

# IBM System Storage - DS8900F Disk Storage Microcode Bundle 89.13.7.0 Release Note Information

Release Date: July 30, 2021

## VRMF Level Data Results:

VRMF level From:	89.12.8.0
VRMF Level To:	89.13.7.0
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
89.13.7.0	7.9.13.17	7.9.13.17	7.9.13.17	5.9.13.1007	6.2.12

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

## At a glance:

- Code fixes

**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 89.13.7.0 Release Note Information**

**Acute: An irrecoverable error with potential loss of data.**

None.

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

### **Incorrect IEA497I message issued**

- 1. Problem Description:** An Invalid Track Format error was mis-reported as invalid Device Control Word error.
  - 2. Potential Impact of Problem:** Unplanned HyperSwap
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
- ID# 351060

### **Loss of access caused by extended PCIe error recovery**

- 1. Problem Description:** CPC PCIe adapter hardware failure caused LPAR failover, and extended I/O enclosure PCIe recovery.
  - 2. Potential Impact of Problem:** loss of access
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
- ID# 352893

### **Repeated track ID mismatch, 0x4433 MLE, and Host Adapter fence**

- 1. Problem Description:** An unusual CKD command chain exposed a microcode logic error in Host Adapter code.
  - 1. Potential Impact of Problem:** loss of access
  - 2. Problem Severity:** High Impact
  - 3. Pervasive Problem:** No
- ID# 353928

### **PPRC suspend or I/O error during Space Release**

- 1. Problem Description:** Error recovery while performing Space Release on a SafeGuarded Copy source, exposed a potential timing condition that can result in a deadlock.
  - 2. Potential Impact of Problem:** temporary loss of access
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
- ID# 354006

# **IBM System Storage - DS8900F Disk Storage**

## **Microcode Bundle 89.13.7.0 Release Note Information**

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

### **0x01B7:5083 MLE**

- 1. Problem Description:** Task timeout caused by excessive sidefile lock contention.
  - 2. Potential Impact of Problem:** ODD Dump
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** Yes
- ID# 349736

### **IEA491E PPRC Suspended**

- 1. Problem Description:** PPRC suspend after creation of new pairs, if the first I/O is a two-track (Torn Page) atomic write.
  - 2. Potential Impact of Problem:** PPRC suspend with freeze
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
- ID# 350891

### **No callhome after I/O enclosure fenced**

- 1. Problem Description:** Hardware resource was fenced, but no serviceable event was created.
  - 2. Potential Impact of Problem:** degraded performance
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
- ID# 351183

### **Host Adapter Header bad CRC**

- 1. Problem Description:** During an XRC read operation, the Host adapter detected an invalid Cache Record Control Block header.
  - 2. Potential Impact of Problem:** Warmstart
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
- ID# 351247

### **Incorrect FRU call-out for PCIe link errors**

- 1. Problem Description:** Serviceable event called out a FRU that was not part of the error domain.
  - 2. Potential Impact of Problem:** Repeated service actions
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
- ID# 351270

### **Poor TCT read performance**

- 1. Problem Description:** Slow Transparent Cloud Tiering reads when compression is enabled.
  - 2. Potential Impact of Problem:** degraded performance
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
- ID# 351699

# **IBM System Storage - DS8900F Disk Storage**

## **Microcode Bundle 89.13.7.0 Release Note Information**

### **Repeated 0x20EC MLEs**

- 1. Problem Description:** During warmstart processing, a timing window exists where NVS and Cache SafeGuarded Copy metadata may end up out of sync.
- 2. Potential Impact of Problem:** Warmstarts, single LPAR reboot
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 351750

### **Performance (RPO) Degradation**

- 1. Problem Description:** Potential performance degradation in systems with large number of CPUs, caused by bitmap locking contention.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 351934

### **I/O delays on some Linux hosts during microcode update**

- 1. Problem Description:** During Failover/Failback, and Host Adapter Fastload, systems with 16Gb and 32Gb adapters terminate the Fiber Channel exchange without sending an abort sequence.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 352227

### **Unable to login to DS GUI**

- 1. Problem Description:** HMC was continually trying to communicate with a disconnected DS CLI session, causing the message router queue to become full.
- 2. Potential Impact of Problem:** Login failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 352690

### **Performance impact running mkflash from IBM i**

- 1. Problem Description:** Host I/O was impacted by large numbers of Unit Attentions (State Change Interrupts) sent to the host.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 352819

### **Transparent Cloud Tiering slowdown**

- 1. Problem Description:** Timeout duration for TCT sockets can impact overall copy job performance.
- 2. Potential Impact of Problem:** degraded TCT performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 352830

# **IBM System Storage - DS8900F Disk Storage**

## **Microcode Bundle 89.13.7.0 Release Note Information**

### **SRC BE1E2170 deadlock while performing SafeGuarded Copy**

- 1. Problem Description:** A task was holding an exclusive lock on a metadata track, while waiting in queue behind other tasks, that also needed access to that same metadata track.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 353029

