IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

Date: February 14, 2022

VRMF Level Data Results:

VRMF level From:	89.20.147.0
VRMF Level To:	89.22.19.0
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
89.22.19.0	7.9.22.54	7.9.22.48	7.9.22.48	5.9.22.1021	6.3.2
89.22.18.0	7.9.22.51	7.9.22.48	7.9.22.48	5.9.22.1019	6.3.2
89.22.17.0	7.9.22.48	7.9.22.48	7.9.22.48	5.9.22.1017	6.3.2
89.21.35.0	7.9.21.98	7.9.21.80	7.9.21.80	5.9.21.1035	6.3.2
89.21.34.0	7.9.21.95	7.9.21.80	7.9.21.80	5.9.21.1034	6.3.2
89.21.32.0	7.9.21.91	7.9.21.80	7.9.21.80	5.9.21.1032	6.3.1
89.21.31.0	7.9.21.89	7.9.21.80	7.9.21.80	5.9.21.1031	6.3.1
89.21.30.0	7.9.21.86	7.9.21.80	7.9.21.80	5.9.21.1030	6.3.1
89.21.28.0	7.9.21.80	7.9.21.80	7.9.21.80	5.9.21.1028	6.3.1
89.20.147.0	7.9.20.477	7.9.20.477	7.9.20.477	5.9.20.1169	6.3.0

This is a summary of the fixes in the R9.2 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

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Acute: An irrecoverable error with potential loss of data.

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
5 **Release Bundle:** 89.21.35.0, 89.22.17.0
ID# 356928

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
5 **Release Bundle:** 89.21.34.0, 89.22.17.0
ID# 357988

Potential data loss exposure in RAID-10 arrays
1 **Problem Description:** Testing and code review have discovered a path that could lead to sequence number errors, corrupt parity, and adapter unit checks in RAID-10 arrays.
2 **Potential Impact of Problem:** loss of data
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355852

HIPER Potential DS8900F Data Loss during a system power outage
1 **Problem Description:** https://www.ibm.com/support/pages/node/6415607
2 **Potential Impact of Problem:** loss of data
3 **Problem Severity:** HIPER
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 350299

Potential out-of-sync bitmap corruption
1 **Problem Description:** During a PPRC failback, with 'Force', the Out-of-Sync bitmaps from the (old primary) secondary may not be properly merged with those in the (new) primary.
2 **Potential Impact of Problem:** Inconsistent data
3 **Problem Severity:** High Impact
4 Pervasive Problem: No
5 **Release Bundle:** 89.20.147.0
ID# 351566

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SafeGuarded Copy volume stuck in Rolloff state
1   **Problem Description:** After an error recovery event during SGC Rolloff, SGC consistency group formation fails with "try later" sense.
2   **Potential Impact of Problem:** Loss of SafeGuarded Backup
3   **Problem Severity:** High Impact
4   **Pervasive Problem:** No
5   **Release Bundle:** 89.20.147.0
ID# 353027

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

HIPER Transparent Cloud Tiering fails to start
1   **Problem Description:** Application Framework fails to start in systems running R9.2 SP2 - 89.22.17.0. This affects startup of Transparent Cloud Tiering functions.
    https://www.ibm.com/support/pages/node/6891151
2   **Potential Impact of Problem:** Loss of TCT function.
3   **Problem Severity:** HIPER
4   **Pervasive Problem:** Yes
5   **Release Bundle:** 89.22.19.0
ID# 360055

HIPER Temporary loss of access with an unusual workload pattern.
1   **Problem Description:** Workloads with a small number of tracks in NVS, but very high update write activity to those same tracks, may lead to a destage stall condition, in systems running R9.2 SP2 – 89.22.17.0. Problem is more likely to occur in DS8910F systems with minimum cache/NVS size. https://www.ibm.com/support/pages/node/6857815
2   **Potential Impact of Problem:** Warmstart, loss of access
3   **Problem Severity:** HIPER
4   **Pervasive Problem:** Yes
5   **Release Bundle:** 89.22.18.0
ID# 358142

