

IBM System Storage DS8870 Disk Storage

87.30.x.x Release Notes Cumulative Summary v4.2

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Date: September 1, 2015

VRMF Level Data Results:

VRMF level From:	87.30.105.0
VRMF Level To:	87.31.38.0
Report for:	DS8870

Code Bundle Contents

DS8000 Code Bundle	SEA or LMC	DSCLI Client	STAT Tool	Easy Tier Client	Heat Map Transfer Utility	Storage Manager Code Level
87.31.38.0	7.7.31.90	7.7.31.90	7.7.31.90	7.7.31.90	7.7.31.90	5.7.31.1035
87.31.37.0	7.7.31.88	7.7.31.88	7.7.31.88	7.7.31.88	7.7.31.88	5.7.31.1034
87.31.23.0	7.7.31.50	7.7.31.50	7.7.31.50	7.7.31.50	7.7.31.50	5.7.31.1022
87.31.16.0	7.7.31.32	7.7.31.32	7.7.31.32	7.7.31.32	7.7.31.32	5.7.31.1016
87.31.2.2	7.7.31.6	7.7.31.4	7.7.31.4	7.7.31.4	7.7.31.4	5.7.31.1002
87.31.2.0	7.7.31.4	7.7.31.4	7.7.31.4	7.7.31.4	7.7.31.4	5.7.31.1002
87.30.105.0	7.7.30.307	7.7.30.307	7.7.30.307	7.7.30.307	7.7.30.307	5.7.30.1147

This is a summary of the fixes in the R7.3 microcode releases.

Select Modifications Included in this Release Note:

This is a list of some modifications contained across one or more LIC levels (License Internal Code) or microcode release(s). The potential impact is variable. Specific environments may aggravate or degrade the potential impact.

Problem(s) reported in this release note may not be in higher levels of code bundles.

Definition of Problem Severity:

- 1** High Impact
 - Acute: An irrecoverable error with potential loss of data.
 - Serious: An irrecoverable error with potential loss of access to data.
- 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.

Error in GM collision handling

1. **Problem Description:** A microcode logic error handling a GM collision may result in 0x7618 MLE, or incomplete data sent to secondary, depending on timing.
 2. **Potential Impact of Problem:** Warmstart, or corrupted consistency group
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 303510

0x7178 MLE, SEFLC target volume in failed state

1. **Problem Description:** Track-Space-Efficient secondary volumes in failed state because of a microcode logic error
 2. **Potential Impact of Problem:** loss of data
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 303700

Provide new warning when replacing DDMs in an offline array

1. **Problem Description:** SSR may replace a DDM that is needed to recover an offline array.
 2. **Potential Impact of Problem:** Extended loss of access, or loss of data
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 305037

Enable PCIe ECRC checking for High Performance Flash

1. **Problem Description:** End-to-end PCIe ECRC checking was disabled.
 2. **Potential Impact of Problem:** loss of data
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 309255

Failing DDM was not rejected

1. **Problem Description:** Failed DDM is not rejected when Device Adapter is in takeover state.
 2. **Potential Impact of Problem:** loss of data
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 309406

HIPER - Killstrip error logs are not processed by DA

1. **Problem Description:** Killstrip processing is delayed until the host executes a read to that location.
 2. **Potential Impact of Problem:** loss of data
 3. **Problem Severity:** HIPER
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.16.0
- ID#: 299666

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Inconsistencies on PPRC 'D' copy

1. **Problem Description:** When PPRC pairs are cascaded, an indicator is lost that the 'C' volume is also a PPRC primary. This allows flashcopy establish, without ensuring the copy is being mirrored.

Failure scenario:

- 4 way cascaded (A-B-C-D) migration is used to migrate from a MM pair to a new MM pair, using Global Copy, AND
- Incremental Resync is active on the MM primary, AND
- Hyperswap is used to swap from the old MM primary to the new MM (GC) primary, AND
- FlashCopy is being used on new MM (GC) primary

NOTE: There is no exposure if the migration is a single cascaded Global Copy relationship to migrate from a MM pair to a new volume that will become a MM primary after the Hyperswap

2. **Potential Impact of Problem:** Undetected data corruption
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 300273

Serious: An irrecoverable error with potential loss of access to data.

