IBM System Storage - DS8880 Disk Storage

88.2x.x.x Release Notes Cumulative Summary v5.2

Date: April 23, 2018

VRMF Level Data Results:

VRMF level From:	88.20.112.0
VRMF Level To:	88.25.8.0
Report for:	All DS8880

Code Bundle Contents

DS8880 Code Bundle Level	SEA or LMC Version:	DS CLI Client	STAT Tool	Heat Map Transfer Utility	Storage Manager	Copy Services Manager
88.25.8.0	7.8.25.15	7.8.25.15	7.8.25.15	7.8.25.15	5.8.25.1008	6.1.5
88.25.7.0	7.8.25.15	7.8.25.15	7.8.25.15	7.8.25.15	5.8.25.1007	6.1.5
88.24.6.0	7.8.24.14	7.8.24.11	7.8.24.11	7.8.24.11	5.8.24.1007	6.1.5
88.23.27.0	7.8.23.114	7.8.23.91	7.8.23.114	7.8.23.114	5.8.23.1039	6.1.5
88.23.20.0	7.8.23.91	7.8.23.91	7.8.23.91	7.8.23.91	5.8.23.1032	6.1.5
88.23.18.0	7.8.23.87	7.8.23.87	7.8.23.87	7.8.23.87	5.8.23.1030	6.1.5
88.22.34.0	7.8.22.87	7.8.22.87	7.8.22.87	7.8.22.87	5.8.22.1036	6.1.5
88.22.33.0	7.8.22.85	7.8.22.85	7.8.22.85	7.8.22.85	5.8.22.1034	6.1.4
88.20.112.0	7.8.20.280	7.8.20.280	7.8.20.280	7.8.20.280	5.8.20.1119	6.1.4

This is a summary of the fixes in the R8.2 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: 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.

Potential data loss in systems running zHPF and APAR OA52080

1. **Problem Description:** A microcode logic error may result in data loss in systems running zHPF, with Format Write chains that have multi-track embedded Locate Record entries, such as those created for Torn Page Protection.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.25.7.0

ID#: 331965

0x7DEA MLE running MT-PPRC with preserve mirror

1. **Problem Description:** Clients running Multi-Target PPRC with preserve mirror are exposed to a microcode logic error caused by an incorrect Out-of-Sync bitmap.
2. **Potential Impact of Problem:** loss of data on target volume
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.27.0

ID#: 328458

0x7235 MLE during ESE space release

1. **Problem Description:** During withdraw of a dataset from a full volume ESE Flash Copy, space release attempted to release extents that were still doing I/O.
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.27.0

ID#: 329996

HIPER Possible Data Loss using FlashCopy Fast Reverse Restore with ESE volumes

1. **Problem Description:** http://www.ibm.com/support/docview.wss?uid=ssg1S1010356
2. **Potential Impact of Problem:** loss of data
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.23.20.0

ID#: 328347

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XRC data miscompare

1. **Problem Description:** A channel error occurred while processing a bitmap toggle command. The command was redriven, resetting bitmap values that should not have been reset.
2. **Potential Impact of Problem:** loss of data on XRC secondary
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0

ID#: 324307

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

Temporary loss of access during DA error recovery

1. **Problem Description:** A Device Adapter was reset while the partner adapter was also being reset.
6. **Potential Impact of Problem:** loss of access
7. **Problem Severity:** High Impact
8. **Pervasive Problem:** No
9. **Release Bundle:** 88.25.7.0

ID#: 326608

Repeated 0x7003 MLE

1. **Problem Description:** During CS metadata track recovery, an unexpected reason code triggered a microcode logic error.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.25.7.0

ID#: 330348

Production impact during incremental Flash Copy

1. **Problem Description:** When managed out-of-band by CSM, the primary volume was being quiesced during PPRC failback.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.25.7.0

ID#: 331945

V-RAID adapter timeouts during array rebuild

1. **Problem Description:** SAS T10 errors on rebuild target drive caused repeated resets of both V-RAID adapters.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.25.7.0