Failure to establish additional PPRC relationships
1   **Problem Description:** Multi-Target relationships could not be created because there were no free primary relationship entries. Original Relation IDs still existed in the control structures, but were not reused. https://www.ibm.com/support/pages/node/6857809
2   **Potential Impact of Problem:**
    - Unexpected full copy
    - Unable to create Multi-Target relations
3   **Problem Severity:** High Impact
4   **Pervasive Problem:** No
5   **Release Bundle:** 89.22.18.0
ID# 358170

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XRC session forward time creep

1 **Problem Description:** In R9 systems, timekeeping based on processor ticks causes a forward time creep, which System Data Mover and XRC software do not handle well. Systems that have extended periods with no updates on any volume in a LCU / SSID may see message ANTX5001E with No Record Found, or Invalid Track Format, and ANTX5104E RC=0901 indicating incorrect data is written to the secondary volume

2 **Potential Impact of Problem:** XRC failure

3 **Problem Severity:** High Impact

4 **Pervasive Problem:** No

5 **Release Bundle:** 89.22.18.0

ID# 358622

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

5 **Release Bundle:** 89.22.17.0

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

5 **Release Bundle:** 89.21.34.0, 89.22.17.0

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.

2 **Potential Impact of Problem:** loss of access

3 **Problem Severity:** High Impact

4 **Pervasive Problem:** No

5 **Release Bundle:** 89.21.34.0, 89.22.17.0

ID# 357237

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MTIR relations missing after a region swap-back
1 **Problem Description:** MultiTarget Incremental Resync relationships could not be created because there were no free primary relationship entries. Original Relation IDs still existed in the control structures, but were not reused.
2 **Potential Impact of Problem:** Loss of Copy Services function
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 354951

Repeated 0x7002 MLEs and dual-cluster reboots
1 **Problem Description:** A MultiTarget FlashCopy operation encountered an out-of-space condition on one of the targets, but an incorrect return code was generated.
2 **Potential Impact of Problem:** loss of access
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355247

Multiple 0x4809 Host Adapter MLEs
1 **Problem Description:** Unexpected zHPF command chain triggered multiple microcode logic errors and loss of access, because the commands were allowed to keep retrying.
2 **Potential Impact of Problem:** loss of access
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355867

Failing V-RAID adapter led to loss of access
1 **Problem Description:** V-RAID adapter was still functional but sending Unit Check sense, that should have caused the adapter to be fenced.
2 **Potential Impact of Problem:** loss of access
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 356136

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Performance impact during SafeGuarded recover operation
1 **Problem Description:** During recover, SGG needs to search all backups that precede the recovery point, to find each track of interest. Each search thread may take up to 10mS, which may starve other processes. It also can prevent ODD dump scanloop quiesce from completing within the allowed 8mS, leading to one or both LPARs failing to collect dumps. Fix provides a persistent poke to reduce maximum thread duration to 5mS.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 356210

HIPER Global CRC error caused multiple Host Adapters fenced
1 **Problem Description:** FICON global CRC errors may lead to fencing the last path to data
2 **Potential Impact of Problem:** loss of access
3 **Problem Severity:** HIPER
4 **Pervasive Problem:** Yes
5 **Release Bundle:** 89.20.147.0
ID# 345204

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
5 **Release Bundle:** 89.20.147.0
ID# 351060

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:** 89.20.147.0
ID# 351682

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MGM session would not start after site swap
1 **Problem Description:** Metro-Global-Mirror start H1-H2-H3 failed because of incorrect Out-of-Sync track bitmaps.
2 **Potential Impact of Problem:** Replication failure
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 351900

Flash Drive read/write timeout
1 **Problem Description:** SAS path recovery routines may temporarily remove the last operational path to the storage enclosure.
2 **Potential Impact of Problem:** loss of access
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352215

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
5 **Release Bundle:** 89.20.147.0
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.
2 **Potential Impact of Problem:** loss of access
3 **Problem Severity:** High Impact
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
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
5 **Release Bundle:** 89.20.147.0
ID# 354006