HIPER Cluster hang during failover

1. **Problem Description:** When cluster failover is preceded by quickstart, the 'surviving' cluster fails to get the statesave lock, causing it to hang in "Cluster Failover" state.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.31.38.0

ID#: 308404

LPAR fails to fence during dual IML

1. **Problem Description:** In Dual IML, an LPAR cannot fence itself if it gets marked "fence pending"
2. **Potential Impact of Problem:** Increased outage duration
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 294445

Loss of access during CDA when repository size > 50TiB

1. **Problem Description:** Insufficient metadata table space for repositories > 50TiB, but this limit was not enforced.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 295123

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HIPER I/O timeout during failed DDM deconfigure

1. **Problem Description:** Operation in process hangs because the DDM is unresponsive, thus preventing quiesce of the DDM.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** HIPER
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.37.0
- ID#: 298041

Repeated 0xE716 MLE after failover

1. **Problem Description:** NVS data for the failed CEC was being processed, which should have been cleared.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 301554

HIPER Loop errors caused multiple DDM rejections

1. **Problem Description:** Degraded loop led to array members being marked 'Security Degraded', which then caused them to be rejected from the array.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** HIPER
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.37.0
- ID#: 303528

MLE during dynamic HCD changes

1. **Problem Description:** A microcode error may allow processing of zHPF I/O without first obtaining an SMP lock.
 2. **Potential Impact of Problem:** Repeated warmstarts
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 304265

Persistent false HPFE error indication

1. **Problem Description:** High Performance Flash Enclosure surfaced a false error, that could not be cleared.
 2. **Potential Impact of Problem:** Disruptive repair
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 304850

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CRC errors cause fenced VRA pair

1. **Problem Description:** V-RAID adapter pair was fenced after multiple unit checks caused by bad CRC from one of the RAID managers
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 305143

FB background task timeout

1. **Problem Description:** Cache running out of segments leads to deadlock.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 306339

HIPER Volumes suspended after Hyperswap

1. **Problem Description:** DA has a race condition from the master CEC when setting and resetting the Soft Fence Pending flags on the remote owning CEC. This will leave volumes in a soft fence condition.
2. **Potential Impact of Problem:** Hyperswap failure/Loss of Access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.31.23.0

ID#: 302939

iSeries system hang after array went read-only

1. **Problem Description:** Inquiry page C0h is not reported to iSeries hosts, preventing the host from detecting a write inhibit condition
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.23.0

ID#: 298671

HIPER Repeated warmstarts triggered by VMWare REPORT_LUNs command

1. **Problem Description:** VMWare r6 VVOL function has implemented a new variation of the REPORT_LUNS command with SELECT_REPORT field set to a value that was previously not tolerated by DS8870. This results in repeated warmstarts.
2. **Potential Impact of Problem:** Warmstarts, potential loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** Yes
6. **Release Bundle:** 87.31.16.0

ID#: 298050

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DA metadata LRC error caused a dual reboot

1. **Problem Description:** Processor hardware error corrupted an unused Device Adapter metadata track. The error subsequently caused a dual reboot.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 293522

PCIe last path recovery enhancement

1. **Problem Description:** During error recovery for a PCIe error to a host bay, access can be lost if we have latent PCIe errors on the alternate host bay. This change implements additional recovery strategies when a secondary error occurs on the last path.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 298574

HIPER - Slow DDM rejected by one DA is not rejected by partner DA

1. **Problem Description:** When a DDM is rejected by DAHP for being slow the partner adapter may not reject the drive the DDM does not respond to commands. The microcode logic should reject the DDM on both adapters without waiting for the DDM to respond.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** HIPER
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.16.0
- ID#: 300024

0x14E MLE and loss of access

1. **Problem Description:** System deadlocked because no cache segments are free, and cache SMP segment scan is stalled.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 301701

HIPER - Host I/O time-outs when PPRC bit maps are merged

1. **Problem Description:** When consistency groups fail to form the internal data structure is locked while bit maps are merged. Host I/O will be held off during the merge, due to the lock. This problem is exposed with large volume sizes.
 2. **Potential Impact of Problem:** degraded performance, high RPO, loss of access possible
 3. **Problem Severity:** HIPER
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.2.0
- ID#: 296179

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

Unbalanced Global Copy path utilization

1. **Problem Description:** Path selection algorithm behaves incorrectly if the SMP bandwidth counters are higher than the host adapter bandwidth counters. This leads to unbalanced path usage, and degraded copy rates.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.37.0
- ID#: 271451

MLE during background copy

1. **Problem Description:** The same in-memory relation entry was queued on two different background copy rank queues, causing a microcode logic error.
 2. **Potential Impact of Problem:** Warmstart
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.37.0
- ID#: 291579

Host Adapter Virtual Command Ring too small

1. **Problem Description:** Running large read I/O chains, the channel detects missing IUs from the control unit via IUCount mismatches. The CU is not sending all the IUs it says it is, because the VCR (virtual command ring) has become full.
 2. **Potential Impact of Problem:** IFCCs
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 295152

