BullSequana S

Release Note TS 05.03

86 A1 28FR 04 - May 2018

Atos

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Hardware

May 2018

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Table of Contents

Preface

This document gives information about all changes from the previous version.

It also gives information about restrictions, known problems and the associated workarounds.

Finally it lists the objects delivered in the Technical State and the features of the resources provided on the Resource and Documentation DVDs.

Chapter 1. Overview

Important To fully address the Intel Meltdown/Spectre security alert, it is mandatory to update the Operating System.

1.1. Scope of the Technical State

This Technical State 05.03 is a patched one compared to the Technical State 05.02. It contains a new release of the EMM33_BMC firmware.

1.2. Operating Systems Versions

It is recommended to use the following minimum versions.

1.2.1. VMware ESXi

ESXi: 6.5u1 patch 02 build 7388607

Note Available on the Bull Support Website: https://support.bull.com

For BullSequana S200 server certification details check:

https://www.vmware.com/resources/compatibility/detail.php?deviceCategory=server&productid=44639

For BullSequana S400 server certification details check:

https://www.vmware.com/resources/compatibility/detail.php?deviceCategory=server&productid=44854

For BullSequana S800 server certification details check:

https://www.vmware.com/resources/compatibility/detail.php?deviceCategory=server&productid=44745

1.2.2. Linux

1.2.2.1. Red Hat

RHEL 7.3 : All models

RHEL 6.9 : BullSequana S200 server and BullSequana S400 server only.

1.2.2.2. Suse

SLES 12 SP2

1.2.3. Windows

Windows Server 2016 (with iaStorA.free.win8.64bit.4.3.0.1198 driver)

1.3. New Features and Changes

EMM33_BMC

- New release fixing the following issue:
  DFM fans randomly unavailable with TS 05.02.

1.4. Resolved Issues

DFM fans randomly unavailable with TS 05.02

With the present release of the EMM33_BMC firmware, the fans are running normally, without random faults.

Chapter 2. Known Restrictions and Issues

2.1. FAN Regulation Messages

Issue

There are cases where the fan regulation is not optimal. This results in messages in the System Event Log (SEL) such as:

```
Fan at or below critical speed
```

In some cases, the FAN may be also seen as unavailable.

Workaround

No workaround

2.2. Mounting Drives as Virtual Media

Issue

Mounting two drives as virtual media may cause the Server Hardware Console (SHC) to reboot

Workaround

Mount only one media at a time

2.3. PEB Ethernet Activity LEDs

Issue

The Ethernet activity LEDs on the PEB are always amber, even when the module is powered off.

2.4. Hot Plug of the Broadcom P210tp PCI card

Issue

The hot plug feature of the Broadcom PCI card BCM 957416A4160C does not currently work.

Workaround

Insert or remove the card only when the operating system is stopped.

2.5. Memory Module exclusion

Issue

Excluding a memory module from the SHC has no effect.

Workaround

Use the Hardware Management CLIs to exclude a memory module.

2.6. Serial On LAN (SOL) activation

Issue

When using the ipmi command "SOL activate" for Serial On LAN, there are issues with the keyboard.

Workaround

Open a ssh session on the SHC and use the terminal command.

2.7. Partitioning a BullSequana S800 Server

Issue

Partitioning a BullSequana S800 server into two partitions, one that includes modules 0 and 3 and a second that includes modules 1 and 2, is not possible yet.

Workaround

The available partitioning schemes are:

- Two partitions:
  - Three modules and one module: all schemes are available
  - Two modules and two modules: only the (module 0, module 1) and (module 2 , module 3) scheme is available
- Four partitions

2.8. Mounting Virtual Media Files from the Remote Console

Issue

Installing software from a very large ISO file via the Remote Console may fail with several medium errors reported.

Workaround

Use smaller ISO files.

2.9. Using SR-IOV

Issue

On a BullSequana S400 or S800 server, attempting to assign the SR-IOV passtrough to a virtual machine fails, resulting in the following error message: *unsupported configuration: host does not support passthrough of host PCI devices*

Workaround

SR-IOV is not yet supported under ESXi 6.0 and Windows. Use ESXi 6.5.

2.10. Power Supply Unit (PSU) Redundancy Sensor

Issue

The Power Redundancy sensor is shown NORMAL on the SHC although one PSU is detected absent.

Workaround

Ignore the Power Redundancy sensor and use the PSU sensors to check power supply.

