# IBM System Storage DS8870 Disk Storage
# 87.10.x.x Release Notes Cumulative Summary v5.2

**Date: March 5, 2015**

**VRMF Level Data Results:**

| VRMF level From: | 87.10.87.0 |
|---|---|
| VRMF Level To: | 87.10.113.0 |
| Report for: | DS8870 |

## Code Bundle Contents

| DS8000 Code Bundle | SEA or LMC | DSCLI Client | STAT Tool | Easy Tier Client | Storage Manager Code Level |
|---|---|---|---|---|---|
| 87.10.113.0 | 7.7.10.354 | 7.7.10.354 | 7.7.10.354 | 7.7.10.354 | 7.7.10.354 |
| 87.10.102.0 | 7.7.10.317 | 7.7.10.317 | 7.7.10.317 | 7.7.10.317 | 5.7.10.1182 |
| 87.10.91.0 | 7.7.10.293 | 7.7.10.293 | 7.7.10.291 | 7.7.10.293 | 5.7.10.1167 |
| 87.10.89.0 | 7.7.10.291 | 7.7.10.291 | 7.7.10.291 | 7.7.10.291 | 5.7.10.1167 |
| 87.10.87.0 | 7.7.10.287 | 7.7.10.287 | 7.7.10.287 | 7.7.10.287 | 5.7.10.1165 |

## This is a summary of the fixes in the R7.1 microcode releases.

**Select Modifications Included in this Release Note:**
This is a list of some modifications contained across one or more LIC levels (License Internal Code) or microcode release(s). The potential impact is variable. Specific environments may aggravate or degrade the potential impact.
Problem(s) 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

### PAV base and alias devices can not exist in same 32 address range
1. **Problem Description:** Detailed problem description and mitigation
   http://www.ibm.com/support/docview.wss?uid=ssg1S1004395
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.89.0
   ID#: 285209

### HIPER - 0x7178 MLE, SEFLC target volume in FC08 state
1. **Problem Description:** After recovery from 0x7178 microcode logic error  a Track-Space-Efficient Flash Copy target volume can be left in FC08 (unable to destage) state
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** Hiper
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.10.113.0
ID#: 286857

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

### Loss of access during host adapter firmware update on PPRC primary
1. **Problem Description:** When updating host adapter firmware on a PPRC primary, where the secondary has already been updated, a microcode logic error may cause loss of access.
   Note:  This exposure only exists when upgrading from 87.10.89.0.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.91.0
ID#: 286229

### Flashcopy target volume fenced
1. **Problem Description:** Fix a small time window during two destages to the same track, where CS may mark both as "allocation destage".
2. **Potential Impact of Problem:** loss of access to target volume
3. **Problem Severity:** Serious
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.113.0
ID#: 282611

### HIPER - Flash Copy relationship stuck revertible
1. **Problem Description:** If an inband Establish Revertible command aborts because of a communication timeout, the command is redriven on another path. But the original command may still be in flight, and the two commands can collide.
2. **Potential Impact of Problem:** GM fatal error, or repeated suspends.
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.10.113.0
ID#: 285004

**HIPER - Improved handling of Lost Data Frame errors**
1. **Problem Description:** When a serviceable event is generated for Lost Data Frame errors on a Device Adapter loop, the affected loop will be placed in service mode.
2. **Potential Impact of Problem:** Multiple DDM rejections, possibly causing degraded array(s).
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.10.113.0
ID#: 289221

**Host Adapter MLE x60CA with heavy read workloads**
1. **Problem Description:** During periods of heavy read activity, a Host Adapter may run out of Sequence Buffer Memory blocks, resulting in a microcode logic error.
2. **Potential Impact of Problem:** Fenced Host Adapter(s)
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.113.0
ID#: 292581

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

**PPRC Suspend due to track format mismatch being falsely detected**
1. **Problem Description:** Track format checking can detect a false mismatch when R0 is uninitialized on a PPRC secondary volume.
2. **Potential Impact of Problem:** PPRC suspend, GDPS freeze
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.10.102.0
ID#: 286844

**Global Mirror stuck in first pass due to a microcode logic error**
1. **Problem Description:** Global Copy pairs are stuck in first pass and do not form consistency groups.
2. **Potential Impact of Problem:** Global Mirror not forming consistency groups
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.102.0
ID#: 283328

**PPRC link errors cause host adapter to be fenced**
1. **Problem Description:** Host adapter recovery can fence a host adapter that experiences CRC errors on a port used as a PPRC path.
2. **Potential Impact of Problem:** loss of path
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.102.0
ID#: 286001

### NVS saturation with large sequential bursts of PPRC data to secondary
1. **Problem Description:** NVS utilization for large ranks can result in PPRC and host I/O to wait for NVS space, causing degraded performance.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.102.0
ID#: 284307

### Read I/O on FlashCopy source volumes not being counted by Easy Tier
1. **Problem Description:** On FlashCopy CST operation, Easy Tier records the read I/O statistics on FlashCopy source volume against the target volume.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
**Release Bundle:** 87.10.102.0
ID#: 286540