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

Heat Map transfer failed with SRC=BE74160D
1 **Problem Description:** Application Framework fails to start in systems running R9.2 SP2 - 89.22.17.0. This affects all EasyTier functions.
2 **Potential Impact of Problem:** Degraded performance.
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** Yes
5 **Release Bundle:** 89.22.19.0
ID# 360027

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
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
ID# 355419

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Transparent Cloud Tiering stalled
1   Problem Description: High ReST API request activity can lead to Java out-of- memory errors.
2   Potential Impact of Problem: TCT Stall
3   Problem Severity: Moderate
4   Pervasive Problem: Yes
5   Release Bundle: 89.22.17.0
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
5   Release Bundle: 89.22.17.0
ID# 355724

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
5   Release Bundle: 89.22.17.0
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
5   Release Bundle: 89.22.17.0
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
5   Release Bundle: 89.22.17.0
ID# 356488

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SGC recover fails with RC=08
1 **Problem Description:** When a FlashCopy source volume is also a Safeguarded copy source, a FLC withdraw command, using background copy, will incorrectly also perform BGC on the SGC relationship. SGC recover cannot run until the BGC completes.
2 **Potential Impact of Problem:** SGC recover command fails
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
ID# 356692

Improve error text for SAN-based serviceable events
1 **Problem Description:** Provide clearer explanation of error events, such as CRC, BER Exceeded, Loss of Sync, Loss of Signal. Such errors are reported by the DS8K, but are usually caused by external SAN problems.
2 **Potential Impact of Problem:** Loss of path
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** Yes
5   **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
ID# 356810

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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
5 Release Bundle: 89.22.17.0
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
5 Release Bundle: 89.22.17.0
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
5 Release Bundle: 89.22.17.0
ID# 357074

Incorrect Global Mirror session values in GUI
1 Problem Description: Query of GM session information is only working on sessions having an even-numbered master LSS. DS CLI queries are not affected, and will produce the correct output.
2 Potential Impact of Problem: Inconsistent GUI reporting
3 Problem Severity: Moderate
4 Pervasive Problem: No
5 Release Bundle: 89.22.17.0
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
5 Release Bundle: 89.22.17.0
ID# 357240

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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
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
ID# 357675

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
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
ID# 357812

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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

5 **Release Bundle:** 89.22.17.0

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

5 **Release Bundle:** 89.22.17.0

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

5 **Release Bundle:** 89.22.17.0

ID# 358271

0x4143 MLE during TCT recall or 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

5 **Release Bundle:** 89.21.34.0

ID# 357240

Unable to login to HMC1 WUI or DS GUI

1 **Problem Description:** Network congestion caused KMIP periodic key retrieval requests to stack up in LPAR ESS01

2 **Potential Impact of Problem:** HMC login failure

3 **Problem Severity:** Moderate

4 **Pervasive Problem:** Yes

5 **Release Bundle:** 89.21.28.0

ID# 350903

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GEO2615I Devices are Soft Fenced
1 **Problem Description:** During Hyperswap, a query to a PAV alias device incorrectly failed, because the base was in Soft Fence.
2 **Potential Impact of Problem:** Unexpected error message
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 351936

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:** 89.21.28.0
ID# 346977

RESTful API query fails with SRC=BE7A0000
1 **Problem Description:** In systems with CKD volumes, RESTful queries /api/v1/volumes, and /api/v1/pools/P0/volumes, fail when Parallel Access Volumes (PAVs) are present.
2 **Potential Impact of Problem:** Unable to use RESTful API scripts
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** Yes
5 **Release Bundle:** 89.21.28.0
ID# 351371

Unable to process encryption recovery key
1 **Problem Description:** Recovery key processing requires two different user logins. During this time, the recovery key state may be overwritten by a periodic key retrieval attempt.
2 **Potential Impact of Problem:** Extended recovery duration
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 352788

GM RPO target exceeded
1 **Problem Description:** A Global Mirror sync priority handling improvement may, in rare cases, adversely affect smaller sessions. Fix provides an optional poke to revert to the prior behavior
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 353497

