Intel® Server M20NTP Family

Intel® Server Board M20NTP2SB

Intel® Server System M20NTP1UR

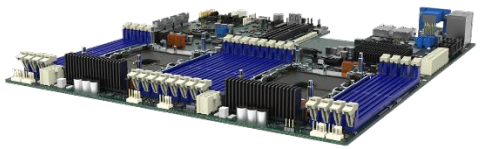
Intel® Server System M20NTP2UR

Configuration Guide

A reference document used to identify available Intel® server building blocks, integrated systems, accessories, and spare parts associated with the Intel® Server M20NTP Family.

Rev. 1.1

February 2022



M20NTP

Delivering Breakthrough Data Center System Innovation – Experience What's Inside!

<This page is intentionally left blank>

Document Revision History

Date	Revision	Changes
January 2022	1.0	First production release.
February 2022	1.1	Sections 1.5 & 1.6 – Updated 1U and 2U system features tables Section 1.6.1, Table 9 – Updated to reflect NVMe* support with 2nd backplane installed in 2U system Section 4.4 – made correction to 2U Fan Kit – Changed “Kit Includes” content to 1 system fan Section 4.5 – updated TPM accessory options support note

Disclaimers

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.

You may not use or facilitate the use of this document in connection with any infringement or other legal analysis concerning Intel products described herein. You agree to grant Intel a non-exclusive, royalty-free license to any patent claim thereafter drafted which includes subject matter disclosed herein.

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

The products described may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

Copies of documents which have an order number and are referenced in this document may be obtained by calling 1-800-548-4725 or by visiting www.intel.com/design/literature.htm.

Intel, Intel Optane, Intel Xeon, and the Intel logo are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

© Intel Corporation

Table of Contents

1. Overview 8
1.1 Product Family Overview 8
1.2 Processor Support 9
1.3 Memory Support 11
1.4 Intel® Server Board M20NTP2SB Overview 13
1.5 Intel® Server System M20NTP1UR Overview 17
1.6 Intel® Server System M20NTP2UR Overview 23
1.6.1 Accessory Kits for 16 Front Drive Bay Expansion 29
1.7 Additional Information and Software 30
2. Server Board and Systems 32
2.1 Intel® Server Board M20NTP2SB Options 32
2.2 Intel® Server Systems M20NTP1UR and M20NTP2UR Options 33
2.3 1U and 2U System Storage Option Cabling 36
3. Intel Add-in Card Options 37
3.1 Intel® OCP* Networking Options 37
3.2 Intel® RAID Card Options 39
4. Accessories and Spare FRUs 41
4.1 Riser Card Accessories and Spares 41
4.2 System Power Accessories and Spares 43
4.3 Storage Option Accessories and Spares 44
4.4 System Thermal Accessories and Spares 48
4.5 Miscellaneous Product Family Accessories and Spares 50
Appendix A. Glossary 53

List of Figures

Figure 1. Intel® Server M20NTP Family Overview 8
Figure 2. 3rd Gen Intel® Xeon® Scalable Processor Shelf Identification 9
Figure 3. Intel® Server Board M20NTP2SB 13
Figure 4. Intel® Server System M20NTP1UR Dimensions and Internal View 17
Figure 5. Intel® Server System M20NTP1UR General Features 18
Figure 6. Intel® Server System M20NTP1UR Back Panel Features 18
Figure 7. Intel® Server System M20NTP1UR Front Panel Features 19
Figure 8. Intel® Server System M20NTP1UR Control Panel Features 19
Figure 9. Intel® Server System M20NTP1UR with Optional Front Bezel 19
Figure 10. Intel® Server System M20NTP2UR Dimensions and Internal View 23
Figure 11. Intel® Server System M20NTP2UR Features 24
Figure 12. Intel® Server System M20NTP2UR Back Panel Features 24
Figure 13. Intel® Server System M20NTP2UR Front I/O and Control Panel Features 25
Figure 14. Intel® Server System M20NTP2UR 8-Drive Configuration (Default) 25
Figure 15. Intel® Server System M20NTP2UR 16-Drive Configuration (with Accessory Kit Options) 25
Figure 16. Intel® Server System M20NTP2UR with Optional Front Bezel 26

List of Tables

Table 1. Intel® Server M20NTP Family Processor Support 9
Table 2. 3rd Gen Intel® Xeon® Scalable Processor Shelf Feature Comparison 10
Table 3. Supported DDR4 DIMM Memory 11
Table 4. Maximum Supported DDR4 DIMM Speed by Processor Shelf 11
Table 5. DDR4 DIMM Attributes Table for “Identical” and “Like” DIMMs 12
Table 6. Intel® Server Board M20NTP2SB Features 14
Table 7. Intel® Server System M20NTP1UR Features 20
Table 8. Intel® Server System M20NTP2UR Features 26
Table 9. Cable Kits for 16 Drive 2U Intel® Server System M20NTP2UR208 Upgrade 29
Table 10. Product Family Reference Collaterals 30
Table 11. Intel® Server Board M20NTP2SB Product Information 32
Table 12. Intel® Server System M20NTP1UR304 Product Information 34
Table 13. Intel® Server System M20NTP2UR208 Product Information 35
Table 14. 1U Intel® Server System M20NTP1UR304 Storage Option Cabling 36
Table 15. 2U Intel® Server System M20NTP2UR208 Storage Option Cabling 36

1. Overview

This document provides a catalog of available Intel® server boards, Intel® server systems, accessories, and spares that make up the Intel® Server M20NTP Family.

1.1 Product Family Overview

Intel® Server Board M20NTP2SB

L3 – Server Board Only

Intel® Server System M20NTP1UR

L6 – 1U Server System

Intel® Server System M20NTP2UR

L6, L9 – 2U Server System

L3 = Building Block Option
L6 = Semi-integrated system. The base configuration is non-functional out of the box. Additional integration of components required
L9 = Fully integrated system. Pre-configured. Base configuration is power-on ready. No OS installed

Figure 1. Intel® Server M20NTP Family Overview

Important: Fully configured (operation ready, no operating system) L9 systems are only orderable from Intel using its online Configure-To-Order (CTO) tool at orderconfigurator.intel.com (Intel NDA required) or contact your Intel field sales representative.

The core products that define the Intel® Server M20NTP Family include:

- **Intel® Server Board M20NTP2SB** – A board only server product that offers server system developers the option of integrating an Intel developed server board (and other available Intel developed accessory options) within their own custom or 3rd party developed server chassis.
- **Intel® Server System M20NTP1UR** – An Intel developed and validated 1U server system integrated with an Intel® Server Board M20NTP2SB.
- **Intel® Server System M20NTP2UR** – An Intel developed and validated 2U server system integrated with an Intel® Server Board M20NTP2SB.

For additional information on each of these server products, go to:

https://www.intel.com/content/www/us/en/documentation-resources/developer.html and search for “M20NTP”.

1.2 Processor Support

The Intel® Server M20NTP Family supports the 3rd Gen Intel® Xeon® Scalable processor family. Processor shelves within the product family are identified as shown in the following figure.

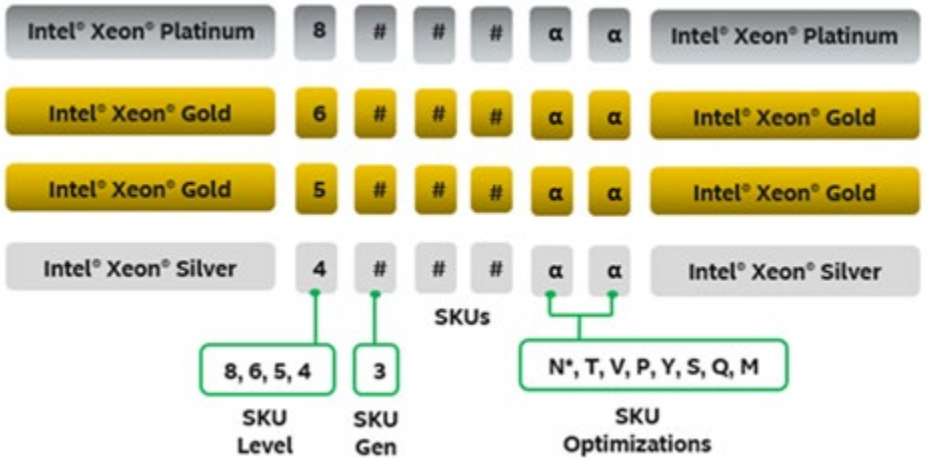


Figure 2. 3rd Gen Intel® Xeon® Scalable Processor Shelf Identification

Notes:

- Supported 3rd Gen Intel® Xeon® Scalable processor SKUs cannot end in (H), (L), or (U).
- The 8351N SKU is a 1-socket optimized SKU and is not supported on the Intel® Server Board M20NTP.

Table 1. Intel® Server M20NTP Family Processor Support

3rd Gen Intel® Xeon® Scalable Processor Shelf	Intel® Server Board M20NTP2SB Max TDP = 250W	Intel® Server System M20NTP1UR	Intel® Server System M20NTP2UR
Platinum 8300 series processors	√	X	X
Gold 6300 series processors	√	X	X
Gold 5300 series processors	√	√ - Max TDP=185W	√ - Max TDP=185W
Silver 4300 series processors	√	√ - Max TDP=150W	√ - Max TDP=150W

X – Not Supported
√ - Supported

Table 2. 3rd Gen Intel® Xeon® Scalable Processor Shelf Feature Comparison

Feature	Platinum 8300 series Processors	Gold 6300 series Processors	Gold 5300 series Processors	Silver 4300 series Processors
# of Intel® UPI Links	3	3	3	2
Intel® UPI Speed	11.2 GT/s	11.2 GT/s	11.2 GT/s	10.4 GT/s
Supported Topologies	2S-2UPI 2S-3UPI	2S-2UPI 2S-3UPI	2S-2UPI 2S-3UPI	2S-2UPI
Node Controller Support	No	No	No	No
Processor RAS Capability	Advanced	Advanced	Advanced	Standard
# of DDR4 Integrated Memory Controllers (IMC)	4	4	4	4
# DDR4 Channels	8	8	8	8
Intel® Turbo Boost Technology	Yes	Yes	Yes	Yes
Intel® HT Technology	Yes	Yes	Yes	Yes
Intel® AVX-512 ISA Support	Yes	Yes	Yes	Yes
Intel® AVX-512 - # of 512b FMA Units	2	2	2	2
# of PCIe* Lanes	64	64	64	64
Intel® VMD 2.0	Yes	Yes	Yes	Yes

Note to Board-Only Customers: The maximum supported processor TDP at the system level may be lower than what the server board can support. Design limits of the chosen server chassis / system will determine the maximum processor TDP that can be supported up to the 250W processor TDP limit of the server board. Reference the chosen server chassis/system documentation for specific processor support information.

Disclaimer: Intel server boards include and support several high-density VLSI and power delivery components that need adequate airflow to reliably operate within their thermal specification limits. Intel ensures through its own chassis development and testing that when an Intel server board and Intel chassis are used together, the fully integrated system meets the thermal requirements of these components. It is the responsibility of anyone purchasing the board-only product with intentions to develop their own server system using a non-Intel chassis, to consult all available design guides, specifications, and datasheets to determine the thermal operating limits of installed components and airflow necessary to cool them for all intended system configurations and target workloads. It is also their responsibility to perform adequate environmental validation testing to ensure reliable system operation. Intel cannot be held responsible if components fail or the server board does not operate correctly when published operating and non-operating limits are exceeded.

1.3 Memory Support

The Intel® Server Board M20NTP supports DDR4 DIMMs with the following attributes:

- All DDR4 DIMMs must support ECC
- Registered DDR4 (RDIMM), 3DS-RDIMM, Load Reduced DDR4 (LRDIMM), 3DS-LRDIMM
  Note: 3DS stands for 3-Dimensional Stacking.
- RDIMMs and LRDIMMs with thermal sensor on-DIMM (TSOD)
- DIMM speeds of up to 3200 MT/s
- DIMM capacities of 8 GB, 16 GB, 32 GB, 64 GB, 128 GB, and 256 GB
- RDIMMs organized as Single Rank (SR), Dual Rank (DR)
- 3DS-RDIMM organized as Quad Rank (QR), or Oct Rank (OR)
- LRDIMMs organized as Quad Rank (QR)
- 3DS-LRDIMM organized as Quad Rank (QR), or Oct Rank (OR)

The following tables list the DDR4 DIMM support guidelines.

Table 3. Supported DDR4 DIMM Memory

Type	Ranks per DIMM and Data Width	DIMM Capacity (GB)		Maximum Speed (MT/s) at 1.2 V
		8 Gb DDR4 Density	16 Gb DDR4 Density	1 DPC
RDIMM	SR x8	8	16	3200
	SR x4	16	32	3200
	DR x8	16	32	3200
	DR x4	32	64	3200
3DS-RDIMM	QR/OR x4	64 (2H) 128 (4H)	128 (2H) 256 (4H)	3200
LRDIMM	QR x4	64	128	3200
3DS-LRDIMM	QR/OR x4	128 (4H)	128 (2H) 256 (4H)	3200

Note: SR = Single Rank, DR = Dual Rank, QR = Quad Rank, OR = Oct Rank, H = Stack Height, DPC = DIMMs Per Channel.

The maximum supported DRAM DIMM speed depends on the processor shelf as shown in the following table.

Table 4. Maximum Supported DDR4 DIMM Speed by Processor Shelf

Processor Family	Maximum DIMM Speed (MT/s) by processor Shelf			
	Platinum 8300 Series Processors	Gold 6300 Series Processors	Gold 5300 Series Processors	Silver 4300 Series Processors
3rd Gen Intel® Xeon® Scalable processors	3200	3200	2933	2666

Intel DDR4 Support Disclaimer

Intel validates and will only provide support for system configurations where all installed DDR4 DIMMs have matching "Identical" or "Like" attributes. See Table 5. 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 Table 5.

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. See Table 5.

