

Lanner

Telecom Datacenter Appliances

Hybrid TCA Platforms

HTCA-E400

HMB-E100/HMB-E200/HLM-E110

User Manual

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About this Document

This manual describes the overview of the various functionalities of this product, and the information you need to get it ready for operation. It is intended for those who are:

- responsible for installing, administering and troubleshooting this system or Information Technology professionals.
- assumed to be qualified in the servicing of computer equipment, such as professional system integrators, or service personnel and technicians.

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Icon Descriptions

The icons are used in the manual to serve as an indication of interest topics or important messages. Below is a description of these icons:

Icon	Usage
 Note or Information	This mark indicates that there is something you should pay special attention to while using the product.
 Warning or Important	This mark indicates that there is a caution or warning and it is something that could damage your property or product.

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Compliances and Certification

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ▶ Reorient or relocate the receiving antenna.
- ▶ Increase the separation between the equipment and receiver.
- ▶ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ▶ Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

- ▶ Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- ▶ This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

EMC Notice

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

Safety Guidelines

Follow these guidelines to ensure general safety:

- ▶ Keep the chassis area clear and dust-free during and after installation.
- ▶ Do not wear loose clothing or jewelry that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- ▶ Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- ▶ Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- ▶ Disconnect all power by turning off the power and unplugging the power cord before installing or removing a chassis or working near power supplies
- ▶ Do not work alone if potentially hazardous conditions exist.
- ▶ Never assume that power is disconnected from a circuit; always check the circuit.

In order not to result in potential electric shock or fire, please avoid improper use narrated below:

- ▶ Replacing a battery with an incorrect type (e.g. in the case of certain lithium battery types), which can defeat a safety guard.
- ▶ Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, which can result in an explosion.
- ▶ Leaving a battery in an extremely high temperature surrounding environment, which can result in an explosion or the leakage of flammable liquid or gas.
- ▶ A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.

Lithium Battery Caution:

- ▶ Risk of Explosion if Battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- ▶ Installation only by a trained electrician or only by an electrically trained person who knows all English Installation and Device Specifications which are to be applied.
- ▶ Do not carry the handle of power supplies when moving to another place.
- ▶ The machine can only be used in a fixed location such as labs or computer facilities.

Operating Safety

- ▶ Electrical equipment generates heat. Ambient air temperature may not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Be sure that the room in which you choose to operate your system has adequate air circulation.
- ▶ Ensure that the chassis cover is secure. The chassis design allows cooling air to circulate effectively. An open chassis permits air leaks, which may interrupt and redirect the flow of cooling air from internal components.
- ▶ Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. Be sure to follow ESD-prevention procedures when removing and replacing components to avoid these problems.
- ▶ Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

- ▶ Periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

Mounting Installation Precaution

Environment:

- ▶ Do not install and/or operate this unit in any place that flammable objects are stored or used in.
- ▶ If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
- ▶ Installation of the equipment (especially in a rack) should consider the ventilation of the system's intake (for taking chilled air) and exhaust (for emitting hot air) openings so that the amount of air flow required for safe operation of the equipment is not compromised.
- ▶ To avoid a hazardous load condition, be sure the mechanical loading is even when mounting.
- ▶ Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- ▶ Reliable earthing should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Installation & Operation:

- ▶ The installation of this product must be performed by trained specialists; otherwise, a non-specialist might create the risk of the system's falling to the ground or other damages.
- ▶ Lanner Electronics Inc. shall not be held liable for any losses resulting from insufficient strength for supporting the system or use of inappropriate installation components.

Consignes de sécurité

Suivez ces consignes pour assurer la sécurité générale :

- ▶ Laissez la zone du châssis propre et sans poussière pendant et après l'installation.
- ▶ Ne portez pas de vêtements amples ou de bijoux qui pourraient être pris dans le châssis. Attachez votre cravate ou écharpe et remontez vos manches.
- ▶ Portez des lunettes de sécurité pour protéger vos yeux.
- ▶ N'effectuez aucune action qui pourrait créer un danger pour d'autres ou rendre l'équipement dangereux.
- ▶ Coupez complètement l'alimentation en éteignant l'alimentation et en débranchant le cordon d'alimentation avant d'installer ou de retirer un châssis ou de travailler à proximité de sources d'alimentation.
- ▶ Ne travaillez pas seul si des conditions dangereuses sont présentes.
- ▶ Ne considérez jamais que l'alimentation est coupée d'un circuit, vérifiez toujours le circuit. Cet appareil génère, utilise et émet une énergie radiofréquence et, s'il n'est pas installé et utilisé conformément aux instructions des fournisseurs de composants sans fil, il risque de provoquer des interférences dans les communications radio.

Avertissement concernant la pile au lithium

- ▶ Risque d'explosion si la pile est remplacée par une autre d'un mauvais type.
- ▶ Jetez les piles usagées conformément aux instructions.
- ▶ L'installation doit être effectuée par un électricien formé ou une personne formée à l'électricité connaissant toutes les spécifications d'installation et d'appareil du produit.
- ▶ Ne transportez pas l'unité en la tenant par le câble d'alimentation lorsque vous déplacez l'appareil.
- ▶ La machine ne peut être utilisée qu'à un lieu fixe comme en laboratoire, salle d'ordinateurs ou salle de classe.

Sécurité de fonctionnement

L'équipement électrique génère de la chaleur. La température ambiante peut ne pas être adéquate pour refroidir l'équipement à une température de fonctionnement acceptable sans circulation adaptée. Vérifiez que votre site propose une circulation d'air adéquate.

- ▶ Vérifiez que le couvercle du châssis est bien fixé. La conception du châssis permet à l'air de refroidissement de bien circuler. Un châssis ouvert laisse l'air s'échapper, ce qui peut interrompre et rediriger le flux d'air frais destiné aux composants internes.
- ▶ Les décharges électrostatiques (ESD) peuvent endommager l'équipement et gêner les circuits électriques. Des dégâts d'ESD surviennent lorsque des composants électroniques sont mal manipulés et peuvent causer des pannes totales ou intermittentes. Suivez les procédures de prévention d'ESD lors du retrait et du remplacement de composants.
- ▶ Portez un bracelet anti-ESD et veillez à ce qu'il soit bien au contact de la peau. Si aucun bracelet n'est disponible, reliez votre corps à la terre en touchant la partie métallique du châssis.
- ▶ Vérifiez régulièrement la valeur de résistance du bracelet antistatique, qui doit être comprise entre 1 et 10 mégohms (Mohms).

Consignes de sécurité électrique

- ▶ Avant d'allumer l'appareil, reliez le câble de mise à la terre de l'équipement à la terre.
- ▶ Une bonne mise à la terre (connexion à la terre) est très importante pour protéger l'équipement contre les effets néfastes du bruit externe et réduire les risques d'électrocution en cas de foudre.
- ▶ Pour désinstaller l'équipement, débranchez le câble de mise à la terre après avoir éteint l'appareil.
- ▶ Un câble de mise à la terre est requis et la zone reliant les sections du conducteur doit faire plus de 4 mm² ou 10 AWG.

Procédure de mise à la terre pour source d'alimentation CC

- ▶ Desserrez la vis du terminal de mise à la terre.
- ▶ Branchez le câble de mise à la terre à la terre.
- ▶ L'appareil de protection pour la source d'alimentation CC doit fournir 30 A de courant.
- ▶ Cet appareil de protection doit être branché à la source d'alimentation avant l'alimentation CC.

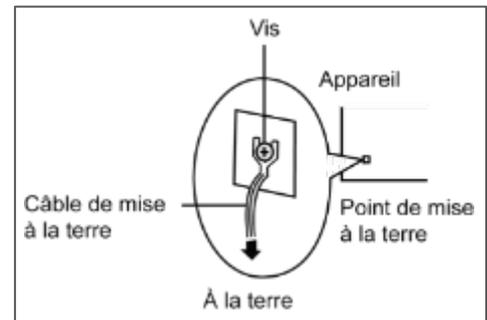


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CHAPTER 1: HTCA-E400 PRODUCT OVERVIEW

The HTCA-E400, a carrier-grade Open Edge Server, powered by 3rd Gen Intel Xeon Scalable Processors (codenamed Ice lake) with built-in AI Acceleration, for 5G Open RAN, Edge Cloud, and AI edge-focused applications with extensive configuration options. HTCA-E400 is a high-performance appliance designed to leverage edge computing for accelerating 5G deployment.

Key Features:

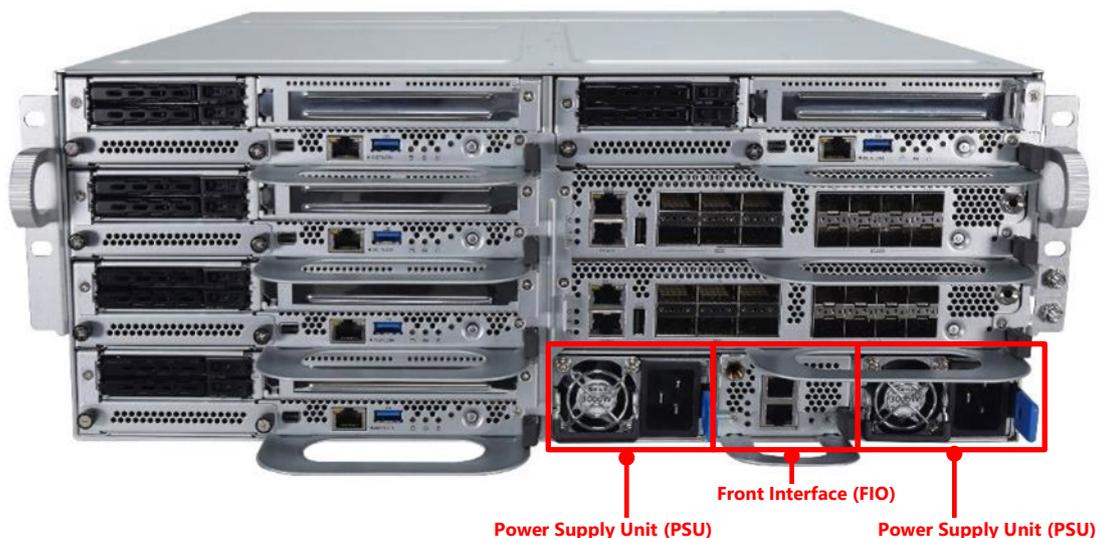
- Carrier-grade, full redundancy and extreme high performance
- 3rd Gen Intel® Xeon® Scalable Processor with AI Acceleration
- Support 5x 1U compute sleds or 2x 2U+1U compute sleds
- Support 2x switch sleds
- 450mm Short Depth Chassis for Edge Deployment
- Distinguished, Flexible and Front I/O Access
- 1+1 Redundant Hot-swappable PSU
- NEBS-3 Compliant for Harsh Conditions

Package Content

Your package contains the following items:

- ▶ 1x HTCA-E400 Network Security Platform
(includes 2x PSUs, Front Interface (FIO) Compute; Switch blades NOT included)
- ▶ 2x Handles, 3x Lock Brackets, 1x Screw pack

Note: Power Cable is not included. Power Cable requirements: Connector Type: C19; Cable Gauge: 12AWG; Voltage: VAC (HTCA-E400 only supports 220VAC with redundancy mode).



Ordering Information

SKU No.	Description
HTCA-E400	HybridTCA™ 4U Telecom Network Appliance

Available Blades

SKU No.	Description
HMB-E100	1U Compute Sled for HTCA-E400
HMB-E200	2U Compute Sled for HTCA-E400
HLM-E110	1U Switch Sled for HTCA-E400

System Specifications

Form Factor		4U Rackmount
Platform	CPU Options	Depend on 1U Compute Sled or 2U Compute Sled
BIOS		AMI SPI Flash BIOS
System Memory	Max. Capacity	Depend on CPU in 1U Compute Sled or 2U Compute Sled
Switch Blade	Switch Fabric	Depend on Switch Sled
Storage	Type	Depend on 1U Compute Sled or 2U Compute Sled
IPMI	Technology	Onboard AST2500
	Port	1x RJ45 Management Port; 1x RJ45 LOM Port
Expansion	PCIe	Depend on 1U Compute Sled or 2U Compute Sled
Cooling	Processor	CPU Heatsinks with Fan Duct
	System	Independent Smart fans on Compute Sled and Switch Sled
Environment	Operating Temperature	-5°C to 50°C (NEBS SKU); 0°C to 40°C (Commercial SKU)
	Storage Temperature	-40°C to 70°C
	Relative Humidity	5% to 90%, non-condensing
Miscellaneous	Watchdog	Yes
	Internal RTC w/ Li Battery	Yes
Mechanical	Dimension (WxHxD)	444 x 175.5 x 450mm
	Weight	27.5kg
	Mounting	4U Rackmount
Power	Type / Watts	3000W 1+1 Redundant PSU
	Input	220~240V @50-60Hz, Max.15.5A
OS Support	Linux	Cent OS 7.2 or above
Certification	EMC	CE Class A, FCC Class A, Design comply for NEBS Level 3



Important

The HTCA-E400's maximum power consumption is 3000W.

100V~127V provides 1000W.

200V~220V provides 2600W.

220V~240V provides 3000W.

Therefore, each power supply unit (PSU) should supply 3000W; hence, the power input needs to be within the range of 220V~240V.

HTCA-E400 Front Panel



No.	Description	
F1	2U Compute Sled	1x 2U Compute Sled
F2	1U Compute Sled	1x 1U Compute Sled
F3	1U Switch Sled	1x 1U Programmable Switch Sled
F4	Power Supply	3000W 1+1 Redundant Hot-swappable Power Supply Unit
F5	MGT Port	1x RJ45 Management Port
F6	LOM Port	1x RJ45 LOM Port

HTCA-E400 Rear Panel



CHAPTER 2: HMB-E100 1U COMPUTE SLED

The HMB-E100 compute sled is powered by 3rd Gen Intel Xeon Scalable Processor (codenamed Ice lake), and provides front access I/O including 2x storage bays, 1x PCIe, 1x OCP NIC 3.0 slot, mini-DP for VGA port, LOM and USB 3.0 ports. The FHHL PCIe by 16 slot can support a GPU or FPGA card, in addition to an OCP NIC 3.0 slot to plug in OCP NIC 3.0 modules. This compute sled is compatible with HTCA-E400 Series network appliances.

Key Features:

- Support 3rd Gen Intel® Xeon® Scalable Processor (codenamed IceLake-SP)
- Front Access I/O: 2x Storage bays, 1x PCIe, 1x OCP NIC 3.0 slot, 1x mini-DP for VGA port, 1x LOM port, 1x USB 3.0 port
- Support FHHL PCIe by 16 Module Card
- Support OCP NIC 3.0 Modules
- Compatible with HTCA-E400 Series

Package Content

Your package contains the following items:

- ▶ 1x HMB-E100 1U x86 Compute Sled
- ▶ 1x CPU Heat sink (in separate box)
- ▶ 1x Screw Pack

Ordering Information

SKU No.	Description
HMB-E100A	1U Compute Sled for HTCA-E400

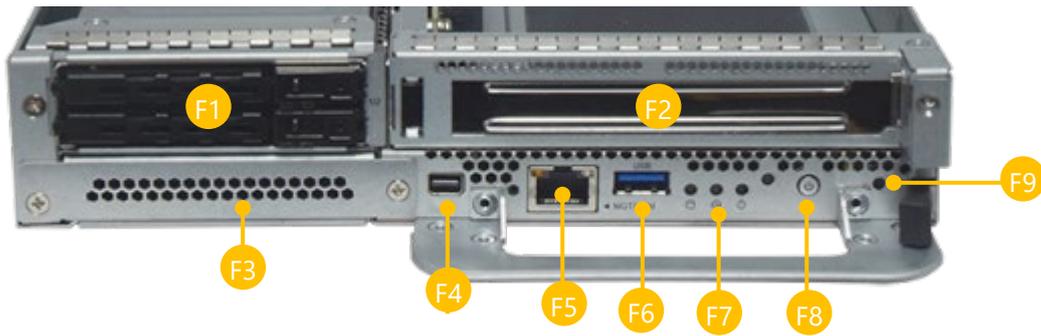
Optional Accessories

Model No.	Description
NIC Module	BCM957508-N2100G, N2100G 2x100G OCP NIC 3.0 Module
TPM Module	IAC-TPM04A, TPM 2.0 Module

HMB-E100 System Specifications

Form Factor		1U Computing Blade
Platform	Processor	Intel® Xeon® Processor Scalable Family (Ice Lake-SP)
	CPU TDP	Heat Sink support up to 165W
	CPU Socket	1x LGA4189
	Chipset	Intel® C627A
	Security Acceleration	Intel® QuickAssist Technology
BIOS		AMI SPI Flash BIOS
System Memory	Technology	DDR4 2133/2400/2666/2933/3200MHz RDIMM / LRDIMM
	Max. Capacity	512GB
	Socket	8x 288-pin DIMM
Networking	Ethernet Ports	1x Intel® E810-CAM2 Support 2x 100G (2xKR4) to Switch Blade; 1x Intel® i210AT to MGT
Storage	HDD/SSD Support	2x 2.5" SSD (7mm) Trays
	Onboard Slots	1x M.2 2280 M-Key
I/O	Reset Button	Software Reset (Control by GPIO)
	LED Indicator	Power/Status/Storage, refer to Appendix A
	Power Button	1x ATX Power Switch
	USB Port	1x USB 3.0 Port
	Display Port	1x Mini-DP Port (VGA Signal)
	LOM Port	1x RJ45 LOM Port
Expansion	OCP NIC Slot	1x OCP NIC 3.0 Modules
	PCIe	1x PCIe*16 FH/HL
Cooling	Processor	Passive CPU Heat Sink, up to 165W
	Fans	4x Smart Fans
Environment	Operating Temperature	0°C to 40°C (Commercial SKU)
	Storage Temperature	-40°C to 70°C
	Relative Humidity	5% to 90%, Non-condensing
Miscellaneous	Watchdog	Yes
	Internal RTC w/ Li Battery	Yes
	TPM	Yes, TPM 2.0 (Optional)
Mechanical	Dimension (WxHxD)	216.5 x 42.2 x 490.2mm
	Weight	TBD kg
Power	Input	DC 12V
OS Support	Linux	Cent OS 7.2 or above
Certification	EMC	CE Class A, FCC Class A, Design comply for NEBS Level 3

