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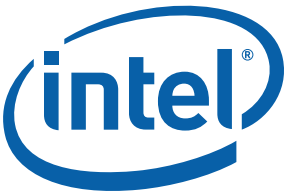
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Intel NetStructure® MPCMM0001 Chassis Management Module

and

Intel NetStructure® MPCMM0002 Chassis Management Module

Software Specification Update

December 2006

Notice: The **Intel NetStructure® MPCMM0001 Chassis Management Module** or **Intel NetStructure® MPCMM0002 Chassis Management Module** may contain design defects or errors known as errata that may cause the product to deviate from published specifications. Current characterized errata are documented in this specification update.

Order Number: 273931-018

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Revision History

Date	Revision	Description
December 2006	018	Version 5.2.7.35 of the firmware.
June 2006	017	Version 5.2.6.13 of the firmware.
March 2006	016	Version 5.2.5.33 of the firmware.
January 2006	015	Version 5.2.4.289 of the firmware. Added special instructions for upgrading to version 5.2.4 from an earlier version of 5.2.
January 2006	014	Version 5.2.4.289 of the firmware Added 2 specification changes, 4 specification clarifications, and 4 documentation changes
October 2005	013	Version 5.2.3.219 of the firmware Added or changed 3 errata Added 6 documentation changes
August 2005	012	Version 5.2.2.135 of the firmware Added 2 errata. Removed erratum 16 (appears as erratum 16 in revision 011).
June 2005	011	Version 5.2.1 of the firmware (5.2.1.249) Added 6 errata Added 6 documentation changes
April 2005	010	5.2 SRA Release (5.2.0.1543) Added special upgrade instructions Added 10 new features Added 6 errata Removed 32 errata Revised procedure of CMM reboot discovery
January 2005	009	5.2 ER2 Release (5.2.0.1205)
December 2004	008	5.2 ER1 Release (5.2.0.847)

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Preface

This document is an update to the specifications contained in the Affected Documents/Related Documents table below. This document is a compilation of device and documentation errata, specification clarifications and changes. It is intended for hardware system manufacturers and software developers of applications, operating systems, or tools.

Information types defined in Nomenclature are consolidated into the specification update and are no longer published in other documents.

This document may also contain information that was not previously published.

Affected Documents and Related Documents

Title	Order
Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification	273888-007
Intel NetStructure® MPCMM0001 Chassis Management Module Hardware Technical Product Specification	273881-001

Nomenclature

Release Notes is a list of changes and feature additions made to firmware and fixes to past items in the release.

Errata are design defects or errors. These may cause the Intel NetStructure® MPCMM0001 Chassis Management Module's behavior to deviate from published specifications. Hardware and software designed to be used with any given stepping must assume that all errata documented for that stepping are present on all devices.

Specification Changes are modifications to the current published specifications. These changes will be incorporated in any new release of the specification.

Specification Clarifications describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in any new release of the specification.

Documentation Changes include typos, errors, or omissions from the current published specification. These will be incorporated in any new release of the specification.

Note: Errata remain in the specification update throughout the product's lifecycle, or until a particular stepping is no longer commercially available. Under these circumstances, errata removed from the specification update are archived and available upon request. Specification changes, specification clarifications and documentation changes are removed from the specification update when the appropriate changes are made to the appropriate product specification or user documentation (datasheets, manuals, etc.).

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Identification Information

Firmware Version

Firmware version currently running on the Intel NetStructure® MPCMM0001 Chassis Management Module (CMM) can be determined by executing the following command using the CLI:

```
cmmget -l cmm -d version
```

The version returned is a string in the following format:

Version: [Major Build Number].[Minor Build Number].[Release Number].[Build Number]

For example:

```
Version: 5.2.7.35
```


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Release Notes

Version 5.2.7.35

About This Release

- December 1, 2006
- CMM software version: V5.2.7.35
- RedBoot* version: V1.3.6
- FPGA version: 0x0A
- Data Sync version: 90

Special Notes and Instructions

- A new JFFS2 version of the file system was ported from kernel 2.6.15.6. This version resolves a number of problems found in previous versions. In addition, some patches were added to the ported kernel, and the tool "mkrootfs" was changed to mkfs.jffs2 because this tool was incompatible with the newer version of JFFS2.

New Fixes and Features

Below is a list of new features and functionality changes in this release.

- JHM application and driver

The following issues reported in previous releases are fixed in this release:

- The "Site ID" of the "Get Address Info" command (the 7th byte of response data) was set to "0x01" in all slots. Fixed only for Dutch Harbor.
- Cannot copy /home/scripts
- NEC Chassis Support for MPCMM0002 required
- SNMPTrap sequence
- CMM detected both PEMs IPMB-B error
- Cmmdump improvement requested
- Sensor number in SNMPTrap is not as expected
- Standby CMM HS LED was still blinking - occurred in NTT again
- CMM user LEDs (1-4) were on when setting all_leds for cmm:fru1
- CORE: all_leds should not affect CMM userled1-4 if location is filtertray
- CMM reports different M states for blades
- CMM reports different M states for blades - Hot Swap:M4 - Powerstate:M2 case
- CMM incorrectly responded on SNMPwalk
- CMM returns slave address in its response to Get Device ID command for slot10

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- Active CMM was suddenly rebooted by PMS
- Active CMM was repeatedly changed
- Standby CMM was stopped at M2
- Username added by "adduser" was not synchronized to standby CMM
- Active HS LED suddenly changed to blinking
- cmmdump should be improved to collect detailed information about all FRUs that CMMs manage in a chassis
- Request to change CMM behavior when single-bit errors events received from blades
- Active CMM was at M3
- Standby CMM's HS LED was still blinking

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Version 5.2.6.13

About This Release

- June 30, 2006
- CMM software version: V5.2.6.13
- RedBoot* version: V1.3.6
- FPGA version: 0x0A
- Data Sync version: 90

Special Notes and Instructions

- None

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- None

The following issues reported in previous releases are fixed in this release:

- File descriptors improperly closed
- CMM does not list targets associating with sensor type of 26h
- CMM suddenly stopped responding via RMCP
- Active CMM was suddenly rebooted by PMS
- Unknown event is not properly processed and reported
- Segmentation fault caused by debug assertion in listtargets command
- Active CMM mistakenly recognized standby CMM as removed
- CMM 5.2.5 does not recognize Processor Events
- Event does not disappear from SBY-CMM

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Version 5.2.5.33

About This Release

- March 31, 2006
- CMM software version: V5.2.5.33
- RedBoot* version: V1.3.6
- FPGA version: V0A
- Data Sync version: 90

Special Notes and Instructions

- None

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- In previous versions, only traces with severity CRITICAL were logged (in /home/log/error.log). Now an additional log file (/var/log/warning.log) is created to record traces with severity MAJOR. When the current file (/var/log/warning.log) reaches 500KB, it is compressed and stored in flash (/home/log/). The current file is then truncated to 0KB (rolled over). Flash always holds the four latest warning.log files other than the current file.

The following issues reported in previous releases are fixed in this release:

- Are RMCP multiple sessions properly supported?
- RMCP function gets degradation in 5.2.5
- RMCP command failed
- Fantray was still at M2 after CMM firmware updated
- CMM does not recognize KCT's sensor
- Datasync status vs synch events: contradictory behaviors?
- Standby CMM didn't change to M4
- Standby CMM and fantray HS LED were still blinking
- Fanspeed was still at 100%
- Fantray suddenly changed to M1 during CMM FW updating
- CMM firmware update failed
- CMM generated incorrect traps?
- 5.2.4 SDRs overwritten after FW update
- Some irregular entries observed in CMM__SEL
- Fantray gets stuck in M2
- CMM does not list targets associating with sensor type of 26h
- Sensor names are listed but unknown names are used for traps

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- CMM Status event is not as defined
- Can't log in to CMM via serial or Ethernet, but ping is OK
- Active CMM was suddenly rebooted
- CMM hotswap LED blinking
- Barnegat does not start with CMM
- RPC timeout occurs at ACTCMM suddenly
- System Firmware progress error
- Fantray goes to M1 with CMM FW update
- Unknown event when upgrading CMM FW
- Unrecognized CMM event
- Add cmdPrivillege.ini to the saveList
- Output of "Network Reload" on SBY CMM is different on different releases.
- CMM fails to initialize and hotswap LED blinking
- Standby CMM didn't change to M4 after both CMMs rebooted

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Version 5.2.4.289

About this release

- January 06, 2006
- CMM software version: V5.2.4.289
- RedBoot* version: V1.3.6
- FPGA version: V0A
- Data Sync version: 90

Special Upgrade Instructions from v5.2.*x*

This section describes special instructions you must follow if you are upgrading the Intel NetStructure® MPCMM0001 Chassis Management Module firmware from version 5.2.*x* (that is, any version from 5.2.0 through 5.2.3) to version 5.2.4.289.

Upgrading a dual CMM (active and standby) system running firmware version 5.2.0 through version 5.2.3.

1. To get the version 5.2.4 `/etc/cmm/*.bin` and `/etc/cmm/*.sif` files, install version 5.2.4.289 of the firmware on a single CMM system. Make sure these files are available either from that CMM or from another location to the CMM systems that you will be upgrading to version 5.2.4.289.
2. On the active CMM of any redundant (dual CMM) system to be upgraded, back up the `/etc/cmm/*.bin` and `/etc/cmm/*.sif` files. This can be done by renaming the files or by copying them to a different location. You will need these files if you decide to downgrade the system to the original version of the firmware.
3. Overwrite the files `/etc/cmm/*.bin` and `/etc/cmm/*.sif` on the *active* CMM with the new `*.bin` and `*.sif` files you got in step 1.
4. Upgrade the *standby* CMM to version 5.2.4.289.
5. Once the standby CMM has been upgraded, fail over from the active CMM to the standby.
6. Upgrade the *new standby* CMM to version 5.2.4.289.
7. If you ever decide to downgrade the upgraded CMMs to the previous version of the firmware, overwrite the `*.bin` and `*.sif` files with the back-up `*.bin` and `*.sif` files saved in step 2, then follow the usual downgrade procedure.

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Special Upgrade Instructions from v5.1.4 or earlier

This section describes special instructions you must follow when upgrading your current version of the Intel NetStructure® MPCMM0001 Chassis Management Module firmware to version 5.2.4.289. The instructions you follow depend on the current version you are running.

Upgrading a dual CMM (active and standby) system running firmware version 5.1.4 or earlier

When upgrading CMM firmware to version 5.2.4.289 from version 5.1.4 or earlier, you must wait to update the Chassis Data Module (the chassis FRU) until your *active* CMM is running version 5.2.4 of the firmware.

Follow these instructions:

1. On the *standby* CMM, run this command all on one line:

   ```
   NO_FRU_UPDATE=1 cmmset -d update -v "CMM_5.2.4.289"
   ```

2. Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM.
3. Failover to the upgraded standby CMM by entering the following command on the *active* CMM:

   ```
   cmmset -d failover -v 1
   ```

   The CMM that is now active is running the new version of the firmware without having yet updated its chassis FRU. The CMM that is now the standby is still running the older version of the firmware.

4. On the *standby* CMM, run the command below. Note that in this step you allow the chassis FRU to be updated as part of upgrading the firmware.

   ```
   cmmset -d update -v "CMM_5.2.4.289"
   ```

   Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM. The standby CMM is now running the new version of the firmware and it has updated its chassis FRU.

5. All that is left is to synchronize the chassis FRU of the currently active CMM. To do this, you must first make it the standby CMM again, so perform another failover. Now that the CMM is once again the standby, you can synchronize its chassis FRU by rebooting it.
6. Wait for the standby CMM to finish updating, rebooting, and synchronizing, and you are done.

Special Notes and Instructions

None.

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New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- None

The following issues reported in previous releases are fixed in this release:

- Repeatedly upgrading and downgrading the firmware causes the CMM to boot abnormally.
- Spurious filter tray temperature events.
- CMM incorrectly responds on SNMPWalk.
- Both CMMs were rebooted; standby CMM was in state M0.
- RMCPUser password file is overwritten when doing firmware upgrade.
- Memory leak is observed in Wrapper Process 255.
- Both CMMs rebooted during OpenHPI testing.
- PmsProc54 (BPM) – Process Integrity fault: Standby CMM reboots every 30 minutes.
- Set SEL Time command does not perform as defined.
- SNMP trap connection lost.
- Memory leaks occur when the SBC is powered on/off.
- SNMP daemon has a memory leak.
- Fan speed does not become 100% even though a major temperature event was detected.
- CMM Sensor Data Record is incorrect.
- Memory leak exists.

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Version 5.2.3.219

About this release

- October 14, 2005
- CMM software version: V5.2.3.219
- RedBoot* version: V1.3.6
- FPGA version: V0A
- Data Sync version: 90

Special Upgrade Instructions

This section describes special instructions you must follow when upgrading your current version of the Intel NetStructure® MPCMM0001 Chassis Management Module firmware to version 5.2.3.219. The instructions you follow depend on the current version you are running.

Upgrading a dual CMM (active and standby) system running firmware version 5.1.4 or earlier

When upgrading CMM firmware to version 5.2.3.219 from version 5.1.4 or earlier, you must wait to update the Chassis Data Module (the chassis FRU) until your *active* CMM is running version 5.2.3 of the firmware.

Follow these instructions:

1. On the *standby* CMM run this command all on one line:

   ```
   NO_FRU_UPDATE=1 cmmset -d update -v "CMM_5.2.3.219"
   ```

2. Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM.
3. Failover to the upgraded standby CMM by entering the following command on the *active* CMM:

   ```
   cmmset -d failover -v 1
   ```

   The CMM that is now active is running the new version of the firmware without having yet updated its chassis FRU. The CMM that is now the standby is still running the older version of the firmware.

4. On the *standby* CMM run the command below. Note that in this step you allow the chassis FRU to be updated as part of upgrading the firmware.

   ```
   cmmset -d update -v "CMM_5.2.3.219"
   ```

   Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM. The standby CMM is now running the new version of the firmware and it has updated its chassis FRU.

5. All that is left is to synchronize the chassis FRU of the currently active CMM. To do this, you must first make it the standby CMM again, so perform another failover. Now that the CMM is once again the standby, you can synchronize its chassis FRU by rebooting it.
6. Wait for the standby CMM to finish updating, rebooting, and synchronizing, and you are done.

