IBM System Storage - DS8880 Disk Storage
Microcode Bundle 88.54.31.0 Release Note Information

Release Date: September 30, 2019

VRMF Level Data Results:

VRMF level From:	**88.53.5.0**
VRMF Level To:	**88.54.31.0**
Report for:	**All DS8880**

Code Bundle Contents

DS8880 Code Bundle Level	SEA or LMC Version:	DSCLI Client	Heat Map Transfer Utility	Storage Manager	Copy Services Manager
88.54.31.0	7.8.54.77	7.8.54.77	7.8.54.77	5.8.54.1035	6.2.6

Overview of new features and functions supported by this release

At a glance:

- Allow FlashCopy to a Global Mirror Primary, when the GM pair is suspended
- Code 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.

None.

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

Extended long busy while terminating Global Copy pair
1. **Problem Description:** A command timeout during termination of a PPRC pair may cause extended long busy on the primary volume.
2. **Potential Impact of Problem:** Temporary loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 328201

Repeated 0x0164 MLE
1. **Problem Description:** Removal of a PPRC secondary volume or LSS while PPRC is still active may cause repeated microcode logic errors.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 341295

Incorrect drive allocation in RAID-10 arrays
1. **Problem Description:** Error conditions while creating arrays caused both primary and secondary drives to be on the same loop, creating a single point of failure
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 341427

Failing PPRC links led to loss of access
1. **Problem Description:** Repeated PPRC link recovery with large numbers of relationships can lead to an Out of Task Control Blocks condition on the primary system.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 341443

Metro Mirror suspend
1. **Problem Description:** Suspend after Metro Mirror secondary returned long busy during a write operation. This may lead to production impact in Geographically-Dispersed Parallel Sysplex environments.
2. **Potential Impact of Problem:** GDPS freeze
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 341724

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VRAID timeout during RAID-6 rebuild
1. **Problem Description:** A faulty cable caused excessive delay on flash drive access during array rebuild.
2. **Potential Impact of Problem:** Temporary loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 343909

SRC=BE340111 surfaced by health check
1. **Problem Description:** HPFE Gen2 enclosure mis-cable was undetected at install time
2. **Potential Impact of Problem:** Non-concurrent repair to correct cabling
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 344497

Equipment check on SafeGuarded Copy primary
1. **Problem Description:** SafeGuarded Copy extent pool full condition caused equipment check on source device
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID# 344066

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

0x1070 MLE during DDM/Flash firmware update
1. **Problem Description:** While a rank is in PreEmptive Reconstruct (PER) mode, a command was allowed to be sent to the quiesced member
2. **Potential Impact of Problem:** Warmstart, possible cluster failover.
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 330277

Slow migration when pinning volumes to flash tier
1. **Problem Description:** Migration progress was slowed by background list processing.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 335436

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SRC=BE1E1402 EasyTier rate below 0.05
1. **Problem Description:** EasyTier repeatedly attempted to migrate extents to a rank that did not have enough free space
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 340195

0x4477 MLE
1. **Problem Description:** A zHPF multi-track read operation encountered a microcode logic error during end-of-chain processing.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 340236

0x7F70 MLE
1. **Problem Description:** During a cascaded FlashCopy destage, a microcode logic error caused incorrect detection whether the track bitmap had been modified
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 340455

0x0103 MLE
1. **Problem Description:** Transparent Cloud Tiering task was called with an incorrect parameter
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 341746

0x7F91 MLE
1. **Problem Description:** Task Control Block deadlock occurred while processing heavy large-volume FlashCopy workload
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 342201

0x4599 MLE while establishing Remote Pair FlashCopy
1. **Problem Description:** Cluster quiesce/resume during RPFC establish exposed a microcode logic error.
2. **Potential Impact of Problem:** RPFC establish errors, Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 342526

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Host Adapter MLE while running SafeGuarded Copy
1. **Problem Description:** Host Adapter LRC miscompare while running SafeGuarded Copy
2. **Potential Impact of Problem:** Warmstarts
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
ID# 342553

Slow GDPS data migration
1. **Problem Description:** During forced withdraw of a Multi-Target Incremental Resync pair, Out-of-Sync information was discarded, causing full copy to be done.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 342585

Orphan FlashCopy relation on secondary
1. **Problem Description:** A Persistent Mirror FlashCopy relation with two primaries was withdrawn, and a PPRC relation ID mismatch caused only the primary relations to be removed.
2. **Potential Impact of Problem:** Unable to perform FlashCopy
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 344111

Easy Tier warm promote missed
1. **Problem Description:** Calculation was missing sequential I/O activity
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
ID# 344226

Service: A recoverable error, Service improvements.

False SRC=BE1E1406 for CKD small extent pools
1. **Problem Description:** Space reserve calculation for EasyTier did not properly consider the difference between Fixed Block and Count-Key-Data extent sizes.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 332915

0x1D07 MLE
1. **Problem Description:** A microcode logic error may occur when performing backward-cascaded C->A FlashCopy, and logical volume 0000 does not exist.
2. **Potential Impact of Problem:** ODD dump
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 336807

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Callhome entitlement failure
1. **Problem Description:** System was attempting to call home using the machine type/serial number of one of the internal p systems.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 339664

HPFE firmware update failure
1. **Problem Description:** Enclosure Services Module firmware update failed because an incorrect parameter was passed
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 340679

Unable to download code bundles from Fix Central
1. **Problem Description:** System was configured with administrator contact in a different country, and download did not try entitlement using both country codes
2. **Potential Impact of Problem:** Unable to perform Remote Code Load
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 340798

