

# IBM System Storage - DS8900F Disk Storage

## 89.0.x.x Release Notes Cumulative Summary v4.1

Date: July 26, 2021

### VRMF Level Data Results:

VRMF level From:	89.0.214.0
VRMF Level To:	89.4.8.0
Report for:	DS8900F

### Code Bundle Contents

DS8900F Code Bundle Level	SEA or LMC Version:	DSCLI Client	Heat Map Transfer Utility	Storage Manager	Copy Services Manager
89.4.8.0	7.9.4.26	7.9.4.26	7.9.4.26	5.9.4.1010	6.2.9.1
89.3.6.0	7.9.3.19	7.9.3.19	7.9.3.19	5.9.3.1008	6.2.8
89.2.40.1	7.9.2.89	7.9.2.88	7.9.2.88	5.9.2.1039	6.2.7
89.2.40.0	7.9.2.88	7.9.2.88	7.9.2.88	5.9.2.1039	6.2.7
89.1.24.0	7.9.1.36	7.9.1.36	7.9.1.36	5.9.1.1016	6.2.6
89.1.23.0	7.9.1.36	7.9.1.36	7.9.1.36	5.9.1.1016	6.2.6
89.0.214.0	7.9.0.523	7.9.0.523	7.9.0.523	5.9.0.1205	6.2.6

This is a summary of the fixes in the R9.0 microcode releases.

### 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**

## **89.0.x.x Release Notes Cumulative Summary v4.1**

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

#### **HIPER Inconsistent SafeGuarded Backup data**

1. **Problem Description:** <https://www.ibm.com/support/pages/node/6368715>
  2. **Potential Impact of Problem:** Data inconsistency
  3. **Problem Severity:** HIPER
  4. **Pervasive Problem:** No
  5. **Release Bundle:** 89.4.8.0
- ID# 349398

#### **Pinned data after power loss**

1. **Problem Description:** During IML with modified data, an exposure exists where a previously queued commit may not be restored to cache.
  2. **Potential Impact of Problem:** loss of data
  3. **Problem Severity:** High Impact
  4. **Pervasive Problem:** No
  5. **Release Bundle:** 89.4.8.0
- ID# 350519

#### **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
  5. **Release Bundle:** 89.3.6.0
- 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
  5. **Release Bundle:** 89.3.6.0
- ID# 348842

#### **Incorrect volume LRC**

1. **Problem Description:** During base and alias volume creation, insufficient locking may lead to incorrect LRC calculation.
  2. **Potential Impact of Problem:** loss of data
  3. **Problem Severity:** High Impact
  4. **Pervasive Problem:** No
  5. **Release Bundle:** 89.2.40.0
- ID# 344090

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **0x10F7 MLE during RAID-5 array rebuild**

- 1. Problem Description:** During RAID-5 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
- 5. Release Bundle:** 89.2.40.0

ID# 346492

### **Inconsistent data on secondary after error recovery**

- 1. Problem Description:** Error recovery while forming FlashCopy Consistency Groups, across multiple LSSs, may result in one or more LSSs coming out of freeze earlier than the others.  
**Note:** Complete fix will require Co-Req APARs OA59936 (SDM) and PH26701 (GDPS)
- 2. Potential Impact of Problem:** Data inconsistency
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347624

### **Data Loss exposure with high write activity**

- 1. Problem Description:** A timing exposure exists in systems with high write activity. After freeing an NVS track buffer for reuse, a track may be allowed to use the buffer before PHYP has finished cleanup operations. Data loss may then occur during a power loss or Cluster failover event.
- 2. Potential Impact of Problem:** loss of data
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347200

### **Potential data inconsistency after failover**

- 1. Problem Description:** IBM i systems may encounter inconsistent data when skip writes are interrupted by cluster failover.
- 2. Potential Impact of Problem:** loss of data
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 348193

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Data Loss exposure with high write activity**

- 1. Problem Description:** A timing exposure exists in systems with high write activity. After freeing an NVS track buffer for reuse, a track may be allowed to use the buffer before PHY has finished cleanup operations. Data loss may then occur during a power loss or Cluster failover event.
  - 2. Potential Impact of Problem:** loss of data
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.1.24.0
- ID# 347200

### **NVDIMMs deconfigured after power loss**

- 1. Problem Description:** After unexpected power loss event, NVDIMM image may be corrupted on both clusters.
  - 2. Potential Impact of Problem:** loss of data
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.1.23.0
- ID# 346171