### **Host Adapter 0xB03E MLE**

- 1. Problem Description:** Periodic test I/O was sent to a PPRC path that was in High Failure Rate state, but the port had been taken offline.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 353058

### **Global Mirror session shows as cascaded instead of Multi-Target**

- 1. Problem Description:** Attempt was made to create a MTIR pair where one already existed for the same volume pairs. This caused the original MTIR pairs to be set to cascaded.
- 2. Potential Impact of Problem:** Full copy of data
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 353239

### **Enforce minimum SafeGuarded Copy multiplier value**

- 1. Problem Description:** Change SafeGuarded Copy minimum multiplier value to 1.5.
- 2. Potential Impact of Problem:** SGC 'out of space' failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 353447

### **Global Copy/Global Mirror performance degraded**

- 1. Problem Description:** PPRC performance impacted by overly aggressive pre-staging of Customer data tracks.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 353463

### **Old CSM backup restored during manual version update**

- 1. Problem Description:** When using DS CLI 'installsoftware' to manually update to a newer Copy Services Manager version, an incorrect backup was restored.
- 2. Potential Impact of Problem:** Revert CSM configuration changes
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes

ID# 353660

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## **Microcode Bundle 89.13.7.0 Release Note Information**

### **0x05E0 MLE**

- 1. Problem Description:** A data track was moved from the cache fast write list, to destage wait list, while safe data commit scan was attempting to destage the track.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 354148

### **Latency Spikes while running SafeGuarded Copy**

- 1. Problem Description:** High SGC activity, combined with lock contention on the backup volumes, consumed NVS space, impacting production workload.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No

ID# 354245, 354928

## **Service: A recoverable error, Service improvements.**

### **zHyperLink wrap test missing prompt**

- 1. Problem Description:** While running a zHyperLink wrap test, SSR was not prompted to install the wrap plug.
- 2. Potential Impact of Problem:** Repair/Verify failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 351966

### **Incorrect VRAID adapter resource state**

- 1. Problem Description:** After a CDA recovery, VRAID adapter Resource Manager attributes incorrectly showed the adapters in 'Offline' state.
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 352042

### **Encryption key retrieval failures**

- 1. Problem Description:** When periodic key retrieval delivered invalid certificate data, ESSNI failed to return an error indication, because of a NegativeArraySize exception.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 352068

# **IBM System Storage - DS8900F Disk Storage**

## **Microcode Bundle 89.13.7.0 Release Note Information**

### **SAN 'feping' utility fails on newer Host Adapters**

- 1. Problem Description:** Extended Link Service Echo command returns "not supported" response on 16Gb and 32Gb host adapters.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 352177

### **Management Enclosure power supply replacement failure**

- 1. Problem Description:** In DS8910F model 993, using Customer-supplied PDUs, repair will fail because iPDU resource manager objects show iPDU state is "Not Present".
- 2. Potential Impact of Problem:** Repair action failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 353307

### **CDA suspend while second LPAR is being updated**

- 1. Problem Description:** An ESSNI query of a new Resource Manager attribute caused the Resource Manager to terminate.
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 353588

### **DS CLI 'setauthpol' failures**

- 1. Problem Description:** Some parameters in the setauthpol command are rejecting values containing spaces.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 353722

### **0x01B7:1000 MLE**

- 1. Problem Description:** Insufficient retries allowed for NVS Track ID list lock spin processing.
- 2. Potential Impact of Problem:** ODD Dump
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 353730

### **Attention LED turned off**

- 1. Problem Description:** Health checker turned off the Attention LED when a problem had not yet been resolved.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 353778

# **IBM System Storage - DS8900F Disk Storage**

## **Microcode Bundle 89.13.7.0 Release Note Information**

### **Incorrect FRU list order**

- 1. Problem Description:** HPFE Gen2 midplane VPD error incorrectly prioritizes Expander module replacement before the midplane.
- 2. Potential Impact of Problem:** Repeated service actions
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 353886

### **mkaliasvol fails with CMUN04003E error**

- 1. Problem Description:** Creating multiple CKD alias volumes may trigger an internal Resource Manager core dump, if the RM exceeds available resources.
- 2. Potential Impact of Problem:** Failure to create PAVs
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 354071

### **SRC BE19005A caused by RPC register corruption**

- 1. Problem Description:** While running a procedure to recover the Storage Facility Resource Manager configuration to the HMC, parallel threads were accessing the same RPC register location, leading to corrupted register contents.
- 2. Potential Impact of Problem:** Repeated repair actions
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No

ID# 354545

## **Improvements: Improvements for better usability**

### **Remove EMC super administrator HMC role**

- 1. Problem Description:** Remove HMC role that is no longer used.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No

ID# 350825



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