

Cannonball Platform Firmware Release Notes

Revision: 0.50
Date: 08-31-2017

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II. Overview

This document provide the BIOS release related information for Cannonabl, and the firmware components affected by the changes for this BIOS release.

III. Version

Firmware Component	Version	Release Date
BIOS	0.50	08-31-2017

IV. Cross Dependency

Firmware Component	Version	Remarks
N/A	N/A	N/A

v. Specification Compliance

Specification	Revision
AWS Platform Firmware Specification	800800-003553-008H
Compute_15B_FW Spec	0.9
Amazon Server Board Specification	005 Draft

VI. BIOS Changes

A. Version

Component		Version / Comments
BIOS	BIOS Version	0.50
	BIOS Binary filename	CANBL050.BIN
	BIOS Binary File Checksum	e656fbb4e0a52412438ef442ff6ceaa9
	Checksum Type	MD5
	BIOS Build Date	08-31-2017
	BIOS GIT Commit-ID or tags	V0.50
	ODM Firmware Code Base	git-codecommit.us-east-1.amazonaws.com/v1/repos/flex-16bios-4e52
	Motherboard Hardware Revision	X01
	AMI Codebase/Label (if applicable)	5.12_PurleyCrb_0ACFD081
	Intel RC	142.R08
	Firmware update tool	afulnx_64
Onboard Device Firmware (If applicable, otherwise skip)	ACM	v1.3.3
	SPS ME Firmware (NM)	4.00.03.235.0
	VGA Option ROM	v.1.03.05

	MCU	A-0:M1350650_8000002B
	MCU	A-1:M1350651_8000002B
	MCU	B0: M9750652_80000034
	MCU	H0: M9750654_02000029

NOTES:

ODM Firmware Code Base: This shall be the ODM repository used for the release.

Onboard Device Firmware: This is applicable to BIOS release notes and it will include the Intel ME Firmware, MCU, onboard IO controller firmware etc.

The package structure of the firmware update tools shall comply with the Vendor-supplied Firmware Tools specification (800-009432-002).

B. Changes and Bug Fixes

Feature/Issue	Description	Remarks
Support to synchronize BIOS time and BMC time on every system boot		Per request by AWS/ZT to be same as previous AWS platform
Modify default BIOS Settings for some setup items	Set "Link L0p Enable" to Enabled Set "Link L1 Enable" to Enabled Set "KTI Prefetch" to Disabled	Amazon Server Board Specification Cannonball (DRAFT_800-027740-005)
Correct token "FPT_START" to 0x1000.	Refer to Note #1 below.	JIRA: FLEX-109
Changed correctable memory error threshold from 1 to 100. Changed Leaky bucket config HI value to 0xA. Changed Leaky bucket config LO value to 0x9.		Amazon Server Board Specification Cannonball (DRAFT_800-027740-005)
Updated source code to 5.12_PurleyCrb_0ACFD081.		Intel RC: 142.R08 Intel BKC Version: 2017_WW31
Fix only one Boot Fail event when Endless Boot is enabled and system keep retrying to boot from PXE		
Updated AHCI to label AHCI_16.		

[*] The issue number will be a hyperlink to the ODM Jira issue. This will help the reader to quickly check the issue log for details.

C. Known Issues

D. Notes

1. If encounter JIRA: [FLEX-109](#) prior to BIOS 0.50, please follow the steps below to update BIOS/ME regions to BIOS 0.50 or later versions.

- 1) Execute the update_bios.sh.
- 2) You should see AFU Utility is suspended w/ "Update success for MER".
- 3) Then shutdown the system properly.
- 4) Power on system and boot to OS.
- 5) Execute the update_bios.sh again.
- 6) After flash is done, you should see "ME Entire Image update success !!".

Step 1 is for correcting AMI token in BIOS region.

Steps 2-5 is for re-flashing ME region.

E. Change Log

Release Version	Feature/Issue	Description	Remarks
V0.41	Updated AST2500 to label AST2500_06.		
	Disabled ACPI S4 supported.		Refer to Compute15B Firmware SPEC.
	Support Endless Boot	When Endless Boot is enabled, BIOS will try to boot from all boot devices until system can boot successfully. There is also a setup option "Endless Boot Support" added in Boot menu	New requirement from AWS JIRA: FLEX-68
	Fix default setting of some setup items don't match the definition in FW Spec	Set "Port XX: PCI-E ASPM Support" of all IIO PCIE Ports to disable except Port 0/DMI	JIRA: FLEX-77
	Added individual USB Setup options.		AWS Platform Firmware Spec (800-003553-008H)
	Added to support invalid boot sector event.		AWS Platform Firmware Spec (800-003553-008H)
	Added Secure Erase Support Setup options.		AWS Platform Firmware Spec (800-003553-008H)
	Log power-up via RTC wakeup for System Restart Cause.		Compute15B Firmware SPEC Rev 0.9.

