



# **Intel® Data Center Blocks for Nutanix\* Enterprise Cloud**

## ***Configuration Guide***

Reference guide for ordering parts and accessories to configure a system based on Intel® Server Board S2600WF family or Intel® Compute Module HNS2600 family.

**Rev 1.9**

**Aug 2020**

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## Document Revision History

Date	Revision	Changes
December 2018	1.0	Initial release.
December 2018	1.1	Corrected DIMM support information in Section 2.3.2, Table 1, and Table 2.
February 2019	1.2	Updated for the addition of Intel® DC P4610 SSD, Intel® Ethernet Network Adapter XXV710-DA2, and ConnectX-4 Lx EN with RoCE RDMA adapter
July 2019	1.3	Updated for the 2 <sup>nd</sup> Gen Intel® Xeon® Scalable processor family.
October 2019	1.4	Updated for Optane SSDs and 1DWPD NVMe SSDs
December 2019	1.5	Added support for 3.5" drive systems and new NVMe SSDs
February 2020	1.6	Updated information on Compute Module NUR, Intel Nutanix Product Code, information on Hardware Compatibility list, Intel Storage Module RMSP3JD160J + RMSP3QD160J
May 2020	1.7	Updated information on 3.5" HDD and 2.5"HDD
June 2020	1.8	Expanded Intel® DCB and replaced with Intel® Data Center Blocks for Nutanix* Enterprise Cloud Platform
Aug 2020	1.9	Updated information on 3.5" HDD and Processor list (Cascade Lake), Intel® Optane™ DC Persistent Memory Module

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# 1. Overview

Intel® Data Center Blocks (Intel® DCB) for Nutanix\* Enterprise Cloud are single systems that include processors, server boards, chassis, power supply, storage, networking, and memory validated together to work with the Nutanix Enterprise Cloud operating system. Intel DCB systems are configurable to order with a multitude of hardware configurations certified by Nutanix to best fit current business needs.

## 1.1 Product Family Summary

Intel® Data Center Blocks for Nutanix\* Enterprise Cloud Platform includes two configurable server platforms that support both 1<sup>st</sup> and 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors:

- System based on Intel® Server Board S2600WF family (single-node)
- System based on Intel® Compute Module HNS2600BP family (four-node)

Intel's 2U single-node system, based on the Intel® Server Board S2600WF, is architected for up to 24 high performance flash storage devices with balanced input and output operations. Greater throughput and lower latency allow for faster access to large datasets which is desirable for enterprise class workloads.

The advanced thermal design of Intel's 2U four-node system, based on the Intel Compute Module HNS2600BP, allows for high compute density including options for more powerful processors that deliver more performance in a 2U space and at a lower hardware cost compared to four separate 1U or 2U systems. This makes an Intel DCB based on the Intel Compute Module HNS2600BP an excellent choice for virtualized systems.

Table 1 provides an overview of the available systems and their key features. For additional order information and full product descriptions, refer to Chapter 2.

**Table 1. Overview of Intel® Data Center Blocks for Nutanix\* Enterprise Cloud Platform**

Intel® Data Center Blocks for Nutanix* Enterprise Cloud Platform	# of CPU sockets	Memory capacity range	# of drive bays	# of nodes per server	Power supply type	Redundant cooling	Remote server management
<b>S2600WF</b>	2	184 GB to 1.5 TB	<ul style="list-style-type: none"> <li>• 16 (upgradable to 24) – in 2.5" drives chassis</li> <li>• 12 – in 3.5" drives chassis</li> </ul>	1	1300 W AC	Yes	Yes
<b>HNS2600BP</b>	2	128 GB to 768 GB	<ul style="list-style-type: none"> <li>• 24 – in 2.5" drives chassis</li> <li>• 12 – in 3.5" drives chassis</li> </ul>	4	2130 W common redundant power supply (80 PLUS* Platinum)	Yes	Yes

## 1.2 Intel® Data Center Blocks for Nutanix\* Enterprise Cloud Platform Product Code

The installation of Nutanix software is dependent on your platform's product code. It is imperative that the product code contains "NX" that stands for Nutanix-qualified Intel platform. Intel® Data Center Blocks for Nutanix Enterprise Cloud are identifiable by the 15 character Product Code listed on the chassis cover and within the system FRUSDR.