Easy Tier appfw MLE

1. **Problem Description:** After CDA, we have a small window that data persistency between the LPARs is out of sync. Volume deletions during this window can take too long to process, causing repeated microcode logic errors.
 2. **Potential Impact of Problem:** Easy Tier unable to function
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.37.0
- ID#: 298455

CS Task Timeout caused GM Suspend

1. **Problem Description:** A microcode logic error caused a deadlock condition between cache and copy services functions.
 2. **Potential Impact of Problem:** Global Mirror Suspend
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 303225

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Easy Tier warm demote after DB2 reorg

1. **Problem Description:** Reorg can trigger demote of active DB2 data to nearline tier
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 305524

Global Mirror performance problem

1. **Problem Description:** The High Failure Rate (HFR) algorithm avoids performing I/O on PPRC links where timeouts have occurred. But the algorithm depends on I/O traffic to determine whether the path is still having problems. This change implements functionality to test the viability of PPRC links, at the host adapter port level.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.23.0
- ID#: 253139

Copy Services-Cache deadlock

1. **Problem Description:** Copy Services component deadlocks while waiting for access to metadata track that is in the Cache prestage task queue.
 2. **Potential Impact of Problem:** I/O timeout, PPRC suspend
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.23.0
- ID#: 265169

Host Adapter MLE

1. **Problem Description:** During fabric re-login after a disconnect, the host adapter returned an unexpected Remote Point Indicator value, causing a microcode logic error.
 2. **Potential Impact of Problem:** loss of path
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.23.0
- ID#: 299032

Incorrect logical path state reporting

1. **Problem Description:** PPRC links that are in High Failure Rate (HFR) status may incorrectly transition to Failed status when coming out of HFR.
 2. **Potential Impact of Problem:** loss of path
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.23.0
- ID#: 299525

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Cache Metadata Track function hang

1. **Problem Description:** The CMT function, which is used by CS to clear certain Copy Services metadata information, hangs in r7.4 code.
 2. **Potential Impact of Problem:** Unable to perform function
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.23.0
- ID#: 302608

Excessive warm demotes to NearLine tier

1. **Problem Description:** For some workloads, Easy Tier cannot accurately assess Nearline workload, causing excessive Nearline workloads, and warm demotes to Nearline
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 296134

Excessive Easy Tier swap plan generation time

1. **Problem Description:** Multiple time-outs and MLEs caused by Easy Tier taking too long to generate swap plans, and missing heartbeats.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.16.0
- ID#: 298152

IWNR2704E on Global Mirror session pause

1. **Problem Description:** When > 1 control paths are owned by the Master Alternate Controller (MAC), code does not properly iterate through all the external subordinates owned by the MAC.
 2. **Potential Impact of Problem:** Global Mirror pause failure
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 299406

Long write response after upgrade to 7.3 code

1. **Problem Description:** Insufficient cache queueing timestamp granularity
 2. **Potential Impact of Problem:** degraded
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 300242

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0x0F6D unit check on zHPF read/write to last (non-full) track

1. **Problem Description:** Transport Mode: Read Track Data is valid as an embedded CCW Operation Code for Read Tracks (0C). If the Blocksize value is not equal to the value of the data length field in the count area of any record being read, the record is not transferred and the operation is terminated with status that includes unit check (Invalid Track Format).

What we should do is take advantage of the behavior that is now allowed for Read domains (16), where we do not rely on the Regular Data Format bit, but instead, check the format of the track, to understand the host expectations for the amount of data to be read.

Fix Description:

Once we get track access, we will enforce the conditions of the chain's parameters for zHPF. As with the Read Domain, we can allow the Read Tracks domain to a track that has an EOF record. We will then make sure that any assumptions we have made based on regular data format (which is required for Read Tracks as it is for the Read domain) make the correct decisions for an End Of File record.

2. **Potential Impact of Problem:** Unit Checks
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 301867

Global Mirror drain failure recovery

1. **Problem Description:** When the Global Copy Collision code is enabled, if a Global Mirror collision occurs together with a Global Copy collision, the Global Mirror collision may be queued behind the Global Copy transfer.
2. **Potential Impact of Problem:** Elongated consistency group times
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.2.0

ID#: 296338

Service: A recoverable error, Service improvements.

