinfo routines.
 - 2. Potential Impact of Problem:** Warmstart
 - 3. Problem Severity:** Moderate
 - 4. Pervasive Problem:** No
- ID#: 317511

Service: A recoverable error, Service improvements.

Automate DC-UPS event log collection after IML

- 1. Problem Description:** Improve data collection after power off event.
 - 2. Potential Impact of Problem:** none
 - 3. Problem Severity:** Service
 - 4. Pervasive Problem:** No
- ID#: 291512

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

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Background media scan false positives

- 1. Problem Description:** On certain 300G/15K drive families, log entries created by internal scan routines are being mis-counted as media events.
- 2. Potential Impact of Problem:** Excessive drive replacements
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#: 309568

Selectively filter state=10 DDM information

- 1. Problem Description:** DDMs marked for deferred replacement (state=10) are incorrectly being shown in DS GUI, DSCLI, and TPC-R queries.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#: 310532

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

SSR unable to launch MPRD config panel

- 1. Problem Description:** SSR is unable to configure MRPD (heartbeat) callhome, because of an incorrect cipher suite configuration in the HMC.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:313471

Incorrect V-RAID adapter status in GUI

- 1. Problem Description:** Storage Manager GUI shows incorrect V-RAID adapter status information. V-RAID status information should only be shown as part of the Flash Enclosure status.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:313726

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

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False SRC=BE820115

- 1. Problem Description:** During a service action healthcheck surfaced an I2C bus error, and created a false serviceable event.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:314348

HMC contacting addons.mozilla.org

- 1. Problem Description:** Firefox language pack add-ons periodically check for updates. This is benign, but the traffic appears suspicious. HMC configuration has been changed to block the outbound traffic.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:314354

Security scan missing TLS v1.2

- 1. Problem Description:** Legacy port 9660 was open for MSIE applet compatibility. This port was no longer used, so was not updated for TLS v1.2 authentication, causing security scans to flag the vulnerability.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:314401

Unable to change private IP range to 9.x.x.x

- 1. Problem Description:** After the change, each HMC saw the other as offline in the peer node.
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:315177

HMC restore failure

- 1. Problem Description:** Dual HMCs backup can transfer the data to the LPARs at the same time, which can cause corrupted backup.
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:315489

'Event List Trimmed' messages in DS GUI

- 1. Problem Description:** Excessive 'Event List Trimmed' messages, and some also have misleading descriptions.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:316046

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DSCLI unable to login to older systems

- 1. Problem Description:** Java security updates have disabled older ciphers that are needed to login to older systems, even when the disableSSLv3 workaround is applied.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:316136

SRC=BE1E2182 text is not clear

- 1. Problem Description:** BE1E2182 should indicate that the LPAR resume could not complete because the **operational** LPAR is at a higher LIC level.
- 2. Potential Impact of Problem:** Extended service window
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:316588

False key manager connection timeouts

- 1. Problem Description:** When running key manager connectivity test, the operation gave a false failure result, because of an error in the GUI code.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:316729

RPC fenced with SRC=BE19D1E1

- 1. Problem Description:** Running multiple instances of "View Hardware Topology" utility may cause Rack Power Control communication timeouts. Fix adds a "Busy" dialog, to indicate the utility is still running.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:316736

Storage Enclosure add MES failed

- 1. Problem Description:** Failure was caused by Resource Manger out-of-memory condition. Fix adds RM memory usage tracing
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID#:316929

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DS GUI 'Capacity' indicator colors are confusing

- 1. Problem Description:** Meaning of colors has been changed as follows:
If any pool is over-provisioned and over threshold, show capacity in yellow. If any pool is over-provisioned and full, show capacity in red
 - 2. Potential Impact of Problem:** none
 - 3. Problem Severity:** Service
 - 4. Pervasive Problem:** No
- ID#:317008

Callhome / data offload failure after HMC reload and restore

- 1. Problem Description:** Customer proxy settings were not included in the HMC data backups.
 - 2. Potential Impact of Problem:** HMC unable to call home
 - 3. Problem Severity:** Service
 - 4. Pervasive Problem:** No
- ID#:317025

V-RAID adapter replacement failure

- 1. Problem Description:** Repair did not recognize Customer Card ID Number (CCIN) PSWH as a valid replacement part.
 - 2. Potential Impact of Problem:** Extended service window
 - 3. Problem Severity:** Service
 - 4. Pervasive Problem:** Yes
- ID#:318026

FRU list incorrect for SRC=BE197073

- 1. Problem Description:** Symbolic procedure calls RPC C2 port T206, should be port T205.
 - 2. Potential Impact of Problem:** Extended service action
 - 3. Problem Severity:** Service
 - 4. Pervasive Problem:** No
- ID#:318575

Improvements: Improvements for better usability

Autoclose key manager SRC BE14EAF1

- 1. Problem Description:** SRC BE14EAF1 is surfaced if communication is lost to a key manager server. If communication is restored within 4 hours, the SRC will be automatically closed.
 - 2. Potential Impact of Problem:** none
 - 3. Problem Severity:** Improvement
 - 4. Pervasive Problem:** No
- ID#:314751

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