	Correct event data2 & data3 of PCIe errors.		JIRA: FLEX-98
	Added VSCC value for Macronix MX25L25645G.		
	Changed reset times of Annapurna PCI-E Link workaround to 2.		Compute15B Firmware SPEC Rev 0.9.
	Updated PCIe Retrain SEL of PCIe link W/A.		Compute15B Firmware SPEC Rev 0.9.
	Updated PCIe Reset SEL of PCIe link W/A.		Compute15B Firmware SPEC Rev 0.9.
	Modified function "PcieRetrainLink" as per Compute15B Firmware Specification rev 0.9.		Compute15B Firmware SPEC Rev 0.9.
	Updated sensor number for Processor errors.		JIRA: FLEX-101
	Update sensor number for Post Progress Event	Sensor Number is changed to 0xDC	
V0.40	Added to log PCIe error extended data.		AWS Platform Firmware Spec (800-003553-008H)
	Modified for Memory Correctable Behavior.		AWS Platform Firmware Spec (800-003553-008H)
	Support to preserve password when NVRAM is reset by Load default jumper or RTC Power Loss.		New requirement from JAX
	Support to let BMC control Power Restore Policy.	1. Add "Restore AC Power Loss" in Server Mgmt menu. 2. Set "PCH state after G3" to S5 by default	New requirement from JAX
	Modify BIOS default value for some setup items.	1. Set "DCA" to Enabled 2. Set "Altitude" to 300 3. Set "Link L0p Enable" to disabled 4. Set "Link L1 Enable" to disabled	AWS Platform Firmware Spec (800-003553-008H) Amazon Web Services Server Board Specification (800-027740-004)
	Added to log UPI Correctable Error.		AWS Platform Firmware Spec (800-003553-008H)
	Fix Product Name in SMBIOS Type #1 is incorrect after BIOS sync FRU data to SMBIOS during POST.		

	Disabled SSC in ICC.		
	Added PCIe training delay options (0s, 0.5s, 1s, 1.5s, 2s, 2.5s, 3s - default is set to 0s).		
	Updated sensor number for all SEL.		Refer to JAX_BMC_design_exit_check_table.xlsx.
	Support End of Post event.		AWS Platform Firmware Spec (800-003553-008H)
	Support PXE Boot event.		AWS Platform Firmware Spec (800-003553-008H)
	Support Boot Error event.		AWS Platform Firmware Spec (800-003553-008H)
	Support POST Error event.		AWS Platform Firmware Spec (800-003553-008H)
V0.30	Support to sync BMC FRU data to SMBIOS Type 1/2/3 during POST.	Per request from AWS FW team to sync BMC FRU data to SMBIOS Type 1/2/3 (Except UUID/Family in Type 1)	AWS Platform Firmware Spec (800-003553-008H) + Email
	Added to support SPCR via PCIe BAR of K2T card.		Compute15B Firmware Specification, v008
	Added to support NMI - ipmitool power diag.		
	Updated source code to 5.12_PurleyCrb_0ACFD080.		
	Modify "BIOS Version" of SMBIOS Type 0 from "Aptio Core Version" to "BIOS Release Version (x.xx)"		AWS Platform Firmware Spec (800-003553-008H)
	Support SMBIOS Type 12 for Jumpers/Switches	Porting SMBIOS Type 12 for the Jumpers/switches on the Cannonball MLB (J14/J15/J27/J28/J29)	
	Support SMBIOS Type 41 for Onboard Devices Extended Information	Porting SMBIOS Type 41 for onboard device extended information (Onboard Video, SATA, sSATA)	
	Porting SMBIOS Type 8.		

	Porting SMBIOS Type 9.		
	Per SI report to modify USB2PP1 and USB2PP2 registers.		
	Per SI report to fine tune sSATA & SATA.		
	Per SI report to fine tune TXEQ of all the KTI ports.		
	Modify "BIOS Characteristics" of SMBIOS Type 0	Unset Bit23 and Bit24 of BIOS Characteristics	
	Support to preserve password when Flash BIOS with parameter "/n"		Request by JAX FW team
	Set the default value of setup item "Package C State" to "C0/C1 state"		Amazon Web Services Server Board Specification (800-027740-004)
V0.20	Added to support NMI Button.		
	Support SMI Timeout function	BIOS will trigger GPP_G16 to low when enter SMI handler, and trigger GPP_G16 to high again when exit SMI handler	AWS Platform Firmware Spec (800-003553-008H)
	Support BIOS Recovery from Full BIOS Bin file (32MB)		
	Added Annapurna PCI-E Link workaround.		Compute15B Firmware Specification, v008
	Modify default BIOS Settings for some Setup Items	Follow the BIOS default setting defined in AWS Spec to modify the default value of some setup items	AWS Platform Firmware Spec (800-003553-008H), Compute15B Firmware Specification, v008
V0.10	Per AWS spec to filter PXE Boot device.	Support to the PXE boot device selection defined in System Boot Order section of AWS FW Spec	AWS Platform Firmware Specification - 800-003553-008H
	Changed Serial IRQ Mode to Continuous.		
	Added delay for initializing BMC interface.	Add specific delay time when initializing BMC	

		interface after power on	
	Exclude K2C-AB NVME drives from BIOS boot device list.	Per definition in "System Boot Order", the K2C NVME drives must be blacklisted from being bootable devices	Compute15B Firmware Specification, v008
	Add FixBootOrder_13 Module.	Support System Boot order defined in AWS Firmware Spec	AWS Platform Firmware Specification - 800-003553-008H
	Add AMISetupNVLock_03 Module.	Support BIOS Password Module list in Compute15B Firmware Specification_08	Compute15B Firmware Specification, v008
	Enabled load default when CMOS is cleared.		

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VII. Blacklist document

This section shall provide the Blacklist Document name and the document shall be part of this release.

The purpose of the Blacklist document is to point out differences between the overall FW spec versus actual platform FW that is being delivered. The following areas shall be covered by the document:

- BIOS setup – will point out items that no longer exist, have different strings or different setup options to choose.
- BMC – will point out any gray areas for sensor names, event data bytes, etc.

The ODMs and HW Qual teams can use the Blacklist document(s) as a guide or reference when judging if particular data is accurate or not in the overall FW specification.

VIII. Confidential Notice

This section will contain the confidential notice from the ODMs regarding this release notes and its contents.

IX. Disclaimer

This section will contain disclaimer notice from the ODMs regarding this release notes and its contents.