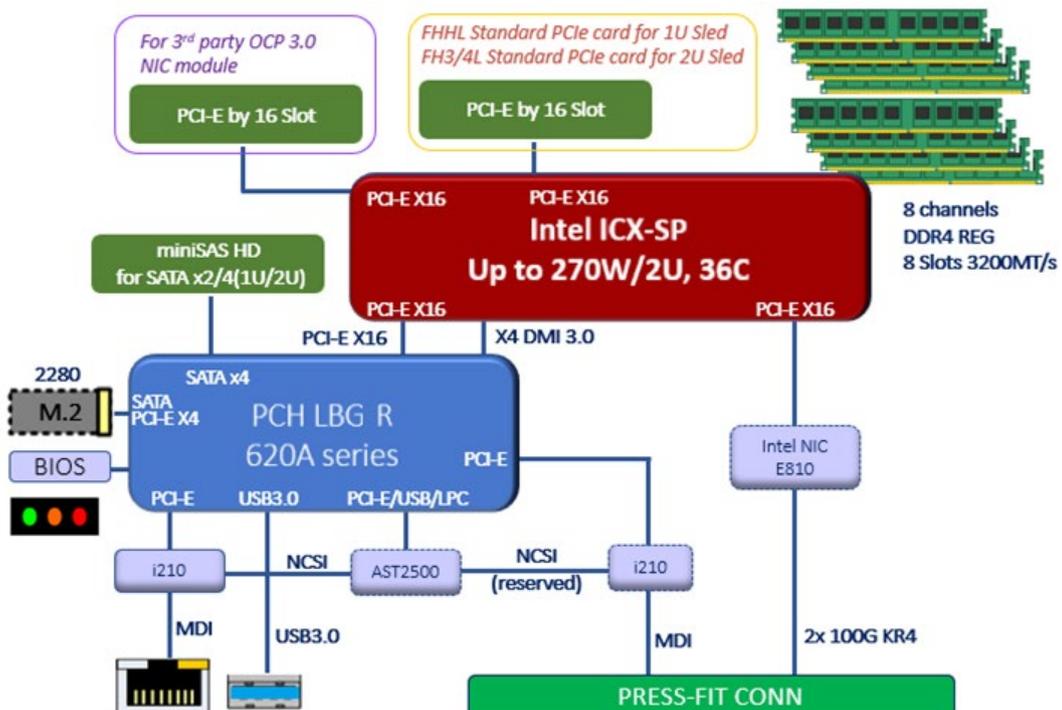
HMB-E100 Front Panel



No.	Description	
F1	Storage	2x 2.5" SSD (7mm) Trays
F2	Front Expansion Slot	1x PCIe*16 FH/HL
F3	OCP NIC Slot	1x OCP NIC 3.0 Module Slot
F4	Display Port	1x Mini-DP Port (VGA Signal)
F5	LOM Port	1x RJ45 LOM Port
F6	USB Port	1x USB 3.0 Port
F7	LED Indicators	Power/Status/Storage, pls refer Appendix A
F8	Power Button	1x ATX Power Switch
F9	Reset Button	1x Reset Button (Software Control by GPIO)

HMB-E100 Block Diagram

The block diagram indicates how data flows among components on the motherboard. Please refer to the following figure for your motherboard's layout design.



CHAPTER 3: HMB-E200 2U COMPUTE SLED

The HMB-E200 compute sled is powered by 3rd Gen Intel Xeon Scalable Processor (codenamed Ice lake), and provides front access I/O including 4x storage bays, 1x PCIe, 1x OCP NIC 3.0 slot, 1x mini-DP for VGA port, 1x LOM and 1x USB 3.0 ports. The FHHL PCIe by 16 expansion slots, HL for 2U heatsink and 3/4L for 1U heatsink, can support a GPU or FPGA card, in addition to an OCP NIC 3.0 slot to plug in OCP 3.0 NIC modules. This compute sled is compatible with HTCA-E400 series network appliances.

Key Features:

- Support 3rd Gen Intel® Xeon® Scalable Processor (codenamed IceLake-SP)
- Front Access I/O: 4x Storage bays, 1x PCIe, 1x OCP NIC 3.0 slot, 1x mini-DP for VGA Port, 1x LOM Port, 1x USB 3.0 Port
- Support FH3/4L double width or single width PCIe Card
- Support OCP NIC 3.0 Modules
- Compatible with HTCA-E400 Series

Package Content

Your package contains the following items:

- ▶ 1x HMB-E200 2U x86 Compute Sled
- ▶ 1x CPU Heat sink (in separate box)
- ▶ 1x Screw Pack

Ordering Information

SKU No.	Description
HMB-E200A	2U Compute Sled for HTCA-E400

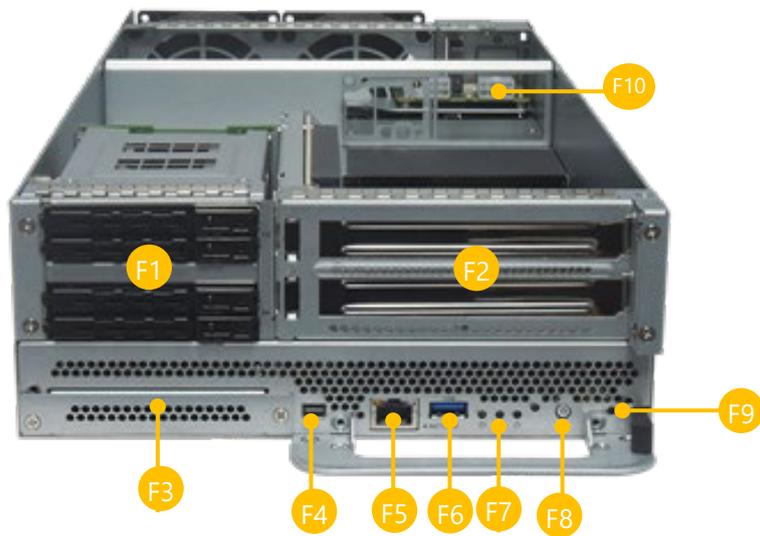
Optional Accessories

Model No.	Description
NIC Module	BCM957508-N2100G, N2100G 2x100G OCP NIC 3.0 Module
TPM Module	IAC-TPM04A, TPM 2.0 Module
Heat Sink	2U Heat Sink (up to 270W)

HMB-E200 System Specifications

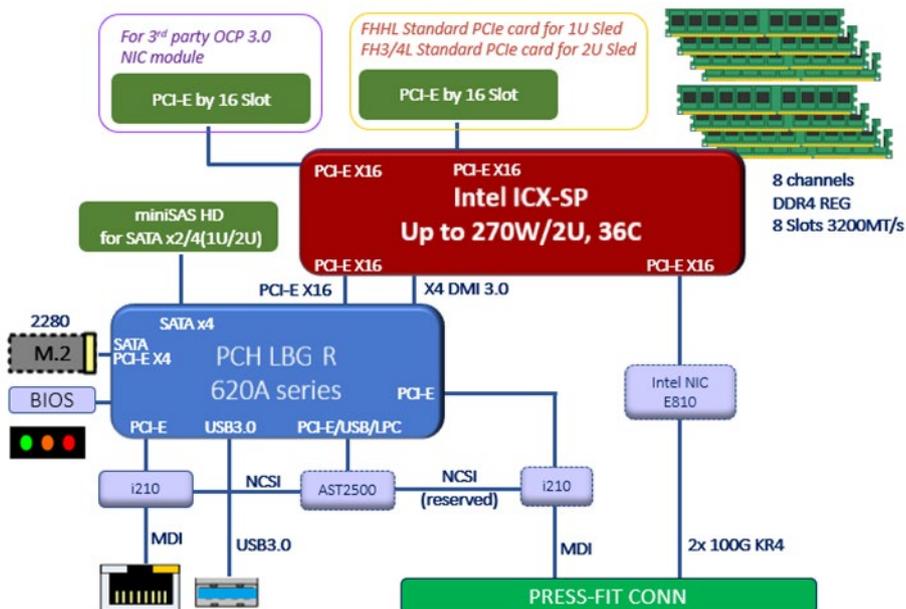
Form Factor		2U Computing Blade
Platform	Processor	Intel® Xeon® Processor Scalable Family (Ice Lake-SP)
	CPU TDP	1U Heat Sink, support up to 165W; 2U Heat Sink, support up to 270W (Optional)
	CPU Socket	1x LGA4189
	Chipset	Intel® C627A
	Security Acceleration	Intel® QuickAssist Technology
BIOS		AMI SPI Flash BIOS
System Memory	Technology	DDR4 2133/2400/2666/2933/3200MHz RDIMM / LRDIMM
	Max. Capacity	512GB
	Socket	8x 288-pin DIMM
Networking	Ethernet Ports	1x Intel® E810-CAM2 Support 2x 100G (2xKR4) to Switch Blade; 1x Intel® i210AT to MGT
Storage	HDD/SSD Support	4x 2.5" SSD (7mm) Trays
	Onboard Slots	1x M.2 2280 M-Key
I/O	Reset Button	Software Reset (Control by GPIO)
	LED Indicator	Power/Status/Storage, refer to Appendix A
	Power Button	1x ATX Power Switch
	USB Port	1x USB 3.0 Port
	Display Port	1x Mini-DP Port (VGA Signal)
	LOM Port NIC Slot	1x RJ45 LOM Port 1x OCP NIC 3.0 Module Slot
Expansion	PCIe	1x PCIe*16 FH3/4L
Cooling	Fans	2x Smart Fans
Environment	Operating Temperature	0°C to 40°C (Commercial SKU)
	Storage Temperature	-40°C to 70°C
	Relative Humidity	5% to 90%, Non-condensing
Miscellaneous	Watchdog	Yes
	Internal RTC w/ Li Battery	Yes
	TPM	Yes, TPM 2.0 (Optional)
Mechanical	Dimension (WxHxD)	216.5 x 85 x 490.2mm
	Weight	TBD kg
Power	Input	DC 12V
OS Support	Linux	Cent OS 7.2 or above
Certification	EMC	CE Class A, FCC Class A, Design comply for NEBS Level 3

HMB-E200 Front Panel



No.	Description	
F1	Storage	4x 2.5" SSD (7mm) Trays
F2	Front Expansion Slot	1x PCIe*16 FH/HL
F3	NIC Slot	1x OCP NIC 3.0 Module Slot
F4	Display Port	1x Mini-DP Port (VGA Signal)
F5	LOM Port	1x RJ45 LOM Port
F6	USB Port	1x USB 3.0 Port
F7	LED Indicators	Power/Status/Storage, pls refer Appendix A
F8	Power Button	1x ATX Power Switch
F9	Reset Button	1x Reset Button (Software Control by GPIO)
F10	Auxiliary Power Connector	External Power Supply Rail for PCIe add-in card over 75W dissipation

HMB-E200 Block Diagram



CHAPTER 4: HLM-E110 SWITCH SLED

The HLM-E110 switch blade provides fabric interface with 100GbE QSFP28 x6, and 10/25GbE SFP+ x8 with Intel Tofino Series switch controller. This switch blade is compatible with HTCA-E400 Series network appliances to offer 10/25/100GbE fabric connectivity.

Key Features:

- Fabric interface with 6x 100GbE QSFP28, 8x 10/25GbE SFP28
- Intel® Tofino Series (BFN-T10-032D-B0) the maximum bandwidth up to 3.2 Tb/s
- Optional IEEE 1588 support
- Compatible with HTCA-E400 Series

Package Content

Your package contains the following items:

- ▶ 1x HLM-E110 1U Switch Sled
- ▶ 1x Screw pack

Ordering Information

SKU No.	Description
HLM-E110A	6x 100GbE QSFP28, 8x 10/25GbE SFP28 Switch Sled for HTCA-E400 Series

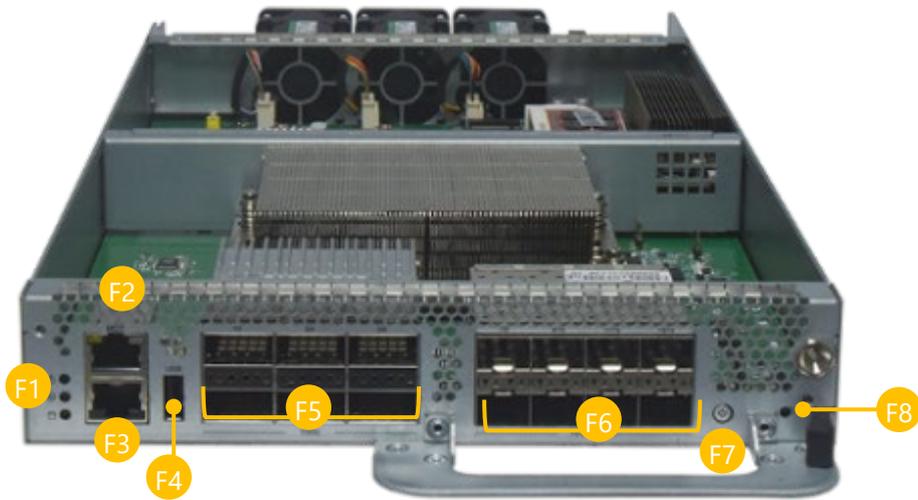
Optional Accessories

Model No.	Description
Timing Module Card Kit	PSF9657-010 IEEE1588 Timing Module Kit

HLM-E110 System Specifications

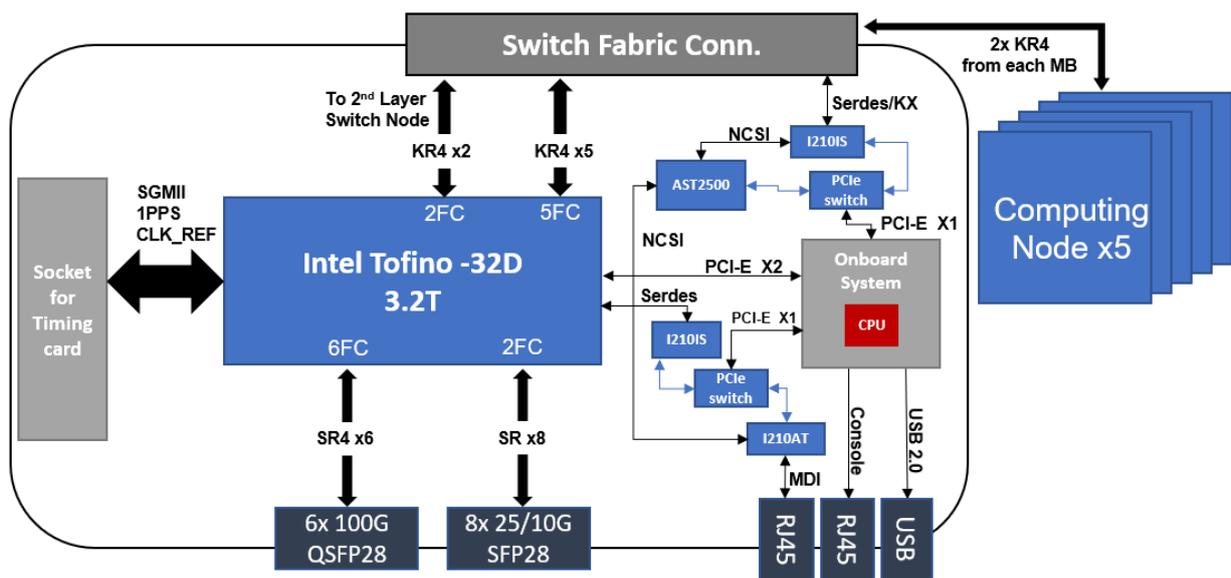
Form Factor		1U Switch Sled
Platform	Controller	Intel® Tofino Series (BFN-T10-032D-B0)
Fabric Interface		6x 100GbE QSFP28, 8x 10/25GbE SFP28
I/O Interface	LED Indicator	Power/Status/Storage LED Indicator, pls refer to Appendix A
	LAN Port	6x 100GbE QSFP28, 8x 10/25GbE SFP28
	Console Port	1x Console Port
	Management Port	1x Management Port
	USB Port	1x USB 2.0 Port
	Power Button Reset Button	1x Power Button 1x Reset Button (Software control by GPIO)
Memory	Technology	DDR4 3200 SODIMM
Cooling	Fans	3x Smart Fans
Environment	Operating Temperature	0°C to 40°C
	Storage Temperature	-40°C to 70°C
	Humidity	5% to 90%, Non-condensing
Mechanical	Dimension (WxHxD)	216.5 x 42.2 x 444mm
	Weight	TBD kg
POS Support	Linux	Cent OS 7.2 or above
Certification	EMC	CE Class A, FCC Class A

HLM-E110 Front Panel



No.	Description	
F1	LED Indicators	Power/Status/Storage, pls refer Appendix A
F2	Management Port	1x RJ45 Management Port
F3	Console Port	1x RJ45 Console Port
F4	USB Port	1x USB 2.0 Port
F5	LAN Ports	6x 100GE QSFP28
F6	LAN Ports	8x 10/25GbE SFP28
F7	Power Button	1x ATX Power Switch
F8	Reset Button	1x Reset Button (Software Control by GPIO)

