

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.59.36.0 Release Note Information

Release Date: June 24, 2022

VRMF Level Data Results:

VRMF level From:	88.59.28.0
VRMF Level To:	88.59.36.0
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
88.59.36.0	7.8.59.121	7.8.59.121	7.8.59.121	5.8.59.1056	6.3.2

Overview of new features and functions supported by this release

At a glance:

- 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: Irrecoverable error with potential loss of data. - Serious: Irrecoverable error with potential loss of access to data, or critical function.
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.

TCT migration to cloud may fail silently

1. **Problem Description:** Cloud migration over a degraded network connection, may expose a timing window where the object was not migrated, but the operation completed with good status.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID# 356928

Inconsistent data may exist on SafeGuarded Copy recovery volume(s)

1. **Problem Description:** <https://www.ibm.com/support/pages/node/6573169>
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID# 357988

Serious: An irrecoverable error with potential loss of access to data, or critical function.

Repeated 0x7410 MLE and dual reboot during TCT recall or restore

1. **Problem Description:** Transparent Cloud Tiering recall or restore of datasets from TS7700, to volumes in a PPRC relationship, may encounter repeated warmstarts, leading to dual-cluster IML.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID# 357237

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

GEO2615I Devices are Soft Fenced

1. **Problem Description:** During Hyperswap, a query to a PAV alias device incorrectly failed, because the base was in Soft Fence.
2. **Potential Impact of Problem:** Unexpected error message
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 351936

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0x4433 MLE

1. **Problem Description:** End of Chain processing on an Extended Address Volume write operation encountered an arithmetic error.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 352273

DS CLI client install failure on Windows 2019 Server

1. **Problem Description:** Changes in Windows 2019 Server require an updated version of Install Anywhere software.
2. **Potential Impact of Problem:** DS CLI install failure
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes

ID# 352995

0x4775 MLE

1. **Problem Description:** Two copy services threads were running in parallel, and out-of-order. The second thread finished first, and freed the Task Control Block, leaving the first thread stranded.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 354123

Unable to connect to DS GUI or DSCLI

1. **Problem Description:** NI server was unable to recover from event cache database corruption.
2. **Potential Impact of Problem:** HMC login failure
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 354883

0x7FA3 MLE

1. **Problem Description:** Cache attempted to allocate Task Control Blocks from a Copy Services dynamic TCB pool that did not have any free TCBs.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 355321

I/O enclosure removal failure

1. **Problem Description:** I/O enclosures installed in the wrong locations, could not be removed without manual intervention.
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 355419

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Transparent Cloud Tiering stalled

1. **Problem Description:** High ReST API request activity can lead to Java out-of- memory errors.
 2. **Potential Impact of Problem:** TCT Stall
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
- ID# 355658

Unexpected SGC Rolloff during backup cycle

1. **Problem Description:** When increasing Safeguarded Copy capacity multiplier to ≥ 5 , an internal flag was not reset.
 2. **Potential Impact of Problem:** Unexpected SGC behavior
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
- ID# 355724

Unexpected full copy on PPRC failback

1. **Problem Description:** A temporary link error can cause a failure to read the Out-of-Sync bitmap from the secondary
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
- ID# 355776

0x0645 MLE

1. **Problem Description:** zHyperLink write abort function continued to read incoming message data after mail complete flag was set.
 2. **Potential Impact of Problem:** Warmstart
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
- ID# 356046

0x4143 Command reset task timeout

1. **Problem Description:** Copy source to target deadlock while waiting for metadata invalidation to complete.
 2. **Potential Impact of Problem:** Warmstarts. PPRC suspend
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
- ID# 356488

I/O enclosure backplane repair failure

1. **Problem Description:** Model 980/981/982 systems do not recognize the newer firmware on current-build enclosure backplanes.
 2. **Potential Impact of Problem:** Loss of path, Extended service action
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
- ID# 356498

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SGC recover fails with RC=08

1. **Problem Description:** When a FlashCopy source volume is also a Safeguarded copy source, a FLC withdraw command, using background copy, will incorrectly also perform BGC on the SGC relationship. SGC recover cannot run until the BGC completes.
2. **Potential Impact of Problem:** SGC recover command fails
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 356572

Lock contention with high transaction write workloads

1. **Problem Description:** PPRC volumes with high transaction write workloads may encounter Remote Unit Address Control Block lock contention, caused by improper use of locking functions.
2. **Potential Impact of Problem:** Degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 356692