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 following table. 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 5. 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

1.4 Intel® Server Board M20NTP2SB Overview

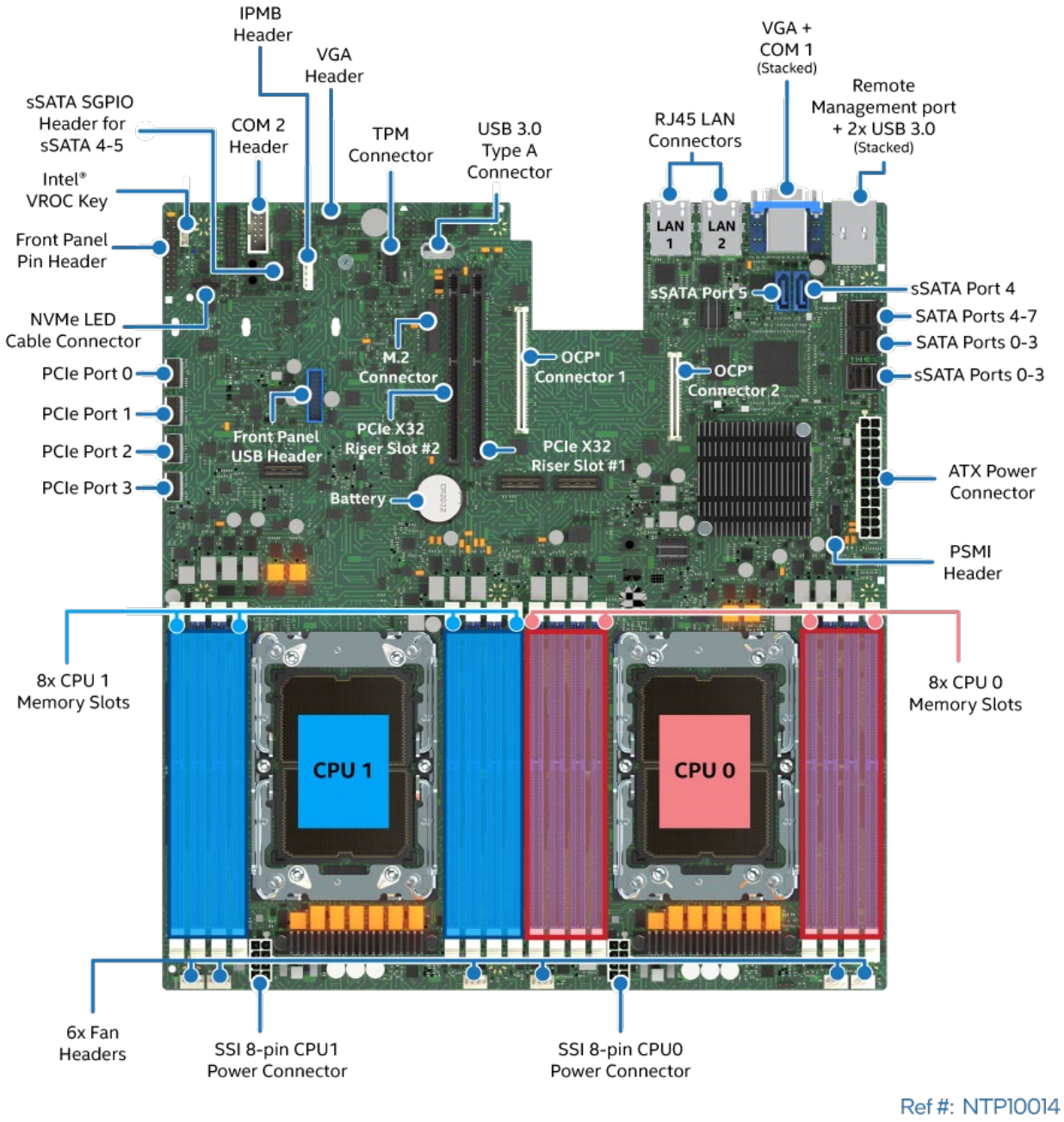


Figure 3. Intel® Server Board M20NTP2SB

Table 6. Intel® Server Board M20NTP2SB Features

Feature	Details
Server Board	Intel® Server Board M20NTP2SB
Server Board Dimensions	333.2 mm X 306.8 mm (13.1" X 12")

Processor Support	• Dual Socket-P4 LGA4189
	• 3rd Gen Intel® Xeon® Scalable processor family:
	  ○ Intel® Xeon® Platinum 8300 processor
	  ○ Intel® Xeon® Gold 6300 processor
	  ○ Intel® Xeon® Gold 5300 processor
	  ○ Intel® Xeon® Silver 4300 processor
	Note: 3rd Gen Intel® Xeon® Scalable processor SKUs ending in (H), (L), (U), or (Q) are not supported.
	• Intel® UPI links: up to three at 11.2 GT/s (Platinum and Gold families) or up to two at 10.4 GT/s (Silver family)
	Note: Previous generation Intel® Xeon® processors are not supported.

Maximum Supported Processor Thermal Design Power (TDP)	• 250 W (Server board only) **Note:** The maximum supported processor TDP at the system level may be lower than what the server board can support. Design limits of the chosen server chassis / system will determine the maximum processor TDP that can be supported up to the 250W processor TDP limit of the server board. Reference the chosen server chassis/system documentation for specific processor support limits.

PCH Chipset	• Intel® C621A Platform Controller Hub (PCH) chipset
	• Embedded features supported on this server board:
	  ○ SATA support
	  ○ USB support
	  ○ PCIe* support

Server Management Processor (SMP)	• ASpeed* AST2500 Advanced PCIe* Graphics and Remote Management Processor
	• Embedded features supported on this server board:
	  ○ Baseboard Management Controller (BMC)
	  ○ 2D Video Graphics Adapter

Memory Support	• 16 memory slots
	  ○ 8 DIMM slots per processor (2 processors)
	  ○ Eight memory channels per processor
	  ○ One slot per memory channel
	• Registered DDR4 (RDIMM), 3DS-RDIMM, Load Reduced DDR4 (LRDIMM), 3DS-LRDIMM
	Note: 3DS = 3-Dimensional Stacking
	  ○ All DDR4 DIMMs must support ECC
	  ○ Up to 3200 MT/s (processor SKU dependent)
	  ○ Memory voltage = 1.2 V

Network Connectivity	• Onboard Intel® Ethernet Controller I210-AT ○ Two (2) RJ45 1000 Base-T ports (Back panel I/O) • Support for one (1) OCP* 2.0 Mezzanine add-in card

Feature	Details
PCIe* Expansion	• Two (2) X32 PCIe* 4.0 Riser Card slots
Storage Connectivity Options	**NVMe* Support** • Four (4) onboard SFF-8654 SlimSAS* cable connectors. Each connector supports backplane connectivity for one PCIe* NVMe* SSD • One (1) onboard 7-pin NVMe* LED support cable connector – cable installed together with onboard SlimSAS* cables to backplane • One (1) onboard PCIe* NVMe* M.2 SSD connector. Supports 42 mm, 80 mm, or 110 mm SSD • Embedded support for Intel® Volume Management Device (Intel® VMD) 2.0 for NVMe* • Support for Intel® Virtual RAID on CPU (Intel® VROC) for NVMe*. Intel® VROC for NVMe* upgrade key option required. **SATA Support – Up to 14 SATA 6 GB/s drives** • Three (3) onboard quad port SFF-8643 Mini-SAS HD cable connectors. Each connector supports backplane connectivity for 4 SATA devices • Two (2) onboard single port 7-pin cable connectors • Embedded support for Intel® Virtual RAID on CPU (Intel® VROC) for SATA. Supported RAID Levels: 0, 1, 5, 10
Video Support	• Embedded 2D video controller • One (1) VGA DB-15 cable connector (Back panel I/O) • One (1) VGA 14-pin onboard cable header (Front Panel VGA support) • 128 MB of DDR4 video memory • Up to 1920 x 1200 resolution
USB Support	• Two (2) external USB 3.0 connectors (Back panel I/O) • One (1) USB 3.0 internal onboard Type-A connector • One (1) onboard 20-pin cable connector for optional front panel 2x USB 3.0 ports
Serial Ports	• One (1) DB-9 Serial COM1 port cable connector (Back panel I/O) • One (1) onboard DH-10 Serial COM2 port header for optional front or rear serial port support. The port follows DTK pinout specifications.

Fan Support	• Six (6) 4-pin system fan connectors
	• Managed fan speed control
	  ○ Enabled (Default) with Intel® server systems
	  ○ Disabled (Default) for system using Non-Intel chassis. Can be configured using embedded server management features of the BMC. See board TPS for more information.

Server Management	• Integrated Baseboard Management Controller (BMC) • Dedicated RJ45 1 GbE remote management port (Back panel I/O) • Onboard Light Guided Diagnostics • Integrated BMC Web Console for Intel® server systems • Intelligent Platform Management Interface (IPMI) 2.0 compliant • Support for Intel® Data Center Manager (DCM) • Support for Intel® Server Debug and Provisioning Tool (Intel® SDP Tool) • Redfish*-compliant Customizable BMC management support for server systems using non-Intel server chassis (See board TPS for more information) • Sensor monitoring • Fan speed control

Feature	Details

Security	• Intel® Software Guard Extensions (Intel® SGX)
	• Intel® CBnT – Converged Intel® Boot Guard and Intel® Trusted Execution Technology (Intel® TXT)
	• Intel® Total Memory Encryption (Intel® TME)
	• Trusted platform module (TPM 2.0) support
	  ○ Accessory option: Standard – iPC **JNPTPM** (Not supported in China)
	  ○ Accessory option: China Compatible – iPC **JNPTPMCH**

Onboard Jumper Blocks and Buttons	• System Buzzer Configuration Jumper • Serial Port Configuration Jumpers • Intel® ME Recovery Jumper • Clear CMOS Button • System Reset Button • Power Button
Environment Limits	• Operating Temp: 10–35 °C (50–95 °F) • Non-Operating Temp: -40–70 °C (-40–158 °F) • Non-Operating Humidity: 90%, non-condensing at 35 °C

