# Intel® Server Board M10JNP2SB

User Guide

An overview of product features, functions, architecture, support specifications, and instructions for essential component installation.

Rev. 1.7

June 2021

M10JNP2SB

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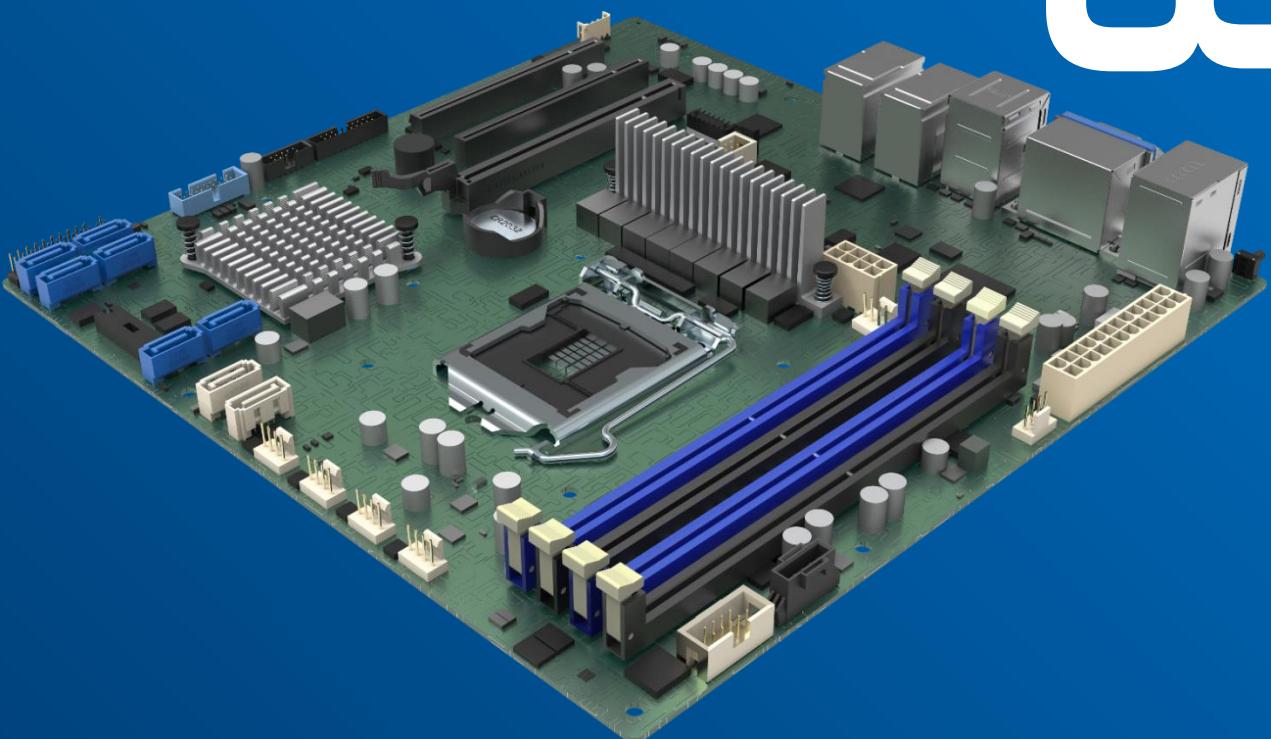
Document Revision History

Date	Revision	Changes
October 2019	1.0	First release.
October 2019	1.01	Added product regulatory compliance table.
November 2019	1.1	Chapter 3 - Added Supported processors
January 2020	1.2	Updated Appendix F – Product Regulatory information to include EU Lot 9 support content
April 2020	1.3	Chapter 5 – Added I/O Shield 2D drawing
June 2020	1.4	Chapter 2 Server Board Overview – Updated processor Thermal Design Power (TDP) information
September 2020	1.5	Updated reference source error messages Updated information on section 4.1 Memory Support
December 2020	1.6	Chapter 4 – Added DDR4 Disclaimer Minor updates for clarity
June 2021	1.7	Adding section installation and removal of IO shield Minor updates throughout for clarity

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Intel recommends the following steps be taken when performing any procedures described within this document or while performing service to any computer system.

- Where available, all system integration and/or service should be performed at a properly equipped ESD workstation.
- Wear ESD protective gear like a grounded antistatic wrist strap, sole grounders, and/or conductive shoes.
- Wear an anti-static smock or gown to cover any clothing that may generate an electrostatic charge.
- Remove all jewelry.
- Disconnect all power cables and cords before opening the Server Chassis
- Power down the system and remove power feed from the Server Board before performing any integration or service
- Touch any unpainted metal surface of the chassis before performing any integration or service.
- Hold all circuit boards and other electronic components by their edges only.
- After removing electronic devices from the system or from their protective packaging, place them component side up on to a grounded anti-static surface or conductive foam pad. **Do not** place electronic devices on to the outside of any protective packaging.

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1. Introduction

This user guide provides a high level overview of the features, functions, and architecture of the Intel® Server Board M10JNP2SB. This document replaces the document previously known as the Technical Product Specification (TPS).

This guide is divided in two main parts. Going from chapters 2–8, it provides information about the server board features and functions, followed by instructions on how to install or service essential system components on Chapter 9.

For additional information about this server board, refer to the documents listed in Appendix D.

1.1 Intel® Server Board Use Disclaimer

Intel Corporation server boards support add-in peripherals and contain a number of high-density VLSI and power delivery components that need adequate airflow to cool. It is the responsibility of the system integrator to consult vendor datasheets and operating parameters to determine the amount of airflow required for a specific system configuration and operating environment. Intel Corporation cannot be held responsible if components fail or the server board does not operate correctly when used outside any of its published operating or non-operating limits.

2.   Server Board Overview

The Intel® Server Board M10JNP2SB is a monolithic printed circuit board assembly with features for data center and office environments running multiple applications under a continuous workload. This server board is designed to support the Intel® Xeon® E 2200 processor family.
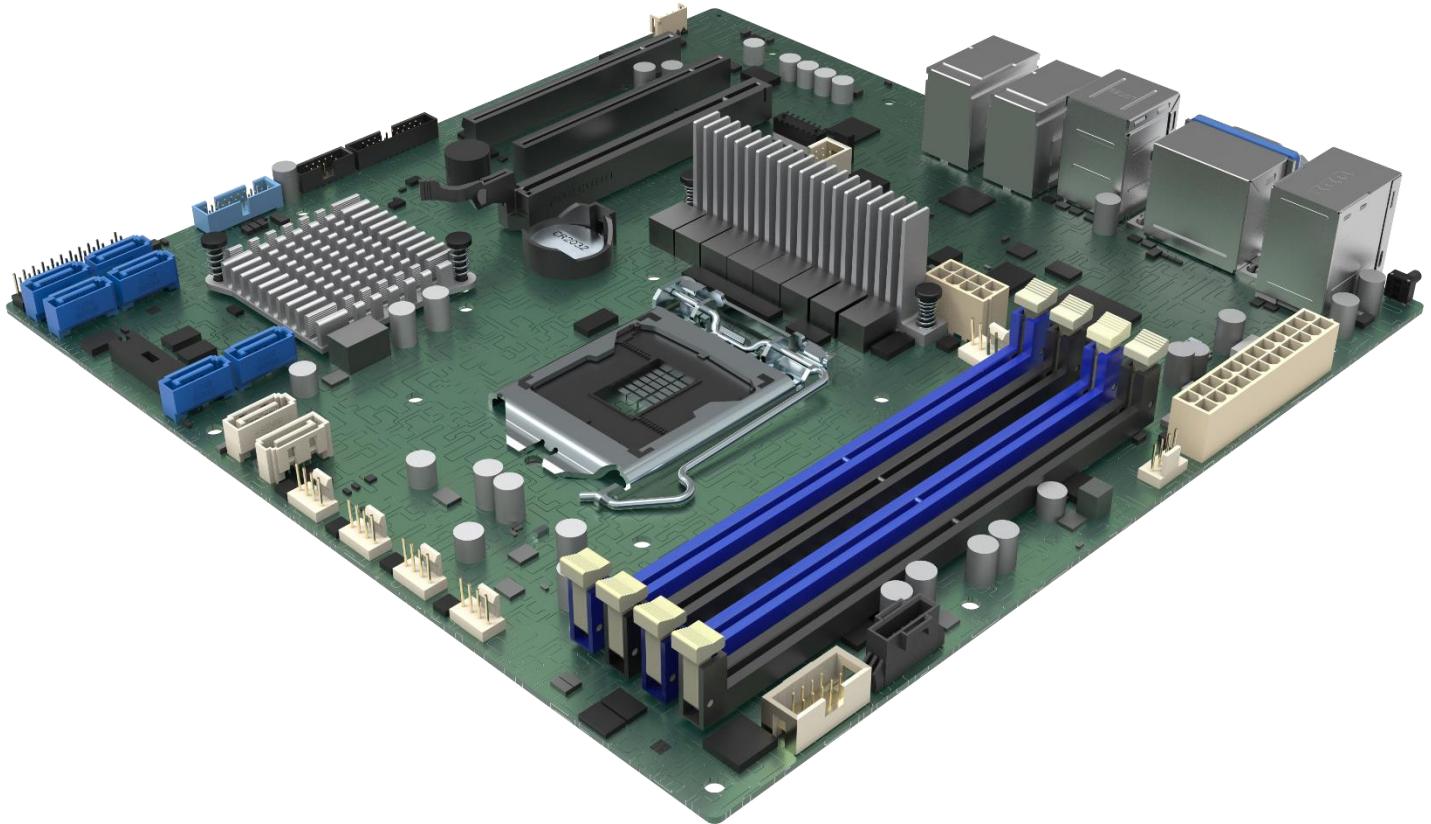
Figure 1. Intel® Server Board M10JNP2SB

2.1   Server Board Features Overview

Table 1. Intel® Server Board M10JNP2SB features/specifications

Feature	Description
Processor support	- One LGA1151 processor socket - Supports one of the following processors: ○ Intel® Xeon E-2224 processor ○ Intel® Xeon E-2236 processor ○ Intel® Xeon E-2278G processor - Maximum supported Thermal Design Power (TDP) of up to 95 W **Note:** Server Systems based on this server board may support a lower maximum Thermal Design Power (TDP). Consult chassis vendor specifications for maximum supported processor TDP limits.
Memory	- Four DIMM Slots - Two memory channels - DDR4 UDIMM ECC, 2666 MT/s, 1.2V - Up to 128GB total installed memory
Chipset	Intel® C246 Chipset
Network Ports	- Four 1GbE Base-T, RJ45 - One dedicated management port, RJ45

Feature	Description
Onboard Storage Support	• Six SATA 6 Gbps ports (6 Gb/s, 3 Gb/s and 1.5 Gb/s transfer rates are supported) • Two 7-pin SATA-DOM connectors Embedded SATA software RAID • Intel® VROC (SATA RAID)
PCIe* Add-in Card Slots	• Slot 1: PCIe* 3.0 x8 slot (x4 electrical) • Slot 2: PCIe* 3.0 x8 slot (x8 electrical) • Slot 3: PCIe* 3.0 x16 slot (x8 electrical)
Riser Card Support	Support for one PCIe 3.0 riser card on PCIe slot 3. (Sold separately. Optional Intel Accessory)
Video	• Integrated 2D video controller • 16 MB of DDR4 video memory • One DB-15 external connector • Two External Display Port connectors
USB	• Four external USB 3.1 Gen2 ports • One 2x10 pin connector providing front panel support for (2) USB 3.1 Gen1 ports
Serial Port	• Two internal DH-10 serial port connectors
Server Management	• Integrated baseboard management controller, IPMI 2.0 compliant • Dedicated RJ45 management port • Shared management interface
Security	• Trusted platform module 2.0 support (China Version) – iPC JNPTPMCH (accessory option) • Trusted platform module 2.0 support (Rest of World) – iPC JNPTPM (accessory option)
System Fan Support	• Two 4-pin processor fan headers • Six 6-pin front system fan headers • One 4-pin rear system fan header
Front Panel Support	• One 2x12 pin SSI front panel header

2.2 Server Board Component / Feature Identification
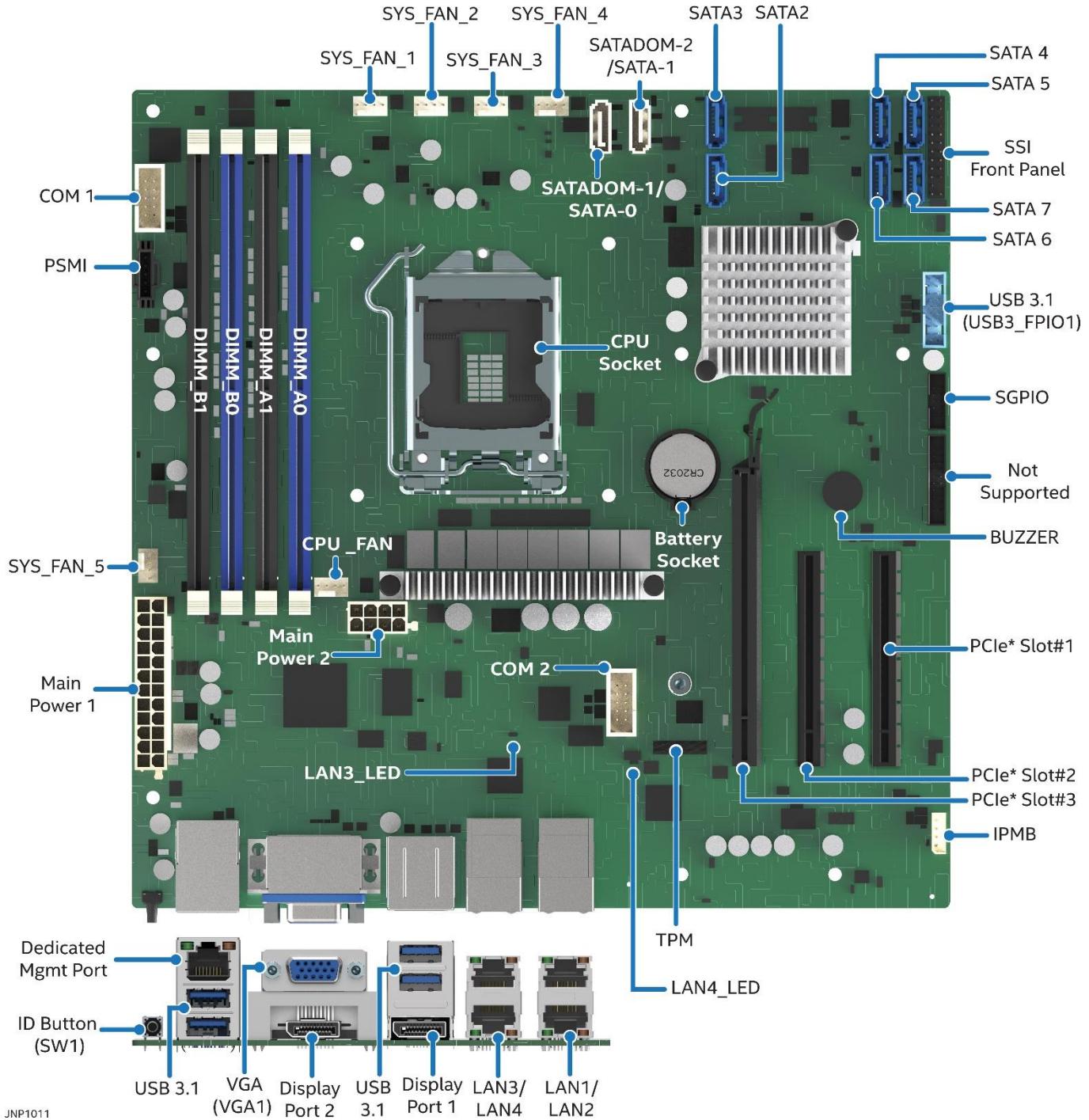
Figure 2. Server board component / feature identification