Example of a block product code is LBP2224NX55260A or LBP2312NXxxxxxx. The naming convention of the product code is as follows:

L	BP/WF	2	2/3	24	NX	552	6	0A
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- L: Indicates the system is an L9 integrated system.
- BP/WF: BP indicates that the system is based on the Intel® Server Board S2600BP and WF indicates that the system is based on the Intel® Server Board S2600WF.
- 2: Supporting 2U chassis, where U is for the Rack height, U=1.75 vertical inches
- 2/3: 2 Indicates the system is designed for 2.5" form factor storage devices and /3 indicates the system is designed for 3.5" form factor storage devices
- 24: Indicates the system is a 24-drive (8x3) or has three drive-bays in the L9 integrated system.
- NX: Indicates that the system is a Nutanix Certified configuration.
- 552: Indicates the system includes Intel® Xeon® Gold processor 6152.
- 6: Indicates the system includes 16 GB DIMMS.
- 0A: Indicates a unique identifier.



## 2. System Configurations

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Intel® Data Center Blocks for Nutanix® Enterprise Cloud Platform are L9 Integrated systems with fixed and flexible components. These systems are custom defined using Intel's configure-to-order (CTO) system with no fixed SKUs. The CTO tool is designed to take the risk out of component selection allowing only certified and compatible options. Get started with the CTO tool at

<https://www.intel.com/content/www/us/en/products/docs/servers/data-center-blocks/configure-to-order.html>.

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**Note:** The Intel DCB for Nutanix Enterprise Cloud systems do not include Nutanix Enterprise Cloud software. Contact a qualified Nutanix software provider for details on how to integrate the software.

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Intel DCB for Nutanix Enterprise Cloud supports the following two families of server systems. Their major components are listed below:

- System based on Intel® Server Board S2600WF family
  - Intel® Server System R2216WFONUR (LWF2216NXxxxxxx and LWF2224NXxxxxxx)
  - Intel® Server System R2312WFONUR (LWF2312NXxxxxxx)
- System based on Intel® Compute Module HNS2600BP family
  - Intel® Server Chassis H2224XXLR3
    - Intel® Compute Module HNS2600BPB24NUR (LBP2224NXxxxxxx)
    - Intel® Compute Module HNS2600BPS24NUR (LBP2224NXxxxxxx)
  - Intel® Server Chassis H2312XXLR3
    - Intel® Compute Module HNS2600BPSNUR(LBP2312NXxxxxxx)

Compute Modules ending in "NUR" are a virtual SKU that includes the base components for L9 system SKUs (LWF22xxNXxxxxxx/LBP2224NXxxxxxx). Compute Module "NUR" cannot be ordered separately.

You can check the hardware compatibility of the Intel- Nutanix® platforms and qualified components, along with their qualified firmware required to run Nutanix® software solution at the following link:

<https://portal.nutanix.com/#/page/docs/details?targetId=Intel-Hardware-Firmware-Compatibility:Intel-Hardware-Firmware-Compatibility>

