

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Release Date: August 7, 2020

VRMF Level Data Results:

VRMF level From:	88.55.9.0
VRMF Level To:	88.56.9.0
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
88.56.9.0	7.8.56.30	7.8.56.30	7.8.56.30	5.8.56.1010	6.2.8

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

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Acute: An irrecoverable error with potential loss of data.

0x10F7 MLE during array rebuild

- 1. Problem Description:** During array rebuild, track recovery was unable to completely restore an unreadable track from the copy in cache.
- 2. Potential Impact of Problem:** loss of data
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID# 346492

Inconsistent data on secondary after error recovery

- 1. Problem Description:** Error recovery while forming PPRC Consistency Groups, across multiple LSSs, may result in one or more LSSs coming out of freeze earlier than the others.
- 2. Potential Impact of Problem:** Data inconsistency
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID# 348783

Pinned non-retryable data in cache after cluster failover

- 1. Problem Description:** During failover, a narrow window exists where a task control block for a format write operation was not processed.
- 2. Potential Impact of Problem:** loss of data
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID# 348842

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

Repeated warmstarts and LPAR reboot

- 1. Problem Description:** Device Adapter MLE processing invalid failed track logs led to repeated warmstarts, and reboot of both clusters.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID# 349270

0x0632 MLE and cluster failover

- 1. Problem Description:** A microcode logic error was encountered while converting a Global Copy primary relation with change recording, to MetroMirror and start Incremental Resync.
- 2. Potential Impact of Problem:** Warmstarts, cluster failover, Possible loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No

ID# 349654

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Potential Loss of Access using DB2 System Backup Restore utility with Preserve Mirror

1. **Problem Description:** <https://www.ibm.com/support/pages/node/6253915>
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
- ID# 350053

HIPER HyperSwap may fail in Cascaded Metro Global Mirror managed by CSM

1. **Problem Description:** <https://www.ibm.com/support/pages/node/6259481>
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** HIPER
 4. **Pervasive Problem:** No
- ID# 350674

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

Slow throughput running Transparent Cloud Tiering

1. **Problem Description:** Insufficient threading for TCT implementations with low per-thread bandwidth.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
- ID# 344422

XRC Suspend

1. **Problem Description:** No Record Found, or Invalid Track Format on XRC secondary, when using Remote Pair FlashCopy and/or XRC. A track update was not sent to the secondary because of improper sidefile processing.
 2. **Potential Impact of Problem:** XRC Suspend
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
- ID# 345644

FB task timeouts after cluster hardware failover

1. **Problem Description:** After a sudden cluster down failure, PCIe error recovery may take longer than expected.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
- ID# 346864

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Stuck FlashCopy relation using BackGround Copy

- 1. Problem Description:** When BGC is started and the first tracks of the target are not allocated, a timing window exists where BGC may start repeatedly on the same rank, but never move on to the next rank.
- 2. Potential Impact of Problem:** FlashCopy failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 347081

EasyTier rebalance halt within the same Device Adapter pair

- 1. Problem Description:** EasyTier does not rebalance when DA pairs are near full bandwidth utilization, even when source and target are within the same DA pair. Fix will allow rebalance within a DA pair, as this does not add to overall DA pair utilization
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 347175

FlashCopy performance degradation

- 1. Problem Description:** In large configurations with heavy FlashCopy usage, the system may run out of journal resources.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 347611

FlashCopy performance degradation with Type 2 Change Recording

- 1. Problem Description:** Requests for task control blocks to set Change Recording bits were being held up
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 347782

FlashCopy performance degradation

- 1. Problem Description:** Lock contention for In-Memory Relation Table resources while copying large volumes, or a source to two targets.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 347783

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Read response times elongated by cross-cluster FlashCopy

- 1. Problem Description:** While XC FlashCopy will consume more resources, multiple locking inefficiencies were found to be contributing to the problem.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 348371

SafeGuarded Copy Thaw while check-in is still running

- 1. Problem Description:** SGC implementations not under Copy Services Manager control may exceed the check-in default timeout.
- 2. Potential Impact of Problem:** SafeGuarded Copy Failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 348513

XRC suspend during cluster failback to dual

- 1. Problem Description:** If Remote Pair FlashCopy or XRC establish or withdraw occurs during a cluster failback, the session will suspend.
- 2. Potential Impact of Problem:** XRC suspend
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 349025

Cluster failover during HPFE drive replacement

- 1. Problem Description:** During drive replacement, harvest of the new drive attributes conflicted with removal of the attributes from the failed drive.
- 2. Potential Impact of Problem:** Warmstarts, Cluster Failover
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 349351

0x0109 MLE

- 1. Problem Description:** zHyperLink writes encountered a deadlock when Global Copy was being suspended.
- 2. Potential Impact of Problem:** I/O timeout, warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 349474

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Service: A recoverable error, Service improvements.

