

IBM System Storage DS8870 Disk Storage

87.20.x.x Release Notes Cumulative Summary v9.1

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Date: March 4, 2015

VRMF Level Data Results:

VRMF level From:	87.20.220.0
VRMF Level To:	87.21.48.0
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
87.21.48.0	7.7.21.94	7.7.21.94	7.7.21.94	7.7.21.94	7.7.21.94	5.7.21.1050
87.21.39.0	7.7.21.78	7.7.21.78	7.7.21.78	7.7.21.78	7.7.21.78	5.7.21.1042
87.21.30.0	7.7.21.62	7.7.21.62	7.7.21.62	7.7.21.62	7.7.21.62	5.7.21.1028
87.21.16.1	7.7.21.39	7.7.21.38	7.7.21.38	7.7.21.38	7.7.21.38	5.7.21.1012
87.21.16.0	7.7.21.38	7.7.21.38	7.7.21.38	7.7.21.38	7.7.21.38	5.7.21.1012
87.21.8.0	7.7.21.21	7.7.21.21	7.7.21.21	7.7.21.21	7.7.21.21	5.7.21.1007
87.21.5.0	7.7.21.13	7.7.21.13	7.7.21.13	7.7.21.13	7.7.21.13	5.7.21.1006
87.20.220.0	7.7.20.582	7.7.20.582	7.7.20.582	7.7.20.582	7.7.20.582	5.7.20.1167

This is a summary of the fixes in the R7.2 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.

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:** 87.21.48.0

ID#: 299666

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:** 87.21.48.0

ID#: 300273

Device Adapter loop hang

1. **Problem Description:** During Device Adapter loop recovery, a command is sent that is no longer supported by firmware. While normally harmless, in this scenario, the command was not properly handled, causing the loop to hang, which interfered with the recovery process.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.16.0

ID#: 283044

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

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:** 87.21.48.0
- 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:** 87.21.39.0
- ID#: 294172

DA Takeover failure during cluster failure causes loss of access

1. **Problem Description:** When a cluster and DA adapter fail the operational cluster can takeover a DA adapter owned by the failing cluster. A microcode logic error can prevent the DA Takeover when an unexpected adapter state is detected.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.39.0
- ID#: 294527

OpenVMS could not use DS8870 volume as a quorum dis

1. **Problem Description:** OpenVMS attempts to modify the Application Tag Owner (ATO) bit, which is not changeable in DS8870. The resultant error causes OpenVMS to not allow the volume to be used in a clustered environment.
 2. **Potential Impact of Problem:** Cannot use 8870 volumes in a clustered OpenVMS environment
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 288164

zHPF with TCAX can expose a microcode logic error

1. **Problem Description:** When zHPF with TCAX a microcode logic error can result in multiple warmstarts and fenced host adapters. This could fence all host adapters in the DS8000.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 290365

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HIPER - Internal communication error causes enclosure power off

1. **Problem Description:** Communication failure between the enclosure controller cards can result in both cards taking control of the internal serial bus which can result in the storage enclosure powering off.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** HIPER
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.21.30.0
- ID#: 292022

Track Space Efficient repository greater than 19GB exposure

1. **Problem Description:** Track Space Efficient (TSE) repositories greater than 19TB (19456 GB) are exposed to corruption of the data contained in the repository that can result in a loss of access.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 293344

Fabric login to a Brocade switch with VVL bit set causes reboot

1. **Problem Description:** If the Vendor Version Level (VVL) field has non-zero values then the Brocade switch will reboot. These bits will be set to all zeros when the DS8000 initiates fabric login to the switch.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 294098

Host adapter Sequence Buffer Memory leak

1. **Problem Description:** Loss of access caused by microcode logic error managing sequence buffer memory
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 295463

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:** 87.21.30.0
- ID#: 296179

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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:** 87.21.16.3
- ID#: 296179

Fabric login to a Brocade switch with VVL bit set causes reboot

1. **Problem Description:** If the Vendor Version Level (VVL) field has non-zero values then the Brocade switch will reboot. These bits will be set to all zeros when the DS8000 initiates fabric login to the switch.
 2. **Potential Impact of Problem:** loss of access
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.16.1
- ID#: 294098

Flashcopy target volume fenced

1. **Problem Description:** Fix a small time window during two destages to the same track, where CS may mark both as "allocation destage".
 2. **Potential Impact of Problem:** loss of access to target volume
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.16.0
- ID#: 282611

Host Adapter MLE x60CA with heavy read workloads

1. **Problem Description:** During periods of heavy read activity, a Host Adapter may run out of Sequence Buffer Memory blocks, resulting in a microcode logic error.
 2. **Potential Impact of Problem:** Fenced Host Adapter(s)
 3. **Problem Severity:** High Impact
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.16.0
- ID#: 292581

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

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:** 87.21.48.0
- ID#: 298152

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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:** 87.21.48.0

ID#: 299406

PPRC state change unit attentions may be incorrectly reported to AIX and iSeries hosts

