IBM System Storage - DS8800 Disk Storage
Microcode Bundle 86.31.142.0 Release Note Information v1.1

Release Date: October 3, 2014

VRMF Level Data Results:

VRMF level From:	86.31.123.0
VRMF Level To:	86.31.142.0
Report for:	All DS8800

Code Bundle Contents

This table includes code component reference information.

DS8000 Code Bundle Level	SEA or LMC Version: Used with dscli *ver* command.	CLI Client Level	Storage Manager Code Level
86.31.142.0	7.6.31.2240	7.6.31.2240	5.6.31.1266

Overview of new features and functions supported by this release on DS8800, 242x model 951

At a glance:
• New HMC base code level, to improve security
• Bash 'ShellShock' vulnerability fix
• Embedded AOS remote support option
• Problem fixes
• Serviceability enhancements
• Improvements

This new microcode release only supports the DS8800.

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.

During drive rejection a microcode logic error does not set status
1. **Problem Description:** During drive rejection a microcode logic error can cause the incorrect status to be set in an internal control block. This can result in data loss for all tracks queued on the adapter.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 292362

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

Long warmstart after PCIe error
1. **Problem Description:** Extended warmstart after a PCIe fabric CRC error caused ~3 second loss of access
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 293412

Errors on Fiber Channel Arbitrated Loop can result in offline ranks
1. **Problem Description:** An error condition on the Fiber Channel Arbitrated Loops can result in offline arrays. A microcode logic error in the handling of large payloads can cause both DA adapters to become fenced.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 293821

HIPER - Slow DDM rejected by one DA is not rejected by partner DA
1. **Problem Description:** When a DDM is rejected by DAHP for being slow the partner adapter may not reject the drive the DDM does not respond to commands. The microcode logic should reject the DDM on both adapters without waiting for the DDM to respond.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 294172

DA Takeover failure during cluster failure causes loss of access
1. **Problem Description:** When a cluster and DA adapter fail the operational cluster can takeover a DA adapter owned by the failing cluster. A microcode logic error can prevent the DA Takeover when an unexpected adapter state is detected.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 294527

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

Preserve Mirror PPRC suspends
1. **Problem Description:** While Performing flashcopy to primary volume of a Metro Mirror pair, an erase command while the volume is still duplex pending can cause Track Format Descriptor (TFD) mismatch.
2. **Potential Impact of Problem:** PPRC suspends
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes

ID#: 296584

PPRC state change unit attentions may be incorrectly reported to AIX and iSeries hosts
1. **Problem Description:** In some configurations, the rate of unit attentions generated can be high enough to cause performance problems
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID#: 296526

Service: A recoverable error, Service improvements.

Metro Mirror can encounter microcode logic error 0x601
1. **Problem Description:** When metro mirror is active and there is a PPRC agent abort a microcode logic error will cause a warmstart.
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 231681

Microcode logic error 0x7D10 when Global Mirror task chain updated
1. **Problem Description:** PPRC uses chains of commands to move data from primary to secondary devices. If a command is received close to completion of the current chain of commands a microcode logic error can cause a warmstart.
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 267103

Microcode Logic Error 0x01B7 caused by a time-out reading registers
1. **Problem Description:** A microcode logic error will cause a warmstart if reading the PCIe registers in the I/O Bay times-out. The warmstart will recover all resources.
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 280888

Microcode Logic Error 0x4143 with XRC write pacing enabled
1. **Problem Description:** With XRC write pacing enabled when terminate concurrent copy commands are received a microcode logic error can cause a warmstart
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 291477

Host Adapter link reports wrong link speed after fastload
1. **Problem Description:** After performing HA fastload during CDA, the adapter port erroneously shows 1Gb/S speed.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 297072

Host Adapter harvest hang during CDA
1. **Problem Description:** While performing concurrent code upgrade, the HA harvest process hung, causing CDA to suspend.
2. **Potential Impact of Problem:** Extended service window
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 297330

PPRC path failure causes 0x7473 MLE
1. **Problem Description:** A permanent PPRC path failure during data transfer can cause a Microcode Logic Error
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 297669

0x7730 MLE caused by failed Consistency Group
1. **Problem Description:** Failure of a consistency group while global copy collisions are pending can cause a Microcode Logic Error
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 298043

PPRC microcode logic error 0x7D10
1. **Problem Description:** When PPRC sends the last track in the side file the lock is cleared. A microcode logic error can result in the lock being cleared a second time, resulting in the 0x7D10 microcode logic error
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 298737

Cannot connect to DS Storage Manager
1. **Problem Description:** After code upgrade, external browser cannot connect to HMC because of a firewall configuration error
2. **Potential Impact of Problem:** Unable to manage HMC from remote
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 299946

HMC hang during repair
1. **Problem Description:** In dual HMC configurations, if the HMC object for one HMC is lost or deleted, the partner HMC can enter a retry loop
2. **Potential Impact of Problem:** Unable to access the 'good' HMC
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 293710

Incomplete secure erase of self-encrypting drives
1. **Problem Description:** Areas of self-encrypting drives that are reserved for metadata and adapter dumps are not being overwritten during secure erase.
2. **Potential Impact of Problem:** Incomplete erase, and false drive failures
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 294675

Device harvest on large systems causes extended code update time
1. **Problem Description:** During code update, there are normally errors generated that are expected, but must still be handled. On large systems, the handling of these errors consumes resources needed to complete the code update process.
2. **Potential Impact of Problem:** Extended concurrent update window
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 294751

Improvements: Improvement for better usability

Remap embedded AOS to r6.3
1. **Problem Description:** New HMC base code embedded AssistOnSite function for r6.3 HMC
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID#: 297883

Fix bash shellshock security exposure
1. **Problem Description:** The bash (shell shock) security exposure has been fixed on the HMC with this change. This addresses exposures detailed security bulletins CVE-2014-6271, CVE-2014-7169, CVE-2014-7186, CVE-2014-7187, CVE-2014-6277, CVE-2014-6278.
2. **Potential Impact of Problem:** security exposure
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** N/A

ID#: 301426

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