### **Backup Power Module failure not detected**

- 1. Problem Description:** NVDIMM BPM error log entries were missed, with the result that the affected Cluster was not shutdown, and no serviceable event was created.
  - 2. Potential Impact of Problem:** loss of data
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.1.23.0
- ID# 346191

### **Corrupted parity after array resync**

- 1. Problem Description:** Parity resync on a flash array encountered a locking issue with a host write while updating parity for the same stripe.
  - 2. Potential Impact of Problem:** loss of data
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.1.23.0
- ID# 346606

### **Data miscompare exposure**

- 1. Problem Description:** A rare timing window, combined with a data pattern on a boundary, can lead to a host write completing to media when initialization is required, without processing and clearing the initialization required indicator.
  - 2. Potential Impact of Problem:** Data miscompare
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.1.23.0
- ID# 346697

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Data miscompare on SafeGuarded Copy recovery volume**

- 1. Problem Description:** Track Bitmap and Recovery Bitmap were out of sync during a host write to the recovery volume. This caused inconsistent data on the recovery volume, making it unusable.
  - 2. Potential Impact of Problem:** Data miscompare
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.1.23.0
- ID# 346873

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

### **Last Device Adapter fenced**

- 1. Problem Description:** A microcode logic error during adapter recovery caused the only available adapter to be fenced.
  - 2. Potential Impact of Problem:** loss of access
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.4.8.0
- ID# 341982

### **I/O adapter failure caused multiple warmstarts**

- 1. Problem Description:** PCIe error recovery did not recognize that the adapter was presenting power fault
  - 2. Potential Impact of Problem:** Multiple warmstarts
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.4.8.0
- ID# 345611

### **FB background task timed out**

- 1. Problem Description:** I/O bay PCIe issues led to I/O timeout after waiting 5 minutes for a SCSI Command to complete.
  - 2. Potential Impact of Problem:** loss of access
  - 3. Problem Severity:** High Impact
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.4.8.0
- ID# 345671

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **TCT Recall fails with Invalid Track Number**

1. **Problem Description:** Transparent Cloud Tiering Recall task that spans multiple volumes may fail because a microcode logic error handling parallel recall threads.
2. **Potential Impact of Problem:** Recall job failure
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.4.8.0

ID# 350598

### **REST API failure after code bundle update**

1. **Problem Description:** In systems running with an alternate internal IP address range, REST API requires manual intervention to restore Transparent Cloud Tiering function after code bundle update.
2. **Potential Impact of Problem:** loss of access to cloud data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.4.8.0

ID# 350876

### **0x014E MLE during failback**

1. **Problem Description:** Cluster failback could not complete because it could not access metadata on a quiesced rank.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.4.8.0

ID# 351315

### **Loss of access exposure running ESE Sizing Tool**

1. **Problem Description:** If an LPAR is running the ESE Sizing Tool, and has a failure, the partner LPAR would be unable to take over, and would also fail. Once the system is recovered, copy services relations would have to be reconfigured. Exposure was discovered in code review.
2. **Potential Impact of Problem:** loss of access, loss of replication
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.4.8.0

ID# 351682

### **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
5. **Release Bundle:** 89.3.6.0

ID# 349270

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
5. **Release Bundle:** 89.3.6.0

ID# 349654

### **0x1024 MLE and dual reboot**

1. **Problem Description:** When expanding a large extents volume that does not end on an extent boundary, and had been migrated from a different geometry, the first and last track information for the last extent may be mis-calculated.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.3.6.0

ID# 349898

### **HIPER Multiple 32Gb Host Adapters fenced**

1. **Problem Description:** zHPF Format Write with an irregular track format was mis-handled by the HA firmware. Only 32Gb-capable adapters are susceptible to this condition.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.3.6.0

ID# 349936

### **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
5. **Release Bundle:** 89.3.6.0

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
5. **Release Bundle:** 89.3.6.0

ID# 350674

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **HIPER SRC=BE352662 Host Adapter zHPF Global CRC error**

- 1. Problem Description:** An unusual zHPF chain led to CRC errors, and fencing of multiple Host Adapters.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** HIPER
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.2.40.0

ID# 345019

### **0x01B7:801A MLE**

- 1. Problem Description:** Summary Event Notification processing is using inefficient iterative methods, contributing to thread timeouts.
- 2. Potential Impact of Problem:** ODD Dump, Warmstart, Failover, or HyperSwap Failure
- 3. Problem Severity:** Varies depending on workload.
- 4. Pervasive Problem:** Yes - ODD Dump
- 5. Release Bundle:** 89.2.40.0