0x05E0 MLE during SF IML

1. **Problem Description:** A microcode logic error during Storage Facility IML caused the SF to DSI and perform another dual IML. The exposure only exists during full SF IML.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 302748

Prevent accidental LIC downgrade

1. **Problem Description:** SSR was able to accidentally start a CDA process to a lower level of LIC.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 303230

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Increase maximum number of TPC-R server connections allowed

1. **Problem Description:** Environments with multiple TPC-R servers may exceed the maximum client logins to the DS8K. This change increases the default maximum client logins from 10 to 64.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 303459

DS Storage Manager GUI hangs

1. **Problem Description:** The GUI server hit an Out-of-Memory Java error
 2. **Potential Impact of Problem:** Unresponsive GUI
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 304096

Option to disable 240-byte performance data

1. **Problem Description:** Code levels that supply 240-byte performance data to zOS are problematic for Customers that are running versions of zOS older than 1.12, or z/VM without VM65248. This fix provides the option to revert to the older 192-byte device performance stats.
 2. **Potential Impact of Problem:** Abends
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 305219

Unable to run commands to VRAID adapter when in service mode

1. **Problem Description:** Could not run low-level VRAID commands
 2. **Potential Impact of Problem:** Extended maintenance window
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.37.0
- ID#: 305254

Missing heartbeat callhome

1. **Problem Description:** After spring Daylight Saving Time change, heartbeat fails to collect data until HMC is returned to standard time.
 2. **Potential Impact of Problem:** Missing heartbeats
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.37.0
- ID#: 305698

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Enhanced VRAID soft error isolation

1. **Problem Description:** Soft error analysis does not always correctly identify the failing component
2. **Potential Impact of Problem:** Multiple repair actions
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 305894

DDM replacement failure

1. **Problem Description:** Map 4970 enhancement for SRC BE340027 where DDM is bypassed by FCIC firmware.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 307067

TPC - HMC communication failure

1. **Problem Description:** HMC failed to clean up sockets and threads after a connection failure, causing a file descriptor leak
2. **Potential Impact of Problem:** TPC cannot connect to HMC
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.23.0

ID#: 300923

CDA failed 'updating schedule'

1. **Problem Description:** If SSR logs in HMC within a few minutes after reboot and start CDA, a deadlock between CDA problem processing activities and and SFPV problem init process may cause CDA to hang
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.23.0

ID#: 301004

Change warmstart notification text

1. **Problem Description:** Warmstart notification SRCs display "no service required", which may or may not be accurate.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.23.0

ID#: 301987

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Non-deferred DDM failure did not call home

1. **Problem Description:** After DDM sparing, failed DDM should have been called home for service.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.23.0
- ID#: 302829

Storage enclosure interface card replacement failure

1. **Problem Description:** FCIC repair fails during FRU level identify when enclosure serial number contains the letter 'T'
 2. **Potential Impact of Problem:** Extended repair
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.23.0
- ID#: 303200

DC-UPS firmware change to correct battery life calculation

1. **Problem Description:** Initial battery life was originally mis-configured for 7 years, rather than 5.5 years.
 2. **Potential Impact of Problem:** No early warning that batteries are approaching end-of-life
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.30.501.501
- ID#: 296441

PCR 7575 - DSGUI AppScan errors/security vulnerabilities

1. **Problem Description:** Corrects multiple vulnerabilities
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 294209

PPRC path failure causes 0x7473 MLE

1. **Problem Description:** A permanent PPRC path failure during data transfer can cause a Microcode Logic Error
 2. **Potential Impact of Problem:** Warmstart
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.31.16.0
- ID#: 297669

Apache Tomcat chunk denial of service vulnerability

1. **Problem Description:** CVE-2014-0075, CVE-2014-0095, CVE-2014-0096, CVE-2014-0099, CVE-2014-0119
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 298087

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STAT workload skew report incorrect

1. **Problem Description:** We have two problems here:
 - a) Extents are not sorted by bandwidth when generating the heat files;
 - b) When generating the CSV files, code uses the extents sorted by the total I/O, instead of heat I/O;These two problems cause an incorrect skew curve for bandwidth based on the CSV files
 2. **Potential Impact of Problem:** Incorrect workload reporting
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 298335

False loss-of-access indication on single LPAR

1. **Problem Description:** LPAR in service mode with a failed Device Adapter indicates a loss of access to data. Operational LPAR was not impacted.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 298487

0x5171 MLE

1. **Problem Description:** Track that was destaged is partially restaged from NVS. Subsequent re-access of track without full restage caused a Microcode Logic Error
 2. **Potential Impact of Problem:** Warmstart
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 298533

Repair action fails if HMC and SF are at different code levels

1. **Problem Description:** Unable to perform service actions after HMC has been updated, but before SFI code has been updated.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 298881