2.3 Server Board Mechanical Drawings
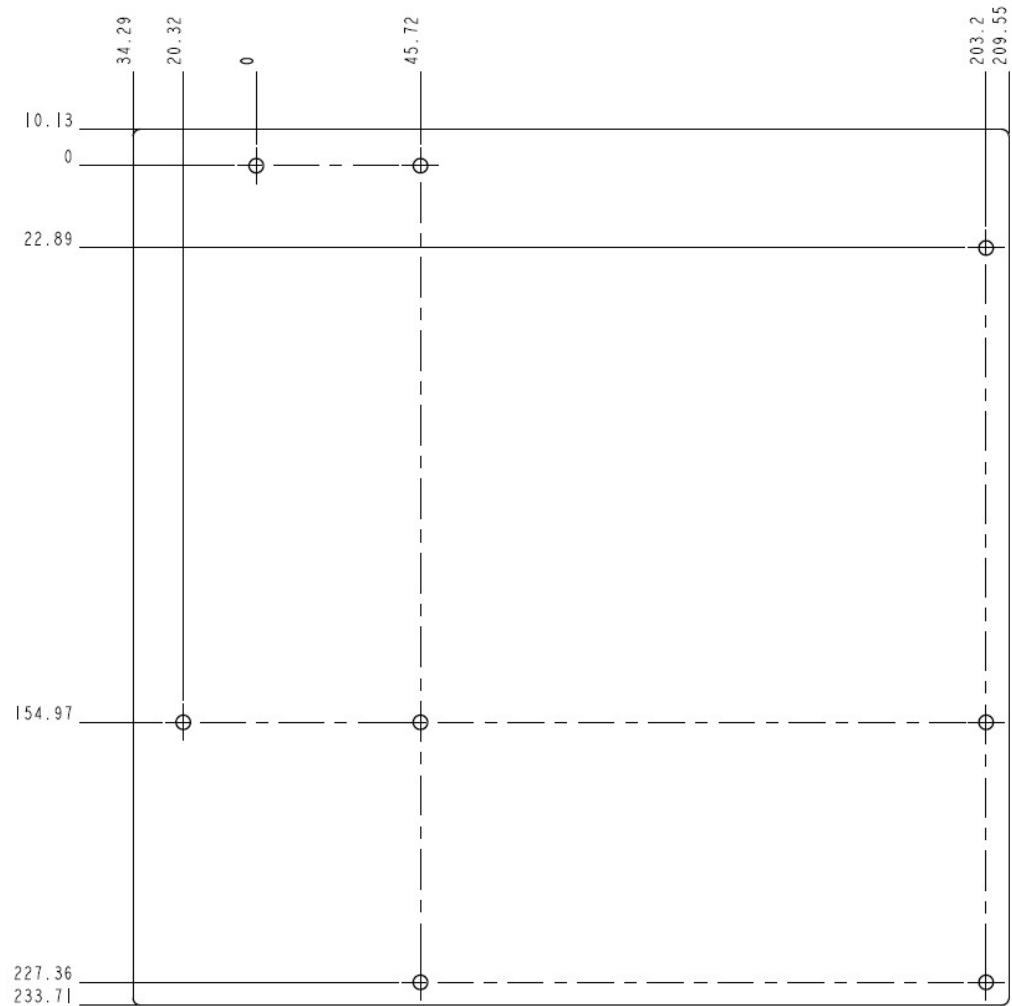
Figure 3. Server board mounting holes
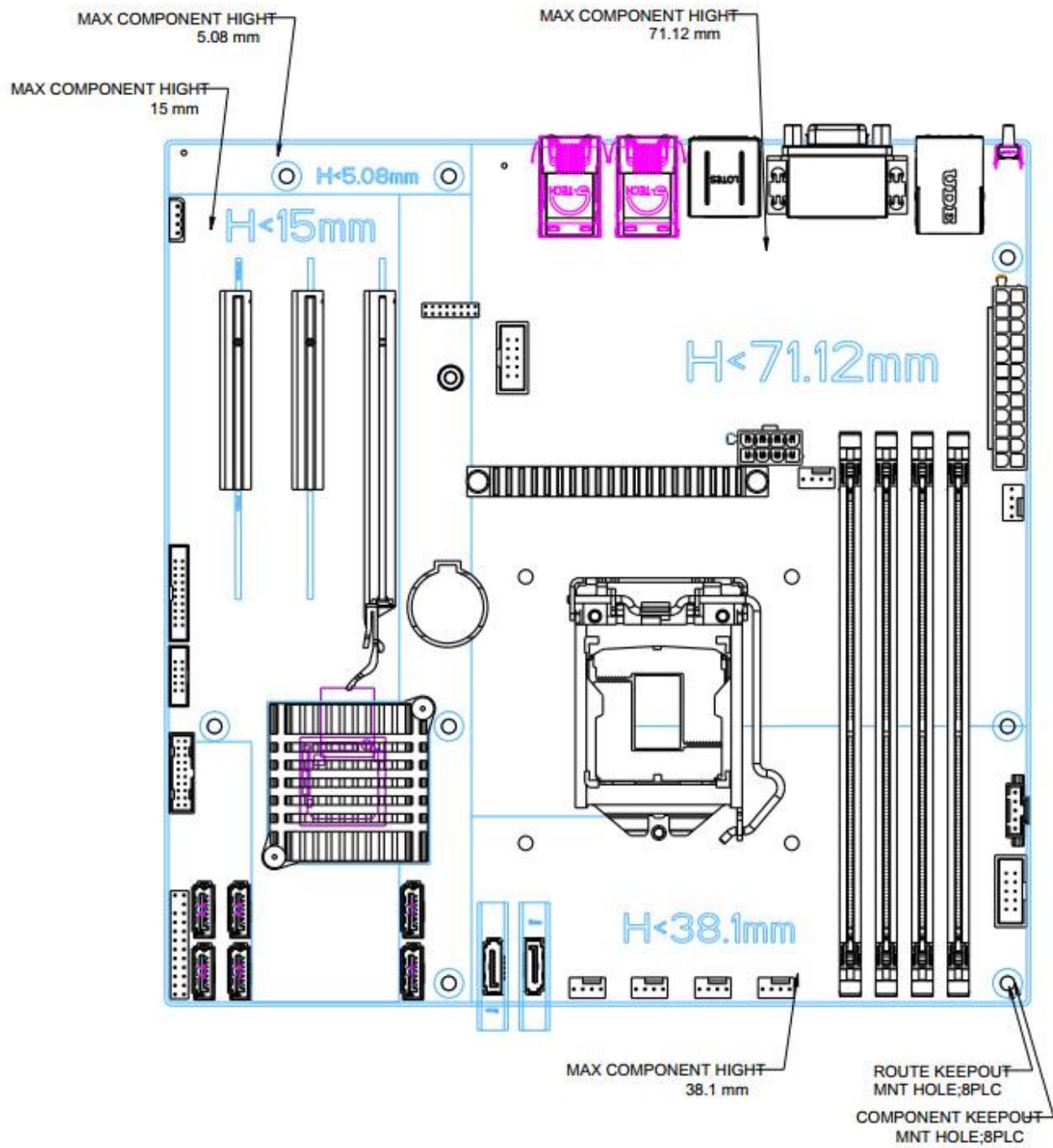
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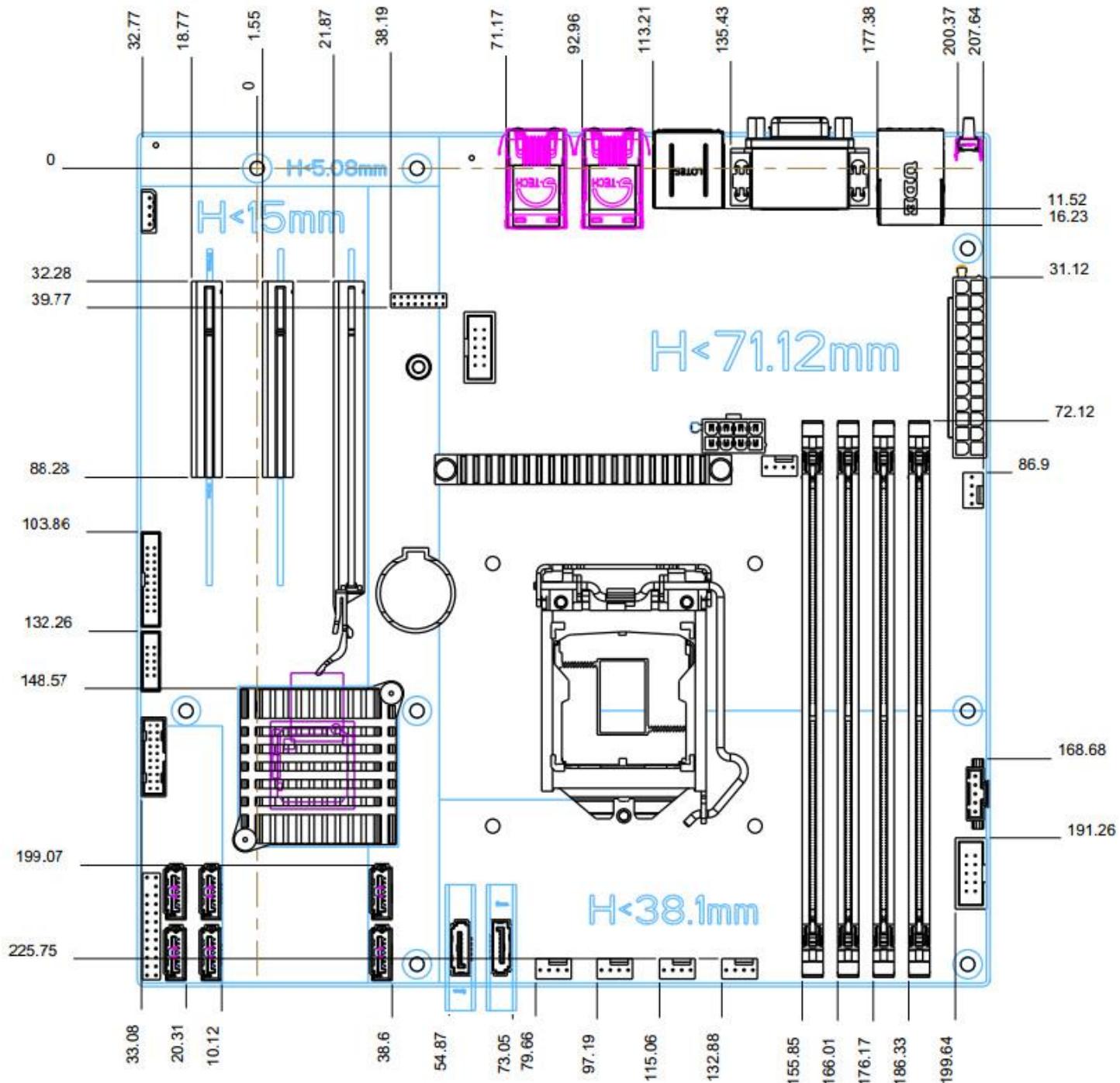
Figure 5. Major components and connectors 1 of 2
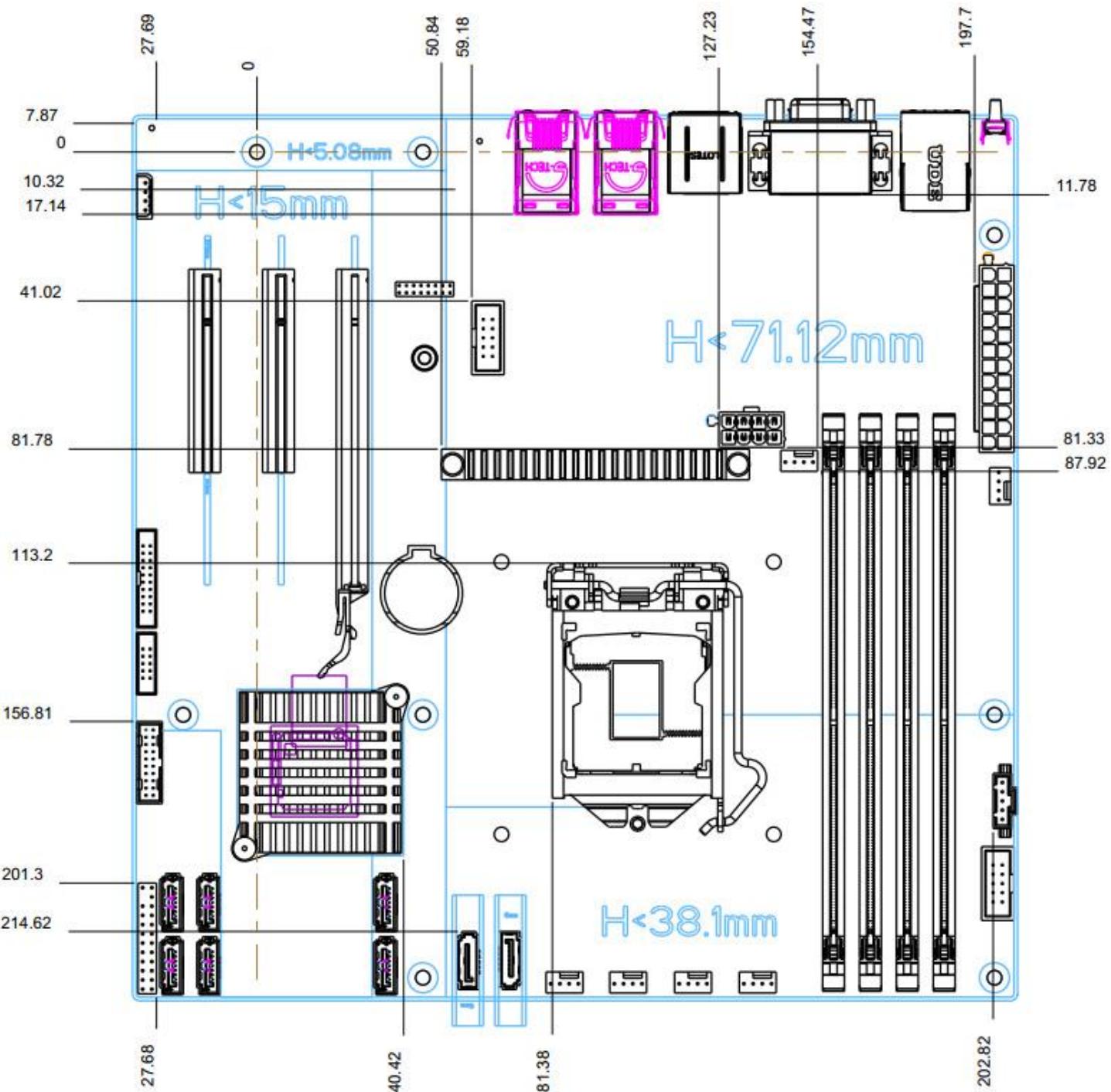
Figure 6. Major components and connectors 2 of 2

2.4 Product Architecture Overview

The architecture of Intel® Server Board M10JNP2SB is developed around the integrated features and functions of the Intel® Xeon® E-2200 processor family, the Intel® C246 Platform Controller Hub (PCH)chipset, Intel® Ethernet Controller I210, and the ASPEED* AST2500 baseboard management controller (BMC).

Figure 7 provides an overview of the server board architecture, showing the features and interconnects of each of the major subsystem components.
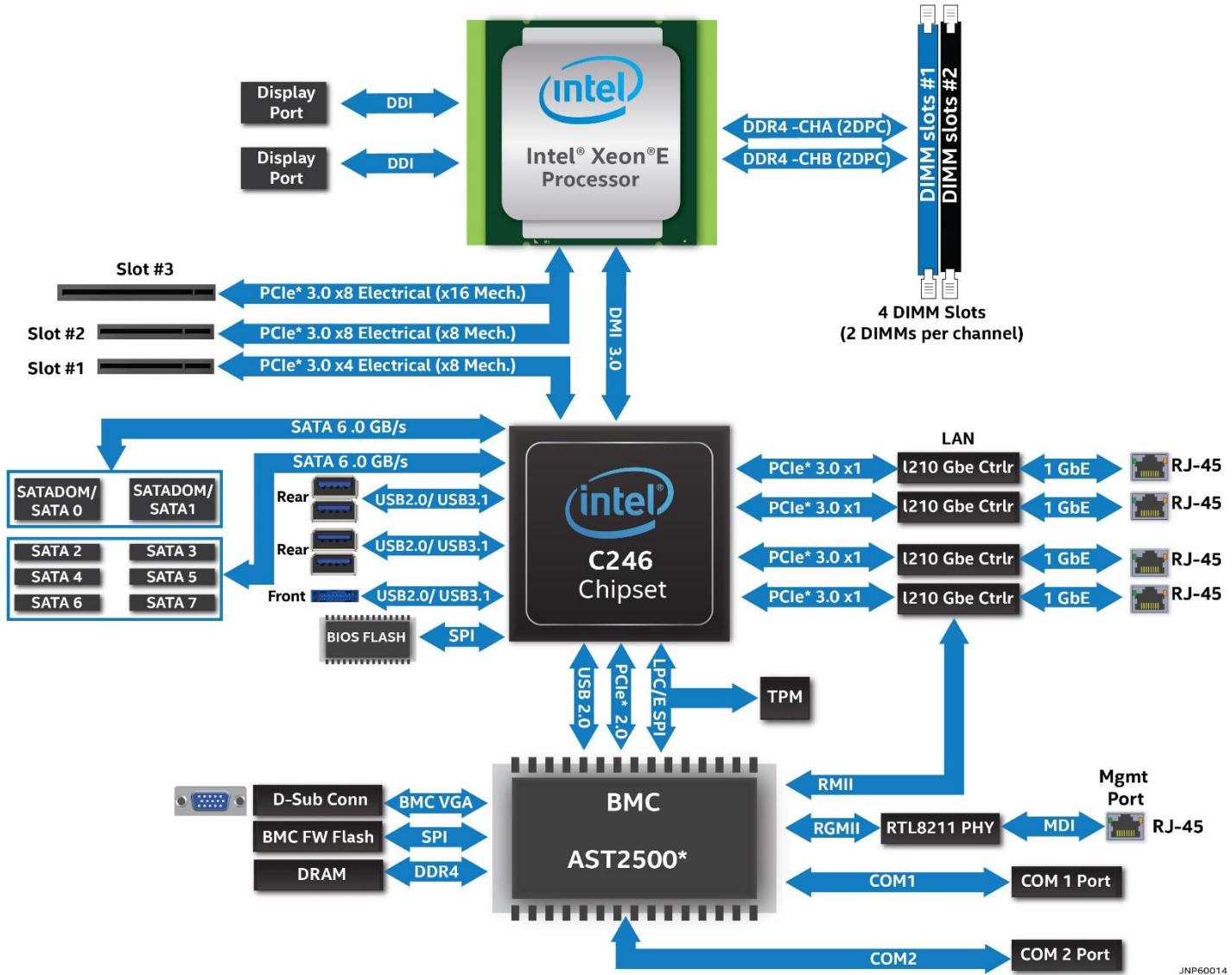
Figure 7. Intel® Server Board M10JNP2SB block diagram

3. Processor Support

The server board includes one LGA1151 processor socket compatible with select models from the Intel® Xeon® E-2100 and Intel® Xeon® E-2200 processor families with a maximum Thermal Design Power (TDP) of 95 W.

The Intel Server Board M10JNP2SB has been validated to support the following Intel processors:

- Intel® Xeon E-2104G processor
- Intel® Xeon E-2124 processor
- Intel® Xeon E-2124G processor
- Intel® Xeon E-2126G processor
- Intel® Xeon E-2134 processor
- Intel® Xeon E-2136 processor
- Intel® Xeon E-2146G processor
- Intel® Xeon E-2174G processor
- Intel® Xeon E-2176G processor
- Intel® Xeon E-2186G processor
- Intel® Xeon E-2224 processor
- Intel® Xeon E-2236 processor
- Intel® Xeon E-2278G processor

Table 3 and Table 2 provide a comparison of specifications between the supported processors.

Table 2. Intel® Xeon® E-2100 processor family features list

SKU	Cores/threads	Base Speed (GHz)	Max Intel® Turbo Boost Technology 2.0 Speed (GHz)	Intel® UHD Graphics P630	Intel® Smart Cache (MB)
E-2186G	6/12	3.8	4.7	Yes	12
E-2176G	6/12	3.7	4.7	Yes	12
E-2174G	4/8	3.8	4.7	Yes	8
E-2146G	6/12	3.5	4.5	Yes	12
E-2144G	4/8	3.6	4.5	Yes	8
E-2136	6/12	3.3	4.5	No	12
E-2134	4/8	3.5	4.5	No	8
E-2126G	6/12	3.3	4.5	Yes	12
E-2124G	4/8	3.4	4.5	Yes	8
E-2124	4/8	3.3	4.3	No	8
E-2104G	4	3.2	N/A	Yes	8

Table 3. Intel® Xeon® E-2200 processor family features list

Features	Intel® Xeon® E-2224 Processor	Intel® Xeon® E-2236 Processor	Intel® Xeon® E-2278G Processor
Cores/Threads	4/4	6/12	8/16
Max Turbo Frequency	4.7 GHz	4.8 GHz	5.0 GHz
Base Frequency	3.5 GHz	3.4 GHz	3.8 GHz
Intel® Smart Cache	8 Mb	12 Mb	12 Mb
Intel® UHD Graphics	P360	N/A	P360
DDR4 ECC UDIMM	128 Gb	128 Gb	128 Gb

3.1   Processor Features

The Intel® Xeon® E-2100 and Intel® Xeon® E-2200 processor families combine several key system components into a single processor package, and include the following features:

- Intel® Virtualization Technology (Intel® VT-x)
- Intel® Active Management Technology 11.0 (Intel® AMT)
- Intel® Trusted Execution Technology (Intel® TXT)
- Intel® Streaming SIMD Extensions 4.2 (Intel® SSE4.2)
- Intel® Hyperthreading Technology (Intel® HT Technology)
- Intel® 64 Architecture
- Execute Disable Bit
- Intel® Turbo Boost Technology 2.0
- Intel® Advanced Vector Extensions 2 (Intel® AVX2
- Intel® Advanced Encryption Standards New Instructions (Intel® AES-NI)
- PCLMULQDQ (Perform Carry Less Multiplication Quad word) instruction
- Intel® Secure Key
- Intel® Transactional Synchronization Extensions (Intel® TSX-NI)
- PAIR – Power Aware Interrupt Routing
- SMEP – Supervisor Mode Execution Protection
- Intel® Boot Guard
- Intel® Software Guard Extensions (Intel® SGX)
- Intel Memory Protection Extensions (Intel® MPX)
- GMM Scoring Accelerator
- Intel® Processor Trace (Intel® PT)
- High Definition Content Protection (HDCP) 2.2

Note: Feature availability may vary between processor SKUs.

Refer to the *Intel® Server Board M10JNP2SB Configuration Guide* for a complete list of tested hardware.