ID# 345941

### **SRC=BE1E218D Fixed block microcode timeout**

- 1. Problem Description:** SafeGuarded Copy ran into an out-of-space condition, but older backups were not rolled off.
- 2. Potential Impact of Problem:** Temporary loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346455

### **VRAID adapter left in service mode**

- 1. Problem Description:** After a pseudo-repair of a VRAID adapter, the adapter was left in service mode. Subsequent repair of the partner adapter was allowed to proceed, causing loss of access.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346737

### **SafeGuarded Copy filling up extent pools**

- 1. Problem Description:** SGC was filling up pools faster than older backups were being removed. Fix provides a pokeable setting to fail the SGC relation if the pools are filling up, to avoid failing host I/O.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347244

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Repeated 0x0109 MLEs running Concurrent Copy**

1. **Problem Description:** 0x7D0E ODD Dump failed to clear a lock, leading to multiple 0x0109 MLEs and repeated warmstarts.
2. **Potential Impact of Problem:** Repeated warmstarts, single cluster reboot
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.2.40.0

ID# 347490

### **NVDIMMs deconfigured after power failure**

1. **Problem Description:** After a hard power off, a p9 firmware problem caused NVDIMMs to be deconfigured.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.2.40.0

ID# 347579

### **SafeGuarded Copy failure recovery options**

1. **Problem Description:** Provide a pokeable value for SGC error recovery to fail the relationship when encountering out-of-space condition.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.2.40.0

ID# 347807

### **HIPER Unable to IPL from SafeGuarded Copy recovery volume**

1. **Problem Description:** When using a Task Control Block with two Cache Track Requests to access a track on the recovery volume, the second access may be discarded.
2. **Potential Impact of Problem:** IPL failure
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 89.1.23.0

ID# 346511

### **Host bay failed auto-power-on**

1. **Problem Description:** After a short-duration Power Line Disturbance, a host bay did not power on again because of a dual fan fault condition.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.1.23.0

ID# 346525

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **0x1BB5 MLE**

- 1. Problem Description:** Encryption key repository reads encountered lock contention between the two Clusters. May cause dual IML failure.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 346673

### **Multiple path failure on Linux hosts during error recovery**

- 1. Problem Description:** For Linux hosts, change the default Queue Error management parameter to binary '00', to allow other commands in the task set to be processed after a check condition.
- 2. Potential Impact of Problem:** loss of access
- 3. Problem Severity:** High Impact
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 346755

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

### **PPRC path inoperative after a FC link event**

- 1. Problem Description:** Link recovery on a PPRC path led to a Destination ID (D\_ID) change in the Host Adapter port, but the old D\_ID also remained, creating a duplicate entry. Condition requires manual intervention to restore the path.
- 2. Potential Impact of Problem:** loss of path
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.4.8.0

ID# 346912

### **Slow cluster hard drive**

- 1. Problem Description:** A failing, but still operational, cluster hard drive caused performance impact, and cluster failover
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 347791

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **SAN error recovery caused PPRC suspend**

- 1. Problem Description:** Fibre Channel frames arrived out of order at the PPRC secondary, but the secondary did not return out-of-order status to the primary.
- 2. Potential Impact of Problem:** PPRC Suspend
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.4.8.0

ID# 348117

### **0x1C12 MLE during Flash Drive replacement**

- 1. Problem Description:** Process to remove the config of the old drive collided with the process to harvest the information from the new one.
- 2. Potential Impact of Problem:** Warmstart and LPAR failover
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349355

### **Resource Managers hung on LPAR**

- 1. Problem Description:** Unable to query or stop/start RMs, or quiesce/resume the LPAR, because of a deadlock between a volume delete command, and a query operation.
- 2. Potential Impact of Problem:** DSCLI command failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349388

### **0x7D0A MLE**

- 1. Problem Description:** Preserve Mirror FlashCopy command required a large buffer, so a new Task Control Block was allocated to send the command to the secondary. But the calling function could not handle a callback to the new TCB, and triggered a Microcode Logic Error
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349420

### **Host I/O performance degradation while running FlashCopy**

- 1. Problem Description:** FlashCopy runs 32 discard scans at a time, which can impact host I/O on smaller systems
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349521

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **0x1D02 MLE running SafeGuarded Copy**