1. **Problem Description:** In some configurations, the rate of unit attentions generated can be high enough to cause performance problems
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.39.0

ID#: 296526

Preserve Mirror PPRC suspends

1. **Problem Description:** While Performing flashcopy to primary volume of a Metro Mirror pair, an erase command while the volume is still duplex pending can cause Track Format Descriptor (TFD) mismatch.
2. **Potential Impact of Problem:** PPRC suspends
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.21.39.0

ID#: 296584

Unexpected reset soft fence of a volume can prevent hyperswap

1. **Problem Description:** If a volume does not have soft fence set then a reset soft fence condition is unexpected and can prevent hyperswap
2. **Potential Impact of Problem:** temporary loss of hyperswap
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.30.0

ID#: 292777

PPRC link in High Failure Rate mode

1. **Problem Description:** Initial PPRC I/O operation on an adapter port is rejected, causing link to go into High Failure Rate mode. Subsequent I/O operations are not affected.
2. **Potential Impact of Problem:** Degraded PPRC performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.30.0

ID#: 293529

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LUNs in hybrid pools reported as SSD

1. **Problem Description:** LUNs in hybrid pools consisting of both solid-state and rotational drives are all being reported as SSD.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 295996

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:** 87.21.30.0
- ID#: 296338

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:** 87.21.16.1
- ID#: 296338

Global Mirror stuck in first pass due to a microcode logic error

1. **Problem Description:** Global Copy pairs are stuck in first pass and do not form consistency groups.
 2. **Potential Impact of Problem:** Global Mirror not forming consistency groups
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.21.16.0
- ID#: 283328

Read I/O on FlashCopy source volumes not being counted by ET

1. **Problem Description:** On Flashcopy CST operation, Easy Tier records the read I/O statistics on FlashCopy source volume against the target volume.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.16.0
- ID#: 291892

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Erroneous suspend of PPRC volume pair

1. **Problem Description:** After receiving long busy response when writing to the secondary volume, the primary volume also returned long busy for the write operation, as it should. The host did not re-drive the write operation, and code failed to reset the out-of-sync condition on the affected track(s).
 2. **Potential Impact of Problem:** PPRC suspend
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.21.16.0
- ID#: 291892

Easy Tier can over utilize SSD ranks with high sequential writes

1. **Problem Description:** SSD ranks are over utilized by Easy Tier when a workload has a very high sequential write ratio. This change addresses problem of over utilizing SSD ranks for workloads with high percentage of sequential writes. Only CKD volumes are affected by this problem.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.16.0
- ID#: 293420

Read I/O on FlashCopy source volumes not being counted by ET

1. **Problem Description:** On Flashcopy CST operation, Easy Tier records the read I/O statistics on FlashCopy source volume against the target volume.
 2. **Potential Impact of Problem:** degraded performance
 3. **Problem Severity:** Moderate
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.8.0
- ID#: 291892

Service: A recoverable error, Service improvements.

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:** 87.20.501.501
- 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:** 87.21.48.0
- ID#: 294209

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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:** 87.21.48.0
- 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:** 87.21.48.0
- 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:** 87.21.48.0
- ID#: 298533

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:** 87.21.48.0
- 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:** 87.21.48.0
- ID#: 299907

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Code update suspended

1. **Problem Description:** During p7 firmware update SRC B1818A10 is logged, causing CDA to suspend
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.48.0
ID#: 299924

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:** 87.21.48.0
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:** 87.21.48.0
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:** 87.21.48.0
ID#: 300834

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:** 87.21.48.0
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:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.21.39.0
ID#: 297669

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Heartbeat call home with wrong level information

1. **Problem Description:** Improper merge of CDA history records from dual HMCs.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.39.0

ID#: 298561

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:** 87.21.39.0

ID#: 298881

Host Adapter port error causes warmstart

1. **Problem Description:** Intermittent parity errors cause adapter reset, which in turn causes warmstart. For these errors it is not necessary to reset the entire adapter.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 87.21.30.0

ID#: 284345

Fenced DC-UPS

1. **Problem Description:** A communication problem between the DC-UPS DC Supply Unit, and a single Battery Service Module, can cause the DC-UPS to become fenced. This change will cause the BSM set to fence instead.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.30.0

ID#: 285247

Unit Exception is returned when Unit Check Status should be

1. **Problem Description:** With zHPF enabled when the domain count is X'01', if the DCW count is inconsistent with TLF count a Unit Exception is reported to the channel when Unit Check Status should have been reported.
2. **Potential Impact of Problem:** Interface control check reported
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.30.0

ID#: 288166

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DS8000 returns the incorrect status flags 1 value for CRC errors

1. **Problem Description:** With zHPF enabled the DS8000 returns the wrong value in the status flags 1 field when invalid CRC is detected.
 2. **Potential Impact of Problem:** incorrect status returned to host
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 288169

LPAR MCP objects deleted when HMC to LPAR communication lost

1. **Problem Description:** A repair was not allowed because the service lock could not be found. Also, HMC may not properly refresh state of LPARs until communication is restored, and the MCP objects regenerate.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.21.30.0
- ID#: 289183