4. Memory Support
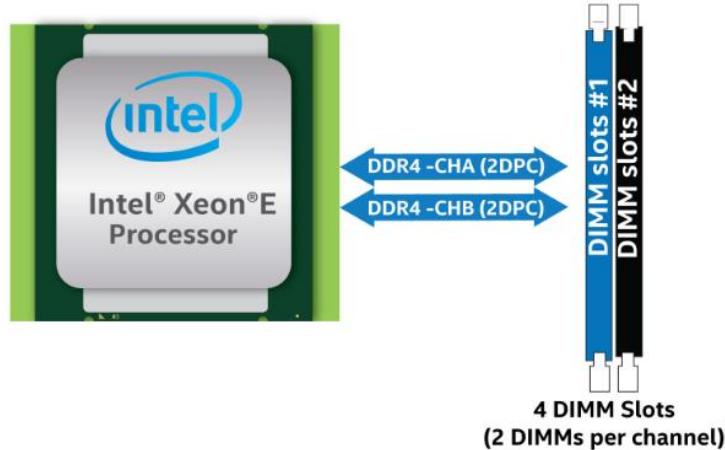
Figure 8. Memory subsystem architecture

The Intel® Xeon® E-2200 processor family includes an Integrated Memory Controller (IMC) capable of supporting two memory channels that can accommodate up to two DIMM slots per channel. On the Intel® Server Board M10JNP2SB, a total of four DIMM slots are provided as shown in Figure 9.

4.1 Supported Memory

The server board supports the following:

- Only DDR4 DIMMs are supported
- Error Correction Code (ECC) enabled and non-ECC UDIMMs are supported
- Total installed system memory of up to 128GB
- DIMM speeds of 2666/2400 MT/s
- DIMMs organized as Single Rank (SR) or Dual Rank (DR)

The following illustration shows the location of the DIMM slots on the server board.
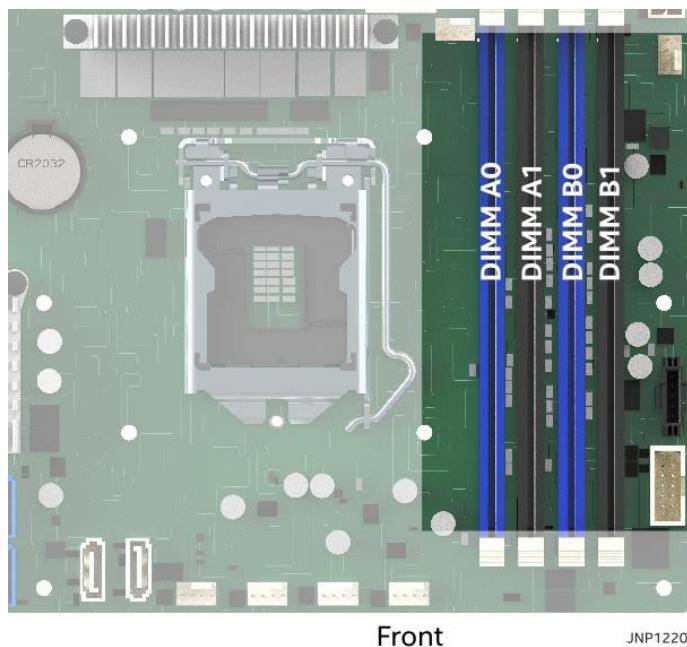
Figure 9. DIMM slot identification

Intel DDR4 DIMM Support Disclaimer:

Intel validates and will only provide support for system configurations where all installed DDR4 DIMMs have matching "Identical" or "Like" attributes. See **Error! Reference source not found.**4. A system configured concurrently with DDR4 DIMMs from different vendors will be supported by Intel if all other DDR4 "Like" DIMM attributes match.

Intel does not perform system validation testing nor will it provide support for system configurations where all populated DDR4 DIMMs do not have matching "Like" DIMM attributes as listed in **Error! Reference source not found.**4.

Intel will only provide support for Intel server systems configured with DDR4 DIMMs that have been validated by Intel and are listed on Intel's Tested Memory list for the given Intel server product family.

Intel configures and ships pre-integrated L9 server systems. All DDR4 DIMMs within a given L9 server system as shipped by Intel will be identical. All installed DIMMs will have matching attributes as those listed in the *"Identical" DDR4 DIMM4 Attributes* column in **Error! Reference source not found.**4.

When purchasing more than one integrated L9 server system with the same configuration from Intel, Intel reserves the right to use "Like" DIMMs between server systems. At a minimum "Like" DIMMS will have matching DIMM attributes as listed in the table below. However, the DIMM model #, revision #, or vendor may be different.

For warranty replacement, Intel will make every effort to ship back an exact match to the one returned. However, Intel may ship back a validated "Like" DIMM. A "Like" DIMM may be from the same vendor but may not be the same revision # or model #, or it may be an Intel validated DIMM from a different vendor. At a minimum, all "Like" DIMMs shipped from Intel will match attributes of the original part according to the definition of "Like" DIMMs in the following table.

Table 4. DDR4 DIMM Attributes Table for "Identical" and "Like" DIMMs

• DDR4 DIMMs are considered "Identical" when ALL listed attributes between the DIMMs match			
• Two or more DDR4 DIMMs are considered "Like" DIMMs when all attributes minus the Vendor, and/or DIMM Part # and/or DIMM Revision#, are the same.			
Attribute	**"Identical" DDR4 DIMM Attributes**	**"Like" DDR4 DIMM Attributes**	**Possible DDR4 Attribute Values**
Vendor	**Match**	**Maybe Different**	Memory Vendor Name
DIMM Part #	**Match**	**Maybe Different**	Memory Vendor Part #
DIMM Revision #	**Match**	**Maybe Different**	Memory Vendor Part Revision #
SDRAM Type	**Match**	**Match**	DDR4
DIMM Type	**Match**	**Match**	RDIMM, LRDIMM
Speed (MHz)	**Match**	**Match**	2666, 2933, 3200
Voltage	**Match**	**Match**	1.2V
DIMM Size (GB)	**Match**	**Match**	8GB, 16GB, 32GB, 64GB, 128GB, 256GB
Organization	**Match**	**Match**	1Gx72; 2Gx72; 4Gx72; 8Gx72; 16Gx72; 32Gx72
DIMM Rank	**Match**	**Match**	1R, 2R, 4R, 8R
DRAM Width	**Match**	**Match**	x4, x8
DRAM Density	**Match**	**Match**	8Gb, 16Gb

4.2 General Memory Population Rules

The following memory population rules apply when installing DIMMs:

- When only one DIMM is used in the channels A or B, it must be populated in the **black** DIMM slot.
- Mixing DIMMs of a different type or rank organization is not supported

The following table lists the recommended DIMM populations for the server board.

Table 5. DIMM population recommendations

# of installed DIMMs	DIMM Slot			
	DIMM_A0	DIMM_A1	DIMM_B0	DIMM_B1
1		✓		
2	✓	✓		
1				✓
2			✓	✓
2		✓		✓
3	✓	✓		✓
3		✓	✓	✓
4	✓	✓	✓	✓

4.3   Memory RAS Features

Each processor within the Intel® Xeon® E-2200 processor family has support for advanced memory RAS features as defined in the following table.

Table 6. Memory RAS features

RAS Feature	Description
Device Data Correction	x8 Single Device Data Correction (SDDC) via static virtual lockstep (Applicable to x8 DRAM DIMMs)
	Adaptive Data Correction (SR) (Applicable to x4 DRAM DIMMs)
	x8 Single Device Data Correction + 1 bit (SDDC+1) (Applicable to x8 DRAM DIMMs)
	SDDDC + 1, and ADDDC (MR) + 1 (Applicable to x4 DRAM DIMMs)
Memory Mirroring	Full Memory Mirroring: An intra IMC method of keeping a duplicate (secondary or mirrored) copy of the contents of memory as a redundant backup for use if the primary memory fails. The mirrored copy of the memory is stored in memory of the same processor socket's IMC. Dynamic (without reboot) failover to the mirrored DIMMs is transparent to the OS and applications.
	Address Range/Partial Memory Mirroring: Provides further intra socket granularity to mirroring of memory by allowing the firmware or OS to determine a range of memory addresses to be mirrored, leaving the rest of the memory in the socket in non-mirror mode.

5. Server Board I/O

5.1 PCIe* Add-In Card Support

The server board provides three PCI Express* (PCIe*) slots labeled: "PCIe#1", "PCIe#2", and "PCIe#3". The PCIe* interface of the Intel® Server Board M10JNP2SB is fully compliant with the *PCIe* Base Specification, Revision 3.0* supporting the following PCIe* bit rates: 3.0 (8.0 GT/s), 2.0 (5.0 GT/s), and 1.0 (2.5 GT/s).

PCIe add-in card slots and their properties are as follows:

- Slot 1: PCIe* 3.0 x8 slot (x4 electrical)
- Slot 2: PCIe* 3.0 x8 slot (x8 electrical)
- Slot 3: PCIe* 3.0 x16 slot (x8 electrical)
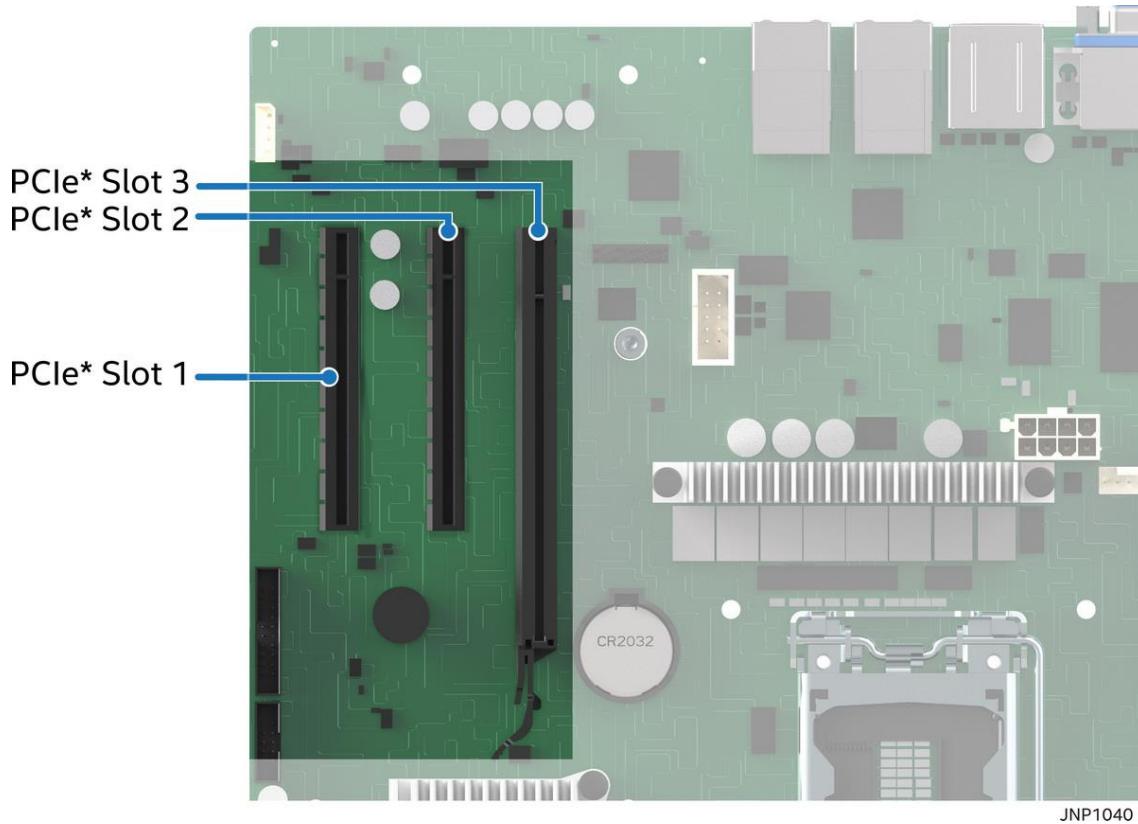
Figure 10. PCIe slot identification

5.1.1 PCIe* Enumeration and Allocation

The BIOS assigns PCI bus numbers in a depth-first hierarchy, in accordance with the PCI Local Bus Specification, Revision 3.0. The bus number is incremented when the BIOS encounters a PCI-PCI bridge device.

Scanning continues on the secondary side of the bridge until all subordinate buses are assigned numbers. PCI bus number assignments may vary from boot to boot with varying presence of PCI devices with PCI-PCI bridges.

If a bridge device with a single bus behind it is inserted into a PCI bus, all subsequent PCI bus numbers below the current bus are increased by one. The bus assignments occur once, early in the BIOS boot process, and never change during the pre-boot phase.

The BIOS resource manager assigns the PIC-mode interrupt for the devices that are accessed by the legacy code. The BIOS ensures that the PCI BAR registers and the command registers for all devices are correctly set

up to match the behavior of the legacy BIOS after booting to a legacy OS. Legacy code cannot make any assumption about the scan order of devices or the order in which resources are allocated to them. The BIOS automatically assigns IRQs to devices in the system for legacy compatibility. A method is not provided to manually configure the IRQs for devices.

5.2   1U One-Slot PCIe* Riser Card Option (iPC – JNP1URISER)

The server board supports one riser card with a single PCIe 3.0 slot. Due to the size of the riser card (x16 mechanical) it can only be installed in PCIe* Slot #3 as shown in Figure 10.
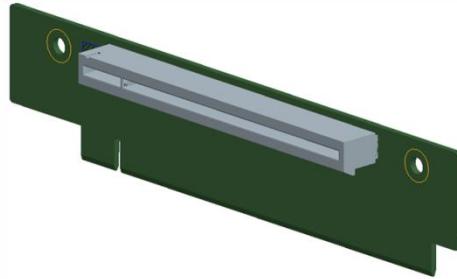
Figure 11. 1U one-slot PCIe* riser card option (iPC – JNP1Uriser)

Table 7. One-slot PCIe* riser card slot description

Slot #	Description
Slot-1	PCIe x8 elec, x16 mechanical

5.3   Networking

The Intel® Server Board M10JNP2SB includes five external RJ45 connectors that support the following features:

- Four 1 Gb Network Interface Ethernet Ports
- One dedicated 1 Gb server management port

The following illustration shows the ports on the back edge of the server board.

Figure 12. Rear networking ports

The five onboard Ethernet ports have green and yellow LEDs that indicate LAN status. The following table lists the different LED states.

Table 8. 10/100/1000 Mbps LAN link/activity LED matrix

Speed/State		Left LED	Right LED
10 Mbps	**Link**	Green	Off
	Active	Blinking Green	Off
100 Mbps	**Link**	Green	Green
	Active	Blinking Green	Green
1000 Mbps	**Link**	Green	Amber
	Active	Blinking Green	Amber
No Link		Off	Off

5.3.1 MAC Address Definition

The Intel® Server Board M10JNP2SB has the following MAC addresses assigned at the factory:

- RJ45 Network Interface Ethernet Port 1 (base MAC address)
- RJ45 Network Interface Ethernet Port 2 (base MAC address + 1)
- RJ45 Network Interface Ethernet Port 3 (base MAC address + 2)
- RJ45 Network Interface Ethernet Port 4 (base MAC address + 3)
- Dedicated management port (base MAC address + 4)
- Shared management interface (through Ethernet port 4 – base MAC address +5)

5.4 USB

USB support is provided through onboard internal and external connectors as described in the following sections.

5.4.1 External USB 3.1 Connectors

The server board includes four (stacked 2x2) USB 3.1 Gen2 ports on the back edge of the server board. Two ports are located below the Dedicated Management port, while the other two are located above one of the display port connectors as shown in Figure 13.
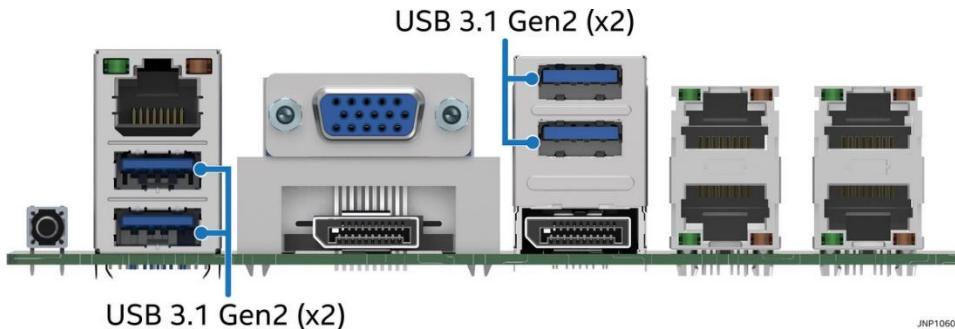
Figure 13. External USB 3.1 Gen2 ports

5.4.2 Front Panel USB 3.1 Connector

A blue 20-pin (2x10) shrouded connector on the server board (labeled "USB3_FPIO1") provides the option of routing two USB 3.1 ports to the front of a given chassis. Figure 14 provides the location of the connector on the server board. See Section 7.4.2 for detailed connector pinouts.
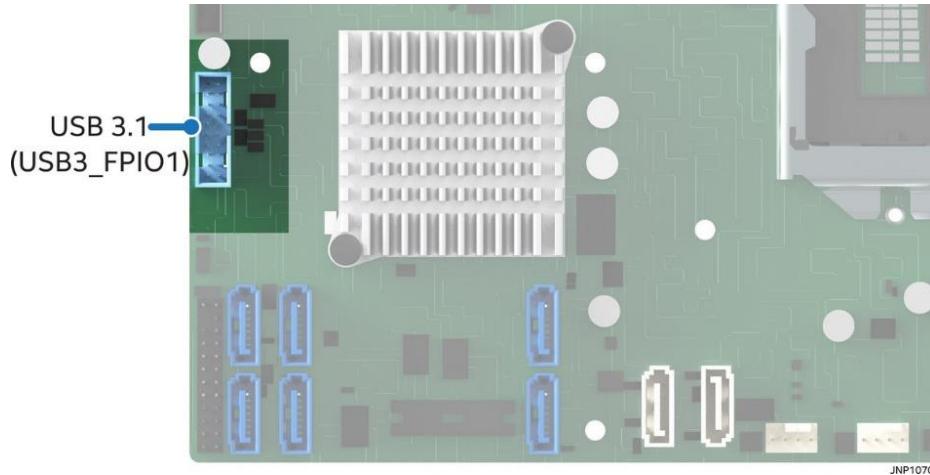
Figure 14. Front panel USB 3.0 connector

5.5   Onboard SATA Support

The server board includes an AHCI SATA controller embedded in the chipset, providing eight 6 Gb/sec SATA ports with the following functionality:

- Two white single port 9-pin connectors labeled "SATADOM-1/SATA-0" and "SATADOM-2/SATA-1", supporting SATA DOM (Disk on Module) storage devices.
- Six SATA ports on the server board labeled "SATA2-7"

5.5.1   SATADOM support

The 9-pin connectors labeled "SATA-0/SATADOM-1" and "SATA-1/SATADOM-2" support SATADOM devices and provide two additional pins to power a connected device. Figure 15 shows the pinout for the connectors.

PIN	1	2	3	4	5	6	7	P1	P2
Signal	GND	TXP	TXN	GND	RXN	RXP	GND	VCC 5V	GND
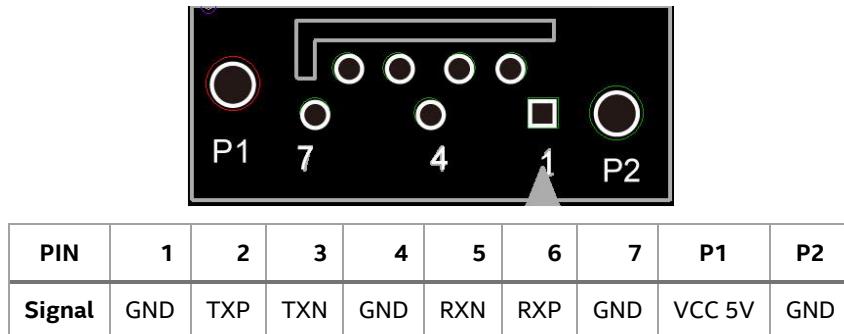
Figure 15. SATADOM connector pinout

Note: The ports are located close to the front edge of the server board. Refer to the documentation of the chassis where the server board will be installed for details on clearance at the front edge of the board to determine the dimensions of the SATADOM devices that can be installed.