HLM-E110 Block Diagram



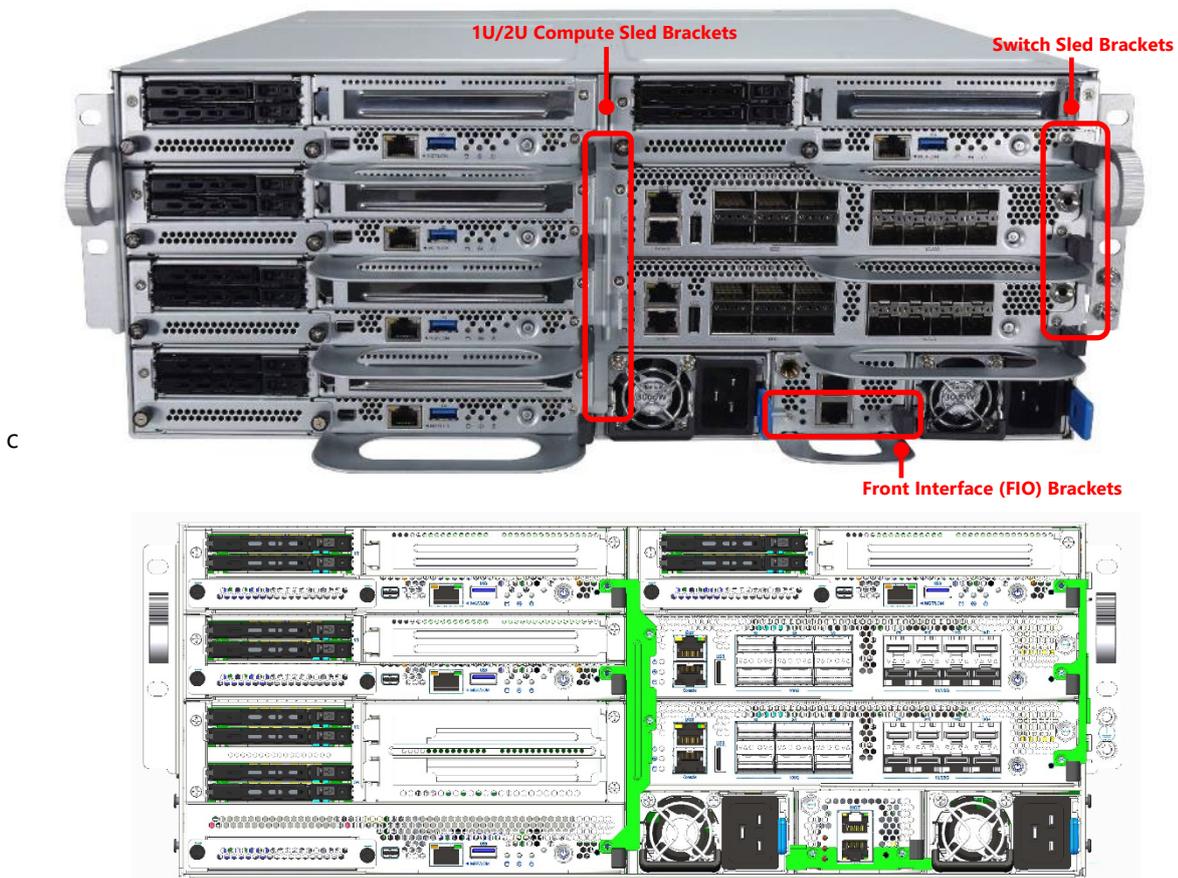
CHAPTER 5: HARDWARE SETUP

To access some components and perform certain service procedures, you must perform the following procedures first.



Warning: (1) To reduce the risk of personal injury, electric shock, or damage to the equipment, please remove all power sources. (2) Please wear ESD protected gloves before conducting the following steps. This exclamation point indicates that there is a caution or warning and it is something that could damage your property or product.

HTCA-E400: Installing/Accessing the Compute Sled/Switch Sled



HTCA-E400 have three sets of brackets available to prevent power shut down when a sled is accidentally pulled out. Please note there are three types of compute sled brackets: one for 4x 1U computing sled set, one for 2x 2U computing sled set, and 2x 1U & 1x 2U computing sled set. Please make sure to use the appropriate bracket.

Accessing a Compute/Switch Sled

To remove or replace a new sled, please follow the steps below.

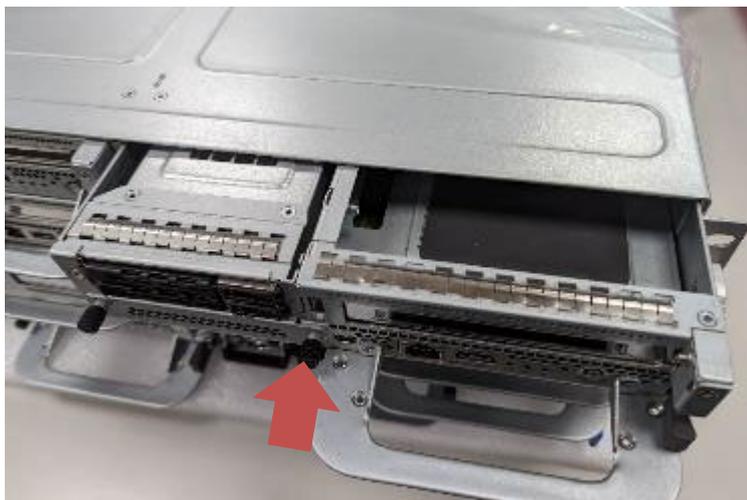
1. Remove the 1U/2U compute sled bracket or switch sled bracket.
2. Hold on to the handle on the compute sled or switch sled and pull the lock lever towards the left.
3. Pull the compute sled or switch sled unit out.



Installing Compute/Switch Sled

Please follow the steps below to install a compute sled or switch sled.

1. Select a row to install the compute sled or switch sled on HTCA-E400.
2. Gently push the sled all the way in.



HTCA-E400: Replacing Power Supply Units

Power supply units may wear out eventually and must be replaced. Please follow the steps below to replace a power supply unit.

1. Hold onto the handle of the power supply unit and pull the lock lever towards the right.
2. Pull the power supply unit out.



HMB-E100 & HMB-E200: Installing the CPU

The HMB-E100 and HMB-E200 compute sled is powered by 3rd Gen Intel Xeon Scalable Processor (codenamed Ice lake). This processor comes with a rather sophisticated design, therefore, the assembly of which must be handled with exclusive tools and extreme care by professionals. Please read through the instructions in this section and refer to the [official tutorial](#) released by Intel® to make sure you have acquired the necessary knowledge and comply with the requirements.

Installing the processor onto the motherboard involves two stages:

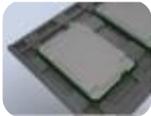
1. Mount the processor onto the heat sink to make a PHM (Processor + Heat Sink Module)
2. Install the PHM onto the motherboard.

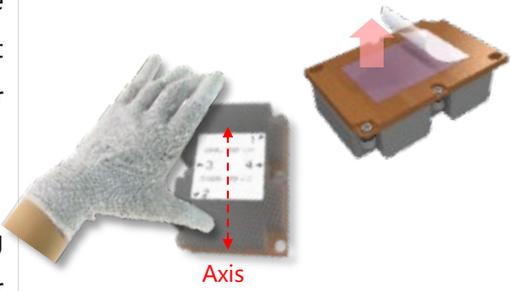
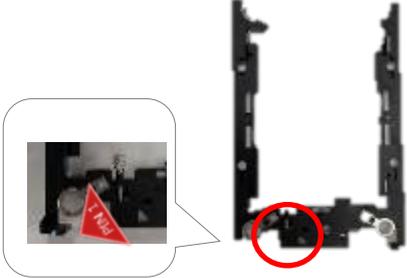
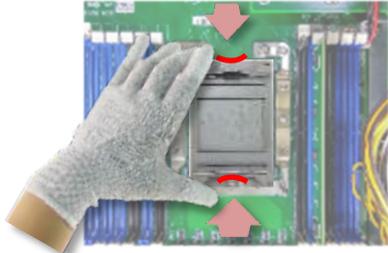
Tools Required

Tool	Description	
(T-30 Torx Bit®)	Set to <u>8in/lb</u> for tightening the nuts which fasten the PHM on the bolster plate.	
ESD Protection (ESD gloves, ESD-safe work surface, ESD-safe shoes, grounded wrist strap etc.)	During the entire assembly process, at least wear a pair of ESD gloves to avoid damaging or contaminating the electronic parts while enhancing your own safety.	

Note: The images of tools shown in this document are merely for reference; the actual tools you use might differ.

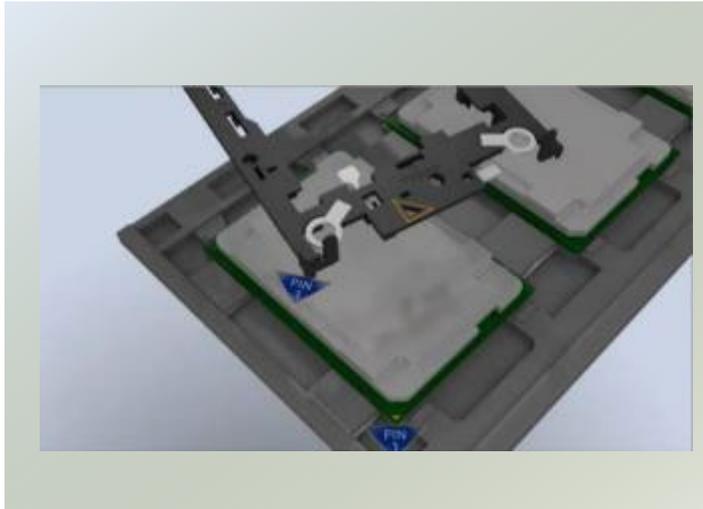
Parts Explanation:

Item	Description	
Processor	Please avoid touching the gold fingers or package lands of the processor even if you are wearing ESD gloves.	 

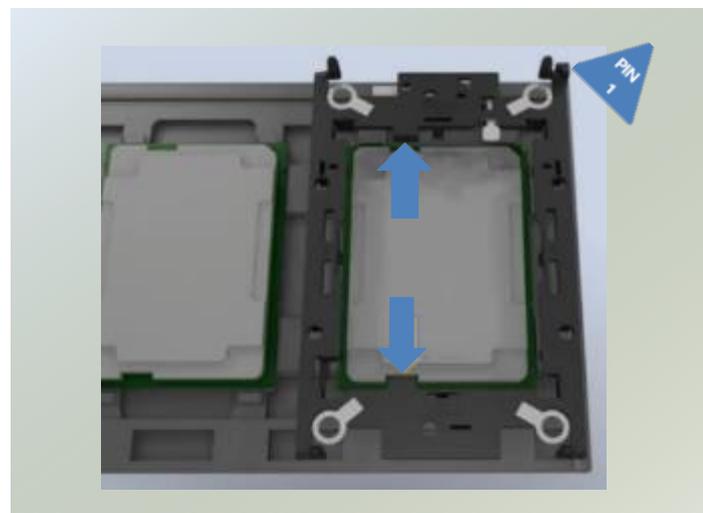
<p>Heat Sink</p>	<p>If a TIM (Thermal Interface Material) protective film is already attached to the base of the heat sink, remove it before you mount the processor on it.</p> <p>When holding the heatsink, please grip it along the axis of its fins with your thumb and your index finger.</p>	
<p>Processor Carrier</p>	<p>This is packed along with the processor. Before performing any assembly involving this part, please locate PIN1 on one of the corners, an important indicator used to align this carrier with the processor and the bolster plate correctly.</p>	
<p>Socket Cover</p>	<p>This cover is used to protect the package land surface of the processor from contamination. To remove it from the processor, grasp the holding features with your thumb and your index finger while pulling the cover off vertically.</p>	
<p>Bolster Plate</p>	<p>A robust bolster plate is used to assist in PHM alignment for installation, while effectively helping eliminate PCB bowing during compression. Please locate the Cutout on one of the four corners before starting PHM installation.</p>	

Mounting the CPU onto the Heat Sink

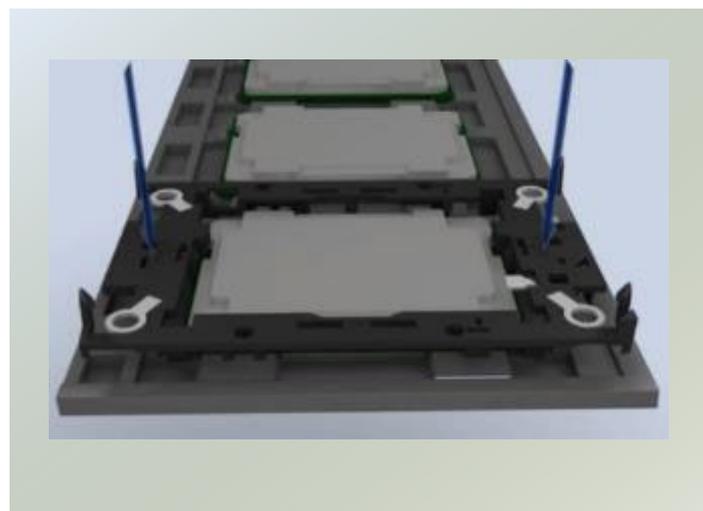
1. With the processor in the shipping tray, align the **PIN1** indicator on the processor carrier to the **PIN1** marking on the processor.



2. And line up the two keying features on the processor carrier.

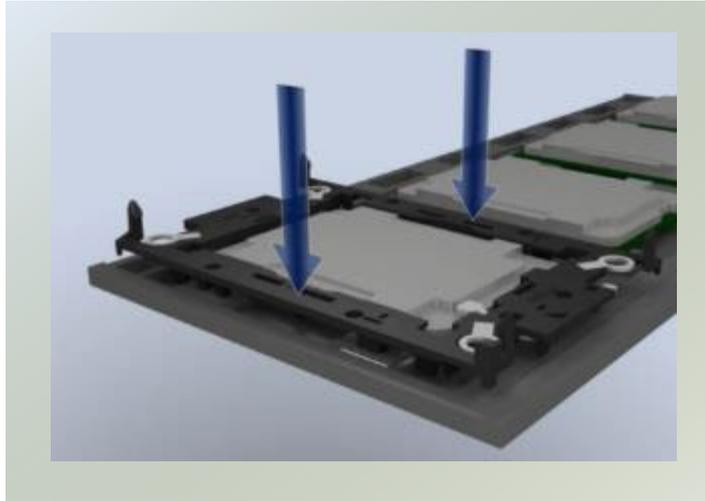


3. Gently press on the each of the press tabs at the top and bottom of the carrier to engage the locking tabs

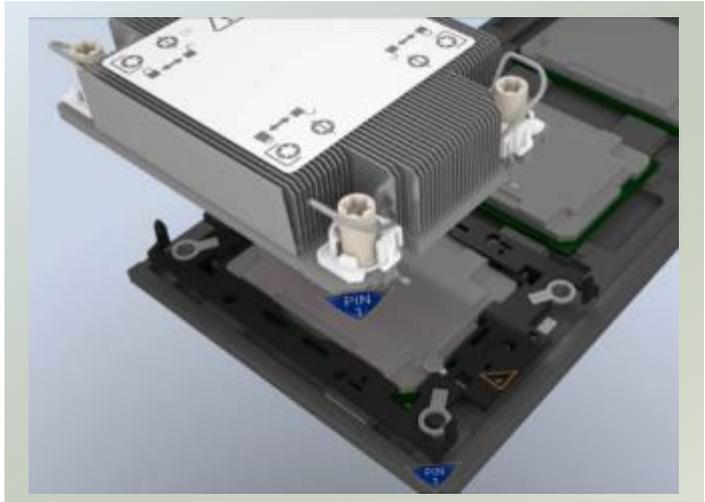


Note: During assembly, it is essential to have (1) PIN1 on the processor carrier aligned with the processor, and (2) the alignment features on the top and the bottom of the processor aligned with the corresponding carrier latches.

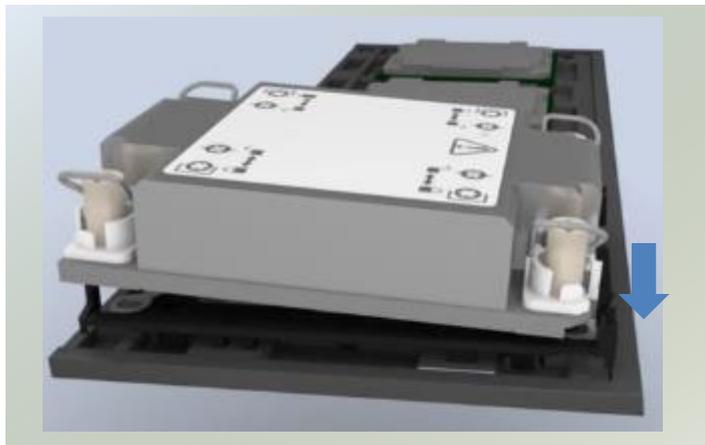
4. Push down on the two sides to engage the side locking tabs. Check to make sure all four locking tabs have been attached to the processor.