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0x27B0 MLE
1 **Problem Description:** Copy Services stage processing encountered a CKD track with invalid metadata.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 354396

IOS071I Missing Device End
1 **Problem Description:** Missing Device End or command timeouts during a FlashCopy withdraw or SafeGuarded Copy Recovery, that starts BackGround Copy to a large Extent-Space-Efficient target volume.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** Yes
5 **Release Bundle:** 89.21.28.0
ID# 354451

Unable to connect to DS GUI or DSCLI
1 **Problem Description:** NI server was unable to recover from event cache database corruption.
2 **Potential Impact of Problem:** HMC login failure
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 354883

Global Mirror session failed after issuing FlashCopy command
1 **Problem Description:** FLC establish and withdraw commands, while system is doing single-cluster IML, will fail with 0F37 sense, causing the GM session to fail.
2 **Potential Impact of Problem:** Loss of Global Mirror function
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355210

0x7FA3 MLE
1 **Problem Description:** Cache attempted to allocate Task Control Blocks from a Copy Services dynamic TCB pool that did not have any free TCBs.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355321

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Query SafeGuarded Copy Relations command failure
1 **Problem Description:** When processing SafeGuarded LSS relation query, command is only using the first 32 bytes of parameter data.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355403

TCT authentication fails with malformed header
1 **Problem Description:** Transparent Cloud Tiering MCstore libraries have compatibility issues connecting to some services from outside the US.
2 **Potential Impact of Problem:** Migration failure
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355447

DS GUI performance bandwidth graphs incorrect
1 **Problem Description:** GUI is using the wrong formula to calculate bandwidth intervals
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355530

Long IBMi IPL times
1 **Problem Description:** Volume status requests were being delayed because of indications the volumes were in a PPRC relation that was being suspended.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355659

Unexpected full copy on PPRC failback
1 **Problem Description:** A temporary link error can cause a failure to read the Out-of-Sync bitmap from the secondary
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355776

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

0x0645 MLE
1 **Problem Description:** zHyperLink write abort function continued to read incoming message data after mail complete flag was set.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 356046

Excessive asynchronous status presentation
1 **Problem Description:** A flood of asynchronous status events may overwhelm the System Z channel subsystem.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 341922

0x01EF MLE while terminating SGC volume(s)
1 **Problem Description:** Terminating SafeGuarded Copy relations, that are still active, may result in a Microcode Logic Error.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 347908

Unable to restart failed CPC Processor and Memory upgrade
1 **Problem Description:** If one CPC was upgraded, and the second fails, it cannot be recovered to dual cluster without support assistance.
2 **Potential Impact of Problem:** Extended service action
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 347993

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
5 **Release Bundle:** 89.20.147.0
ID# 349736

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

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
5 Release Bundle: 89.20.147.0
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
5 Release Bundle: 89.20.147.0
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
5 Release Bundle: 89.20.147.0
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
5 Release Bundle: 89.20.147.0
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
5 Release Bundle: 89.20.147.0
ID# 351699

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

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
5 **Release Bundle:** 89.20.147.0
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
5 **Release Bundle:** 89.20.147.0
ID# 351934

0x1C71 MLE
1 **Problem Description:** A #define of MAX Rank Segment Table global data tracks can be smaller than the actual number of supported tracks.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 351974

Excessive state change processing
1 **Problem Description:** The Rank State Machine calls rank state change and volume state change notification code every time it runs, even when the rank state has not changed.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352173

I/O timeout while withdrawing FLC relation
1 **Problem Description:** While withdrawing an incremental FlashCopy relation with type 2 change recording, a write command to the Fixed Block source volume was delayed for ~10 seconds.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352226

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

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
5   **Release Bundle:** 89.20.147.0
ID# 352227

0x4433 MLE
1   **Problem Description:** End of Chain processing on an Extended Address Volume write operation encountered an arithmetic error.
2   **Potential Impact of Problem:** Warmstart
3   **Problem Severity:** Moderate
4   **Pervasive Problem:** No
5   **Release Bundle:** 89.20.147.0
ID# 352273

