

## **Release Letter Driver Version CBplus-7.41**

Cell BE based blade / Malta Board (M/T 79232X)

### **Table of content**

Notice.....	2
Supported platforms.....	2
This package contains.....	2
Release History.....	3
Change History.....	3
Known issues.....	4
Code Compatibility.....	5
Upgrade instructions.....	6
Tips and hints.....	6
Used Hardware.....	7
Trademarks.....	7

### **IMPORTANT NOTICE:**

**There is a dependency between the BMC fw and the host FW. Before you start your update check the compatibility matrix and the update procedure!**

**Level 10 and Level 20 boards are not supported any longer!**

**This driver supports Redhat Enterprise Linux 5.1**

**You need a RHEL 5.1 beta installation to run this driver**

**RHEL 5.1 beta is not distributed together with this driver**

**The official RedHat Linux Kernel could be downloaded from RedHat Web Site using the following link: <http://people.redhat.com/dzickus/el5/>**

**Please check the compatibility matrix below.**

## Notice

The CB+ driver CB+741 has been released to test.

This driver includes a package for SAS drive support which has been used for Bring-Up. Anyway, due to missing hardware this package could not be tested by the driver integration team again!

This driver contains a bootable Linux Kernel together with a initial ramdisk intended to update the firmware of the broadcom chip: `zImage.initrd-bcmautoflash_338_247` This image does not use the final tool to update the Broadcom chip but a diagnostic tool from Broadcom. For licensing reasons this image must not leave IBM.

It is highly recommended to use `update_flash` under Linux instead of `update-flash` from SLOF.

Cisco OFED 1.2 tvflash on QS21:

The BC2 HSDC firmware v4.7.600 is not working on QS21.

In order to fix the issues, a new firmware needs to be installed – v4.8.200

The necessary files to update the firmware are located in the drivers `tools/cisco-qs21-tvflash` subdirectory.

## Supported platforms

This code supports Cell BE based blades (Malta boards) with following hardware revisions:

- revision 3 (Level 30; Machine type/Model 79232X)
- revision 4 (Level 40, 41, 42; Machine type/Model 79232X)

To check your blade's hardware revision, use the Management Module Web Interface to do the following:

1. Go to Monitors -> Hardware VPD
2. Scroll down to view the VPD info for your Cell BE based blade
3. If the column "Hardware Revision" states "30" or "40" or greater you have the appropriate hardware to use this code

Last supporting system driver for each hardware revision:

- hardware revision 1 (Level 10):            QS21 System Driver 7.10
- hardware revision 2 (Level 20):            QS21 System Driver 7.27
- hardware revision 3 (Level 30):            still supported with this driver
- hardware revision 4 (Level 40):            still supported with this driver

## This package contains

CNETCMUS.pkt	Advanced Management Module Firmware Update 28G
zImage.initrd-bcmautoflash_338_247	Broadcom Firmware Update
<a href="#">BNBT16A.pkt</a>	<a href="#">Blade Board Management Processor Code</a>
cellbladeplus_v32.jed	FPGA code (Level 30/40)
<a href="#">QB-1.9.1-1-boot_rom.bin</a>	<a href="#">Host Firmware Code</a>
CellDevScripts-CBPLUS710.tgz	Bringup Scripts
malta30_107_12_0701.bin	VPD (Level 30)
malta40_107_12_0800.bin	VPD (Level 40)
malta41_107_12_0901.bin	VPD (Level 41)
malta42_107_12_0A00.bin	VPD (Level 42)
<a href="#">Cbplus-7.41_ReleaseLetter.odt</a>	this file

All files can be found on the repository at GSA under

`/gsa/ehngsa/projects/m/malta-driver/released_dev/741`

## Release History

Cbplus-7.41 (October 12, 2007)  
 Cbplus-7.33 (August 17, 2007)

## Change History

The following issues have been fixed / new functions have been implemented:

CBPLUS-7.41 new / changed functions

Driver		Cmvc / Bugzilla IDs	Description
7.41	BMC fw	392845	PCI-X card white list
		392855	Add FPGA bit after init training
		372940f_1	Init failed x12
		383287	Init Failed x18
		393056	Init fail 16&96 and 98
	Host fw	380907	Closed: QS21- Blade hangs at the memory portion when booting Firmware-Fix that writes the correct default value back into a FPGA register. This fix avoids changes in hardware.
		387344	Closed: yaboot fails to get MAC of boot NIC on QS21 This fix stores the BOOTP/DHCP response packet to the device tree according to the OpenFirmware spec. Yaboot needs this information in some cases. Fix is already tested and verified by the creator.
		388108	Verify: EMET: Malta does not error report when IP is not read. We just increased the Watchdog-Timer to avoid the race condition. Now our code is able to disable the Watchdog and to report the error before the watchdog initiates a reboot.
		386502	Closed: Forth word "version" does not show Broadcom Firmware version The user will see the Broadcom-Bootcode level now.
		385254	Closed: SMS menu always forces BOOTP instead of DHCP This fix makes DHCP as default protocol.
		388028	Closed: FW QB-1.9.1-0 issue regarding boot sequence. The problem has been solved by correcting some string operations.
		385839	Closed: DRONE boot comes up with "-2" on stack. We forgot a simple condition check. This is fixed now.
		392785	Verify: USB scan hang up because of bad Device
		38933	Closed: ELF loader parser not properly interpreting ELF header

## Known issues

aMM	n.a.
BCM fw	Planar Fault LED shows N/A instead of Planar.
FPGA code	n.a.
Host fw	n.a.
Linux	n.a.
Scripts	n.a.
Tools	Only Infiniband cards with firmware 4.8.200 and above are supported. See Upgrade Instructions below.