Improve error text for SAN-based serviceable events

1. **Problem Description:** Provide clearer explanation of error events, such as CRC, BER Exceeded, Loss of Sync, Loss of Signal. Such errors are reported by the DS8K, but are usually caused by external SAN problems.
2. **Potential Impact of Problem:** Loss of path
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes

ID# 356719

Update Apache Log4j to address CVE-2021-44228

1. **Problem Description:** Log4j updated to version 17.1
2. **Potential Impact of Problem:** Security vulnerability
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes

ID# 356891

CSM lost access to Global Mirror session

1. **Problem Description:** The last volume in the LSS serving as GM Master was deleted. Fix will prevent removal of the last device in an LSS, if the LSS is serving as GM Master.
2. **Potential Impact of Problem:** Loss of CSM communication
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357038

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Single LPAR Data Storage Interrupt /reboot

1. **Problem Description:** A FlashCopy extent checking task was locked, then moved to another list. A second process then acted on the Task Control Block without taking the lock, exposing the TCB to corruption during a narrow window of time.
2. **Potential Impact of Problem:** Degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357074

Incorrect Global Mirror session values in GUI

1. **Problem Description:** Query of GM session information is only working on sessions having an even-numbered master LSS. DS CLI queries are not affected, and will produce the correct output.
2. **Potential Impact of Problem:** Inconsistent GUI reporting
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357147

0x4143 MLE during TCT restore

1. **Problem Description:** When performing Transparent Cloud Tiering recall or restore, Global Mirror collisions are not handled properly.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357240

Reduce copy services bitmap lock contention

1. **Problem Description:** Reduce unnecessary calls for bitmap lock in copy services write intercept path
2. **Potential Impact of Problem:** Degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357564

Full copy when converting MGM to multi-target MM/GM

1. **Problem Description:** When converting from cascaded to multi-target PPRC using Force Failback, the Update Secondary process initialized the OutOfSync bitmaps.
2. **Potential Impact of Problem:** Full copy to secondary
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357676

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SCG capacity alerts not sent to z/OS syslog

1. **Problem Description:** Some Safeguarded Copy capacity alerts were being filtered as dups, because a token was being reused.
2. **Potential Impact of Problem:** SGC out of space without warning.
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357812

0x15E5 MLE while creating SGC recovery volumes

1. **Problem Description:** During Safeguarded Copy recover operation, a bitmap metadata segment was populated without obtaining a lock
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 357911

Back out a locking change

1. **Problem Description:** In ID# 349736, a locking change was made to improve performance, but this change has unintended side-effects in PPRC workloads with high write activity.
2. **Potential Impact of Problem:** Degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID# 358023

Service: A recoverable error, Service improvements.

0x01B7:717B MLE

1. **Problem Description:** Out-of-Sync query must loop through all Global Mirror volumes, and with large numbers of volumes, the thread is staying on CPU too long.
2. **Potential Impact of Problem:** ODD Dump
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes

ID# 355714

DSCLI 'showgmir' command returns incorrect values

1. **Problem Description:** Global Mirror has a buffer overflow issue when calculating the percentage of successful consistency groups
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID# 355716

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False warning when configuring > 64 LUNs to a pSeries host

1. **Problem Description:** Warning should only be shown when the host is IBM i.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 355720

Incorrect storage facility capacity shown in REST API

1. **Problem Description:** Capacity was calculated using MiB factor, instead of MB.
 2. **Potential Impact of Problem:** Incorrect reporting
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 356383

LCD monitor displays "out of range" error

1. **Problem Description:** Monitor refresh rate is out of range when switching the display between HMCs.
 2. **Potential Impact of Problem:** Extended service action
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 356447

Improvements: Improvements for better usability

SafeGuarded Copy performance enhancement

1. **Problem Description:** Implement a new Optimization Bitmap to improve performance while performing SGC Recover operations.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
- ID# 356292

Improve SCSI-PR3 Compliance

1. **Problem Description:** Add Read Full Status action support for the SCSI Persistent Reserve In (5E) command.
 2. **Potential Impact of Problem:** None
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
- ID# 356553

Improve first-time data capture

1. **Problem Description:** Add long i/o traces to default PE package data collection
 2. **Potential Impact of Problem:** None
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
- ID# 356924

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