- 1. Problem Description:** During SGC rolloff, the Device Adapter encountered an extent with an unexpected (but legal) size.
  - 2. Potential Impact of Problem:** Warmstart
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.4.8.0
- ID# 349635

### **DSCLI authentication failure**

- 1. Problem Description:** User login timed out while synchronizing the authentication state with the peer HMC.
  - 2. Potential Impact of Problem:** Unable to process commands
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.4.8.0
- ID# 349931

### **False 0x2031 MLE**

- 1. Problem Description:** Microcode Logic Error was triggered by a condition other than what it was designed to recover from.
  - 2. Potential Impact of Problem:** Warmstart
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.4.8.0
- ID# 350506

### **0x20DB MLE on zHyperLink write**

- 1. Problem Description:** Compare-after-restore function encountered a false miscompare indication.
  - 2. Potential Impact of Problem:** Warmstart
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.4.8.0
- ID# 350596

### **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
  - 5. Release Bundle:** 89.3.6.0
- ID# 344422

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
  - 5. Release Bundle:** 89.3.6.0
- 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
  - 5. Release Bundle:** 89.3.6.0
- ID# 346864

### **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
  - 5. Release Bundle:** 89.3.6.0
- ID# 347081

### **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
  - 5. Release Bundle:** 89.3.6.0
- 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
  - 5. Release Bundle:** 89.3.6.0
- ID# 347782

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
- 5. Release Bundle:** 89.3.6.0

ID# 347783

### **Make journal block reclamation pokeable persistent**

- 1. Problem Description:** csjrFreshMgrTimeoutSec pokeable did not persist through cluster IML.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.3.6.0

ID# 347918

### **Adjust data stripe destage calculations**

- 1. Problem Description:** Destage code is not optimized for current stripe structure, where extents may not begin on a stripe boundary.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.3.6.0

ID# 348119

### **Read cache performance on background copy workloads**

- 1. Problem Description:** Changes made to improve cleaning of metadata extents created some unintended side-effects for sequential read operations.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.3.6.0

ID# 348133

### **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
- 5. Release Bundle:** 89.3.6.0

ID# 348371

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
- 5. Release Bundle:** 89.3.6.0

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
- 5. Release Bundle:** 89.3.6.0

ID# 349025

### **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
- 5. Release Bundle:** 89.3.6.0

ID# 349474

### **Resource Manager failure**

- 1. Problem Description:** Resource Manager runs out of Adapter Platform Object Model file descriptors.
- 2. Potential Impact of Problem:** Copy Service Manager/CS Toolkit communication failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.2.40.0

ID# 320360

### **MetroMirror suspended**

- 1. Problem Description:** Data arrived out of order at the secondary, causing the secondary to send unexpected status to the primary.
- 2. Potential Impact of Problem:** PPRC Suspend
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 340716

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **0x05E0 MLE**

- 1. Problem Description:** Incorrect control structures were found when presenting PPRC path notifications.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.2.40.0

ID# 341866

### **Stale LDAP cache**

- 1. Problem Description:** ESSNI does not detect LDAP changes, and continues to use cached tokens.
- 2. Potential Impact of Problem:** Security exposure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 344326

### **Host timeout during HyperSwap**

- 1. Problem Description:** Add a poke to disable the release space process during PPRC Failback.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 344999

### **CMUN02947E error removing SafeGuarded Copy volumes**

- 1. Problem Description:** After withdrawing SafeGuarded Copy consistency groups and terminate SGC, reservations remained on the volumes, preventing their removal.
- 2. Potential Impact of Problem:** Unable to remove former SGC volumes
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 345211

### **Copy Services Manager unable to communicate with HMCs**

- 1. Problem Description:** Essni is unable to execute firewall scripts because of a path issue.
- 2. Potential Impact of Problem:** HMC communication failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346028

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **0x1C70 MLE during cluster failback**

- 1. Problem Description:** Cluster failback may encounter a microcode logic error if Dynamic Volume Relocation is running.
- 2. Potential Impact of Problem:** Failback failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346031

### **RPO falling behind**

- 1. Problem Description:** Large Global Mirror environments may exceed existing resource allocations for FlashCopy per cluster and port.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346138

### **PPRC path throughput imbalance**

- 1. Problem Description:** Path selection algorithms may incorrectly calculate path activity in some environments. Additional options are being provided, that can be enabled by poke.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346458

### **0x1D07 MLE**

- 1. Problem Description:** During high zHPF write activity, a write operation may encounter a microcode logic error while waiting for a data buffer.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346587