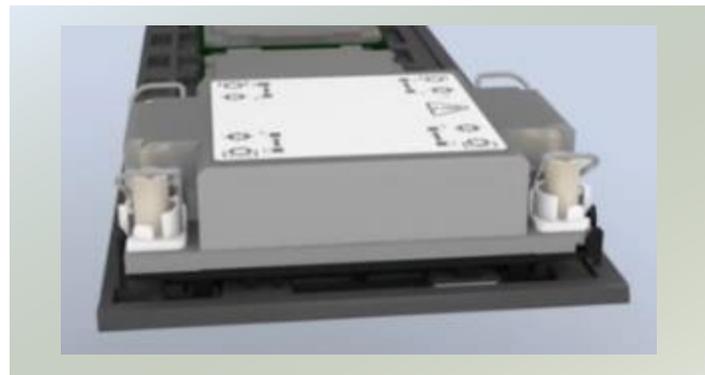
5. Align **PIN1** of the heatsink to the PIN1 indicator of the processor carrier (if there are two corner cutouts on one heat sink, either will do).



6. Lower the PIN1 end of the heatsink over the processor carrier to engage the two locking tabs near the corners. Then push the other end down to engage the locking tabs at the remaining corners. You might hear a clicking sound when the latch clicks into place. There should not be any gaps between the heatsink and the carrier.

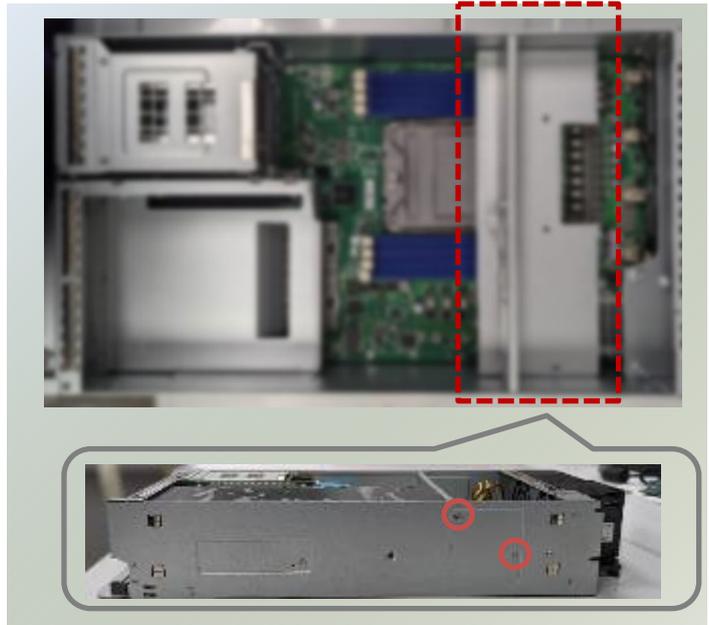


7. The PHM is now ready to be integrated into the socket.



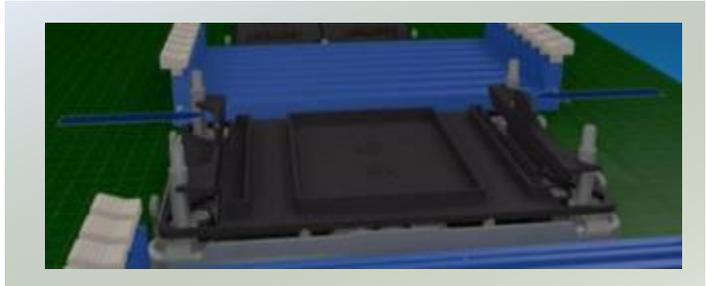
Installing the PHM onto the Motherboard

1. Locate the "trap door" cover. Unscrew the four (4) screws and lift up the "trap door" cover.

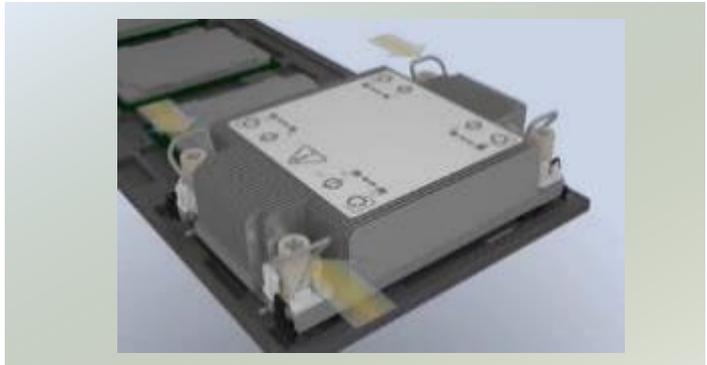


2. Remove the socket cover from the socket contacts of the motherboard by grasping the tabs on either side. Squeeze inward

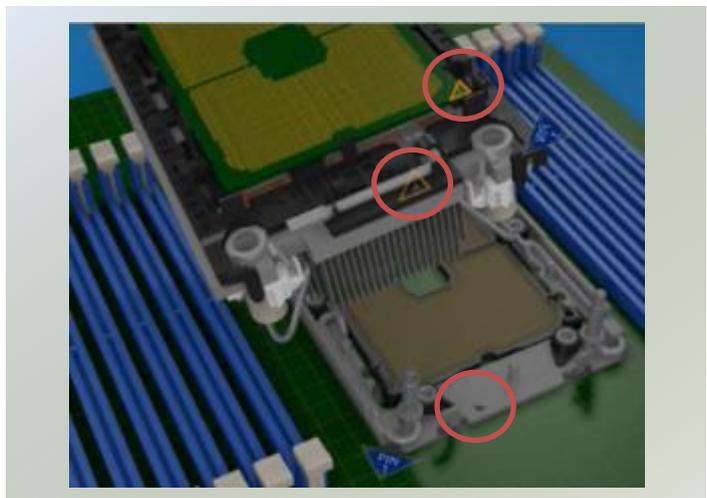
Note: Inspect the surface of the socket under sufficient lighting to ensure there is no contamination or damage prior to the PHM installation.



3. Set each anti-tilt wire to inward or unlocked position on the heatsink.



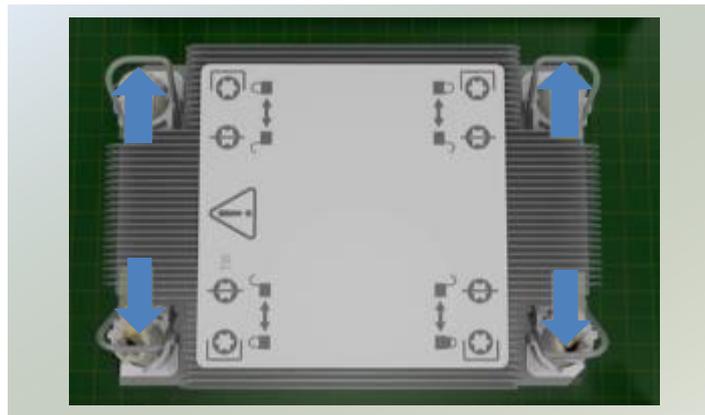
4. Lift up the PHM. Turn the PHM over to locate the PIN1 corner on processor carrier and processor.



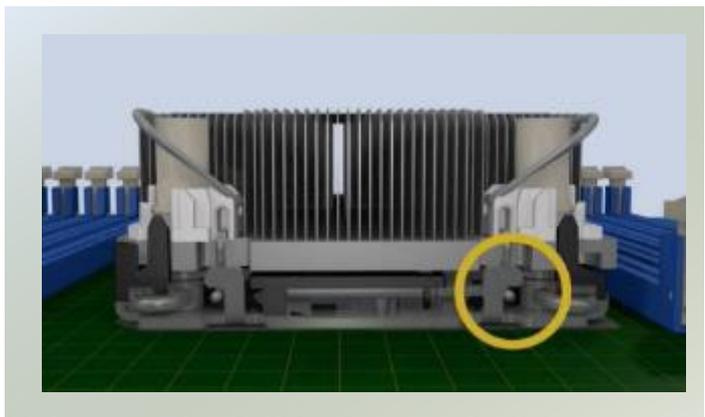
5. Then turn the PHM right side up. Line up the **PIN1** corner of the PHM to the bolster plate **PIN1** corner. Lower the PHM vertically down over the bolster plate studs.



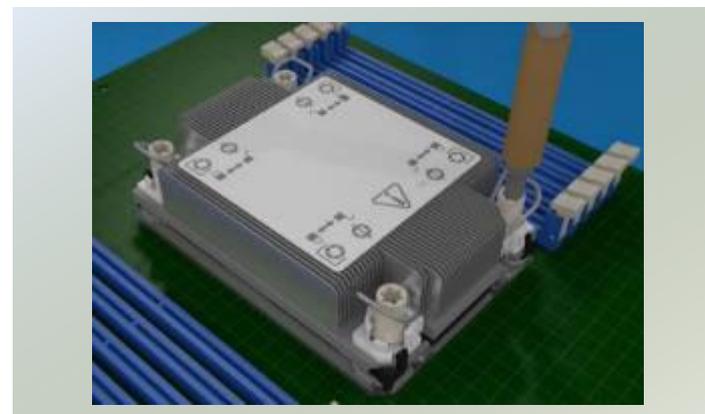
6. Move each anti-tilt wire to outward or locked position.



7. Check the anti-tilt wires are in locked position and have engaged the anti-tilt flanges on the bolster plate.



8. Use a torque driver with a T-30 Torx bit to tighten the four nuts to 8 in/lb in the bolster plate.



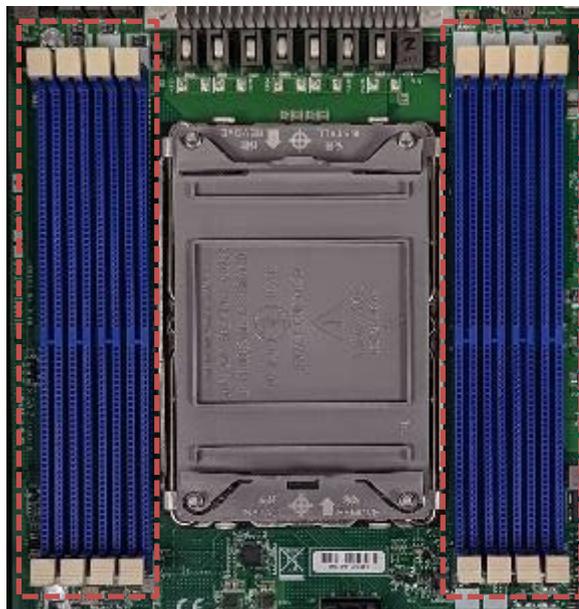
9. Installation is now completed.

HMB-E100 & HMB-E200: Installing the System Memory

The HMB-E100 and HMB-E200 motherboard supports 8x memory slots for DDR4 RDIMM with speeds of up to 3200MHz. Please follow the steps below to install the DIMM memory module.

Supported System Memory Summary

Total Slots	8
Number of Channels	8 (1 DIMMs per channel)
Supported DIMM Capacity	4GB, 8GB, 16GB, 32GB, 64GB
Memory Size	Maximum 512GB (64GB*4)
Memory Type	DDR4 2133/2400/2666/2933/3200MHz RDIMM / LRDIMM
Minimum DIMM Installed	At least 1 memory modules to boot and run

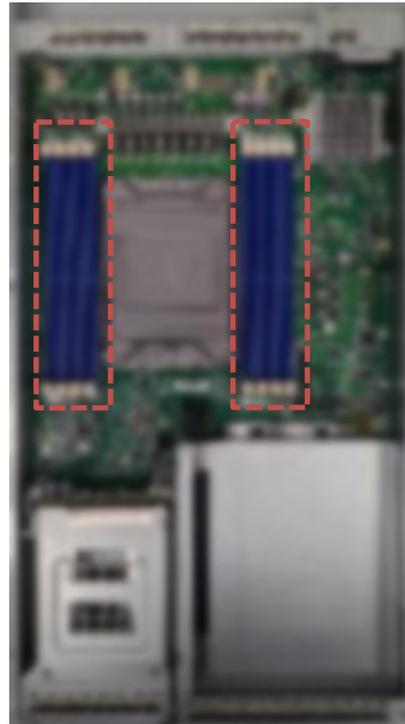


DIMM Population Guidelines

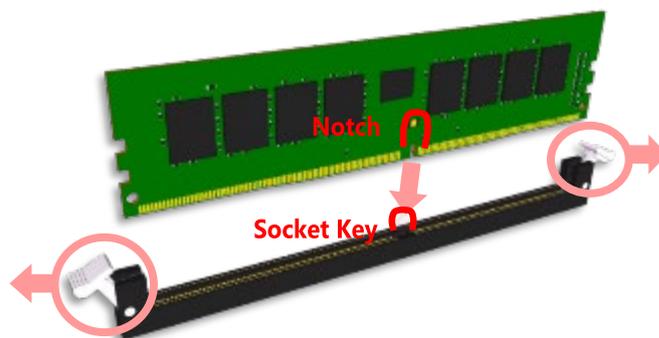
- Use memory modules of the same capacity, speed, and from the same manufacturer to avoid compatibility issues and to achieve optimal CPU performance.

Memory Module Installation Instructions

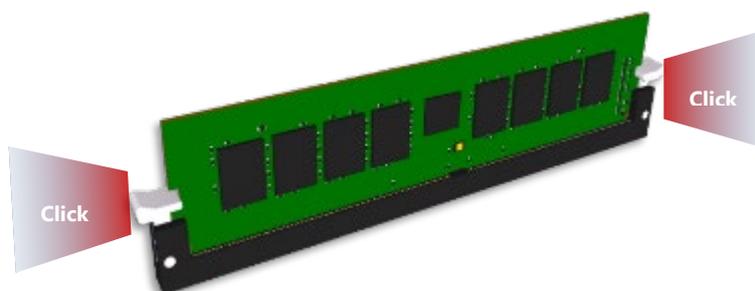
1. Locate the DIMM slots.



2. Pull open the white DIMM slot latches.
3. Align the notch of the module with the socket key in the slot and carefully insert the module into the slot.



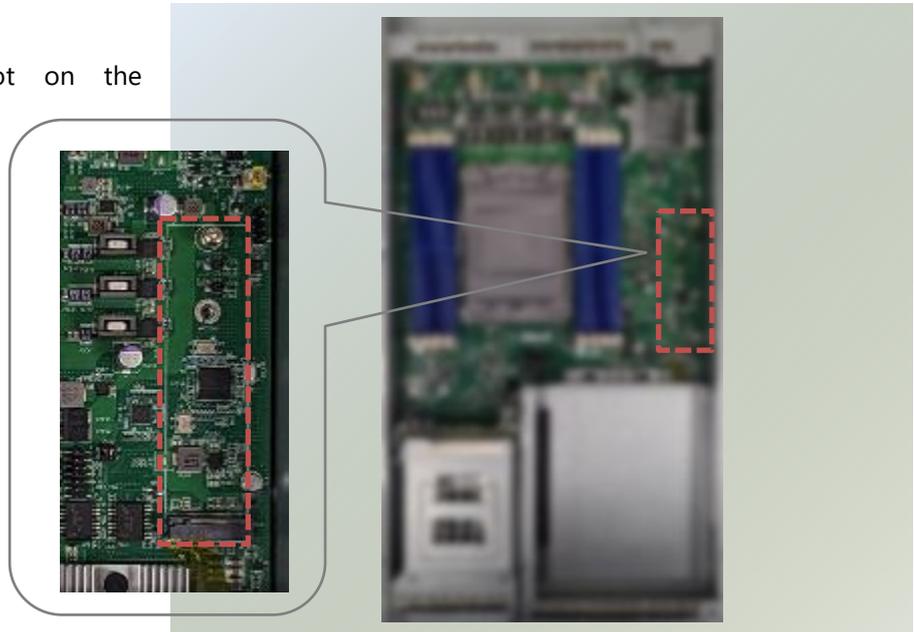
4. Push the module down into the slot until it is firmly seated. Press vertically on both corners of the module until it clicks into place.



HMB-E100 & HMB-E200: Installing the M.2 SSD Storage Module (Optional)

HMB-E100 & HMB-E200 comes with an additional M.2 SSD memory card slot. Please follow the steps for installation.

1. Power off the system.
2. Locate the M.2 slot on the motherboard.



3. Align the notch of the M.2 Storage module with the socket key in the pin slot.



4. Insert the M.2 Storage module pins at 30 degrees into the socket until it is fully seated.



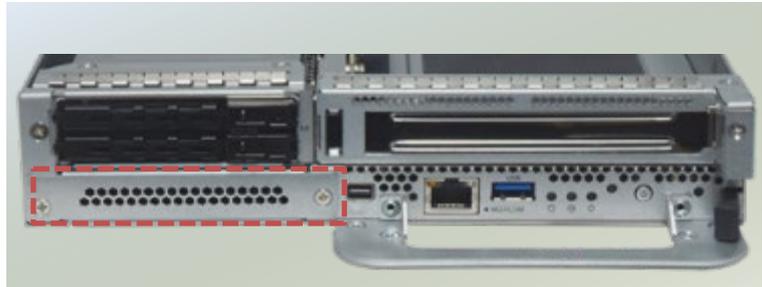
5. Push down on the module and secure it with a screw.



HMB-E100 & HMB-E200: Installing the OCP NIC 3.0 Modules (Optional)

HMB-E100 and HMB-E200 each comes with one OCP NIC 3.0 module slot. Please follow the steps for installation.

1. Locate the OCP NIC 3.0 module slot on the front panel.



2. Unscrew the screws on two sides and remove the door panel.



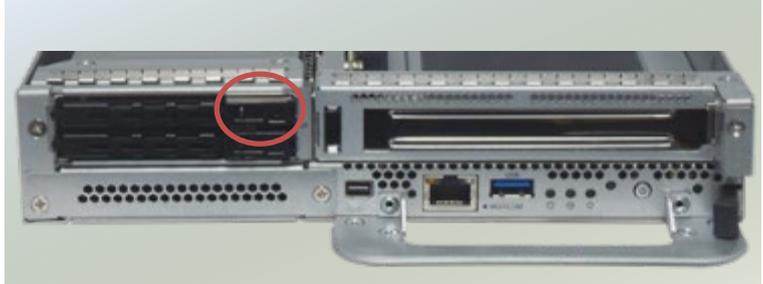
3. Insert your OPC NIC 3.0 module.