1.5 Intel® Server System M20NTP1UR Overview

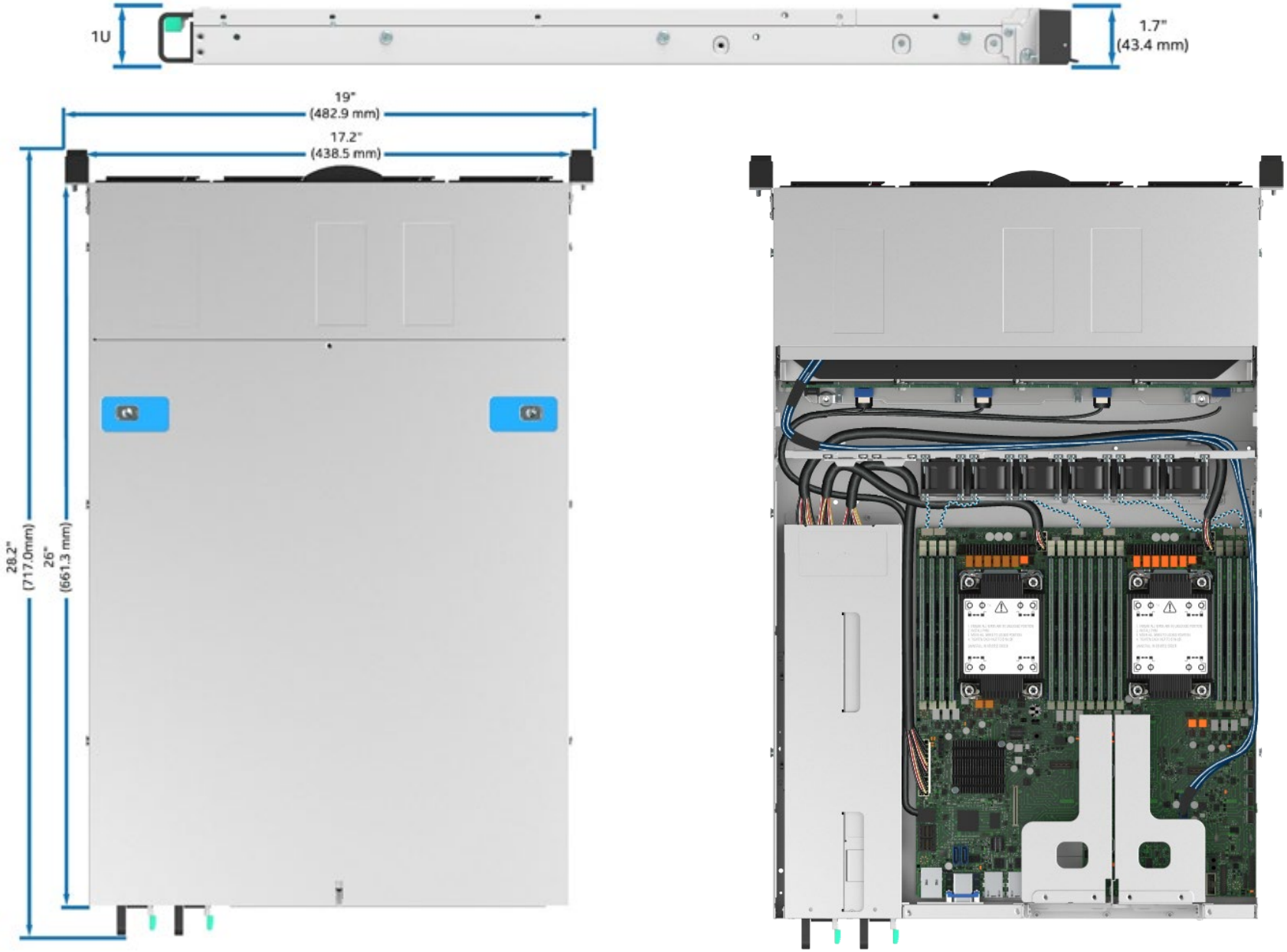


Figure 4. Intel® Server System M20NTP1UR Dimensions and Internal View

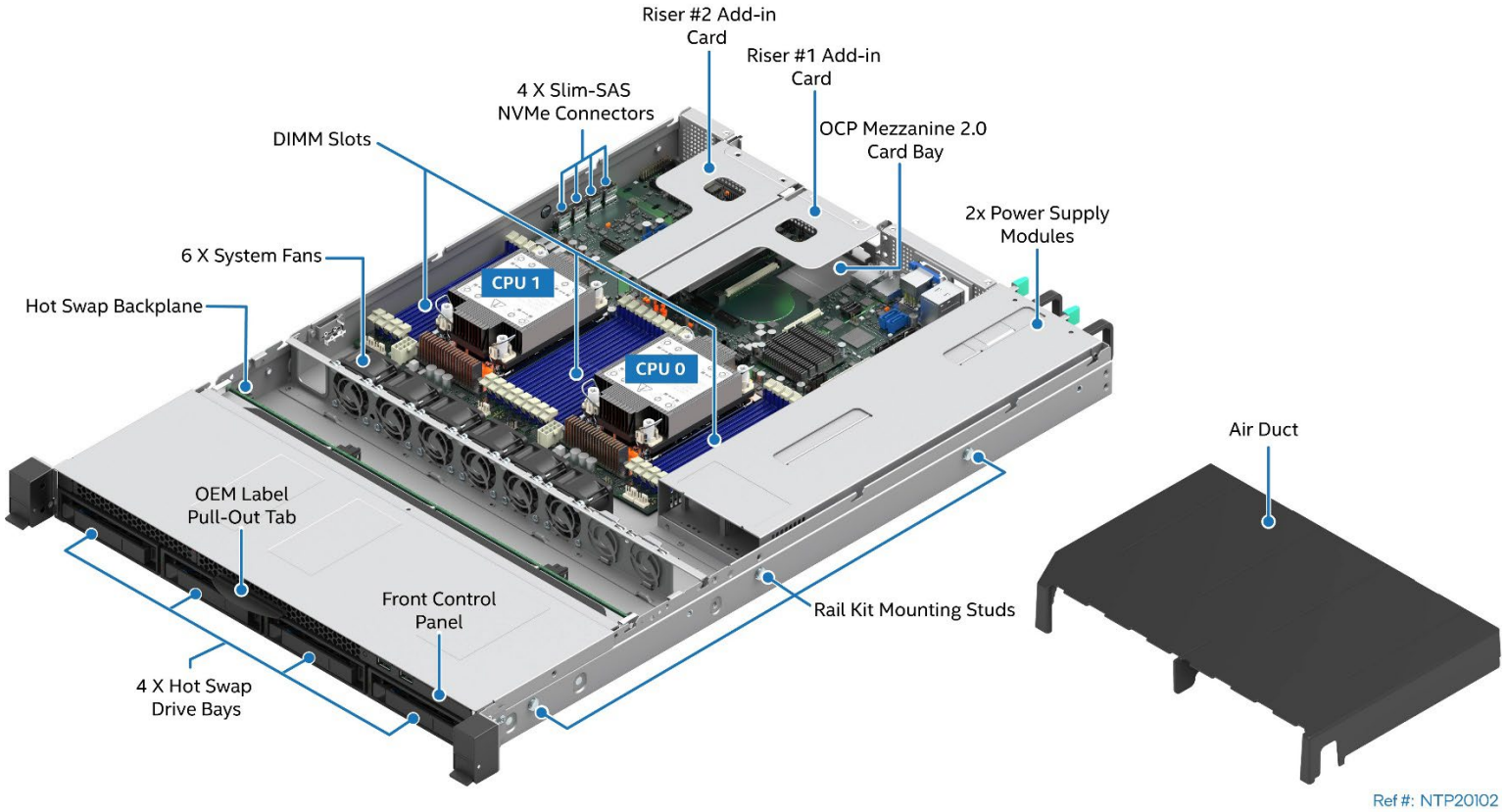


Figure 5. Intel® Server System M20NTP1UR General Features

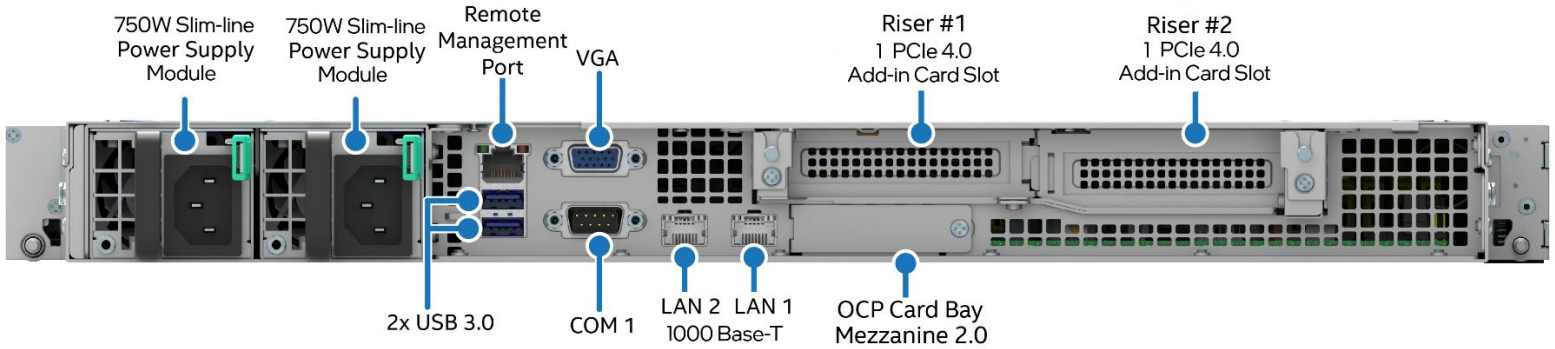


Figure 6. Intel® Server System M20NTP1UR Back Panel Features

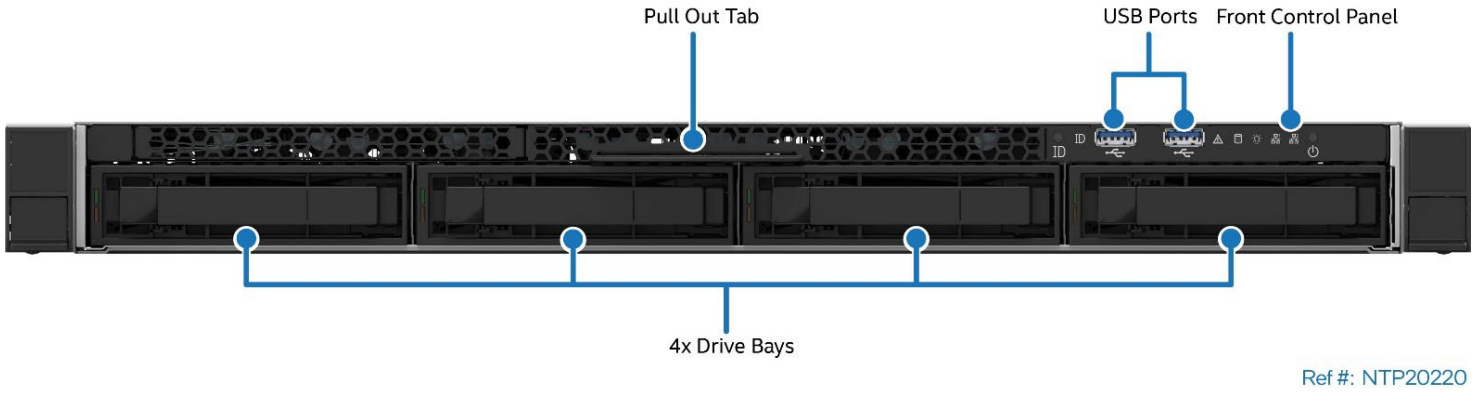


Figure 7. Intel® Server System M20NTP1UR Front Panel Features

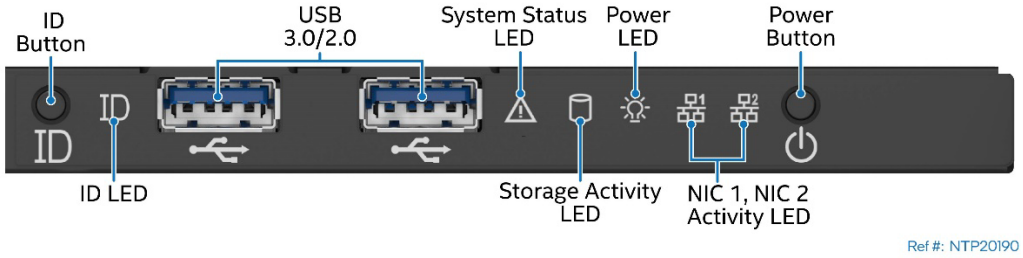


Figure 8. Intel® Server System M20NTP1UR Control Panel Features

Figure 9. Intel® Server System M20NTP1UR with Optional Front Bezel

Table 7. Intel® Server System M20NTP1UR Features

Feature	Details
Chassis form factor	1U Rack Mount
Chassis Dimensions	26” x 17.2” x 1.7” (661.3 mm x 438.5 mm x 43.4 mm)
Server Board	Intel® Server Board M20NTP2SB
Available Integration levels	• L6 – Additional components required for basic operation: Processor(s), Memory, Storage

Processor Support	• Dual Socket-P4 LGA4189
	• 3rd Gen Intel® Xeon® Scalable processor family:
	  ○ Intel® Xeon® Scalable Gold 5300 series processor
	  ○ Intel® Xeon® Scalable Silver 4300 series processor
	Note: 3rd Gen Intel® Xeon® Scalable processor SKUs ending in (H), (L), (U), or (Q) are not supported.
	• Intel® UPI links: up to three at 11.2 GT/s (Gold 5300 series) or up to two at 10.4 GT/s (Silver 4300 series)
	Note: Previous generation Intel® Xeon® processors are not supported.

Supported Processor Thermal Design Power (TDP)	• Maximum 185 W

PCH Chipset	• Intel® C621A Platform Controller Hub (PCH) chipset
	• Embedded features supported on this server system:
	  ○ SATA support
	  ○ USB support
	  ○ PCIe* support

Server Management Processor	• ASpeed* AST2500 Advanced PCIe* Graphics and Remote Management Processor
	• Embedded features supported on this server system:
	  ○ Baseboard Management Controller (BMC)
	  ○ 2D Video Graphics Adapter

Memory Support	• 16 memory slots
	  ○ 8 memory slots per processor (2 CPUs)
	  ○ Eight memory channels per processor
	  ○ One slot per memory channel
	• Registered DDR4 (RDIMM), Load Reduced DDR4 (LRDIMM)
	  ○ All DDR4 DIMMs must support ECC
	  ○ 2933 MT/s – Intel® Xeon® Scalable Gold 5300 series processors
	  ○ 2666 MT/s – Intel® Xeon® Scalable Silver 4300 series processors
	  ○ Memory voltage = 1.2 V

Network Connectivity	• Onboard Intel® Ethernet Controller I210-AT ○ Two (2) RJ45 1000 Base-T ports (Back panel I/O) • One (1) X16 PCIe* OCP* Mezzanine 2.0 add-in card slot

Feature	Details
PCIe* Add-in Card Support	• Two (2) PCIe* 4.0 Riser Cards supporting 2 total low profile PCIe* add-in slots ○ One (1) X16 PCIe* 4.0 add-in card slot per riser card

Storage Options	**Front Drive Bay**
	• Four (4) hot-swap capable drive bays
	  ○ 3.5" HDD – SAS/SATA
	  ○ 2.5" SSD – SAS/SATA and NVMe*
	Front Drive Bay Connectivity options
	NVMe* Support:
	• Four (4) onboard SFF-8654 SlimSAS* cable connectors. Each connector supports backplane connectivity for one PCIe* NVMe* SSD
	• One (1) onboard 7-pin NVMe* LED support cable connector – cable installed together with onboard SlimSAS* cables to backplane
	• Intel® Volume Management Device (Intel® VMD) 2.0 for NVMe*
	• Intel® Virtual RAID on CPU (Intel® VROC for NVMe*) with installation of VROC for NVMe* upgrade Key.
	SATA Support:
	• Three (3) onboard quad port SFF-8643 Mini-SAS HD cable connectors. Each connector supports backplane connectivity for 4 SATA devices – only one connector used in 1U system
	• Intel® Virtual RAID on CPU (Intel® VROC for SATA) – RAID 0, 1, 5, and 10
	M.2 SSD
	• Support for one (1) NVMe* M.2 SSD
	• Supported M.2 SSD form factors: 2242 (42 mm), 2280 (80 mm), and 22110 (110 mm)
	USB 3.0
	• Support for one (1) internal mounted USB 3.0 device via onboard Type A USB connector

Video Support	• One (1) VGA DB-15 cable connector (Back panel I/O) • Embedded 2D video controller • 128 MB of DDR4 video memory • Up to 1920 x 1200 resolution
USB	• Two (2) external USB 3.0 connectors (Back panel I/O) • Two (2) external USB 3.0 connectors (Front panel I/O) • One (1) USB 3.0 internal onboard Type-A connector
Serial Ports	• One (1) DB-9 COM1 port cable connector (Back panel I/O) • One (1) internal DH-10 COM2 port header for optional front or rear serial port support. The port follows DTK pinout specifications. (optional COM2 cable kit not available from Intel)
Fan Support	• Six (6) system fans with fan redundancy • Fan speed control is managed by embedded BMC server management

Power Supply	• Support for up to Two (2) Slim-line Power Supplies
	• Available options:
	  ○ 750 W (80 Plus Platinum power efficiency)
	• Supported operating modes:
	  ○ Single Power Supply (1 + 0) – No Redundancy
	  ○ Dual Power Supplies (1 + 1) – Redundant Power – Hot swap support – Supported when system power draw is less than 750 W
	  ○ Dual Power Supplies (2 + 0) – Combined Power (No power redundancy) – Enabled when system power draw is greater than 750 W

Feature	Details
Server Management	• Integrated Baseboard Management Controller (Integrated BMC) • Dedicated RJ45 1 GbE remote management port (Back panel I/O) • CPU, Memory, and system thermal monitoring • CPU, Memory, Chipset, and Power supply voltage monitoring • Fan speed control • Onboard Light Guided Diagnostics • Integrated BMC Web Console for Intel® server systems • Intelligent Platform Management Interface (IPMI) 2.0 compliant • Support for Intel® Data Center Manager (DCM) • Support for Intel® Server Debug and Provisioning Tool (Intel® SDP Tool) • Redfish*-compliant

Security	• Intel® Software Guard Extensions (Intel® SGX)
	• Intel® CBnT – Converged Intel® Boot Guard and Intel® Trusted Execution Technology (Intel® TXT)
	• Intel® Total Memory Encryption (Intel® TME)
	• Trusted platform module (TPM 2.0) support
	  ○ Accessory option: Standard – iPC **JNPTPM** (Not supported in China)
	  ○ Accessory option: China compatible – iPC **JNPTPMCH**
	Note: Available TPM Accessory options are not supported by Microsoft* Windows Server 2022

Onboard Jumper Blocks and Buttons	• System Buzzer Configuration Jumper • Serial Port Configuration Jumpers • Intel® ME Recovery Jumper • Clear CMOS Button • System Reset Button • Power Button

Rack Mount Kit Accessory Option (Sold Separately)	• iPC – **AXXFULLEXTRAILK**
	  ○ Full extension rails
	  ○ Tool-less installation
	  ○ 33 Kgs (72.2 lbs) max supported weight

Environment Limits	• Operating Temp: 10 °C – 35 °C (50 °F – 95 °F) • Non-Operating Temp: -40 °C – 70 °C (-40 °F – 158 °F)