### **Erratic SafeGuarded Copy consistency group performance**

- 1. Problem Description:** SafeGuarded Copy check-in task is not running at a high enough priority.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346680

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **ESC=CBB9 during warmstart**

- 1. Problem Description:** During warmstart, VRAID adapter reset should have been called in an earlier phase.
- 2. Potential Impact of Problem:** Extended warmstart recovery
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346696

### **0x0109 MLE**

- 1. Problem Description:** Pathing thread attempted to lock a unit address control block that it already held the lock for.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346977

### **Vary path online failure**

- 1. Problem Description:** Host Adapter ports were stuck in "Remove Logical Path in Progress" state.
- 2. Potential Impact of Problem:** loss of path
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346983

### **Warmstart while replacing 32Gb Host Adapter**

- 1. Problem Description:** During adapter slot power off, upstream PCIe switch reports an error.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347019

### **False SRC=BC20E504**

- 1. Problem Description:** NVDIMM firmware error resulted in a cluster FENCED\_INT\_8 condition, and cluster failover.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.2.40.0

ID# 347152

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
  - 5. Release Bundle:** 89.2.40.0
- ID# 347175

### **0xB10A MLE**

- 1. Problem Description:** Host adapter received unexpected PProcess LogOut on a PPRC path. PRLO is specific to FICON, and should not be seen on a Fibre Channel Protocol port.
  - 2. Potential Impact of Problem:** Warmstart
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.2.40.0
- ID# 347305

### **Global Mirror FlashCopy hang**

- 1. Problem Description:** While attempting to quiesce Background QuickInit on a volume, a data structure was zeroed, causing quiesce code to indicate the quiesce was still in progress
  - 2. Potential Impact of Problem:** PPRC suspend
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.2.40.0
- ID# 347334

### **Repeated 0x11B6 MLE**

- 1. Problem Description:** Device Adapter error recovery routine encountered duplicate entries in a function stack.
  - 2. Potential Impact of Problem:** Multiple warmstarts, and FailOver.
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.2.40.0
- ID# 347392

### **0x526F MLE**

- 1. Problem Description:** During a torn-page write to a Metro-Global Mirror intermediate volume, code check for completion occurred before NVS validation was done.
  - 2. Potential Impact of Problem:** Warmstart
  - 3. Problem Severity:** Moderate
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.2.40.0
- ID# 347493

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **0x05E0 MLE**

- 1. Problem Description:** A task freed it's lock before it was completely done processing.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate]
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347497

### **Longer warmstart times in larger environments**

- 1. Problem Description:** A function to validate Fibre Channel Security Management structures is iterating across all available ports FC ports, when it only needs to run once.
- 2. Potential Impact of Problem:** degraded performance
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347498

### **REST API communication failure**

- 1. Problem Description:** Entitlement validation for Transparent Cloud Tiering to TS7700 is incorrectly acting on public cloud types.
- 2. Potential Impact of Problem:** Unable to control public cloud types
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347524

### **0x6070 Host Adapter MLE**

- 1. Problem Description:** Host Adapter received Link Busy from a FICON channel, when no I/O was in progress.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347540

### **SafeGuarded Copy sequence number mismatch**

- 1. Problem Description:** When performing dataset-level SafeGuarded Copy, where source and target have different sequence numbers, a microcode logic error may cause an incorrect sequence number to be written to the target.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347633

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Host Adapter communication timeout after cluster quiesce**

- 1. Problem Description:** Code load process requested ODD collection, but did not wait for data collection to finish, before quiescing the next LPAR.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347685

### **0xD00F MLE**

- 1. Problem Description:** zHyperLink error recovery attempted to recover from a permanent hardware error condition.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347794

### **LPAR MLE referencing a null pointer**

- 1. Problem Description:** A function call to allocate a Task Control Block encountered a NULL pointer.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347894

### **DS GUI and DSCLI login fails with CMUN00018E**

- 1. Problem Description:** Authentication timeouts led to a timer failing to reset.
- 2. Potential Impact of Problem:** Unable to access the HMC
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347870

### **0x7F31 MLE**

- 1. Problem Description:** Fast Reverse Restore was allowed to be initiated targeting a SafeGuarded Copy source volume, that was not also a Global Mirror FlashCopy source volume.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 337401

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **0x790B MLE running Dataset-level cascaded FlashCopy**

- 1. Problem Description:** While creating and withdrawing multiple relationships, a microcode logic error was encountered in Background Copy queue management.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 341109