## Code Compatibility

During driver integration intensive test were made with the following code version combinations. With this code version combinations no incompatibility could be detected.

Hard-ware	aMM	Fpga code	VPD	BMC fw	Host fw	Script	Linux	Re-mark
30	BPET28G	32	5	BNBT16A	QB0109101	7.10	zImage-2.6.18-43.el5	
30	BPET28G	32	5	BNBT15A	QB0109100	7.10	zImage-2.6.18-43.el5	
30	BPET28G	32	5	BNBT16A	QB0109101	7.10	zImage-2.6.18-43.el5	
40	BPET28G	32	5	BNBT16A	QB0109101	7.10	zImage-2.6.18-43.el5	
40	BPET28G	32	5	BNBT15A	QB0109100	7.10	zImage-2.6.18-43.el5	
40	BPET28G	32	5	BNBT16A	QB0109101	7.10	zImage-2.6.18-43.el5	
41	BPET28G	32	5	BNBT16A	QB0109101	7.10	zImage-2.6.18-43.el5	
41	BPET28G	32	5	BNBT15A	QB0109100	7.10	zImage-2.6.18-43.el5	
41	BPET28G	32	5	BNBT16A	QB0109101	7.10	zImage-2.6.18-43.el5	

Tab. 1: Software combinations tested in this driver integration tests

## Upgrade instructions

**IMPORTANT NOTICE:** It is strongly recommended to update the host firmware before updating the BMC firmware as described below.

1. Upgrade optional Infiniband card firmware via Linux `tvflash` utility
  1. Depending on your Linux configuration loading the Linux Driver `ib_mthca` for an Infiniband card with firmware version 4.7.600 will cause the board to generate a NMI and reboot. So you first have to modify your Linux setup to not load the Infiniband driver on system boot. To do that you could boot the board without the Infiniband card. On RHEL5U1 you could prevent loading the driver by adding the line  
`blacklist ib_mthca`  
to the file `/etc/modprobe.d/blacklist`  
Fortunately this driver is not required to update the firmware of the card.
  2. Copy the content of the `tools/infiniband` folder to the blade's Linux installation.
  3. Change dir to `cisco-qs21-tvflash` directory on the blade as root.
  4. On the Linux prompt perform `./tvflash -p fw-bc2-a0-4.8.200.bin`  
It is important to use this provided version of the `tvflash` utility and to use the "-p" option. *After* upgrading to firmware Level 4.8.200, the `tvflash` utility from your Linux distribution should also work without the "-p" option.
2. Upgrade host firmware via Linux `update_flash` utility
  5. Copy the new firmware file to the blade's Linux installation
  6. On the Linux prompt perform `update_flash -f QB-1.9.1-1-boot_rom.bin`
3. Upgrade System Management Processor firmware
  1. BMC flash is only allowed when the blade is powered off
  2. Copy the BMC firmware file to the server
  3. From the Management Module web interface, select "Blade Tasks" -> "Firmware update"
  4. In the Update Blade Firmware screen select the target blade and the firmware file `BNBT16A.PKT`, and click "Update".
  5. In the Confirm Firmware Update screen click "Continue"
  6. Wait until the following message is displayed:  
`Update of CPBB-nnnn firmware was successful.`  
The new firmware version is active now.
4. Upgrade the Broadcom chip
  1. Updating the Broadcom chip is done using the same way like booting any other Linux image.
  2. Just follow the steps above like 'Install Linux' starting at point 4.

## Tips and hints

### boot Linux

- In the official RedHat Kernel e.g. 43.el5 from <http://people.redhat.com/dzickus/el5/> currently a DHCP patch is missing. That's why you have to specify the complete NFS path instead of `/dev/nfs` to boot such a kernel.

**Infos about the fw** (version, bot side, ...) can be found at the blade at `/proc/device-tree/openprom/`

**Infos about the hw** (clock rate, memory size, ...) can be found at the blade at `/proc/cpuinfo`,  
`/proc/meminfo`

## Used Hardware

- Board position 2014  
CB+ blade, board number 075510Z, hardware revision 30
- Board position 2011  
CB+ blade, board number 074V11Z, hardware revision 30
- Board position 2012  
CB+ blade, board number 075Y108, hardware revision 40
- Board position 2010  
CB+ blade, board number 077L11C, hardware revision 41

## Trademarks

Cell BE (Cell broadband engine) is a trademark of Sony Computer Entertainment Inc.

(C) Copyright International Business Machines Corporation 2006.  
All rights reserved.