0x7D0E MLE running XRC or Concurrent Copy on VM with minidisks

- 1. Problem Description:** Code attempted to free a lock that was already freed.
- 2. Potential Impact of Problem:** ODD Dump (88.11.45.0 and later)
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** Yes

ID# 324851

0x7E3A MLE with Global Mirror FlashCopy

- 1. Problem Description:** Extent-Space-Efficient space release during background copy encountered a microcode logic error.
- 2. Potential Impact of Problem:** ODD Dump
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** Yes

ID# 341999

HMC replacement failure

- 1. Problem Description:** Hardware Management Console replacement process failed to establish communication with LPARs.
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 342834

DS GUI export incomplete

- 1. Problem Description:** Current GUI Export System Summary function does not provide all the information that the previous GUI export provided. But previous GUI export may not provide reliable information.
- 2. Potential Impact of Problem:** Incorrect exported information
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 345308

Read/Write counters are incorrectly reporting usage

- 1. Problem Description:** Interval counters may under-report sequential R/W activity
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 347829

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Change of internal address range caused code upgrade failure

- 1. Problem Description:** While CDA preload was active, the internal networks were changed to an alternate address range. Subsequent code activation reverted the change on the internal servers.
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 347854

AOS config panel display incorrect

- 1. Problem Description:** AssistOnSite config panel displays incorrectly when authenticated proxy is configured with a password containing "@".
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 348208

mkarray failed with CMUN02013E

- 1. Problem Description:** In device adapter pairs with an intermix of drive capacities and speeds, an array site may become intermixed because of prior failures and subsequent repair actions. If an intermixed array is removed, the intermix condition may prevent reconfiguring the array.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 348279

HMC heartbeat callhome triggers SNMP alert

- 1. Problem Description:** If SNMP is configured for Trap 3 notifications, after the next HMC reboot, SNMP will begin also reporting Trap 13 events.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 348520

HMC Hardware API fails to start

- 1. Problem Description:** If resource manager query returns rack2 objects first, HW API may fail to start.
- 2. Potential Impact of Problem:** Unable to login to HMC
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 348614

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

HMC WUI fails CE and Customer login

1. **Problem Description:** CE or Customer login returned "Invalid user name or password specified" because of a Pluggable Authentication Module (PAM) failure.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 348649

NTP server config missing after HMC update

1. **Problem Description:** Function to remove default public NTP servers can also remove Customer-configured public NTP servers.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 348834

Flash drive errors not cleared during repair

1. **Problem Description:** HPFE drive error counts are preserved through the replacement process, when the same drive is still in the enclosure.
 2. **Potential Impact of Problem:** Drive pseudo-repair fails
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 349062

RemotePathStateChanged message incomplete

1. **Problem Description:** Status message should display 9 fields for PPRC path status, but only 8 are shown.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 349226

Transparent Cloud Tiering time out with no error message

1. **Problem Description:** When an abort is received, TCT waits for the pipe to empty before posting a message
 2. **Potential Impact of Problem:** ODD Dump
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 349337

SCSI DISK_ERR5 messages on AIX host

1. **Problem Description:** When performing a write same unmap command, DS8K does not receive a data block from the host before starting the unmap.
 2. **Potential Impact of Problem:** Host errors
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
- ID# 349562

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Improvements: Improvements for better usability

Improve DS GUI performance graph accuracy

- 1. Problem Description:** Add Read Physical Disconnect Time and Write Physical Disconnect time to Device Performance Statistics.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No

ID# 346042

Improve storage enclosure cable check

- 1. Problem Description:** Storage enclosure mis-cabling during field install
- 2. Potential Impact of Problem:** Extended install duration
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No

ID# 349842

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

Trademarks

The following terms are trademarks of the International Business Machines Corporation in the United States, other countries, or both.

- > AIX
- > Enterprise Storage Server
- > ESCON
- > FICON
- > i5/OS
- > iSeries
- > IBM
- > pSeries
- > S/390
- > System Storage
- > TotalStorage
- > z/OS
- > zSeries

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at Copyright and trademark information at <http://www.ibm.com/legal/us/en/copytrade.shtml>. Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in the United States, other countries, or both.

© Copyright IBM Corp. 2004, 2011

Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

IBM System Storage - DS8880 Disk Storage

Microcode Bundle 88.56.9.0 Release Note Information

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATIONS "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.