### **Deconfigured NVDIMM after PHYP crash**

- 1. Problem Description:** After a Hypervisor crash, NVDIMMs are left with a corrupt image, and are deconfigured.
- 2. Potential Impact of Problem:** Cluster IML failure
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 346139

### **Host Adapter 0x0B8A MLE**

- 1. Problem Description:** During HA fastload, failure to handle linked commands triggered a microcode logic error in the adapter.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 346953

### **0x7A2A MLE**

- 1. Problem Description:** Copy Services journal cleaner task failing with a microcode logic error, caused by syntax errors in code.
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 347120

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

### **0x01B7:506A MLE**

- 1. Problem Description:** Metadata lock contention on Metro Mirror secondary when it is also a Global Copy or Multi-Target Incremental Resync primary.
- 2. Potential Impact of Problem:** ODD dump
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.4.8.0

ID# 337694

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Ambiguous HyperSwap failure sense**

- 1. Problem Description:** In a HyperSwap "go to sync" failure, the sense needs an additional qualifier to clarify the reason for the failure.
- 2. Potential Impact of Problem:** Extended problem determination
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 345088

### **HMC code update failure**

- 1. Problem Description:** HMC failed to function after code update, because a required function was not updated.
- 2. Potential Impact of Problem:** Extended code update activity
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 347978

### **Flash Drives rejected for SAS path errors**

- 1. Problem Description:** Flash drives were incorrectly rejected for SAS path errors that were affecting multiple drives.
- 2. Potential Impact of Problem:** Extended service actions
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 348994

### **Closed serviceable event reappeared after an hour**

- 1. Problem Description:** CDA Preload Manager process got into a deadlock trying to display "Preload complete" message to a user session that should not be receiving it.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349130

### **0x1159 MLE**

- 1. Problem Description:** Release Space is being called before I/O is fully quiesced for the extent
- 2. Potential Impact of Problem:** Warmstart
- 3. Problem Severity:** Moderate
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349185

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

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

- 1. Problem Description:** During 'stage grouping' on cascaded FlashCopy target, the thread may exceed the timeout limit.
- 2. Potential Impact of Problem:** ODD dump
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349225

### **HMC network description settings lost**

- 1. Problem Description:** During private network IP range change procedure, a persistent information file was removed.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349227

### **Enclosure Service Module repair failure**

- 1. Problem Description:** HPFE Gen2 ESM repair failed because a prior recovery left the adapter device busses in a quiesced state.
- 2. Potential Impact of Problem:** Extended repair action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349576

### **Excessive metadata pre-stage activity**

- 1. Problem Description:** On PPRC primary, a flag is not being cleared after every valid metadata pre-stage.
- 2. Potential Impact of Problem:** Unnecessary work being done
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5.**

ID# 350070

### **False SRC=BE34002B 'Out of Spares' condition**

- 1. Problem Description:** A function to query predicted capacity was left open, each time it was run. Eventually enough resources were consumed, to the degree that Resource Manager functions began to fail.
- 2. Potential Impact of Problem:** Resource Management failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 350490

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **MES install failure**

- 1. Problem Description:** Drive failure during HPFE Gen2 MES install required manual intervention to complete the install.
- 2. Potential Impact of Problem:** Extended service action
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 350777

### **Unable to export system summary using DS GUI**

- 1. Problem Description:** An empty attribute in an HMC Resource Manager object caused a number format exception.
- 2. Potential Impact of Problem:** Export function failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.4.8.0

ID# 351420

### **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
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.3.6.0

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
- 5. Release Bundle:** 89.3.6.0

ID# 341999

### **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
- 5. Release Bundle:** 89.3.6.0

ID# 347829

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
  - 5. Release Bundle:** 89.3.6.0
- ID# 347854

### **HMC login hang**

- 1. Problem Description:** Login hangs after accepting the password containing the "%" character.
  - 2. Potential Impact of Problem:** Unable to login
  - 3. Problem Severity:** Service
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.3.6.0
- ID# 348090

### **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
  - 5. Release Bundle:** 89.3.6.0
- 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
  - 5. Release Bundle:** 89.3.6.0
- 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
  - 5. Release Bundle:** 89.3.6.0
- ID# 348520

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
5. **Release Bundle:** 89.3.6.0

ID# 348614

### **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
5. **Release Bundle:** 89.3.6.0

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
5. **Release Bundle:** 89.3.6.0