DS GUI 'Download Spreadsheet' function fails

1. **Problem Description:** On the 'Monitor Tasks' page, the 'Download Spreadsheet' function does nothing. The function does work on other pages
 2. **Potential Impact of Problem:** Unable to download task log information to spreadsheet
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 293400

Extent Space Efficient volume capacity reported incorrectly by DSCLI

1. **Problem Description:** Space dedicated to ESE volume management overhead is being over-reported
 2. **Potential Impact of Problem:** ESE volumes appear to be smaller than they are
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 293592

Extent Space Efficient volume capacity reported incorrectly by DS GUI

1. **Problem Description:** Space dedicated to ESE volume management overhead is being over-reported
 2. **Potential Impact of Problem:** ESE volumes appear to be smaller than they are
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 293628

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HMC hang during repair

1. **Problem Description:** In dual HMC configurations, if the HMC object for one HMC is lost or deleted, the partner HMC can enter a retry loop
 2. **Potential Impact of Problem:** Unable to access the 'good' HMC
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 293710

Encryption key servers incorrectly shown as failed

1. **Problem Description:** During box IML, HMC could not access machine info for the key servers because the IML was not complete. This caused the key server heartbeat thread to crash, so the key server status did not update once the machine info was available.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 294587

Incomplete secure erase of self-encrypting drives

1. **Problem Description:** Areas of self-encrypting drives that are reserved for metadata and adapter dumps are not being overwritten during secure erase.
 2. **Potential Impact of Problem:** Incomplete erase, and false drive failures
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 294675

Device harvest on large systems causes extended code update time

1. **Problem Description:** During code update, there are normally errors generated that are expected, but must still be handled. On large systems, the handling of these errors consumes resources needed to complete the code update process.
 2. **Potential Impact of Problem:** Extended concurrent update window
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.21.30.0
- ID#: 294751

Drive failures during Secure Data Overwrite

1. **Problem Description:** Drive failures during SDO cause early termination, and multiple attempts to complete the process.
 2. **Potential Impact of Problem:** Extended SDO runtime
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 295522

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SRC B1818A10 during CDA update of p7 firmware

1. **Problem Description:** False SRC causes CDA suspend. This change will veto the SRC.
 2. **Potential Impact of Problem:** Extended service window to complete CDA
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.30.0
- ID#: 296358

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:** 87.21.30.0
- ID#: 297318

SRC BE30CEB7 Loop Error is reported when DDMs are idle

1. **Problem Description:** SRC BE30CEB7 indicating an error on loops from DA adapters to storage enclosures. Due to a microcode error idle DDMs can be reported as causing loop errors. This problem is most common on machines without logical configuration.
 2. **Potential Impact of Problem:** Invalid error reported
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.21.16.0
- ID#: 292102

CUIR failed to vary off paths during host bay repair

1. **Problem Description:** During a host bay repair, a microcode logic error caused CUIR to skip vary off of one of the host adapters
 2. **Potential Impact of Problem:** Had to manually vary off the paths
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** No
 5. **Release Bundle:** 87.21.16.0
- ID#: 292745

HMC reboot causes MRPD data off-load failure

1. **Problem Description:** After a reboot of the HMC a microcode logic error causes a MRPD data off-load failure. The only way to correct the MRPD data off-load failure is for the SSR to reconfigure the MRPD off-load.
 2. **Potential Impact of Problem:** none
 3. **Problem Severity:** Service
 4. **Pervasive Problem:** Yes
 5. **Release Bundle:** 87.21.5.0
- ID#: 290710

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Improvements: Improvement for better usability

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 has been 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:** 87.21.48.0

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:** 87.21.48.0

ID#: 297112

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:** 87.21.48.0

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:** 87.21.48.0

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:** 87.21.48.0

ID#: 300132

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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:** 87.21.48.0

ID#: 301005

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:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.39.0

ID#: 298087

Fix bash shellshock security exposure

1. **Problem Description:** The bash (shell shock) security exposure has been fixed on the HMC with this change. This addresses exposures detailed security bulletins CVE-2014-6271, CVE-2014-7169, CVE-2014-7186, CVE-2014-7187, CVE-2014-6277, CVE-2014-6278.
2. **Potential Impact of Problem:** security exposure
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** N/A
5. **Release Bundle:** 87.21.39.0

ID#: 301426

Eliminate 'Heartbleed' vulnerability

1. **Problem Description:** HMC CIM agent in r7.2 is exposed to the 'Heartbleed' vulnerability
2. **Potential Impact of Problem:** CIM agent private key/certificate may be exposed
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 87.21.30.0

ID#: 296229

Eliminate 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:** 87.21.30.0

ID#: 297176

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Eliminate an SSL vulnerability

- 1. Problem Description:** Closes an HMC SSL vulnerability for UDP port 1701
- 2. Potential Impact of Problem:** none
- 3. Problem Severity:** Improvement
- 4. Pervasive Problem:** No
- 5. Release Bundle:** 87.21.16.0

ID#: 285107

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