0xB05B Host Adapter MLE on HAs using Secure Login/EDiF
1   **Problem Description:** After an Implicit Logout, the Host Adapter driver attempts to re-use a Security Association Index that the ASIC thinks is still in use.
2   **Potential Impact of Problem:** Warmstart
3   **Problem Severity:** Moderate
4   **Pervasive Problem:** No
5   **Release Bundle:** 89.20.147.0
ID# 352338

0x014E MLE during LPAR quiesce
1   **Problem Description:** Quiesce was held up by a stuck Global Mirror session that had no copy sets.
2   **Potential Impact of Problem:** Warmstart, CDA suspend
3   **Problem Severity:** Moderate
4   **Pervasive Problem:** No
5   **Release Bundle:** 89.20.147.0
ID# 352441

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
5   **Release Bundle:** 89.20.147.0
ID# 352690

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

0x05E0 MLE
1 **Problem Description:** Device Adapter received a Task Control Block from Cache, that it was already working on.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352770

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
5 **Release Bundle:** 89.20.147.0
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
5 **Release Bundle:** 89.20.147.0
ID# 352830

Persistent FlashCopy NVS usage
1 **Problem Description:** When full copy has completed, persistent FlashCopy source volumes are still using NVS as if write data will still be sent to the target volume.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352833

0x7F0E MLE
1 **Problem Description:** A status field in a Data Mover task control block was updated after the task control block had been freed.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352851

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

0x790E MLE when removing a SafeGuarded Copy volume
1 **Problem Description:** When removing a fenced SGC volume, code is trying to update tables that no longer exist.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352855

Write command to FLC target fails with I/O error
1 **Problem Description:** FlashCopy target returns write inhibit error on a read-only volume. New flag is being added to Sense Subsystem Data (SNSS) response, to notify the host that the volume is read-only.
2 **Potential Impact of Problem:** Unnecessary error recovery
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352996

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
5 **Release Bundle:** 89.20.147.0
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
5 **Release Bundle:** 89.20.147.0
ID# 353058

GM 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
5 **Release Bundle:** 89.20.147.0
ID# 353239

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

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
5 Release Bundle: 89.20.147.0
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
5 Release Bundle: 89.20.147.0
ID# 353463

SafeGuarded Copy roll-off does not send an event
1 Problem Description: Old SGC backups are being pruned without proper notification of SGC space constraints, and the resulting roll-off.
2 Potential Impact of Problem: Oldest backups removed without notification.
3 Problem Severity: Moderate
4 Pervasive Problem: No
5 Release Bundle: 89.20.147.0
ID# 353482

Cross-Cluster DMA timeout during failback phase
1 Problem Description: A hard CPC failure can leave behind pointer corruption in the Cross-Cluster DMA engine
2 Potential Impact of Problem: Extended single-cluster recovery
3 Problem Severity: Moderate
4 Pervasive Problem: No
5 Release Bundle: 89.20.147.0
ID# 353615

I/O enclosure failure led to single LPAR reboot
1 Problem Description: LPAR continued trying to send transfers to the partner LPAR, through the failed I/O enclosure.
2 Potential Impact of Problem: Warmstart, Single LPAR reboot
3 Problem Severity: Moderate
4 Pervasive Problem: No
5 Release Bundle: 89.20.147.0
ID# 353703

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

0x26D0 MLE
1 **Problem Description:** An out-of-space condition caused the write task to abort, but a child process had not yet finished it's work.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 353834

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
5 **Release Bundle:** 89.20.147.0
ID# 354123

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
5 **Release Bundle:** 89.20.147.0
ID# 354148

Increased RPO
1 **Problem Description:** FlashCopy was delayed by lock contention for the In-Memory Relation Table. Function changed to use a different type of lock.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 354227

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
5 **Release Bundle:** 89.20.147.0
ID# 354245, 354928

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

Reduce lock contention in QuickInit code
1 **Problem Description:** Lock contention causing FlashCopy latency spikes.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 354585