2.11. CPU Power Consumption Sensors

Issue

CPU power consumption sensors reports inconsistent values.

Workaround

Rely on the global power consumption sensor instead.

2.12. Fan Messages at Power On

Issue

Power On results in eight inconsistent fan status messages being issued.

Workaround

Ignore the messages.

2.13. WEO fault Message

Issue

A WEO fault message is issued although the WEO sensor has no reading.

Workaround

Ignore the message.

2.14. Updating the Server Hardware Console (SHC)

Issue

Updating the SHC firmware results in the Alert Setting Policies page being cleared.

Workaround

If you have modified the Alert Policies default settings, collect settings before the SHC update and restore them afterward.

2.15. Dismounting and Mounting Back a Module from a Partition

Issue

On a multi-module with a partition made of two modules, partitioning after having dismounted and mounted back a module from the partition is not possible from the SHC.

Workaround

Use the *bsmSetPartitions* CLI command instead.

2.16. Boot Manager Entries

Issue

When there are more than 15 entries in the boot manager, the same EFI network number is assigned to all the subsequent entries.

Workaround

For BullSequana S200 and S400 servers, avoid having more than 15 entries.

For BullSequana S800 servers, disable four internal Ethernet ports on a slave module via the BIOS interface to reduce the number of entries.
As an example, the following procedure explains how to disable the port 2 on the CPU 2:

1. From the SHC, launch the BIOS interface.
2. Select Setup Utility from the main menu.
3. From the Advanced tab, select Socket Configuration > IIO Configuration to open the IIO Configuration menu.
4. From the IIO Configuration menu, select Socket2 Configuration > Socket 2 PcieBr2D00F0-Port 2A.
5. Select PCI-E Port and disable it.

2.17. Memory Module Messages during BIOS Initialization

Issue

During BIOS initialization, inconsistent warning messages about the memory modules are issued.

Workaround

Ignore the messages.

2.18. Locating an FDB Disk

Issue

The command designed to locate a failed FDB disk fails to switch on the disk's LED, making it impossible to locate it.

Workaround

See BullSequana S Description Guide, 86 A1 13FR, to locate FDB disks.

Physical mapping is identical for LSI SAS 9300-8i and LSI MegaRaid SAS 9361-8i cards.

2.19. Updating Firmware from the Server Hardware Console (SHC)

Issue

In rare cases, when updating firmware from the SHC, the operation may be successful but result in the following message:
Please wait for the connection to be established.

Workaround

Wait and check the connection.

2.20. Missing Processors When Booting the server

Issue

In rare cases, on BullSequana S400 and S800 servers, some processors are missing from the configuration, with the following message in the SEL:

```
2018-05-14 18:14:01 BMC Message BIOS Init Warning Message on Module: 0 DIMM:
([Major-code:58h; Minor-code:02h])
```

Workaround

Reboot the server.

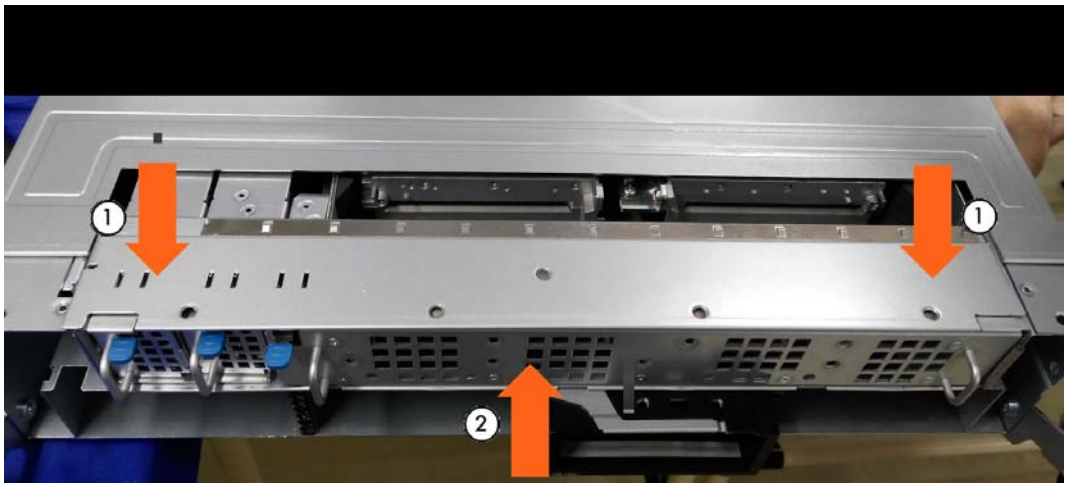
2.21. Storage Unit insertion in a multi-module

Issue

For BullSequana S400 server or BullSequana S800 server there are cases where the storage drawer does not insert smoothly into the compute box.