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Special Notes and Instructions

None.

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- None

The following issues reported in previous releases are fixed in this release:

- Failover fails due to critical items not being synched.
- SNMP trap is lost
- Memory leak occurs at cli_svr
- CMM memory leaks
- Broadcast address is improperly set
- CMM reboots when SBC ejector latch is repeatedly opened and closed
- Standby CMM suddenly reboots
- After CMM reboots, SBC does not transition to state M4
- When SETIP parameter is set to BOTH, segmentation fault occurs
- Blade does not transition from state M2 to M3 with poweron command
- CMM loses track of fantray status or fantray does not transition to state M4
- Active CMM rebooted suddenly by PMS
- Fantray and PEM firmware cannot be updated
- xinetd leaks memory
- CMM occasionally fails to reboot during an OOM (Out of Memory) condition
- cmd_hand memory leak
- syslogd very inefficient for JFFS2

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Version 5.2.2.135

About this release

- August 05, 2005
- CMM software version: V5.2.2.135
- RedBoot* version: V1.3.5
- FPGA version: V0A
- Data Sync version: 90

Special Upgrade Instructions

This section describes special instructions you must follow when upgrading your current version of the Intel NetStructure® MPCMM0001 Chassis Management Module to version 5.2.2.135. The instructions you follow depend on the current version you are running.

Upgrading a dual CMM (active and standby) system running firmware version 5.1.4 or earlier

When upgrading CMM firmware to version 5.2.2.135 from version 5.1.4 or earlier, you must wait to update the Chassis Data Module (the chassis FRU) until your *active* CMM is running version 5.2.2 of the firmware.

Follow these instructions:

1. On the *standby* CMM run this command all on one line:

   ```
   NO_FRU_UPDATE=1 cmmset -d update -v "CMM_5.2.2.135"
   ```

2. Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM.
3. Failover to the upgraded standby CMM by entering the following command on the *active* CMM:

   ```
   cmmset -d failover -v 1
   ```

   The CMM that is now active is running the new version of the firmware without having yet updated its chassis FRU. The CMM that is now the standby is still running the older version of the firmware.

4. On the *standby* CMM run the command below. Note that in this step you allow the chassis FRU to be updated as part of upgrading the firmware.

   ```
   cmmset -d update -v "CMM_5.2.2.135"
   ```

   Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM. The standby CMM is now running the new version of the firmware and it has updated its chassis FRU.

5. All that is left is to synchronize the chassis FRU of the currently active CMM. To do this, you must first make it the standby CMM again, so perform another failover. Now that the CMM is once again the standby, you can synchronize its chassis FRU by rebooting it.
6. Wait for the standby CMM to finish updating, rebooting, and synchronizing, and you are done.

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Special Notes and Instructions

None.

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- None

The following issues reported in previous releases are fixed in this release:

- Incorrect description strings used for SNMP traps.
- Implement WDT logging (Strata logging) feature.
- CDM unexpectedly downgrades from CDM version 107 to version 105.
- Power Hotswap Manager fails to grant all remaining power, refuses requests for zero watts, and leaves some units stuck on the unpowered units list.
- CMM stops sending SNMP traps.
- CMM failover happens suddenly when different SBCs are inserted.

Version 5.2.1.249

About this release

- June 10, 2005
- CMM software version: V5.2.1.249
- RedBoot* version: V1.3.5
- FPGA version: V0A
- Data Sync version: 90

Special Upgrade Instructions

This section describes special instructions you must follow when upgrading your current version of the Intel NetStructure® MPCMM0001 Chassis Management Module to version 5.2.1.249. The instructions you follow depend on the current version you are running.

Upgrading a dual CMM (active and standby) system running firmware version 5.1.4 or earlier

When upgrading CMM firmware to version 5.2.1.249 from version 5.1.4 or earlier, you must wait to update the Chassis Data Module (the chassis FRU) until your *active* CMM is running version 5.2.1 of the firmware.

Follow these instructions:

1. On the *standby* CMM run this command all on one line:

   ```
   NO_FRU_UPDATE=1 cmmset -d update -v "CMM_5.2.1.249"
   ```


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2. Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM.
3. Failover to the upgraded standby CMM by entering the following command on the *active* CMM:

   ```
   cmmset -d failover -v 1
   ```

   The CMM that is now active is running the new version of the firmware without having yet updated its chassis FRU. The CMM that is now the standby is still running the older version of the firmware.
4. On the *standby* CMM run the command below. Note that in this step you allow the chassis FRU to be updated as part of upgrading the firmware.

   ```
   cmmset -d update -v "CMM_5.2.1.249"
   ```

   Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM. The standby CMM is now running the new version of the firmware and it has updated its chassis FRU.
5. All that is left is to synchronize the chassis FRU of the currently active CMM. To do this, you must first make it the standby CMM again, so perform another failover. Now that the CMM is once again the standby, you can synchronize its chassis FRU by rebooting it.
6. Wait for the standby CMM to finish updating, rebooting, and synchronizing, and you are done.

Special Notes and Instructions

None.

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- None

The following issues reported in previous releases are fixed in this release:

- RMCP Thread causes JFFS2/syslogd to hang.
- SNMP Trap of M2 and M3 not generated when SBC powered up.
- After rebooting a dual CMM chassis, the active CMM, the fantray, the power entry modules, and blade 5 enter the state M0.
- CMM does not issue “Set Port State”.
- CMMs have major events (M7 and redundancy lost) while M4 reported.
- fruUpdate utility needs to be modified to support CDM update from standby CMM.
- CLI healthevents query results differ from SEL.
- CMM does not send an SNMP trap for certain events.

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Version 5.2.0.1543

About this release

- April 15, 2005
- CMM software version: V5.2.0.1543
- RedBoot* version: V1.3.5
- FPGA version: 0x0A
- CDM version 109

Special Upgrade Instructions

This section describes special instructions you must follow when upgrading your current version of the Intel NetStructure® MPCMM0001 Chassis Management Module to version 5.2.0.1543. The instructions you follow depend on the current version you are running.

Upgrading from an earlier build of version 5.2.0

If you are upgrading from an earlier build of version 5.2.0 (such as 5.2.0.1205 or 5.2.0.847) to the SRA build of version 5.2.0 (namely, 5.2.0.1543), do the following:

1. On the active CMM back up the file /etc/cmm/CMM_CS.bin by copying it to a different name or a different location.
2. Overwrite /etc/cmm/CMM_CS.bin on the active CMM with the CMM_CS.bin file from this new version (5.2.0.1543)
3. Upgrade the standby CMM with this new version.
4. Once the standby CMM is ready, failover from the active CMM to the standby. The old standby is now the active CMM and the old active CMM is now the standby CMM.
5. Upgrade the standby CMM with this new version (5.2.0.1543).
6. Once the upgrade is finished, delete the back up of the file /etc/cmm/CMM_CS.bin made in step 1.

Note: The instructions above do not apply when upgrading to version 5.2.0.1543 from an earlier production version of the firmware (such as 5.1.3.53 or 4.12c).

Upgrading a dual CMM (active and standby) system running firmware version 5.1.4 or earlier

When upgrading CMM firmware to version 5.2.0 from version 5.1.4 or earlier, you must wait to update the Chassis Data Module (the chassis FRU) until your *active* CMM is running version 5.2.0 of the firmware.

Follow these instructions:

1. On the *standby* CMM run this command all on one line:

   ```
   NO_FRU_UPDATE=1 cmmset -d update -v "5.2.0.1543"
   ```

2. Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM.

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3. Failover to the upgraded standby CMM by entering the following command on the *active* CMM:

   ```
   cmmset -d failover -v 1
   ```

   The CMM that is now active is running the new version of the firmware without having yet updated its chassis FRU. The CMM that is now the standby is still running the older version of the firmware.

4. On the *standby* CMM run the command below. Note that in this step you allow the chassis FRU to be updated as part of upgrading the firmware.

   ```
   cmmset -d update -v "5.2.0.1543"
   ```

   Wait for the standby CMM to finish updating, rebooting, and synchronizing with the active CMM. The standby CMM is now running the new version of the firmware and it has updated its chassis FRU.

5. All that is left is to synchronize the chassis FRU of the currently active CMM. To do this, you must first make it the standby CMM again, so perform another failover. Now that the CMM is once again the standby, you can synchronize its chassis FRU by rebooting it.

6. Wait for the standby CMM to finish updating, rebooting, and synchronizing, and you are done.

Special Notes and Instructions

None.

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- The thresholds for filter tray temperature sensors (FilterTrayTemp 1 and FilterTrayTemp 2) have been changed: upper non-critical is set to 30 degrees Celsius, upper critical is set to 40 degrees Celsius, and upper non-recoverable is set to 80 degrees Celsius.
- Added SNMP and WP/BPM PIEs
- The SNMP Management Information Base (MPCMM0001.mib) has been updated to version 5.8.0. New objects have been added that let you set the eventaction scripts from the SNMP interface for all locations
- You can reboot the standby CMM from either the active or the standby CMM. The command is:

  ```
  cmmset -d standbycmmreboot -v 1
  ```

- Added new chassis data item FanRPMEventsAffectFanSpeed. This data item allows you to instruct the CMM not to increase the fan speed when the fan tach RPM events are asserted. The CMM commands for this data item are:

  ```
  cmmget -l chassis -d FanRPMEventsAffectFanSpeed
  cmmset -l chassis -d FanRPMEventsAffectFanSpeed -v yes
  cmmset -l chassis -d FanRPMEventsAffectFanSpeed -v no
  ```

- A new data item, syncuserscripts, has been added to allow you to set the synchronization direction of user scripts. For example:

  ```
  cmmset -d syncuserscripts -v upgrade
  cmmget -d syncuserscripts
  ```


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- A new data item, failoveronredundancy, has been added to set the failover configuration. For example:

  ```
  cmmset -d failoveronredundancy -v automatic
  ```

  ```
  cmmget -d failoveronredundancy
  ```

- You can now set the value “any” with the failover data item as follows:

  ```
  cmmset -d failover -v any
  ```

- Operations are now performed on fantray locations and not chassis location. Also, you now specify actual cooling levels as defined by the fantray firmware rather than using percentages. You can also get the minimum and maximum cooling level. Finally, you can configure the default cooling levels when operating at normal temperature and at the minor temperature level. The new commands supported are:

```
cmmset -l fantrayX -d minorlevel -v [normallevel - majorlevel ]
cmmset -l fantrayX -d normallevel -v [ minimumsettng - minorlevel
]
cmmset -l fantrayX -d control -v [ EmergencyShutdown | fantray |
CMM | defaultcontrol ]
cmmset -l fantrayX -d defaultcontrol -v [ fantray | CMM ]
cmmset -l fantrayX -d restoredefaults -v 1
cmmget -l fantrayX -d minorlevel
cmmget -l fantrayX -d normallevel
cmmget -l fantrayX -d minimumsetting
cmmget -l fantrayX -d maximumsetting
cmmget -l fantrayX -d recommendedsetting
cmmget -l fantrayX -d control
cmmget -l fantrayX -d defaultcontrol
cmmget -l cmm -d temeraturelevel
cmmget -l fantrayX -d currentfanlevel
```


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- You can now launch a script when a CMM becomes active and when it goes to standby.

The following issues reported in previous releases are fixed in this release:

- New SBY_CMM and Filter Tray become M7 after rebooting ACT_CMM continuously
- CMM can't sync if other CMM is inserted within 45 seconds after one CMM
- Missing a CMM 1 Redundancy Lost due to CMM reboot or halt deassertion event.
- The dataitem “listdataitems” does not work with “all_leds” target in “cmmget”
- CMM hangs if temperaturelevel and/or currentfanlevel is queried.
- Two different cooling levels operate when fantray.cfg does not sync
- Changing root password corrupts RMCP service
- Power Supply events incorrectly interpreted
- CMM might process health events out of order
- User-defined startup script does not function as described in the Technical Product Specification
- High-bit set on discrete sensor readings
- Process Monitoring Service might contain wrong state information
- The BIST software update failure does not clear after successful installation
- CMM SEL Clear does not work when receiving a large number of events
- CMM & fantray don't work when continuously executing clearmajor/minor
- When a component does not have a FRU name, the FRU format is malformed
- snmpget utility will generate a “Cannot find module” error
- Device Locator Records are not handled correctly by the CMM
- Datasync Status query returns “Encountered a Problem”
- CMM returns “IMB ERROR Completion Code Error” when querying thresholdsall on components that do not support sensor thresholds
- CLI error: An unknown error occurred
- CMM reboots itself (by PMS)
- CMM may become unstable if booted with an empty SDR Repository
- Locator Records for the CMMs are missing from SDR repository
- Transportlayer fails to set 3 digit ending IP address
- Failover and Restart recovery action on standby CMM does not send corresponding “attempting recovery action” SNMP trap
- All sensor-specific events are displayed in SEL as “Deassertion Event”
- Minor event gets set to Normal event when Major event is deasserted
- Datasync Status query not rejected on standby CMM
- Setting cmmPowerSequence via SNMP returns errors
- Action script to Power Entry Module cannot be set via SNMP

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- SNMP trap string changed
- Chassis FRU information is incorrect
- Temp event causes a fantray to exit emergencyshutdown control

Version 5.2.0.1205

About this release

- January 31, 2005
- CMM software version: V5.2.0.1205
- RedBoot* version: V1.3.5
- FPGA version: 0x0A

Special Update Instructions

- New firmware versions:
  Kennicott: 1.9
  Fantray: 1.7
  PEM: 1.7
- New version of the chassis FRU (CDM) is available: 108.