HMC remote authentication failed
1. **Problem Description:** HMC failed to open port 9562 for LDAP access, and did not retry
2. **Potential Impact of Problem:** Unable to login using LDAP
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
ID# 340815

DSCLI unable to connect
1. **Problem Description:** HMC had ESSNI queue full condition, and did not redirect DSCLI request through the partner HMC
2. **Potential Impact of Problem:** DSCLI command failures
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 340933

0x01B7 MLE during FlashCopy establish or withdraw
1. **Problem Description:** FlashCopy establish/withdraw presents State Change Interrupts to to all logical paths, even if the device is not online or a member of a path group. In large configurations, SCI processing may exceed the 180mS timeout value.
2. **Potential Impact of Problem:** ODDdump
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 340980

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HMCs inaccessible
1. **Problem Description:** Java.net.SocketException: Too many open files errors caused by use of an incorrect parameter
2. **Potential Impact of Problem:** Unable to monitor/control DS8000
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 341328

CDA Preload Failure
1. **Problem Description:** Preload failed cloning LPAR boot volume, then subsequent preload retry ended with SRC=BE9CE1FF, because of a NullPointerException while processing the update package list.
2. **Potential Impact of Problem:** Extended service window
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 341703

mkfbvol command fails with CMUN02667E message
1. **Problem Description:** System incorrectly calculated the maximum capacity for Virtual Rank Auxiliary Volumes
2. **Potential Impact of Problem:** Unable to create volumes
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 341756, 342018

LPAR Resource Manager failure during CDA
1. **Problem Description:** During Code Distribution and Activation, when the LPARs are running on different levels, a resource harvest process failed because of attributes that only exist in the new code level.
2. **Potential Impact of Problem:** HMC monitoring/management failure
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 341972

HMC /var filesystem full after rebuild
1. **Problem Description:** A file used in the previous GUI was not pruned
2. **Potential Impact of Problem:** DS GUI failure
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342096

VRAID Adapter Map inconsistent output
1. **Problem Description:** When displaying internal HPFE path status, the column order in the output may be inconsistent
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342226

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DSCLI CMUN00018E message on HP-UX host
1. **Problem Description:** HMC code incorrectly attempted to connect using the wrong SSL protocols
2. **Potential Impact of Problem:** Host unable to connect to HMC
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342415

NTP hostname truncated
1. **Problem Description:** HMC limited NTP hostname to 20 characters
2. **Potential Impact of Problem:** NTP failure
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342479, 342558

Spectrum Control out-of-memory condition
1. **Problem Description:** Log processor queue can fill faster than logs are able to be written to file
2. **Potential Impact of Problem:** Frequent out-of-memory dumps
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342724

Unable to set SIM reporting to 4
1. **Problem Description:** Setting SIM reporting to 4 (none) results in an 'invalid value' message
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342765, 342868, 342956

Spectrum Control NullPointerException
1. **Problem Description:** NullPointerException connecting to ESSNI service in HMCs
2. **Potential Impact of Problem:** Unable to monitor the system
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342857

DSCLI CMUN00014E message
1. **Problem Description:** chaccess -cim does not work if using -hmc all
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 342890

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0x01B7 MLE during PPRC failover/failback
1. **Problem Description:** Out-of-Sync bitmap merge operation exceeded the 180mS timeout value
2. **Potential Impact of Problem:** ODDdump
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 343005

DS8882F UPS fenced
1. **Problem Description:** Unused power outlets were detected offline
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 343045

ESSNI database not recreated during startup
1. **Problem Description:** During startup, database errors are not always detected properly
2. **Potential Impact of Problem:** ESSNI communication failure
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 343287

CMUN80991E message configuring key manager
1. **Problem Description:** ESSNI failed to properly evaluate the supplied encryption group ID.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 343802

Missing lsfbvol and lsckdvol display
1. **Problem Description:** DSCLI commands showfbvol -metrics and showckdvol -metrics fail when using R8,5 DSCLI client on a system running an older code version
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 343981

Heartbeat interval changed after CDA
1. **Problem Description:** After HMC transformation or rebuild, heartbeat callhome reverts to the default 7 day interval.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 344092

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0x01B7 MLE destaging metadata
1. **Problem Description:** Very high metadata destage activity led to task timeouts
2. **Potential Impact of Problem:** ODDdump
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 344127

DS GUI CMUN80564E message loading cache
1. **Problem Description:** In systems with large numbers of volume groups, the query selection string exceeds the maximum length
2. **Potential Impact of Problem:** DS GUI failure
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 344232

DS8882F repeat UPS battery failure
1. **Problem Description:** Battery replacement was never completed because of a missing UPS state definition
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID# 344266

Improvements: Improvements for better usability

ESSNI tracing improvements
1. **Problem Description:** Improve logging in ESSNI, to provide better information about the cause of HMC communication issues.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID# 339955

Add CDA history to heartbeat data
1. **Problem Description:** Provide Code Distribution and Activation history data to heartbeat data collection
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID# 341010

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Enhance Fiber Channel Ports page in DS GUI
1. **Problem Description:** Show columns "Frame", I/O Enclosure" and "HA Card" in System page, and Settings -> Network
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID# 343010

lsioport command enhancement
1. **Problem Description:** Add columns "Frame", "I/O Enclosure" and "HA Card" for lsioport -l
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID# 343011

Remove ESSNI database from HMC backups
1. **Problem Description:** Avoid database issues after HMC reload, by letting ESSNI recreate it's database
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID# 343444

FTDC improvement for 0x4143 MLE
1. **Problem Description:** Additional First-Time Data Capture routines
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID# 344287

Update remote access information in callhome data
1. **Problem Description:** Provide additional information for AOS and RSC remote support access methods
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID# 345136

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