Update Apache Tomcat to current versions

1. **Problem Description:** Older versions of web server lack security fixes.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 299055

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HMC Healthcheck failed at: verifyHMCFileSystemSize

1. **Problem Description:** Accumulation of monitor files from processes that have exited.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 299747

0x0103 MLE

1. **Problem Description:** CS tries to map an invalid segment because it's accessing a sidefile entry before the entry is complete. This causes a Microcode Logic Error.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 299907

0x05E0 MLE

1. **Problem Description:** Global Mirror collision and Global Copy collision on the same track triggers a Microcode Logic Error if the volume is removed from the session while Global Copy transfer is still pending.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 300069

Excessive MRPD data transmit time

1. **Problem Description:** Collection of data for logicalVolume and logicalSubsystem caused MRPD dataset to become very large.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 300113

Assist OnSite (AOS) disabled after HMC update

1. **Problem Description:** Default setting after reinstalling AOS filesets is to disable AOS.
2. **Potential Impact of Problem:** Must re-enable AOS after update
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.31.16.0

ID#: 300834

CEC down, but no callhome

1. **Problem Description:** Callhome data contained special symbols in XML text, causing the callhome process to fail. No impact, but a second CEC failure would cause loss of access.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 300934

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FlashCopy Manager script failure

1. **Problem Description:** Failure was caused by malformed UnitSerial field in inquiry page C2h
2. **Potential Impact of Problem:** Scripting fails
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 301289

PPRC path failure causes 0x7473 MLE

1. **Problem Description:** A permanent PPRC path failure during data transfer can cause a Microcode Logic Error
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.31.2.2

ID#: 297669

0x0103 MLE

1. **Problem Description:** CS tries to map an invalid segment because it's accessing a sidefile entry before the entry is complete. This causes a Microcode Logic Error.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.2.2

ID#: 299907

0x05E0 MLE

1. **Problem Description:** Global Mirror collision and Global Copy collision on the same track triggers a Microcode Logic Error if the volume is removed from the session while Global Copy transfer is still pending.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.2.2

ID#: 300069

Quickstart triggers warmstart notification

1. **Problem Description:** Fix will disable default notification of Quickstart
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.2.2

ID#: 301478

Callhome problem after AOS session

1. **Problem Description:** SSL callhome fails after an AOS session, when Customer is using the same proxy to access AOS inbound and SSL outbound.
2. **Potential Impact of Problem:** Unable to call home for service
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.2.0

ID#: 297318

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Improvements: Improvement for better usability

SSLv3 'Poodle' fix enhancement

1. **Problem Description:** Current implementation leaves Customers with problems accessing systems that do not yet have the 'Poodle' fix.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.37.0

ID#: 305745

DCR 7520 Host Adapter port live reset

1. **Problem Description:** When a recoverable port parity error is received, all active IO will be cleaned up and the port reset without going through warmstart.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.23.0

ID#: 293926

SSLv3 security vulnerability

1. **Problem Description:** Closes CVE-2014-3566 "Poodle" Vulnerability, in DS CIM agent by disabling SSL v3 access.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.23.0

ID#: 302535

Remove Apache Struts v1 from GUI

1. **Problem Description:** On April 30, 2014, a critical Apache Struts vulnerability was published at <http://web.nvd.nist.gov/view/vuln/detail?vulnId=CVE-2014-0114>, with a score high enough to require a fix as soon as possible. It is noted that Apache Struts 1.x is now EOL and cannot be simply replaced with a newer version without significant code rework.

It was decided to simply eliminate all GUI usage of Apache Struts, and use new Java servlets instead.

2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 296806

Easy Tier data collection improvements

1. **Problem Description:** Add sub-tasks to the Easy Tier data collection by area task, and reduce the size of individual sub-packages
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.31.16.0

ID#: 297112

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Easy Tier data collection improvements

1. **Problem Description:** Provide additional functions to collect Easy Tier logs and Easy Tier traces by date
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 299028

Allow secondary HMC to report powerfail/firehose dump

1. **Problem Description:** If power is lost to the base rack, the integrated HMC is unable to report the event. If a secondary HMC exists, this improvement will allow it to report the event.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 299134

WebSM/AOS callhome change

1. **Problem Description:** Update callhome records with AOS information
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 300132

Enable Global Copy Collision sidefile by default

1. **Problem Description:** Changes the default setting to enabled.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.16.0
- ID#: 301005

Apache Struts v1 vulnerability

1. **Problem Description:** Change implements a new servlet class (ParamFilter) that will filter out injected parameters that can otherwise be used to exploit the vulnerability.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Improvement
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.31.2.0
- ID#: 297176

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