IBM TotalStorage® DS8700 Disk Storage
Microcode Bundle 76.20.107.0 v2 Release Note Information

Release Date: October 26, 2012

VRMF Level Data Results:

VRMF level From:	76.20.98.0
VRMF Level To:	76.20.107.0
Report for:	Model 941

Code Bundle Contents

DS800 Code Bundle Level	SEA or LMC Version: Used with dscli *ver* command.	CLI Client Level	Storage Manager Code Level
76.20.107.0	6.6.20.400	5.6.20.390	5.6.20.1159

Overview of new features and functions supported by Microcode Release 76.20.107.0 for DS8700 , 242x model 941.

At a glance:

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 HIPER — Acute: An irrecoverable error with potential loss of data.
2 High Impact — Serious: An irrecoverable error with potential loss of access to data.
3 Moderate — A function not operational and/or performance might be degraded.
4 Service — A recoverable error (no impact) and service improvements.
5 Improvements - Improvement changes for better Usability and Serviceability.

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Pervasive: Problems with 3 or more occurrences

Acute: An irrecoverable error with potential loss of data.

Error recovery for a DA adapter with LRC errors causes invalid bitmap

1. **Problem Description:** Error recovery for a DA adapter with LRC errors did repeated warmstarts causing LPAR failover. The repeated warmstarts can result in an invalid copy services bitmap on the operational LPAR. Copy services volumes can be in a FC-08 condition, pinned non-retryable, as a result of the bitmap.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 273497

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

Withdraw of FlashCopy full copy relationship before copy complete fails

1. **Problem Description:** When a withdraw is issued to a FlashCopy full copy relationship, where the target volume has Metro Mirror incremental resync set, a microcode logic error will leave the relationship in a validation needed state if the copy has not completed.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 270835

During microcode update a microcode logic error causes loss of access

1. **Problem Description:** During the time the LPAR is quiesced for update the ownership of the I/O Bays is transferred to the other LPAR. A microcode logic error can cause the transfer to retried repeatedly and the operational LPAR to encounter a Data Storage Interrupt which will reboot the LPAR.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 270884

Easy Tier staging tracks that are beyond the end of the extent

1. **Problem Description:** Easy Tier migration can stage tracks that are beyond the end of the extent. A microcode logic error can repeatedly attempt stage of tracks that are beyond the end of the extent until loss of access occurs.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 270887

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

Synchronous PPRC pair "stalls" in duplex pending state

1. **Problem Description:** When a FlashCopy target is a PPRC primary and a FlashCopy establish incremental command is issued the target will remain in duplex pending state if source is updated. If Preserve Mirror is used with FlashCopy this problem will not occur.
2. **Potential Impact of Problem:** loss of sync between PPRC pair
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 272514

LRC error on PPRC host adapter will suspend the pair

1. **Problem Description:** If a host adapter detects an LRC error the track will be restored from NVS. If the track is good in cache after restore then the PPRC pair will not be suspended
2. **Potential Impact of Problem:** PPRC pair suspended
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 269342

zHPF format write can cause XRC suspend with 9C4-08 abend

1. **Problem Description:** zHPF format write command has 55 records to an XRC device cause an XRC suspend. This only occurs with 55 record format write command.
2. **Potential Impact of Problem:** XRC suspend
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 273490

Easy Tier SSD rank performance degraded when bandwidth exceeded

1. **Problem Description:** Easy Tier does not warm demote extends in an efficient manner with random I/O workload is high and sequential I/O has large sized I/O operations.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 270991

Easy Tier does not calculate rank bandwidth effectively for large I/O sizes

1. **Problem Description:** The rank bandwidth calculation is not efficient for large I/O operations. SSD rank saturation during peak workloads can result.
2. **Potential Impact of Problem:** performance degraded
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 272377
5.

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Changing from single reader to multiple reader XCR session can fail
1. **Problem Description:** When changing from single reader XRC session to multiple reader XRC session will fail due to a microcode logic error that does not initialize the session ID to the correct value
2. **Potential Impact of Problem:** Primary session ID mismatch, significant manual recovery required.
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID#: 263823

PCIe error recovery does not reset error registers
1. **Problem Description:** When an error is detected on the internal I/O fabric error recovery does not reset the registers. If a second fabric error is detected error recovery the previous status will be stale and present.
2. **Potential Impact of Problem:** Loss of paths
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID#: 258339

Service: A recoverable error, Service improvements.
Improved isolation of Host Adapter LRC errors
1. **Problem Description:** When two host adapters in the same I/O Bay log an LRC error then expand the FRU list to the PCIe card.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 265401

Improvements: Improvement for better usability
Enable CDA PreVerify to check previous I/O Bay status
1. **Problem Description:** Improvement to CDA PreVerify previous I/O Bay status and fence the I/O Bay prior to microcode update if I/O Bay reset is required.
2. **Potential Impact of Problem:** Extended service
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** N/A
ID#: 274245

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