1.6 Intel® Server System M20NTP2UR Overview

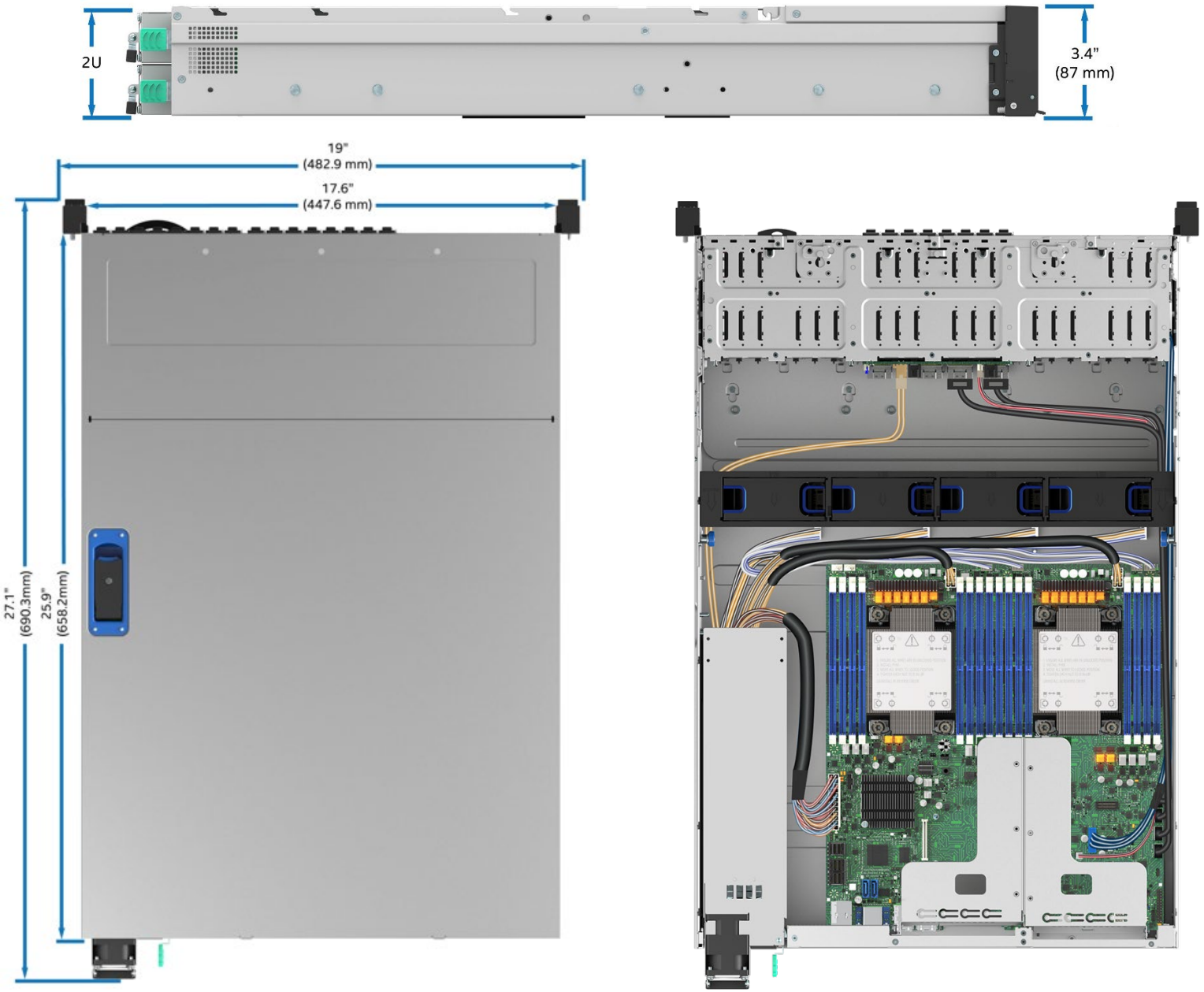


Figure 10. Intel® Server System M20NTP2UR Dimensions and Internal View

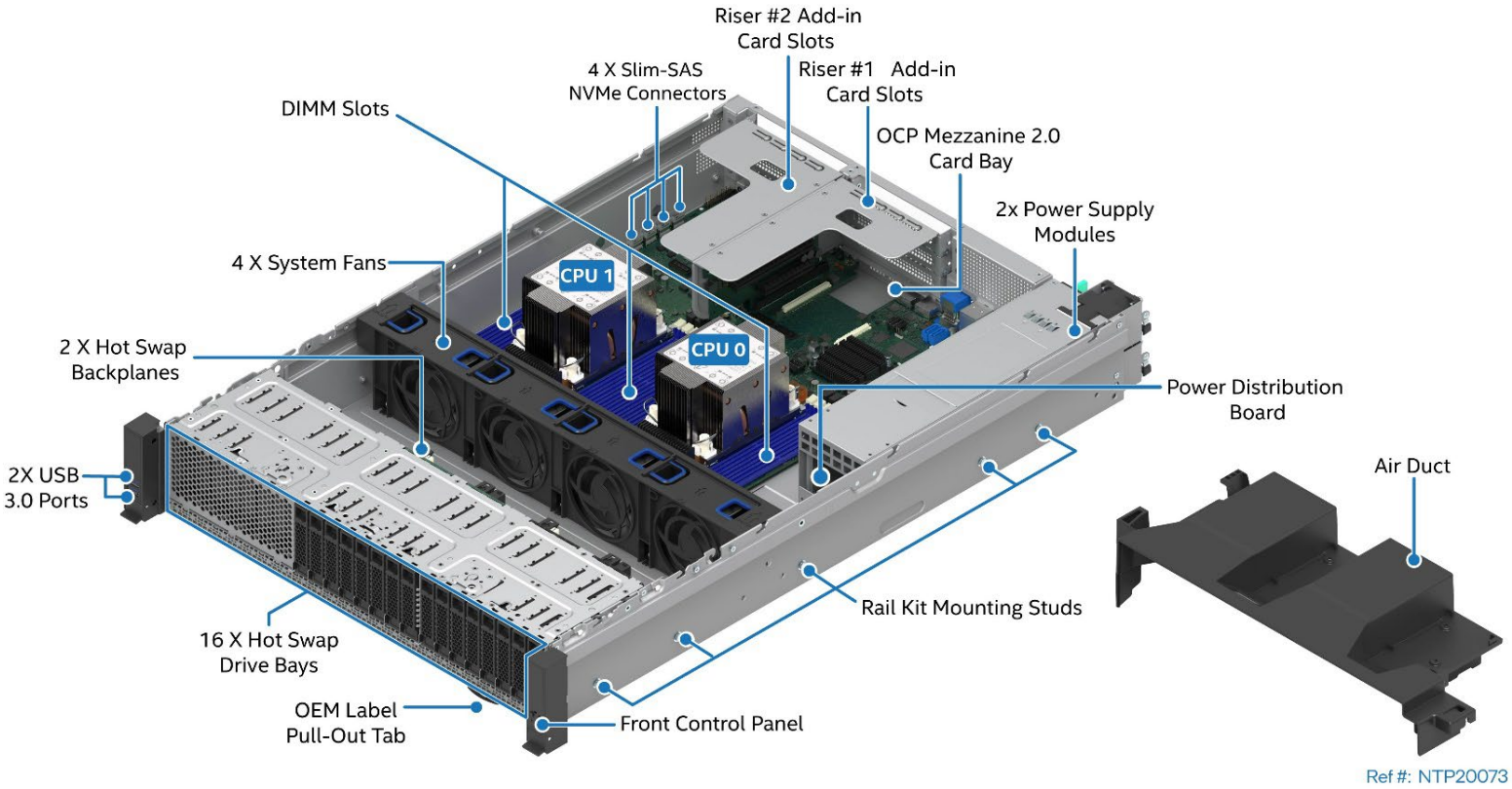


Figure 11. Intel® Server System M20NTP2UR Features

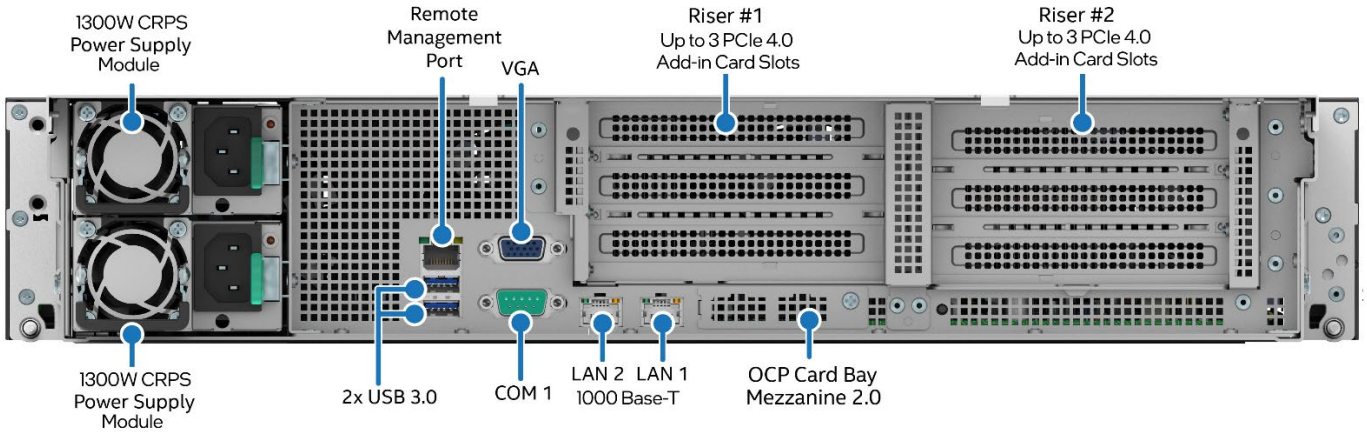


Figure 12. Intel® Server System M20NTP2UR Back Panel Features

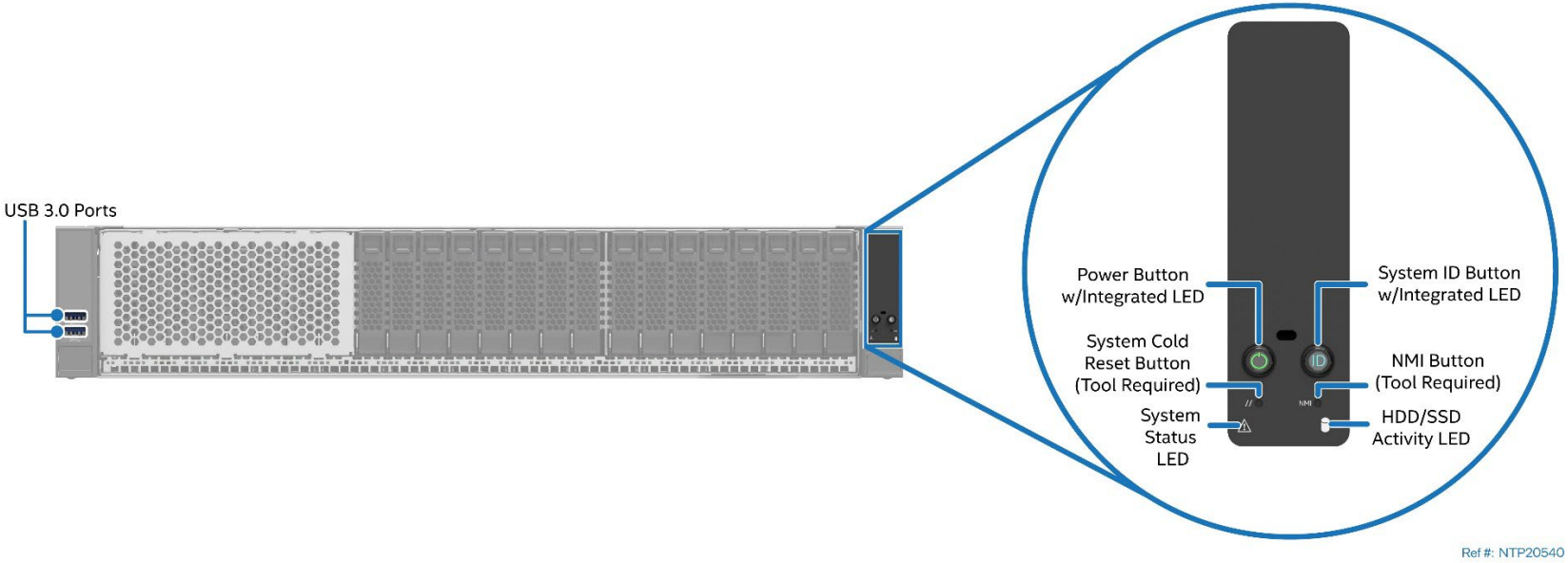


Figure 13. Intel® Server System M20NTP2UR Front I/O and Control Panel Features

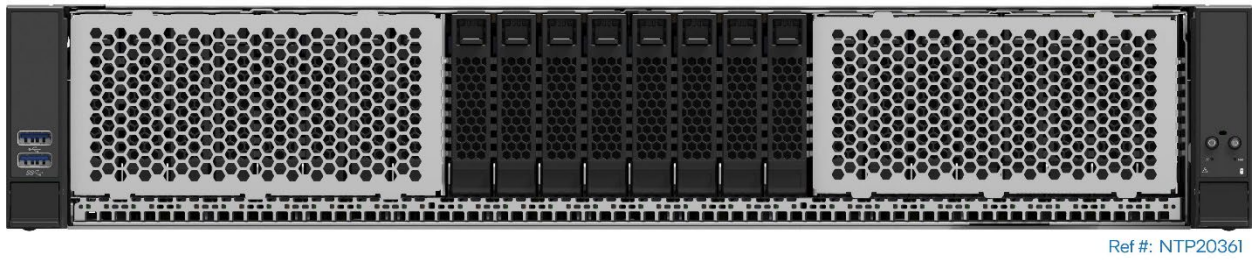


Figure 14. Intel® Server System M20NTP2UR 8-Drive Configuration (Default)

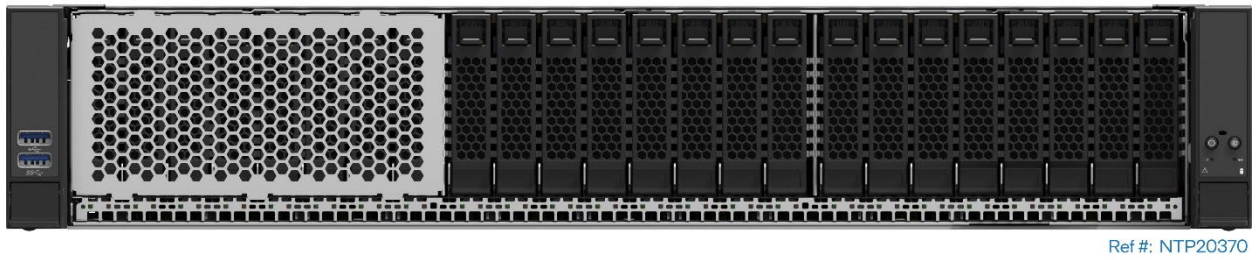


Figure 15. Intel® Server System M20NTP2UR 16-Drive Configuration (with Accessory Kit Options)

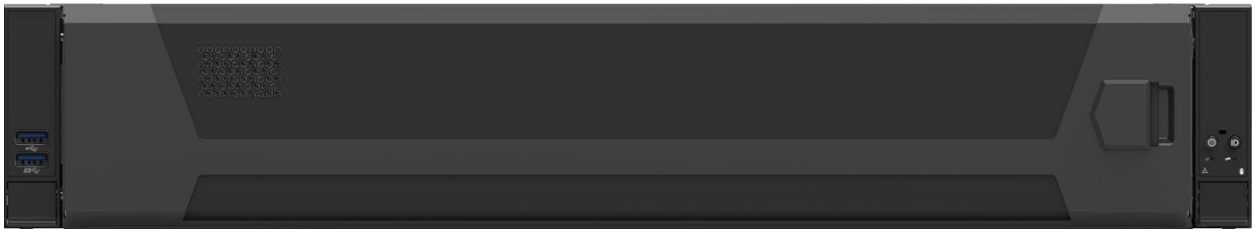


Figure 16. Intel® Server System M20NTP2UR with Optional Front Bezel

Table 8. Intel® Server System M20NTP2UR Features

Feature	Details
Chassis Form Factor	2U Rack Mount
Chassis Dimensions	26” x 17.2” x 3.4” (661.3 mm x 438.5 mm x 87 mm)
Server Board	Intel® Server Board M20NTP2SB
Available Integration Levels	• L6 – Additional components required for basic operation: Processor(s), Memory, Storage • L9 – Fully Integrated (No OS) – Orderable via Intel online Configure-to-Order (CTO) tool only

Processor Support	• Dual Socket-P4 LGA4189
	• 3rd Gen Intel® Xeon® Scalable processor family:
	  ○ Intel® Xeon® Scalable Gold 5300 series processor
	  ○ Intel® Xeon® Scalable Silver 4300 series processor
	Note: 3rd Gen Intel® Xeon® Scalable processor SKUs ending in (H), (L), (U), or (Q) are not supported.
	• Intel® UPI links: up to three at 11.2 GT/s (Gold 5300 series) or up to two at 10.4 GT/s (Silver 4300 series)
	Note: Previous generation Intel® Xeon® processors are not supported.