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
5. **Release Bundle:** 89.3.6.0

ID# 349062

### **Non-Contiguous volume creation fails**

1. **Problem Description:** Creating volumes fails if two ranges are specified with a gap between them.
2. **Potential Impact of Problem:** Multiple creation actions required
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.3.6.0

ID# 349080

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **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
- 5. Release Bundle:** 89.3.6.0

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
- 5. Release Bundle:** 89.3.6.0

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
- 5. Release Bundle:** 89.3.6.0

ID# 349562

### **AOS connection failure**

- 1. Problem Description:** Assist OnSite connection via proxy fails, and AOS must be restarted.
- 2. Potential Impact of Problem:** Remote support access failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 327293

### **DS GUI display issue using Multi-Target Incremental FlashCopy**

- 1. Problem Description:** When FlashCopy pairs are designated as Multi-Incremental (Type 2), the DS GUI table does not show anything in the "Recording" column. FlashCopy Properties display, and DSCLI, are not affected.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 334418

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **REST API shows incorrect CKD capacity**

- 1. Problem Description:** Capacity units were changed from extents for both Fixed Block and Count-Key-Data, to MB for FB, and cylinders for CKD. But conversion was not provided for cylinders to MB.
  - 2. Potential Impact of Problem:** none
  - 3. Problem Severity:** Service
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.2.40.0
- ID# 341739

### **LPAR dumps "re-compressed" during IML**

- 1. Problem Description:** When pruning old dumps, the newest should not be pruned, regardless of age.
  - 2. Potential Impact of Problem:** none
  - 3. Problem Severity:** Service
  - 4. Pervasive Problem:** No
  - 5. Release Bundle:** 89.2.40.0
- ID# 342391

### **0x01B7:3043 MLE**

- 1. Problem Description:** High numbers of unsolicited status interrupt threads may encounter ReConnect Control Block contention, leading to thread timeouts.
  - 2. Potential Impact of Problem:** ODD Dump
  - 3. Problem Severity:** Service
  - 4. Pervasive Problem:** Yes
  - 5. Release Bundle:** 89.2.40.0
- ID# 343541

### **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
  - 5. Release Bundle:** 89.2.40.0
- ID# 345308

### **0x01B7:506A MLE**

- 1. Problem Description:** Lock contention on Copy Services SideFile and eXtended Distance Consistency Session locks, during periods of high Global Mirror collision activity.
  - 2. Potential Impact of Problem:** ODD Dump
  - 3. Problem Severity:** Service
  - 4. Pervasive Problem:** Yes
  - 5. Release Bundle:** 89.2.40.0
- ID# 345989

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Copy Service Manager lost connection to HMC**

- 1. Problem Description:** Out-of-memory condition caused ESSNI crashdump. Fix will increase Java heap size.
- 2. Potential Impact of Problem:** Communication failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346308

### **0x5170 MLE**

- 1. Problem Description:** FlashCopy withdraw encountered a deadlock condition when the target volume was also in Validation Required state.
- 2. Potential Impact of Problem:** ODD Dump
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346528

### **Unable to access DS GUI**

- 1. Problem Description:** After code update, DS GUI cache refresh was slowed by query threads consuming large amounts of CPU time.
- 2. Potential Impact of Problem:** DS GUI login failure
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346852

### **Logical volume creation failure**

- 1. Problem Description:** After deleting volumes, storage system may incorrectly identify the number of clean extents available.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346882

### **False SRC=B7006A72 during quiesce/resume**

- 1. Problem Description:** Transient PCIe events during LPAR recycle were not suppressed.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346909

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **CMUN80000E login failure after Customer network IP change**

- 1. Problem Description:** If the first configured remote authentication URL is unreachable, HMC does not retry over the second configured URL.
- 2. Potential Impact of Problem:** Unable to authenticate via LDAP
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346946

### **Missing IBMi GUI option**

- 1. Problem Description:** DS GUI Create Custom Volume function does not display the choice to assign the volume to IBMi. Volume can be assigned separately after creation.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 346978

### **0x747A MLE**

- 1. Problem Description:** System attempted to create a Multi-Target Incremental Resync pair that points to itself.
- 2. Potential Impact of Problem:** ODD Dump
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347007

### **CSM data restore error message**

- 1. Problem Description:** After HMC reload, a timing window exists where HMC critical data restore may collide with Copy Services Manager also trying to restore it's data.
- 2. Potential Impact of Problem:** Misleading error message
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347045