ID#: 332374

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HPFE Gen2 enclosure powered off
1. **Problem Description:** False thermal sensor indications caused enclosure to power off.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.25.7.0
ID#: 332414

HIPER Failover and cluster reboot during PCIe error recovery
1. **Problem Description:** During PCIe error recovery, Device Adapter deconfiguration may hang while attempting to unload the device driver
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.24.6.0
ID#: 300160

HIPER Metro/Global Mirror suspend, GDPS freeze
1. **Problem Description:** Systems running DB2 Castout Accelerator can expose a condition that results in a track access deadlock during I/O redrive.
2. **Potential Impact of Problem:** I/O timeout, Warmstart
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.24.6.0
ID#: 326226

HPFE Gen1 logical disk failure
1. **Problem Description:** During command timeout recovery, the SAS expanders may cause both V-RAID adapters to disconnect from the flash drives at the same time. This then causes the V-RAID adapters to fail multiple flash drives.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 326271

HIPER Cache LRU scan deadlock
1. **Problem Description:** A microcode logic error caused the LRU list pointer to become stuck at the top of the list, rather than scanning up from the bottom.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 327821

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HIPER Cache segment demote scan stalled

1. **Problem Description:** Accelerated LRU queue was stalled, but was not marked as stalled, so segments were not demoted out of cache
2. **Potential Impact of Problem:** Repeated warmstarts, loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.24.6.0

ID#: 330499

I/O bay failure during code update

1. **Problem Description:** Pre-verify did not flag PCIe bus soft errors, which subsequently caused failures during cluster IML.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0

ID#: 319023

HIPER PPRC paths failed to resume

1. **Problem Description:** PPRC path management failure may lead to loss of access or PPRC suspend.
2. **Potential Impact of Problem:** Loss of Access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.23.18.0

ID#: 319201

IBM i LUN discovery problem

1. **Problem Description:** IBM i serial number prefix is captured incorrectly if it has a leading zero
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0

ID#: 324682

/var filesystem full

1. **Problem Description:** Temporary log jar files are accumulating. Can occur on HMCs or LPARs.
2. **Potential Impact of Problem:** Potential loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0

ID#: 324988

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Copy Services TCB manager detected a deadlock
1. **Problem Description:** Deadlock caused Cluster reboot. Subsequent deadlock could then cause the partner Cluster to reboot.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 319838

Multiple DDMs rejected during loop recovery
1. **Problem Description:** Device Adapter loop instability can cause failures reading drive capacity information
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 322533

Possible loss of access when zHPF data transfer is > 16MB
1. **Problem Description:** zHPF Write with data transfer > 16MB and incorrect buffer size causes channel timeout. The operation is aborted. Channel retries the same operation and repeatedly aborts again.
   Fix will return control unit error status to break the loop.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 322593

HIPER Small-Extent volume missing extents
1. **Problem Description:** http://www.ibm.com/support/docview.wss?uid=ssg1S1010480
2. **Potential Impact of Problem:** Warmstarts, loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.22.33.0
ID#: 324390

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88.2x.x.x Release Notes Cumulative Summary v5.2

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

0x7D0E MLE
1. **Problem Description:** XRC tried to release a lock that was not being held, causing a microcode logic error.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.24.6.0
ID#: 316139

0x109 MLE during failback to dual cluster
1. **Problem Description:** During failback, a PCIe fabric recovery action interrupted cross-cluster communication.
2. **Potential Impact of Problem:** Warmstart, re-IML offline cluster, and retry failback
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 322794

0x01B7 MLE scanloop timeout
1. **Problem Description:** CPU lock contention may cause task control block starvation in copy services environments.
2. **Potential Impact of Problem:** ODD dump
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 324202

0x166A MLE during DDM firmware update
1. **Problem Description:** During DDM firmware update, DDM exceeded the pre-emptive reconstruct timeout value
2. **Potential Impact of Problem:** ODD dump
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 325105