0x7F0E MLE
1 **Problem Description:** A copy services Task Control Block was freed before the owning task had presented it's completion status.
2 **Potential Impact of Problem:** Warmstart
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 354656

LPAR booted from the wrong bos image after FSP replacement
1 **Problem Description:** Multiple FSP replacements occurred, but code only auto-corrected the bos image pointer one time.
2 **Potential Impact of Problem:** Extended service action
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 355226

Add Summary Bitmaps specific to PPRC Sync
1 **Problem Description:** In some environments, where volumes are large and relatively few tracks are being written (and so few Out-Of-Sync bits are being set), the Upper Tier of PPRC Sync can become a performance bottleneck.
2 **Potential Impact of Problem:** degraded performance
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 350881

CMUN00015E error while removing a logical ESE volume
1 **Problem Description:** Volume deletion process using 'force' option, hung because of erroneous indications of operations in process.
2 **Potential Impact of Problem:** Warmstart required
3 **Problem Severity:** Moderate
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 351178

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

0x0632 MLE and single LPAR reboot while formatting IBMi LUNs

1   **Problem Description:** While formatting a large number of LUNs, a local variable truncated the Task Control Block counter.
2   **Potential Impact of Problem:** Unable to complete formatting tasks
3   **Problem Severity:** Moderate
4   **Pervasive Problem:** No
5   **Release Bundle:** 89.20.147.0

ID# 354511

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
5   **Release Bundle:** 89.22.17.0

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
5   **Release Bundle:** 89.22.17.0

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
5   **Release Bundle:** 89.22.17.0

ID# 357867

CMUN02745E mkkeygrp failed

1   **Problem Description:** While configuring KMIP key group, key server returned CTGKM3425E message, which was mishandled by Device Adapter code.
2   **Potential Impact of Problem:** KMIP configuration failure
3   **Problem Severity:** Service
4   **Pervasive Problem:** No
5   **Release Bundle:** 89.21.28.0

ID# 353418

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

DS GUI could not change callhome settings
1 **Problem Description:** ESSNI communications failed because of missing Resource Manager HMC attribute values.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 353640

No FRU callout for SRC=BEB30009
1 **Problem Description:** Serviceable event did not indicate which memory DIMM was failing.
2 **Potential Impact of Problem:** Delayed repair action
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 354582

Java exception error on first login after HMC reboot
1 **Problem Description:** After HMC reboot, DS GUI will accept a login before Resource Managers are fully initialized, causing a Java exception. Subsequent login attempts are successful.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 354799

DSCLI 'showsu' command shows incorrect performance data
1 **Problem Description:** When stats are collected, they are being added to previous values, but never reset to zero first.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355041

0x01B7:501D and :702E MLEs
1 **Problem Description:** Write Intercept command chain exceeded the timeout limit while trying to obtain a lock.
2 **Potential Impact of Problem:** ODD dump
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355218

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

HMC grey screen when swapping monitor between HMCs
1 **Problem Description:** HMC hotplug monitor support contains incorrect definitions for some types of monitors.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355344

0x01B7:50AA MLE
1 **Problem Description:** When comparing/changing volume group pages for SCSI mask hosts, an error processing bitmaps caused unnecessary processing to be done.
2 **Potential Impact of Problem:** ODD dump
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355394

iPDU activation failure reports wrong iPDU
1 **Problem Description:** Errors during iPDU FRU replacement report against pdu23, even if it doesn't exist.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355498

Negative raw capacity values in DS GUI and Storage Insights
1 **Problem Description:** In very large systems, raw capacity may exceed the bounds of an integer variable field, resulting in arithmetic error, and a negative result is shown.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355524

False SRC=BE340073 logged during flash drive failure
1 **Problem Description:** RAS was attempting to remove an unhealthy Flash Drive from an array, but hardware RAID manager had already rejected it.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355626

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

Unable to access DS GUI after changing authentication policy
1 **Problem Description:** A missing file causes GUI to attempt to fill cache with information from all supported policies, even when they are not active
2 **Potential Impact of Problem:** HMC login failure
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355691