HMB-E100 & HMB-E200: Installing Disk Drives (Optional)

HMB-E100 and HMB-E200 supports externally accessible 2.5" disk drive bays, with HMB-E100 supporting two 2.5" disk drives and HMB-E200 supporting four 2.5" disk drives. Please follow the steps for installation.

1. Select a drive bay for installation and press down on the lock of the drive bay.
2. The lever handle will pop open.



3. Pull the drive bay out using the lever handle, and install a 2.5" SSD disk drive.

Keep in mind that the contacts should be facing outwards (bottom section of the drive bay), and will go towards the inside of the system.



4. Secure the drive with four (4) screws on the back side.



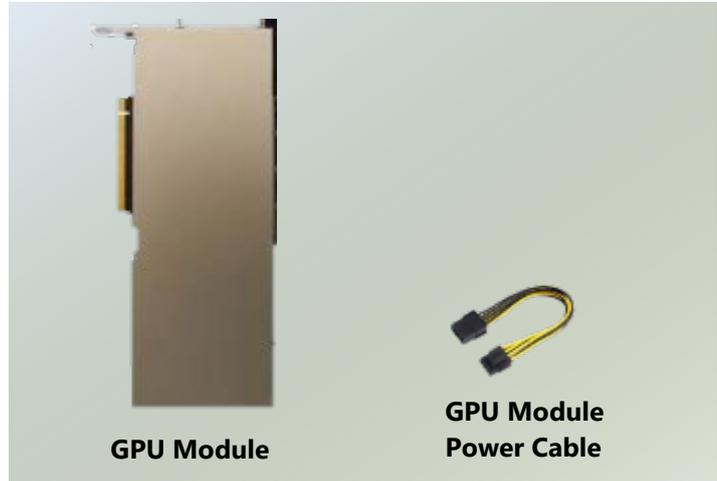
5. Then gently slide the drive back into its slot and push lever until close.



HMB-E200: Installing the GPU graphic card (Optional)

HMB-E200 supports optional slot for GPU graphic card expansion. The GPU graphic card requires a rather complex installation process; therefore, the assembly must be handled with care. Please read through the instructions in this section to make sure you have acquired the necessary knowledge and comply with the requirements.

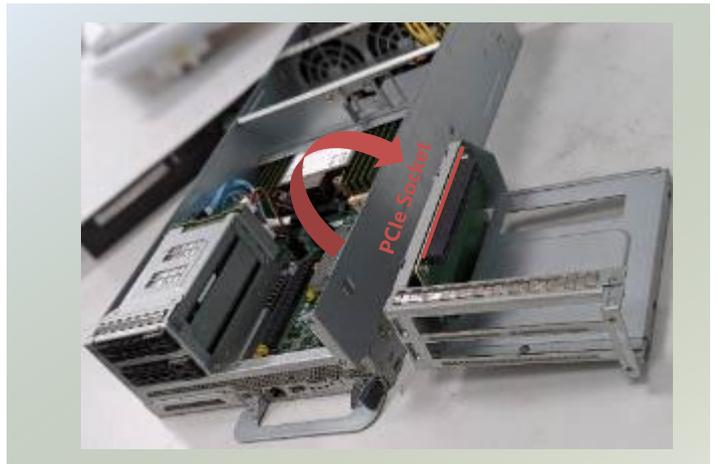
1. The GPU expansion kit will include:
 - ▶ 1x GPU module
 - ▶ 1x GPU power cable



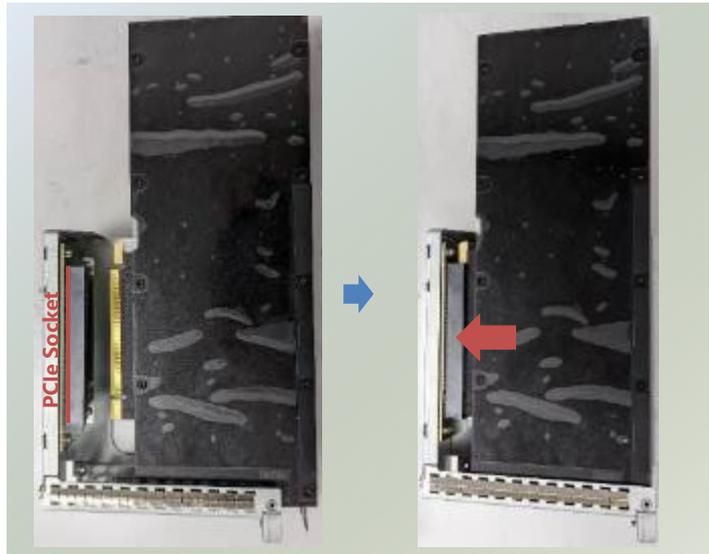
2. Power off the system. Locate the four (4) screws securing the PCIe bracket to the Compute Sled.



3. Loosen the four (4) screws and take out the PCIe bracket.



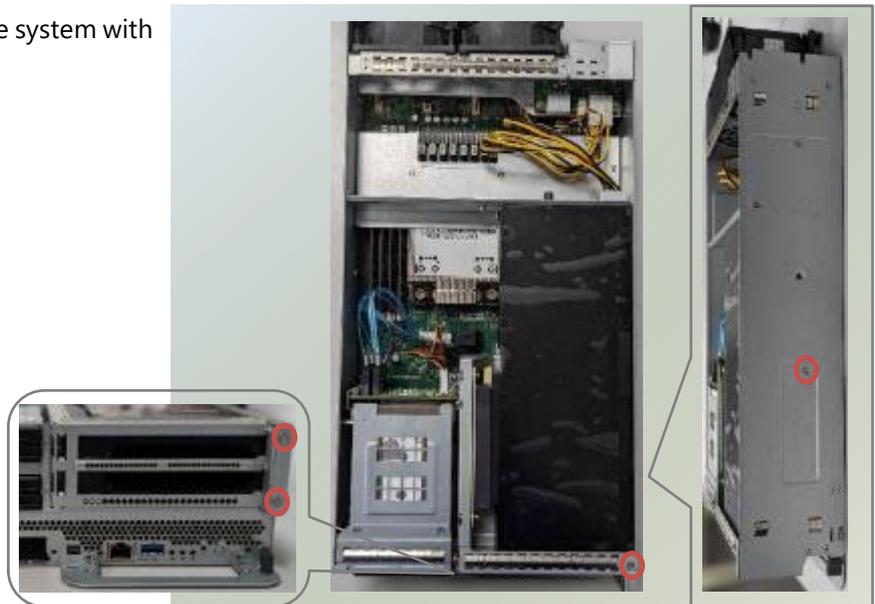
- 4. Align the GPU module to the PCIe sockets. Slide the GPU module into PCIe sockets until fully seated.



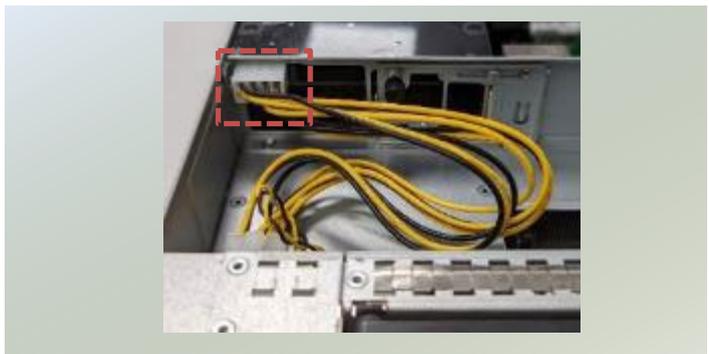
- 5. Next, we will mount the PCIe bracket with the installed GPU module back in the Compute Sled. Make sure to "lock" the trap door on the Compute Sled, near the end side of the GPU.



- 6. Secure the PCIe bracket to the system with four (4) screws.



- 7. Insert the GPU power cable to the side of the GPU module. Other end of power cable should have been pre-installed on the motherboard.
- 8. The GPU module installation has been completed.



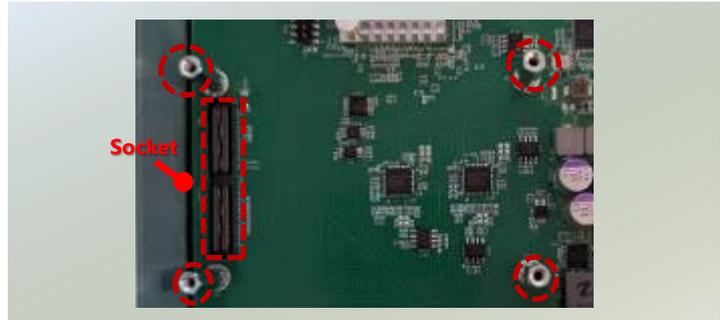
HLM-E110: Installing Precision Time Card (Optional)

HLM-E110 Switch Sled supports carrier-grade IEEE 1588 precision time protocol PTPv2 to synchronize distributed device clocks. The IEEE 1588 precision time protocol card delivers precise timing signals within a sub-micro-second range, including time stamping input and schedule outputs.

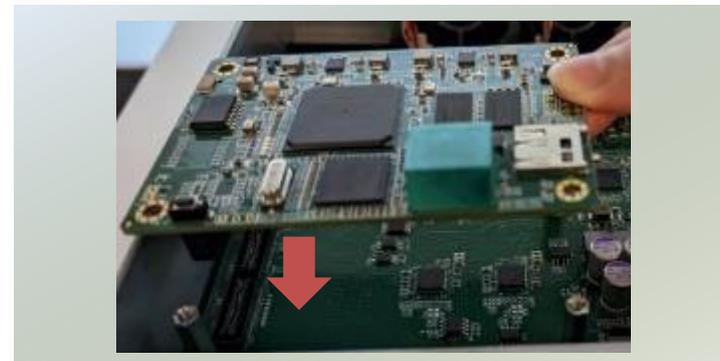
1. Power off the system and open the cover.
2. Locate the Time card socket and pillars on the motherboard.



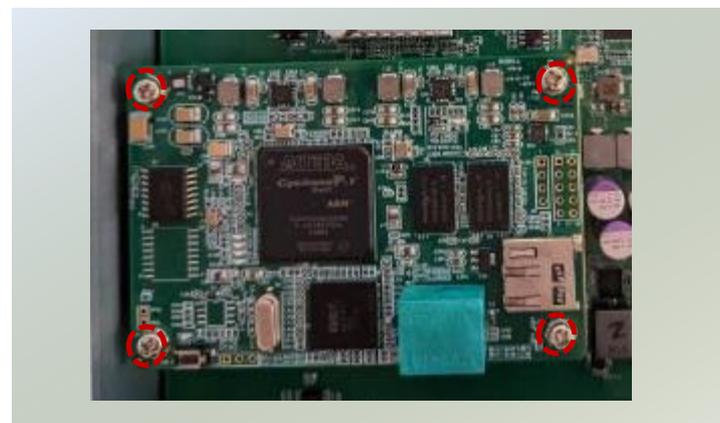
3. Unscrew the four (4) screws on the metal pillars.



4. Insert the Time card into the socket until it is fully seated in the connector.



5. Secure the Time card with four (4) screws, one for each metal pillar. The installation is complete.



APPENDIX A: LED INDICATOR EXPLANATION

The status explanations of LED indicators on Front Panel are as follows:



Green: System Power

Red/Green: System Status

Amber: Storage Activity

LED	COLOR	LED ACTION	DESCRIPTION
Power	Green	Steady	System is powered ON
	OFF	N/A	System is powered OFF
Status	Green	Steady	LED controlled by BIOS
	Red	Steady	
	OFF	N/A	System is powered OFF
Storage	Amber	Flashing	Storage has been accessed
	OFF	N/A	System is powered OFF

APPENDIX B: INSTALLING INTEL® LAN CONTROLLER DRIVER FOR LINUX

To install the Intel® LAN controller base driver for the Red Hat® and Linux operating system, please visit <http://www.lannerinc.com/support/download-center/drivers>, enter the product category and download the utility package.

For the latest driver update, please visit Intel® download center at <https://downloadcenter.intel.com/>, use the keyword search or the filter to access the driver's product page, and then download the latest controller driver as well as the ReadMe document.

APPENDIX C: AST2500 BMC CMM SPECIFICATION

CHAPTER 1: BMC OVERVIEW

This document specifies the BMC firmware features. The BMC firmware implements IPMI 2.0 based on ASPEED service processor. It performs all the BMC management tasks defined by IPMI 2.0.

In addition, BMC firmware runs an embedded web-server for full configuration using Web UI, which has a low learning curve.

BMC Main Features

Feature		Description
IPMI 2.0 Standard Features	System Interface support IPMI 2.0 based Management	<ul style="list-style-type: none"> • LAN (RMCP+) • BMC stack with an IPMI 2.0 implementation • Sensor monitoring • System power management
	System Management	<ul style="list-style-type: none"> • Watchdog timer • Fan speed monitor and control • FRU information
	Event Log	<ul style="list-style-type: none"> • System Event Log (SEL)
	Text Console Redirection: SOL	<ul style="list-style-type: none"> • Support in IPMI stack for SOL to remotely access BIOS and text console before OS booting
	User Management	<ul style="list-style-type: none"> • IPMI based user management • Multiple user permission level
Non-IPMI functions	Web User Interfaces	<ul style="list-style-type: none"> • BMC management via web user interface • Integrated KVM and Virtual Media
	Security	<ul style="list-style-type: none"> • SSL and HTTPS support
	Maintenance	<ul style="list-style-type: none"> • Auto-sync time with NTP server • Remote firmware update by Web UI

BMC Firmware Functional Description

System Health Monitoring

The BMC implements system sensor monitoring feature. It could monitor voltage, temperature, and current of critical components.

System Power Management

The BMC implements chassis power and resets functions for system administrators to control and manage the system power behavior. These functions can be activated by sending the IPMI 2.0 compatible chassis commands to the BMC over messaging interfaces. The following list summaries the supported functions.

- Chassis power on

- Chassis power off
- Chassis power cycle
- Chassis power reset
- Chassis power soft
- Server's power status report

Watchdog Timer

The BMC provides an IPMI 2.0 compatible watchdog timer which can prevent the system from system hanging.

Fan Speed Control

BMC is in charge of fan speed control. The fan speed can be modified by varying the duty cycle of PWM signal. The fan speed control algorithm mainly refers to the readings of on-board temperature sensors.

Field Replaceable Unit (FRU)

The BMC implements an interface for logical FRU inventory devices as specified in IPMI 2.0 specification. This functionality provides commands for system administrators to access and management the FRU inventory information.

System Event Log (SEL)

A non-volatile storage space is allocated to store system events for system status tracking.

Serial over LAN (SOL)

IPMI 2.0 SOL is implemented to redirect the system serial controller traffic over an IPMI session. System administrators are able to establish a SOL connection with a standard IPMI client, like IPMITOOL, to remotely interact with serial text-based interfaces such as OS command-line and serial redirected BIOS interfaces.

User Management

The BMC supports 9 IDs for IPMI user accounts. The maximum length of the username and password are 16 and 20 respectively, and the possible privilege levels are Callback, User, Operator, and Administrator. Moreover, the account creator is allowed to enable/disable the user account at any time. If not specified, the default user accounts are listed follows:

User Name	Password	User Access	Characteristics
admin	admin	Enabled	Password can be changed

Keyboard, Video, Mouse (KVM) Redirection

- The BMC provides keyboard, video, and mouse (KVM) redirection over LAN. This application is available remotely from the embedded web server.

Virtual Media Redirection

- The BMC provides remote virtual CD and HD redirection. CD image could be mounted directly in KVM window.
- Efficient USB 2.0 based CD/DVD redirection with a typical speed of 20XCD.
- Completely secured transmission.