5.6 I/O Shield Drawing

The Intel® Server Board M10JNP2SB includes the following I/O Shield.
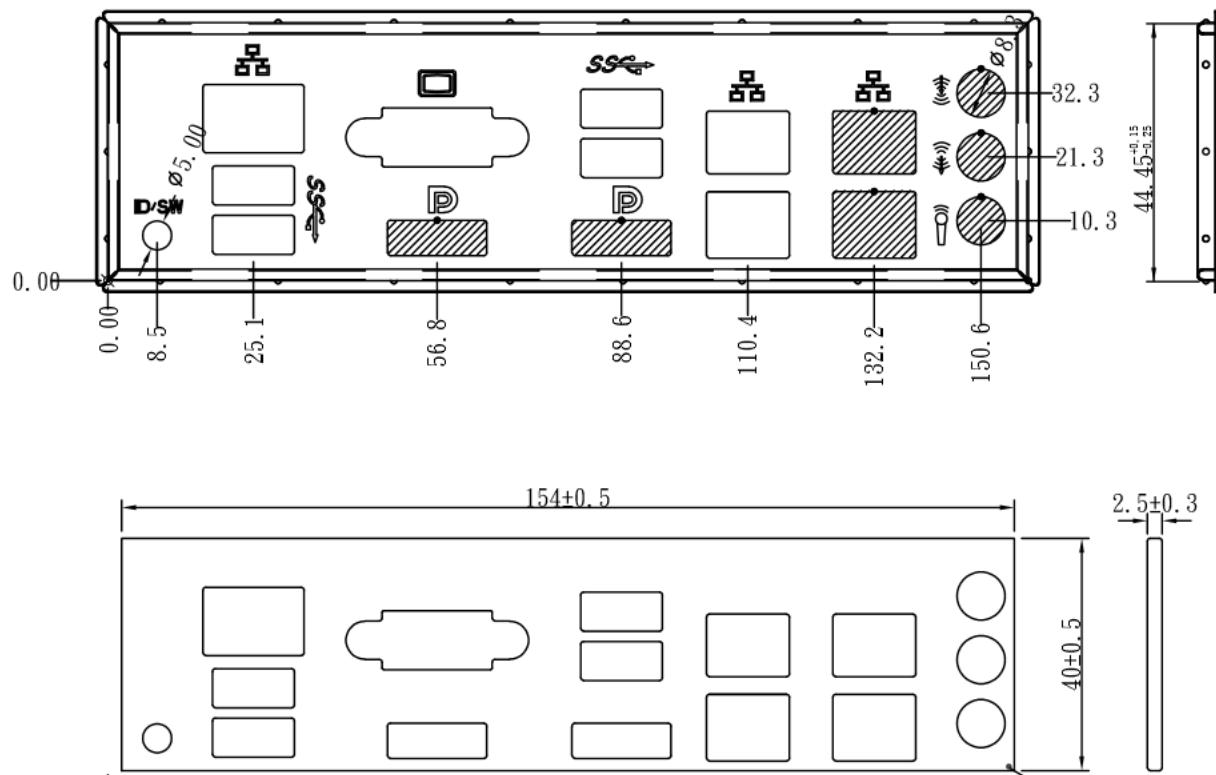
Figure 16. I/O Shield 2D drawing

Caution: The I/O Shield includes a conductive gasket to protect the board and other system components from Electrostatic discharges (ESD). Do not damage or remove the gasket from the I/O shield.

6. Server Management

The Intel® Server Board M10JNP2SB includes an ASPEED* AST2500 Baseboard Management Controller (BMC) that is IPMI 2.0 compliant, providing several management features that enable support for the following:

- Control system functions – power system, ACPI, system reset control, system initialization, front panel control, and system event log.
- Monitor various board and system sensors and regulate platform thermals and performance to maintain (when possible) server functionality in the event of component failure and/or environmentally stressed conditions.
- Monitor and report system health.

The integrated BMC supports the following features:

- Sensor monitoring
- In-Circuit BMC firmware update
- Chassis intrusion detection
- FRU information
- Logging and reporting
- Remote control
- Image redirection
- Power control
- Chassis identify
- Front panel control
- Configuration backup
- External user services
- Platform event filtering
- SMTP messaging
- Video recording
- User management
- Embedded firewall

6.1 Shared Management Interface

The Intel® Server Board M10JNP2SB provides a shared management interface that can be used to route management traffic through Ethernet port #4 on the back edge of the server board. This feature is disabled by default and can be enabled using the **<F2>** BIOS Setup Utility. Refer to the *Intel® Server Board M10JNP2SB BIOS Setup Guide* for more details.

6.2 Integrated Baseboard Management Controller Web Console (Integrated BMC Web Console)

BMC manageability provides an Integrated BMC Web Console, which exposes the management features of the BMC. It is supported through the dedicated management port on the back edge of the server board or the shared management interface (when enabled and configured). The web console user interface supports the following client web browsers:

- Microsoft Internet Explorer*
- Mozilla Firefox*
- Google Chrome*
- Safari*

User authentication is based on user ID and password.

The user interface presented by the web console authenticates the user before allowing a web session to be initiated. The web interface also provides a launch point keyboard, video, and mouse (KVM) and media redirection.

For additional information, refer to the *Intel® Server Board M10JNP2SB Integrated BMC Web Console User Guide.*
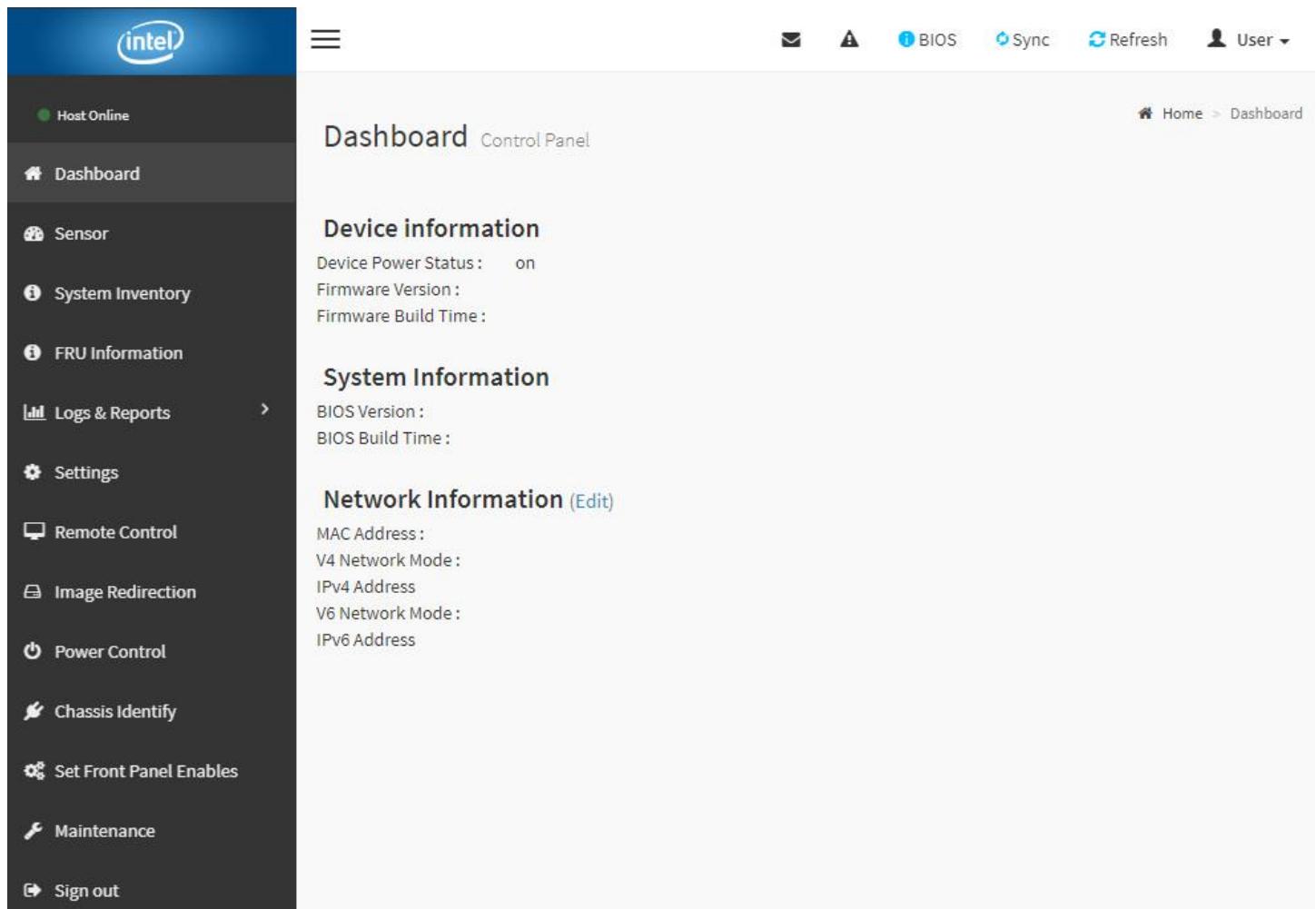
Figure 17. Integrated BMC Web Console user interface

7. Onboard Connector/Header Pinout Overview

This chapter identifies the pinouts for onboard connectors and headers on the Intel® Server Board M10JNP2SB that provide an interface for system options and features, onboard platform management, and other user accessible options or features. For more details on the location of the connectors in this chapter, see Figure 2.

7.1 Power Connectors

The server board includes two power connectors labeled "PWR1" and "PWR2". The following tables provide the pinout for these connectors.

Table 9. PWR1 pinout

Signal	Pin	Pin	Signal
+3.3 Vdc	1	13	+3.3 Vdc
+3.3 Vdc	2	14	–12 Vdc
GND	3	15	GND
+5 Vdc	4	16	PS_ON#
GND	5	17	GND
+5V	6	18	GND
GND	7	19	GND
PWR_OK	8	20	NC
5 VSB	9	21	+5 Vdc
+12 Vdc	10	22	+5 Vdc
+12 Vdc	11	23	+5 Vdc
+3.3 Vdc	12	24	GND

Table 10. PWR2 pinout

Signal	Pin	Pin	Signal
GND	1	5	+12 Vdc
GND	2	6	+12 Vdc
GND	3	7	+12 Vdc
GND	4	8	+12 Vdc

Important Note: PWR1 and PWR2 must be connected to power for the server board to boot correctly.

7.2 Onboard Storage Connectors

This section contains a functional overview and pinout of each connector that the server board provides in support of several storage options.

7.2.1 SATA 6 Gbps Connectors

The server board includes six blue 7-pin SATA connectors capable of transfer rates of up to 6 Gbps. The following table provides the pinout for all six connectors.

Table 11. SATA connector pinout

Pin	Signal
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

7.2.2 SATADOM 6 Gbps Connectors

The server board includes two white 9-pin SATADOM connectors capable of transfer rates of up to 6Gbps. The following table provides the pinout for both connectors:

Table 12. SATADOM connector pinout

PIN	Signal
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND
P1	VCC 5V
P2	GND

7.2.3 SATA SGPIO Connector

The server board includes a 10-pin SGPIO for storage sideband communications. The following table provides the pinout for the connector:

Table 13. SGPIO connector pinout

Signal	Pin	Pin	Signal
SCL	1	2	SD1/SDO1
SDA	3	4	SDO0
GND	5	6	SLOAD
KEY	7	8	SCLOCK
V3AUX	9	10	HDD_FAULT

7.3   Fan Connectors

The server board supports a total of six fans: five in support of system cooling fans, and one in support of a processor fan.

7.3.1   System Fan Connectors

The server board includes five 4-pin system fan connectors labeled SYS_FAN_# (1-5). The following table provides the pinout for the connectors.

Table 14. System fan connector pinout

Pin	1	2	3	4
Signal	GND	P12V	TACH	PWM

7.3.2   Processor Fan Connectors

The server board includes one 4-pin processor fan connector labeled "CPU Fan". The following table provides the pinout for the connector:

Table 15. Processor fan connector pinout

Pin	1	2	3	4
Signal	GND	P12V	TACH	PWM

7.4   Front Panel Headers and Connectors

The server board includes several connectors that provide multiple front panel options. This section provides a functional description and pinout for each connector.

7.4.1   Front Panel Header

Included on the left edge of the server board is a 2x12-pin SSI front panel header. The following table provides the connector pinout.

Table 16. Front panel header pinout

Signal	Pin	Pin	Signal
PWR_LED+	1	2	FP_PWR
KEY	3	4	ID_LED+
PWR_LED-	5	6	ID_LED-
HDD_LED+	7	8	FAULT_LED1-
HDD_LED-	9	10	FAULT_LED2-
PWR_SW#	11	12	LAN1 ACTLED+
GND	13	14	LAN1 ACTLED-
RST_SW#	15	16	SMBus SDA
GND	17	18	SMBus SCL
SYS_ID_SW#	19	20	INTRUSION#
TEMP_SENSOR	21	22	LAN2 ACTLED+
NMI_SW#	23	24	LAN2 ACTLED-

7.4.2   Front Panel USB 3.1 Connector

The server board includes a 20-pin header to connect two USB 3.0 ports that can be routed to the front of a chassis. The following table lists the pinout.

Table 17. Front panel USB 3.1 connector pinout

Signal Name	Pin#	Pin#	Signal Name
		1	P5V_USB_FP
P5V_USB_FP	19	2	USB3_04_RXN
USB3_01_RXN	18	3	USB3_04_RXP
USB3_01_RXP	17	4	GROUND
GROUND	16	5	USB3_04_TXN
USB3_01_TXN	15	6	USB3_04_TXP
USB3_01_TXP	14	7	GROUND
GROUND	13	8	USB2_13_DN
USB2_10_DN	12	9	USB2_13_DP
USB2_10_DP	11	10	USB3_ID

7.5 Dedicated LAN Activity LED Headers

The server board includes two LED headers for Ethernet ports 3 and 4, which can be routed to a front panel that supports displaying LAN activity for 4 Ethernet controllers. The following tables describe their pinout.

Table 18. LAN 3 activity LED header

Signal	Pin	Pin	Signal
VCC 3.3V	1	2	LAN3_LED_N

Table 19. LAN 4 activity LED header

Signal	Pin	Pin	Signal
VCC 3.3V	1	2	LAN4_LED_N

7.6 Other Headers and Connectors

Table 20. TPM header pinout

Signal	Pin	Pin	Signal
P3V3	1	2	LPC_FRAME_N
LPC_LAD0	3	4	KEY
LPC_LAD1	5	6	PLTRST_N
LPC_LAD2	7	8	GND
LPC_LAD3	9	10	CLK
IRQ_SERIAL	11	12	GND
FM_TPM_MOD_PRES_N	13	14	P3V3_AUX
P3V3(NI)/GND	15	16	RST_ESPI_RESET_N

7.6.1 Serial Port Connectors

Table 21. COM1 port pinout

Signal	Pin	Pin	Signal
DCD	1	2	DSR
RXD	3	4	RTS
TXD	5	6	CTS
DTR	7	8	RI
GND	9	10	KEY–Pin

Table 22. COM2 port pinout

Signal	Pin	Pin	Signal
DC	1	2	DSR
RXD	3	4	RTS
TXD	5	6	CTS
DTR	7	8	RI
GND	9	10	KEY–Pin

7.6.2   Power Supply Monitoring Interface (PSMI) Connector

The server board includes a PSMI connector for the BMC to monitor and communicate with the installed power supplies. The pinout for this connector is shown in the following table.

Table 23. PSMI connector pinout

Signal	Pin	Pin	Signal
PSMI_CLK	1	2	**PSMI_DAT**
PSMI_ALERT	3	4	**GND**
VCC	5		

7.6.3   IPMB Header

The server board includes an IPMB SMBUS* header. The following table provides the pinout for the header.

Table 24. IPMB header pinout

Signal	Pin	Pin	Signal
IPMB_DATA	1	2	**GND**
IPMB_CLK	3	4	**VCC**

7.6.4   Chassis Intrusion Header

The server board includes a 2-pin chassis intrusion header, which can be used when the chassis is configured with a chassis intrusion switch. The following table provides the pinout for the header.

Table 25. Chassis intrusion header pinout

Header State	Signal	Description
Pins 1 and 2 closed	FM_INTRUDER_HDR_N is pulled HIGH	Chassis cover is removed
Pins 1 and 2 open	FM_INTRUDER_HDR_N is pulled LOW.	Chassis cover is closed

7.6.5   ID LED Header

The server board includes a 2-pin header to connect a chassis-mounted ID LED. The following table provides the pinout for the header.

Table 26. ID LED header pinout

Signal	Pin	Pin	Signal
FP_IDLED_BTN_N	1	2	GND

8.   Reset and Recovery Jumpers

The server board includes two jumper blocks, which can be used to configure, protect, or recover specific features of the server board. Figure 18 identifies the location of each jumper block on the server board. Pin 1 of each jumper block can be identified by the arrowhead (▼) silkscreened on the server board next to the pin.
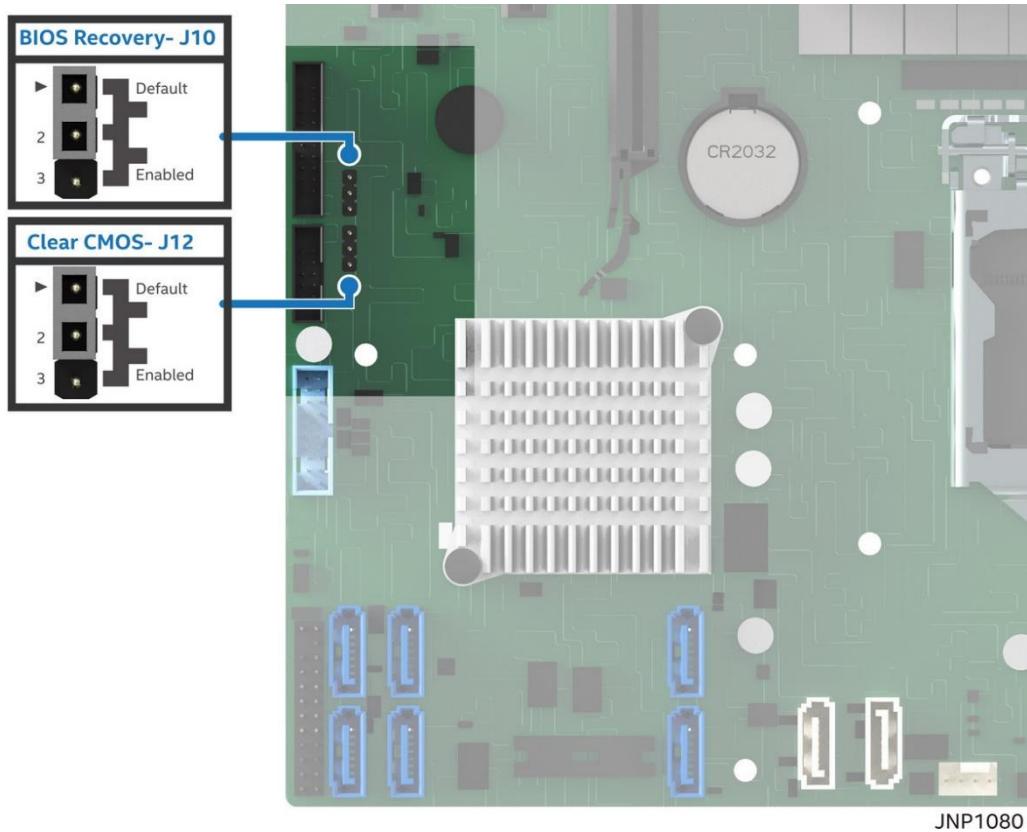
Figure 18. Board jumper identification

8.1   Clear CMOS Jumper Block

This jumper resets BIOS options, configured using the <F2> BIOS Setup Utility, back to their default factory settings.