Supported Processor Thermal Design Power (TDP)	• Maximum 185 W

PCH Chipset	• Intel® C621A Platform Controller Hub (PCH) chipset
	• Embedded features supported on this server system:
	  ○ SATA support
	  ○ USB support
	  ○ PCIe* support

Server Management Processor	• ASpeed* AST2500 Advanced PCIe* Graphics and Remote Management Processor
	• Embedded features supported on this server system:
	  ○ Baseboard Management Controller (BMC)
	  ○ 2D Video Graphics Adapter

Feature	Details

Memory Support	• 16 memory slots
	  ○ 8 memory slots per processor (2 CPUs)
	  ○ Eight memory channels per processor
	  ○ One slot per memory channel
	• Registered DDR4 (RDIMM), Load Reduced DDR4 (LRDIMM)
	  ○ All DDR4 DIMMs must support ECC
	  ○ 2933 MT/s – Intel® Xeon® Scalable Gold 5300 series processors
	  ○ 2666 MT/s – Intel® Xeon® Scalable Silver 4300 series processors
	  ○ Memory voltage = 1.2 V

Network Connectivity	• Onboard Intel® Ethernet Controller I210-AT ○ Two (2) RJ45 1000 Base-T ports (Back panel I/O) • One (1) X16 PCIe* OCP* Mezzanine 2.0 add-in card slot

PCIe* Add-in Card Support	• Two (2) PCIe* 4.0 Riser Cards supporting six total PCIe* add-in slots
	  ○ One (1) X16 PCIe* 4.0 add-in card slot per riser card
	  ○ Two (2) X8 PCIe* 4.0 add-in card slot per riser card

Storage Options	**Front Drive Bay**
	• Eight (8) hot-swap capable drive bays. Upgradable to sixteen (16) drive bays with installation of optional accessory kits.
	  ○ 2.5” solid-state drives (SSD)
	  ○ SAS/SATA and NVMe* support
	Note: Maximum number of NVMe* SSDs supported is eight, configured to 1st backplane only
	Front Drive Bay Connectivity options
	NVMe* Support:
	• Four (4) onboard SFF-8654 SlimSAS* cable connectors. Each connector supports backplane connectivity for one PCIe* NVMe* SSD
	• One (1) onboard 7-pin NVMe* LED support cable connector – cable installed together with onboard SlimSAS* cables to backplane
	• Intel® Volume Management Device (Intel® VMD) 2.0 for NVMe*
	• Intel® Virtual RAID on CPU 7.5 – Intel® VROC for NVMe* with installation of optional Intel® VROC for NVMe* upgrade Key.
	• Intel® RAID tri-mode (SAS/SATA/NVMe*) accessory add-in card options
	SAS/SATA Support:
	• Three (3) onboard quad port SFF-8643 Mini-SAS HD cable connectors. Each connector supports backplane connectivity for 4 SATA drives
	• Intel® Virtual RAID on CPU 7.5 – Intel® VROC for SATA (RAID 0, 1, 5, 10)
	• Intel® RAID tri-mode (SAS/SATA/NVMe*) accessory add-in card options
	M.2 SSD
	• Support for one (1) NVMe* M.2 SSD
	• Supported M.2 SSD form factors: 2242 (42 mm), 2280 (80 mm), and 22110 (110 mm)
	USB 3.0
	• Support for one (1) internal mounted USB 3.0 device via onboard Type A USB connector

Feature	Details
Video Support	• One (1) VGA DB-15 cable connector (Back panel I/O) • Embedded 2D video controller • 128 MB of DDR4 video memory • Up to 1920 x 1200 resolution
USB	• Two (2) external USB 3.0 ports – Back panel I/O • Two (2) external USB ports: (1 x USB 3.0 + 1 x USB 2.0) – Front panel I/O • One (1) USB 3.0 internal onboard Type-A connector
Serial Ports	• One (1) DB-9 COM1 port cable connector (Back panel I/O) • One (1) internal DH-10 COM2 port header for optional front or rear serial port support. The port follows DTK pinout specifications. (Optional COM2 cable kit not available from Intel)
Fan Support	• Four (4) system fans with fan redundancy • Fan speed control is managed by embedded BMC server management

Power Supply	• Support for up to Two (2) CRPS Power Supplies
	• Available options:
	  ○ 1300 W (80 Plus Platinum power efficiency)
	• Supported operating modes:
	  ○ Single Power Supply (1 + 0) – No Redundancy
	  ○ Dual Power Supplies (1 + 1) – Redundant Power – Hot swap support – Supported when system power draw is less than 1300 W
	  ○ Dual Power Supplies (2 + 0) – Combined Power (No power redundancy) – Enabled when system power draw is greater than 1300 W

Server Management	• Integrated Baseboard Management Controller (BMC) • Dedicated RJ45 1 GbE remote management port (Back panel I/O) • CPU, Memory, and system thermal monitoring • CPU, Memory, Chipset, and Power supply voltage monitoring • Fan speed control • Onboard Light Guided Diagnostics • Integrated BMC Web Console for Intel® server systems • Intelligent Platform Management Interface (IPMI) 2.0 compliant • Support for Intel® Data Center Manager (DCM) • Support for Intel® Server Debug and Provisioning Tool (Intel® SDP Tool) • Redfish*-compliant

Security	• Intel® Software Guard Extensions (Intel® SGX)
	• Intel® CBnT – Converged Intel® Boot Guard and Intel® Trusted Execution Technology (Intel® TXT)
	• Intel® Total Memory Encryption (Intel® TME)
	• Trusted platform module (TPM 2.0) Support
	  ○ Accessory option: Standard – iPC **JNPTPM** (Not supported in China)
	  ○ Accessory option: China compatible – iPC **JNPTPMCH**
	Note: Available TPM Accessories are not supported by Microsoft* Windows Server 2022

Feature	Details
Onboard Jumper Blocks and Buttons	• System Buzzer Configuration Jumper • Serial Port Configuration Jumpers • Intel® ME Recovery Jumper • Clear CMOS Button • System Reset Button • Power Button

Rack Mount Kit Accessory Option (Sold Separately)	• iPC – **AXXFULLEXTRAILK**
	  ○ Full extension rails
	  ○ Tool-less installation
	  ○ 33 Kgs (72.2 lbs) max supported weight

Environment Limits	• Operating Temp: 10 °C – 35 °C (50 °F – 95 °F) • Non-Operating Temp: -40 °C – 70 °C (-40 °F – 158 °F)

1.6.1 Accessory Kits for 16 Front Drive Bay Expansion

The Intel® Server System M20NTP2UR208 can be upgraded to support an additional 8 drives within the front drive bay. To perform the upgrade, the following Intel accessory kits must be ordered separately and integrated into the base system.

- (1) 8x2.5" Drive Hot-Swap Backplane Kit – iPC **AXXHSBP2208**
- (1) 2.5" Drive Carrier Sled Kit – iPC **CYP25HSCARRIER**
- Appropriate SAS/SATA and/or NVMe* cable kits (See Table 9)

Table 9. Cable Kits for 16 Drive 2U Intel® Server System M20NTP2UR208 Upgrade

Storage Interface Type	Storage Interface Source	Cable Routing	Intel Cable Kit (iPC)	Kit Type	Notes
SATA	Server Board	Server Board to 2nd Backplane	**CYPCBLHDHDXXX1**	Spare/Accessory	
SAS / SAS RAID	PCIe* SAS RAID Add-in Card	Riser 1 to 2nd Backplane	**CYPCBLHDHDXXX1**	Spare/Accessory	
SAS / SAS RAID	PCIe* SAS RAID Add-in Card	Riser 2 to 2nd Backplane	**CYPCBLHDHDXXX1**	Spare/Accessory	
NVMe*	Server Board	Server Board to 2nd Backplane	N/A		**Configuration Not Supported**
NVMe*	PCIe* Tri-Mode RAID Add-in Card	Riser 1 to 2nd Backplane	N/A		**Configuration Not Supported**
NVMe*	PCIe* Tri-Mode RAID Add-in Card	Riser 2 to 2nd Backplane	N/A		**Configuration Not Supported**

See Chapter 3 for additional Intel accessory kit information.

Refererence the *Intel® Server System M20NTP2UR System Integration and Service Guide* for complete installation instructions.

1.7 Additional Information and Software

For additional information about this family of products or any of their supported accessories, refer to the following resources available at http://www.intel.com/support and https://www.intel.com/content/www/us/en/documentation-resources/developer.html.

Table 10. Product Family Reference Collaterals

Topic	Document Title or Support Collateral	Document Classification
Server board-level architectural and features overview	*Intel® Server Board M20NTP Technical Product Specification*	Public
System-level architectural and features overview	*Intel® Server System M20NTP1UR Technical Product Specification*	Public
	Intel® Server System M20NTP2UR Technical Product Specification	Public
System integration and service instructions	*Intel® Server System M20NTP2UR System Integration and Service Guide*	Public
	Intel® Server System M20NTP1UR System Integration and Service Guide	Public
Available product family options, spares, accessories.	*Intel® Server M20NTP Family Configuration Guide*	Public
Tested Hardware and OS List (THOL)	*Intel® Server Configurator Tool* https://serverconfigurator.intel.com	Public
Integrated BMC Web Console	*Intel® Integrated Baseboard Management Controller Web Console (Integrated BMC Web Console) User Guide*	Public
Base specifications for the IPMI architecture and interfaces	*Intelligent Platform Management Interface Specification Second Generation v2.0*	Intel Confidential
Specifications for the PCIe* 3.0 architecture and interfaces	*PCIe* Base Specification, Revision 3.0* http://www.pcisig.com/specifications	Public
Specifications for the PCIe* 4.0 architecture and interfaces	*PCIe* Base Specification, Revision 4.0* http://www.pcisig.com/specifications	Public
Specification for OCP*	*Open Compute Project* (OCP*) Specification*	Intel Confidential
TPM for PC Client specifications	*TPM PC Client Specifications, Revision 2.0*	Intel Confidential
Functional specifications of 3rd Gen Intel® Xeon® Scalable processor family	*3rd Generation Intel® Xeon® Scalable Processors, Codename Ice Lake-SP External Design Specification (EDS):* Document IDs: 574451, 574942, 575291.	Intel Confidential
Processor thermal design specifications and recommendations	*3rd Generation Intel® Xeon® Scalable Processor, Codename Ice Lake-SP and Cooper Lake-SP - Thermal and Mechanical Specifications and Design Guide (TMSDG)*: Document ID 574080	Intel Confidential
Intel® Virtual RAID on CPU (Intel® VROC)	*Intel® Virtual RAID on CPU (VROC) Technical Product Specification (TPS)*	Intel Confidential
	Intel® Virtual RAID on CPU (VROC) User Guide	Public
BIOS and BMC Security Best Practices	*Intel® Server Systems Baseboard Management Controller (BMC) and BIOS Security Best Practices White Paper* https://www.intel.com/content/www/us/en/support/articles/000055785/server-products.html	Public
Managing an Intel Server Overview	*Managing an Intel Server System 2020* https://www.intel.com/content/www/us/en/support/articles/000057741/server-products.html	Public
Latest system software updates: BIOS and Firmware	*Intel® Server Update Package (SUP) for Intel® Server M20NTP Family*	Public
	Intel® Server Firmware Update Utility (SYSFWUPDT) - Various operating system support	

Topic	Document Title or Support Collateral	Document Classification
	Intel® Server Firmware Update Utility User Guide	
To obtain full system information	*Intel® Server Information Retrieval Utility*	Public
	Intel® Server Information Retrieval Utility User Guide	
To configure, save, and restore various system options	*Intel® Server Configuration Utility – Various operating system support*	Public
	Intel® Server Configuration Utility User Guide	
Product Warranty Information	*Warranty Terms and Conditions* https://www.intel.com/content/www/us/en/support/services/000005886.html	Public
Intel® Data Center Manager (Intel® DCM) information	*Intel® Data Center Manager (Intel® DCM) Product Brief* https://software.intel.com/content/www/us/en/develop/download/dcm-product-brief.html	Public
	Intel® Data Center Manager (Intel® DCM) Console User Guide https://software.intel.com/content/www/us/en/develop/download/dcm-user-guide.html	Public

2. Server Board and Systems

2.1 Intel® Server Board M20NTP2SB Options

The Intel® Server Board M20NTP2SB is offered as a board only option that allows system developers to integrate an Intel developed server board and other compatible Intel developed accessories (see Chapter 3) into a custom or 3rd party developed server chassis.

Table 11. Intel® Server Board M20NTP2SB Product Information

<table>
<tr><th>Product Image</th><th>Details</th><th>Description</th></tr>
<tr>
<td> </td>
<td>
Intel® Server Board M20NTP2SB, 5 pack
<table>
<tr><td>iPC</td><td>M20NTP2SB</td></tr>
<tr><td>MM#</td><td>99AL7K</td></tr>
<tr><td>UPC</td><td>00735858502399</td></tr>
<tr><td>EAN</td><td>5032037237253</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
<tr><td>Product type</td><td>Multi-pack, Server board only
Building block / Spare FRU</td></tr>
<tr><td>Packaged gross wt.</td><td>#.# kg (#.# lb)</td></tr>
<tr><td>Un-packaged net wt.</td><td>#.# kg (#.# lb) per server board</td></tr>
</table>
</td>
<td>
Key Server Board Features:

Two (2) CPU Sockets – P4 LGA4189
16 Memory Slots – DDR4
Intel® C621A chipset
Intel® Ethernet Controller I210-AT supporting Two (2) RJ45 1000 Base-T ports
Support for One (1) onboard OCP* Mezzanine 2.0 add-in card
Two (2) X32 PCIe* 4.0 riser card slots
Four (4) PCIe* SFF-8654 SlimSAS* cable connectors for NVMe* support
One (1) onboard PCIe* NVMe* M.2 SSD interface connector
Fourteen (14) – SATA 6 Gbps ports
ASpeed* AST2500 Baseboard Management Controller (BMC)
Six (6) managed system fan connectors

See Table 6 for the complete feature set.