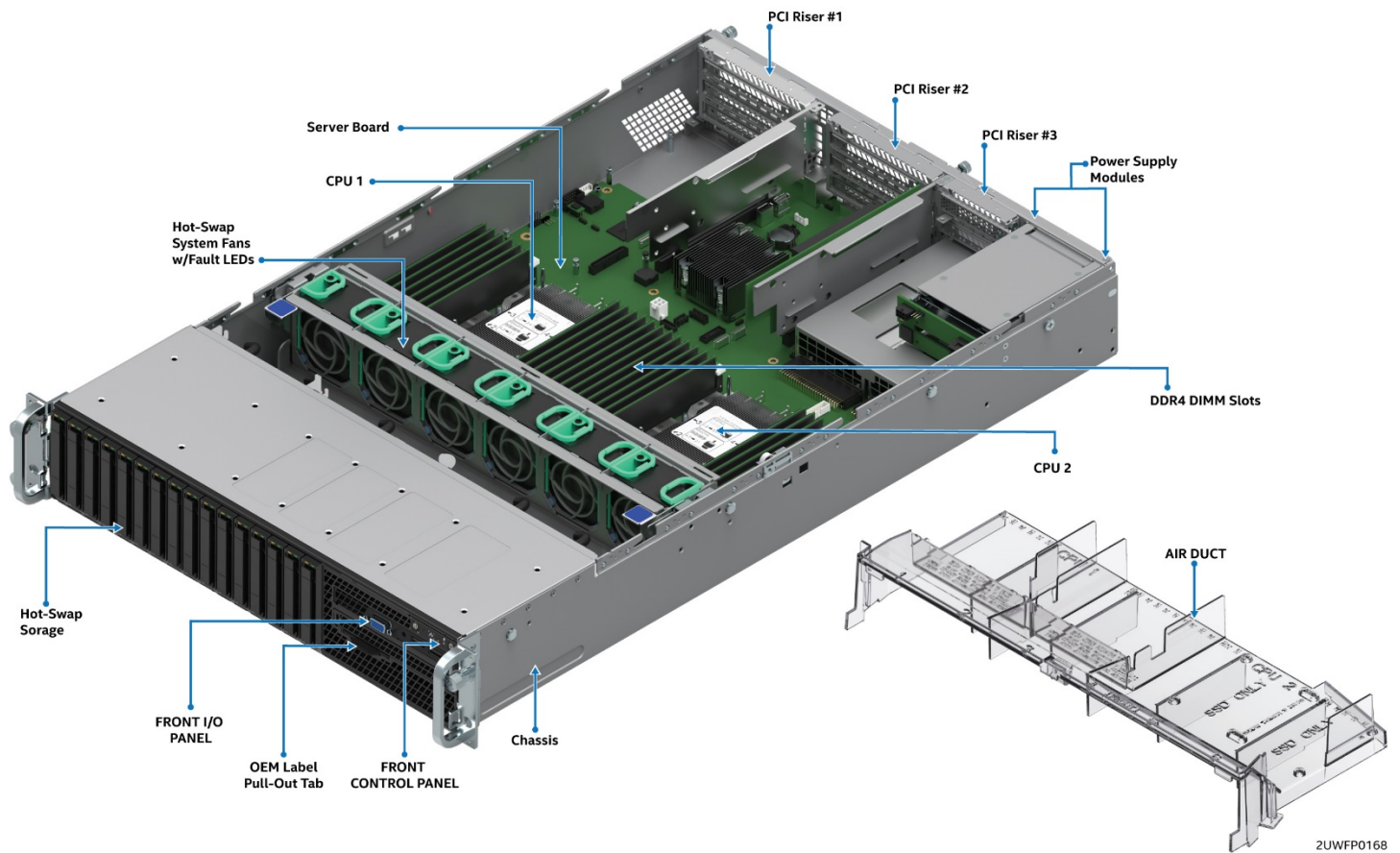
The following sections provide the configuration details and options for each system.

### 2.1 System Based on Intel® Server Board S2600WF Family

The product table in this section provides order code information and detailed descriptions for the Intel Server System R2216WFONUR & R2312WFONUR. Items identified by Intel Product Code (iPC) are orderable accessories or spares. The table identifies:


- Included components shipped with the server system.
- Required items that include hardware necessary to achieve basic functionality using the default system feature set.
- Optional accessories that include some of the accessories available to enhance the basic feature set of the server system. Find additional accessories in Chapter 3.