Note: This jumper does not reset administrator or user passwords.

To use the BIOS default jumper, perform the following steps:

1. Power off the system and unplug the power cord (s).
2. Open the system chassis and access the "Clear CMOS" jumper block.
3. Move the "Clear CMOS" jumper from pins 1–2 (normal operation) to pins 2–3 (reset BIOS options).
4. Wait five seconds then move the jumper back to pins 1–2.
5. Close the system chassis.
6. Plug in the power cord(s), power on the system and press **<F2>** during POST to access the BIOS setup utility to configure and save desired BIOS options.

Note: The system time and date may need to be reset.

8.2   BIOS Recovery Jumper

When the BIOS recovery jumper block is moved from its default pin position (pins 1–2), the server board boots using a backup BIOS image to the UEFI shell, where a standard BIOS update can be performed. Refer to the BIOS update instructions that are included with the firmware update package downloaded from Intel's download center website. This jumper is used when the BIOS has become corrupted and is non-functional, requiring a new BIOS image to be loaded on to the server board.

Note: The BIOS Recovery jumper is only used to reinstall a BIOS image in the event the BIOS has become corrupted. This jumper is not used when the BIOS is operating normally to update the BIOS from one version to another.

Note: System firmware update files are included in the firmware update package posted to Intel's download center website at http://downloadcenter.intel.com.

To use the BIOS recovery jumper, perform the following steps:

1. Power off the system and unplug the power cord(s).
2. Open the system chassis and access the "BIOS Recovery" jumper block.
3. Move the "BIOS Recovery" jumper from pins 1–2 (default) to pins 2–3 (BIOS recovery position).
4. Close the system chassis, plug in the power cord(s) and power on the system. The system automatically boots to the EFI shell.
5. Update the BIOS using the standard BIOS update instructions provided with the firmware update package.
6. After the BIOS update has successfully completed, power off the system and unplug the power cord(s).
7. Open the system chassis and access the "BIOS Recovery" jumper.
8. Move the "BIOS Recovery" jumper back to pins 1–2 (default).
9. Close the system chassis, plug in the power cord(s) and power on the system. During POST, press <F2> to access the BIOS setup utility to configure and save desired BIOS options.

9. Server Board and Essential System Component Installation and Removal

This chapter provides instructions for installation and removal of the following components:

- I/O Shield
- Server board
- Processor
- Memory (DIMMs)
- SATA drives
- System fans

Before You Begin

Before working with your server board, observe the safety and ESD precautions found in the Product Safety Overview section at the beginning of this manual.

Perform the following steps prior to install the server board into a chassis.
1. Make sure the selected chassis supports the Micro ATX board form factor.
2. Make sure the selected chassis has the necessary standoffs installed. These standoffs are usually metal and are gold in color. Intel recommends using metal standoffs with screws that will fasten the server board more securely in place. To confirm standoff placement, lay the server board inside the chassis and align the mounting holes of the server board to the standoffs inside the chassis. Figure 19 shows the location of the server board mounting holes. Some chassis include plastic standoffs instead of metal ones.
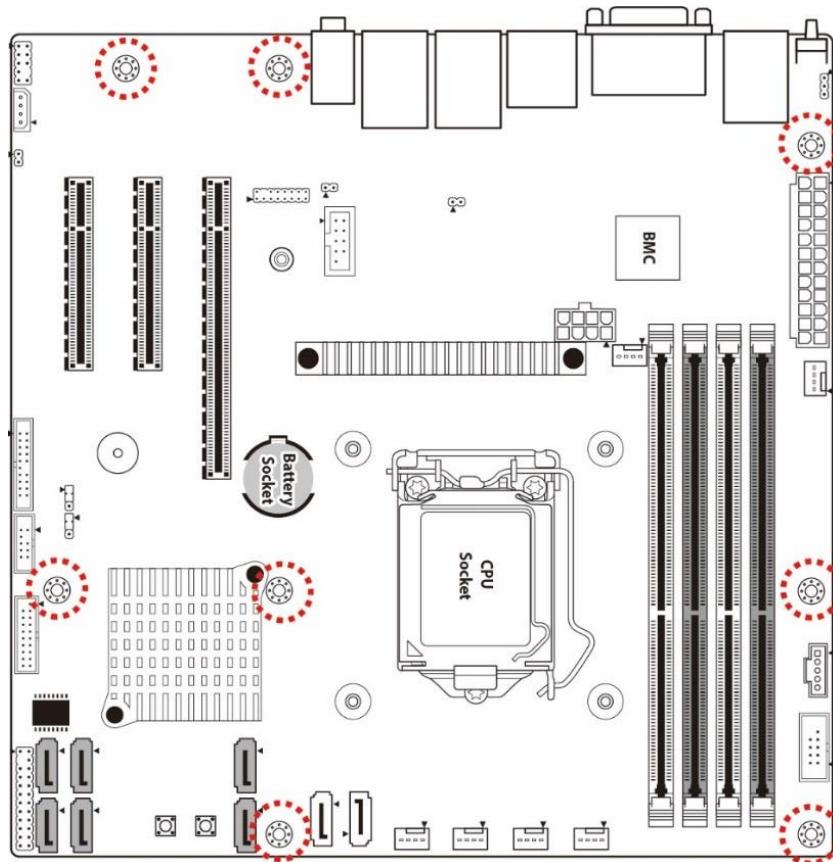
Figure 19. Server board mounting hole location

9.1 I/O Shield Installation / Removal

The included I/O shield is designed to be installed from the inside of the chassis, and it must be installed prior to installing the server board. The procedures shown in this section illustrate the installation in a pedestal chassis, but can be applied to other chassis types, provided the chassis has a matching I/O shield brace.

Caution: The I/O Shield includes a conductive gasket to protect the board and other system components from Electrostatic discharges (ESD). Do not damage or remove the gasket from the I/O shield.

Installing I/O Shield
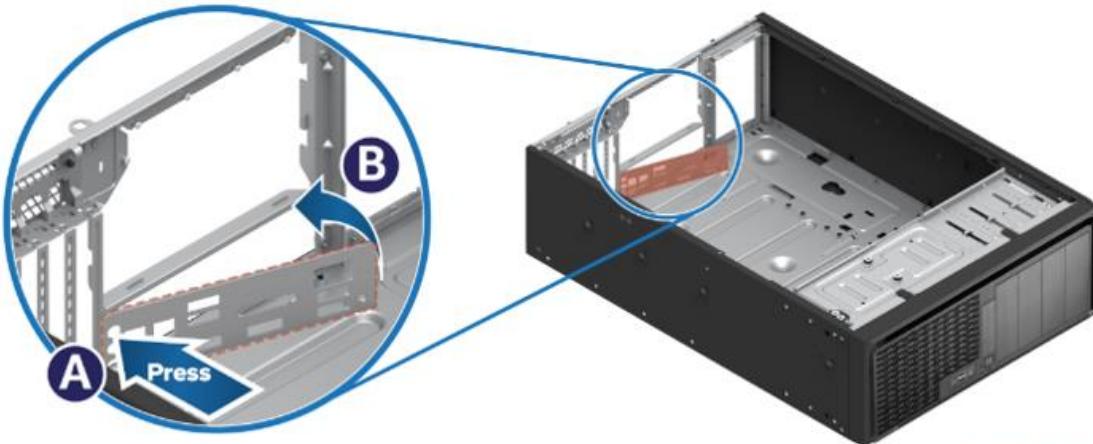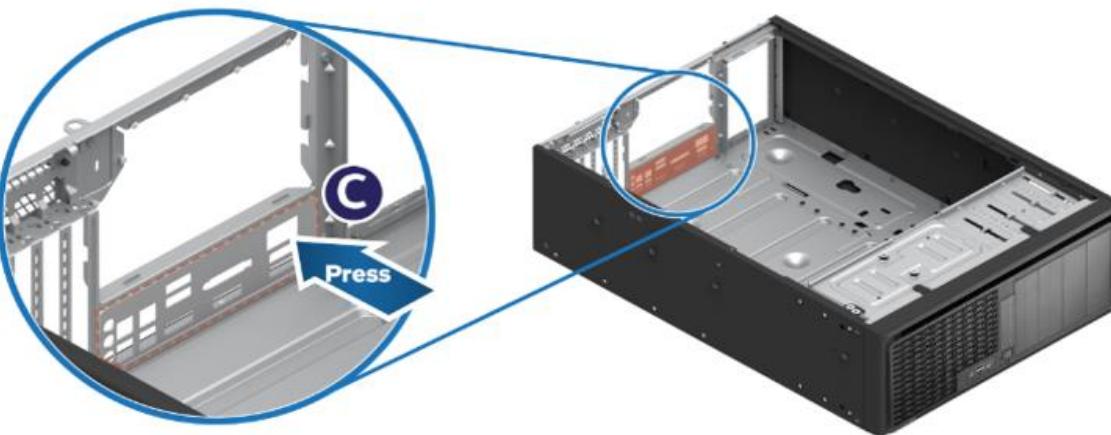
Figure 20. Installing the I/O shield

1. From the chassis inner side, align the I/O shield with the chassis rear I/O brace.
2. Press the I/O shield firmly to the chassis rear I/O brace until it clicks into place.
   Note: To make the process easier, install one end of the I/O shield first and press (see letter A). Make sure the I/O shield is correctly aligned to the chassis I/O brace (see letter B).
3. Complete the process by pressing the other end (see letter C).

Removing I/O Shield

Ref #: JNP40040

Ref #: JNP40020
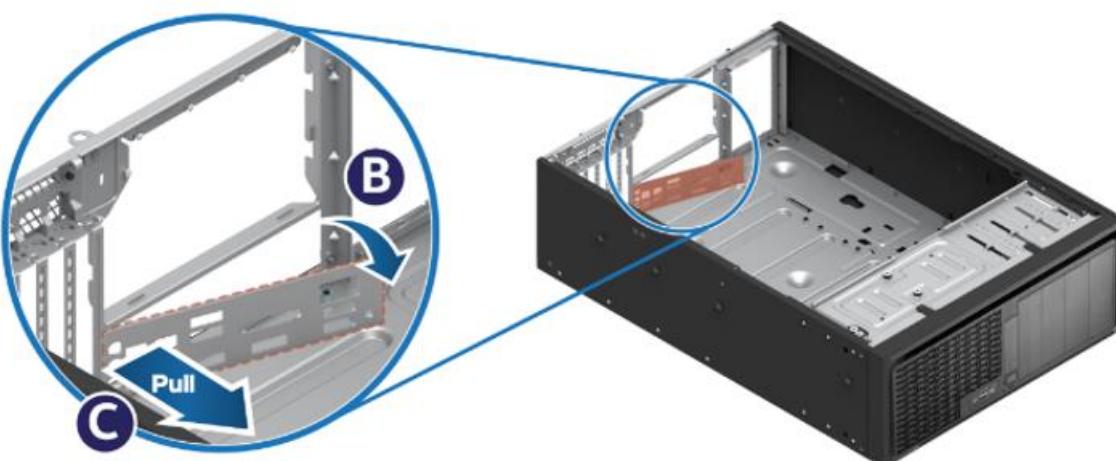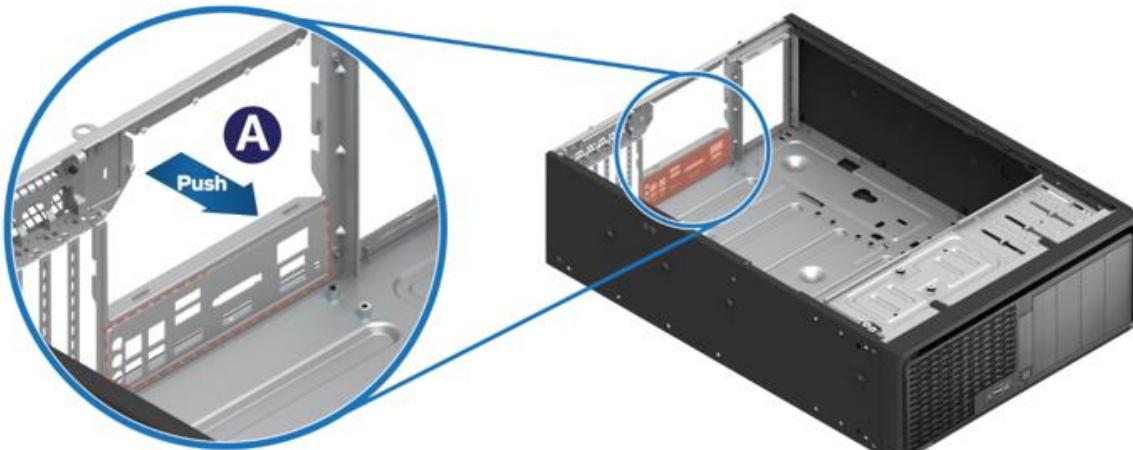
Figure 21. Removing the I/O shield

If the server board is installed, remove it by following the steps in Section 9.3.

1. From the chassis outer side, push firmly one end of the I/O shield to the inner part of the chassis rear I/O brace (see letter A).
2. Once one end is released from the chassis I/O brace (see Letter B), pull it **from the inside of the chassis** to release it (see letter C).

9.2   Installing the Server Board

The instructions in this section describe the process of installing the server board in a chassis. The process described is for reference purposes only. Refer to the selected chassis documentation to determine if additional tools or steps are required.

Required Tools and Supplies

- Anti-static wrist strap and conductive foam pad (recommended)
- Screwdriver – Refer to the selected chassis documentation to determine the specific head required

1. Verify that all cables are clear of the area in which the server board will be installed.
2. Remove the server board from its packaging.
3. Carefully lower the server board into the chassis ensuring that the mounting holes are aligned with the standoffs on the chassis.
4. Using a screwdriver, secure the server board with eight screws.

System Integration Guidance

The server board includes two power connectors labeled "PWR1" and "PWR2" that are required to be connected to power for the server board to boot correctly. Select a power supply that includes power harnesses for both connectors and the selected peripherals.

9.3   Server Board Removal

The instructions in this section describe the process for removing the server board from a chassis. The process described is for reference purposes only. Refer to the selected chassis documentation to determine if additional tools or steps are required.

Required Tools and Supplies

- Anti-static wrist strap and conductive foam pad (recommended)
- Screwdriver – Refer to the selected chassis documentation to determine the specific head required

1. Power off the system and remove the power cord(s).
2. Disconnect all externally attached cables.
3. Open the system chassis.
4. If present, remove any PCIe* add-in cards installed.
5. Disconnect and clear from the server board area all cables attached to connectors on the server board.
6. Remove the processor heat sink (see Section 9.6).
7. Remove the processor (see Section 9.7).
8. Remove all DIMMs (see Section 9.9).
9. Using a screwdriver, remove the eight screws used to secure the server board to the chassis.
10. Carefully lift the server board from the chassis and place it into an anti-static bag.

9.4   Installing the Processor

Required Tools and Supplies

- Anti-static wrist strap and conductive foam pad (recommended)

Figure 22. Removing the socket protection cap

1.   Remove the plastic socket protection cap.

Note: The plastic socket protection cap should be saved and re-used should the processor need to be removed at any time in the future.
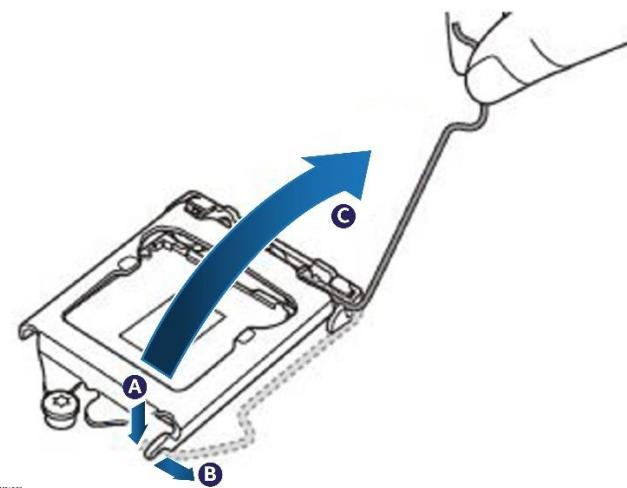
Figure 23. Opening the socket lever

2.   Release the socket lever from the processor load plate by pushing down (see letter A), sliding it under the load plate notch (see letter B) and lifting it up (see letter C).
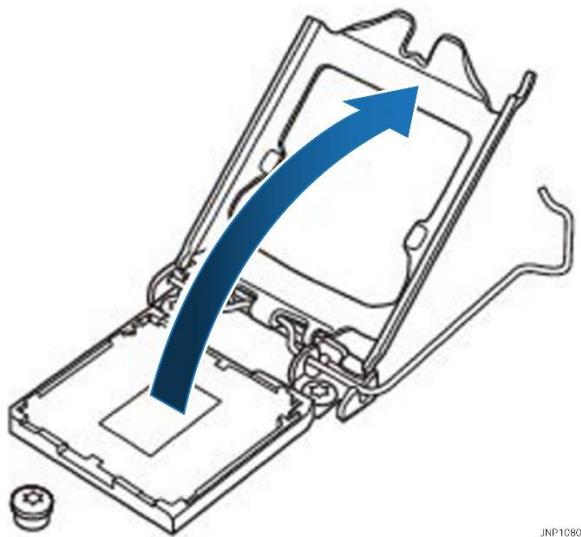
Figure 24. Opening the processor load plate

3. Lift open the processor load plate.

CAUTION: The pins inside the processor socket are extremely sensitive. Other than the processor, no object should make contact with the pins inside the processor socket. **A damaged processor socket pin will render the socket inoperable and will produce erroneous processor or other system errors if used.**

NOTE: The underside of the processor has components that may damage the socket pins if installed improperly. The processor must align correctly with the socket opening before installation. **Do not drop the processor into the socket!**
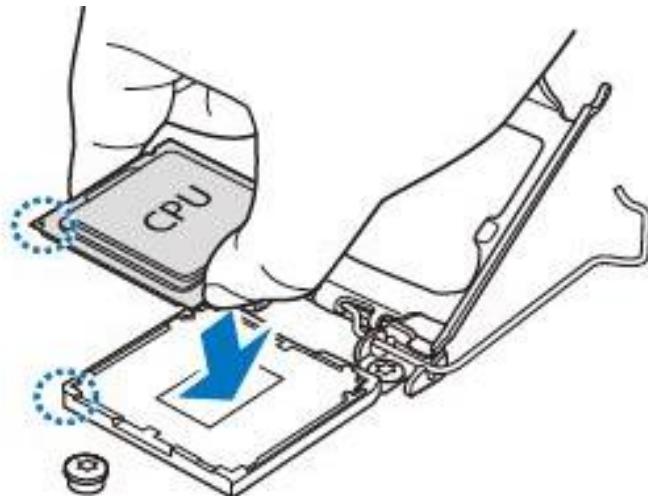
Figure 25. Installing the processor

4. Remove processor from its packaging. If present, carefully remove the protective cover from the bottom side of the processor, taking care not to touch any processor contacts. Orient the processor with the socket so that the gold key on it is aligned to the mark on the socket.
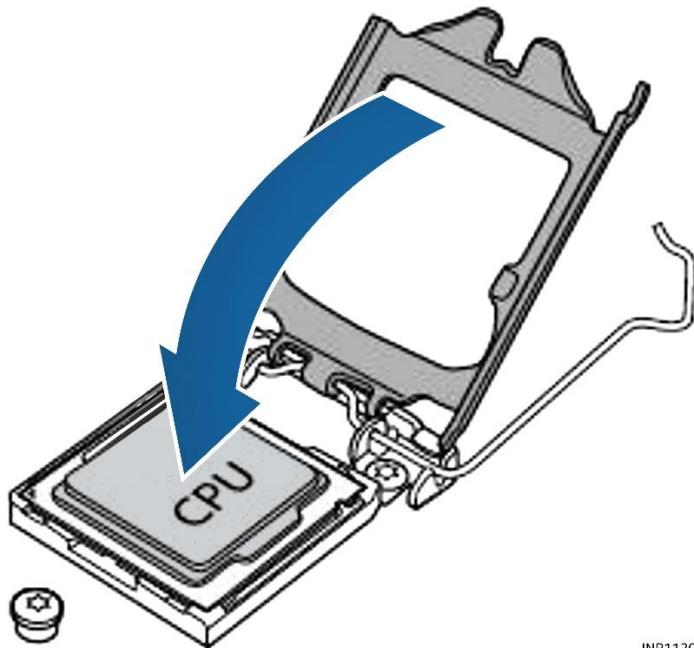
JNP1120

Figure 26. Closing the load plate

5. Carefully lower down the load plate over the processor.
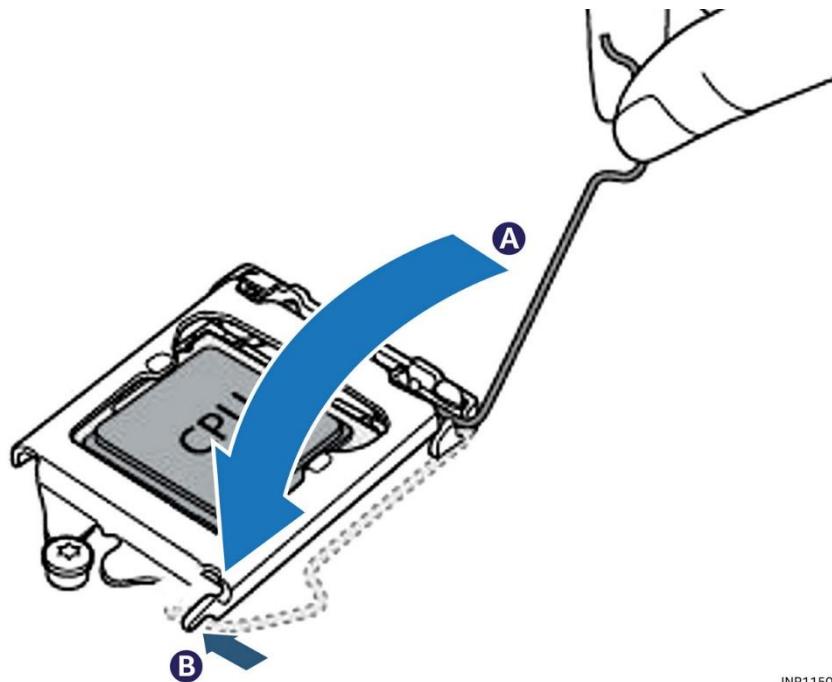
JNP1150

Figure 27. Closing the socket lever

6. Lock down the load plate with the locking lever by lowering it down (see letter A) and sliding it under the notch in the load plate (see letter B).