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0x01B7 MLE
1. **Problem Description:** Global Mirror collision function incorrectly setting Extended Distance Consistency session locks.
2. **Potential Impact of Problem:** degraded performance, ODD dumps
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.24.6.0
ID#: 325696

Poor cache hit ratios
1. **Problem Description:** This defect addresses multiple issues:
   a.) SARC algorithm is not properly differentiating between random and sequential tracks on flash arrays.
   b.) Error in LRU scan list management
   c.) Error in scan stall management
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.24.6.0
ID#: 327091

Easy Tier usage issue with small extents
1. **Problem Description:** Easy Tier mis-records usage stats for small extents with low usage
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 327563

Global Mirror suspend while removing a volume from the session
1. **Problem Description:** Volume removal exposed a timing window where a consistency group was beginning to form, but was not yet aware that the volume had been removed from the session.
2. **Potential Impact of Problem:** Global Mirror suspend
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 329059

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LRC error incorrectly fenced a Host Adapter
1. **Problem Description:** Sector LRC was good across the 524-byte IBM i sector, but was not good across the 512-byte data portion. When the sector was subsequently read, the data area LRC was not checked until it got to the host adapter.
2. **Potential Impact of Problem:** loss of path
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 330688

RPO increase after code load
1. **Problem Description:** Copy Services metadata pre-stage function was not pre-staging enough metadata tracks
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 317758

Add persist files for destage TCB pokes
1. **Problem Description:** Number of destage TCB setting can be poked but is not persistent.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326613

Slow data migration to secondary system
1. **Problem Description:** Easy Tier heat map transfer to secondary failed to properly set the measurement count attribute.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326736

0x1A3E MLE while creating volumes
1. **Problem Description:** When creating large numbers of over-provisioned Extent Space Efficient volumes, Device Adapters can run out of Virtual Storage Table space. Action should fail during pre-check, and issue the appropriate message.
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 321159

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DDM media errors caused performance impact
1. **Problem Description:** Fix lowers correctable media error thresholds
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 321413

Unassigned processors after CDA
1. **Problem Description:** After processor and memory upgrade, one HMC may still contain the old LPAR profiles. If the HMC with the old profile is then used to perform a p8 firmware update, the LPARs are resumed using the previous processor configuration.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 322845

0x1159 MLE, data pinned in cache
1. **Problem Description:** Read command was modified to become a write command, but DA did not allocate an extent to destage the write data.
2. **Potential Impact of Problem:** Warmstart, pinned write data.
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.22.33.0
ID#: 324675

Slow replication with 16Gb Host Adapters
1. **Problem Description:** Poor Metro/Global Mirror performance when replicating from systems using ≤8Gb HAs, to target systems that are using 16Gb HAs.
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.22.33.0
ID#: 324689

Performance degraded on workloads dependent on hw reserves
1. **Problem Description:** Hardware device reserve processing may delay allowing a disconnected device to reconnect
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324961

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Service: A recoverable error, Service improvements.

I/O bay fenced with no serviceable event
1. **Problem Description:** Rack power control card registers were not correctly set for the I/O bays
2. **Potential Impact of Problem:** Undetected I/O bay power/cooling errors
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.25.7.0
ID#: 330717

REST API authentication failure
1. **Problem Description:** HMCs using remote authentication (LDAP) are not properly handling authentication requests for RESTful API service
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.25.7.0
ID#: 331802

DSCLI lsarraysite, lsextpool, and lsioport fail with CMUN00015E
1. **Problem Description:** Command hang when failing internal query of fibre channel ports caused an out-of-memory condition.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 323754

Slow DS GUI cache refresh
1. **Problem Description:** When large numbers of volumes are changed, DS GUI cache refresh may restart many times before it completes. During cache refresh, DS GUI is not usable.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.24.6.0
ID#: 326848