To identify the feature set of the system based on Intel® Server Board S2600WF family, refer to Figure 1.




**Figure 1. System based on Intel® Server Board S2600WF family feature set identification**

**Table 2. System based on Intel® Server Board 2600WF family**

Intel® Server System R2216WF0NU	
	
<b>Included</b>	<ul style="list-style-type: none"> <li>(1) - Intel® Server Board S2600WF0R (No on-board LAN) iPC S2600WF0R</li> <li>(2) - 3-slot PCIe x8 riser cards (riser 1 and 2) iPC A2UL8RISER2</li> <li>(1) - 2-slot low profile PCIe riser card (1 x4 &amp; 1 x8 slots for Riser 3 only) iPC A2UX8X4RISER</li> <li>(8) - 2.5 inch hot swap drive tool-less carriers iPC FXX25HSCAR3</li> <li>(2) - SAS/NVMe Combo Front Mount Hot Swap Drive Bay Module iPC A2U8X25S3PHS</li> <li>(1) - standard control panel board iPC FXXFPANEL2</li> <li>(3) - 730 mm Mini SAS HD Cable iPC AXXCBL730HDHD</li> <li>(1) - 875 mm Mini-SAS HD Cable iPC AXXCBL875HDHD</li> <li>(1) - Intel Storage Module RMSP3JD160J iPC RMSP3JD160J</li> <li>(1) - SSD D3-S4510 Series (240 GB, M.2 80 mm SATA 6 Gb/s, 3D2, TLC) iPC SSDSCKKB240G801</li> <li>(1) - Remote Management Module AXXRMM4LITE2 iPC AXXRMM4LITE2</li> <li>(1) - 2U Air duct</li> <li>(6) - Hot swap system fans iPC FR2UFAN60HSW</li> <li>(2) - 1300 W AC Power Supply Module iPC AXX1300TCRPS</li> <li>(2) - CPU heat sinks iPC FXXCA78X108HS</li> </ul>
<b>Required items</b>	<ul style="list-style-type: none"> <li>• 2<sup>nd</sup> Generation Intel® Xeon® Scalable processors (see Section 2.3.1)</li> <li>• ECC DDR4 memory (see Section 2.3.2) <ul style="list-style-type: none"> <li>○ Up to (24) DIMMs for dual processors</li> <li>○ Up to (12) DIMMs for a single processor</li> <li>○ DDDC DDR-compatible Intel® Optane™ DC persistent memory module (supported by Intel® Server Boards S2600WFTR, S2600WF0R, and S2600WFQR with a 2<sup>nd</sup> Gen Intel® Xeon® Scalable processor)</li> </ul> </li> <li>• At least (2) SATA SSDs (see Section 2.3.3)</li> <li>• Intel® Ethernet adapter (choose one) <ul style="list-style-type: none"> <li>○ Intel Ethernet Converged Network Adapter X550-T2 – iPC X550T2</li> <li>○ Intel Ethernet Converged Network Adapter X710-DA2 – iPC X710DA2</li> <li>○ Intel Ethernet Network Adapter XXV710-DA2 – iPC XXV710DA2</li> </ul> </li> </ul>
<b>Optional accessories</b>	<ul style="list-style-type: none"> <li>• Upgraded storage capacity (enables up to 8 additional SSDs) making this a LWF2224NX system from LWF2216NX. This upgrade is included as a “one click” option in the CTO tool that automatically adds the following components to the system: <ul style="list-style-type: none"> <li>○ (1) SAS/NVMe hot-swap backplane – iPC F2U8X25S3PH</li> <li>○ (1) Intel® Storage Module RSP3QD160J – iPC RSP3QD160J</li> <li>○ (1) Cable kit AXXCBL730HDHD – iPC AXXCBL730HDHD</li> <li>○ (1) Rack handle kit A2UHANDLKIT – iPC A2UHANDLKIT</li> </ul> </li> <li>• Kit of serial port DB9 adapters – iPC AXXRJ45DB93</li> <li>• Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 or iPC AXXTPMCHNE8 (China)</li> <li>• Rail options (choose one) <ul style="list-style-type: none"> <li>○ 2U premium rail – iPC AXXSHRTRAIL</li> <li>○ 2U premium rail and cable management arm – iPC AXXFULLRAIL, iPC AXXCMA2</li> <li>○ Enhanced value rail – iPC AXXELVRAIL</li> <li>○ 2U 2 post brackets (hard mount) – iPC AXX2POSTBRCKT</li> </ul> </li> </ul>