Workaround

1. Carefully press on the top cover of the storage drawer
2. Insert the storage drawer into the compute box.



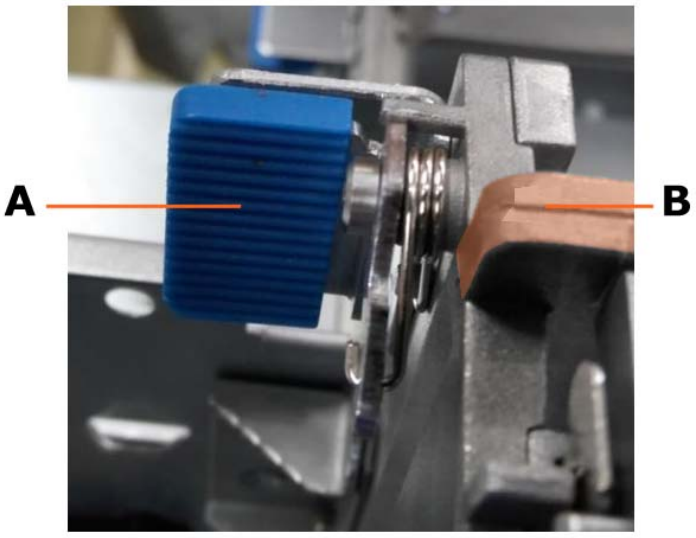
2.22. Locking a 2.5” Disk Storage Unit

Issue

In some cases the latch does not insert properly into the locking bracket

Workaround

1. Check that the latch (A) is parallel to the top of the side wall (B) as shown below.



2. Press the latch (A) down to secure the HDD cage in place.

Chapter 3. Delivery Content

3.1. Delivered items

- Documentation, firmware and customer tools are delivered on the Resources and Documentation DVDs
- BSMHW_NG and iCare are delivered on the Resources and Documentation DVDs
- VMware ESXi Installer is delivered, if ordered, on a bootable USB key

3.2. Documentation

Note (*) indicates a new version, (**) indicates a new item.

Name	Description	Version
BullSequana S Customer Documentation Portfolio	Complete documentation dedicated to the customer.	5
BullSequana S Field Documentation Portfolio	Complete documentation dedicated to the field.	4

3.3. Platform Firmware

Note (*) indicates a new version, (**) indicates a new item.

Name	Description	Version
BIOS_SKL040	BIOS firmware for SKL board.	40.55.02 build 107
CPLD_IO_CPB	Flash image for the IO CPLD component on the CPB board.	2.5.4.0
CPLD_NBB	Flash image for the CPLD component on the NBB board.	2.1.0
CPLD_P_CPB	Flash image for the CPLD component on the CPB board.	2.4.7.0
EMM33_BMC	Server Hardware Console (SHC) firmware.	33.19.01 build 001 (*)
ESXi_6.5_BullSequana_S	VMware supervisor.	6.5u1 patch 02 build 7388607
FPGA_CPB	FPGA firmware for theCPB board	2.4.1.0
FPGA_FLASH_M3WEO	Flash image for the embedded firmware of the sWitch Ethernet One Gigabit (WEO).	1.0.0

Name	Description	Version
FPGA_W3WEO	FPGA image for the sWitch Ethernet One Gigabit (WEO).	1.0.0
FW_PEB	Flash image for the SPI 4Mbit 85MHz 8SOIC 256Byte per page.	2.b.9
FW_URS	Flash for the SPI 4Mbit 75MHz 8SO.	0.0.1
VR_PCH_CPB	Configuration file for CPU voltage regulator on CPB board.	3.0.0
VR_VCCIN_CPU0_CPB	Configuration file for CPU voltage regulator on CPB board.	3.0.0
VR_VCCIN_CPU1_CPB	Configuration file for CPU voltage regulator on CPB board.	3.0.0
VR_VCCIO_CPU0_CPB	Configuration file for CPU voltage regulator on CPB board.	3.0.0
VR_VCCIO_CPU1_CPB	Configuration file for CPU voltage regulator on CPB board.	3.0.0
VR_VDDQ_DDR_ABC_CPB	Configuration file for Memory voltage regulator on CPB board.	3.0.0
VR_VDDQ_DDR_DEF_CPB	Configuration file for Memory voltage regulator on CPB board.	3.0.0
VR_VDDQ_DDR_GHJ_CPB	Configuration file for Memory voltage regulator on CPB board.	3.0.0
VR_VDDQ_DDR_KLM_CPB	Configuration file for Memory voltage regulator on CPB board.	3.0.0