0x01B7:717B MLE
1 **Problem Description:** Out-of-Sync query must loop through all Global Mirror volumes, and with large numbers of volumes, the thread is staying on CPU too long.
2 **Potential Impact of Problem:** ODD Dump
3 **Problem Severity:** Service
4 **Pervasive Problem:** Yes
5 **Release Bundle:** 89.21.28.0
ID# 355714

DSCLI 'showgmir' command returns incorrect values
1 **Problem Description:** Global Mirror has a buffer overflow issue when calculating the percentage of successful consistency groups
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355716

False warning when configuring > 64 LUNs to a pSeries host
1 **Problem Description:** Warning should only be shown when the host is IBM i.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355720

iPDU MES wrong IP address in Resource Manager
1 **Problem Description:** In systems using the alternate '192' address range, an insufficient variable size causes the IP address to be truncated in the RM object
2 **Potential Impact of Problem:** MES failure
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.21.28.0
ID# 355842

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

HMC Customer network routing config lost
1   Problem Description: In HMCs with the dual-Customer-NIC RPQ, routing configuration may not persist after an HMC reboot or reload.
2   Potential Impact of Problem: Cannot access HMC remotely
3   Problem Severity: Service
4   Pervasive Problem: No
5   Release Bundle: 89.21.28.0
ID# 356089

Transparent Cloud Tiering setnetworkport error
1   Problem Description: CMUN04003E error setting TCT network interface IP address, when Primary/Secondary DNS are '0.0.0.0'
2   Potential Impact of Problem: Unable to configure IP addresses
3   Problem Severity: Service
4   Pervasive Problem: No
5   Release Bundle: 89.20.147.0
ID# 350546

CPC hard drive replacement failure
1   Problem Description: Problem analysis routines call out the hard drive as the first FRU, when the problem is in the SAS controller.
2   Potential Impact of Problem: Extended service action
3   Problem Severity: Service
4   Pervasive Problem: No
5   Release Bundle: 89.20.147.0
ID# 350893

RPC repair failed
1   Problem Description: Repair procedure did not provide a complete list of FRUs for the repair.
2   Potential Impact of Problem: Extended service action
3   Problem Severity: Service
4   Pervasive Problem: No
5   Release Bundle: 89.20.147.0
ID# 351249

DS GUI Remote Authentication screen returns to "Other LDAP"
1   Problem Description: When returning to the Configure Remote Authentication panel, the "Other LDAP Server" radio button is selected, even when one of the other choices was already configured.
2   Potential Impact of Problem: none
3   Problem Severity: Service
4   Pervasive Problem: No
5   Release Bundle: 89.20.147.0
ID# 351817

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

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
5   Release Bundle: 89.20.147.0
ID# 351966

Code bundle activation hang
1   Problem Description: A locking exception caused the code update process to hang while backing up HMC critical data.
2   Potential Impact of Problem: Extended service action
3   Problem Severity: Service
4   Pervasive Problem: No
5   Release Bundle: 89.20.147.0
ID# 351993

User not logged out after a policy change
1   Problem Description: LDAP user policy change is not being enforced for users that are already logged in.
2   Potential Impact of Problem: Security exposure
3   Problem Severity: Service
4   Pervasive Problem: No
5   Release Bundle: 89.20.147.0
ID# 352008

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
5   Release Bundle: 89.20.147.0
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
5   Release Bundle: 89.20.147.0
ID# 352068

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

0x7E38 MLE
1 **Problem Description:** Remote Pair FlashCopy fail, with multiple extents having the same source and target volume, triggered a Microcode Logic Error.
2 **Potential Impact of Problem:** ODD dump
3 **Problem Severity:** Service
4 **Pervasive Problem:** Yes
5 **Release Bundle:** 89.20.147.0
ID# 352133

SAN 'fcping' 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
5 **Release Bundle:** 89.20.147.0
ID# 352177

Improve syslog server configuration error messages
1 **Problem Description:** Multiple error states are displaying the same message.
2 **Potential Impact of Problem:** Extended problem determination
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352419

