Cannonball
Platform Firmware
Release Notes

Revision: 001
Date: 08-31-2017

I. Contents

II. Overview

This document will provide a brief overview of the Cannonball BMC firmware changes, and the firmware components affected by the changes for this release.

III. Version

This section will summarize the version number of the firmware component which is part of this release. Note that more details related to this release are captured in section VI.A.

Firmware Component	Version	Release Date
BMC firmware	V0.50	08-31-2017

IV. Cross Dependency

This section will contain notification(s) relevant to the cross dependency of the firmware component from this release with another firmware component, e.g. a release may require both BIOS and BMC be updated in order for a delivered feature or bug fix to function correctly. This section will describe the issue(s) resulting in the cross dependency.

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

V. Specification Compliance

This section will provide the list of AWS specifications the release complies.

Specification	Revision
AWS Platform Firmware Specification	800-003553-008H
AWS Server Board Specification	800-027740-004
Compute 15B Firmware Specification	800-030284-001

VI. BMC Changes

A.   Version

Component		Version / Comments
BMC	BMC Version	V0.50
	BMC Binary filename	rom.ima
	BMC Binary File Checksum	596bc75effb76fa3705ab9932ea3f643
	Checksum Type	MD5
	BMC Build Date	08-31-2017

	BMC GIT tags	V0.50
	ODM Firmware Code Base	reference-16bmc-16d5 e70a5bca6bb8f6bd92be43f7625ea2d3b6a1569e
	Motherboard Hardware Revision	X01
	AMI Codebase	AMI SPX RR11
	Firmware update tool	socflash v1.14

B.   Changes and Bug Fixes

Feature/Issue	Description	Remarks
Add CPU VR temperature sensor	Add CPU0_VCCIO_TEMP,CPU1_VCCIO_TEMP,CPU0_VCCIN_TEMP and CPU1_VCCIN_TEMP sensor	
Add CPU GPIO sensor	Add CPU_0_Status, CPU_1_Status discrete sensor for report CPU 0/1 status(ThermalTrip), CPU0_VCCIN_VRHOT,CPU1_VCCIN_VRHOT,CPU0_VCCIO_VRHOT, CPU1_VCCIO_VRHOT discrete sensor for report CPU VRHOT status.	
Add MAX_DIMM_TEMP, MAX_SSD_TEMP and BMC_INIT sensor	Add MAX_DIMMM_TEMP,MAX_SSD_TEMP sensor for report maximum temperature of DIMM/SSD, BMC_INIT sensor for report BMC firmware is ready.	
Add H20_CABLE_BROKEN sensor	Add H20_CABLE_BROKEN sensor for leakage detection.	Refer BMC Requirements for Liquid Cooling and Leak Detection_v0.7 from ZT.
Change CPU PUMP temperature slave address and sensor name.	Change TMP102 slave address to 0x90 which monitor CPU0 & CPU1 PUMP module temperature, and change sensor name PUMP_x_LQ_TEMP to CPUx_PUMP_LQTEMP, PUMP_x_TACH_y to CPUx_PUMP_RPM_y	Refer BMC Requirements for Liquid Cooling and Leak Detection_v0.7 from ZT.
Add wrong sensor/event type code in BMC fw update complete SEL	Fixed the bug about log incorrect sensor/event type in FW_UPDATE_STATUS SEL event	
System power can not keep last state when system power is on	Fixed system power cannot power-on when power-restore policy last state is on.	

BMC will record "CPU_x_DIMM_xx lower critical going low" assert/de-assert event during system power reset and AC off/on	Extend delay time before DIMM temperature polling.	

C.   Known Issues

Management CPLD would sending incorrect value to BMC via I2C bus.

D.   Notes

Cannonball BMC update instruction
1.   Change the path to BMC folder
2.   Run ./update_bmc.sh

E.   Change Log

Release Version	Feature/Issue	Description	Remarks
	Add CFM sensor and OEM command	Add SYS_CFM and CFM_PER_WATT sensor and OEM command to set CFM parameter.	Refer ZT_CFM_spec_v07_170810.pdf
	Add PUMP0/1 temperature sensor	Add PUMP_0_TEMP and PUMP_1_TEMP sensor	
V0.41	Update SDR data	Update below items in SDR 1. SYS_AMP_TEMP_0 threshold and entity id. 2. SYS_PCH_TEMP threshold. 3. SYS_VCORE_CPU0/1 SYS_VMEM_x UC/LC threshold. 4. SMB_ALERT entity id to 0x15. 5. PUMP_0/1_TACH sensor type to 0x0A. 6. AL5_x_TEMP UC to 0x5F. 7. SSD_x_TEMP entity id to 0x04,UC to 0x46. 8. SYSTEM_EVENT_LOG entity id to 0x22. 9. BMC_INTERNAL_WD, DBGLOG_RDY,MAX_DBGLOG_REACH to SDR type 3. 10.PXE_BOOT entity id to 0x22. 11.UPI_ERROR entity id to 0x03.	