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- MPCMM0001.mib updated to 5.8.0. New objects added which allow setting of the eventaction scripts from the SNMP interface for all locations.
- Added SNMP and Wrapper Process/BPM PIEs.
- CMM provides a mechanism on ATCA to launch a script when the CMM has become Active, and to also execute a script when the CMM has gone to Standby. It is an extension of the current "CMM Status" sensor implementation, which includes Active, Standby, CMM Ready, CMM not Ready, CMM Ready Timeout, and CMM Ready after timed out.
- The thresholds for filter tray temperature sensors (FilterTrayTemp 1 and FilterTrayTemp 2) have been changed as follows:
  Upper non critical from 48C to 30C
  Upper critical from 53C to 40C
  Upper non recoverable critical from 80C to 53C
- IMB Error Enhancement
- Can start PmsMonitor shadow process many times with invalid option
- CMM must monitor and recover SNMP sanity
- Define Process Monitoring Health Checks
- Health Check: Blade Wrapper Processes
- Process Monitoring: Health Check Failure

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- No sel entries when pmsproc for blades are killed
- Corrective action occurs when sanity monitor for blade are disabled
- New sensor “datasync status” added

The following issues reported in previous releases are fixed in this release:

- “Get FRU Inventory Area Info” does not correctly verify FRU Device ID
- Need SNMP equivalent support (to CLI) for EventAction
- Blade is reported as “Not Present” after failover repeatedly occurs
- Continuously updating shelfLocation using SNMP causes errors to be reported
- SNMP does not check for valid targets on CMM FRU
- Extracting SBC does not trigger state transition to M0.
- CMM fails to list all targets on Kennicot SBC

Version 5.2.0.847

About this release

- December 9, 2004
- CMM software version: V5.2.0.847
- RedBoot* version: V1.3.2
- FPGA version: 0x09

Special Update Instructions

- Chassis FRU Update is Required, new fru version is 107

New Fixes and Features

Below is a list of new features and functionality changes in this release. For more information on these changes please refer to the Software Technical Product Specifications.

- When a message fails to be put on a message queue it isn't logged to critical log (in Flash) they are logged to the components log file (in RAM). Debug Logging must be enabled to see these statements
- New dataitem introduced - "syncuserscripts" to allow user to set the user scripts synchronization direction.
- New dataitem introduced - "failoveronredundancy" to set the failover configuration.
- New additional set value - "any" introduced for the already existing "failover" dataitem.
- All old fanspeed commands are deprecated and to be removed at a time to be determined. Customers should begin using the new fantray conventions.
- Operations are now performed on fantray locations and not on the chassis location.
- Percentages will no longer be used when setting cooling levels the user will use actual cooling levels as defined by the fantray firmware. The user will have the ability to get the minimum cooling level and maximum cooling level.

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- The vendor will now be able to configure default cooling levels to be used when operating at the normal temperature level and minor temperature level.
- New fantray commands:

```
cmmset –l fantrayX –d minorlevel –v [ normallevel – majorlevel ]
cmmset –l fantrayX –d normallevel –v [ minimumsetting – minorlevel
]
cmmset –l fantrayX –d control –v [ EmergencyShutdown | fantray |
CMM | defaultcontrol ]
cmmset –l fantrayX –d defaultcontrol –v [ fantray | CMM ]
cmmset –l fantrayX –d restoredefaults –v 1
cmmget –l fantrayX –d minorlevel
cmmget –l fantrayX –d normallevel
cmmget –l fantrayX –d minimumsetting
cmmget –l fantrayX –d maximumsetting
cmmget –l fantrayX –d recommendedsetting
```

```
cmmget –l fantrayX –d control
cmmget –l fantrayX –d defaultcontrol
cmmget –l fantrayX –d currentfanlevel
```

```
cmmget –l cmm –d temperaturelevel
```

- SNMP MIB has been updated
- New dataitem "standbycmmreboot" that can be used to reboot the standby CMM from either the active CMM or the standby CMM itself. The CLI syntax is: cmmset -d standbycmmreboot -v 1

The following issues reported in previous releases are fixed in this release:

- SDR manager may report incorrect state of SBC
- Monitor the Process Monitoring Service
- Failover when Process Monitoring Service Dies
- PMS: Continue to retry recovery actions
- IPMI Sensor Type: System Firmware Progress
- IPMI Sensor Type: System Firmware Progress - Notification
- FRU Update Utility
- SNMP traps should be sent out for unrecognized sensors
- New SBY_CMM and Filter Tray become M7 after rebooting ACT_CMM continuous
- SEL gets to size 8184 and causes wrapper proc 23 to hang
- IPMI Sensor Type: Watchdog 2 and notification
- Support heterogeneous synchronization during CMM Upgrade and Downgrade
- Configure for Automatic or Manual Failover following update
- RMCP server on CMM responds incorrect RMCP/IPMI error message
- CMM does not interpret sensor type code 20h events
- frucontrol script sample needed
- Clearmajor/minor commands should clear major/minor alarm LEDs on both CMMs

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- cmmset -l fantray1 -t hsled -d ledstate -v lamptest,10000,blue
- Invalid targets and dataitems are unexpectedly supported
- CDM becomes "removed" after SBYCMM is rebooted
- cmmset -l cmm -d fruextractionnotify -v 1 successfully
- CLI (cmmset -l system -d clearmajor -v 50)
- Command handler does not fully catch invalid commands

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Summary Table of Changes

The following table indicates the errata, specification changes, specification clarifications, or documentation changes which apply to the Intel NetStructure® MPCMM0001/MPCMM0002 Chassis Management Module product. Intel may fix some of the errata in a future stepping of the component, and account for the other outstanding issues through documentation or specification changes as noted. This table uses the following notations:

Codes Used in Summary Table

Page

(Page):	Page location of item in this document.

Status

Doc:	Document change or update will be implemented.
Fixed:	This erratum has been previously fixed.
No Fix:	There are no plans to fix this erratum.
Plan Fix:	This erratum may be fixed in a future stepping of the product.
EB:	Expected behavior.

Row

	Change bar to left of table row indicates this erratum is either new or modified from the previous version of the document.

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Errata

No.	Page	Status	Errata
1	33	Plan Fix	Incorrect error message “Non IPMI Blade”
2	33	Plan Fix	Critical events (non-recoverable thresholds) not enabled
3	33	Doc	SNMP MIB issue: Sensor tables don't have a sensor name column
4	33	Plan Fix	No SEL event logged on forced Failover
5	34	Plan Fix	CMM does not error-check target name if location is "system"
6	34	Plan Fix	Several SNMP queries don't direct user to active CMM
7	34	Plan Fix	RMCP - STATUS ERROR completion code not reflecting accurate status
8	34	Plan Fix	Standby CMM does not retain major event after reboot
9	34	Plan Fix	The fru values returned by fruUpdate and cmmget are not consistent
10	35	Plan Fix	Blades powered up in random sequence during testing of power sequence
11	35	Plan Fix	Unable to update the "AM2" field in product area of the chassis FRU
12	35	Plan Fix	The fru values returned by fruUpdate and cmmget are not consistent
13	35	Plan Fix	Healthevents get lost after a failover
14	35	Plan Fix	Cannot get PEM's hot swap state using SNMP
15	35	Plan Fix	Crossing low threshold generates “Going High” message
16	36	Plan Fix	Inappropriate warning message when resetting a blade’s powerstate for an invalid location
17	36	Plan Fix	cmmget command returns Infinite instead of an error message
18	36	Plan Fix	PMS does not resume Thread Watch Dog after adminstate is locked, shadow monitor is stopped or killed, then adminstate is unlocked
19	36	Plan Fix	Failover event does not show up in the SEL
20	37	No Fix	CMM may not failover automatically if a PMS critical event is raised
21	37	No Fix	System Firmware Progress Sensor: SEL and SNMP description is incorrect for offset 0x00
22	37	Plan Fix	Event type codes are not always interpreted correctly
23	37	Plan Fix	Multiple identical SEL entries
24	37	No Fix	Event severity for deassertion events is set incorrectly
25	37	Plan Fix	The PMS (Process Monitoring System) may occasionally restart the wrapper processes
26	38	Fixed	Blade does not transition from M2 to M3 with poweron command
27	38	Fixed	RMCP may fail to communicate with network interfaces
28	38	No Fix	M State transitions can get lost during failover
29	38	Fixed	Erroneous messages shown for sensors 0x0C and 0x07
30	39	Plan Fix	Site ID of Get Address Info command was set to 0x01
31	39	Plan Fix	Duplicated SEL/traps when reinserting abruptly removed board

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Errata

No.	Page	Status	Errata
32	39	Plan Fix	Active CMM stays in M5 state - inconsistent state of powerstate (M5) and fru hot swap (M4)
33	40	Plan Fix	RPC output for the cmmget -d thresholdsall command is incorrect
34	40	Plan Fix	Truncated string in threshold output

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Specification Changes

No.	Page	Specification Change
1	41	“Procedure of CMM Reboot Discovery”
2	43	“SNMP MIB Changes”
3	43	“Sensor Changes”
4	44	“Chassis FRU Downgrade”
5	44	“Monitoring CLI commands, IPMB traffic, and ejector signals on the CMMs”
6	51	“The cmmdump command shows filesystem free space in greater granularity”
7	51	“JHM Application and Driver”

Specification Clarifications

No.	Page	Specification Clarifications
1	57	CMM Status Sensor uses Reading Type byte in SEL events inconsistently
2	57	ProcessIntegrityInterval parameter and execution of a PIE
3	57	Lamptest function support
4	57	Halt command
5	57	Redundancy, Synchronization, and Failover - CMM Failover
6	57	CMM Scripting - Associating Scripts to Event Severity
7	58	IPMI Pass-Through - Overview
8	58	FRU Update Utility - FRU Recovery Process
9	58	All time information is maintained using UTC
10	58	Before updating CMM, ensure sufficient space on /home partition

Documentation Changes

No.	Page	Document Revision	Documentation Changes
1	59	273888-007	Error and return codes for RPC
2	64	273888-007	Dataitem keywords for cmmset command
3	64	273888-007	System firmware error hex value correction
4	64	273888-007	Set Event Receiver command not supported in RMCP
5	65	273888-007	CMM voltage and temperature sensor thresholds and sensor numbers
6	66	273888-007	CMM Status Event strings
7	66	273888-007	RPC usage example for IPMI pass-through incorrect
8	66	273888-007	Instructions on setting the SETIP variable incorrect
9	66	273888-007	Supported targets for cmm:fru1
10	67	273888-007	Supported values for frucontrol
11	67	273888-007	Warning about invalid RTC date
12	67	273888-007	Change of FaultLEDcolor dataitem to faultledcolor

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Documentation Changes

No.	Page	Document Revision	Documentation Changes
13	67	273888-007	RMCPUser file added to saveList
14	67	273888-007	fruUpdate utility available in firmware package
15	68	273888-007	shelfEventAction MIB object is a placeholder
16	68	273888-007	frudeactivationpolicy valid only for FRUs that support ECN001 or later
17	68	273888-007	Discrepancies between actual and specified BIST event strings
18	68	273888-008	FCC Verification Notice now mentions shielded cabling
19	69	273888-008	Table “IPMI Commands Supported by CMM RMCP” now shows privilege level
20	69	273888-008	Procedures for adding and removing CMM users added

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Errata

1. Incorrect error message “Non IPMI Blade”

Problem: There is a brief moment during the FRU's state transition where the CLI reports that the FRU is a "Non IPMI Blade". This is incorrect.

Implication: The customer may see this brief message at the CLI.

Workaround: None

Status: Plan Fix

2. Critical events (non-recoverable thresholds) not enabled

Problem: Critical events (non-recoverable thresholds) not enabled.

Implication: Critical events cannot be set/assigned for any of the FRUs. This means users cannot set assigned actions for these thresholds.

Workaround: None

Status: Plan Fix

3. SNMP MIB issue: Sensor tables don't have a sensor name column

Problem: For certain SNMP browsers (i.e., AdventNet*), when you display a table of sensors, the table doesn't include a column for the sensor name. Different MIB browsers may or may not decode the table index.

Implication: For the table of current readings, thresholds, etc, that is returned it isn’t clear what sensor they relate to.

Workaround: The index (i.e., the sensor name) can be seen by looking up "Index editor”. With AdventNet version 4 (and possibly earlier versions), you can right-click on any of the table column headers and select "View the non-accessible index". The sensor names then show up in a new column.

Status: Doc

4. No SEL event logged on forced Failover

Problem: When the standby CMM becomes the active due to a forced failover not caused by a CMM removal (i.e. SEGV, WDT, or Alarm button) it just becomes active and no SEL is logged.

Implication: No SEL event is logged when there should be one.

Workaround: None

Status: Plan Fix

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5. CMM does not error-check target name if location is "system"

Problem: If the user types in a "cmmget" command using the "system" location and ANY target name, the CMM doesn't check the target name for validity, and will respond to any target name input, even though the system location doesn't support any targets.

Implication: Cosmetic issue. System location does not support targets.

Workaround: None

Status: Plan Fix

6. Several SNMP queries don't direct user to active CMM

Problem: There are several instances where if the user queries something from the standby CMM via SNMP, the CMM doesn't direct the user to the active CMM. The CLI does. These include: ThresholdsAll, UpperNonRecoverable, UpperCritical, UpperNonCritical, LowerNonCritical, LowerCritical, LowerNonRecoverable, IgnoresPCIRst, MinorAction, MajorAction, CriticalAction, Normal-Action.

Implication: SNMP command is not consistent with CLI and will run incorrectly on standby.

Workaround: Do not use command on standby CMM.

Status: Plan Fix

7. RMCP - STATUS ERROR completion code not reflecting accurate status

Problem: The CMM currently returns 0xFF for STATUS ERROR which is an “unspecified error” in the IPMI Spec. The CMM should return an explicit completion code instead of “unspecified error”.

Implication: The status error returned does not accurately reflect the status of the failure.

Workaround: None

Status: Plan Fix

8. Standby CMM does not retain major event after reboot

Problem: The standby CMM should retain a major event even after a reboot and it does not. After disconnecting Eth1 of the standby CMM and rebooting it, both CMMs should report the same major event that was reported before reboot.

Implication: The active CMM does retain its major event, but the standby CMM loses its major event.

Workaround: None

Status: Plan Fix

9. The fru values returned by fruUpdate and cmmget are not consistent

Problem: When the fields in the chassis fru area are updated using fruUpdate utility, the cmmget command is not able to retrieve those updated values until the CMM is rebooted; however, the fruUpdate utility reads from the cache.

Implication: Until the chassis has finished rebooting the fruUpdate utility returns the newly updated values whereas the cmmget command returns the old values.

Workaround: Reboot the chassis if you update the FRU information and want to be able to read the new information using cmmget.

Status: Plan Fix

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10. Blades powered up in random sequence during testing of power sequence

Problem: Blades powered up in random sequence from one test pass to another, the blades didn't power up consistently and correctly twice in a row.