9.5 Processor Heat Sink Installation

The instructions in this section describe the process of installing a processor heat sink. The process described is for reference purposes only. The selected heat sink to install on the server board may be different.

Required Tools and Supplies

- Anti-static wrist strap and conductive foam pad (recommended)
- Phillips* head screwdriver

If present, remove the protective cover from the bottom of the heatsink to expose the thermal interface material. Make sure the push pins on the heat sink are rotated clock-wise.
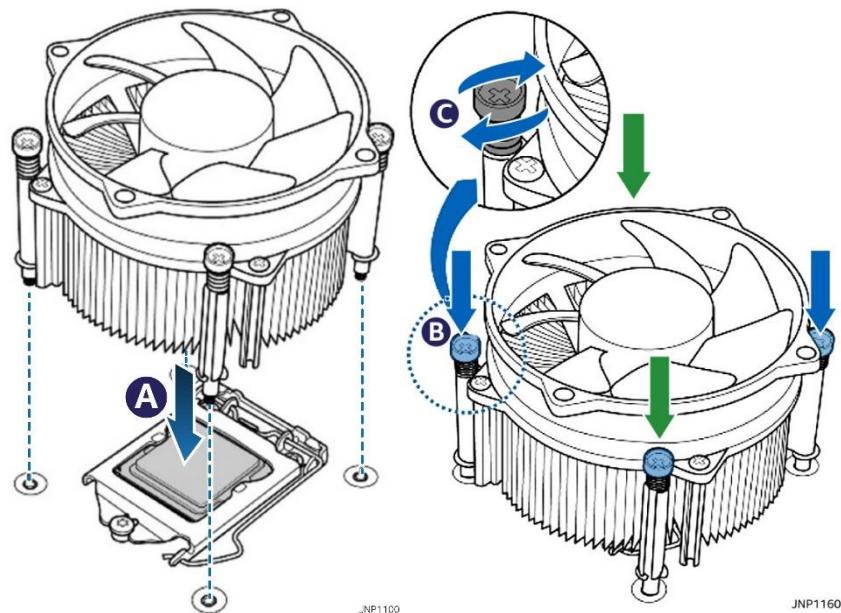
Figure 28. Installing the heat sink

1. Place the heat sink on top of the installed processor aligning the 4 plastic pins with the holes in the server board (see letter A).
2. Push the pins through the holes on the server board doing two opposite corners at a time until they click into place (see letter B).
3. Tighten the 4 screws on the push pin head using a Phillips head screwdriver.
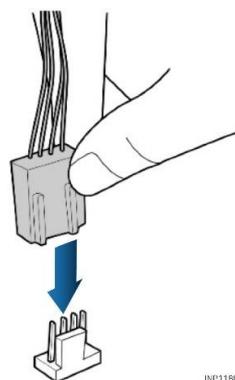
Figure 29. Connecting the fan cable

4. Connect the fan cable to the 4-pin processor fan connector labeled "CPU Fan" on the server board to complete the installation.

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9.6   Heat Sink Removal

The instructions in this section describe the process of removing a processor heat sink. The process described is for reference purposes only. The installed heat sink on the server board may be different.

Required Tools and Supplies

- Anti-static wrist strap and conductive foam pad (recommended)
- Phillips* head screwdriver
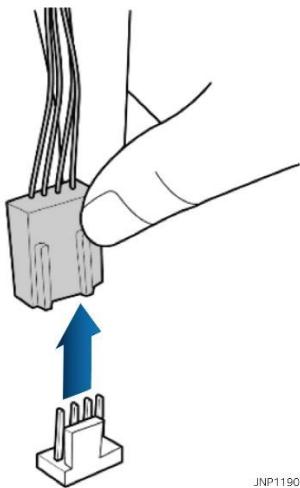
Figure 30. Removing the fan cable

1. Remove the fan cable from the 4-pin processor fan connector labeled "CPU Fan" on the server board.
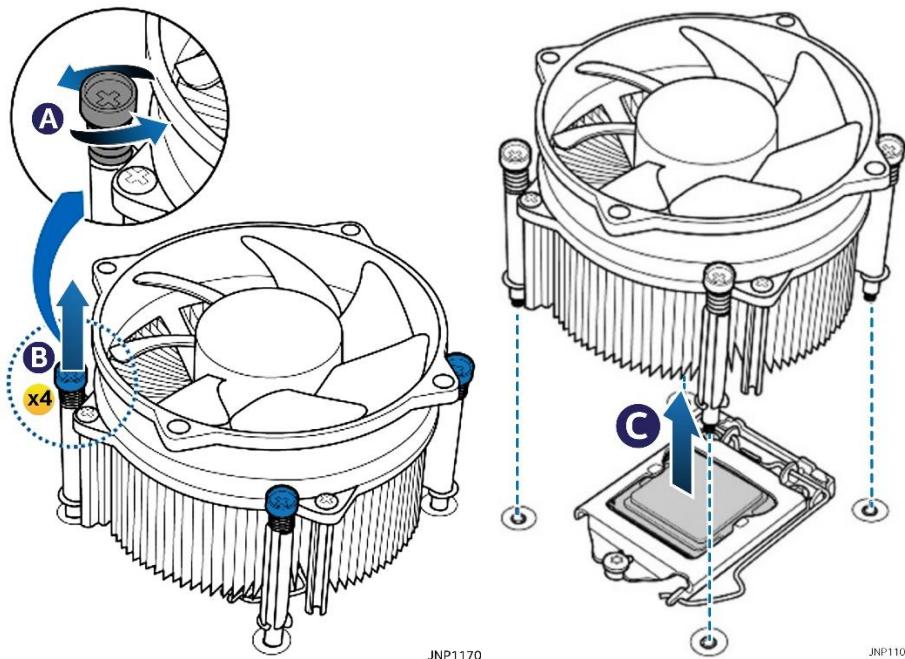
Figure 31. Removing the heat sink

1. Using a Phillips head screwdriver, loosen the screws on the head of the 4 push pins (see letter A).
2. Carefully lift the push pins to detach the heat sink from the server board (see letter B).
3. Lift the heat sink from the server board (see letter C).

9.7   Removing the Processor

Required Tools and Supplies

- Anti-static wrist strap and conductive foam pad (recommended)

4. Unlatch the processor load plate (see Section 9.3 step 2).
5. Lift open the load plate (see Section 9.3 step 3).
6. Remove the processor by carefully lifting it out of the socket, taking care **not** to drop the processor as well as not touching any pins inside the socket.
7. If a replacement processor is not being installed, install the socket protection cap.

9.8   Memory (DIMM) Installation

BNP053
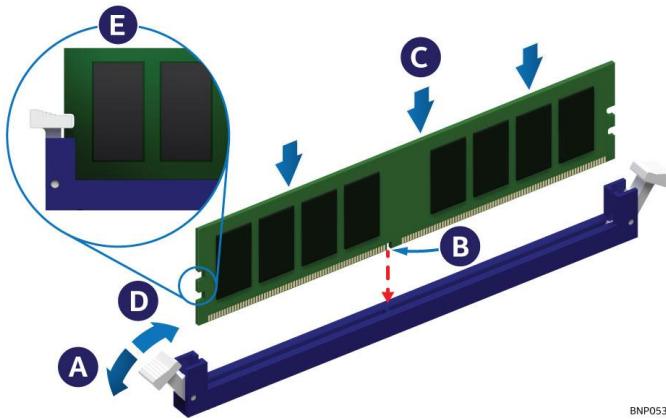
Figure 32. DIMM installation

1. Locate the DIMM slot for installation. Ensure that the DIMM ejection tabs at both ends of the DIMM slot are pushed outward to the open position (see Letter A).
2. Carefully unpack the DIMM, taking care to only handle the device by its outer edges.
3. Align the notch at the bottom edge of the DIMM with the key in the DIMM slot (see Letter B).
4. Insert the DIMM into the slot (see Letter C) pushing down on the DIMM, until the ejection tabs snap into place (see Letter D). Ensure that the ejection tabs are firmly in place (see Letter E).

9.9   Memory (DIMM) Removal

DMM1031
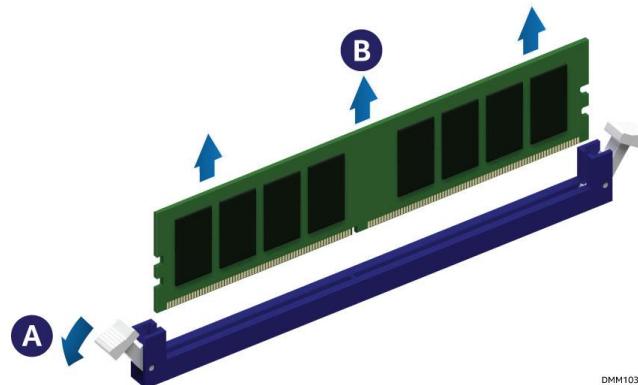
Figure 33. DIMM removal

1. Identify and locate the faulty DIMM. Ensure that the ejection tabs of adjacent DIMM slots are closed.
2. Open the DIMM ejection tabs at both ends of the selected DIMM slot (see Letter A). The DIMM will slightly lift from the slot.
3. Holding the DIMM by its edges, lift it away from the slot (see Letter B).

9.10 Connecting SATA Drives

This section describes the process of attaching SATA power and data cables (not included) when connecting SATA drives to the server board.
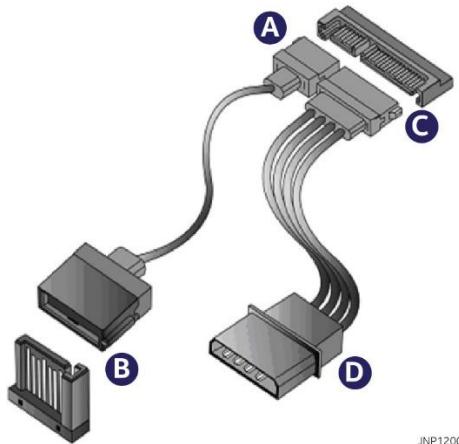
Figure 34. Attaching SATA cables

1. Connect one end of the SATA data cable connector to the drive (see letter A).
2. Connect the other end of the SATA data cable to one of the SATA ports on the board (see letter B). See Section 7.2.1 for details on port location.
3. Connect the SATA power cable to the power connector of the drive (see letter C).
4. Connect the 4-pin power connector to the system power supply (see letter D).

The server board does not include power connectors for SATA drives. Power for SATA drives must be provided through a cable harness (not included) routed to the system power supply.

9.11 Removing SATA Drives

This section describes the process of detaching SATA power and data cables (not included) when detaching SATA drives from the server board.
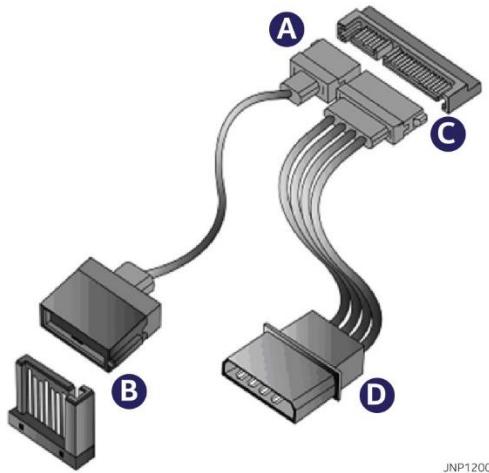
Figure 35. Removing SATA cables

1. Remove the end of the SATA data cable connected to the drive (see letter A).
   Skip to step 3 if a replacement drive is being installed.
2. Remove the end of the SATA data cable from the server board (see letter B).
3. Remove the SATA power cable from the power connector of the drive (see letter C).
   Skip step 4 if a replacement drive is being installed.
4. Remove the 4-pin power connector to the system power supply (see letter D).

9.12 Connecting System Fans

The instructions in this section describe the process of attaching system fans to the server board. The process described is for reference purposes only. Refer to the selected chassis documentation to determine if additional tools or steps are required.

Required Tools and Supplies

*   Anti-static wrist strap and conductive foam pad (recommended)

The server board includes five 4-pin system fan connectors labeled SYS_FAN_# (1-5). Figure 36 shows the location of the connectors on the board.
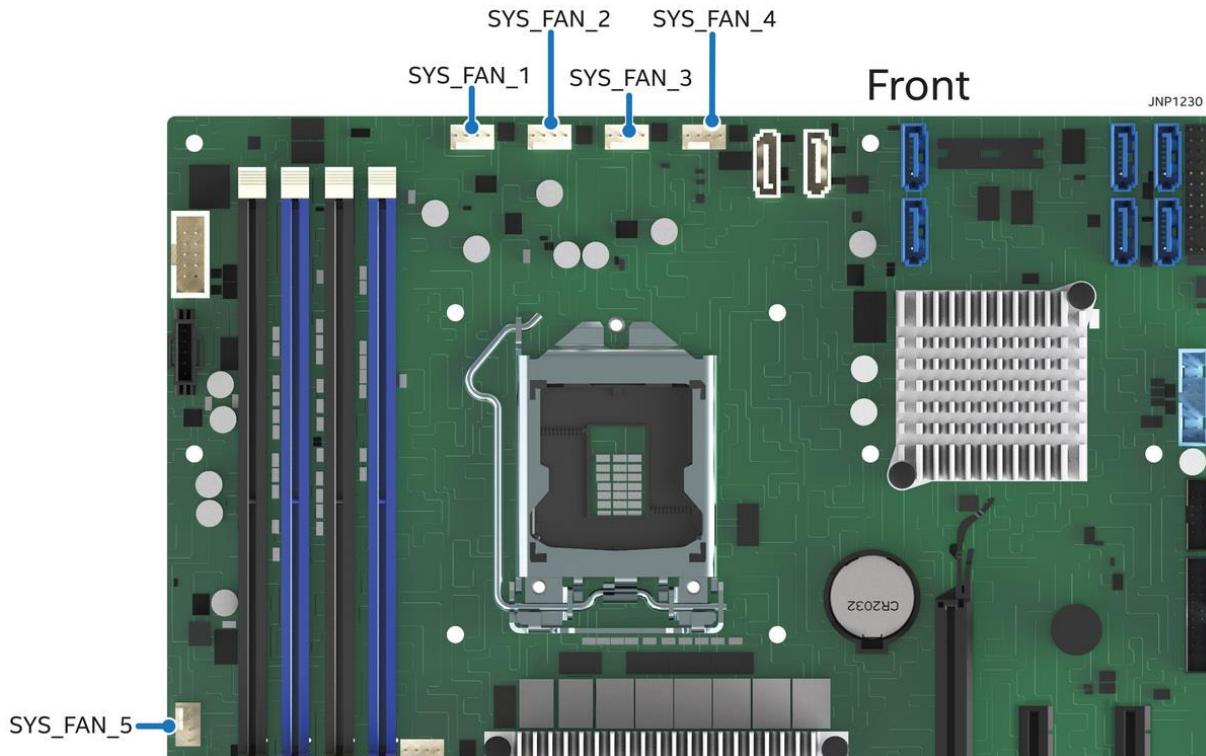
Figure 36. System fan connector identification
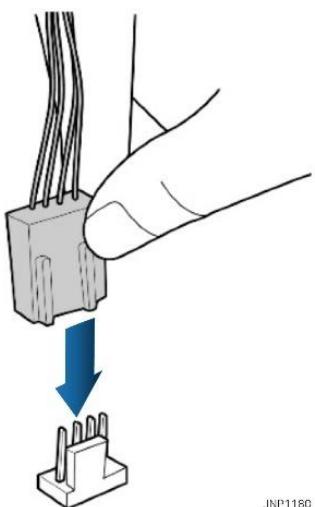
Figure 37. Connecting system fan cables

Connect the system fan cable to the 4-pin connector on the server board as shown in Figure 37.

9.13 Disconnecting System Fans

The instructions in this section describe the process of disconnecting system fans from the server board. The process described is for reference purposes only. Refer to the selected chassis documentation to determine if additional tools or steps are required.

Required Tools and Supplies

- Anti-static wrist strap and conductive foam pad (recommended)
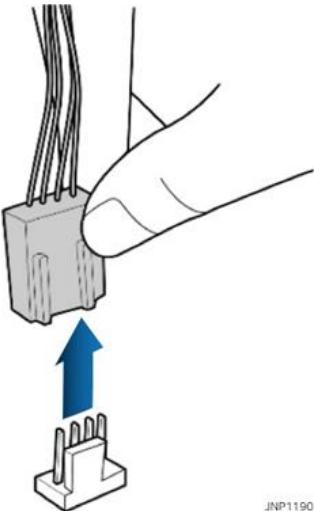
Figure 38. Removing system fan cables

Locate and remove the fan cable from the 4-pin connector on the server board as shown in Figure 38.

Appendix A. Usage Tips

When installing add-in cards, find the appropriate slot for the add-in card and insert the card firmly. Do not force any add-in cards into any slots if they do not seat in place. It is recommended to try using another slot or a different card rather than damaging both the server board and the add-in card.

