IBM TotalStorage® DS8800 Disk Storage
Microcode Bundle 86.31.70.0 v2 Release Note Information

Release Date: July 2, 2013

VRMF Level Data Results:

VRMF level From:	86.31.58.0
VRMF Level To:	86.31.70.0
Report for:	All DS8800

Code Bundle Contents

DS800 Code Bundle Level	SEA or LMC Version: Used with dscli *ver* command.	CLI Client Level	Storage Manager Code Level
86.31.70.0	7.6.31.630	7.6.31.630	5.6.31.1114

Overview of new features and functions supported by Microcode Release 86.31.70.0 for DS8800, 242x model 951.

Features at a glance:

General:
• Global Mirror improvements for low bandwidth connections
• DA and DDM error handling improvements
• Improved error handling for drives with slow response times

This is a 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

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Acute: An irrecoverable error with potential loss of data.

Smart Rebuild scan changed to once and hour from once a day

1. **Problem Description:** The smart rebuild scan has been changed to run once an hour instead of once a day.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes

ID#: 284782

FlashCopy target volumes have stale R0 data

1. **Problem Description:** In a CKD environment FlashCopy target volumes can have stale R0 data due to a microcode logic error.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes

ID#: 264749

BE504940 multiple sector LRC is detected

1. **Problem Description:** Parity checking does not check the entire sector due to a microcode logic error. Parity should check the entire sector and correct any parity error.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 276086

Background media scan causes incorrect LBA calculation

1. **Problem Description:** Background media scan will calculate incorrect Logical Base Address (LBA) when converting the component LBA to an array LBA if the address is greater than 32 bits on a RAID6 array. This affects LUNs that are greater than 2TB is size.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 283506

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

Internal I/O fabric error leaves host adapter link light on

1. **Problem Description:** During a recursive fabric error recovery the host adapter link light is left on but the adapter will not respond to I/O requests.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes

ID#: 276605

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DA adapter fenced by repeated showstop errors

1. **Problem Description:** If BGMS attempts to repair an LBA that is beyond the useable area of the drive the DA adapter will have repeated showstop errors until the adapter is fenced, only RAID 6 arrays are exposed.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes

ID#: 275724

Direct attached iSeries host port login is not processed correctly

1. **Problem Description:** Direct attached iSeries host has successful fabric login but port login fails, preventing remote IPL of the new host.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes

ID#: 279507

PPRC resume can cause copy relationship ID to incorrect

1. **Problem Description:** After some PPRC suspends, loss of all paths for example, the PPRC resume can result in new copy relationship IDs. This could potentially prevent hyperswap.
2. **Potential Impact of Problem:** loss of hyperswap capability
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 279746

Cache deadlock during destage cause host reboot

1. **Problem Description:** Cache destage selects strides with no busy tracks first. If the first track in a stride is busy the other tracks are ignored. This can lead to a deadlock condition and result in the host rebooting.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 275846

Fiber Channel Loop errors causes DAHP to reject DDMs

1. **Problem Description:** When DAHP is enabled some Fiber Channel loop error recovery scenarios will result is DDMs being slow to respond. This can result in DAHP rejecting DDMs for being slow, and can result in degraded ranks.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 279289

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

Global Mirror fatal error due to stale commands due to network issues
1. **Problem Description:** Network issues lead to stale revertible commands being received at the GM secondary which leads to a GM fatal condition.
2. **Potential Impact of Problem:** GM suspend
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 241033

PPRC Path State Change messages not handled like multi-host SIM
1. **Problem Description:** PPRC Path State Change messages are not handled the same as multi-host SIM messages when multi-host SIM is enabled. This can cause problems with console messages.
2. **Potential Impact of Problem:** job abends
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 275880

Hyper PAV alias device goes long busy for 2 minutes
1. **Problem Description:** If midway through processing a command chain and a unit check is encountered we will return long busy to the host for 2 minutes due to a microcode logic error
2. **Potential Impact of Problem:** 2 minute device long busy
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 282025

Long I/O response time during RAID 6 DDM rejection
1. **Problem Description:** During array metadata update all alpha components in the array are updated. If one of the drives is slow to respond to the metadata update then I/O is held until the drive responds
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 276112

Host adapter microcode logic error recovery takes longer than time-out
1. **Problem Description:** A host adapter error causes the adapter to request reset causing warmstart to extent to 7 seconds. If host has an I/O time-out of 5 seconds then an application error will occur.
2. **Potential Impact of Problem:** loss of path(s)
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 283103

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Service: A recoverable error, Service improvements.

FlashCopy control block update conflict

1. **Problem Description:** During control block update the lock does not cover the status field. This microcode logic error causes a warmstart.
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 271715

PPRC command reject can result in a warmstart

1. **Problem Description:** On a highly utilized PPRC link a command reject result in a warmstart due to a microcode logic error
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 275799

Metro Mirror or Global Mirror control block conflict

1. **Problem Description:** Due to a microcode logic error a warmstart to resolve a control block conflict can occur
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 248217

zHigh Performance FICON microcode logic error causes warmstart

1. **Problem Description:** When running Global Mirror or Global Copy with zHPF it is possible for command processing to result in a microcode detected error and a warmstart.
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 276801

Destage of cache data can encounter a microcode logic error

1. **Problem Description:** Due to a microcode logic error a warmstart can occur during cache destage. This error will result in a warmstart
2. **Potential Impact of Problem:** warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID#: 273131

Update the order of part replacement for SRC BED10861

1. **Problem Description:** The primary part is the I/O enclosure power supply. The second and third parts changed order to make the PCIe/SPCN card the secondary part and the mid-plane the last part to repair this failure.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 270217

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CEC hard drive rebuild fails because no matching level found
1. **Problem Description:** CEC hard drive rebuild process checks the VRMF
   level, searching for a matching level. If an ICS disk was used to install an
   the fix level is updated and causes hard drive rebuild to fail.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
ID#: 264701

PE Package is missing LPAR data
1. **Problem Description:** Intermittently the PE Package is missing the LPAR
   files due to a microcode logic error on the HMC.
2. **Potential Impact of Problem:** delayed problem analysis
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 277537

After microcode update a storage enclosure reports not in a good state
1. **Problem Description:** After microcode update a storage enclosure will
   report not in a good state. The enclosure is in a good state.
2. **Potential Impact of Problem:** False error reported
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
ID#: 255938

I/O Priority Manager monitor mode does not work without LIC key
1. **Problem Description:** Due to a microcode logic error DS GUI does not
   allow the user to access IO Priority Manager to enable monitor mode without
   the feature key being installed.
2. **Potential Impact of Problem:** DS GUI will not set IOPM monitor mode
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 277415

Improvements: Improvement for better usability
LSS and PPRC path information added to error logging
1. **Problem Description:** LSS and path information added to the error logs
   for PPRC path problems. Previously a statesave is required to get the LSS
   path information which is required for problem analysis.
2. **Potential Impact of Problem:** reduced problem analysis time
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** N/A
ID#: 283045

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