Implication: The blades may not power up in the appropriate sequence.

Workaround: None

Status: Plan Fix

11. Unable to update the "AM2" field in product area of the chassis FRU

Problem: The AM2 field in the product area of the chassis FRU cannot be updated using the fruUpdate utility.

Implication: The fruUpdate utility will not be able to update the AM2 field in the product area of the chassis FRU.

Workaround: None

Status: Plan Fix

12. The fru values returned by fruUpdate and cmmget are not consistent

Problem: When the fields in the chassis fru area are updated using fruUpdate utility, the cmmget command is not able to retrieve those updated values until the CMM is rebooted, but the fruUpdate utility as it reads from cache.

Implication: Until the chassis rebooted, the fruUpdate utility returns the newly updated values and the cmmget returns the old values.

Workaround: Reboot the chassis if you update the FRU information and want to be able to read the new information using cmmget.

Status: Plan Fix

13. Healthevents get lost after a failover

Problem: When a failover occurs right after a healthevent, the healthevent does not sync over and gets lost.

Implication: The healthevent that occurs will be lost.

Workaround: None

Status: Plan Fix

14. Cannot get PEM's hot swap state using SNMP

Problem: Trying to query for the PEM's hotswap state doesn’t give any output.

Implication: You cannot read a PEM’s hot swap state using SNMP.

Workaround: None

Status: Plan Fix

15. Crossing low threshold generates “Going High” message

Problem: When a critical or non-recoverable threshold is crossed going low, CMM incorrectly displays the message “Crossed Upper Critical Going High” or “Crossed Upper Non-Recoverable Going High”, respectively. The messages should say “Crossed Upper Critical Going Low” or “Crossed Upper Non-Recoverable Going Low”.

Implication: The entries for these events in the SEL are incorrect.

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Workaround: None

Status: Plan Fix

16. Inappropriate warning message when resetting a blade's powerstate for an invalid location

Problem: If you attempt to reset the powerset for a blade for an invalid location, the following warning message is displayed:

```
WARNING: Resetting this blade may have many adverse effects. This
action can take up to HealthyRampUp seconds to take effect after
the command completes. Please consult the documentation before
continuing. Do you want to continue? (Y/N)
```

If you press 'Y' and continue, you then see the following message:

```
CLI Invalid Location Error
```

The warning message is superfluous since the invalid location specified in the command will prevent it from executing.

Implication: None

Workaround: Ignore the message.

Status: Plan Fix

17. cmmget command returns Infinite instead of an error message

Problem: If you enter the cmmget command with certain invalid combinations of targets and data items, you will be returned the value Infinite instead of getting the message CLI Invalid Target Error or CLI Invalid Data Item Error (depending on which argument is invalid in the command).

Implication: You should ignore the returned value of Infinite if the combination of target and data item entered in the cmmget command is invalid.

Workaround: None

Status: Plan Fix

18. PMS does not resume Thread Watch Dog after adminstate is locked, shadow monitor is stopped or killed, then adminstate is unlocked

Problem: If you lock the adminstate, stop or kill the shadow process monitor, then unlock the adminstate, the shadow process monitor will not resume (if stopped) or restart (if killed).

Implication: Process monitoring is degraded in this situation since the shadow process monitor is no longer available.

Workaround: Run PMS in normal operating mode (where both existence and integrity monitoring are enabled).

Status: Plan Fix

19. Failover event does not show up in the SEL

Problem: When the active CMM is pulled out of the chassis and failover occurs, it is not recorded in the SEL.

Implication: You will not see the failover event in the SEL, and no SNMP traps will be sent out regarding the failover, when an active CMM is pulled out of the chassis.

Workaround: None

Status: Plan Fix

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20. CMM may not failover automatically if a PMS critical event is raised

Problem: Some PMS (Process Monitoring System) events that contribute to system health are not taken into account when checking for the need for failover.

Implication: The active CMM may not failover to the standby CMM even if the health of the standby CMM is better than that of the active CMM.

Workaround: None

Status: No Fix

21. System Firmware Progress Sensor: SEL and SNMP description is incorrect for offset 0x00

Problem: If a system firmware progress event at offset 0x00 is generated, the description of the event stored in the System Event Log and generated by the SNMP trap says that the error is unknown.

Implication: The specifics of the error cannot be retrieved.

Workaround: None

Status: No Fix

22. Event type codes are not always interpreted correctly

Problem: If an invalid event type code is found in an event message, the CMM firmware processes the code as if it were valid. SEL entries made and SNMP traps sent will include the erroneous interpretation of the event type code.

Implication: Invalid event type codes are not flagged.

Workaround: None

Status: Plan Fix

23. Multiple identical SEL entries

Problem: In some cases the same SEL entry is logged multiple times. All the SEL data, including timestamps, are identical.

Implication: Examining the SEL file may give the false preliminary impression that a given event has occurred more than once.

Workaround: None

Status: Plan Fix

24. Event severity for deassertion events is set incorrectly

Problem: The event severity is not always set to OK as it should be.

Implication: The CMM shows health events for deasserted events.

Workaround: None

Status: No Fix

25. The PMS (Process Monitoring System) may occasionally restart the wrapper processes

Problem: Very occasionally the PMS (Process Monitoring System) may restart the wrapper processes.

Implication: If a healthevent arises during the restarting of the wrapper processes, it will not be recorded.

Workaround: None

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Status: Plan Fix

26. Blade does not transition from M2 to M3 with poweron command

Problem: Blades do not transition from state M2 to state M3 when the poweron command is executed

Implication: If failover occurs at a certain point blades will not power up.

Workaround: Make the redundant CMM active and reinsert the blade.

Status: Fixed

27. RMCP may fail to communicate with network interfaces

Problem: RMCP may fail to bind or listen to eth0 and eth1 interfaces

Implication: Firmware upgrades for blades using the RMCP interface will not work

Workaround: Disable and then re-enable RMCP.

Status: Fixed

28. M State transitions can get lost during failover

Problem: If an M state transition is received from a blade during failover, neither CMM will act on the state transition.

Implication: The CMMs could report an incorrect M state for the blade.

Workaround: Query the hot swap sensor directly.

Status: No Fix

29. Erroneous messages shown for sensors 0x0C and 0x07

Problem: CMM retrieves erroneous messages for sensors 0x0C and 0x07. In the explanations below, XX = sensor number.

- When the CMM retrieves this event (raw Hex representation): 04 0C XX 08 00 00 00
  SEL should show: "Memory Device Removed: Assertion Event"
  SEL erroneously shows: "Memory Inserted: Assertion Event"
  SNMP Trap msg should show: "Sensor : Memory , Event : Device Removed: Assertion Event"
  SNMP Trap msg erroneously shows: "Sensor : Memory , Event : Fan Tray Removed: Assertion Event"
- When the CMM retrieves this event (raw Hex representation): 04 0C XX 88 00 00 00
  SEL should show: "Memory Device Removed: Deassertion Event"
  SEL erroneously shows: "Memory Inserted: Deassertion Event"
  SNMP Trap msg should show: "Sensor : Memory , Event : Device Removed: Deassertion Event"
  SNMP Trap msg erroneously shows: "Sensor : Memory , Event : Fan Tray Removed: Deassertion Event"
- When the CMM retrieves this event (raw Hex representation): 04 0C XX 08 01 00 00
  SEL should show: "Memory Device Inserted: Assertion Event"
  SEL erroneously shows: "Memory Inserted: Assertion Event"
  SNMP Trap msg should show: "Sensor : Memory , Event : Device Inserted: Assertion Event"
  SNMP Trap msg erroneously shows: "Sensor : Memory , Event : Fan Tray Inserted: Assertion Event"
- When the CMM retrieves this event (raw Hex representation): 04 0C XX 88 01 00 00
  SEL should show: "Memory Device Inserted: Deassertion Event"
  SEL erroneously shows: "Memory Inserted: Deassertion Event"

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SNMP Trap msg should show: "Sensor : Memory , Event : Device Inserted: Deassertion Event"
SNMP Trap msg erroneously shows: "Sensor : Memory , Event : Fan Tray Inserted: Deassertion Event"

- When the CMM retrieves this event (raw Hex representation): 04 07 XX 08 00 00 00
  SEL should show: "CPU Device Removed: Assertion Event"
  SEL erroneously shows: "CPU Inserted: Assertion Event"
  SNMP Trap msg should show: "Sensor : CPU , Event : Device Removed: Assertion Event"
  SNMP Trap msg erroneously shows: "Sensor : CPU , Event : Fan Tray Removed: Assertion Event"
- When the CMM retrieves this event (raw Hex representation): 04 07 XX 88 00 00 00
  SEL should show: "CPU Device Removed: Deassertion Event"
  SEL erroneously shows: "CPU Inserted: Deassertion Event"
  SNMP Trap msg should show: "Sensor : CPU , Event : Device Removed: Deassertion Event"
  SNMP Trap msg erroneously shows: "Sensor : CPU , Event : Fan Tray Removed: Deassertion Event "
- When the CMM retrieves this event (raw Hex representation): 04 07 XX 08 01 00 00
  SEL should show: "CPU Device Inserted: Assertion Event"
  SEL erroneously shows: "CPU Inserted: Assertion Event"
  SNMP Trap msg should show: "Sensor : CPU , Event : Device Inserted: Assertion Event"
  SNMP Trap msg erroneously shows: "Sensor : CPU , Event : Fan Tray Inserted: Assertion Event "
- When the CMM retrieves this event (raw Hex representation): 04 07 XX 88 01 00 00
  SEL should show: "CPU Device Inserted: Deassertion Event"
  SEL erroneously shows: "CPU Inserted: Deassertion Event"
  SNMP Trap msg should show: "Sensor : CPU , Event : Device Inserted: Deassertion Event"
  SNMP Trap msg erroneously shows: "Sensor : CPU , Event : Fan Tray Inserted: Deassertion Event"

Workaround: None.

Status: Fixed

30. Site ID of Get Address Info command was set to 0x01

Problem: The "Site ID" of the "Get Address Info" command (the 7th byte of response data) was set to "0x01" in all slots. Problem already fixed for Dutch Harbor only.

Workaround: None.

Status: Plan Fix

31. Duplicated SEL/traps when reinserting abruptly removed board

Problem: Kennicott blade was abruptly removed from chassis. After transition to M7 state, it was reinserted and the sel and traps were checked. Transition to M4 was reported twice.

Workaround: None.

Status: Plan Fix

32. Active CMM stays in M5 state - inconsistent state of powerstate (M5) and fru hot swap (M4)

Problem: Active CMM stays in M5 state - inconsistent state of powerstate (M5) and fru hot swap (M4). To reproduce:
1. Open and close latch on active CMM1 many times. CMM1 should not reboot because of fast

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opening and closing latch. Only failover should occur. Wait for failover caused by system.
2. Observe the powerstate on newly standby CMM1. When the powerstate returns M5, perform failover manually from CMM2.
3. Wait 30 s. and check powerstate and FRU hot swap state on newly active CMM1.

Workaround: None.

Status: Plan Fix

33. RPC output for the cmmget -d thresholdsall command is incorrect

Problem: The output for the command cmmget -t <target> -d thresholdsall executed via RPC looks like the 3rd threshold value (uppernoncritical) is empty and the next values are shifted.

Workaround: None.

Status: Plan Fix

34. Truncated string in threshold output

Problem: The "Celsius" string is truncated at least for one sensor when a three-digit threshold is set.

Workaround: None.

Status: Plan Fix

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Specification Changes

1. Procedure of CMM Reboot Discovery

Summary

The purpose of this section is to describe the procedure to determine the cause of CMM reboots. The features described in this document are applicable to the version 4.11x and 5.*x* firmware releases.

Current State

Currently, CMM could reboot by one of the following sources:

- Telco alarm silence (Front Panel Reset) button pressed and held for approximately 5 seconds
- CMM power on / Chassis power loss and powered back on
- CMM removal / insertion
- Firmware update (TFTP vs. FTP)
- "Reboot" or "Shutdown" command
- Command by user on the Active CMM to reboot the Standby in 5.2
- CMM latch open
- Process Monitoring Service (PMS)
- Kernel panic
- CMM CLI "PowerState" dataitem "reset" (location -l cmm)
- Watchdog Timer (WDT) fires due to system hang

In order to distinguish between a HW-induced reboot (for example, WDT) and other reboots, a "process of elimination" approach is advised.

