

IBM System Storage - DS8900F Disk Storage **Microcode Bundle 89.22.17.0 Release Note Information**

Release Date: June 24, 2022

VRMF Level Data Results:

| | |
|-------------------------|-------------------|
| VRMF level From: | 89.21.35.0 |
| VRMF Level To: | 89.22.17.0 |
| Report for: | DS8900F |

Code Bundle Contents

| DS8900F Code Bundle Level | SEA or LMC Version: | DSCSI Client | Heat Map Transfer Utility | Storage Manager | Copy Services Manager |
|----------------------------------|----------------------------|---------------------|----------------------------------|------------------------|------------------------------|
| 89.22.17.0 | 7.9.22.48 | 7.9.22.48 | 7.9.22.48 | 5.9.22.1017 | 6.3.2 |

Overview of new features and functions supported by this release on DS8900F 533x models 993/994/996/998

At a glance:

- SafeGuarded Copy fix

This new microcode release supports DS8900F 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 - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

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.

Shutdown while installing a new I/O enclosure pair

- 1 Problem Description:** Enclosure install process failed, leaving the enclosures partially installed. While attempting reinstall, the system saw both enclosures in the pair were unavailable, and performed an emergency shutdown.
 - 2 Potential Impact of Problem:** Loss of access
 - 3 Problem Severity:** High Impact
 - 4 Pervasive Problem:** No
- ID# 356268, 356279

Potential System Z loss of access on R9.2 code

- 1 Problem Description:** The Asynchronous Status Exchange counter is not properly decremented when asynchronous status events are aborted.
 - 2 Potential Impact of Problem:** loss of access
 - 3 Problem Severity:** High Impact
 - 4 Pervasive Problem:** No
- ID# 356779

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.
 - 1 Potential Impact of Problem:** loss of access
 - 2 Problem Severity:** High Impact
 - 3 Pervasive Problem:** No
- ID# 357237

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

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

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

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

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

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

Expansion frame install failed

- 1 Problem Description:** Expansion frame iPDU install process fails if the base frame has only one iPDU pair.
 - 2 Potential Impact of Problem:** Extended service action
 - 3 Problem Severity:** Moderate
 - 4 Pervasive Problem:** Yes
- ID# 355972

License key file missing on one LPAR

- 1 Problem Description:** Code update suspended because of a LIC feature miscompare
 - 2 Potential Impact of Problem:** Extended service action
 - 3 Problem Severity:** Moderate
 - 4 Pervasive Problem:** No
- ID# 356443

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

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

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

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

0x1C63 MLE during LIC bundle upgrade

- 1 Problem Description:** Timing window exists while one LPAR is upgraded, where a space release operation may fail with "try later" sense, resulting in a microcode logic error.
- 2 Potential Impact of Problem:** Warmstart,
- 3 Problem Severity:** Moderate
- 4 Pervasive Problem:** No

ID# 356725

LDAP user login with no access

- 1 Problem Description:** Ungrouped users with Administrator role do not have administrator access (First-time data capture)
- 2 Potential Impact of Problem:** Unable to perform admin tasks
- 3 Problem Severity:** Moderate
- 4 Pervasive Problem:** No

ID# 356810

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

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

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

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

TCT failed after LIC bundle upgrade to R9.2

- 1 Problem Description:** In R9.2, with multicloud support, all clouds must have their names in lowercase. Existing clouds with upper or mixed case names, must be recreated with lowercase.
- 2 Potential Impact of Problem:** Loss of TCT function
- 3 Problem Severity:** Moderate
- 4 Pervasive Problem:** Yes

ID# 357494

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

0x1C5A MLE while creating a new volume

- 1 Problem Description:** While a new volume was being created, an unrelated warmstart opened a timing window where an extent scan attempted to process the incomplete volume.
- 2 Potential Impact of Problem:** Repeated Warmstart, single LPAR reboot
- 3 Problem Severity:** Moderate
- 4 Pervasive Problem:** No

ID# 357675

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

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

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

CPC dual hard drive reload failure

- 1 Problem Description:** Process to reload CPC hard drives from HMC failed to correctly identify the LPAR MAC addresses
- 2 Potential Impact of Problem:** Extended service action
- 3 Problem Severity:** Moderate
- 4 Pervasive Problem:** No

ID# 358271

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

Service: A recoverable error, Service improvements

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

Managed system connections lost after internal IP change

- 1 Problem Description:** HMC1 was unable to communicate over the service processor connections to the CPCs
- 2 Potential Impact of Problem:** Extended service action
- 3 Problem Severity:** Service
- 4 Pervasive Problem:** No

ID# 357867

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# 356293

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

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

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

IBM System Storage - DS8900F Disk Storage

Microcode Bundle 89.22.17.0 Release Note Information

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