		12.Add POST_PROGRESS and assigned sensor num to 0xDC	
	Add FW_UPDATE_VER sensor	Add FW_UPDATE_VER sensor and log SEL for BMC firmware update is completed	
	Add CPU_MSMI sensor	Add CPU_MSMI sensor, the processor that drove the MSMI must be in ED2. as a bitmap. i.e. bit 0 = CPU0; bit 1 = CPU1.	
	Add power monitor sensor	Add SYS_FAN_0_4_PIN, SYS_FAN_5_10_PIN, PUMP_PIN, PCIE_RISER_0_PIN and PCIE_RISER_0_PIN sensor.	Refer JAX Server Board Spec section VIII 'Power Telemetry'
	Change leak sensor for DVT design	Change leak sensor to high/low level trigger for DVT design and set default shutdown timer to 0.	
	Add PDB_HSC_1_VIN and PDB_HSC_1_IOUT sensor	Add PDB_HSC_1_VIN and PDB_HSC_1_IOUT sensor and re-arrange PDB related sensor number.	
	BMC will record "CPU_x_DIMM_xx lower critical going low" assert/de-assert event, during system power reset and AC off/on.	Extend delay time before DIMM temperature polling during system in AC / DC cycle.	
	Power restore policy command fail when option is set "always power off" and "last state".	Fixed set power policy command to 'always-off or 'last state' , system still power-on after remove AC power cord.	
V0.40	Update sensor SDR data	1. Change SYS voltage related sensor threshold LC/UC value. 2. Change SYS voltage related sensor name. 3. Change CPUx_PECI_TEMP LC/UC value. 4. Change SYS_FAN_x sensor name. 5. Change PDB related sensor name to PDB_HSC_x . 6. Change SYS_FAN_PUMP sensor name to PUMP_x_TACH_x . 7. Change BMC name to CANNONBALL_BMC. 8 Update all sensor entity id.	
	12V_CURRENT_OUT,12V_POWER_IN and AUX_POWER_IN trigger UC during AC	Fixed bug about recored 12V_CURRENT_OUT, 12V_POWER_IN and	

		AUX_POWER_IN going low assert	
	SYS_PCH_TEMP report is abnormal	Fixed the bug about SYS_PCH_TEMP report is abnormal.	
	Record CPU_X_DIMM_X_C_X going low assert event during AC cycle	Fixed the bug about record CPU_x_DIMM_x_C_x going low assert event during system AC cycle.	
	When remove fan module, SYS_FAN_x displays 0x0 in reading.	Once fan module is removed, BMC should report 0x0 in SYS_FAN_x reading.	
	SSD TEMP cannot be displayed	Fixed the bug about SSD temperature cannot be display	
	Block UDP/TCP port 9999	BMC FW must disable port 9999 by default.	Refer Amazon Server Board Spec, BMC requirement
	Add Set Fan PWM command	Add set fan PWM OEM command that requested by ZT	
	Add ZT Fan speed control algo code	Add ZT fan speed control algorithm and OEM command	
	Block AMI HPM and YAFU OEM cmd request	BMC blocked AMI HPM and YAFUFlash OEM command request	Refer Compute_15B FW Spec V08 section XIV. Firmware Update over IPMI.
	Enable set power restore policy cmd	Enable set power restore policy command (NetFn:0x0, Cmd:0x06)	Default power restore policy is 'always-on'
V0.30	Disable thermal shutdown	Disable BMC thermal shutdown behavior for short-term	
	Support PCIe SSD Temperature	Add PCIe SSD temperature into BMC sensor list	Refer Amazon Firmware Spec, page 47 ,PCIe SSD Temperature.
	Add PDB sensor	Add PDB sensor into BMC sensor list and remove PSU related sensor.	Refer Amazon Server Board Spec, section V. Power distribution board.
	Support set PDB limit register	Set PDB limit threshold into PDB PMBus register at BMC initial phase.	PDB limit threshold values are TBD
	Change PowerUnit status sensor for PDB	Change PowerUnit status sensor code to get PDB status.	
	PCH_MFG_MODE pin keep in HIGH	Fixed incorrect PCH_MFG_MODE pin config.	
	AL4~7_TEMP reading always 0	Fixed bug about reading value from AL4_TEMP,AL5_TEMP,AL6_TEMP,AL7_TEMP are always 0.	
	Fan 1/2/3/4/8/9/10/11 speed reading are abnormal.	Fixed bug in Fan module 1/2/3/4/8/9/10/11 reading value are abnormal and	