Discovery Procedure

1. Log on to the CMM suspected of rebooting.
2. Dump the CMM SEL and look for the string "CMM Boot" in the SEL. Use the cmmget -d SEL | grep -C "CMM Boot" command to obtain the last "CMM Boot" SEL entry along with its date and time stamp. For example, the output may be as follows, as example:

   ```
   Thu Dec  2 16:40:42 2004
   BIST    CMM Boot.
   ```

3. If the "CMM Boot" SEL entry is not found, no reboot occurred. Terminate this procedure. Otherwise, reboot occurred. Continue the procedure.
4. Dump the CMM SEL and look for the string "Software update successful" in the SEL. Use the cmmget -d sel | grep -C "Software update successful" command to obtain the list of the SEL entries along with its date and time stamp. The output will be as follows, as example:

   ```
   Thu Dec  2 16:40:42 2004
   ```


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```
BIST    Software update successful
```

5. If the "Software update successful" SEL entry is found, and the last SEL entry of the "Software update successful" is before the last SEL entry of the "CMM Boot" within the same date and time stamp plus a second or two, then the reboot was caused by the CMM firmware update via FTP. Terminate this procedure. Otherwise, continue the procedure.
6. Dump the user.log archives and look for the string "DataItem:powerstate, Data:reset", starting with the user.log.1.gz file and end with the user.log.1.gz file, if it exists. Use Linux "gzip -d" command to unzip the archives and use the grep command to obtain the last "DataItem:powerstate, Data:reset" log entry along with its date and time stamp. For example,

   ```
   gzip -d /home/log/user.log.1.gz
   ```

   ```
   grep "DataItem:powerstate, Data:reset" /var/log/user.log
   ```

And the output could be

```
Oct 18 11:09:01 MPCMM0001 cmmset:  User:root, Action:Set,
Location:cmm, DataItem:powerstate, Data:reset
```

7. If the log entry "DataItem:powerstate, Data:reset" is found, and its date and time stamp is within 90 seconds prior to the "CMM Boot" SEL entry, then the reboot was caused by the CMM CLI "-d powerstate -v reset" command. Terminate this procedure. Otherwise, continue the procedure.
8. Dump the /home/log/error.log file and look for the string “DoReboot”. Use the grep command to obtain the last “DoReboot” log entry along with its date and time stamp. For example:

   ```
   grep "DoReboot" /home/log/error.log
   ```

   And the output could be:

   ```
   Oct 18 16:49:02 svg-c12-2 PmsMonitor: Pid:211 RecoveryManager.c
   DoReboot() #1066 <crit> SEL: Reboot requested due to Uid 54.
   ```

9. If the log entry “DoReboot” is found and its date and time stamp is within 90 seconds prior to the “CMM Boot” SEL entry, the reboot was caused by the PMS. Terminate this procedure. Otherwise, continue the procedure.
10. Check the existence of the /home/crash.log file. If the crash.log exists, and its date and time stamp is within 90 seconds prior to the "CMM Boot" SEL entry, then the reboot was caused by the kernel panic. Terminate this procedure. Otherwise, continue the procedure.
11. Log on to the other CMM. If it is not active, failover from the other CMM, then make sure it is active.
12. Dump the user.log archives and look for the string "DataItem:standbycmmreboot", starting with the user.log.1.gz file and end with the user.log.1.gz file, if it exists. Use Linux "gzip -d" command to unzip the archives and use the grep command to obtain the last "DataItem:standbycmmreboot" log entry along with its date and time stamp. For example,

    ```
    gzip -d /home/log/user.log.1.gz
    ```

    ```
    grep "DataItem: standbycmmreboot" /home/log/user.log
    ```

And the output could be

```
Oct 18 11:09:01 MPCMM0001 cmmset:  User:root, Action:Set,
Location:cmm, DataItem: standbycmmreboot
```

13. If the log entry "DataItem:standbycmmreboot" is found, and its date and time stamp is within 90 seconds prior to the "CMM Boot" SEL entry, then the reboot was caused by the CMM CLI

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"-d standbycmmreboot" command. Terminate this procedure. Otherwise, continue the procedure.

14. Dump the CMM chassis SEL and look for the string "CMM Redundancy Lost due to CMM removal" in the SEL. Use the "grep -C" command to obtain the last "CMM Redundancy Lost due to CMM removal" SEL entry along with its date and time stamp. For example,

    ```
    cmmget -d SEL | grep -C "CMM Redundancy Lost due to CMM removal"
    ```

15. If the "CMM Redundancy Lost due to CMM removal" SEL entry is found, and its date and time stamp is within 90 seconds prior to the "CMM Boot" SEL entry, then the reboot was caused by the CMM removal. Terminate this procedure. Otherwise, continue the procedure.

16. For Telco alarm silence button press, Power cycle chassis, Firmware update via TFTP, Linux "Reboot" or "Shutdown" command, and CMM latch open, you need to have an administration log to track operator activities in the field. If the log does not exist, then the reboot was caused by WDT.

2. SNMP MIB Changes

The MIB objects cmmPieTestDataEventCount, cmmPieTestDataEventData, and cmmPieSNMPLoopBackTest have been added to the SNMP MIB file to expose these special OIDs that are used by the Process Monitoring Service and are reserved for its internal functioning.

The MIB objects shelffrushelfLocation, b#LocationSpanned, b#FruShelfManagerControlledActivation, fanTrayFruShelfManagerControlledActivation, and pemFruShelfManagerControlledActivation were removed from the MIB because they were never implemented.

3. Sensor Changes

The following changes have been implemented to the sensors in the CMM firmware:

- The entity instance ID of all CMM sensors is 60h.
- The Filter Run Time sensor generates an **assertion** event when the *upper* non-critical or the *upper* critical threshold is crossed *going high* and a **deassertion** event when the *upper* non-critical or the *upper* critical threshold is crossed *going low*. This sensor does not generate an event when any of the other thresholds are crossed.
- Certain sensors generate events only under the following conditions:
  - An **assertion** event when the *upper* non-critical, *upper* critical, or *upper* non-recoverable threshold is crossed *going high* and the corresponding **deassertion** event when the *upper* non-critical, *upper* critical, or *upper* non-recoverable threshold is then crossed *going low*
  - An **assertion** event when the *lower* non-critical, *lower* critical, or *lower* non-recoverable threshold is crossed *going low* and the corresponding **deassertion** event when the *lower* non-critical, *lower* critical, or *lower* non-recoverable threshold is then crossed *going high*

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The sensors that behave this way are: VBAT, VTT DDR, +2.5V, +3.3V, +5V, +12V, CPU Core V, Brd Temp, CPU Temp, FilterTrayTemp 1, FilterTrayTemp2

In all other cases, crossing a threshold does *not* cause these sensors to generate an event.

4. Chassis FRU Downgrade

In versions of firmware prior to 5.2.5, when the CMM firmware was updated, the CDM FRU was either automatically or manually updated. However, there was no support for CDM FRU downgrade.

Beginning in version 5.2.5 firmware the configuration file .CFG for FRU Update utility is extended in support of CDM FRU downgrade. For each version of the CDM FRU released, a CFG file will be created that will be able to update the CDM FRU to that version of the CDM FRU. The CFG file will be able to update from all supported versions of the FRU released at the time of the CFG file release. Any CDM FRU versions released at a later time will require a new CFG file. If the CFG file does not understand the version of the FRU on the system, the FRU will not be modified and a message will notify the user.

- The CFG files are named after the target chassis and version of the FRU they will upgrade the CDM to. Example: MPCHC104.cfg (MPCHC - MPCHC chassis FRU, 104 - version to which the CDM will be updated).
- Each file is a fully automated update and will not query the user for any input.
- All CFG files included with the distribution can be found in the fruUpdate.zip file.

At each CMM firmware release, Intel will release the latest CDM version .FRU file and updated versions of the multiple CFG files that contain the needed changes to downgrade to the previous target versions. When a new version of the CDM is released, all of these files will be updated in the CMM software package to include a method to modify the FRU from the new version to the version defined by the .CFG file. A new file will also be added to support going to the new CDM version.

The CFG files will have to be run manually, using the FRU update utility, before downgrading the firmware images on the CMMs. If the FRU image is updated after the CMMs have been downgraded, the CMM may not operate using the correct FRU information.

The user executes the FRU Update utility specifying the .CFG of the target CDM version:

```
LD_LIBRARY_PATH=. ./fruUpdate -u MPCHCnnn.CFG
```

where nnn is the desired target version. For example, to update from CDM v107 to v109:

```
LD_LIBRARY_PATH=. ./fruUpdate -u MPCHC109.CFG
```

5. Monitoring CLI commands, IPMB traffic, and ejector signals on the CMMs

Issue: A new monitoring feature has been introduced to allow logging of IPMB messages, presence signals, ejector events on the CMMs (but not the blades), and CLI commands. The two principal runtime components of this feature are the IPMB monitor driver running inside the kernel that captures the information to be monitored, and the IPMB monitor daemon running in user space—the pathname is `/usr/local/cmm/bin/ipmbmon_daemon`—that stores the captured information in the file system.

Files where information is stored

CLI commands (`cmmget` and `cmmset`) are stored in the file `cli.user.log` by the CLI itself.

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The other kinds of information are collected by the IPMB monitor deamon and stored in binary format in three files:

- `ipmb.bin`—Stores information about IPMB and I^2C messages sent to and received by the FPGA driver.
- `slot.bin`—Stores information about the receipt of the interrupt notifying the CMM of the ejector event.

Each entry in the binary files is numbered sequentially starting with 1. After a reboot of the CMM, subsequent log entries continue to be appended to the end of appropriate binary file but the numbering restarts at 1.

To view each of these files in human-readable format, execute the `ipmbmon_dump` command as follows:

`ipmbmon_dump [-b` *bus_number*`] [-n]` *binary_file*

The argument *binary_file* is either `ipmb.bin` or `slot.bin`.

Output is sent to the standard output.

The `-b` option can be specified with `ipmb.bin`. If this option is specified, the output is filtered to include data only for the specified bus. The bus number must be a decimal number.

The `-n` option directs `ipmbmon_dump` to read the entire binary file regardless of any restarting of entry sequence numbers that it might encounter.

Note: If the `-n` option is not used, `ipmbmon_dump` stops reading when it encounters a logged entry where the message number for that entry is out of sequence. Since the numbering of logged events appended to the end of any of the binary files restarts at 1 after a reboot, omitting the `-n` option causes `ipmbmon_dump` to stop read the binary file once it encounters the second entry in the file with a sequence number of 1. This effectively limits `ipmbmon_dump` to reading only those entries that were logged between the time the current binary file was created and the time of the first subsequent reboot of the CMM.

Configuring monitoring with ipmbmon_config

Monitoring is disabled in the CMM firmware as shipped because a default version of the configuration file `ipmbmon.cfg` is not provided. Monitoring is configured and enabled with the `ipmbmon_config` command or by creating the file `/etc/ipmbmon.cfg`, assigning values to the parameters described in "Configuration file" on page 47, then executing the command

Note: The configuration file must be used to mount an external filesystem using NFS. The configuration file must also be used to automatically start logging at system startup and make a given configuration persistent across reboots. The `ipmbmon_config` command can be used to change the configuration parameters (other than those for NFS) during runtime, such as changing the logging levels "on the fly".

To first enable monitoring, create the configuration file, then execute the command `ipmbmon_config -c`. Once the configuration file exists, logging is automatically restarted whenever the CMM reboots.

The syntax of the `ipmbmon_config` command is:

`ipmbmon_config [-c [-m]] [-s` *size*`] [-p` *log_path*`][-t` *target* `-l` *log_level*`] [-i]`

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The options are associated arguments (if any) are described below.

`-c` Read `/etc/ipmbmon.cfg` file. If it does not exist, disable all logging.

`-m` Mount an NFS filesystem using the NFS parameters specified in the configuration file `ipmbmon.cfg`.

`-s` *size* Maximum allowed size of all the log files. When a log file grows larger than *size*, the suffix `.old` is appended to the file name and a new empty log file with the original file name is created. All new log entries are then written to the new log file. All other log files are then also renamed in the same way when next written to even if those log files have not yet grown to *size* byes. If *size* is 0, this rotation of log files does not happen. Instead, the original log files continue to grow without limit.

`-p` *log_path* Pathname of the directory where the files `ipmb.bin`, `slot.bin`, and `cli.user.log` are stored. Do not specify the same directory pathname for both CMMs to avoid the possibility of both CMMs trying to write to the same file at the same time.

`-t` *target* Target for which logging is to be enabled or disabled. Possible values for target are:

ALL—All targets (CLI, IPMB, and SLOT)

CLI—CLI console commands

IPMB—IPMB traffic

SLOT—Ejector events on the CMMs

`-l` *log_level* Level of logging for the specified target. For CLI and SLOT, a *log_level* of 0 disables logging and 1 enables logging. For the ALL target, a *log_level* of 0 disables all logging and a value of 1 sets logging for each target to the value defined in the configuration file.

For IPMB, a bit vector specifies which buses are to have logging enabled. The value of the bit vector is denoted by a either a decimal number or a hexadecimal number prefixed with 0x. Each bit in the bit vector that is set to 1 enables logging for the bus associated with that bit.

The bit positions and their associated buses are:

Bit 0 : blades for IPMB 0

Bit 1 : cmm for IPMB 0

Bit 2 : pwr and fan for IPMB 0

Bit 3 : chassis for IPMB 0

Bit 4 : blades for IPMB 1

Bit 5 : cmm for IPMB 1

Bit 6 : pwr and fan for IPMB 1

Bit 7 : chassis for IPMB 1

A value of 0x00 disables logging for all the buses; a value of 0xFF enables logging for all the buses.

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`-i` Shows current status of the logging levels

For example, to turn off all logging, execute this command:

```
ipmbmon_config -t ALL -l 0
```

To resume logging using the values defined in the configuration file, execute this command:

```
ipmbmon_config -c
```

Configuration file

The configuration file `/etc/ipmbmon.cfg` contains certain parameters that affect how logging functions. This file, which must be created manually after installing the CMM firmware, is read during the boot process before other drivers are started and before the CMM firmware is started. The file is also read when the command `ipmbmon_config -c` is executed.

The file can include the following parameters:

NFS_ServerIP	IP address of the NFS server where the log directory will be stored.
NFS_ServerPath	NFS Server path exported on the server.
NFS_MountPoint	Directory on the CMM on which the server path will be mounted.
NFS_MountPointCreate	If set to 1, the mount directory will be created.
MaxLogSize	The maximum allowed log size in bytes. When the size of the log file exceeds this value, the string `.old` is appended to the name of the file and a new empty log file with the original file name is created.
LogPath	Pathname of the directory where the files `ipmb.bin`, `slot.bin`, and `cli.user.log` are stored. Do not specify the same directory pathname for both CMMs to avoid the possibility of both CMMs trying to write to the same file at the same time.
LogLevel_CLI	Logging level for CLI commands. If set to 0, logging is disabled; if set to 1, logging is enabled.
LogLevel_SLOT	Logging level for ejector events on the CMMs. If set to 0, logging is disabled; if set to 1, logging is enabled.
LogLevel_IPMB	A bit vector (denoted by either a decimal number or a hexadecimal number prefixed by 0x) that specifies which buses are to have logging enabled. Each bit in the bit vector that is set to 1 enables logging for the bus associated with that bit. The buses and their associated bit positions are: blades over IPMB 0 (bit 0), cmm over IPMB 0 (bit 1), power and fan over IPMB 0 (bit 2), chassis over IPMB 0 (bit 3), blades over IPMB 1 (bit 4), cmm over IPMB 1 (bit 5), power and fan over IPMB 1 (bit 6), and chassis over IPMB 1 (bit 7). A value of 0 disables logging for all buses.

Collecting FRU and SDR information

To collect FRU and SDR information from the system (blades, the CMM, and the chassis), execute the `dumpSystemInfo` command. By default, this command executes the `cmmget` command to read all sensor values.

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The syntax of this command is:

`dumpSystemInfo` command line parameters are as follows:

`dumpSystemInfo [-l` *location*`] [-p` *log_file*`] [-SDR] [-FRU] [+FRU_OLD_IPMI] [-currentValueOnly]`

The options and arguments (if any) are described below:

`-l` *location*	Repeat this option and its argument as many times as needed to specify all the locations for which information is to be dumped. For example: `... -l blade7 -l cmm -l blade10 ...`
`-p` *log_file*	File in which to store the information. If not specified, the information is stored in the file `systemInfo.txt`. Specify a different pathname for each CMM.
`-SDR`	Do not read the SDR information
`-FRU`	Do not read the FRU Inventory Area Info. This option should not be used with the `+FRU_OLD_IPMI` option.
`+FRU_OLD_IPMI`	Read FRUs that conform to the IPMI format prior to version 1.5 of the specification. This option is ignored if the `-FRU` option is specified.
`-currentValueOnly`	Instead of reading all sensor values, read only the current value of each sensor and its associated threshold values.

By default, the whole system (blades, CMM, and chassis) is scanned. The information collected is stored in the current directory in a text file compressed with gzip.

It is necessary to run this command when the system configuration has changed.

Caveats and notes

After the IP address negotiation phase over the IPMB interface, some messages exchanged between the active and standby CMMs are sent over Ethernet interface. Traffic through this interface is not logged by the IPMB monitor driver.

The current estimate for the growth in size of the `impb.bin` log is about 1 MB per hour. This estimate assumes that logging has been enabled for the buses between the two CMMs and the buses between the CMMs and the blades in the chassis.

Sample output from ipmbmon_config -i

Below is sample output from the command `ipmbmon_config -i`, which displays the current logging levels and other information about the current configuration.

Note: The output includes a listing for PWR and `pwr.bin` even though this category of logging is not supported on the AdvancedTCA* platform. It should be ignored.