False I/O Enclosure power supply SRCs BE198C9C and BE198CFD
1 **Problem Description:** I/O enclosure communication faults were not being cleared when communication was recovered
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** Yes
5 **Release Bundle:** 89.20.147.0
ID# 352529

SafeGuarded Copy volumes are included in overall volume count
1 **Problem Description:** In DS GUI and DS CLI, Logical Corruption Protection volumes should be hidden from volume queries.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 352598

IBM System Storage - DS8900F Disk Storage
89.20.x.x Release Notes Cumulative Summary v2.3

Unable to verify iPDU firmware version after code bundle update

1 Problem Description: Display Storage Facility Code Levels function does not show iPDU firmware

2 Potential Impact of Problem: none

3 Problem Severity: Service

4 Pervasive Problem: No

5 Release Bundle: 89.20.147.0

ID# 352630

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

5 Release Bundle: 89.20.147.0

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

5 Release Bundle: 89.20.147.0

ID# 353588

DS GUI could not change callhome settings

1 Problem Description: ESSNI communications failed because of missing Resource Manager HMC attribute values.

2 Potential Impact of Problem: none

3 Problem Severity: Service

4 Pervasive Problem: No

5 Release Bundle: 89.20.147.0

ID# 353640

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

5 Release Bundle: 89.20.147.0

ID# 353722

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89.20.x.x Release Notes Cumulative Summary v2.3

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
5 **Release Bundle:** 89.20.147.0
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
5 **Release Bundle:** 89.20.147.0
ID# 353778

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
5 **Release Bundle:** 89.20.147.0
ID# 353886

Unable to modify security policy
1 **Problem Description:** If the security policy is active, the secadmin user is not permitted to modify it.
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 353931

LPAR hard drive replacement failed
1 **Problem Description:** Disk failure called out the wrong FRU, because of a problem with the error log search.
2 **Potential Impact of Problem:** Extended repair action
3 **Problem Severity:** Service
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 353954

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89.20.x.x Release Notes Cumulative Summary v2.3

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

5 Release Bundle: 89.20.147.0

ID# 354071

Unexpected SF shutdown during repair

1 Problem Description: During a non-concurrent Storage Enclosure midplane replacement, in a small configuration, repair code incorrectly determined the repair would remove the last path to Global Metadata.

2 Potential Impact of Problem: none

3 Problem Severity: Service

4 Pervasive Problem: No

5 Release Bundle: 89.20.147.0

ID# 354497

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

5 Release Bundle: 89.20.147.0

ID# 354545

DS GUI issues configuring SafeGuarded Copy capacity multiplier

1 Problem Description: DS GUI aggressively tries to pre-populate the field with '1.5' while the user attempts to edit the value.

2 Potential Impact of Problem: none

3 Problem Severity: Service

4 Pervasive Problem: No

5 Release Bundle: 89.20.147.0

ID# 354901

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89.20.x.x Release Notes Cumulative Summary v2.3

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
5 **Release Bundle:** 89.22.17.0
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
5 **Release Bundle:** 89.22.17.0
ID# 356553

Improve first-time data capture
1 **Problem Description:** Add long I/O traces to default PE package data collection
2 **Potential Impact of Problem:** None
3 **Problem Severity:** Improvement
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.22.17.0
ID# 356924

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
5 **Release Bundle:** 89.21.32.0
ID# 356293

Show volume provisioning in SCSI inquiry response
1 **Problem Description:** Indicate thin provisioning in SCSI inquiry page 0xB2 response
2 **Potential Impact of Problem:** none
3 **Problem Severity:** Improvement
4 **Pervasive Problem:** No
5 **Release Bundle:** 89.20.147.0
ID# 321099

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89.20.x.x Release Notes Cumulative Summary v2.3

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
5 Release Bundle: 89.20.147.0
ID# 350825

Improve detection of latent LRC errors
1 Problem Description: Expand nightly LRC scans to include additional data structures.
2 Potential Impact of Problem: none
3 Problem Severity: Improvement
4 Pervasive Problem: No
5 Release Bundle: 89.20.147.0
ID# 351537

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