3.4. Adapter Firmware

Notes
- (*) indicates a new version, (**) indicates a new item.
- Concerning the Broadcom_PCIe_BCM957416A4160C firmware, see chapter 4 Recommendations.

Name	Version
Broadcom_PCIe_BCM957416A4160C	20.4.8.1
Emulex_PCIe_LPe12002-M8	fw202a3 - UniversalBootCode1140a6 OneCommandManagerCLI 11.4.204.12
Emulex_PCIe_LPe31002-M6	11.4.204.20 OneCommandManagerCLI 11.4.204.12
Emulex_PCIe_LPe31004-M6	11.4.204.25 OneCommandManagerCLI 11.4.204.12
Ethernet_Intel_I350-X520	22.9
INTEL_PCIe_OPA_HFI	10.4.2.0.7-110
LSI_MegaRaid_SAS_9361-8i	Package 24.21.0-0012 Firmware 4.680.00-8249
LSI_SAS_9300-8i	15.00.02.00/8.35.04.00
LSI_SAS_9305-16i	15.00.00/8.35.00
Mellanox_ConnectX-4Lx	14.21.1000/3.5.305
Mellanox_ConnectX-5	16.21.1000/3.5.305

3.5. Customer Tools

Note (*) indicates a new version, (**) indicates a new item.

Name	Description	Version
EMM_DEFAULT_BIOS_SETTINGS	Bios default settings file.	1.0
EMM_REGS_DUMP	This set of files gives the list of registers to dump in CPU and FPGA devices in case of CATERR detection or of IPMI dump command.	1.0
EMM33_BMC_Bckp	The backup image of the Server Hardware Console (SHC) firmware.	33.14.00 build 2
mc-setup	A Linux Utility used to discover the embedded management board's MAC address and to change the embedded management board's IP address.	1.2.1 build 2
psetup	A Windows Utility used to discover the embedded management board's MAC address and to change the embedded management board's IP-address.	1.2.4

3.6. Management Information Base (MIB)

Note (*) indicates a new version, (**) indicates a new item.

Name	Description	Version
MIB_bull_PlatformManagement	Defines Platform Management SNMP interfaces of Bull servers.	201411171200Z
MIB_PlatformEventTraps	The Platform Event Trap definition file. This MIB (Management Information Base) file is used by SNMP (Simple Network Management Protocol) managers to receive server hardware events.	2.3.6

3.7. Bull Admin Tools

Note (*) indicates a new version, (**) indicates a new item.

Name	Description	Version
BSMHW_NG	A set of prompt commands, based on free IPMI open source commands, used to manage server or device hardware. These commands can be used to return information and status and/ or to remotely control and configure server hardware.	1.5.2
iCare	A WEB application used for hardware unit maintenance. Both Linux and Windows versions are provided.	2.2.0

Chapter 4. Recommendations

4.1. Broadcom_PCIe_BCM957416A4160C firmware

The correct firmware version to be used is 20.6.112.0.

Note Available on the Bull Support Website: https://support.bull.com

4.2. System Hardware Console (SHC)

It is strongly recommended to clear the Internet browser's cache before using the SHC.

4.3. Server Hardware Console (SHC) Firmware Update

- It is strongly recommended to power off the system before updating the SHC firmware. Otherwise, some slave modules may be lost.
- If the PCIe slot 0 is not visible after updating the SHC, do an AC/Off - AC/On to see the slot.

4.4. FPGA_CPB Update

It is mandatory to update the SHC firmware before updating the FPGA_CPB firmware.