Contents: 5 Individually boxed server boards. Each server board box includes:

(1) Server Board, (2) Processor socket covers, (2) CPU Carrier Clips, (1) I/O Shield, (1) M.2 SSD retention clip, (4) Mounting Screws for OCP* Add-in option (1) Attention Document

Note: All necessary mounting hardware, cabling, and shielding ship with the chassis and optional accessory kits.
</td>
</tr>
</table>

Optional Intel accessories supported by the server board include:

- Intel Riser Card options
- Processor Heat Sink options
- Intel® Virtual RAID on CPU (Intel® VROC for NVMe*) activation key
- Trusted platform modules (TPM)
- Intel NVMe* Cable Kits **NTPCBLSL104K** and **NTPCBLSL204K** for use with onboard NVMe* SlimSAS* cable connectors

See Chapter 3 for all available accessory options.

2.2 Intel® Server Systems M20NTP1UR and M20NTP2UR Options

The Intel® Server M20NTP Family includes two base server system options. Out of the box, these systems are not functional without integrating additional components that are purchased separately from the server. At a minimum, making each system power-on ready and installable within a 4-post rack or cabinet, will require separate purchase and integration of the following:

- Rack Mount Kit
- AC Power Cord
- Processor(s)
- Memory

Optional Intel accessories that can be added to enhance the base feature set include:

- Second power supply module to add power redundancy
- Storage Devices
- Intel® RAID support – PCIe* add-in card and appropriate data cable(s)
- Intel® Ethernet Network Adapter for OCP* module

For additional options and accessories, see Chapter 3.

The product tables found in this section are each divided into sections, each providing useful information as outlined below:

- **Product Image.**
- **Order Information** – Product identifiers used to order the product.
- **Product Information** – Type of product, product weights, product dimensions.
- **Included** – Components included with the product (product BOM).
- **Addition Required Hardware** – Required hardware (sold separately) to be integrated into the base system to achieve basic functionality.
- **Elective Configuration Options** – Elective configuration options and accessories that can be installed to enhance the basic feature set of the server board/chassis. Elective configuration options and accessories are sold separately.

Note: Components listed within the “Included” section may have additional product identification numbers listed beside them. Items identified with an iPC (Intel Product Code) are orderable options, accessories, or spare Field Replaceable Units (FRUs). For order information for these components, see Chapter 3. Items identified with an iPN (Intel Part Number) are not orderable and are provided for reference purposes only.

Table 12. Intel® Server System M20NTP1UR304 Product Information

Intel® Server System M20NTP1UR304
1U Intel® Server Chassis, Intel® Server Board M20NTP2SB, Air cooled, 2 x PCIe* 4.0 Riser Cards, four 3.5” HDDs or 2.5” SSD Hot-swap drive bays, OCP* Mezzanine 2.0 card bay

Order Information

iPC	**M20NTP1UR304**
MM#	99AL6R
UPC	735858510387
EAN	5032037244169
MOQ	1

Product Information

Product type	L6 Integrated System
Chassis form factor	1U rack mount
Packaged gross wt.	##.# kgs. (##.# lbs)
Un-boxed system wt.	##.# kgs. (##.# lbs)
Chassis dimensions	661.3 x 438.5 x 43.4 mm (L x W x H)
Box dimensions	993 x 591 x 258 mm (L x W x H)

Included

Note: Some items maybe integrated within the chassis.

(1) – 1U Chassis
(1) – Intel® Server Board M20NTP2SB – iPC **M20NTP2SB**
(1) – 750W Power supply – iPC **AXXBFP750SLPS**
(1) – Power distribution board
(1) – PCIe* riser card (Riser Slot 1) – iPC **M20NTP1URISER1**
(1) – PCIe* riser card (Riser Slot 2) – iPC **M20NTP1URISER2**
(6) – System fans – iPC **MYP1UFAN**
(1) – Air duct
(4) – 3.5” Drive carrier assemblies: Drive Tray + Drive Blank – iPC **FXX35HSCAR3**
(1) – 4x3.5” drive SATA/SAS/NVMe* backplane – iPC **AXXHSBP1304**
(1) – Multi-port MiniSAS HD to 7-pin (x4 leads) SATA cable
(1) – 570 mm I^2C backplane communication cable
(1) – Front USB cable
(1) – Front control panel cable
(2) – Processor socket covers
(2) – 1U processor heat sinks – iPC **CYP1UHSSTD**
(2) – Processor carrier clips – iPC **ICXPHMMOQ2**
(14) – Memory slot DIMM blanks - iPC **TNPDMMBLNK**
(1) – M.2 SSD retention clip
(4) – Mounting screws for OCP* add-in option
(1) – Attention document

Additional Required Hardware (sold separately)

- Chassis rail kit for 4-post rack or server cabinet – iPC **AXXFULLEXTRAILK**
- AC power cable
- 3rd Gen Intel Xeon Scalable Processor(s) (See Table 1)
- DDR4 DIMMs (See Section 1.3)

Elective Configuration Options (sold separately)

- 750W Power Supply Accessory kit + AC power cable
- Up to four 3.5” HDD (SAS/SATA) or 2.5” SSD (NVMe*/SAS/SATA
- Cables for NVMe* support (Server board to Backplane)
- Intel® VROC for NVMe* upgrade key
- Intel® SAS / SAS RAID add-in card option
- Cables for SAS support (RAID Card to Backplane)
- Intel® OCP* Mezzanine Networking add-in card option

See Chapter 3 for additional information.

Table 13. Intel® Server System M20NTP2UR208 Product Information

Intel® Server System M20NTP2UR208
2U Intel® Server Chassis, Intel® Server Board M20NTP2SB, Air cooled, 2 x PCIe* 4.0 Riser Cards, OCP* Mezzanine 2.0 card bay, eight 2.5” SSD Hot-swap drive bays

Order Information

Coming Soon

iPC	**M20NTP2UR208**
MM#	99AL6T
UPC	735858510394
EAN	5032037244176
MOQ	1

Product Information

Product type	L6 Integrated System
Chassis form factor	2U rack mount
Packaged gross wt.	**TBD** - ##.# kgs. (##.# lbs)
Un-boxed system wt.	**TBD** - ##.# kgs. (##.# lbs)
Chassis dimensions	658.2 x 447.6 x 87 mm (L x W x H)
Box dimensions	993 x 591 x 298 mm (L x W x H)

Included

Note: Some items maybe integrated within the chassis.

(1) – 2U Chassis
(1) – Intel® Server Board M20NTP2SB – iPC **M20NTP2SB**
(1) – 1300W Power Supply – iPC **AXX1300TCRPS**
(1) – Power distribution board
(1) – PCIe* Riser Card (Riser Slot 1) – iPC **M20NTP2URISER1**
(1) – PCIe* Riser Card (Riser Slot 2) – iPC **M20NTP2URISER2**
(4) – System Fans – iPC **SNP2UFANK**
(1) – Air Duct
(8) – 2.5” Drive Rail Assemblies: Drive Rail + Drive Blank – iPC **CYP25HSCARRIER**
(1) – 8x2.5” drive SATA/SAS/NVMe* backplane – iPC **AXXHSBP2208**
(14) – Memory Slot DIMM Blanks
(2) – Processor Socket Covers
(2) – 2U Processor Heat Sinks – iPC **CYP2UHSSTD**
(2) – Processor carrier clips
(1) – M.2 SSD Retention Clip
(2) – Mini-SAS HD SATA cables
(1) – 700 mm I^2C backplane cable
(1) – Front USB cable
(1) – Front Control Panel cable
(4) – Mounting screws for OCP* add-in option
(1) – Attention document

Additional Required Hardware (sold separately)

- Chassis rail kit for 4-post rack or server cabinet – iPC **AXXFULLEXTRAILK**
- AC power cord
- 3rd Gen Intel® Xeon® Scalable processor(s) (See Table 1)
- DDR4 DIMMs (See Section 1.3)

Elective Configuration Options (sold separately)

- Up to eight 2.5” SSD – SAS/SATA/NVMe*
- 1300W Power Supply Accessory kit + AC power cord
- Intel® VROC for NVMe* upgrade key
- Intel® OCP* Mezzanine add-in card option
- Cables for NVMe* support (Server board to Backplane
- Cables for SAS/NVMe* support (RAID Card to Backplane)
- Front drive bay upgrade option: Upgrade to support 16 drives. See information on following page.

See Chapter 3 for additional information

2.3 1U and 2U System Storage Option Cabling

The backplanes mounted within the front drive bay of the Intel® Server Systems M20NTP1UR304 and M20NTP2UR208 can support SATA, SAS, and NVMe* SSDs. The base system configurations (as shipped by Intel) will include appropriate cabling to support the SATA interface from the server board or SAS / SAS RAID from an add-in card to the factory installed backplane.

To support NVMe* SSDs in either the 1U or 2U base system configurations, additional cable kits must be purchased separately. The following tables identify the appropriate cable or cable accessory kit(s) necessary to support the various drive configurations. See Section 4.3 for additional Intel cable kit information.

Table 14. 1U Intel® Server System M20NTP1UR304 Storage Option Cabling

Storage Interface Type	Storage Interface Source	Cable Routing	Intel Cable Kit (iPC)	Notes
SATA	Server Board	Server Board to Backplane	N/A	860 mm SATA/SAS cable included in Base System
SAS / SAS RAID	PCIe* SAS RAID Add-in Card	Riser 1 to Backplane	N/A	Reuse supplied SATA/SAS Cable
SAS / SAS RAID	PCIe* SAS RAID Add-in Card	Riser 2 to Backplane	N/A	**Configuration Not Supported**
NVMe*	Server Board	Server Board to Backplane	**NTPCBLSL104K**	Cable kit supports up to 4 NVMe drives
NVMe*	PCIe* Tri-Mode RAID Add-in Card	Riser 1 to Backplane	N/A	**Configuration Not Supported**
NVMe*	PCIe* Tri-Mode RAID Add-in Card	Riser 2 to Backplane	N/A	**Configuration Not Supported**

Table 15. 2U Intel® Server System M20NTP2UR208 Storage Option Cabling

Storage Interface Option	Storage Interface Source	Cable Routing	Intel Cable Kit (iPC)	Notes
SATA Only	Server Board	Server Board to Backplane	N/A	SATA cables included in Base System
SAS / SAS RAID	PCIe* SAS RAID Add-in Card	Riser 1 to Backplane	Reuse supplied SATA/SAS Cables.	
SAS / SAS RAID	PCIe* SAS RAID Add-in Card	Riser 2 to Backplane	Reuse supplied SATA/SAS Cables.	
NVMe*	Server Board	Server Board to Backplane	**NTPCBLSL204K**	Cable kit supports up to 4 NVMe* drives
NVMe*	PCIe* Tri-Mode RAID Add-in Card	Riser 1 or Riser 2 to Backplane	**CYPCBLSLRTKIT**	Cable kit + RAID card supports up to 4 NVMe* drives

Note: See Table 9 in Section 1.6.1 for cable requirements to support 16-drive configuration option.

3. Intel Add-in Card Options

The following sections identify Intel add-in card options supported by the Intel® Server Board M20NTP.

The product tables found in this section are each divided into sections, each providing useful information as outlined below:

- **Product Description / Image**
- **Order Information** – Product identifiers used to order the product
- **Product Information** – Product overview, Kit Contents

3.1 Intel® OCP* Networking Options

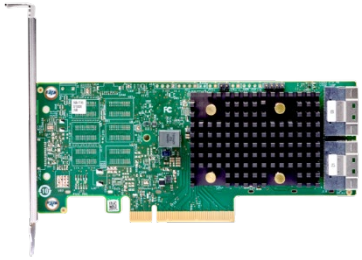
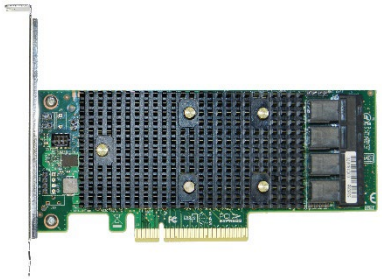
Description / Image	Order Information	Product Information
Intel® Ethernet Network Adapter XXV710-DA1 for OCP*	**iPC** XXV710DA1OCP **MM#** 949033 **UPC** 00735858332248 **EAN** 5032037097475 **MOQ** 1	**Product Type:** Accessory **Where Used:** • Intel® Server Board M20NTP2SB • Intel® Server System M20NTP1UR304 • Intel® Server System M20NTP2UR208 **Product Overview:** 1 port, 25/10/1Gb SFP28, PCIe* 3.0 x8, OCP* Mezz. 2.0 Type 1 SFP28 Direct Attach twinaxial cabling up to 5m / SFP28 SR Optics also supported **Kit Includes:** (1) OCP* Add-in card
Intel® Ethernet Server Adapter XL710-QDA1 for OCP*	**iPC** XL710QDA1OCP **MM#** 942748 **UPC** 00735858319157 **EAN** 5032037088107 **MOQ** 1	**Product Type:** Accessory **Where Used:** • Intel® Server Board M20NTP2SB • Intel® Server System M20NTP1UR304 • Intel® Server System M20NTP2UR208 **Product Overview:** 1 port, 40/10Gb QSFP+, PCIe* 3.0 x8, VEB, EVB, OCP* Mezz. 2.0 Type 1 QSFP+ Direct Attach Copper Cable (Twinaxial)(1-7m) / 40GBASE-SR4 Optics also supported **Kit Includes:** (1) OCP* Add-in card

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>Intel® Ethernet Network Adapter XXV710-DA2 for OCP*
 </td>
<td>
<table>
<tr><td>iPC</td><td>XXV710DA2OCP1</td></tr>
<tr><td>MM#</td><td>959797</td></tr>
<tr><td>UPC</td><td>00735858359290</td></tr>
<tr><td>EAN</td><td>5032037115889</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR304
• Intel® Server System M20NTP2UR208
Product Overview:
2 port 25/10/1Gb SFP28, PCIe* 3.0 x8 OCP Mezz. 2.0 Type 1
SFP28 Direct Attach twin axial cabling up to 5m / SFP28 SR Optics also supported (extended temp ONLY)

Kit Includes:
(1) OCP* Add-in card</td>
</tr>
<tr>
<td>Intel® Ethernet Server Adapter XL710-QDA2 for OCP*
 </td>
<td>
<table>
<tr><td>iPC</td><td>XL710QDA2OCP</td></tr>
<tr><td>MM#</td><td>942752</td></tr>
<tr><td>UPC</td><td>00735858319089</td></tr>
<tr><td>EAN</td><td>5032037088053</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR304
• Intel® Server System M20NTP2UR208
Product Overview:
2 port, 40/10Gb QSFP+, PCIe* 3.0 x8, VEB, EVB, OCP* Mezz. 2.0 Type 1
QSFP+ Direct Attach Copper Cable (Twinaxial)(1-7m) / 40GBASE-SR4 Optics also supported