```
Logging status :
Driver config = ATCA platform
Logger time = Thu Mar 9 07:50:17 2006
Daemon pid = 272
Max log size = 0
```


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```
Global Path = /var/log/
==============================
Logger = IPMB
Logger File = /var/log/ipmb.bin
Logger Level = 22
==============================
Logger = SLOT
Logger File = /var/log/slot.bin
Logger Level = 0
==============================
Logger = CLI
Logger File = /var/log/cli.user.log
Logger Level = 1
==============================
Logger = PWR
Logger File = /var/log/pwr.bin
Logger Level = 0
```

Sample excerpt from the ipmi.bin file

Below is a sample excerpt of what is stored in the `ipmi.bin` file. Since the contents of the file is actually stored in binary, human-readable output is obtained by running the `ipmbmon_dump` command.

```
IPMB SEND (ext:0x88)- bus=29 len=10 msgNo=110 (used=1) - Thu Feb
16 02:59:01 2006 (1140055141 850)
IPMI MESSAGE:
  RAW: 0xb0 0xf0 0x60 0x20 0x10 0xaa 0x00 0x03 0xed 0x36
  SlaveAddr=0xb0  SlaveLUN=0x00  netFn=0x3c (Intel CMM REQUEST)
cksum=0x60
  MasterAddr=0x20  MasterLUN=0x00  rqSeq=0x04  cmd=0xaa
(LogStandbySelEvent)
  Data=0x00 0x03 0xed   cksum=0x36
IPMB RECV (ext:0x89)- bus=29 len=08 msgNo=111 (used=1) - Thu Feb
16 02:59:01 2006 (1140055141 890)
IPMI MESSAGE:
  RAW: 0x20 0xf4 0xec 0xb0 0x10 0xaa 0x00 0x96
  SlaveAddr=0x20  SlaveLUN=0x00  netFn=0x3d (Intel CMM RESPONSE)
cksum=0xec
  MasterAddr=0xb0  MasterLUN=0x00  rqSeq=0x04  cmd=0xaa
(LogStandbySelEvent)
  ComplCode=0x00 (NORMAL)
  cksum=0x96
IPMB SEND (ext:0x88)- bus=29 len=07 msgNo=112 (used=1) - Thu Feb
16 02:59:01 2006 (1140055141 890)
IPMI MESSAGE:
  RAW: 0xb0 0xf0 0x60 0x20 0x14 0xb4 0x18
  SlaveAddr=0xb0  SlaveLUN=0x00  netFn=0x3c (Intel CMM REQUEST)
cksum=0x60
```


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```
  MasterAddr=0x20  MasterLUN=0x00  rqSeq=0x05  cmd=0xb4
(GetRedundancyStatus)
  cksum=0x18
IPMB RECV (ext:0x89)- bus=29 len=12 msgNo=113 (used=1) - Thu Feb
16 02:59:01 2006 (1140055141 900)
IPMI MESSAGE:
  RAW: 0x20 0xf4 0xec 0xb0 0x14 0xb4 0x00 0x04 0x00 0x07 0x00 0x7d
  SlaveAddr=0x20  SlaveLUN=0x00  netFn=0x3d (Intel CMM RESPONSE)
cksum=0xec
  MasterAddr=0xb0  MasterLUN=0x00  rqSeq=0x05  cmd=0xb4
(GetRedundancyStatus)
  ComplCode=0x00 (NORMAL)
  Data=0x04 0x00 0x07 0x00   cksum=0x7d
```

Sample excerpt from the slot.bin file

Below is a sample excerpt of what is stored in the `slot.bin` file. Since the contents of the file is actually stored in binary, human-readable output is obtained by running the `ipmbmon_dump` command.

```
EJECT RECV (ext:0x00)- bus=41 len=01 msgNo=3 (used=1) - Tue Feb 21
11:19:11 2006 (1140517151 610000)
Ejector signals: 0x00000000 -> EJECT=0
```

Sample excerpt from the cli.user.log file

Below is a sample excerpt of what is stored in the cli.user.log file. On each line the first two numbers are the time the command was executed. This time is displayed as the number of seconds (first number) and microseconds (second number) after 00:00:00 on January 01, 1970.

```
1140055157 200: CLI: cmmget -l CMM -d snmptrapport
1140055562 420: CLI: cmmset -l cmm -d failover -v 1
1140055577 740: CLI: cmmset -l cmm -d failover -v 1
1140056058 840: CLI: cmmget -l cmm -d version
```

Sample excerpt from the systemInfo.txt file

```
cmmget -l Fantray1 -t "led2" -d ledcolorprops
led2 supports red,green,amber
Default local control color is red
Default override color is red
  done
cmmget -l Fantray1 -t raw -d 6 1 (defID)
  Reading repository SDRs
cmmget -l Fantray1 -t raw -d 10 34
0 97 0
  Reservation ID: 0061h
cmmget -l Fantray1 -t raw -d 10 35 97 0 0 0 0 8
```


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```
0 2 0 1 0 81 1 56 66 0 48
cmmget -l Fantray1 -t raw -d 10 35 97 0 0 0 8 16
0 2 0 7 1 127 104 1 1 133 58 133 122 59 59 128 1 0 0
cmmget -l Fantray1 -t raw -d 10 35 97 0 0 0 24 16
0 2 0 1 3 0 50 0 0 1 45 0 0 127 128 80 67 60 0
cmmget -l Fantray1 -t raw -d 10 35 97 0 0 0 40 16
0 2 0 1 10 2 2 0 0 0 205 70 97 110 32 84 114 97 121
cmmget -l Fantray1 -t raw -d 10 35 97 0 0 0 56 5
0 2 0 32 84 101 109 112
cmmget -l Fantray1 -t raw -d 10 35 97 0 2 0 0 8
0 3 0 2 0 81 1 56 66 0 64
cmmget -l Fantray1 -t raw -d 10 35 97 0 2 0 8 16
0 3 0 7 1 127 104 4 1 5 48 5 0 3 3 0 18 0 0
cmmget -l Fantray1 -t raw -d 10 35 97 0 2 0 24 16
0 3 0 19 0 0 6 0 0 0 0 0 0 255 0 0 0 0 0
cmmget -l Fantray1 -t raw -d 10 35 97 0 2 0 40 16
0 3 0 80 85 0 4 0 0 0 205 67 104 97 115 115 105 115 32
cmmget -l Fantray1 -t raw -d 10 35 97 0 2 0 56 5
0 3 0 70 97 110 32 49
```

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* Revision 006 (August, 2004), order number 273888-006.

6. The cmmdump command shows filesystem free space in greater granularity

Issue: The command cmmdump used to show filesystem free space in megabytes. Now it shows this figure in bytes.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-008) for version 5.2.0 of the firmware.

7. JHM Application and Driver

Issue: The JHM application and driver allow developers to monitor the JFFS2 file system.

Caution: JHM is a test tool and as such must be used with special care. We strongly recommend using this tool only on misbehaving systems with the suspicion of JFFS corruption. The tool must not be run on production systems operating normally as we cannot fully guarantee system performance.

1. Command Line Parameters

The JHM command line parameters are as follows:

```
USAGE: jhm [-d] [-h] [-i] [-I] image|partition|dump_file
```


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Where

`partition`	Name of partition eg. /dev/mtdblock1, /dev/mtdchar2 or c1 for /dev/mtdchar1, c2 (mtdchar2), b1 (mtdblock1), b2 (mtdblock2)
`image`	Dump of JFFS2 filesystem -d – switch on creation file with debug information -h – read image in hex format from redboot -i – conversion from hex to bin format for redboot image -l - conversion from bin to hex format redboot image

2. Commands

The following commands are available for the JHM application. Usage examples follow the table.

Command	Definition
q	Exit from JHM
cd [parameter]	Change current directory
info [parameter]	Information abort file/node
infoi [parameter]	Information abort node
infoi	Information abort all nodes
info	Information abort all files/nodes
show	Show files in tree
setc	Not ported yet from ver 1.0
setd	Not ported yet from ver 1.0
set [parameter]	Not ported yet from ver 1.0
cat [parameter]	Show file
write [parameter]	Dump file to external file
pwd	Show current directory
ls	Show files in current directory
cd	Change current directory
help	Help
stat	Statistics
files	Information about files
links	Information about links
dirs	Information about the catalog
bad	Information about bad files/inodes
findli [parameter]	Search for lost inodes
findi [parameter]	Search for one inode
findn [parameter]	Search for one node
findt	Not ported from version 1.0
test	Test 1

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Command	Definition
autos	Test 2
autofi	Test 3
autofb [parameter]	Test 4
autof	Test 5
filli	Test 6
fill [parameter]	Test 7
read	Reread image/partition
lost	Information about lost inodes
debug	Turn on/off creation on debug file
map	Turn on/off creation of map file
mem	Information about used memory
ofs	Check error in mkrootfs application
find [parameter]	Find a file

4. Example Usage

jhm c1

```
bash# jhm c1
JHM ver 2.3
reading </dev/mtdchar1> size=8388608
reading nodes
end of image


time of reading=6 s
reorganize inodes
reorganize direntry
dirty=87423(1%) used=132655(2%) free=8168530(97%) all=8388608
available=8255953(98%)
Image size is: 8388608 (0x800000) csize=158536 dsize=449669
eraseblocks: 64 compr=35%
nodes: 1003 used=563 dirty=440 [direntry=176 inodes=763 free=64]
hdr_crc_bad=0
-------------  clean list  --------------
nodes: direntry=160 (files=148 links=2 dirs=10 other=0) inodes=336
free=63
fragments: bad=0 ok=336 all=336
files: bad=0 ok=148 all=148
lost nodes: 0
```


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```
-------------  dirty list  --------------
nodes: direntry=16 inodes=427 free=1
JFFS2 compressor statistics:
      none   compr: 0 blocks (0)  decompr: 169 blocks
      zero   compr: 0 blocks (0)  decompr: 0 blocks
      zlib + compr: 0 blocks (0/0)  decompr: 153 blocks
     rtime + compr: 0 blocks (0/0)  decompr: 2 blocks
  dynrubin - compr: 0 blocks (0/0)  decompr: 0 blocks
 rubinmips - compr: 0 blocks (0/0)  decompr: 0 blocks

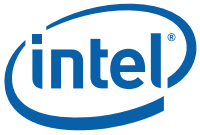
nodes_list: 1004 node_size=448
direntry_list: 161
inodes_tab: 336 max_inode=166
 file system statistics for /etc
type: JFFS2(72b6) id:0 bsize: 4096 namelen=254
blocks: total=8388608(64 x 128kB) free=7696384(8220672)
Blocks required to allow deletion:    2 (256 KiB)
Blocks required to allow writes:      4 (512 KiB)
Amount of dirty space required to GC(nospc_dirty_size): 214958
bytes
time of reorganization=0 s
c@[/etc: /etc] $
```

jhm c2

```
bash# jhm c2
JHM ver 2.3
reading </dev/mtdchar2> size=16777216
reading nodes
end of image

time of reading=16 s
reorganize inodes
reorganize direntry
dirty=4413480(26%) used=1607848(10%) free=10755888(64%)
all=16777216 available=15169368(90%)
Image size is: 16777216 (0x1000000) csize=5070691 dsize=12339748
eraseblocks: 128 compr=41%
nodes: 14408 used=3456 dirty=10952 [direntry=1420 inodes=12860
free=128] hdr_crc_bad=0
```


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```
-------------  clean list  --------------
nodes: direntry=123 (files=113 links=0 dirs=10 other=0)
inodes=3201 free=105
fragments: bad=0 ok=3201 all=3201
files: bad=0 ok=113 all=113
lost nodes: 0
-------------  dirty list  --------------
nodes: direntry=1297 inodes=9659 free=23
JFFS2 compressor statistics:
      none   compr: 0 blocks (0)  decompr: 330 blocks
      zero   compr: 0 blocks (0)  decompr: 0 blocks
      zlib + compr: 0 blocks (0/0)  decompr: 2861 blocks
     rtime + compr: 0 blocks (0/0)  decompr: 0 blocks
  dynrubin - compr: 0 blocks (0/0)  decompr: 0 blocks
 rubinmips - compr: 0 blocks (0/0)  decompr: 0 blocks

nodes_list: 14409 node_size=448
direntry_list: 124
inodes_tab: 3201 max_inode=1960
 file system statistics for /home
type: JFFS2(72b6) id:0 bsize: 4096 namelen=254
blocks: total=16777216(128 x 128kB) free=14503936(15159296)
Blocks required to allow deletion:    2 (256 KiB)
Blocks required to allow writes:      5 (640 KiB)
Amount of dirty space required to GC(nospc_dirty_size): 298844
bytes
time of reorganization=4 s
c@[/home: /home] $

JHM application works read-only other than for the following test
commands:
test
autos
autofi
autofb [parameter]
autof
filli
fill [parameter]
```