4.5. Boot on BIOS with LPe3100x cards

If the server fails to boot the BIOS, and shows the following messages in the logs, apply the last version of firmware (11.4.204.20 or higher).

```
InstallProtocolInterface: 6F2F4E41-0710-4AB1-8CDF-2CD15C2346EA 0
ASSERT
c:\udk2015\MdeModulePkg\Bus\Scsi\emulex\LancerFC\Fibre\ComponentName2.c(81):
CR has Bad Signature
ASSERT
c:\udk2015\MdeModulePkg\Bus\Scsi\emulex\LancerFC\Fibre\ComponentName2.c(132):
CR has Bad Signature
!!!! X64 Exception Type - 000000000000000D !!!!
RIP - 000000005A6EB714, CS - 0000000000000038, RFLAGS - 0000000000010202
ExceptionData - 0000000000000000
RAX - 0A0341D0000C0102, RCX - 0000000056BA02A4, RDX - 000000005A6F09E0
RBX - 0000000000000000, RSP - 0000000048EFF720, RBP - 0000000048EFF860
RSI - 0000000048EFFA30, RDI - 0000000048EFFA38
R8 - 0000000000000004, R9 - 0000000048EFF820, R10 - 000000000000FFF1
R11 - 0000000048EFF3C0, R12 - 000000005A6F09E0, R13 - 0000000000000100
R14 - 0000000000000038, R15 - 0000000000000000
DS - 0000000000000030, ES - 0000000000000030, FS - 0000000000000030
GS - 0000000000000030, SS - 0000000000000030
GDTR - 00005B161F300047 0020007300610000, LDTR - 0000000000000000
IDTR - 0000589E70180FFF 006E006700690000, TR - 0000000000000000
CR0 - 0000000080000013, CR2 - 0000000000000000, CR3 - 0000000048E5F000
CR4 - 0000000000000668, CR8 - 0000000000000000
DR0 - 0000000000000000, DR1 - 0000000000000000, DR2 - 0000000000000000
DR3 - 0000000000000000, DR6 - 00000000FFFF0FF0, DR7 - 0000000000000400
ERROR: C90000002:V305000D I0 62D171CB-78CD-4480-8678-C6A2A797A8DE 55378498
```

4.6. QAT and RedHat

It is strongly recommended to disable the QAT (Quick Assist Technology) option under RedHat as it does not work correctly.

This option is disabled by default in the BIOS settings.

4.7. MicroSD cards in URS

In order to work properly in the Internal Dual RAID board, the microSDs must be formatted correctly. Please use only those provided by Atos representatives.

Chapter 5. Information

5.1. Enabling Trusted Platform Module (TPM)

Important	**Before enabling the TPM feature, it is mandatory to verify that its usage complies with local laws, regulations and policies and get approvals or licenses where applicable. Bull SAS will not be responsible for any related liabilities to any compliance issues arising from your usage of TPM violating the above mentioned requirements.**

Important	在启用**TPM**功能之前，您必须确认其使用符合当地法律，法规和政，并在适用情况下获得批准或许可。 违反上述要求，**Bull SAS** 将不承担由于您使用**TPM**而导致的任何合规问题的相关责任。

5.2. Recovering Firmware

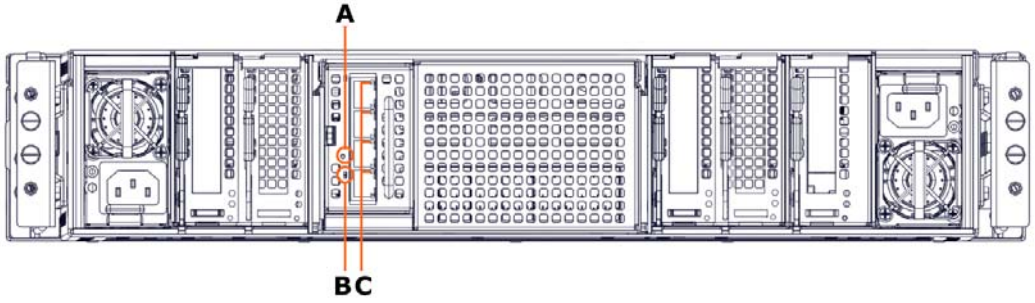
This section explains how to recover from any failure during a firmware update.

5.2.1. Recovering the Server Hardware Console (SHC) Firmware

This sections details the operations to perform to recover the SHC main image.

1. Push the firmware recovery button on the PEB (A)until the firmware recovery LED (B) blinks red. The system boots from the backup images.