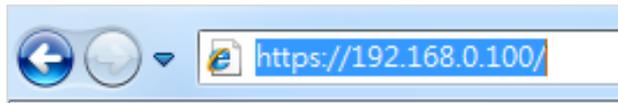
CHAPTER 2: IPMI COMMANDS SUPPORT LIST

COMMANDS	NETFN	CMD
IPM Device “Global” Commands		
Get Device ID	APP (06h)	00h
Cold Reset	APP (06h)	02h
Warm Reset	APP (06h)	03h
Get Device GUID	APP (06h)	08h
BMC Watchdog Timer Commands		
Reset Watchdog Timer	APP (06h)	22h
Set Watchdog Timer	APP (06h)	24h
Get Watchdog Timer	APP (06h)	25h
BMC Device and Messaging Commands		
Get System GUID	APP (06h)	37h
Get Channel Info	APP (06h)	42h
Set User Access	APP (06h)	43h
Get User Access	APP (06h)	44h
Set User Name	APP (06h)	45h
Get User Name	APP (06h)	46h
Set User Password	APP (06h)	47h
Chassis Device Commands		
Get Chassis Capabilities	Chassis (00h)	00h
Get Chassis Status	Chassis (00h)	01h
Chassis Control	Chassis (00h)	02h
Chassis Reset	Chassis (00h)	03h
Sensor Device Commands		
Get Sensor Reading Factors	S/E (04h)	23h
Get Sensor Hysteresis	S/E (04h)	25h
Get Sensor Threshold	S/E (04h)	27h
Get Sensor Event Enable	S/E (04h)	29h
Get Sensor Event Status	S/E (04h)	2Bh
Get Sensor Reading	S/E (04h)	2Dh
Get Sensor Type	S/E (04h)	2Fh
FRU Device Commands		
Get FRU Inventory Area Info	Storage (0Ah)	10h
Read FRU Data	Storage (0Ah)	11h
Write FRU Data	Storage (0Ah)	12h
SDR Device Commands		
Get SDR Repository Info	Storage (0Ah)	20h
Get SDR Repository Allocation Info	Storage (0Ah)	21h
Get SDR	Storage (0Ah)	23h
Get SDR Repository Time	Storage (0Ah)	28h
SEL Device Commands		
Get SEL Info	Storage (0Ah)	40h
Get SEL Allocation Info	Storage (0Ah)	41h

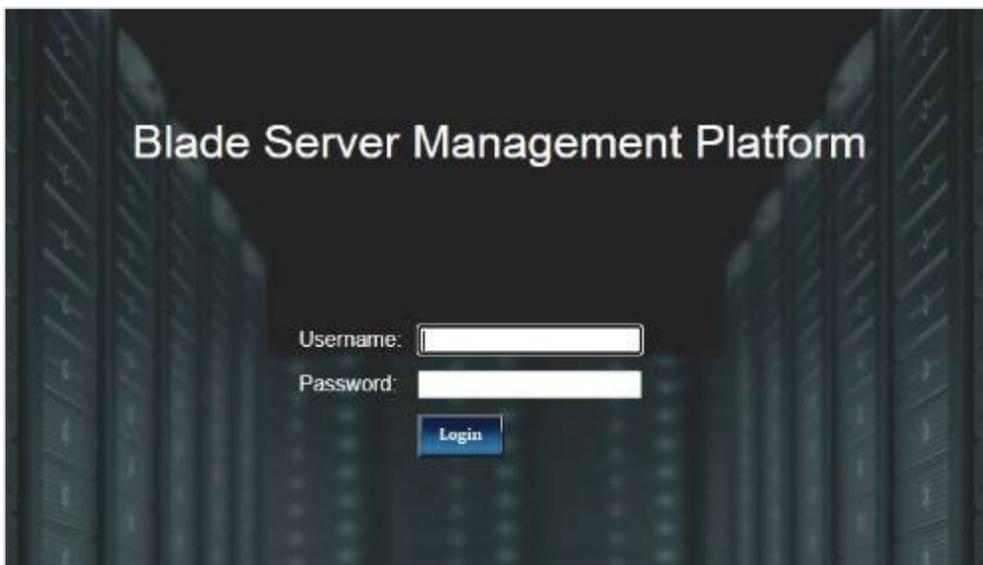
Get SEL Entry	Storage (0Ah)	43h
Delete SEL Entry	Storage (0Ah)	46h
Clear SEL	Storage (0Ah)	47h
Get SEL Time	Storage (0Ah)	48h
Set SEL Time	Storage (0Ah)	49h
Get SEL Time UTC Offset	Storage (0Ah)	5Ch
Set SEL Time UTC Offset	Storage (0Ah)	5Dh
LAN Device Commands		
Set LAN Configuration Parameters	Transport (0Ch)	01h
Get LAN Configuration Parameters	Transport (0Ch)	02h
Serial/Modem Device Commands		
Set User Callback Options	Transport (0Ch)	1Ah
Get User Callback Options	Transport (0Ch)	1Bh
SOL Activating	Transport (0Ch)	20h
Set SOL Configuration Parameters	Transport (0Ch)	21h
Get SOL Configuration Parameters	Transport (0Ch)	22h

CHAPTER 3: USING BMC WEB UI

In the address bar of your Internet browser, input the IP address of the remote server to access the BMC interface of that server.



Initial access of BMC prompts you to enter username and password. A screenshot of the login screen is given below:



Login Page

- ▶ **Username:** Enter your username in this field.
- ▶ **Password:** Enter your password in this field.
- ▶ **Login:** After entering the required credentials, click the **Login** to log in to Web UI.



Note: (1) If not specified, the default IP to access BMC is <https://192.168.0.100>.
(2) Please use **https** to access Web UI.

Default User Name and Password

- ▶ **Username:** admin
- ▶ **Password:** admin

The default username and password are in lower-case characters.

CHAPTER 4: WEB UI LAYOUT

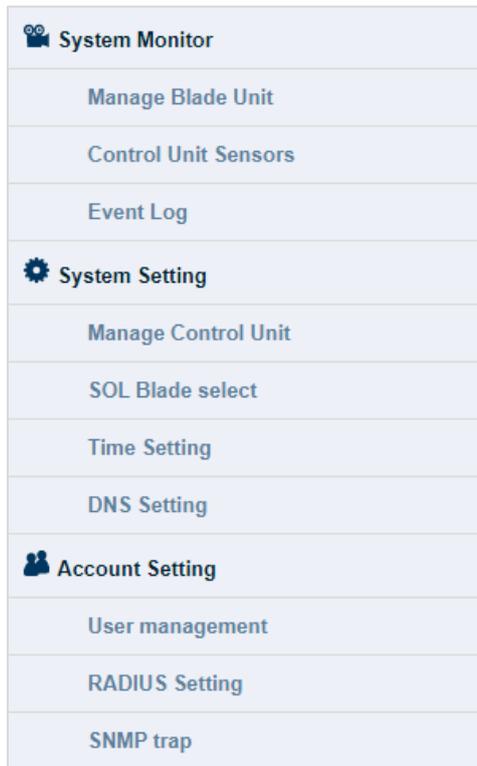
The BMC Web UI consists of various menu items:

Menu Bar

The menu bar displays the following:

- ▶ System Monitor
- ▶ System Monitor – Manage Blade Unit
- ▶ System Monitor – Control Unit Sensors
- ▶ System Monitor – Event Log
- ▶ System Setting
- ▶ System Setting – Manage Control Unit
- ▶ System Setting – SOL Blade Select
- ▶ System Setting – Time Setting
- ▶ System Setting – DNS Setting
- ▶ Account Setting
- ▶ Account Setting – User management
- ▶ Account Setting – RADIUS Setting
- ▶ Account Setting – SNMP trap

A screenshot of the menu bar is shown below:



Menu Bar

Quick Button and Logged-in User

The user information and quick buttons are located at the top right of the Web UI.



User Information

- ▶ **Sign out:** Click the icon  to log out of the Web UI.

Logged-in user and its privilege level

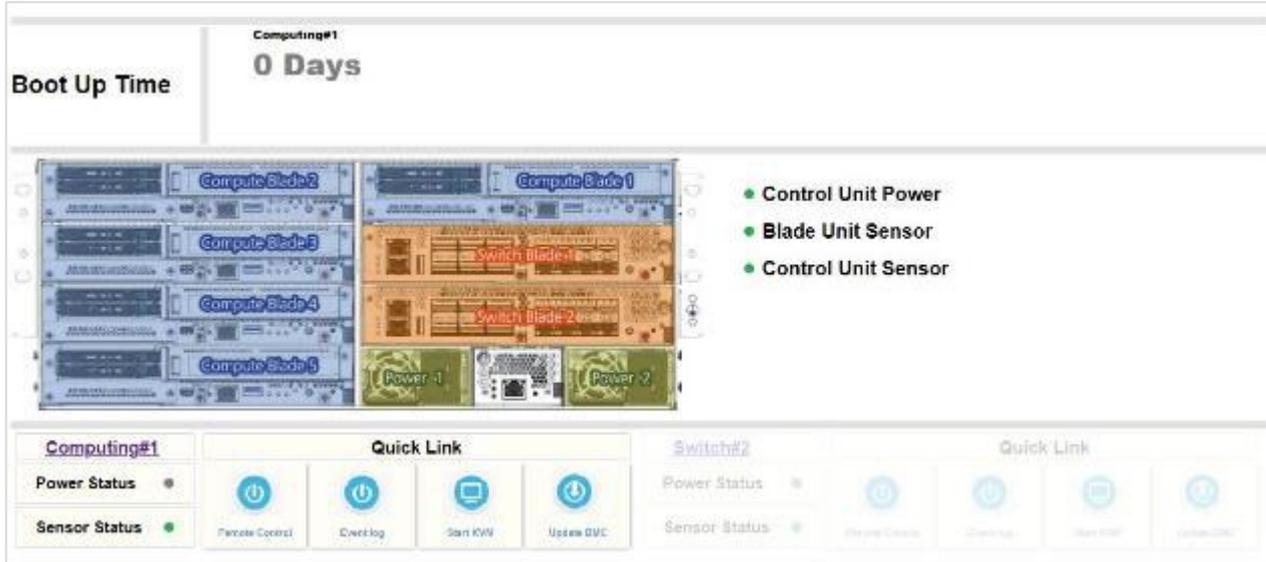
This option shows the logged-in username and privilege. There are four kinds of privileges:

- ▶ **User:** Only valid commands are allowed.
- ▶ **Operator:** All BMC commands are allowed except for the configuration commands that can change the behavior of the out-of-hand interfaces.
- ▶ **Administrator:** All BMC commands are allowed.
- ▶ **No Access:** Login access denied.

CHAPTER 5: SYSTEM MONITOR

Manage Blade Unit

The Manage Blade Unit page gives the overall information about the status of a device. To open the page, click **Manage Blade Unit** from the menu bar. A sample screenshot of the page is shown below:



Manage Blade Unit Page

A brief description of the page is given below:

► **Boot Up Time**

This indicates the boot-up time of every blade, the minimum unit is in hours.

► **System Diagram**

This indicates the system schematic diagram of Compute Blades, Switch Blades, Control Unit and Powers.

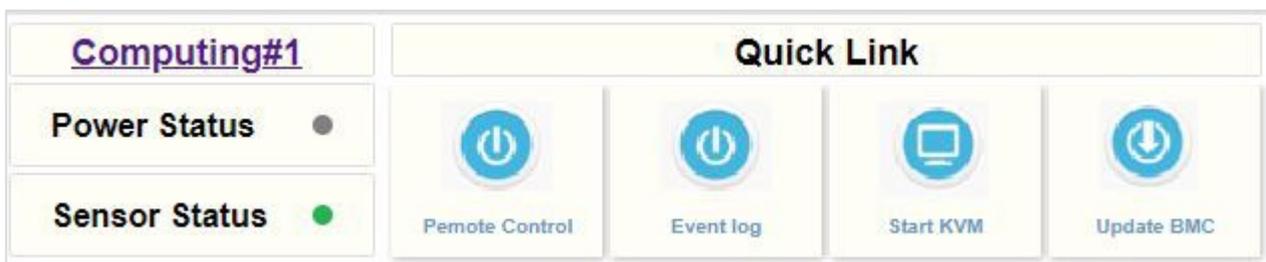
► **Chassis Status**

The LEDs indicates the power status of the control unit and also the sensor status of the control unit and all blades. Green LED means all status is working well, Red LED means there is some error happen.

► **Blade Status and Quick Link**

This indicates the blade power and sensor status, and also provides the Quick Link to control a specific blade.

The screenshot is shown as follows:



Blade Status and Quick Link

► **Blade Sensor**

Clicking the link of every blade will bring you to the blade sensor page, the screenshot is shown as follows.

Current Blade : Blade1

Sensor Information

It will help you to know the System HW by checking the sensor information - and also help you to locate the System malfunction part !!

Sensor Name	Status	Value	LCR	UCR
CPU_VCCDR	Normal	Not Available	1.586	2.015
VDIMM_1	Normal	Not Available	1.14	1.26
VDIMM_2	Normal	Not Available	1.14	1.26
CPU_VCCIO	Normal	Not Available	0.67	1.12
CPU_VCCSA	Normal	Not Available	0.44	1.15
VSB5V	Normal	Not Available	4.752	5.22
12V	Normal	Not Available	11.406	12.512
PCH_P1V05	Normal	Not Available	1.02	1.08
VSB3.3V	Normal	Not Available	3.15	3.45
PCH_PVNN	Normal	Not Available	0.62	1.04
VBAT	Normal	Not Available	3.003	3.537
SYS1_Temp	Normal	Not Available	0	85
SYS2_Temp	Normal	Not Available	0	85
SYS3_Temp	Normal	Not Available	0	70
SYS4_Temp	Normal	Not Available	0	60
CPU1_Temp	Normal	Not Available	0	95
PCH_Temp	Normal	Not Available	0	98
Fan_1	Normal	Not Available	3060	24420
Fan_2	Normal	Not Available	3060	26950
Fan_3	Normal	Not Available	3060	24420
Fan_4	Normal	Not Available	3060	26950
Fan_5	Normal	Not Available	3060	24420

Blade Unit Sensors Page

► **Power Status**

The LED indicates the blade power status, green means power on, gray means power off.

► **Sensor Status**

The LED indicates the sensor status of the blade, green means all sensors working well, red means there is a sensor reading alert. You could enter the specific Blade Sensor page to check the sensor reading.

► **Power Control**

You could control the power status of every blade by using this link.

► **Event Log**

The item is used to go to the blade event page, the screenshot is shown as follows.

Event Log

Events generated by the system will be logged here

All Events | Filter by: All Sensors

Event Log: 104 events in file 0 page 0

Event ID	Time Stamp	Sensor Name	System Event ID	Description
91	04/13/2011 12:22:12	Unknown	System ACPI Power State	[7] - Asertic
92	04/13/2011 12:18:52	Unknown	Slot 1 Connector	[1] - Asertic
93	04/13/2011 12:18:28	Unknown	Slot 1 Connector	[2] - Asertic
94	04/13/2011 12:18:14	Unknown	System Event	[1] - Asertic
95	04/13/2011 12:18:14	Unknown	System Event	[2] - Asertic
96	04/13/2011 12:18:14	Unknown	System Event	[3] - Asertic
97	04/13/2011 12:18:58	Unknown	Slot 1 Connector	[1] - Asertic
98	04/13/2011 12:18:58	Unknown	Slot 1 Connector	[2] - Asertic
99	04/13/2011 12:18:58	Unknown	System ACPI Power State	[1] - Asertic
100	04/13/2011 12:18:42	Unknown	Microcontroller / USB Controller	[1] - Asertic
101	04/13/2011 12:18:22	Unknown	System ACPI Power State	[7] - Asertic
102	04/13/2011 12:18:18	Unknown	System Event	[1] - Asertic
103	04/13/2011 12:18:12	Unknown	System Event	[2] - Asertic
104	04/13/2011 12:18:08	Unknown	System Event	[3] - Asertic
105	04/13/2011 12:18:08	Unknown	System Event	[4] - Asertic
106	04/13/2011 12:18:08	Unknown	System Event	[5] - Asertic
107	04/13/2011 12:18:08	Unknown	System Event	[6] - Asertic
108	04/13/2011 12:18:08	Unknown	System Event	[7] - Asertic
109	04/13/2011 12:18:08	Unknown	System Event	[8] - Asertic
110	04/13/2011 12:18:08	Unknown	System Event	[9] - Asertic
111	04/13/2011 12:18:08	Unknown	System Event	[10] - Asertic
112	04/13/2011 12:18:08	Unknown	System Event	[11] - Asertic
113	04/13/2011 12:18:08	Unknown	System Event	[12] - Asertic
114	04/13/2011 12:18:08	Unknown	System Event	[13] - Asertic
115	04/13/2011 12:18:08	Unknown	System Event	[14] - Asertic
116	04/13/2011 12:18:08	Unknown	System Event	[15] - Asertic
117	04/13/2011 12:18:08	Unknown	System Event	[16] - Asertic
118	04/13/2011 12:18:08	Unknown	System Event	[17] - Asertic
119	04/13/2011 12:18:08	Unknown	System Event	[18] - Asertic
120	04/13/2011 12:18:08	Unknown	System Event	[19] - Asertic
121	04/13/2011 12:18:08	Unknown	System Event	[20] - Asertic
122	04/13/2011 12:18:08	Unknown	System Event	[21] - Asertic
123	04/13/2011 12:18:08	Unknown	System Event	[22] - Asertic
124	04/13/2011 12:18:08	Unknown	System Event	[23] - Asertic
125	04/13/2011 12:18:08	Unknown	System Event	[24] - Asertic
126	04/13/2011 12:18:08	Unknown	System Event	[25] - Asertic
127	04/13/2011 12:18:08	Unknown	System Event	[26] - Asertic
128	04/13/2011 12:18:08	Unknown	System Event	[27] - Asertic
129	04/13/2011 12:18:08	Unknown	System Event	[28] - Asertic
130	04/13/2011 12:18:08	Unknown	System Event	[29] - Asertic
131	04/13/2011 12:18:08	Unknown	System Event	[30] - Asertic
132	04/13/2011 12:18:08	Unknown	System Event	[31] - Asertic
133	04/13/2011 12:18:08	Unknown	System Event	[32] - Asertic
134	04/13/2011 12:18:08	Unknown	System Event	[33] - Asertic
135	04/13/2011 12:18:08	Unknown	System Event	[34] - Asertic
136	04/13/2011 12:18:08	Unknown	System Event	[35] - Asertic
137	04/13/2011 12:18:08	Unknown	System Event	[36] - Asertic
138	04/13/2011 12:18:08	Unknown	System Event	[37] - Asertic
139	04/13/2011 12:18:08	Unknown	System Event	[38] - Asertic
140	04/13/2011 12:18:08	Unknown	System Event	[39] - Asertic
141	04/13/2011 12:18:08	Unknown	System Event	[40] - Asertic
142	04/13/2011 12:18:08	Unknown	System Event	[41] - Asertic
143	04/13/2011 12:18:08	Unknown	System Event	[42] - Asertic
144	04/13/2011 12:18:08	Unknown	System Event	[43] - Asertic
145	04/13/2011 12:18:08	Unknown	System Event	[44] - Asertic
146	04/13/2011 12:18:08	Unknown	System Event	[45] - Asertic
147	04/13/2011 12:18:08	Unknown	System Event	[46] - Asertic
148	04/13/2011 12:18:08	Unknown	System Event	[47] - Asertic
149	04/13/2011 12:18:08	Unknown	System Event	[48] - Asertic
150	04/13/2011 12:18:08	Unknown	System Event	[49] - Asertic
151	04/13/2011 12:18:08	Unknown	System Event	[50] - Asertic
152	04/13/2011 12:18:08	Unknown	System Event	[51] - Asertic
153	04/13/2011 12:18:08	Unknown	System Event	[52] - Asertic
154	04/13/2011 12:18:08	Unknown	System Event	[53] - Asertic
155	04/13/2011 12:18:08	Unknown	System Event	[54] - Asertic
156	04/13/2011 12:18:08	Unknown	System Event	[55] - Asertic
157	04/13/2011 12:18:08	Unknown	System Event	[56] - Asertic
158	04/13/2011 12:18:08	Unknown	System Event	[57] - Asertic
159	04/13/2011 12:18:08	Unknown	System Event	[58] - Asertic
160	04/13/2011 12:18:08	Unknown	System Event	[59] - Asertic
161	04/13/2011 12:18:08	Unknown	System Event	[60] - Asertic
162	04/13/2011 12:18:08	Unknown	System Event	[61] - Asertic
163	04/13/2011 12:18:08	Unknown	System Event	[62] - Asertic
164	04/13/2011 12:18:08	Unknown	System Event	[63] - Asertic
165	04/13/2011 12:18:08	Unknown	System Event	[64] - Asertic
166	04/13/2011 12:18:08	Unknown	System Event	[65] - Asertic
167	04/13/2011 12:18:08	Unknown	System Event	[66] - Asertic
168	04/13/2011 12:18:08	Unknown	System Event	[67] - Asertic
169	04/13/2011 12:18:08	Unknown	System Event	[68] - Asertic
170	04/13/2011 12:18:08	Unknown	System Event	[69] - Asertic
171	04/13/2011 12:18:08	Unknown	System Event	[70] - Asertic
172	04/13/2011 12:18:08	Unknown	System Event	[71] - Asertic
173	04/13/2011 12:18:08	Unknown	System Event	[72] - Asertic
174	04/13/2011 12:18:08	Unknown	System Event	[73] - Asertic
175	04/13/2011 12:18:08	Unknown	System Event	[74] - Asertic
176	04/13/2011 12:18:08	Unknown	System Event	[75] - Asertic
177	04/13/2011 12:18:08	Unknown	System Event	[76] - Asertic
178	04/13/2011 12:18:08	Unknown	System Event	[77] - Asertic
179	04/13/2011 12:18:08	Unknown	System Event	[78] - Asertic
180	04/13/2011 12:18:08	Unknown	System Event	[79] - Asertic
181	04/13/2011 12:18:08	Unknown	System Event	[80] - Asertic
182	04/13/2011 12:18:08	Unknown	System Event	[81] - Asertic
183	04/13/2011 12:18:08	Unknown	System Event	[82] - Asertic
184	04/13/2011 12:18:08	Unknown	System Event	[83] - Asertic
185	04/13/2011 12:18:08	Unknown	System Event	[84] - Asertic
186	04/13/2011 12:18:08	Unknown	System Event	[85] - Asertic
187	04/13/2011 12:18:08	Unknown	System Event	[86] - Asertic
188	04/13/2011 12:18:08	Unknown	System Event	[87] - Asertic
189	04/13/2011 12:18:08	Unknown	System Event	[88] - Asertic
190	04/13/2011 12:18:08	Unknown	System Event	[89] - Asertic
191	04/13/2011 12:18:08	Unknown	System Event	[90] - Asertic
192	04/13/2011 12:18:08	Unknown	System Event	[91] - Asertic
193	04/13/2011 12:18:08	Unknown	System Event	[92] - Asertic
194	04/13/2011 12:18:08	Unknown	System Event	[93] - Asertic
195	04/13/2011 12:18:08	Unknown	System Event	[94] - Asertic
196	04/13/2011 12:18:08	Unknown	System Event	[95] - Asertic
197	04/13/2011 12:18:08	Unknown	System Event	[96] - Asertic
198	04/13/2011 12:18:08	Unknown	System Event	[97] - Asertic
199	04/13/2011 12:18:08	Unknown	System Event	[98] - Asertic
200	04/13/2011 12:18:08	Unknown	System Event	[99] - Asertic