Unable to access DS GUI
1. **Problem Description:** DS GUI access may return 404 error because of an incorrect XML change in R8.2 SP3
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.27.0
ID#: 329595

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DSCLI will not install in Windows 10 environment
1. **Problem Description:** DSCLI installer using an older version of InstallAnywhere that is not compatible with Windows 10
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 314695

Storage Enclosure install failure
1. **Problem Description:** Storage enclosure install in Rack 3 failed because of errors in a plugOrder file
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 321251

Easy Tier missing statistics
1. **Problem Description:** Easy Tier Application volume statistics do not show detailed workload statistics
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 323642

Cannot launch MRPD panel
1. **Problem Description:** The MRPD configuration panel could not be launched from the HMC internal WUI browser.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 323712

Easy Tier Stat Tool browser shows an incorrect picture
1. **Problem Description:** Stat Tool browser page shows a picture of an older DS8000 model
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 323912

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Incorrect Key Manager path status with single HMC

1. **Problem Description:** Path status was being incorrectly reported as degraded on HMC2, when there was no HMC2
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 323996

Add GUI tip for embedded DSCLI scripts

1. **Problem Description:** Embedded DSCLI GUI function supports running DSCLI scripts, but the icon may not be obvious.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 324330

Security scan flags SLPd service active

1. **Problem Description:** Service Location Protocol service was left active when CIM Agent was not running
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 324342

HMC WUI broken NLS support

1. **Problem Description:** HMC WUI shows garbage characters in IE11 if set for Japanese language.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 324566

RSC terminated with broken pipe

1. **Problem Description:** Remote Support Console missed connected message because it was mixed with other unexpected data
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 324800

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Improve missing drive isolation
1. **Problem Description:** When healthcheck finds multiple "not installed" drives in an enclosure, problem isolation may not call the correct FRU replacement order.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 324996

Multiple drives rejected in an enclosure during power cycle
1. **Problem Description:** Drive notification of power off was incorrectly treated as an error.
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 325229

HMC WUI shows incorrect battery end-of-life value
1. **Problem Description:** HMC WUI is referencing a deprecated field in the Resource Manager object
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 325689

HMC not responding if one network interface is down
1. **Problem Description:** DSCLI and CSM commands are not processed on the remaining internal network path.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 325728

HMC callhome failure
1. **Problem Description:** HMC1 connection to IBM was down, and was not able to call home via HMC2, which did have a good connection.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 325932

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Hung Device Adapter health check process
1. **Problem Description:** DA health check process was hung, which then prevented subsequent health checks to run.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326097

Software PID filesets missing
1. **Problem Description:** When filesets are missing on one LPAR, query is unable to tell which LPAR
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326146

Repaired HPFE SES error reported again after CDA
1. **Problem Description:** LPAR SES log directories were not sync'd to the new CDA preload image.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326441

Restore ICSs and CS Pokes after LPAR hard drive rebuild
1. **Problem Description:** Add necessary directories to HDR backup restore list.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326561

SSL callhome test fails through authenticated proxy
1. **Problem Description:** In systems running R8.2 SP2 SSL callhome test is failing to authenticate through the proxy
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326837

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ICS reinstall failed after LPAR hard drive rebuild

1. **Problem Description:** After LPAR hard drive rebuild, ICS reinstall list included ICS fixes that were no longer required.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0

ID#: 327747

Flash Card firmware download does not complete

1. **Problem Description:** If firmware download encounters an error, it continues to the next available Flash enclosure, leaving some downloads incomplete
2. **Potential Impact of Problem:** Incomplete firmware update
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.34.0

ID#: 326249

HMC sl0 interface address conflict

1. **Problem Description:** sl0 (IP over modem) virtual interface is configured with 10.253.0.1 on HMC1 and 10.10.2.1 on HMC2. Fix is to disable sl0.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0

ID#: 322321

Secure Data Overwrite false pre-check failure

1. **Problem Description:** Drives were in a good state for SDO, but failed pre-check because a service state flag was not reset.
2. **Potential Impact of Problem:** Extended SDO duration
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0