Rear view



2. When the Ethernet link activity LED (C) blinks amber, run the following command.

```
ipmi-oem … bull upgrade <image BMC> MC_RESTORE
```

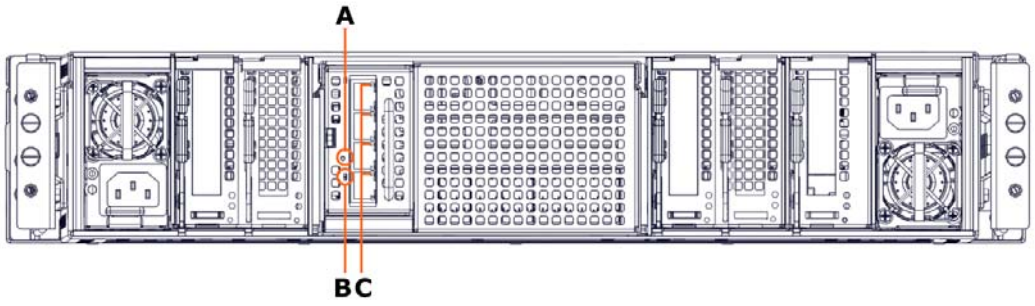
3. Power the system off.
4. Power the system back on to allow normal boot.

5.2.2. Recovering the BIOS Firmware

This sections details the operations to perform to recover the BIOS main image if the SHC can not be reached.

1. Push the firmware recovery button on the PEB (A) until the firmware recovery LED (B) blinks red. The system boots from the backup images.

Rear view



2. When the Ethernet link activity LED (C) blinks amber, run the following command.

```
ipmi-oem … bulloem upgrade <image BIOS> BIOS
```

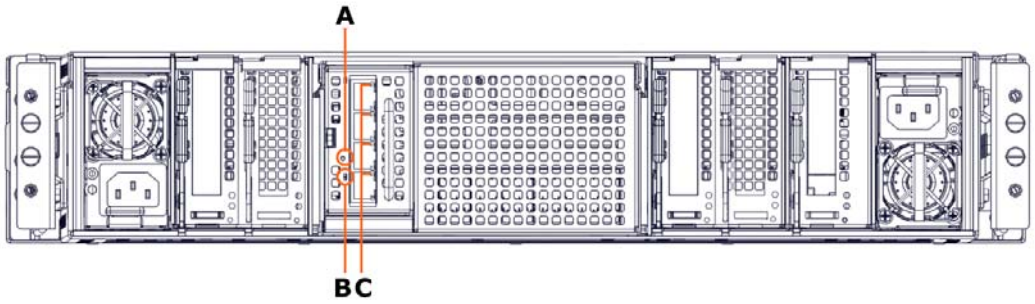
3. Power the system off.
4. Power the system back on to allow normal boot. The network is now available.

5.2.3. Recovering the Phy Ethernet Board (PEB) Flash Firmware

This sections details the operations to perform to recover the PEB main image if the SHC can not be reached.