It is recommended to install add-in cards in a staggered manner rather than making them directly adjacent to each other. This approach allows air to circulate within the chassis more easily and improves cooling for all installed devices.

Appendix B. Getting Help

To obtain support for an issue with the server system, follow these steps:

1. Visit the following Intel support web page: http://www.intel.com/support/

    This web page provides 24x7 support when you need it to get the latest and most complete technical support information on all Intel® Server Products and Solutions. Information available at the support site includes:

    - Latest BIOS, firmware, drivers and utilities
    - Product documentation, setup and service guides
    - Full product specifications, technical advisories and errata
    - Compatibility documentation for memory, hardware add-in cards, and operating systems
    - Server and chassis accessory parts list for ordering upgrades or spare parts
    - A searchable knowledge base to search for product information throughout the support site

2. If a solution cannot be found at Intel's support site, send an email to Intel's technical support center using the online form available at:

    http://www.intel.com/p/en_US/support/contactsupport

3. Lastly, contact an Intel support representative using one of the support phone numbers available at http://www.intel.com/support/feedback.htm?group=server (charges may apply).

Intel also offers Channel Program members around-the-clock 24x7 technical phone support on Intel® server boards, server chassis, server RAID controller cards, and Intel® Server Management at: http://www.intel.com/reseller/.

Note: Access to the 24x7 number requires a login to the reseller site.

Warranty Information

To obtain warranty information, visit http://www.intel.com/p/en_US/support/warranty.

Appendix C. POST Code Errors

The POST code checkpoints are the largest set of checkpoints during the BIOS pre-boot process. In the Intel® Server Board M10JNP2SB the POST codes are visible on the lower right part of the screen during POST. The following table describes the type of checkpoints that may occur during the POST portion of the BIOS:

Checkpoint Ranges

Status Code Range	Description
0x01 – 0x0B	SEC execution
0x0C – 0x0F	SEC errors
0x10 – 0x2F	PEI execution up to and including memory detection
0x30 – 0x4F	PEI execution after memory detection
0x50 – 0x5F	PEI errors
0x60 – 0x8F	DXE execution up to Boot Device Selection (BDS)
0x90 – 0xCF	BDS execution
0xD0 – 0xDF	DXE errors
0xE0 – 0xE8	S3 Resume (PEI)
0xE9 – 0xEF	S3 Resume errors (PEI)
0xF0 – 0xF8	Recovery (PEI)
0xF9 – 0xFF	Recovery errors (PEI)

Standard Checkpoints

SEC Phase

Status Code	Description
0x00	Not used
Progress Codes	
0x01	Power on. Reset type detection (soft/hard).
0x02	Application Processor(s) (AP) initialization before microcode loading
0x03	North Bridge initialization before microcode loading
0x04	South Bridge initialization before microcode loading
0x05	OEM initialization before microcode loading
0x06	Microcode loading
0x07	AP initialization after microcode loading
0x08	North Bridge initialization after microcode loading
0x09	South Bridge initialization after microcode loading
0x0A	OEM initialization after microcode loading
0x0B	Cache initialization

SEC Error Codes	
0x0C – 0x0D	Reserved for future AMI SEC error codes
0x0E	Microcode not found
0x0F	Microcode not found

SEC Beep Codes

None

Table 27. PEI phase

Status Code	Description
Progress Codes	
0x10	PEI Core is started
0x11	Pre-memory CPU initialization is started
0x12	Pre-memory CPU initialization (CPU module specific)
0x13	Pre-memory CPU initialization (CPU module specific)
0x14	Pre-memory CPU initialization (CPU module specific)
0x15	Pre-memory North Bridge initialization is started
0x16	Pre-Memory North Bridge initialization (North Bridge module specific)
0x17	Pre-memory North Bridge initialization (North Bridge module specific)
0x18	Pre-Memory North Bridge initialization (North Bridge module specific)
0x19	Pre-memory South Bridge initialization is started
0x1A	Pre-Memory South Bridge initialization (South Bridge module specific)
0x1B	Pre-memory South Bridge initialization (South Bridge module specific)
0x1C	Pre-Memory South Bridge initialization (South Bridge module specific)
0x1D – 0x2A	OEM pre-memory initialization codes
0x2B	Memory initialization. Serial Presence Detect (SPD) data reading
0x2C	Memory initialization. Memory presence detection
0x2D	Memory initialization. Programming memory timing information
0x2E	Memory initialization. Configuring memory
0x2F	Memory initialization (other)
0x30	Reserved for ASL (see ASL Status Codes section below)
0x31	Memory Installed
0x32	CPU post-memory initialization is started
0x33	CPU post-memory initialization. Cache initialization
0x34	CPU post-memory initialization. Application Processor(s) (AP) initialization
0x35	CPU post-memory initialization. Boot Strap Processor (BSP) selection
0x36	CPU post-memory initialization. System Management Mode(SMM) initialization
0x37	Post-Memory North Bridge initialization is started

Status Code	Description
0x38	Post-Memory North Bridge initialization (North Bridge module specific)
0x39	Post-Memory North Bridge initialization (North Bridge module specific)
0x3A	Post-Memory North Bridge initialization (North Bridge module specific)
0x3B	Post-Memory South Bridge initialization is started
0x3C	Post-Memory South Bridge initialization (South Bridge module specific)
0x3D	Post-Memory South Bridge initialization (South Bridge module specific)
0x3E	Post-Memory South Bridge initialization (South Bridge module specific)
0x3F – 0x4E	OEM post memory initialization codes
0x4F	DXE IPL is started
PCI Error Codes	
0x50	Memory initialization error. Invalid memory type or incompatible memory speed
0x51	Memory initialization error. SPD reading has failed
0x52	Memory initialization error. Invalid memory size or memory modules do not match
0x53	Memory initialization error. No usable memory detected
0x54	Unspecified memory initialization error
0x55	Memory not installed
0x56	Invalid CPU type or speed
0x57	CPU mismatch
0x58	CPU self test failed or possible CPU cache error
0x59	CPU microcode is not found or microcode update is failed
0x5A	Internal CPU error
0x5B	Reset PPI is not available
0x5C – 0x5F	Reserved for future AMI error codes
S3 Resume Progress Codes	
0xE0	S3 Resume is started (S3 Resume PPI is called by the DXE IPL)
0xE1	S3 Boot Script execution
0xE2	Video repost
0xE3	OS S3 wake vector call
0xE4 – 0xE7	Reserved for future AMI progress codes
S3 Resume Error Codes	
0xE8	S3 Resume Failed
0xE9	S3 Resume PPI not Found
0xEA	S3 Resume Boot Script Error
0xEB	S3 OS Wake Error
0xEC – 0xEF	Reserved for future AMI error codes

Recovery Progress Codes	
0xF0	Recovery condition triggered by firmware (Auto recovery)
0xF1	Recovery condition triggered by user (Forced recovery)
0xF2	Recovery process started
0xF3	Recovery firmware image is found
0xF4	Recovery firmware image is loaded
0xF5 – 0xF7	Reserved for future AMI progress codes
Recovery Error Codes	
0xF8	Recovery PPI is not available
0xF9	Recovery capsule is not found
0xFA	Invalid recovery capsule
0xFB – 0xFF	Reserved for future AMI error codes

PEI Beep Codes

# of Beeps	Description
1 (repeatedly)	Memory not installed
1	Memory was installed twice (InstallPEIMemory routine in PEI Core called twice)
2	Recovery started
3	DXEIPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

DXE Phase

Status Code	Description
0x60	DXE Core is started
0x61	NVRAM initialization
0x62	Installation of the South Bridge Runtime Services
0x63	CPU DXE initialization is started
0x64	CPU DXE initialization (CPU module specific)
0x65	CPU DXE initialization (CPU module specific)
0x66	CPU DXE initialization (CPU module specific)
0x67	CPU DXE initialization (CPU module specific)
0x68	PCI host bridge initialization
0x69	North Bridge DXE initialization is started

Status Code	Description
0x6A	North Bridge DXE SMM initialization is started
0x6B	North Bridge DXE initialization (North Bridge module specific)
0x6C	North Bridge DXE initialization (North Bridge module specific)
0x6D	North Bridge DXE initialization (North Bridge module specific)
0x6E	North Bridge DXE initialization (North Bridge module specific)
0x6F	North Bridge DXE initialization (North Bridge module specific)
0x70	South Bridge DXE initialization is started
0x71	South Bridge DXE SMM initialization is started
0x72	South Bridge devices initialization
0x73	South Bridge DXE initialization (South Bridge module specific)
0x74	South Bridge DXE initialization (South Bridge module specific)
0x75	South Bridge DXE initialization (South Bridge module specific)
0x76	South Bridge DXE initialization (South Bridge module specific)
0x77	South Bridge DXE initialization (South Bridge module specific)
0x78	ACPI module initialization
0x79	CSM initialization
0x7A – 0x7F	Reserved for future AMI DXE codes
0x80 – 0x8F	OEM DXE initialization codes
0x90	Boot Device Selection (BDS) phase is started
0x91	Driver connecting is started
0x92	PCI Bus initialization is started
0x93	PCI Bus Hot Plug Controller initialization
0x94	PCI Bus Enumeration
0x95	PCI BUS Request Resources
0x96	PCI Bus Assign Resources
0x97	Console Output devices connect
0x98	Console Input devices connect
0x99	Super IO initialization
0x9A	USB initialization is started
0x9B	USB Reset
0x9C	USB Detect
0x9D	USB Enable
0x9E -0x9F	Reserved for future AMI codes
0xA0	IDE initialization is started
0xA1	IDE Reset
0xA2	IDE Detect
0xA3	IDE Enable
0xA4	SCSI initialization is started

Status Code	Description
0xA5	SCSI Reset
0xA6	SCSI Detect
0xA7	SCSI Enable
0xA8	Setup Verifying Password
0xA9	Start of Setup
0xAA	Reserved for ASL (see ASL Status Codes section below)
0xAB	Setup Input Wait
0xAC	Reserved for ASL (see ASL Status Codes section below)
0xAD	Ready To Boot event
0xAE	Legacy Boot event
0xAF	Exit Boot Services event
0xB0	Runtime Set Virtual Address MAP Begin
0xB1	Runtime Set Virtual Address MAP End
0xB2	Legacy Option ROM initialization
0xB3	System Reset
0xB4	USB hot plug
0xB5	PCI bus hot plug
0xB6	Clean-up of NVRAM
0xB7	Configuration Reset (reset of NVRAM settings)
0xB8 – 0xBF	Reserved for future AMI codes
0xC0 – 0xCF	OEM BDS initialization codes
DXE Error Codes	
0xD0	CPU initialization error
0xD1	North Bridge initialization error
0xD2	South Bridge initialization error
0xD3	Some of the Architectural Protocols are not available
0xD4	PCI resource allocation error. Out of Resources
0xD5	No Space for Legacy Option ROM
0xD6	No Console Output Devices are found
0xD7	No Console Input Devices are found
0xD8	Invalid password
0xD9	Error loading Boot Option (LoadImage returned error)
0xDA	Boot Option is failed (StartImage returned error)
0xDB	Flash update is failed
0xDC	Reset protocol is not available

DXE Beep Codes

| # of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met

ACPI/ASL Checkpoints

Status Code	Description
0x01	System is entering S1 sleep state
0x02	System is entering S2 sleep state
0x03	System is entering S3 sleep state
0x04	System is entering S4 sleep state
0x05	System is entering S5 sleep state
0x10	System is waking up from the S1 sleep state
0x20	System is waking up from the S2 sleep state
0x30	System is waking up from the S3 sleep state
0x40	System is waking up from the S4 sleep state
0xAC	System has transitioned into ACPI mode. Interrupt controller is in PIC mode.
0xAA	System has transitioned into ACPI mode. Interrupt controller is in APIC mode.

Appendix D. Additional References

| Document Title	Document Classification
Intel® Server Board M10JNP2SB Configuration Guide	Public
Intel® Server Board M10JNP2SB BMC and EWS user guide	Public
Intel® Server Board M10JNP2SB Bios Setup Guide	Public

Appendix E.   Safety Instructions

WARNING: English (US)
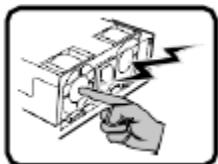
The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product. Refer servicing only to qualified personnel.

Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.
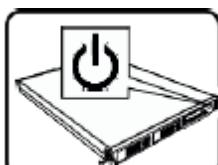
The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply.

The power cord(s) is considered the disconnect device to the main (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible.

SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps:

1. Turn off all peripheral devices connected to the system.
2. Turn off the system by pressing the power button.
3. Unplug all AC power cords from the system or from wall outlets.
4. Label and disconnect all cables connected to I/O connectors or ports on the back of the system.
5. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components.
6. Do not operate the system with the chassis covers removed.

After you have completed the six SAFETY steps above, you can remove the system covers. To do this:

1. Unlock and remove the padlock from the back of the system if a padlock has been installed.
2. Remove and save all screws from the covers.
3. Remove the covers.
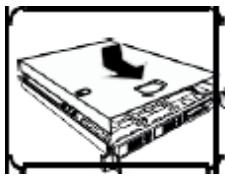
For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers:

1. Check first to make sure you have not left loose tools or parts inside the system.
2. Check that cables, add-in boards, and other components are properly installed.
3. Attach the covers to the chassis with the screws removed earlier and tighten them firmly.
4. Insert and lock the padlock to the system to prevent unauthorized access inside the system.
5. Connect all external cables and the AC power cord(s) to the system.
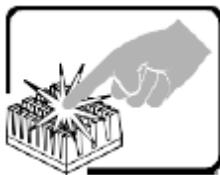
A microprocessor and heat sink may be hot if the system has been running. Also, there may be sharp pins and edges on some board and chassis parts. Contact should be made with care. Consider wearing protective gloves.

Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions.
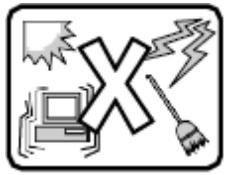
The system is designed to operate in a typical office environment. Choose a site that is:

- Clean and free of airborne particles (other than normal room dust).
- Well ventilated and away from sources of heat including direct sunlight.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppresser and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power supply cord(s), because they serve as the product's main power disconnect.

AVERTISSEMENT: Français
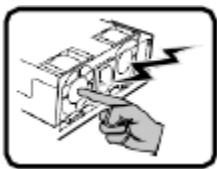
Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème.

Ne pas essayer d'utiliser ni modifier le câble d'alimentation CA fourni, s'il ne correspond pas exactement au type requis. Le nombre de câbles d'alimentation CA fournis correspond au nombre de blocs d'alimentation du produit.
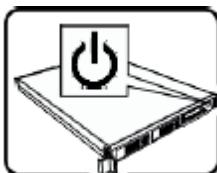
Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.

CONSIGNES DE SÉCURITÉ: Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes:

1. Mettez hors tension tous les périphériques connectés au système.
2. Mettez le système hors tension en mettant l'interrupteur général en position OFF (bouton-poussoir).
3. Débranchez tous les cordons d'alimentation c.a. du système et des prises murales.
4. Identifiez et débranchez tous les câbles reliés aux connecteurs d'E-S ou aux accès derrière le système.
5. Pour prévenir les décharges électrostatiques lorsque vous touchez aux composants, portez une bande antistatique pour poignet et reliez-la à la masse du système (toute surface métallique non peinte du boîtier).
6. Ne faites pas fonctionner le système tandis que le boîtier est ouvert.
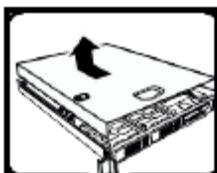
Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit:

1. Si un cadenas a été installé sur à l'arrière du système, déverrouillez-le et retirez-le.
2. Retirez toutes les vis des panneaux et mettez-les dans un endroit sûr.
3. Retirez les panneaux.
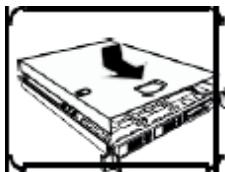
Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit:

1. Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système.
2. Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés.
3. Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt.
4. Remettez le cadenas en place et verrouillez-le afin de prévenir tout accès non autorisé à l'intérieur du système.
5. Rebranchez tous les cordons d'alimentation c. a. et câbles externes au système.
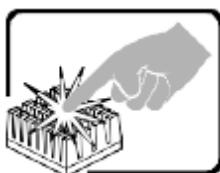
Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection.

Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.

Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être:

- Propre et dépourvu de poussière en suspension (sauf la poussière normale).
- Bien aéré et loin des sources de chaleur, y compris du soleil direct.
- A l'abri des chocs et des sources de vibrations.
- Isolé de forts champs électromagnétiques générés par des appareils électriques.
- Dans les régions sujettes aux orages magnétiques il est recommandé de brancher votre système à un suppresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage.
- Muni d'une prise murale correctement mise à la terre.
- Suffisamment spacieux pour vous permettre d'accéder aux câbles d'alimentation (ceux-ci étant le seul moyen de mettre le système hors tension).

WARNUNG: Deutsch
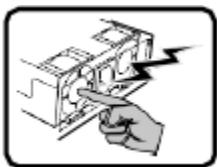
Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden.

Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht genau um den erforderlichen Typ handelt. Ein Produkt mit mehreren Netzgeräten hat für jedes Netzgerät ein eigenes Netzkabel.
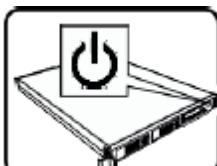
Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.

SICHERHEISMASSNAHMEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:

1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus.
2. Schalten Sie das System mit dem Hauptschalter aus.
3. Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose.
4. Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab.
5. Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden.
6. Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.
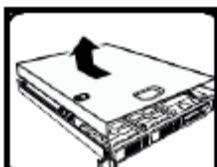
Nachdem Sie die oben erwähnten ersten sechs SICHERHEITSSCHRITTE durchgeführt haben, können Sie die Abdeckung abnehmen, indem Sie:

1. Öffnen und entfernen Sie die Verschlußeinrichtung (Padlock) auf der Rückseite des Systems, falls eine Verschlußeinrichtung installiert ist.
2. Entfernen Sie alle Schrauben der Gehäuseabdeckung.
3. Nehmen Sie die Abdeckung ab.
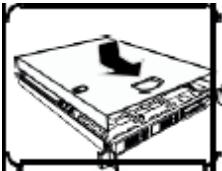
Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen:

1. Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben.
2. Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation.
3. Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben wieder anbringen. Ziehen Sie diese gut an.
4. Bringen Sie die Verschlußeinrichtung (Padlock) wieder an und schließen Sie diese, um ein unerlaubtes Öffnen des Systems zu verhindern.
5. Schließen Sie alle externen Kabel und den AC Stromanschlußstecker Ihres Systems wieder an.
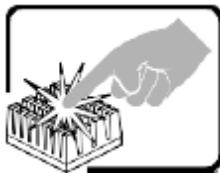
Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.

Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie verbrauchte Batterien den Anweisungen des Herstellers entsprechend.
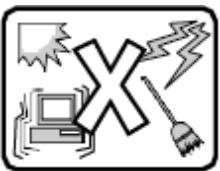
Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

- sauber und staubfrei sein (Hausstaub ausgenommen);
- gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung);
- keinen Erschütterungen ausgesetzt sein;
- keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen;
- in Regionen, in denen elektrische Stürme auftreten, mit einem Überspannungsschutzgerät verbunden sein; während eines elektrischen Sturms sollte keine Verbindung der Telekommunikationsleitungen mit dem Modem bestehen;
- mit einer geerdeten Wechselstromsteckdose ausgerüstet sein;
- über ausreichend Platz verfügen, um Zugang zu den Netzkabeln zu gewährleisten, da der Stromanschluß des Produkts hauptsächlich über die Kabel unterbrochen wird.

AVVERTENZA: Italiano
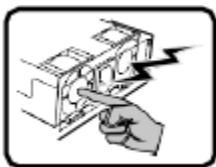
Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione.