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3. Files Created by JHM Driver

The module jhm7 creates the following files in the /proc/fs/jffs2 directory:

eraseblock	Information about erase blocks (number of block, free, used, dirty space, offsets nodes)
gc	Information about garbage collection
mtd	Information about mtd partitions
mtd_erase0, mtd_erase1, mtd_erase2, mtd_fis	Information about number of erase operation for each partition
sb	Information about super blocks
sb_size	JFFS2 statistics

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Specification Clarifications

1. CMM Status Sensor uses Reading Type byte in SEL events inconsistently

Issue: The CMM firmware version 5.2.*x* is not consistent in its use of the Reading Type byte in the SEL events generated for the CMM Status Sensor. However, this does not violate the IPMI Specification version 1.5 since the specification does not expressly forbid sensors to send events with different Reading Types.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

2. ProcessIntegrityInterval parameter and execution of a PIE

Issue: The default value for the `ProcessIntegrityInterval` parameter in the file `pms.ini` is 3600 (seconds). If the `ProcessIntegrityInterval` parameter is not specified in the `pms.ini` for a PIE (Process Integrity Executable), the PIE will run every 3600 seconds. If the `ProcessIntegrityInterval` parameter is specified for a PIE in the `pms.ini` file, the PIE will run as often as specified by the parameter.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

3. Lamptest function support

Issue: If you attempt the lamptest function with any device other than the Chassis Management Module itself, the CMM firmware will simply pass the request to that device. It is entirely up to the device to determine how to respond to or reject the request. If you attempt the lamptest function on the CMM, you must specify either `all_leds` or `userled`*n* (where *n* is 1, 2, 3, or 4) as the target, since these are the only LEDs on the CMM for which the lamptest function is supported.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

4. Halt command

Issue: The halt command brings the CMM to a halt. However, the CMM does not execute any AdvancedTCA-related actions. Specifically, the CMM does not transition to the M1 state, the hot swap LED of the CMM does not change to solid blue, and the SEL entry “CMM1(2):Redundancy Lost due to CMM reboot or halt: Assertion Event” is not generated.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

5. Redundancy, Synchronization, and Failover - CMM Failover

Issue: For each failover attempt, the CMM sends an SNMP trap and records an entry in the SEL. Table 41 in Section 11.4 lists all event strings used for failover events. Trap and SEL entry indicate whether the failover was initiated automatically or manually from the CLI, RPC, or SNMP interface.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

6. CMM Scripting - Associating Scripts to Event Severity

Issue: One script can be associated per event. Additionally, one script can be associated per severity. If the event is logged, the associated event script will always execute.

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Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

7. IPMI Pass-Through - Overview

Issue: All IPMI Pass-through commands are logged in user.log.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

8. FRU Update Utility - FRU Recovery Process

Issue: The same process can be used to write data (or a FRU image) to a blank FRU EEPROM.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

9. All time information is maintained using UTC

Issue: The CMM firmware maintains and records time using the UTC version of Universal Time (UT). The CMM firmware does not support the recording of times using local time, nor can the CMM firmware be configured to take into account time zone information.

Note that UTC is also referred to as “Coordinated Universal Time”.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

10. Before updating CMM, ensure sufficient space on /home partition

Issue: If there is not space available on the /home partition, the update process will stop and wait for input from the console, but all chars sent to the console are received by another process, not the update process, so the process will be unable to continue.

Workaround: Before updating CMM, make sure there is more than 200kB space available on the /home partition.

Affected Docs: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* (order number 273888-008) for version 5.2.0 of the firmware.

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Documentation Changes

1. Error and return codes for RPC

Issue: The Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* lists the error and return codes for the RPC interface up to and including the numeric value 125 in Table 80. However, error and return codes do exist beyond 125. The following table lists all of the error and return codes for that version of the firmware. This list also applies to version 5.2.1.249.

Table 80. Error and Return Codes for the RPC Interface (Sheet 1 of 6)

Code #	Error Code String	Error Code Description
0	E_SUCCESS	Success
1	E_BPM_BLADE_NOT_PRESENT	Blade isn't in the chassis.
2	E_ECMM_SVR_COMMAND_UNSUPPORTED	ECMM_SVR: Unsupported Command Error.
3	E_CLI_MSG_SND	CLI Send Message Error.
4	E_CLI_INVALID_TARGET	Not a valid -t parameter.
5	E_CLI_INVALID_LOCATION	Not a valid -l location.
6	E_CLI_INVALID_DATA_ITEM	Not a valid -d parameter.
7	E_CLI_INVALID_SET_DATA	Not a valid -v parameter.
8	E_CLI_INVALID_REQUEST	CLI Invalid Request Error.
9	E_CLI_MSG_RCV	CLI Receive Message Error.
10	E_CLI_NO_MORE_DATA	No data found to retrieve.
11	E_CLI_DATA_TYPE_UNSUPPORTED	CLI Data Type Unsupported.
12	E_ECMM_CLIENT_CONNECT_ERROR	ECMM_CLIENT: RPC Connect Error.
13	E_ECMM_SVR_AUTH_CODE_FAIL	Invalid auth code passed to RPC interface.
14	E_CLI_STANDBY_CMM	Operation cannot be performed on standby CMM.
15	E_WP_INITIALIZING	The CMM is Initializing and Not Ready. Wait a few seconds and try again.
16	E_BPM_NON_IPMI_BLADE	Blade does not support IPMI.
17	E_BPM_STANDBY_CMM	BPM operation cannot be performed on standby CMM.
18	E_BPM_NO_MORE_DATA	Couldn't delete a board from the drone mode list.
19	E_BPM_INVALID_SET_DATA	Not a valid -v parameter.
20	E_CLI_INVALID_BUFFER	Internal CMM Error
21	E_CLI_INVALID_CMM_SLOT	Internal CMM Error

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Table 80. Error and Return Codes for the RPC Interface (Sheet 1 of 6)

Code #	Error Code String	Error Code Description
22	E_CLI_NO_MSGQ_KEY	Internal CMM Error
23	E_CLI_NO_MSGQ	Internal CMM Error
24	E_CLI_NO_MSGQ_LOCK	Internal CMM Error
25	E_CLI_NO_MSGQ_UNLOCK	Internal CMM Error
26	E_CLI_FILE_OPEN_ERROR	Internal CMM Error
27	E_CLI_CFG_WRITE_ERROR	CMM Config File Error.
28	E_IMB_NO_MSGQ	Internal CMM Error
29	E_IMB_NO_MSGQ_KEY	Internal CMM Error
30	E_IMB_SEND_TIMEOUT	Internal CMM Error
31	E_IMB_DRIVER_FAILURE	Internal CMM Error
32	E_IMB_REQ_TIMEOUT	A blade is not responding to IPMI requests.
33	E_IMB_RECEIVE_TIMEOUT	A blade is not responding to IPMI requests.
34	E_IMB_COMPCODE_ERROR	An IPMI request returned with a non successful completion code. User should try the command again.
35	E_IMB_INVALID_PACKET	Invalid IPMI response. Blade may be returning invalid data.
36	E_IMB_INVALID_REQUEST	Invalid IPMI response. Blade may be returning invalid data.
37	E_IMB_RESPONSE_DATA_OVERFLOW	Invalid IPMI response. Blade may be returning invalid data.
38	E_IMB_DATA_COPY_FAILED	Internal CMM Error
39	E_IMB_INVALID_EVENT	Internal CMM Error
40	E_IMB_OPEN_DEVICE_FAILED	Internal CMM Error
41	E_IMB_MMAP_FAILED	Internal CMM Error
42	E_IMB_MUNMAP_FAILED	Internal CMM Error
43	E_IMB_RESP_LEN_ERROR	Invalid IPMI response. Blade may be returning invalid data.
44	E_NEM_SNMPTRAP_ERROR	Error setting snmp trap parameters. Retry command
45	E_NEM_SYSTEMHEALTH_ERROR	Internal CMM Error.
46	E_NEM_GETHEALTH_ERROR	Internal CMM Error.
47	E_NEM_SNMPENABLE_ERROR	Internal CMM Error.
48	E_NEM_SENSOR_HEALTH_ERROR	Internal CMM Error.
49	E_NEM_FILTER_SEL_ERROR	Internal CMM Error.
50	E_NEM_INITIALIZE_ERROR	Internal CMM Error.
51	E_NEM_SENSOR_EVENT	Internal CMM Error.
52	E_NEM_SENSOR_ERROR	Internal CMM Error.
53	E_NEM_SNMP_PROCESS_EVENT_ERROR	Internal CMM Error.

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Table 80. Error and Return Codes for the RPC Interface (Sheet 1 of 6)

Code #	Error Code String	Error Code Description
54	E_NEM_SNMP_DEST_ADDR_ERROR	SNMP Trap address that the user is setting is invalid.
55	E_NEM_SNMP_COMMUNITY_STRING_ERROR	SNMP Community that user is setting is invalid.
56	E_NEM_SNMP_TRAP_VERSION_ERROR	SNMP Trap version that the user is setting is invalid.
57	E_NEM_SNMP_TRAP_PORT_ERROR	SNMP Trap port that the user is setting is invalid.
58	E_NEM_SNMP_CFG_ERROR	Cannot read SNMP config parameter. Config file may be corrupted.
59	E_NEM_SEND_SNMP_TRAP_ERROR	Internal CMM Error.
60	E_SFS_INVALID_TRANSACTION	Internal CMM Error.
61	E_SFS_LOCK_SDR	Can't read SDRs. Blade may be busy, try again.
62	E_SFS_ENTITY_ID	Internal CMM Error.
63	E_SFS_DEVICE_LOCATOR_NULL	Internal CMM Error.
64	E_SFS_NO_MEMORY	Internal CMM Error.
65	E_SFS_UNSUPPORTED_DEVICE	Internal CMM Error.
66	E_SFS_RESPONSE_LENGTH	Internal CMM Error.
67	E_SFS_RESPONSE_DATA	Internal CMM Error.
68	E_SFS_POWER_SUPPLY_FRU	Internal CMM Error.
69	E_SFS_PATTERN_FOUND	Internal CMM Error.
70	E_SFS_SEMAPHORE_FAILED	Internal CMM Error.
71	E_SFS_CALLBACK_NOT_FOUND	Internal CMM Error.
72	E_SFS_END_OF_DATA	Internal CMM Error.
73	E_SFS_NO_SEL_ENTRY	Internal CMM Error.
74	E_SHEM_INTERNAL_ERROR	Internal CMM Error.
75	E_SHEM_INVALID_DATA_ITEM	Not a valid -d parameter.
76	E_SHEM_STANDBY_CMM	Cannot execute this command on the standby CMM.
77	E_SNSR_STATUS_UNSUPPORTED	Internal CMM Error.
78	E_SNSR_UNSUPPORTED	Internal CMM Error.
79	E_SNSR_CATEGORY	Internal CMM Error.
80	E_SNSR_NO_MEMORY	Internal CMM Error.
81	E_SNSR_NOT_FOUND	Internal CMM Error.
82	E_SNSR_ACTION_UNSUPPORTED	Internal CMM Error.
83	E_SNSR_NON_FIRMWARE	Internal CMM Error.
84	E_SNSR_SHARE_CODE	Internal CMM Error.
85	E_SNSR_LOW_STORAGE	Internal CMM Error.
86	E_SNSR_EVENT_TYPE	Internal CMM Error.

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Table 80. Error and Return Codes for the RPC Interface (Sheet 1 of 6)

Code #	Error Code String	Error Code Description
87	E_SNSR_INVALID_REQUEST	Internal CMM Error.
88	E_SNSR_OS_ERROR	Internal CMM Error.
89	E_SNSR_PROCESSOR_NOT_PRESENT	Internal CMM Error.
90	E_SNSR_THRESHOLD_UNSUPPORTED	The sensor being queried doesn't support a particular threshold.
91	E_SNSR_CAPABILITY_UNSUPPORTED	Internal CMM Error.
92	E_SNSR_SCANNING_DISABLED	Internal CMM Error.
93	E_SNSR_MAX_RETRIES	Internal CMM Error.
94	E_SNSR_TRIGGER_TYPE	Internal CMM Error.
95	E_SNSR_STATE	Internal CMM Error.
96	E_SNSR_EVENT_DEREGISTER	Internal CMM Error.
97	E_SNSR_SEL_EVENT_FUNCTION	Internal CMM Error.
98	E_SNSR_BASE_INDEX	Internal CMM Error.
99	E_SNSR_PRESENCE_DETECTED	Internal CMM Error.
100	E_SNMP_CMD_UNSUPPORTED	Internal CMM Error.
101	E_SNMP_ERROR	Internal CMM Error.
102	E_SNSR_VALUE_OUT_OF_RANGE	Internal CMM Error.
103	E_SNSR_AUTH_ERROR	Internal CMM Error.
104	E_WP_INITIALIZE_LIBS	Internal CMM Error.
105	E_WP_CFG_READ_ERROR	CMM config file may be corrupted.
106	E_WP_CFG_WRITE_ERROR	CMM config file may be corrupted.
107	E_WP_THRESHOLD_UNSUPPORTED	The sensor being queried does not support a particular threshold.
108	E_WP_INVALID_TARGET	The sensor does not support a "current" value. This happens when querying a current value on a discrete sensor type.
109	E_WP_INVALID_LOCATION	Not a valid -l location.
110	E_WP_INVALID_DATA_ITEM	Not a valid -d parameter.
111	E_WP_INVALID_SET_DATA	Not a valid -v parameter.
112	E_WP_CMD_UNSUPPORTED	Not a supported command.
113	E_WP_STANDBY_CMM	Can't execute this command on the standby CMM.
114	E_WP_I2C_ERROR	Internal CMM Error.
115	E_FT_SEM_GET_FAILURE	Internal CMM Error.
116	E_DRONE_NOT_FOUND	Internal CMM Error.
117	E_INTERNAL_ERROR	Internal CMM Error.
118	E_BPM_PWR_SUPPLY_NOT_PRESENT	Internal CMM Error
119	E_NEM_INTERNAL_FAILURE	Internal CMM Error.
120	E_WP_CMM_RESET	CMM Reset.