Kit Includes:
(1) OCP* Add-in card</td>
</tr>
</table>

3.2 Intel® RAID Card Options

Description / Image	Order Information	Product Information
Intel® Storage Adapter RS3P4QF160J 	**iPC** RS3P4QF160J **MM#** 999RKM **UPC** 00735858452830 **EAN** 5032037193115 **MOQ** 5	**Product Type:** Accessory **Where Used:** • Intel® Server Board M20NTP2SB • Intel® Server System M20NTP2UR208 **Product Overview:** SAS 12GB+PCIe*, 16 Internal ports, SAS3816 Low-Profile MD2 PCIe* AIC X8 PCIe* 4.0 PCIe*/SAS/SATA JBOD only, no RAID **Kit Contents:** (1) Intel® Storage Adapter (1) low-profile mounting bracket
Intel® Storage Adapter RSP3QD160J 	**iPC** RSP3QD160J **MM#** 954491 **UPC** 00735858329101 **EAN** 5032037095228 **MOQ** 5	**Product Type:** Accessory **Where Used:** • Intel® Server Board M20NTP2SB • Intel® Server System M20NTP2UR208 **Product Overview:** SAS 12GB+PCIe*, 16 Internal ports, SAS3416 Low-Profile MD2 PCIe* AIC X8 PCIe* x8 3.0 PCIe*/SAS/SATA JBOD only, no RAID **Kit Includes:** (1) Intel® Storage Adapter (1) low-profile mounting bracket

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>Intel® RAID Adapter RSP3MD088F
 </td>
<td>
<table>
<tr><td>iPC</td><td>RSP3MD088F</td></tr>
<tr><td>MM#</td><td>954551</td></tr>
<tr><td>UPC</td><td>00735858329194</td></tr>
<tr><td>EAN</td><td>5032037095310</td></tr>
<tr><td>MOQ</td><td>5</td></tr>
</table>
</td>
<td>Product Type: Accessory
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP2UR208
Product Overview:
SAS 12GB+PCIe*, 8 Int / 8 Ext. ports, SAS3516, Supports optional AXXRPFKDE2 Premium Feature Key
Low-Profile MD2 PCIe* AIC
X8 PCIe* 3.0
PCIe*/SAS/SATA
RAID Levels: 0, 1, 10, 5, 50, 6, 60

Kit Includes:
(1) Intel® Storage Adapter
(1) low-profile mounting bracket</td>
</tr>
</table>

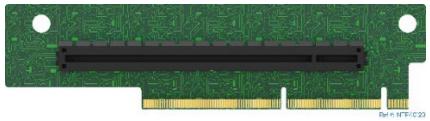
4. Accessories and Spare FRUs

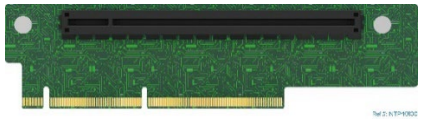
The following sections identify available accessory kits and spare parts (FRUs) for all field replaceable components supported by the Intel® Server Board M20NTP.

The product tables found in this section are each divided into sections, each providing useful information as outlined below:

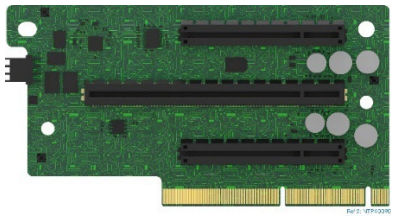
- **Product Description / Image**
- **Order Information** – Product identifiers used to order the product
- **Product Information** – Product overview, Kit Contents

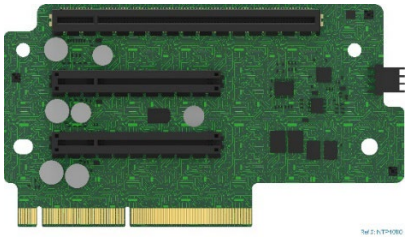
4.1 Riser Card Accessories and Spares

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>1U Riser Card – M20NTP1URISER1
For Riser Slot #1
  </td>
<td>
<table>
<tr><td>iPC</td><td>M20NTP1URISER1</td></tr>
<tr><td>MM#</td><td>99AL6W</td></tr>
<tr><td>UPC</td><td>00735858502405</td></tr>
<tr><td>EAN</td><td>5032037237260</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory / Spare FRU
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR
Product Overview:
1-Slot PCIe* Riser Card (x16 PCIe* add-in slot)
Can only be used in Riser Slot #1 on the server board

Kit Includes:
(1) Riser Card</td>
</tr>
<tr>
<td>1U Riser Card – M20NTP1URISER2
For Riser Slot #2
  </td>
<td>
<table>
<tr><td>iPC</td><td>M20NTP1URISER2</td></tr>
<tr><td>MM#</td><td>99AL1C</td></tr>
<tr><td>UPC</td><td>00735858502412</td></tr>
<tr><td>EAN</td><td>5032037237277</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory / Spare FRU
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR
Product Overview:
1-Slot PCIe* Riser Card (x16 PCIe* add-in slot)
Can only be used in Riser Slot #2 on the server board

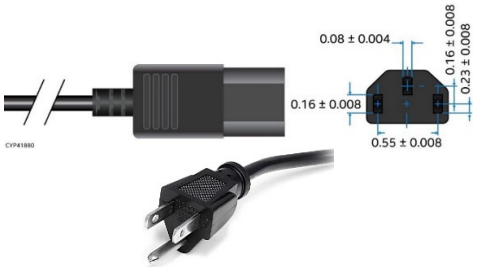
Kit Includes:
(1) Riser Card</td>
</tr>
</table>

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>2U Riser Card – M20NTP2URISER1
For Riser Slot #1
  </td>
<td>
<table>
<tr><td>iPC</td><td>M20NTP2URISER1</td></tr>
<tr><td>MM#</td><td>99AL6Z</td></tr>
<tr><td>UPC</td><td>00735858502429</td></tr>
<tr><td>EAN</td><td>5032037237284</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory / Spare FRU
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP2UR
Product Overview:
3-Slot PCIe* Riser Card (Two PCIe* x8 + One PCIe* x16 add-in slots)
Can only be used in Riser Slot #1 on the server board

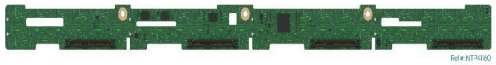
Kit Includes:
(1) Riser Card</td>
</tr>
<tr>
<td>2U Riser Card – M20NTP2URISER2
For Riser Slot #2
  </td>
<td>
<table>
<tr><td>iPC</td><td>M20NTP2URISER2</td></tr>
<tr><td>MM#</td><td>99AL1D</td></tr>
<tr><td>UPC</td><td>00735858502436</td></tr>
<tr><td>EAN</td><td>5032037237291</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory; Spare FRU
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP2UR
Product Overview:
3-Slot PCIe* Riser Card (Two PCIe* x8 + One PCIe* x16 add-in slots)
Can only be used in Riser Slot #2 on the server board

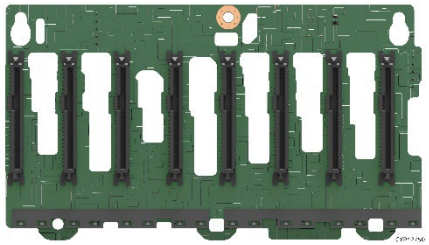
Kit Includes:
(1) Riser Card</td>
</tr>
</table>

4.2 System Power Accessories and Spares

Description / Image	Order Information	Product Information
Power Supply – AXXBFP750SLPS 750 W Slim-line	**iPC** AXXBFP750SLPS **MM#** 99AMPT **UPC** 00735858507035 **EAN** 5032037241175 **MOQ** 1	**Product Type:** Accessory / Spare FRU **Where Used:** • Intel® Server System M20NTP1UR **Product Overview:** 750W AC Slim-line 80+ Platinum efficiency power supply module Power cord sold separately **Kit Includes:** (1) Power supply module
Power Supply – AXX1300TCRPS 1300 W CRPS	**iPC** AXX1300TCRPS **MM#** 956542 **UPC** 00735858345705 **EAN** 5032037106191 **MOQ** 1	**Product Type:** Accessory / Spare FRU **Where Used:** • Intel® Server System M20NTP2UR **Product Overview:** 1300W AC CRPS 80+ Titanium efficiency power supply module Power cord sold separately **Kit Includes:** (1) Power supply module
Power Cable – FPWRCABLENA North America 	**iPC** FPWRCABLENA **MM#** 879287 **UPC** 00735858181129 **EAN** 503203702015738 **MOQ** 1	**Product Type:** Accessory / Spare FRU **Where Used:** • Intel® Server System M20NTP2UR • Intel® Server System M20NTP1UR **Product Overview:** North America power cord **Kit Includes:** (1) Power Cable

4.3 Storage Option Accessories and Spares

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>2.5” / 3.5” x 4 Drive Backplane – AXXHSBP1304
1U System Backplane
  </td>
<td>
<table>
<tr><td>iPC</td><td>AXXHSBP1304</td></tr>
<tr><td>MM#</td><td>99AN3D</td></tr>
<tr><td>UPC</td><td>00735858502443</td></tr>
<tr><td>EAN</td><td>5032037237307</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Spare FRU
Where Used:
• Intel® Server System M20NTP1UR
Product Overview:
1U backplane with support for up to four 3.5” or 2.5” drives. Each drive connector is hot swap capable and supports SATA, SAS, or NVMe* drive interfaces. See the Intel® Server System M20NTP1UR TPS for additional information.

Kit Includes:
(1) Backplane
Note: Mounting hardware included with the system</td>
</tr>
<tr>
<td>2.5” x 8 Drive Backplane – AXXHSBP2208
2U System Backplane
  </td>
<td>
<table>
<tr><td>iPC</td><td>AXXHSBP2208</td></tr>
<tr><td>MM#</td><td>99ANFK</td></tr>
<tr><td>UPC</td><td>00735858502450</td></tr>
<tr><td>EAN</td><td>5032037237314</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory / Spare FRU
Where Used:
• Intel® Server System M20NTP2UR
Product Overview:
2U backplane with support for up to eight 2.5” drives. Each drive connector is hot swap capable and supports SATA and SAS interfaces. See the Intel® Server System M20NTP2UR TPS for additional information.
This kit is offered as one of several required accessory kits for the Intel® Server System M20NTP2U208 when looking to upgrade the front drive bay to 16 drives. See Section 1.6.1 for more information.

Note: NVMe* drives configured to 2nd backplane is not supported.

Kit Includes:
(1) 8x2.5” Backplane
(1) 75 mm I²C cable – 5-pin to 5-pin communication cable installed between two backplanes</td>
</tr>
</table>

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>3.5” Drive Carrier – FXX35HSCAR3 (8-pack)
 </td>
<td>
<table>
<tr><td>iPC</td><td>FXX35HSCAR3</td></tr>
<tr><td>MM#</td><td>99C01J</td></tr>
<tr><td>UPC</td><td>735858513425</td></tr>
<tr><td>EAN</td><td>5032037247153</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Spare FRU
Where Used:
• Intel® Server System M20NTP1U
Product Overview:
A drive carrier is used to install a drive into the drive bay of the Intel® Server System M20NTP1U304. This drive carrier is designed to support 3.5” hard disk drives (HDDs) or 2.5” Solid State Drives (SSDs) when mounted within the included drive blank. With no drive installed, the carrier must be populated with the drive blank to meet the airflow specifications of the system.

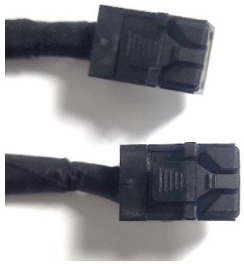
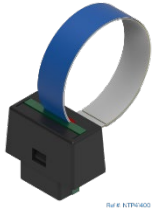
Kit Includes:
(8) 3.5” Drive Carrier
(8) Drive blank (2.5” SSD mount w/ mounting screws)</td>
</tr>
<tr>
<td>2.5” Drive Rail – CYP25HSCARRIER (8-pack)
 </td>
<td>
<table>
<tr><td>iPC</td><td>CYP25HSCARRIER</td></tr>
<tr><td>MM#</td><td>99AKCJ</td></tr>
<tr><td>UPC</td><td>00735858471596</td></tr>
<tr><td>EAN</td><td>5032037210034</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory / Spare FRU
Where Used:
• Intel® Server System M20NTP2U
Product Overview:
The drive rail is used to insert and extract a 2.5” SSD from the front drive bay of the Intel® Server System M20NTP2U208. With no SSD installed, the drive rail must be populated with a drive blank to meet the airflow specifications of the system.
This kit is offered as one of several required accessory kits for the Intel® Server System M20NTP2U208 when looking to upgrade the front drive bay to 16 drives. See Section 1.6.1 for more information.

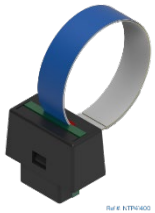
Kit Includes:
(8) 2.5” Drive Rails
(8) Drive Blanks</td>
</tr>
</table>

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>NVMe* Cable Kit – NTPCBLSL104K
SlimSAS* PCIe* x4 to SlimSAS* PCIe* x4
 </td>
<td><table>
<tr><td>iPC</td><td>NTPCBLSL104K</td></tr>
<tr><td>MM#</td><td>99AMT2</td></tr>
<tr><td>UPC</td><td>00735858507141</td></tr>
<tr><td>EAN</td><td>5032037241281</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server System M20NTP1UR
Product Overview:
Each NVMe* cable is used to route PCIe* signals from one PCIe* x4 SlimSAS* connector on the server board to one PCIe* x4 SlimSAS* connector on the backplane.
Kit Includes:
(1) 450 mm NVMe* cable
(1) 550 mm NVMe* cable
(1) 650 mm NVMe* cable
(1) 750 mm NVMe* cable
(1) 850 mm VPP SMBUS communication cable (NVMe LED support cable)</td>
</tr>
<tr>
<td>NVMe* Cable Kit – NTPCBLSL204K
2 x SlimSAS* PCIe* x4 to SlimSAS* PCIe* x8
 </td>
<td><table>
<tr><td>iPC</td><td>NTPCBLSL204K</td></tr>
<tr><td>MM#</td><td>99AMVT</td></tr>
<tr><td>UPC</td><td>00735858507158</td></tr>
<tr><td>EAN</td><td>5032037241298</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server System M20NTP2UR
Product Overview:
Each cable is used to route PCIe* signals from two PCIe* x4 SlimSAS* connectors on the server board to one PCIe* x8 SlimSAS* connector on the 1st backplane. Kit can support up to 4 NVMe* drives on the 2.5” x 8 drive backplane using PCIe* NVMe* SSD connectors [0–1 and 2–3] or [4–5 and 6–7].