Non modificare o utilizzare il cavo di alimentazione in c.a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto. Ad ogni fonte di alimentazione corrisponde un cavo di alimentazione in c.a. separato.
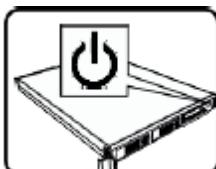
L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.

PASSI DI SICUREZZA: Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi:

1. Spegnere tutti i dispositivi periferici collegati al sistema.
2. Spegnere il sistema, usando il pulsante spento/acceso dell'interruttore del sistema.
3. Togliere tutte le spine dei cavi del sistema dalle prese elettriche.
4. Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema.
5. Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema – qualsiasi superficie non dipinta – .
6. Non far operare il sistema quando il telaio è senza le coperture.
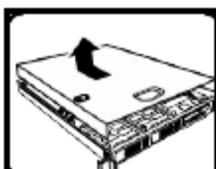
Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come seque:

1. Aprire e rimuovere il lucchetto dal retro del sistema qualora ve ne fosse uno installato.
2. Togliere e mettere in un posto sicuro tutte le viti delle coperture.
3. Togliere le coperture.
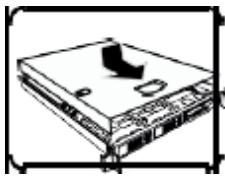
Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio:

1. Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema.
2. Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente.
3. Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente.
4. Inserire e chiudere a chiave il lucchetto sul retro del sistema per impedire l'accesso non autorizzato al sistema.
5. Ricollegare tutti i cavi esterni e le prolunghe AC del sistema.
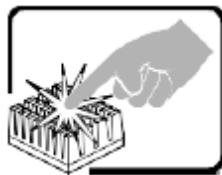
Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione.

Esiste il pericolo di un esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.

Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:

- Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente).
- Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta.
- Al riparo da urti e lontana da fonti di vibrazione.
- Isolata dai forti campi magnetici prodotti da dispositivi elettrici.
- In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem.
- Dotata di una presa a muro correttamente installata.
- Dotata di spazio sufficiente ad accedere ai cavi di alimentazione, i quali rappresentano il mezzo principale di scollegamento del sistema.

ADVERTENCIAS: Español
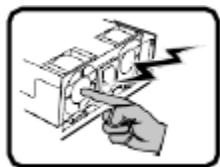
El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación.

No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido.

El número de cables suministrados se corresponden con el número de fuentes de alimentación de corriente alterna que tenga el producto.
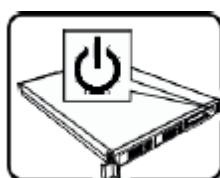
Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.

INSTRUCCIONES DE SEGURIDAD: Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones:

1. Apague todos los dispositivos periféricos conectados al sistema.
2. Apague el sistema presionando el interruptor encendido/apagado.
3. Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna.
4. Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema.
5. Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujetada a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar.
6. No ponga en marcha el sistema si se han extraído las tapas del chasis.
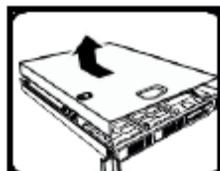
Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello:

1. Desbloquee y extraiga el bloqueo de seguridad de la parte posterior del sistema, si se ha instalado uno.
2. Extraiga y guarde todos los tornillos de las tapas.
3. Extraiga las tapas.
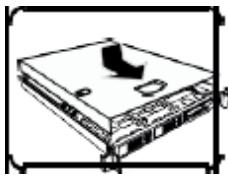
Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas:

1. Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema.
2. Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente.
3. Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente.
4. Inserte el bloqueo de seguridad en el sistema y bloquéelo para impedir que pueda accederse al mismo sin autorización.
5. Conecte todos los cables externos y los cables de alimentación CA al sistema.
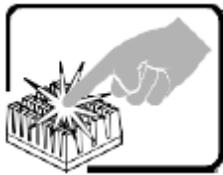
Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.

Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante.
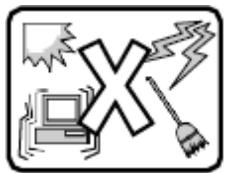
El sistema está diseñado para funcionar en un entorno de trabajo normal. Escoja un lugar:

- Limpio y libre de partículas en suspensión (salvo el polvo normal).
- Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa.
- Alejado de fuentes de vibración.
- Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos.
- En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltaje y desconectar el módem de las líneas de telecomunicación durante las tormentas.
- Provisto de una toma de tierra correctamente instalada.
- Provisto de espacio suficiente como para acceder a los cables de alimentación, ya que éstos hacen de medio principal de desconexión del sistema.

אזהרה: עברית

אספקת החשמל במוצר זה לא מכילה חלקים שניתנים לשירות על ידי משתמש. ייתכן שיש יותר ממקור אספקת חשמל אחד במוצר זה. לקבלת שירות יש לפנות רק אל אנשים המוסמכים לכך.
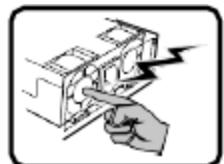
אין לנסות לשנות את כבל החשמל ז"ח המסופק, או לשנותו, אם הוא לא מהסוג המדויק הנדרש. למוצר עם יותר ממקור אספקת חשמל אחד יצורף כבל חשמל נפרד לכל מקור אספקת חשמל.
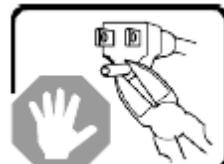
מתג ההפעלה במערכת לא מכבה את מערכת חשמל ז"ח. להסרת חשמל ז"ח מהמערכת, יש לנתק כל כבל חשמל ז"ח משקע הקיר או מאספקת החשמל.

כבל(י) החשמל נחשב(ים) להתקן(ני) ניתוק מקור אספקת חשמל ז"ח. שקע הקיר שאליו מחוברת המערכת יותקן בסמוך לציוד ויהיה נגיש בקלות.
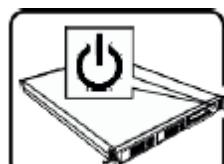
שלבי בטיחות: בכל פעם שמסירים את מכסי המעטפת כדי לגשת לחלק הפנימי של המערכת, יש לבצע את הצעדים הבאים:

1. לכבות את כל ההתקנים ההיקפיים שמחוברים למערכת.
2. לכבות את המערכת על ידי לחיצה על מתג ההפעלה.
3. לנתק את כל כבלי חשמל ז"ח מהמערכת או משקעי הקיר.
4. לתייג את כל הכבלים המחוברים למחברי קלט/פלט או ליציאות בגב המערכת ולנתק אותם.
5. לספק הגנה מסוימת מפריקות אלקטרוסטטיות (ESD) על ידי חבישת רצועת שורש כף יד אנטיסטטית שמחוברת להארקת המעטפת של המערכת - כל משטח מתכת לא צבוע - בעת הטיפול ברכיבים.
6. אין להפעיל את המערכת כשמכסי המעטפת מוסרים.

לאחר השלמת ששת שלבי הבטיחות לעיל, באפשרותכם להסיר את מכסי המערכת. כדי לעשות זאת:

1. יש לפתוח את המנעול התלוי ולהסירו מגב המערכת אם אכן הותקן בה מנעול תלוי.
2. יש להסיר את כל הברגים של המכסים ולשמור אותם.
3. יש להסיר את המכסים.

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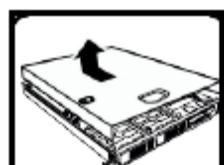
לקירור ולזרימת אוויר תקינים, יש תמיד להתקין מחדש את מכסי המעטפת לפני הפעלת המערכת. הפעלת המערכת ללא המכסים במקומם, עלולה לגרום נזק לחלקי המערכת. להתקנת המכסים:

1. יש לבדוק תחילה כדי לוודא שלא נשארו כלים או חלקים רופפים בתוך המערכת.
2. יש לבדוק שהכבלים, הלוחות הנוספים ורכיבים אחרים מותקנים כראוי.
3. יש לחבר את המכסים למעטפת עם הברגים שהוסרו קודם לכן ולהדק אותם בחוזקה למקומם.
4. יש להכניס את מנעול התליה למערכת ולנעול אותו כדי למנוע גישה בלתי מורשית לפנים המערכת.
5. יש לחבר את כל הכבלים החיצוניים ואת כבל(י) חשמל ז"ח למערכת.
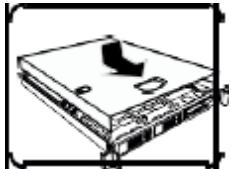
מעבד המיקרו ומפזר החום עלולים להיות לוהטים כשהמערכת פועלת. כמו כן, ייתכנו סיכות וקצוות חדים בחלקי לוח ומעטפת שונים. יש לגעת בזהירות. יש לשקול עטיית כפפות מגן.
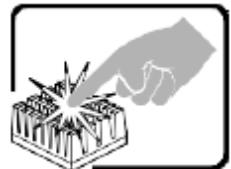
סכנת פיצוץ אם הסוללה מוחלפת באופן שגוי. יש להחליף רק באותו סוג או שווה ערך שמומלץ על ידי יצרן הציוד. יש להשליך סוללות משומשות על פי הוראות היצרן.

המערכת נועדה לפעול בסביבה משרדית טיפוסית. יש לבחור אתר שהוא:

- נקי וחופשי מחלקיקים נישאים באוויר (למעט אבק שקיים באופן רגיל בחדר).
- מאוורר היטב ורחוק ממקורות חום כולל אור שמש ישיר.
- יש להרחיק ממקורות רטט או זעזועים פיזיים.
- מבודד משדות אלקטרומגנטיים חזקים שנגרמים על ידי מכשירים חשמליים.
- באזורים שרגישים לסערות חשמל, אנו ממליצים לחבר את המערכת למדכא נחשול, ובמהלך סערה חשמלית לנתק קווי תקשורת שמחוברים למודם שלכם.
- בעל שקע קיר מוארק כהלכה.
- בעל מספיק מקום לגישה חופשית לכבל(י) החשמל, מכיוון שהוא/הם משמש(ים) לניתוק רשת החשמל למוצר.
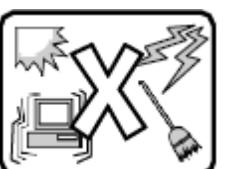
Appendix F. Product Regulatory Information

This product has been evaluated and certified as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product certification categories and/or environments (such as: medical, industrial, telecommunications, NEBS, residential, alarm systems, test equipment, etc.), other than an ITE application, will require further evaluation and may require additional regulatory approvals.

Intel has verified that all L3, L6, and L9 server products[1] **as configured and sold by Intel** to its customers comply with the requirements for all regulatory certifications defined in the following table. It is the Intel customer's responsibility to ensure their final server system configurations are tested and certified to meet the regulatory requirements for the countries to which they plan to ship and or deploy server systems into.

	Intel® Server Board M10JNP2SB	NOTES
	"Juniper Pass"	Intel Project Code Name
	L3 – Board Only	Product Integration Level
	M10JNP2SB	Product family identified on certification
Regulatory Certification		
RCM DoC Australia & New Zealand	✓	
CB Certification & Report (International - report to include all CB country national deviations)	✓	
China CCC Certification	○	
CU Certification (Russia/Belarus/Kazakhstan)	○	
Europe CE Declaration of Conformity	✓	
FCC Part 15 Emissions Verification (USA / Canada)	✓	
Germany GS Certification	○	
India BIS Certification	○	
International Compliance – CISPR32 & CISPR24	○	
Japan VCCI Certification	✓	
Korea KC Certification	✓	
Mexico Certification	○	
NRTL Certification (USA & Canada)	✓	
South Africa Certification	○	
Taiwan BSMI Certification	✓	
Ukraine Certification	○	

Table Key

Not Tested / Not Certified	○
Tested / Certified – Limited OEM SKUs only	●
Testing / Certification (Planned)	(Date)
Tested / Certified	✓

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[1] An L9 product is a power-on ready server system with NO operating system installed. An L6 product requires additional components to be installed in order to make it power-on ready. L3 products are component building block options that require integration into a chassis to create a functional server system

EU Directive 2019/424 (Lot 9)

Beginning on March 1, 2020, an additional component of the European Union (EU) regulatory CE marking scheme, identified as EU Directive 2019/424 (Lot 9), will go into effect. After this date, all new server systems shipped into or deployed within the EU must meet the full CE marking requirements including those defined by the additional EU Lot 9 regulations.

Intel has verified that all L3, L6, and L9 server products[2] **as configured and sold by Intel** to its customers comply with the full CE regulatory requirements for the given product type, including those defined by EU Lot 9. It is the Intel customer's responsibility to ensure their final server system configurations are SPEC® SERT™ tested and meet the new CE regulatory requirements.

Visit the following website for additional EU Directive 2019/424 (Lot9) information:
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019R0424

In compliance with the EU Directive 2019/424 (Lot 9) materials efficiency requirements, Intel makes available all necessary product collaterals as identified below:

- **Product Serviceability Instructions and Product Specifications**
    - *Intel® Server Board M10JNP2SB Technical Product Specification (TPS) – (This document)*
    - *https://www.intel.com/content/www/us/en/support/articles/000055607/server-products/server-boards.html?wapkw=m10jnp2sb*

- **System BIOS/Firmware and Security Updates – Intel® Server Board S2600ST family**
    - System Update Package (SUP) – uEFI only
    - Intel® One Boot Flash Update (OFU) – Various OS Support
    - https://www.intel.com/content/www/us/en/support/products/197378/server-products/server-boards/intel-server-board-m10jnp-family.html

- **Intel Solid State Drive (SSD) Secure Data Deletion and Firmware Updates**
    - Note: for system configurations that may be configured with an Intel SSD
    - Intel® Solid State Drive Toolbox
    - https://downloadcenter.intel.com/download/29205?v=t

- **Intel® RAID Controller Firmware Updates and other support collaterals**
    - Note: for system configurations that may be configured with an Intel® RAID Controller
    - https://www.intel.com/content/www/us/en/support/products/43732/server-products/raid-products.html

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[2] An L9 system configuration is a power-on ready server system with NO operating system installed.
An L6 system configuration requires additional components to be installed in order to make it power-on ready. L3 are component building block options that require integration into a chassis to create a functional server system

Appendix G. Statement Of Volatility

This appendix describes the volatile and non-volatile components on the Intel® Server Board M10JNP2SB. It is not the intention of this document to include any components not directly mounted to the server board, including but not limited to: processors, memory, storage devices, or add-in cards.

The tables in this appendix provide the following data for each identified component.

Component Type

Three types of memory components are used on the server board assembly. These include:

- Non-volatile: Non-volatile memory is persistent, and is not cleared when power is removed from the system. Non-Volatile memory must be erased to clear data. The exact method of clearing these areas varies by the specific component. Some areas are required for normal operation of the server, and clearing these areas may render the server board inoperable.
- Volatile: Volatile memory is cleared automatically when power is removed from the system.
- Battery powered RAM: Battery powered RAM is similar to volatile memory, but is powered by a battery on the server board. Data in Battery powered Ram is persistent until the battery is removed from the server board.

Size

The size of each component includes sizes in bits, Kbits, bytes, kilobytes (KB) or megabytes (MB).

Board Location

The physical location of each component is specified in the Board Location column. The board location information corresponds to information on the silkscreen in the server board.

User Data

The flash components on the server board do not store user data from the operating system. No operating system level data is retained in any listed components after AC power is removed. The persistence of information written to each component is determined by its type as described in the table.

Each component stores data specific to its function. Some components may contain passwords that provide access to that device's configuration or functionality. These passwords are specific to the device and are unique and unrelated to operating system passwords. The specific components that may contain password data are:

BIOS: The BIOS provides the capability to prevent unauthorized users from configuring BIOS settings when a BIOS password is set. This password is stored in BIOS flash, and is only used to set BIOS configuration access restrictions.

BMC: The server board supports an Intelligent Platform Management Interface (IPMI) 2.0 conformant baseboard management controller (BMC). The BMC provides health monitoring, alerting and remote power control capabilities for the server board.   The BMC does not have access to operating system level data.

The BMC supports the capability for remote software to connect over the network and perform health monitoring and power control. This access can be configured to require authentication by a password. If configured, the BMC will maintain user passwords to control this access. These passwords are stored in the BMC flash.

The server board includes several components that can be used to store data. A list of those components is included in the following table.

Table 28. Server board components

Part			Volatility		User Data		Size
Type	**Location**	**Reference**	**Yes**	**No**	**Yes**	**No**	
SDRAM	U11	BMC DDR4	Yes		Yes		TBD
Flash	U12_IC	BMC FW		No	Yes		TBD
Flash	U7_IC	BIOS FW		No	Yes		TBD
LAN1 Flash	U113	LAN1 FW		No		No	TBD
LAN2 Flash	U115	LAN2 FW		No		No	TBD
LAN3 Flash	U117	LAN3 FW		No		No	TBD
LAN4 Flash	U119	LAN4 FW		No		No	TBD
VR Controller	U193	ISL69137I RAZ-T		No		No	TBD
VR Controller	U200	ISL69137I RAZ-T		No		No	TBD
EEPROM	U103	MB FRU		No		No	TBD

Glossary

Term	Definition
1U	One rack unit (1.75 in.)
AC	Alternating current
ACPI	Advanced configuration and power interface
AES-NI	Intel® Advanced Encryption Standard New Instructions
Intel® AMT	Intel® Active Management Technology
BDS	Boot device selection
BIOS	Basic input output system; non-volatile firmware
BMC	Baseboard management controller
BSP	A boot strap processor that is selected at boot time to be the primary processor in a multi-processor system.
Chassis	Casing containing the server board, fans and power supply
CMOS	Complimentary Metal-oxide-semiconductor
CPU	Central processing unit
CSM	Compatibility support module
DC	Direct current, the flow of electric charge in only one direction.
DIMM	Dual inline memory module
DXE	Driver execution environment, a component of Intel® Platform Innovation Framework for EFI architecture.
ECC	Error correction code
EI	Enhanced Intel
ESD	Electrostatic discharge
FRU	Field replaceable unit
GT/s	Giga transfers per second
IIO	Integrated IO modules
IMC	Integrated memory controller, a memory controller integrated into the processor chip
IPL	Initial program load
IPMB	Intelligent platform management bus
KVM	Keyboard, video, and mouse, an attachment that mimics those devices and connects them to a remote I/O user.
LAN	Local area network
LED	Light emitting diode
MAC	Media access control
MT/s	Mega transfers per second
NIC	Network interface card
NMI	Non-maskable interrupt
NVRAM	Non-volatile random access memory
OEM	Original equipment manufacturer
OS	Operating system
PCH	Platform Controller Hub
PCI	Peripheral component interconnect, or CI local bus standard a.k.a. "Conventional PCI"
PCIe*	Peripheral component interconnect express, an updated form of PCI offering better throughput and error management
PEI	Pre EFI initialization, a component of the Intel® Platform Innovation Framework for EFI architecture
PEIM	PEI module
POST	Power on self test, the BIOS activity from Power On until the OS bot starts
PSU	Power supply unit
RAID	Redundant Array of Inexpensive Disks. These provide data security by spreading data over multiple disk drives. RAID 0, RAID 1, RAID 10, and RAID 5 are different patterns of data on varying numbers of disks to provide varying degrees of security and performance.
RAM	Random access memory
RAS	Reliability, availability, and serviceability
SATA	Serial ATA, a high speed serial data version of the disk ATA interface

Term	Definition
SCSI	Small computer system interface, a connection normally used for disks of various types
SDDC	Single device data correction
SIO	Super I/o
SMM	Server management mode
SPD	Serial presence detect
TDP	Thermal design power
TPM	Trusted platform module
Intel® TXT	Intel® Trusted Execution Technology
USB	Universal Serial Bus, a standard serial expansion bus meant for connecting peripherals.
VR	Voltage regulator
Intel® VT-x	Intel® Virtualization Technology