		generate low-critical event after AC cycle	
	LAN leash event generated after AC cycle	Fixed bug about LAN leash event generated after AC cycle	
	NMI signal reverse when press button quickly	Fixed bug about NMI signal is reversed, if press button quickly	
V0.20	Change BMC flash map	Change BMC firmware flash map for Compute 15B spec	Refer Compute_15B FW Spec V08 section XV Other section for BMC map
	Change GPIO pin for power control	Change power control GPIO pin definition	
	Fan module A RPM under critical value	Change fan sensor SDR data M & lower critical value and GPIO pin direction	
V0.10	Firmware Update over IPMI	No support YAFUflash to update firmware via KCS,BT,network,USB interface	Refer Compute_15B FW Spec V08 section XIV. Firmware Update over IPMI.
	Change SDR order of SDR_Version	Move SDR_Version OEM SDR to first order of SDR record	Refer AWS Server board spec v004, BMC requirement
	Support Leak Detection function and commands	Add leak detection sensor and set/get leak shutdown timer OEM command	Refer AWS Server board spec v004, BMC requirement
	Set BMC internal network	Set BMC eth1 port as internal network and set IP to static.	Refer Compute_15B FW Spec v08 section XI. Dual-home network
	Platform Debug Data Log download	Enable platform debug data log download via web server	Refer AWS Platform firmware spec,page 95
	CPU/DIMM Temperature reading is abnormal	Fixed CPU/DIMM temperature reading value is abnormal	N/A
	Incorrect reading in voltage sensor	Change SDR data in SYS_VBAT, SYS_V3.3, SYS_VCCIN_CPU0, SYS_VCCIN_CPU0 voltage sensor	N/A
	PHY 88E1510 can not run in 1G speed	Fixed PHY 88E1510 can not run in 1G speed.	N/A
V0.02	peci_read_temp called failed	Fixed peci_read_temp fail error message shown in BMC console	N/A
	Fail to retry sensor 0xA2...0xAA	Fixed 'Fail to retry sensor 0xA2' error shown in BMC console	N/A
	Abnormal LED behavior in BMC PHY	Fixed RJ45 port LED light on before plug cable	N/A
	Add fan mux module for fan sensor	Add Fan mux module DDF for fan sensor	N/A
	SMB/PMBus Alert	Update SMB/PMB alert pin from	N/A

		GPIO_IRQ_SML1_PMBUS_ALERT_N to GPIO_SMB_SMLINK4_ALERT_N	
	Support Pass-Through Interface	Update GPIOE port pass-through function per pin, due to GPIOE6/7 is for UART TX/RX functional pin.	N/A
	Change thermal sensors access from ME to BMC's PECI interface	Use BMC PECI interface to access CPU data,not use ME proxy PECI command to access CPU in Cannonball platform	N/A
	Enable PHY reset via GPIO	Use GPIOQ6 & GPIOQ7 to reset BMC PHY1 & PHY2	N/A
	Porting for OEM IPMI commands related to I2C devices	There are some new code for Supported Device I2C Device Master Write Read (support access device under mux.)	N/A
	Init platform GPIO setting	Initialize Cannonball GPIO in/output settings	N/A
	Add SYS_FAN_x sensor	Add fan sensor in Cannonball platform	N/A
	Support ACPI Power State	Support add event log when IPMI_ACPI_G1_SLEPPING_S1_S4 0x2A system power state unknow	N/A
	Change instance of cpu thermal sensor	Following instance of sdr is changed to 1. CPU_1_DTS_TEMP CPU_1_PECI_TEMP CPU_1_MARGIN	N/A
	Add system voltage sensor	Support voltage sensor monitor by BMC ADC channel	N/A
	Address of MAC1(eth1) conflict with Buildin FRU	2 lan channel use in Cannonball, add build-in EEPROM address which stores eth1 address.	N/A
	Support Annapurna Temperature	Add temperature sensor to monitor Annapurna card on-board temperature	N/A
	Set Target SOL Channel return Parameter out of range	Fixed return 'out of range' completion code when set target SOL channel OEM command	N/A
	UART routing porting	Set UART routing table for Cannonball platform	N/A
	Configure Lan/Sol channel8 user setting to meet spec	Enable Lan/SOL channel 8 to meet firmware spec requirement	N/A
	Add OEM script with execute permission	Some script show "Permission denied" while script running.	N/A

| V0.01 | Change BMC product ID & manufacture ID | Product id = 0x20, Manufacturer id = 0x0018A1Release for Cannonball Bring up | N/A |
| | Support PHY 88E1510 | Add PHY 88E1510 support in bootloader | N/A |

VII. Blacklist document

N/A

VIII. Confidential Notice

N/A

IX. Disclaimer

N/A