Blade Event Log Page

► **Start KVM**

This item is used to download Jviewer to launch KVM and remote media.

► **Update BMC**

This item will bring you to the update page to update the specific blade BMC, the screenshot is shown as follows.



Blade Unit Update Page

Control Unit Sensors

The page displays all the control unit sensor related information.

To open the page, click **Control Unit Sensors** from the menu. A screenshot of the page is given below:

Control Unit Sensors					
The sensor reading of the control unit.					
Sensor Name	Status	Sensor Reading	Lower Critical	Upper Critical	
SYS1 Temp	Normal	Not Available	0	70	
SYS2 Temp	Normal	Not Available	0	70	
SYS3 Temp	Normal	Not Available	0	80	
SYS4 Temp	Normal	Not Available	0	88	
FAN1 Speed	Normal	Not Available	1100	20900	
PSU1 Vin	Normal	Not Available	90	263.75	
PSU1 Vout	Normal	Not Available	11.5	12.9	
PSU1 Iout	Normal	Not Available	0	245	
PSU1 Pout	Normal	Not Available	0	2990	
PSU1 Fan	Normal	Not Available	4590	20835	
PSU1 Temp	Normal	Not Available	0	125	
PSU2 Vin	Normal	Not Available	90	263.75	
PSU2 Vout	Normal	Not Available	11.5	12.9	
PSU2 Iout	Normal	Not Available	0	245	
PSU2 Pout	Normal	Not Available	0	2990	
PSU2 Fan	Normal	Not Available	4590	20835	
PSU2 Temp	Normal	Not Available	0	125	

Control Unit Sensors Page

In this page, readings for all the available sensors with details like Sensor Name and Sensor Reading will be displayed.

Thresholds are of two types:

- Lower Critical (LC)
- Upper Critical (UC)

The threshold states could be Lower Critical - going low, Lower Critical - going high, Upper Critical - going low, Upper Critical - going high.

Event Log

This page displays the list of event logs triggered by the different sensors on this device. Click on a record to see the details of that entry. You can use the date or sensor name filter options to view those specific events, or you can also sort the list of entries by clicking on any of the column headers.

To open the Event Log page, click **Event Log** from the menu bar. A sample screenshot of Event Log page is shown below:

Event ID	Time Stamp	Sensor Name	Sensor Type	Description
3	01/01/2012 00:22:07	Ultrasonic	[undefined]	OK - Assembled
8	01/01/2012 00:22:10	Ultrasonic	[undefined]	OK - Assembled
7	01/01/2012 00:22:16	Ultrasonic	[undefined]	OK - Assembled
5	01/01/2012 00:22:22	Ultrasonic	[undefined]	OK - Assembled
8	01/01/2012 00:22:01	Ultrasonic	[undefined]	OK - Assembled
4	01/01/2012 00:21:54	Ultrasonic	[undefined]	OK - Assembled
3	01/01/2012 00:21:05	Ultrasonic	[undefined]	OK - Assembled
3	01/01/2012 00:21:04	Ultrasonic	[undefined]	OK - Assembled
3	01/01/2012 00:21:02	Ultrasonic	[undefined]	OK - Assembled

Event Log Page

The Event Log page consists of the following Fields:

- ▶ **Filter by Sensor:** Filtering can be done by selecting sensor name.
- ▶ **Clear Event Logs:** To delete all the event logs.



Note: The maximum event size is 3639 entries; please clear event logs if needed.

CHAPTER 6: SYSTEM SETTING

Manage Control Unit

Manage Control Unit

Control Unit Information

Device	Status	Firmware Version	Operation
Control Unit	Present	0.18.0	<input type="button" value="Reset Control Unit"/> <input type="button" value="Restore Factory Default"/>

Control Unit LAN Setting

Modify LAN Setting

LAN Type: Static IP Address

MAC Address: 00:90:0B:B1:67:0D

IP Address:

Subnet:

Gateway:

Control Unit Internal Domain Setting

Modify Internal Domain Setting

Internal IP Address: 192.168. .100

Control Unit Information

This part provides the information of the control unit, and also you could reboot the unit by “Reset Control Unit” or reset all configuration to factory default by “Restore Factory Default”.

Firmware Update

This wizard takes you through the process of firmware upgrade. A sample screenshot of Firmware Update Page is shown below.



Warning: Please note that after entering update mode widgets, other web pages and services will not work. All open widgets will be closed automatically. If upgrade process is canceled in the middle of the wizard, the device will be reset.



Note: The firmware upgrade process is a crucial operation. Make sure that the chances of a power or connectivity loss are minimal when performing this operation. Once you enter into Update Mode and choose to cancel the firmware flash operation, the BMC must be reset. This means that you must close the Internet browser and log back onto the BMC before you can perform any other types of operations. Once Firmware upgrade using web is started, the regular IPMI command will not be allowed for safety concern.

Control Unit Firmware Update

Source: No file chosen

- 1. Please select a firmware file, then click the 'Upload' button to upload.**
2. Click the 'Verify' button, it will verify the firmware file you uploaded.
3. Click the 'Start Update' button, it will update the firmware of your control unit.
4. After update finish, the control unit will be reset, please login again.

Firmware Update Page

The various fields are as follows.

- ▶ **Choose File:** To Select the Firmware image to be uploaded.
- ▶ **Upload:** To Start the Firmware Upload.

This wizard takes you through the process of firmware upgrade.

Control Unit LAN Setting

A sample screenshot of Network IP Settings is shown below:

Control Unit LAN Setting

Modify LAN Setting

Lan Type:	Static IP Address
IP Address:	<input type="text" value="192.168.0.100"/>
Subnet:	<input type="text" value="255.255.255.0"/>
Gateway:	<input type="text" value="192.168.0.1"/>

Network IP Settings

- ▶ **Modify LAN Setting:** To enable or disable the LAN Settings.
- ▶ **LAN Type:** Indicate the LAN connection type.
- ▶ **IP Address, Subnet, Gateway:** These fields are for specifying the static IPv4 address, Subnet Mask, and Default Gateway to be configured to the device.



Note:

- (1) IP Address is made of 4 numbers, separated by dots as in "xxx.xxx.xxx.xxx".
- (2) Each Number ranges from 0 to 255.
- (3) The first Number must not be 0.

Control Unit Internal Domain Setting

A sample screenshot of internal domain Settings is shown below:



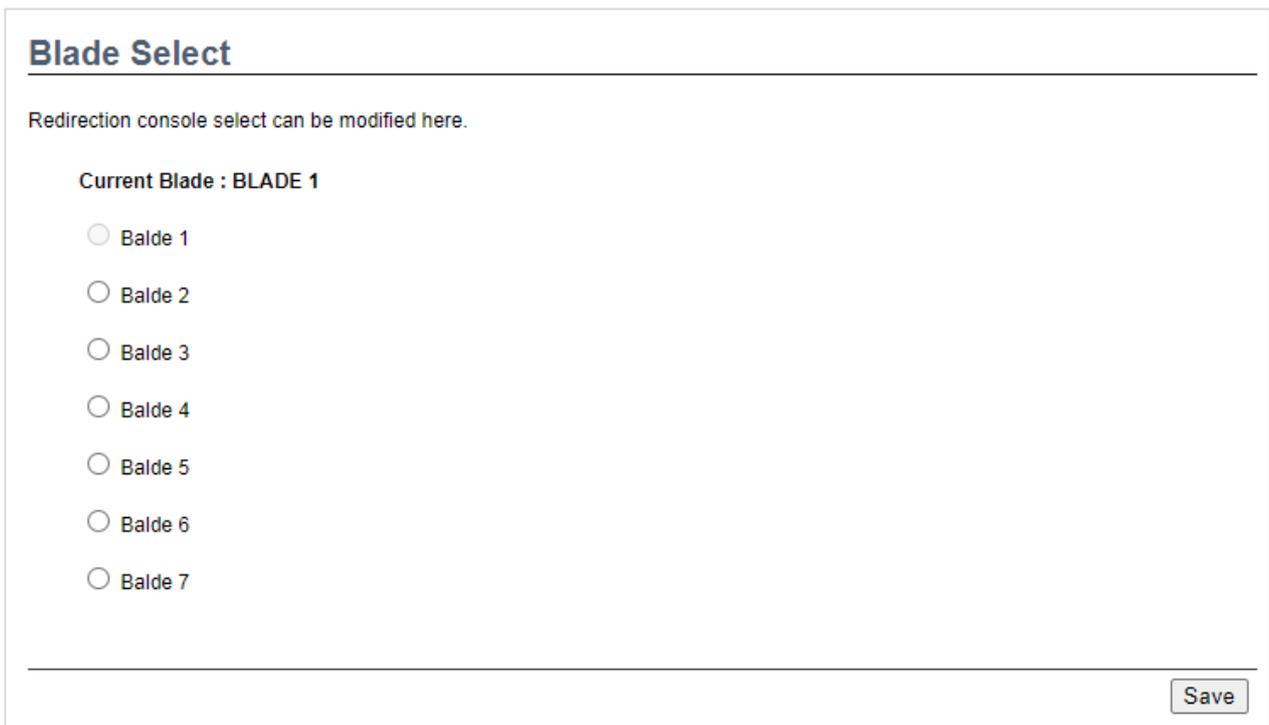
The screenshot shows a configuration window titled "Control Unit Internal Domain Setting". It features a checked checkbox labeled "Modify Internal Domain Setting". Below this, the "Internal IP Address" is displayed as "192.168.1.100", with the "1" in the third octet inside a text input field. At the bottom left, there are two buttons: "Save" and "Cancel".

Internal Domain Settings

- ▶ **Modify Internal Domain Setting:** To enable or disable the internal domain Settings.
- ▶ **Internal IP Address:** This field is used to specify the internal IP domain configured for all devices.

SOL Blade Select

This field is used to set the blade host system console for output via SOL. A Sample screenshot of the page is as shown below:



The screenshot shows a configuration window titled "Blade Select". Below the title, it states "Redirection console select can be modified here." Underneath, it says "Current Blade : BLADE 1". There are seven radio button options labeled "Balde 1" through "Balde 7". The "Balde 1" option is selected. At the bottom right, there is a "Save" button.

Time Setting Page

The page consists of the following fields:

- ▶ **Current Blade:** The current blade host number through the SOL output system console.
- ▶ **Blade 1~7:** Select the blade host to output the console via SOL.
- ▶ **Save:** To save the settings.

Time Setting

This field is used to set the date and time on the BMC. A Sample screenshot of the page is as shown below:

Time Setting Page

The page consists of the following fields:

- ▶ **Configure Date & Time:** Displays time zone list containing the UTC offset along with the locations and Navigational line to select the location which can be used to display the exact local time.
- ▶ **Automatically synchronize Date & Time with NTP Server:** To automatically synchronize Date and Time with the NTP Server.
- ▶ **Primary NTP Server:** Configure primary NTP server to use when automatically setting the date and time.
- ▶ **Secondary NTP Server:** Configure secondary NTP server to use when automatically setting the date and time.
- ▶ **Save:** To save the settings.

Procedure:

1. Select the Time zone location.
2. In the Primary NTP Server / Secondary NTP Server field, specify the NTP server for the device.



Note: Secondary NTP server is an optional field. If the Primary NTP server is not working well, the Secondary NTP Server will be tried.

3. Enable **Automatically synchronize Date & Time with NTP Server** option.
4. Click **Save** button to save the settings.

DNS Setting

The **Domain Name System (DNS)** is a distributed hierarchical naming system for computers, services, or any resource connected to the Internet or a private network. It associates the information with domain names assigned to each of the participants. Most importantly, it translates domain names meaningful to humans into the numerical (binary) identifiers associated with networking equipment for the purpose of locating and addressing these devices worldwide.

The DNS Setting page is used to manage the DNS settings of a device. A sample screenshot of the page is shown below:

DNS Setting Page

- ▶ **DNS Service:** To enable/disable all the DNS Service Configurations.
- ▶ **Host Configuration:** Choose either Automatic or Manual settings. It displays hostname of the device. If the Host setting is chosen as Manual, then specify the hostname of the device.



Note:

- (1) This value ranges from 1 to 64 alpha-numeric characters.
- (2) Special characters '-'(hyphen) and '_'(underscore) are allowed.
- (3) It must not start or end with a '-'(hyphen).
- (4) IE browsers won't work correctly if any part of the hostname contains underscore (_) character.

- ▶ **Domain Name Server Configuration**

DNS Server Address will support the following:

- IPv4 Address format.



Note: IPv4 Addresses should be given in dotted decimal representation.

- ▶ **Save:** To save the entered changes.

Procedure:

1. In **Domain Name Service Configuration**, Enable **DNS Service**.
- Check the option **Enabled** to enable all the DNS Service Configurations.

2. Choose the **Host Configuration** either Automatic or Manual



Note: If you choose Automatic, you need not enter the Host Name; on the other hand, if you choose Manual, you need to enter the Host Name.

3. Enter the **Host Name** in the given field if you have chosen Manual Configuration.
4. In DNS Server 1, DNS Server 2 and DNS Server 3, enter the server addresses to be configured for the BMC.
5. Click **Save** to save the entries.