Kit Includes:
(2) 670 mm NVMe* Cables
(1) 850 mm VPP SMBUS communication cable (NVMe LED support cable)</td>
</tr>
<tr>
<td>NVMe* Cable Kit – CYPCBLSLRTKIT
SlimSAS* PCIe* x8 to SlimSAS* PCIe* x8
 </td>
<td><table>
<tr><td>iPC</td><td>CYPCBLSLRTKIT</td></tr>
<tr><td>MM#</td><td>99A67F</td></tr>
<tr><td>UPC</td><td>00735858475211</td></tr>
<tr><td>EAN</td><td>5032037213165</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server System M20NTP2UR
Product Overview:
• Used to support NVMe* cable routing from a PCIe* Tri-mode RAID add-in card installed in Riser Card #1 or Riser Card #2 to middle backplane
• Each cable includes a PCIe* x8 SlimSAS* connector on each end of the cable.
• Each cable supports two NVMe* drives on the backplane

Kit Includes:
(2) 660 mm NVMe* cables</td>
</tr>
</table>

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>SAS/SATA Cable Kit – CYPCBLHDHDXXX1
Mini-SAS HD to Mini-SAS HD
  </td>
<td><table>
<tr><td>iPC</td><td>CYPCBLHDHDXXX1</td></tr>
<tr><td>MM#</td><td>99AJF8</td></tr>
<tr><td>UPC</td><td>00735858475228</td></tr>
<tr><td>EAN</td><td>5032037213172</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server System M20NTP2UR
• Intel® Server System M20NTP2UR208 + 8 Drive Upgrade
Product Overview:
• Used in 2U system to support > 8 SATA drives from onboard Mini-SAS HD SATA connectors
• Used in 2U system with PCIe* SAS / SAS RAID add-in card installed to either Riser 1 or Riser 2
• Each cable supports up to 4 drives
Kit Includes:
(1) 640 mm SAS/ SATA cable (Onboard SATA to 2nd backplane)
(1) 840 mm SAS/SATA cable (Riser 1, Riser 2)
(1) 930 mm SAS/SATA cable (Riser 1, Riser 2)</td>
</tr>
<tr>
<td>Intel® VROC for NVMe* Key – VROCSTANMOD
Intel® Virtual RAID on CPU – Standard
  </td>
<td><table>
<tr><td>iPC</td><td>VROCSTANMOD</td></tr>
<tr><td>MM#</td><td>951605</td></tr>
<tr><td>UPC</td><td>00735858337243</td></tr>
<tr><td>EAN</td><td>5032037100007</td></tr>
<tr><td>MOQ</td><td>5</td></tr>
</table></td>
<td>Product Type: Accessory kit
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP2UR
• Intel® Server System M20NTP1UR
Product Overview:
Activation key to support Intel and non-Intel® NVMe* SSDs and enable RAID (0, 1, 10) functionality.

Kit Includes:
(1) Activation Key</td>
</tr>
<tr>
<td>Intel® VROC for NVMe* Key – VROCPREMMOD Intel® Virtual RAID on CPU – Premium
  </td>
<td><table>
<tr><td>iPC</td><td>VROCPREMMOD</td></tr>
<tr><td>MM#</td><td>951606</td></tr>
<tr><td>UPC</td><td>00735858337267</td></tr>
<tr><td>EAN</td><td>5032037100014</td></tr>
<tr><td>MOQ</td><td>5</td></tr>
</table></td>
<td>Product Type: Accessory kit
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP2UR
• Intel® Server System M20NTP1UR
Product Overview:
Activation key to support Intel and non-Intel NVMe* SSDs and enable RAID (0, 1, 5, 10) functionality.

Kit Includes:
(1) Activation Key</td>
</tr>
</table>

4.4 System Thermal Accessories and Spares

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>2U System Fan – SNP2UFANK
 </td>
<td>
<table>
<tr><td>iPC</td><td>SNP2UFANK</td></tr>
<tr><td>MM#</td><td>99AN5Z</td></tr>
<tr><td>UPC</td><td>735858507066</td></tr>
<tr><td>EAN</td><td>5032037241205</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Spare FRU
Where Used:
• Intel® Server System M20NTP2UR
Product Overview:
• 80x38 mm system fan
• 117 CFM
• 12VDC
• Hot swap capable

Kit Includes:
(1) System Fan</td>
</tr>
<tr>
<td>1U System Fan – MYP1UFAN
 </td>
<td>
<table>
<tr><td>iPC</td><td>MYP1UFAN</td></tr>
<tr><td>MM#</td><td>99A2H4</td></tr>
<tr><td>UPC</td><td>00735858454889</td></tr>
<tr><td>EAN</td><td>5032037194815</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Spare FRU
Where Used:
• Intel® Server System M20NTP1UR
Product Overview:
• 40x28 mm system fan
• 12VDC

Kit Includes:
(1) System fan</td>
</tr>
<tr>
<td>DIMM Blank – TNPDMMBLNK
(8 pack)
(for all systems)
 </td>
<td>
<table>
<tr><td>iPC</td><td>TNPDMMBLNK</td></tr>
<tr><td>MM#</td><td>99A5ZC</td></tr>
<tr><td>UPC</td><td>00735858469593</td></tr>
<tr><td>EAN</td><td>5032037208161</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Spare
Where Used:
• Intel® Server System M20NTP2UR
• Intel® Server System M20NTP1UR
Product Overview:
In systems that have defined airflow pattern requirements, it may be necessary to install a DIMM blank when no DIMM is desired within a memory slot that must be populated.

Kit Includes:
(8) DIMM Blanks</td>
</tr>
</table>

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>1U Processor Heat Sink – CYP1UHSSTD
 </td>
<td><table>
<tr><td>iPC</td><td>CYP1UHSSTD</td></tr>
<tr><td>MM#</td><td>99A3NP</td></tr>
<tr><td>UPC</td><td>00735858454735</td></tr>
<tr><td>EAN</td><td>5032037194679</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR
Product Overview:
• 1U Aluminum Extrusion + Heat Pipe heat sink with anti-tilt clips
• 72x50 mm thermal pad applied to bottom side of heat sink

Kit Includes:
(1) Heat sink</td>
</tr>
<tr>
<td>2U Processor Heat Sink – CYP2UHSSTD
 </td>
<td><table>
<tr><td>iPC</td><td>CYP2UHSSTD</td></tr>
<tr><td>MM#</td><td>99A3RL</td></tr>
<tr><td>UPC</td><td>00735858475259</td></tr>
<tr><td>EAN</td><td>5032037213202</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP2UR
Product Overview:
• 2U Aluminum Extrusion + Heat Pipe heat sink with anti-tilt clips
• 72x50 mm thermal pad applied to bottom side of heat sink

Kit Includes:
(1) Heat Sink</td>
</tr>
<tr>
<td>Processor Carrier Clip ICXPHMMOQ2
 </td>
<td><table>
<tr><td>iPC</td><td>ICXPHMMOQ2</td></tr>
<tr><td>MM#</td><td>99A3PL</td></tr>
<tr><td>UPC</td><td>00735858475273</td></tr>
<tr><td>EAN</td><td>5032037213226</td></tr>
<tr><td>MOQ</td><td>2</td></tr>
</table></td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR
• Intel® Server System M20NTP2UR
Product Overview:
The processor carrier clip is a component within the Processor Heat Sink Module (PHM). It is used to attach the processor to the heat sink before the PHM is installed onto the processor socket on the server board. This processor carrier clip is compatible with all 3rd Gen Intel® Xeon® Scalable processors.

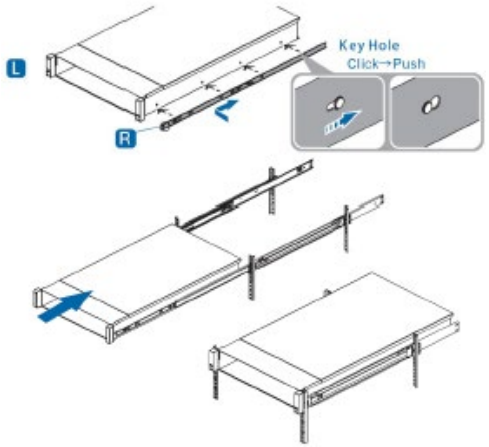
Kit Includes:
(1) Processor Carrier Clip</td>
</tr>
</table>

4.5 Miscellaneous Product Family Accessories and Spares

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>2U Front Bezel – CYP2UBEZEL
 </td>
<td><table>
<tr><td>iPC</td><td>CYP2UBEZEL</td></tr>
<tr><td>MM#</td><td>99A5T7</td></tr>
<tr><td>UPC</td><td>00735858471657</td></tr>
<tr><td>EAN</td><td>5032037210096</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory
Where Used:
• Intel® Server System M20NTP2UR
Product Overview:
Non-locking plastic front panel bezel that latches between the two chassis rack handles of a 2U chassis (See Figure 16)

Kit Includes:
(1) Bezel</td>
</tr>
<tr>
<td>1U Front Bezel – MYP1UBEZEL
 </td>
<td><table>
<tr><td>iPC</td><td>MYP1UBEZEL</td></tr>
<tr><td>MM#</td><td>99A2D7</td></tr>
<tr><td>UPC</td><td>00735858455244</td></tr>
<tr><td>EAN</td><td>5032037195164</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table></td>
<td>Product Type: Accessory
Where Used:
• Intel® Server System M20NTP1UR
Product Overview:
Non-locking plastic front panel bezel that latches between the two chassis rack handles of a 1U chassis (See Figure 9)

Kit Includes:
(1) Bezel</td>
</tr>
</table>

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>Rail Kit – AXXFULLEXTRAILK
1U / 2U System Mounting Rails
 
</td>
<td>
<table>
<tr><td>iPC</td><td>AXXFULLEXTRAILK</td></tr>
<tr><td>MM#</td><td>99ANFL</td></tr>
<tr><td>UPC</td><td>735858507073</td></tr>
<tr><td>EAN</td><td>5032037241212</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory / Spare
Where Used:
• Intel® Server System M20NTP2UR
• Intel® Server System M20NTP1UR
Product Overview:
Chassis rail kit supporting 4-Post Racks or Server cabinets
○ 1U, 2U compatible
○ Tool-less chassis attachment
○ Tool-less installation to rack
○ Rack installation front and rear post distance adjustment from
547 mm to 850 mm
○ 704 mm travel distance
○ Full extension from rack
○ 33 kg (72.7 lbs.) maximum support weight
○ No support for Cable Management Arm
Kit Includes:
• Left and Right rail assemblies
• Installation guide
Note: See Advisory and Caution statements documented in the server product family Technical Product Specifications (TPS).</td>
</tr>
<tr>
<td>TPM 2.0 – JNPTPM
Trusted Platform Module – Standard
(Not supported in China)

Note: Does not meet Microsoft* Win2K22 certification requirements.</td>
<td>
<table>
<tr><td>iPC</td><td>JNPTPM</td></tr>
<tr><td>MM#</td><td>999PLH</td></tr>
<tr><td>UPC</td><td>00735858433884</td></tr>
<tr><td>EAN</td><td>5032037175821</td></tr>
<tr><td>MOQ</td><td>40</td></tr>
</table>
</td>
<td>Product Type: Accessory
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR
• Intel® Server System M20NTP2UR
Product Overview:
A TPM is a hardware-based security device that addresses the growing concern on boot process integrity and offers better data protection. TPM protects the system start-up process by ensuring it is tamper-free before releasing system control to the operating system. A TPM device provides secured storage to store data, such as security keys and passwords. In addition, a TPM device has encryption and hash functions.
JNPTPM implements TPM as per TPM PC Client specifications revision 2.0 by the Trusted Computing Group (TCG)
Kit Includes:
(1) TPM 2.0 - Standard</td>
</tr>
</table>

<table>
<tr><th>Description / Image</th><th>Order Information</th><th>Product Information</th></tr>
<tr>
<td>TPM 2.0 – JNPTPMCH

Trusted Platform Module – China compatible

Note: Does not meet Microsoft* Win2K22 certification requirements.</td>
<td>
<table>
<tr><td>iPC</td><td>JNPTPMCH</td></tr>
<tr><td>MM#</td><td>999PM2</td></tr>
<tr><td>UPC</td><td>00735858433891</td></tr>
<tr><td>EAN</td><td>5032037175838</td></tr>
<tr><td>MOQ</td><td>40</td></tr>
</table>
</td>
<td>Product Type: Accessory
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR
• Intel® Server System M20NTP2UR
Product Overview:
A TPM is a hardware-based security device that addresses the growing concern on boot process integrity and offers better data protection. TPM protects the system start-up process by ensuring it is tamper-free before releasing system control to the operating system. A TPM device provides secured storage to store data, such as security keys and passwords. In addition, a TPM device has encryption and hash functions.
JNPTPMCH implements TPM as per TPM PC Client specifications revision 2.0 by the Trusted Computing Group (TCG)

Kit Includes:
(1) TPM 2.0 – China Compatible</td>
</tr>
<tr>
<td>Advanced System Management Key for Intel® products ADVSYSMGMTKEY

No Image</td>
<td>
<table>
<tr><td>iPC</td><td>ADVSYSMGMTKEY</td></tr>
<tr><td>MM#</td><td>99AJX5</td></tr>
<tr><td>UPC</td><td>N/A</td></tr>
<tr><td>EAN</td><td>N/A</td></tr>
<tr><td>MOQ</td><td>1</td></tr>
</table>
</td>
<td>Product Type: Accessory
Where Used:
• Intel® Server Board M20NTP2SB
• Intel® Server System M20NTP1UR
• Intel® Server System M20NTP2UR
Product Overview:
Software key to be uploaded to the BMC

Note: Needed to enable advance system management features on Integrated BMC Web Console. For more information, see the Intel® Server Board M20NTP2SB Technical Product Specification.</td>
</tr>
</table>

Appendix A. Glossary

Term	Definition
Intel® AVX-512	Intel® Advanced Vector Extensions 512
BOM	Bill of Materials
CRPS	Common Redundant Power Supply
DDR4	Double-Data Rate 4
DIMM	Dual Inline Memory Module
DPC	DIMM per Channel
DR	Double Rank
EAN	International Article Number (Barcode)
ECC	Error Correcting Code
FRU	Field Replaceable Unit
Intel® HT Technology	Intel® Hyper-Threading Technology
iPC	Intel Product Code – used to identify an orderable Intel product
iPN	Intel Part Number – internal part number issued to a component within a product bill of material (BOM). Individual Intel part numbers are not orderable unless it is included within an orderable Intel product code (iPC)
LRDIMM	Load-Reduced DIMM
MM#	Main material order number - used to identify an orderable Intel product
MOQ	Minimum Order Quantity
NVMe*	NVM Express* – based on Non-Volatile Memory Host Controller Interface Specification (NVMHCI)
OR	Oct Rank
PCIe*	PCI Express*
PMem	Persistent Memory
QR	Quad Rank
RDIMM	Registered DIMM
SSD	Solid State Drive
SR	Single Rank
Intel® UPI	Intel® Ultra Path Interconnect
UPC	Universal Product Code (Barcode)
Intel® VROC	Intel® Virtual RAID on CPU