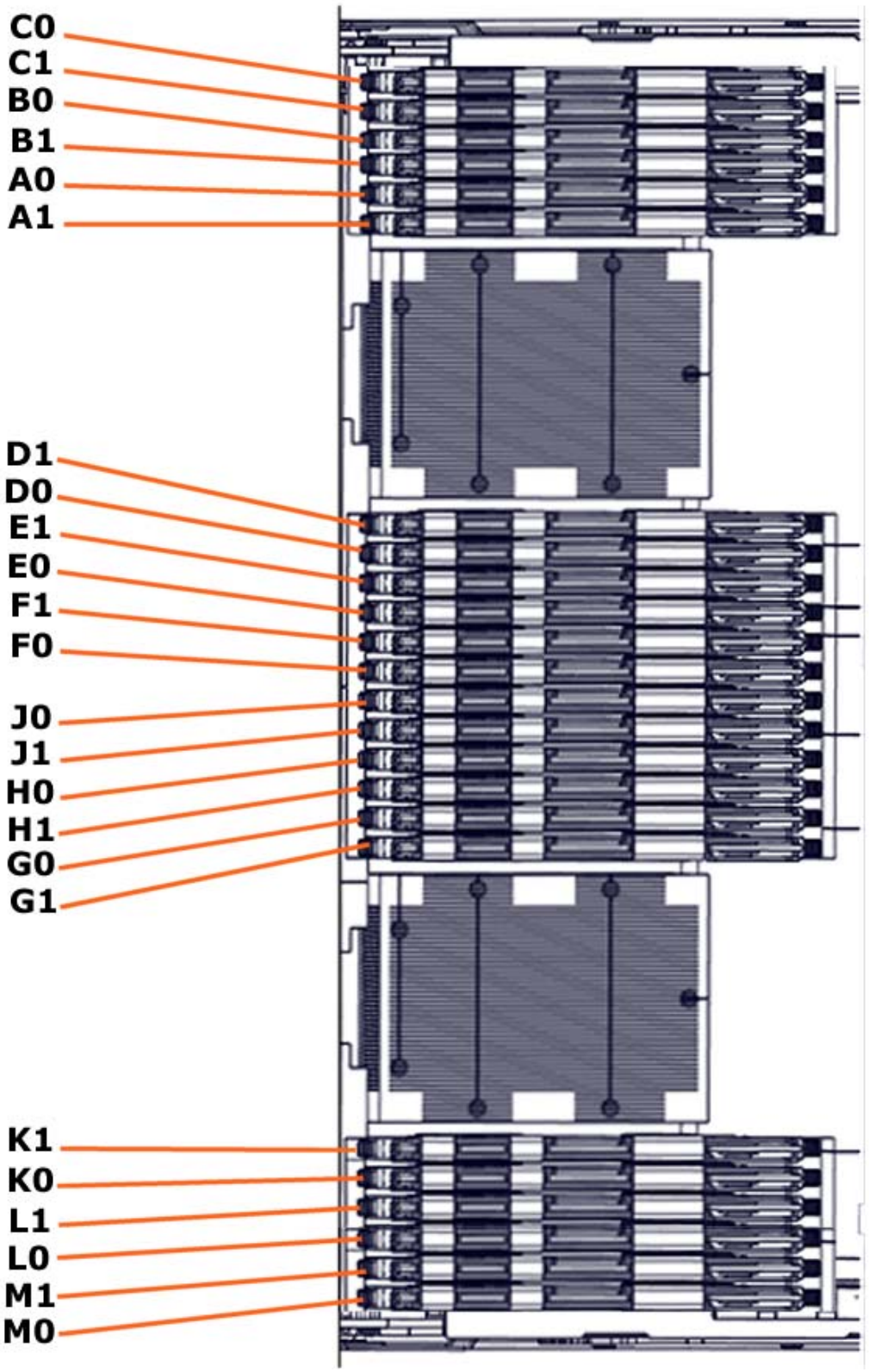
1. Push the firmware recovery button on the PEB (A) until the firmware recovery LED (B) blinks red. The system boots from the backup images.

Rear view



2. When the Ethernet link activity LED (C) blinks amber, power off the system.
3. Power the system back on to allow normal boot. The network is now available.
4. If necessary, update the PEB Flash firmware from the SHC.

5.3. Memory Module Localization



Mark	CPU	Channel	BSM BIOS setting	DIMM	Locator on board	Slot name on board	Locator for dmidecode	BIOS setup memory topology page
C0	0	2	sck0ch2	0	J5C3	CH-C0	M0 CPU0 CH2 DIMM0	Socket0.ChC.Dimm0
C1	0	2		1	J5C4	CH-C1	M0 CPU0 CH2 DIMM1	Socket0.ChC.Dimm1
B0	0	1	sck0ch1	0	J5C5	CH-B0	M0 CPU0 CH1 DIMM0	Socket0.ChB.Dimm0
B1	0	1		1	J6C1	CH-B1	M0 CPU0 CH1 DIMM1	Socket0.ChB.Dimm1
A0	0	0	sck0ch0	0	J6C2	CH-A0	M0 CPU0 CH0 DIMM0	Socket0.ChA.Dimm0
A1	0	0		1	J6C3	CH-A1	M0 CPU0 CH0 DIMM1	Socket0.ChA.Dimm1
D1	0	3	sck0ch3	1	J8C1	CH-D1	M0 CPU0 CH3 DIMM1	Socket0.ChD.Dimm1
D0	0	3		0	J8C2	CH-D0	M0 CPU0 CH3 DIMM0	Socket0.ChD.Dimm0
E1	0	4	sck0ch4	1	J8C3	CH-E1	M0 CPU0 CH4 DIMM1	Socket0.ChE.Dimm1
E0	0	4		0	J8C4	CH-E0	M0 CPU0 CH4 DIMM0	Socket0.ChE.Dimm0
F1	0	5	sck0ch5	1	J9C7	CH-F1	M0 CPU0 CH5 DIMM1	Socket0.ChF.Dimm1
F0	0	5		0	J9C8	CH-F0	M0 CPU0 CH5 DIMM0	Socket0.ChF.Dimm0
J0	1	2	sck1ch2	0	J1C1	CH-J0	M0 CPU1 CH2 DIMM0	Socket1.ChC.Dimm0
J1	1	2		1	J1C2	CH-J1	M0 CPU1 CH2 DIMM1	Socket1.ChC.Dimm1
H0	1	1	sck1ch1	0	J1C3	CH-H0	M0 CPU1 CH1 DIMM0	Socket1.ChB.Dimm0
H1	1	1		1	J2C1	CH-H1	M0 CPU1 CH1 DIMM1	Socket1.ChB.Dimm1
G0	1	0	sck1ch0	0	J2C2	CH-G0	M0 CPU1 CH0 DIMM0	Socket1.ChA.Dimm0
G1	1	0		1	J2C3	CH-G1	M0 CPU1 CH0 DIMM1	Socket1.ChA.Dimm1
K1	1	3	sck1ch3	1	J4C1	CH-K1	M0 CPU1 CH3 DIMM1	Socket1.ChD.Dimm1
K0	1	3		0	J4C2	CH-K0	M0 CPU1 CH3 DIMM0	Socket1.ChD.Dimm0
L1	1	4	sck1ch4	1	J4C3	CH-L1	M0 CPU1 CH4 DIMM1	Socket1.ChE.Dimm1
L0	1	4		0	J4C4	CH-L0	M0 CPU1 CH4 DIMM0	Socket1.ChE.Dimm0
M1	1	5	sck1ch5	1	J5C1	CH-M1	M0 CPU1 CH5 DIMM1	Socket1.ChF.Dimm1
M0	1	5		0	J5C2	CH-M0	M0 CPU1 CH5 DIMM0	Socket1.ChF.Dimm0