### Change in how cache handles LRU demotes
1. **Problem Description:** Large sequential workloads can utilize excessive cache resources, impacting performance of random workloads.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.102.0
ID#: 285125

### IOS071I Start Pending with zHPF active
1. **Problem Description:** Microcode logic error if very high channel utilization causes I/O operation to hang, invoking MIH.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.102.0
ID#: 284393

### Device Adapter MLE 0x14E
1. **Problem Description:** Adapter mailbox processing fails to get rank lock in time to assure commands are not processed out of order.
2. **Potential Impact of Problem:** Fenced Device Adapter
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.113.0
ID#: 288831

## Erroneous suspend of PPRC volume pair
1. **Problem Description:** After receiving long busy response when writing to the secondary volume, the primary volume also returned long busy for the write operation, as it should.  The host did not re-drive the write operation, and code failed to reset the out-of-sync condition on the affected track(s).
2. **Potential Impact of Problem:**  PPRC suspend
3. **Problem Severity:**  Moderate
4. **Pervasive Problem:**  Yes
5. **Release Bundle:**  87.10.113.0
ID#: 292581

## PPRC link in High Failure Rate mode
1. **Problem Description:** Initial PPRC I/O operation on an adapter port is rejected, causing link to go into High Failure Rate mode. Subsequent I/O operations are not affected.
2. **Potential Impact of Problem:**  Degraded PPRC performance
3. **Problem Severity:**  Moderate
4. **Pervasive Problem:**  No
5. **Release Bundle:**  87.10.113.0
ID#: 293529

# Service: A recoverable error, Service improvements.

## DC-UPS firmware change to correct battery life calculation
1. **Problem Description:** Initial battery life was originally mis-configured for 7 years, rather than 5.5 years.
2. **Potential Impact of Problem:**  No early warning that batteries are approaching end-of-life
3. **Problem Severity:**  Service
4. **Pervasive Problem:**  No
5. **Release Bundle:** 87.10.501.501
ID#: 296441

## AOS Access Control list is missing the group for Scandinavia
1. **Problem Description:**  AOS ACLs are missing the group preventing remote support from accessing the HMC via the embedded AOS gateway.
2. **Potential Impact of Problem:**  No remote access with AOS
3. **Problem Severity:**  Service
4. **Pervasive Problem:**  No
5. **Release Bundle:**  87.10.102.0
ID#: 288539

## DSCLI microcode logic error when querying SCSI reserve
1. **Problem Description:**  The "showfbvol -reserve" can result in a microcode logic error that causes warmstart for error recovery.  If the command is issued enough times, the warmstart recoveries can result in cluster failover.
2. **Potential Impact of Problem:**  Cluster failover
3. **Problem Severity:**  Service
4. **Pervasive Problem:**  No
5. **Release Bundle:**  87.10.102.0
ID#: 285875

## Last charge date greater than 8 months incorrectly reported
1. **Problem Description:** DC-UPS incorrectly reports the last charge date of the battery modules is greater than 8 months due to a microcode logic error.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.10.91.0
ID#: 285572

## RAS FRU callout improvement for Lost Data Frame errors
1. **Problem Description:** FCIC cable is at the top of the FRU list, even though it is the least likely to fail. This change re-orders the list to put the FCIC cable at the bottom.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.113.0
ID#: 289351

## Failed login count not synchronized on dual HMCs
1. **Problem Description:** After successful login on one HMC, the failed login counts on the partner HMC may not be reset.
2. **Potential Impact of Problem:** User account locked
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.113.0
ID#: 289485

## HMC reboot causes MRPD data off-load failure
1. **Problem Description:** After a reboot of the HMC a microcode logic error causes a MRPD data off-load failure. The only way to correct the MRPD data off-load failure is for the SSR to reconfigure the MRPD off-load.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.10.113.0
ID#: 290710

## CUIR failed to vary off paths during host bay repair
1. **Problem Description:** During a host bay repair, a microcode logic error caused CUIR to skip vary off of one of the host adapters
2. **Potential Impact of Problem:** Had to manually vary off the paths
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.113.0
ID#: 292745

## Improvements: Improvement for better usability

**FlashCopy and PPRC support for LUNs larger than 2TB**
1. **Problem Description:** PPRC and FlashCopy can support LUNs larger than 2 TB, this function must be enabled by remote support
2. **Potential Impact of Problem:** N/A
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** N/A
5. **Release Bundle:** 87.10.102.0
ID#: 279325

**Add support for I/O Priority Manager to manage ESE volumes**
1. **Problem Description:** I/O Priority Manager can mange performance groups Extent Space Efficient volumes with the DSGUI menus.
2. **Potential Impact of Problem:** N/A
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.102.0
ID#: 285451

**Support for secure connections via https to the DSGUI**
1. **Problem Description:** The HMC GUI can be accessed via http which is not encrypted. This change will support https connections to the DSGUI
2. **Potential Impact of Problem:** security exposure
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** N/A
5. **Release Bundle:** 87.10.102.0
ID#: 282605

**PCR 7500 - z/OS Synergy**
1. **Problem Description:** Adds support for SPID Set/Reset Fence commands
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.10.113.0
ID#: 289475

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