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Table 80. Error and Return Codes for the RPC Interface (Sheet 1 of 6)

Code #	Error Code String	Error Code Description
121	E_UPDATE_INPROGRESS	Firmware update in progress.
122	E_CLI_INVALID_GET_DATA_ITEM	Not a valid getdataitem.
123	E_CLI_INVALID_SET_DATA_ITEM	Not a valid setdataitem.
124	E_SNSR_UPDATE_INPROGRESS	Sensor update in progress.
125	E_WP_SNSR_EVN_DESCRIPTION_NOT_FOUND	Sensor event description not found.
126	E_MSGQ_START	Message queue initializing. Retry operation.
127	E_PMS_ERROR	Process Management System error.
128	E_PMS_INVALID_RECOVERY_ACTION	Recovery action not allowed for this target.
129	E_CLI_MSG_RCV_TIMEOUT	Receive message timeout.
130	E_UPDATE_BADFRU	Chassis FRU cannot be read or is corrupted.
131	E_STANDBY_CMM_NOT_PRESENT	Standby CMM not present.
132	E_STANDBY_CMM_COMM_FAILURE	Failed to communicate with standby CMM.
133	E_FAILOVER_FAILED_BAD_SWITCH	Failover failed because of a bad switch
134	E_FAILOVER_FAILED_BAD_NETWORK	Failover failed because of a bad network connection
135	E_FAILOVER_FAILED_CRITICAL_EVENTS	Failover failed due to a critical event
136	E_FAILOVER_FAILED_COMM_FAILED	Failover failed because of a communication failure
137	E_FAILOVER_FAILED_UNHEALTHY	Failover failed because of an unhealthy event
138	E_FAILOVER_FAILED_PRI1_NOT_SYNCED	Failover failed due to PRI1 not synching
139	E_FAILOVER_FAILED_OLDER_FW_VERSION	Failover failed because the version of the other CMM's firmware is older
140	E_FAILOVER_FAILED_STANDBY_STATE_UNKNOWN	Failover failed because the state of the standby CMM is unknown
141	E_FAILOVER_FAILED	Failover failed
142	E_CLI_SYNTAX_ERROR	CLI syntax error
143	E_OS_ERROR	Operating system error
144	E_CM_CONFIG_ERROR	CM: Internal configuration error.
145	E_CM_NOT_NORMAL_LEVEL	CM: Temperature level not normal.
146	E_CM_LC_NOT_ENABLED	Fantray does not support fantray control.
147	E_CM_NORMAL_TOO_HIGH	CM: Cannot set the normallevel above the minorlevel.
148	E_CM_MINOR_TOO_HIGH	CM: Cannot set the minorlevel above the maximumsetting.
149	E_CM_NORMAL_TOO_LOW	CM: Cannot set the normallevel below the minimumsetting.

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Table 80. Error and Return Codes for the RPC Interface (Sheet 1 of 6)

Code #	Error Code String	Error Code Description
150	E_CM_MINOR_TOO_LOW	CM: Cannot set the minorlevel below the normallevel.
151	E_CM_COMM_FAILED	CM: Communication with the fantray failed.

Note: Error codes 100 and 101 will never be returned by the CMM when using RPC. If you receive these error codes, they are most likely being returned by the RPC client. Consult your RPC client documentation or code to find the description of these errors.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

2. Dataitem keywords for cmmset command

Issue: Table 25 of the *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification*, Dataitem Keywords for All Locations Except Chassis and System, lists `fruactivation` as one of the allowed dataitems. However, the `fruactivation` dataitem cannot be used with the location `cmm`. If you try to use this command, you will see the error message "IMB ERROR Completion".

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

3. System firmware error hex value correction

Issue: In Table 37, System Firmware Progress Event Strings, of the Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* the hex value listed for the error "System Firmware Error: Unspecified error occurred" should be 0x250. Note that the decimal value of 592 listed for that error is correct.

In Table 38, Watchdog 2 Sensor Event Strings, of the Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* the hex value listed for the error "None interrupt type OEM timer" should be 0x359. Note that the decimal value of 857 listed for that error is correct.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

4. Set Event Receiver command not supported in RMCP

Issue: Table 89, IPMI Commands Supported by CMM RMCP, in the Intel NetStructure® MPCMM0001 Chassis Management Module *Software Technical Product Specification* states that the Set Event Receiver command is supported. Executing this command will not result in a return code of 0xC1 (command not implemented); however, the code 0xD4 (incorrect permission) is always returned and the command is not executed.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

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5. CMM voltage and temperature sensor thresholds and sensor numbers

Issue: Table 31 in the *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* shows the threshold sensors present on the CMM with the Upper Non-Recoverable (UNC), Upper Critical (UC), Upper Non-Critical (UNC), Lower Non-Critical (LNC), Lower Critical (LC), and Lower Non-Recoverable (LNR) thresholds for each sensor.

That table is reproduced below with an updated entry for the corrected LC value for Brd Temp and with sensor numbers for all sensors in hexadecimal format.

Table 31. CMM Voltage and Temp Sensor Thresholds

Sensor Name (Sensor Number)	UNR	UC	UNC	LNC	LC	LNR
VBAT (02h)	N/A	3.494 (3.463)	3.292 (3.26)	2.496 (2.527)	1.997 (2.028)	N/A
VTT DDR (03h)	N/A	1.427 (1.404)	N/A	N/A	1.053 (1.076)	N/A
+2.5V (04h)	N/A	2.621 (2.597)	N/A	N/A	2.363 (2.387)	N/A
+3.3V (05h)	N/A	3.477 (3.443)	N/A	N/A	2.976 (3.01)	N/A
+5V (06h)	N/A	5.486 (5.434)	5.304 (5.252)	4.68 (4.732)	4.472 (4.524)	N/A
+12V (07h)	N/A	15.12 (14.994)	13.041 (12.915)	11.088 (11.214)	8.064 (8.19)	N/A
CPU Core V (01h)	N/A	1.357 (1.334)	N/A	N/A	1.229 (1.252)	N/A
Brd Temp (08h)	100 (97)	67 (64)	60 (57)	10 (13)	0 (3)	N/A
CPU Temp (09h)	80 (77)	67 (64)	63 (60)	10 (13)	5 (8)	N/A
FilterTrayTemp 1 (0Ah)	80 (77)	40 (37)	30 (27)	2 (5)	-2 (1)	N/A
FilterTrayTemp 2 (0Bh)	80 (77)	40 (37)	30 (27)	2 (5)	-2 (1)	N/A
Filter Run Time (0Ch)	N/A	192 (189)	128 (125)	N/A	N/A	N/A

Note: Values in parentheses in the first column are sensor numbers. Values in parentheses in the other columns are the deassertion value.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

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6. CMM Status Event strings

Table 46 in the *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* is missing the last row of the table for the event code with hex value 0x405. Below is the full table.

Table 1. CMM Status Event Strings (CMM Status)

Event String	Event Code		Event Severity
	Hex	Decimal	
"CMM is not ready."	0x400	1024	Minor
"CMM is ready."	0x401	1025	OK
"CMM is Active"	0x402	1026	OK
"CMM is Standby"	0x403	1027	OK
"CMM ready timed out"	0x404	1028	Minor
"CMM ready after timed out"	0x405	1029	OK

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

7. RPC usage example for IPMI pass-through incorrect

Issue: The RPC usage example for IPMI pass-through in the *Software Technical Product Specification* for version 5.2.0 of the firmware is incorrect. The section title should be "RPC Usage Example" and the example command should be:

```
cli_client -s MPCMM0001 -m set -l blade7 -d IPMICommand
-v "0x2c L0 1 0"
```

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware, section 25.2.3.2.

8. Instructions on setting the SETIP variable incorrect

Issue: The instructions for setting the SETIP variable are incorrect. The correct instructions are:

Set the SETIP variable to BOTH to assign STATICIP1 to Eth1 and STATICIP2 to Eth1:1. Set SETIP to 1 to assign the STATICIP1 address to eth1; set SETIP to 2 to assign the STATICIP2 address to eth1.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware, section 8.3.1, "Setting IP Address Properties".

9. Supported targets for cmm:fru1

Issue: The only targets supported for the location `cmm:fru1` (such as, for example, using the CLI cmmget or cmmset commands) are `all_leds` and `led1`.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

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10. Supported values for frucontrol

Issue: The description of the valid values for the `frucontrol` dataitem should say the following:

The CMM location supports only 0 (cold reset) and 2 (graceful reboot) and will work only on the standby CMM. Executing frucontrol on the active CMM will cause that CMM to attempt to failover first before executing the command. If failover is unsuccessful, frucontrol will not execute, but return an error instead.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware, Table 25, Dataitem Keywords for All Locations Except Chassis and System, Sheet 2 of 4, in the first row (frucontrol).

11. Warning about invalid RTC date

Issue: If the reading from the RTC (Real Time Clock) is older than the build date of the RedBoot* bootstrap firmware, the warning message "RTC date is older than build date, please update" will be displayed on the RedBoot console and the BIST event "RTC date is invalid" will be logged.

The RedBoot build date can be obtained from the RedBoot console. The output appears similar to the output below. Note that the build date appears at the end of the second line (Sep 12 2005 in the example).

```
RedBoot(tm) bootstrap and debug environment [ROM]
Red Hat certified release, version 1.5.13 - built 17:04:08, Sep 12 2005
```

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

12. Change of FaultLEDcolor dataitem to faultledcolor

Issue: The dataitem `FaultLEDcolor` is now displayed as `faultledcolor`.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

13. RMCPUser file added to saveList

Issue: The `/etc/RMCPUser` file that stores the RMCP password is now one of the items in the saveList. This means that the existing RMCP password is preserved across updates to later versions of the firmware. Note that this file is *not* preserved when upgrading from version 4.*x* or 5.1 since its format is not compatible with that of version 5.2.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

14. fruUpdate utility available in firmware package

Issue: The fruUpdate utility is not installed on the CMM during the update of the firmware. Instead, it is extracted from the firmware package during the update process and held in temporary storage only for use during the firmware upgrade process. Once that process is over, it is deleted.

If you wish to re-run the fruUpdate utility for any reason, extract it from the compressed (`.zip`) firmware package and store it on a filesystem that you can mount onto the Linux* filesystem on the CMM.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

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15. shelfEventAction MIB object is a placeholder

Issue: The shelfEventAction MIB object is a placeholder. Currently, the only chassis target is FRU, which does not generate events. This MIB object exists in case targets that do generate events are ever added in the future to the chassis location.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

16. frudeactivationpolicy valid only for FRUs that support ECN001 or later

Issue: The dataitem `frudeactivationpolicy` is valid only for FRUs that support ECN001 or later of the PICMG* 3.0 Specification. FRUs that do support this ECN can be identified because they return a value of "2.1" or greater as an extension version when queried with the `picmgproperties` dataitem.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

17. Discrepancies between actual and specified BIST event strings

Issue: There are several minor discrepancies between the actual CMM output and the the CMM output as described in Table 43 (BIST Event Strings) of the Technical Product Specification. These are listed below, with the differences indicated by **bold** type.

Specification	Actual Output
"RedBoot **i**mage corrupted. Using golden image."	"RedBoot **I**mage corrupted. Using golden image."
"**FPGA1** firmware outdated."	"**FPGA 1** firmware outdated."
"**FPGA2** firmware outdated."	"**FPGA 2** firmware outdated."
"Update of RedBoot **failed.**"	"Update of RedBoot **failed**"
"Update of FPGA **failed.**"	"Update of FPGA **failed**"
"Update of Bluecat OS **failed.**"	"Update of Bluecat OS **failed**"
"Update of /etc **failed.**"	"Update of /etc **failed**"
"Restore of /etc files **failed.**"	"Restore of /etc files **failed**"
"Software update **failed.**"	"Software update **failed**"
"FPGA re-programmed 2 **times and** no further lockup detected."	"FPGA re-programmed 2 **times, and** no further lockup detected."
"FPGA re-programmed 3 **times and** no further lockup detected."	"FPGA re-programmed 3 **times, and** no further lockup detected."
"FPGA re-programmed more than 3 **times and** lockup still detected."	"FPGA re-programmed more than 3 **times, and** lockup still detected."
"Static **Redboot** image is corrupt."	"Static **RedBoot** image is corrupt."

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-007) for version 5.2.0 of the firmware.

18. FCC Verification Notice now mentions shielded cabling

Issue: The FCC Verification Notice has been modified to include instructions concerning shielded cabling.

"This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection

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against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy if not installed and used in accordance with the instruction manual, and may cause harmful interference to radio communications. Use of shielded cabling is required for compliance. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense."

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-008) for version 5.2.0 of the firmware.

19. Table "IPMI Commands Supported by CMM RMCP" now shows privilege level

Issue: The table "IPMI Commands Supported by CMM RMCP" now includes a column indicating the privilege level of each command: User, Administrator, Callback, or Operator.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-008) for version 5.2.0 of the firmware.

20. Procedures for adding and removing CMM users added

Issue: The following instructions for adding and removing CMM users have been added to the TPS:

To add a user to the CMM:
1. Log in to the standby CMM
2. Issue the command:
adduser <user_name>
3. When prompted, type your password and press [Enter]. This is required twice (for verification).
4. Log in to the active CMM.
5. Issue the command:
adduser <user_name>
6. When prompted, type your password and press [Enter]. This is required twice (for verification).

To remove a user from the CMM:
1. Log in to the standby CMM.
2. Issue the command:
rmuser <user_name>
3. Log in to the active CMM.
4. Issue the command:
rmuser <user_name>

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-008) for version 5.2.0 of the firmware.

21. Potential synchronization problems when file size exceeds free space on target partition

Issue: The synchronization code creates a temporary file on the target partition. If the free space on the target partition of the standby CMM is smaller than a file that that must be synchronized, synchronization will fail. To avoid this, ensure that the target partition always has more free space than the largest file that will ever be synchronized.

This issue will most likely affect files in /home/scripts directory.

Affected Docs: The *Intel NetStructure® MPCMM0001 Chassis Management Module Software Technical Product Specification* (order number 273888-008) for version 5.2.0 of the firmware.

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