Chapter 6. History of Previous Versions

6.1. TS 05.02 (March 2018)

New features and changes

BIOS_SKL040

- Intel fix for Spectre and Meltdown issues
- Memory SddcPlusOne RAS feature enabled by default.
- Fixed excluded dimm display in setup memory topology.
- Improved PatrolScrubbing logging messages on error.
- The integrated Gbe controller is now reported to the Server Hardware Console (SHC).
- Improved dmidecode type9 display for PCIe slots information.
- The Press Esc line is now displayed at 60% of window height for small screens.
- Added Rank Sparing RAS feature (1 or 2 spare ranks).
- Improved RAS messages sent to SHC for SDDC, ADDDC, RankSparing, Leaky Bucket RAS features.

EMM33_BMC

- Changed display of identification LED for better understanding of actions.
- SEL events can be displayed in multiple or single web pages.
- Added the SEL binary file to Collect Log files.
- Partitioning is now available from the SHC, including from a slave console.
- Boot device and instance can be selected from the SHC. This is used to set parameters that direct the system boot to a particular option after a system power up or reset. This feature is the same as the IPMI boot device option.
- PCIe hot plug is available under Red Hat and Suse only.
- On the Power Management web page, Force Power Off, Force Power Cycle, Hard Reset and Diagnostic Dump commands need to be confirmed.
- The “super” user name can be modified from the SHC.
- Implemented reset to default function.

FPGA_CPB

- Fans run at FULL SPEED when the SHC hangs in power on state.

Resolved Issues

Simultaneous power on of different partitions

Powering on two modules of different partitions simultaneously is now possible.

FPGA Update on a BullSequana S800 Server

Inconsistent messages are no longer issued at power on after updating the FPGA on a BullSequana S800 server.

BullSequana S200 Server BIOS Update with Error in SEL

Inconsistent messages are no longer issued when the BIOS update is successful.

Unable to Update Bios with the Preserved Nvram Option

Updating the BIOS firmware from the SHC with the preserved Nvram option is now possible. On a multi-module server, every module is updated successfully.

ESXi 6.5 Installation Failure on USB Raid SD Card (URS)

Installing ESXi 6.5 on a USB Raid SD Card (URS) with Virtual Media is now possible without failure.

Updating the SHC firmware on a multi-module server

The SHC will not show the firmware update as completed if it is not completed on all modules.

6.2. TS 04.02 (January 2018)

This Technical State 04.02 is a patched one compared to the Technical State 04.01. It addresses the Intel Meltdown/Spectre patch.

See The Technical Support Bulletin 400-18-02 for more details, available on the Bull Support Website: https://support.bull.com

6.3. TS 04.01 (December 2017)

First delivery

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