CHAPTER 7: ACCOUNT SETTING

User Management

The User Management page allows you to view the current list of user slots for the BMC. A sample screenshot of the page is shown below:

User Management

The list below shows the current list of available users. To delete or modify a user, select the user name from the list and click "Delete User" or "Modify User". To add a new user, select an unconfigured slot and click "Add User"

UserID ▲	Username ▲	User Access ▲	Privilege ▲	SNMP Status ▲
1	anonymous	Enabled	Administrator	Disabled
2	admin	Enabled	Administrator	Disabled
3	~	~	~	~
4	~	~	~	~
5	~	~	~	~
6	~	~	~	~
7	~	~	~	~
8	~	~	~	~
9	~	~	~	~
10	~	~	~	~

Account Status Page

The fields of Account Status page are explained below:

- ▶ **User ID:** Index of the user.

- ▶ **User Name:** Name of the user.
- ▶ **User Access:** Displays the network access privilege of the user.
- ▶ **Privilege:** Displays the network access privilege of the user.
- ▶ **SNMP status:** Displays the network access privilege of the user.

Procedure to add a new user

1. To add a new user, select a blank column and click the Add User button.
2. Enter the name of the user in the **User Name** field.



Note:

- (1) Username is a string of 1 to 16 alpha-numeric characters.
- (2) It must start with an alphabetical character.
- (3) It is case-sensitive.

3. Select **Password Size**
4. In the **Password** and **Confirm Password** fields, enter and confirm your new password.



Note: (1) Password should be the combination of alphabets, numbers, symbol and upper case characters. (2) White space is not allowed. (3) This field will not allow more than 16 characters.

5. Enable **User Access**.
6. In the **Network Privilege** field, select the privileges assigned to the user which could be Administrator, Operator, User or None.
7. Click **Save** to save the new user

RADIUS Setting

RADIUS is a modular, high performance and feature-rich RADIUS suite including server, clients, development libraries and numerous additional RADIUS related utilities. A sample screenshot of RADIUS Settings page is shown below:

The screenshot shows a web interface titled "RADIUS Settings". At the top, there is a message: "The RADIUS Authentication is currently disabled. To enable RADIUS Authentication and enter the required information to access the RADIUS server. Press the Save button to save your changes. To configure the Advanced settings, RADIUS Server authentication should be enabled." Below this message, there are four fields: "RADIUS Authentication" with a checkbox labeled "Enable" (which is unchecked), "Port" with a text input field containing "1812", "Server Address" with an empty text input field, and "Secret" with an empty text input field. At the bottom right of the form, there are two buttons: "Save" and "Reset".

The fields of General RADIUS Settings Page are explained below:

- ▶ **RADIUS Authentication:** Option to enable/disable primary RADIUS authentication.
- ▶ **Server Address:** The IP address of RADIUS server.
- ▶ **Port:** The RADIUS Port number.



Note:

- (1) Default Port is 1812.
 - (2) Port value ranges from 1 to 65535.
- ▶ **Secret:** The Authentication Secret for RADIUS server.



Note:

- (1) This field will not allow more than 31 characters.
 - (2) Secret must be at least 4 characters long.
 - (3) Space is not allowed.
- ▶ **Save:** To save the settings.



Note: Please use the following Reply-Message to specify user privilege:

- (1) Reply-Message="privilege=Administrator"
- (2) Reply-Message="privilege=Operator"
- (3) Reply-Message="privilege=User"
- (4) Reply-Message="privilege=NoAccess"

SNMP Trap Redirection IP

A sample screenshot of RADIUS Settings page is shown below:

The screenshot shows a web form titled "SNMP Trap Redirection IP". Below the title is a horizontal line, followed by the text "This page allows the user to configure the SNMP trap redirection ip setting". There are two main fields: "Enable" with an unchecked checkbox, and "Redirection IP" with an empty text input field. At the bottom right of the form is a "Save" button.

The fields of SNMP Trap Redirection IP Settings Page are explained below:

- ▶ **Enable:** To enable or disable the SNMP trap feature.
- ▶ **Redirection IP:** The IP address of SNMP trap redirection.

Refresh Video: This option can be used to update the display shown in the Console Redirection window.

Capture Screen: This option helps to take the screenshot of the host screen and save it in the client's system

Compression Mode: This option helps to compress the Video data transfer to the specific mode.

DTC Quantization Table: This option helps to choose the video quality.

Turn OFF Host Display/Host Video Output: If you enable this option, the server display will be blank but you can view the screen in Console Redirection. If you disable this option, the display will be back in the server screen.

Full Screen: This option is used to view the Console Redirection in full screen mode (Maximize). This menu is enabled only when both the client and host resolution are same.

Exit: This option is used to exit the console redirection screen.

Keyboard

This menu contains the following sub menu items.

Hold Right Ctrl Key: This menu item can be used to act as the right-side <CTRL> key when in Console Redirection.

Hold Right Alt Key: This menu item can be used to act as the right-side <ALT> key when in Console Redirection.

Hold Left Ctrl Key: This menu item can be used to act as the left-side <CTRL> key when in Console Redirection.

Hold Left Alt Key: This menu item can be used to act as the left-side <ALT> key when in Console Redirection.

Left Windows Key: This menu item can be used to act as the left-side <WIN> key when in Console Redirection. You can also decide how the key should be pressed: Hold Down or Press and Release.

Right Windows Key: This menu item can be used to act as the right-side <WIN> key when in Console Redirection. You can also decide how the key should be pressed: Hold Down or Press and Release.

Ctrl+Alt+Del: This menu item can be used to act as if you depressed the <CTRL>, <ALT> and keys down simultaneously on the server that you are redirecting.

Context menu: This menu item can be used to act as the context menu key, when in Console Redirection.

Hot Keys: This menu is used to add the user configurable shortcut keys to invoke in the host machine. The configured key events are saved in the BMC.

Full Keyboard Support: Enable this option to provide full keyboard support. This option is used to trigger the Ctrl and Alt key directly to host from the physical keyboard.

Mouse

Show Cursor: This menu item can be used to show or hide the local mouse cursor on the remote client system.

Mouse Calibration: This menu item can be used only if the mouse mode is relative.

In this step, the mouse threshold settings on the remote server will be discovered. The local mouse cursor is displayed in RED color and the remote cursor is part of the remote video screen. Both the cursors will be

synchronized in the beginning. Please use '+' or '-' keys to change the threshold settings until both the cursors go out of synch. Please detect the first reading on which cursors go out of synch. Once this is detected, use 'ALT-T' to save the threshold value.

Mouse Mode: This option handles mouse emulation from local window to remote screen using either of the two methods. Only 'Administrator' has the right to configure this option.

- **Absolute mouse mode:** The absolute position of the local mouse is sent to the server if this option is selected.
- **Relative mouse mode:** The Relative mode sends the calculated relative mouse position displacement to the server if this option is selected.
- **Other mouse mode:** This mouse mode sets the client cursor in the middle of the client system and will send the deviation to the host. This mouse mode is specific for SUSE Linux installation and accessing mouse in UEFI screen.

Note: Client cursor will be hidden always. If you want to enable, use Alt + C to access the menu.

You can see client and host cursor in JViewer if mouse is moved faster/ in circle. Mouse sync will depend on so many factors like network, client machine video packet receive and rendering, BMC CPU utilization etc. In Normal use case scenario you will have mouse sync better compare to heavy video/stress testing. High resolution, media redirection will have directly impact in video rendering due to that client and host cursor can be viewed while moving the cursor.

To view the Supported Operating Systems for Mouse Mode, click Mouse Mode.

Options

Bandwidth: The Bandwidth Usage option allows you to adjust the bandwidth. You can select one of the following:

- **Auto Detect** - This option is used to detect client system keyboard layout automatically and send the key event to the host based on the Layout detected.
- 256 Kbps
- 512 Kbps
- 1 Mbps
- 10 Mbps

Keyboard/Mouse Encryption: This option allows you to encrypt keyboard inputs and mouse movements sent between the connections.

Zoom:

- Zoom In – For increasing the view of the screen with an increment of 10%
- Zoom Out – For decreasing the view of the screen with an increment of 10%

Options

Bandwidth: The Bandwidth Usage option allows you to adjust the bandwidth.

You can select one of the following:

Auto Detect - This option is used to detect the network bandwidth usage of the BMC automatically.

- 256 Kbps

- 512 Kbps
- 1 Mbps
- 10 Mbps

Keyboard/Mouse Encryption: This option allows you to encrypt keyboard inputs and mouse movements sent between the connections.

Zoom:

- Zoom In – For increasing the screen size. This zoom varies from 100% to 150% with an interval of 10%
- Zoom Out – For decreasing the screen size. This zoom varies from 100% to 50% with an interval of 10%
- Actual Size - By default this option is selected
- Fit to Client Resolution - If the host screen resolution is greater than the client screen resolution, choose this option to fit the host screen to client screen. The host video will be scaled down and rendered in the KVM console. In this case, the host mouse cursor will appear smaller than the client mouse cursor. So the client and host mouse cursors might not be in perfect sync.
- Fit to Host Resolution -If the host screen resolution is lesser than the client screen resolution, choose this option to resize the JViewer frame to the host resolution.

Note: This option can be configured from PRJ in MDS.

Send IPMI Command: This option opens the IPMI Command dialog. Enter the raw IPMI command in Hexadecimal field as Hexadecimal value and click Send. The Response will be displayed as shown in the screenshot below.

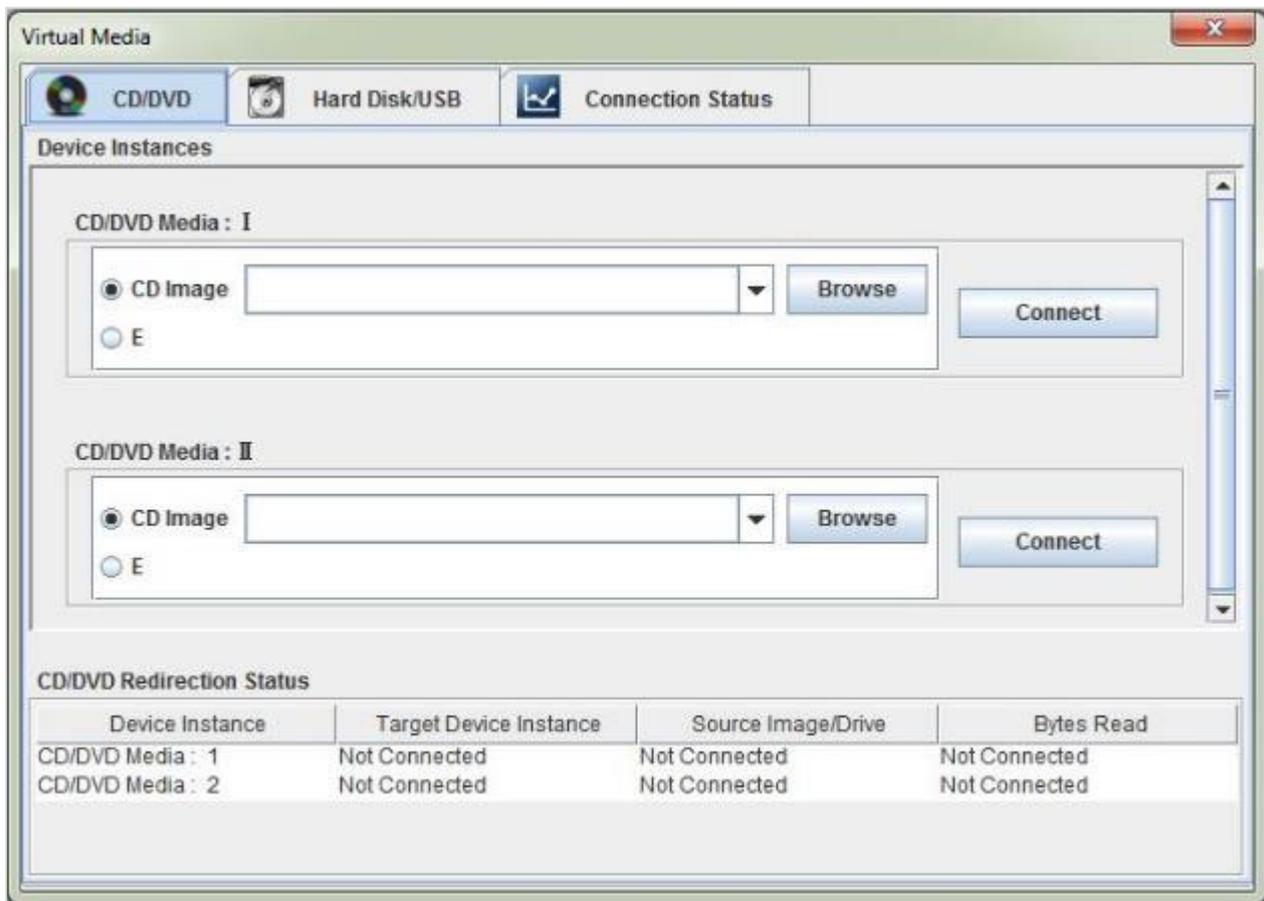
GUI Languages: Choose the desired GUI language.

Block Privilege Request: Full privileged sessions can use this option to block incoming request from partial privileged sessions by setting an auto response as either "Allow only Video" or "Deny Access".

Media

The virtual media application will allow you to redirect different media to the host system. The application supports CD/DVD, Hard Disk/USB devices as well as image files.

A sample screenshot of Virtual Media Application is given below.



CD/DVD: This tab can be used to start or stop the redirection of a physical DVD/ CD-ROM drive and DVD/CD image file of ISO/NRG file format.

Hard disk/USB: This tab can be used to start or stop the redirection of a Hard Disk/USB key image and USB key image such as img/ima.

Connection Status: This tab provides a collective view of the redirection status of various virtual media devices.

Keyboard Layout

Auto Detect: This option is used to detect keyboard layout automatically. The languages supported are English – US, French – France, Spanish – Spain, German- Germany, and Japanese- Japan. If both the client and host languages are the same, then for all the languages other than English mentioned above, you must select this option to avoid errors.

Soft Keyboard: This option allows you to select the keyboard layout. It is similar to onscreen keyboard. If the client and host languages are different, then for all the languages other than English, you must select the appropriate language in the list of the menu and use the softkeyboard to avoid errors.



Video Record

Start Record: Click this option to start recording the screen.

Stop Record: Click this option is used to stop the recording.

Settings: Click this option to set the settings for video recording.

To configure the video settings, follow these steps:



Enter the **Video Length** in seconds.

Browse and locate where you want the video to be saved.

Enable the **Normalized video resolution to 1024X768**.

Click **OK** to save the entries and return to the Console Redirection screen or click **Cancel** if you don't want to save the changes.

In the Console Redirection window, click **Video Record > Start Record**.

Record the process.

To stop recording, click **Video Record > Stop Record**.

Power

The power option is to perform any power cycle operation. Click on the required option to perform the following operation.

Reset Server: To reboot the system without powering off (warm boot).

Immediate Shutdown: To immediately power off the server.

Orderly Shutdown: To initiate operating system shutdown prior to the shutdown.

Power On Server: To power on the server.

Power Cycle Server: To first power off, and then reboot the system (cold boot).

Active Users

Click this option to displays the active users and their system IP address.

APPENDIX D: TERMS AND CONDITIONS

Warranty Policy

1. All products are under warranty against defects in materials and workmanship for a period of one year from the date of purchase.
2. The buyer will bear the return freight charges for goods returned for repair within the warranty period; whereas the manufacturer will bear the after service freight charges for goods returned to the user.
3. The buyer will pay for the repair (for replaced components plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service," RMA goods will be returned at customer's expense.
5. The following conditions are excluded from this warranty:
 - ▶ Improper or inadequate maintenance by the customer
 - ▶ Unauthorized modification, misuse, or reversed engineering of the product
 - ▶ Operation outside of the environmental specifications for the product.

RMA Service

Requesting an RMA#

1. To obtain an RMA number, simply fill out and fax the "RMA Request Form " to your supplier.
2. The customer is required to fill out the problem code as listed. If your problem is not among the codes listed, please write the symptom description in the remarks box.
3. Ship the defective unit(s) on freight prepaid terms. Use the original packing materials when possible.
4. Mark the RMA# clearly on the box.



Note: Customer is responsible for shipping damage(s) resulting from inadequate/loose packing of the defective unit(s). All RMA# are valid for 30 days only; RMA goods received after the effective RMA# period will be rejected.

RMA Service Request Form

When requesting RMA service, please fill out the following form. Without this form enclosed, your RMA cannot be processed.

RMA No:	Reasons to Return: <input type="checkbox"/> Repair(Please include failure details) <input type="checkbox"/> Testing Purpose
Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Applied Date:
Return Shipping Address: _____	
Shipping by: <input type="checkbox"/> Air Freight <input type="checkbox"/> Sea <input type="checkbox"/> Express _____	
<input type="checkbox"/> Others: _____	

Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

***Problem Code:**

- | | | | |
|------------------------|------------------------------|--------------------|--------------------------|
| 01: D.O.A. | 07: BIOS Problem | 13: SCSI | 19: DIO |
| 02: Second Time R.M.A. | 08: Keyboard Controller Fail | 14: LPT Port | 20: Buzzer |
| 03: CMOS Data Lost | 09: Cache RMA Problem | 15: PS2 | 21: Shut Down |
| 04: FDC Fail | 10: Memory Socket Bad | 16: LAN | 22: Panel Fail |
| 05: HDC Fail | 11: Hang Up Software | 17: COM Port | 23: CRT Fail |
| 06: Bad Slot | 12: Out Look Damage | 18: Watchdog Timer | 24: Others (Pls specify) |

Request Party

Confirmed By Supplier

Authorized Signature / Date

Authorized Signature / Date