### **CSM communication failure**

- 1. Problem Description:** A stuck thread in ESSNI causes queries from Copy Services Manager to fail. This change will perform a thread dump when an ESSNI PE package is collected prior to restart.
- 2. Potential Impact of Problem:** CSM in Severe status
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347048

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Unable to access ASMI over AOS or RSC connection**

- 1. Problem Description:** Advanced System Management Interface on clusters will only connect over default port 443.
- 2. Potential Impact of Problem:** Onsite SSR required to assist.
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347095

### **0x7E1D MLE during PMFLC establish on cascaded secondary**

- 1. Problem Description:** After waiting 15 seconds for sync to complete, primary retried the Preserve Mirror FLashCopy establish, but retry found the relationship already exists.
- 2. Potential Impact of Problem:** ODD Dump
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347123

### **Incorrect DSCLI help text**

- 1. Problem Description:** Help text for lsckdvol and lsfbvol commands shows columns that are not shown by DSCLI itself.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347203

### **LPAR log entries incorrectly sorted**

- 1. Problem Description:** Log analysis routines incorrectly AM/PM timestamps to 24 hour format.
- 2. Potential Impact of Problem:** Logs out of order
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347547

### **Incorrect HMC firewall rule**

- 1. Problem Description:** HMC firewall rule to monitor port 1751 is monitoring outgoing traffic, rather than incoming.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347718

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Incorrect attribute name in REST response**

- 1. Problem Description:** In PPRC query response, attribute "name" was used, rather than "ID".
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347769

### **Change DS GUI column names**

- 1. Problem Description:** Rename Mirroring and FlashCopy table columns
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 347801

### **Unable to install Customer-signed certificates using Chrome**

- 1. Problem Description:** Unable to upload certificate files using newer versions of Chrome browser.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** Yes
- 5. Release Bundle:** 89.1.23.0

ID# 344292

### **End-of-Call does not identify failed Storage Manager service**

- 1. Problem Description:** When running End-of-Call check, Service Representative is not notified when Storage Manager service has failed.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 345893

### **HMC console Shift+M shortcut fails**

- 1. Problem Description:** After opening browser, DS Storage Manager link works, but Shift+M shortcut displays an error.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Service
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.1.23.0

ID# 346048

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **DS GUI audit log offload fails**

1. **Problem Description:** Two ESSNI functions were combined into a single .jar file in R8.5 SP1.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.1.23.0

ID# 346266

### **DS GUI cache resync hang**

1. **Problem Description:** Volume Rebalance was stalled because it encountered out of space condition on target ranks, then restarted rather than processing the next queue.
2. **Potential Impact of Problem:** DS GUI storage manager hang
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.1.23.0

ID# 346610

### **Unable to login to WUI**

1. **Problem Description:** WUI login fails if default "Customer" ID does not exist. (Customer ID is automatically removed when creating other users with "esshmccustomer" role.)
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 89.1.23.0

ID# 346643

### **Test Callhome utility failure**

1. **Problem Description:** When running Test Callhome utility, two synchronous processes conflict, causing process hang and eventual test failure.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.1.23.0

ID# 346851

### **Improve BPM lifetime calculations**

1. **Problem Description:** NVDIMM Backup Power Module lifetime calculations were pessimistic under some environmental conditions.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 89.1.23.0

ID# 346478

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

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

#### **Enhance host health checking on secondary volumes**

- 1. Problem Description:** Allow FICON Read Accessibility Mask (RAM) command to a secondary device
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 349826

#### **SafeGuarded Copy performance enhancement**

- 1. Problem Description:** Support a cascaded Global Mirror session to perform the SafeGuarded Copy. The cascaded session will form consistency groups when the primary GM is paused with consistency.

**Note:** Implementation requires APAR PH31059.

- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.4.8.0

ID# 350308

#### **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
- 5. Release Bundle:** 89.3.6.0

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
- 5. Release Bundle:** 89.3.6.0

ID# 349842

#### **Add periodic midplane VPD validation**

- 1. Problem Description:** If Vital Product Data are corrupted or unreadable, scrub routines will detect and rewrite the VPD.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0

ID# 340870

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

### **Allow SafeGuarded Copy target to be persistent**

- 1. Problem Description:** For GDPS environments, support is added to allow persistent SGC volumes.
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 89.2.40.0.0

ID# 346529

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

## **89.0.x.x Release Notes Cumulative Summary v4.1**

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## **89.0.x.x Release Notes Cumulative Summary v4.1**

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