IBM System Storage - DS8880 Disk Storage
Microcode Bundle 88.1.22.0 Release Note Information v1.2

Release Date: March 30, 2016

VRMF Level Data Results:

VRMF level From:	88.0.151.0 (DS8886) or 88.0.153.0 (DS8884)
VRMF Level To:	88.1.22.0
Report for:	All DS8880

Code Bundle Contents

This table includes code component reference information.

DS8880 Code Bundle Level	SEA or LMC Version:	DS CLI Client	STAT Tool	Heat Map Transfer Utility	Storage Manager
88.1.22.0	7.8.1.51	7.8.1.51	7.8.1.51	7.8.1.51	5.8.1.1024

Overview of new features and functions supported by this release on DS8884, 283x model 980, and DS8886, 283x model 981

At a glance:

- MES support
- Model conversion support, DS8870 to DS8880
- In-release microcode back-level
- Support for RAID 10 on Fibre-attached Solid-State Drive arrays
- Support for 1.8 TB 10K RPM 4K native 2.5" Self-Encrypting Drives
- Support for 6 TB 7.2K RPM 4K native 3.5" Self-Encrypting Drives
- Bug fixes

This new microcode release supports DS8880 systems only.

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

Acute: An irrecoverable error with potential loss of data.

HIPER Both V-RAID adapters fenced
1. **Problem Description:** Insufficient time is being given to complete error recovery, which can lead to fencing of both V-RAID adapters
2. **Potential Impact of Problem:** loss of access and/or data
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 313417

HIPER XRC suspend, abend 9C4-10, No Record Found
1. **Problem Description:** Write command with Bypass Extent Checking set, needs to still check for extent conflicts if prior I/Os did not also specify BEC.
2. **Potential Impact of Problem:** Loss of Data on secondary
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** No
ID#: 313493

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

LPAR filesystems filling up
1. **Problem Description:** ESSNI log backup and prune was not keeping up when systems have a lot of TPC query activity.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 312189

HIPER Repeated V-RAID adapter resets
1. **Problem Description:** A flash card failed in a way that led to repeated V-RAID adapter resets. Fix will detect the condition, and immediately bypass the failing flash card.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes
ID#: 312369

Repeated warmstarts after processor memory riser failure
1. **Problem Description:** Hardware failure in one cluster reduced it's available processor memory by half, exposing a memory management microcode error.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No
ID#: 312745

PPRC I/O context out of sequence

1. **Problem Description:** A timing condition results in a task being left on the out-of-order queue, without being processed
2. **Potential Impact of Problem:** PPRC suspend, GDPS failure
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 312795

HIPER Track Format Descriptor mismatch

1. **Problem Description:** Improper setting of flags leads to corruption of the modified sector bitmap.
2. **Potential Impact of Problem:** Global Mirror suspend
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes

ID#: 312882

Flash Card media error

1. **Problem Description:** A single Flash Card was logging a high number of media and SAS errors, and ultimately caused a loss of access. With this fix, if the array is not already exposed, the Flash Card will be rejected on the first occurrence of a SAS T10 Reference Tag, or CRC error.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 312984

RPC config data corruption

1. **Problem Description:** A write flash operation failed, erasing portions of the config data.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 313409

Repeated warmstarts with iSeries linked command chains

1. **Problem Description:** A small timing window allows the next I/O in a linked command chain, before response was sent for the prior I/O.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 313424

DSI on Both LPARs

1. **Problem Description:** Define Subsystem Operation 0x77 (Manage Session Members) specifying an address range that contains 0xFF, will hold onto CPUs in an infinite loop.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** High Impact
4. **Pervasive Problem:** No

ID#: 314452

HIPER Host bay powered off

1. **Problem Description:** Host Bay can power off when the room temperature is below 14ºC
   Note: This optional firmware update requires special handling, that is done outside the framework of the normal code update process.
2. **Potential Impact of Problem:** loss of access
3. **Problem Severity:** HIPER
4. **Pervasive Problem:** Yes

ID#: 314832

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

PPRC extended query reports volume pending status

1. **Problem Description:** When performing flashcopy to a Global Mirror volume pair, the volume status always shows as 'pending'. The underlying state was intended to only be used for Metro Mirror pairs.
2. **Potential Impact of Problem:** May cause DR test to fail
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID#: 311653

0x1B7 MLE

1. **Problem Description:** Device Adapter logical config query thread is taking too long to complete
2. **Potential Impact of Problem:** Warmstart
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** Yes

ID#: 313416

Host bay firmware update caused failover

1. **Problem Description:** Cluster Systems Management timeout during firmware update caused AIX to crashdump
2. **Potential Impact of Problem:** degraded performance
3. **Problem Severity:** Moderate
4. **Pervasive Problem:** No

ID#: 315606

Service: A recoverable error, Service improvements.