ID#: 322705

False V-RAID adapter fan errors

1. **Problem Description:** Increase error thresholds to reduce serviceable events for false fan errors.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** Yes
5. **Release Bundle:** 88.22.33.0

ID#: 323259

IBM System Storage - DS8880 Disk Storage

88.2x.x.x Release Notes Cumulative Summary v5.2

PE Package offload via DSCLI returns false error
1. **Problem Description:** PE package offload can return a false failure if HMC has FTP offload enabled.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 322306

Flash Card replacement failure isolation
1. **Problem Description:** Perform enclosure statesave when Flash Card replacement fails because of a missing path.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 323474

EasyTier support for 1.6 TB and 3.2 TB Flash Cards
1. **Problem Description:** Add performance data to EasyTier config file
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 323491

Unable to group host ports in previous DS GUI
1. **Problem Description:** DSCLI mkhost function creates every connection with host port group 0
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 323595

DSCLI lshostconnect shows WWPN as the hostname
1. **Problem Description:** DSCLI mkhost command names host connections using the WWPN instead of using a variation of the hostname
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 323596

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88.2x.x.x Release Notes Cumulative Summary v5.2

Incorrect translation in DS GUI
1. **Problem Description:** DS GUI incorrectly translates "KIOPS" for French language implementations.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 323848

Change Assist OnSite Access Control List group
1. **Problem Description:** Change to allow only the single AOS ACL group IBM/BLUE/GTS/EMEA/STORAGE/DS8000 for EMEA systems.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324050

SRC=BE14EAF1 does not auto-close
1. **Problem Description:** HMC Key Manager communication errors should auto-close when communication is restored.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324091

DS GUI refresh object cache in the background
1. **Problem Description:** DS GUI waits to build the object cache until the user visits a page that uses the objects
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324119

Apple MacOS host type missing in DS GUI
1. **Problem Description:** Change DS GUI to match the host types supported by DSCLI
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324191

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HPFE install fails if enclosure is fully populated
1. **Problem Description:** If a Gen1 High Performance Flash Enclosure contains all 30 Flash Cards, a microcode logic error fails to assign all of the Flash Cards to an array site during enclosure install.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324201

DS GUI shows incorrect Flash Card firmware level
1. **Problem Description:** After Flash Card upgrade, the firmware level of the new Flash Cards was not correctly shown by DS GUI
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324275

Remove whitespace from challenge key
1. **Problem Description:** New remote support challenge key contains whitespace that can cause problems with copy/paste of the challenge code.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 324839

Improvements: Improvements for better usability

Allow ESE/STD PPRC volume intermix for DS8870 secondary systems
1. **Problem Description:** Support PPRC volume intermix when secondary system is DS8870, to facilitate migration and testing scenarios.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.25.7.0
ID#: 331712

VMWare Unmap command support
1. **Problem Description:** Enable support for VMWare VAAI Unmap command
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 325585

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RSC auto-reconnect after HMC reboot
1. **Problem Description:** After rebooting HMC, Remote Support Console will auto-reconnect to an existing session.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 325601

Change notification time for HMC network surveillance errors
1. **Problem Description:** Enables function in WUI to change the current 8 hour notification time to a shorter value
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.23.18.0
ID#: 326007

Collect PE package from both HMCs
1. **Problem Description:** In dual-HMC systems, PE package collection on one HMC will automatically collect data from both HMCs
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 319477

Update AOS to latest 4.0.1
1. **Problem Description:** Assist OnSite maintenance release
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 320543

HPFE Gen2 MES support
1. **Problem Description:** Adds service WUI support for High Performance Flash Enclosure Gen2 upgrade
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0
ID#: 322813

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Improve VRAID path error analysis
1. **Problem Description:** Provide additional soft device bus error data
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
5. **Release Bundle:** 88.22.33.0

ID#: 323584

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