DS GUI does not show host connections

1. **Problem Description:** The new-since-R7.4 DS GUI informs users on first launch that host connections need to be updated. If that update is skipped, the host connections will be grouped in the GUI as "Unassigned Host Ports". The messages have been improved to better describe what needs to be done, and that the changes will not result in the loss of any host paths.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No

ID#: 305201

Timeout deleting multiple volume aliases
1. **Problem Description:** When deleting a single CKD volume that has multiple aliases, a microcode timeout caused failure to delete the aliases.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311403

CMUN00014E error in legacy DS GUI
1. **Problem Description:** DS GUI fails opening "Copy Services" page, when no LSSs have been created yet.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311405

SRC=BE1E1405 displays improper text
1. **Problem Description:** Remove improper "Corrective Action" text
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 311606

Improve first-time data capture for DDM deconfigure
1. **Problem Description:** Live dump during DDM deconfigure can fail when recovery actions are in progress. Fix will verify that the deconfigure dump is valid, and if not, we will capture another.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312265

No wear leveling logs for 'HSRW' SSD drive family
1. **Problem Description:** System is not collecting wear logs for this 200G SSD drive family.
2. **Potential Impact of Problem:** Unable to monitor SSD wear life
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312563

Unable to clear red Alert icon in DS GUI
1. **Problem Description:** With dual HMCs, a network communication between the HMCs can leave the DS GUI servers out of sync.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312918

No Customer email notification for SRC=BE310B01
1. **Problem Description:** Email notification did not occur because the SRC flag was not set for email notification.
   This fix will also clarify the options on the Customer notify configuration setup pane. The first option will change from "Call home problem events only" to "Serviceable Event Notification only"
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 312939

Prevent flashcopy to XRC volumes
1. **Problem Description:** Provide DS8880 feature license RPQ to allow a legacy FB-only flashcopy enablement key
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 313373

False SRC=B1112AB2 and B1112AB4
1. **Problem Description:** Incorrectly logging a serviceable event for a retryable processor power management controller error.
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 313494, 313548

Verify Bundle shows I/O enclosures downlevel after CDA
1. **Problem Description:** Firmware query was issued by both HMCs at the same time, causing a collision
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 313701

Incorrect TKLM bad path status reported
1. **Problem Description:** Primary and secondary HMC key manager heartbeat modes disagree
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 313800

False PCIe link degraded indication
1. **Problem Description:** When servicing a host bay, the bay was fenced because of a false PCIe link indication
2. **Potential Impact of Problem:** Extended service action
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 314275

DS GUI shows enclosures in wrong location for rack 5
1. **Problem Description:** DS GUI misinterpreted the starting enclosure internal location data for rack 5
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 314277

HMC LDAP Create Authentication failed
1. **Problem Description:** When configuring LDAP authentication, user can not upload trust store file
2. **Potential Impact of Problem:** Unable to configure LDAP
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 314385

Add certificate to HMC AOS config file
1. **Problem Description:** Ensure HMC will only communicate with a legitimate broker
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 314702

SSL callhome failed
1. **Problem Description:** Credential error while attempting to obtain a certificate from a server that is deprecated for DS8880.
2. **Potential Impact of Problem:** Unable to call home
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 315218

Assist On Site cannot connect
1. **Problem Description:** After AOS service pack update, permissions are incorrect on the configuration file
2. **Potential Impact of Problem:** Unable to connect for remote support
3. **Problem Severity:** Service
4. **Pervasive Problem:** No
ID#: 315566

Improvements: Improvements for better usability

Update HMC AOS fixpack version
1. **Problem Description:** HMC AssistOnSite v4 FP 2 update
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No
ID#: 311281

Support RAID-10 on SSDs
1. **Problem Description:** For Fibre-attached SSDs, RAID-10 config is supported without RPQ
2. **Potential Impact of Problem:** none
3. **Problem Severity:** Improvement
4. **Pervasive Problem:** No

ID#: 313897

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