**Table 3. System based on Intel® Server Board 2600WF family**

Intel® Server System R2312WF0NU	
	
<b>Included</b>	<ul style="list-style-type: none"> <li>(1) - Intel® Server Board S2600WF0R (No on-board LAN) - iPC S2600WF0R</li> <li>(2) - 3-slot PCIe x8 riser cards (riser 1 and 2) - iPC A2UL8RISER2</li> <li>(1) - 2-slot low profile PCIe riser card (1 x4 and 1 x8 slots for riser 3 only) - iPC A2UX8X4RISER</li> <li>(1) - standard control panel board - iPC FXXFPANEL2</li> <li>(1) - 2U Air duct</li> <li>(6) - Hot swap system fans - iPC FR2UFAN60HSW</li> <li>(2) - 1300 W AC Power Supply Module - iPC AXX1300TCRPS</li> <li>(2) - CPU heat sinks - iPC FXXCA78X108HS</li> <li>(1) - Intel Storage Module RMSP3JD160J - iPC RMSP3JD160J</li> <li>(1) - SSD D3-S4510 Series (240 GB, M.2 80 mm SATA 6 Gb/s, 3D2, TLC) - iPC SSDSCKKB240G801</li> <li>(1) - Remote Management Module AXXRMM4LITE2 - iPC AXXRMM4LITE2</li> </ul>
<b>Required items</b>	<ul style="list-style-type: none"> <li>• 2<sup>nd</sup> Generation Intel® Xeon® Scalable processors (see Section 2.3.1)</li> <li>• ECC DDR4 memory (see Section 2.3.2) <ul style="list-style-type: none"> <li>○ Up to (24) DIMMs for dual processors</li> <li>○ Up to (12) DIMMs for a single processor</li> <li>○ DDDC DDR-compatible Intel® Optane™ DC persistent memory module (supported by Intel® Server Boards S2600WFTR, S2600WF0R, and S2600WFQR with a 2<sup>nd</sup> Gen Intel® Xeon® Scalable processor)</li> </ul> </li> <li>• At least (2) SATA SSDs (see Section 2.3.3)</li> <li>• Intel® Ethernet adapter (choose one) <ul style="list-style-type: none"> <li>○ Intel Ethernet Converged Network Adapter X550-T2 – iPC X550T2</li> <li>○ Intel Ethernet Converged Network Adapter X710-DA2 – iPC X710DA2</li> <li>○ Intel Ethernet Network Adapter XXV710-DA2 - iPC XXV710DA2</li> </ul> </li> </ul>
<b>Optional accessories</b>	<ul style="list-style-type: none"> <li>• Kit of serial port DB9 adapters – iPC AXXRJ45DB93</li> <li>• Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 or iPC AXXTPMCHNE8 (China)</li> <li>• Rail options (choose one) <ul style="list-style-type: none"> <li>○ 2U premium rail – iPC AXXSHRTRAIL</li> <li>○ 2U premium rail and cable management arm – iPC AXXFULLRAIL, iPC AXXCMA2</li> <li>○ Enhanced value rail – iPC AXXELVRAIL</li> <li>○ 2U 2 post brackets (hard mount) – iPC AXX2POSTBRCKT</li> </ul> </li> </ul>

## 2.2 System Based on Intel® Compute Module HNS2600BPB Family

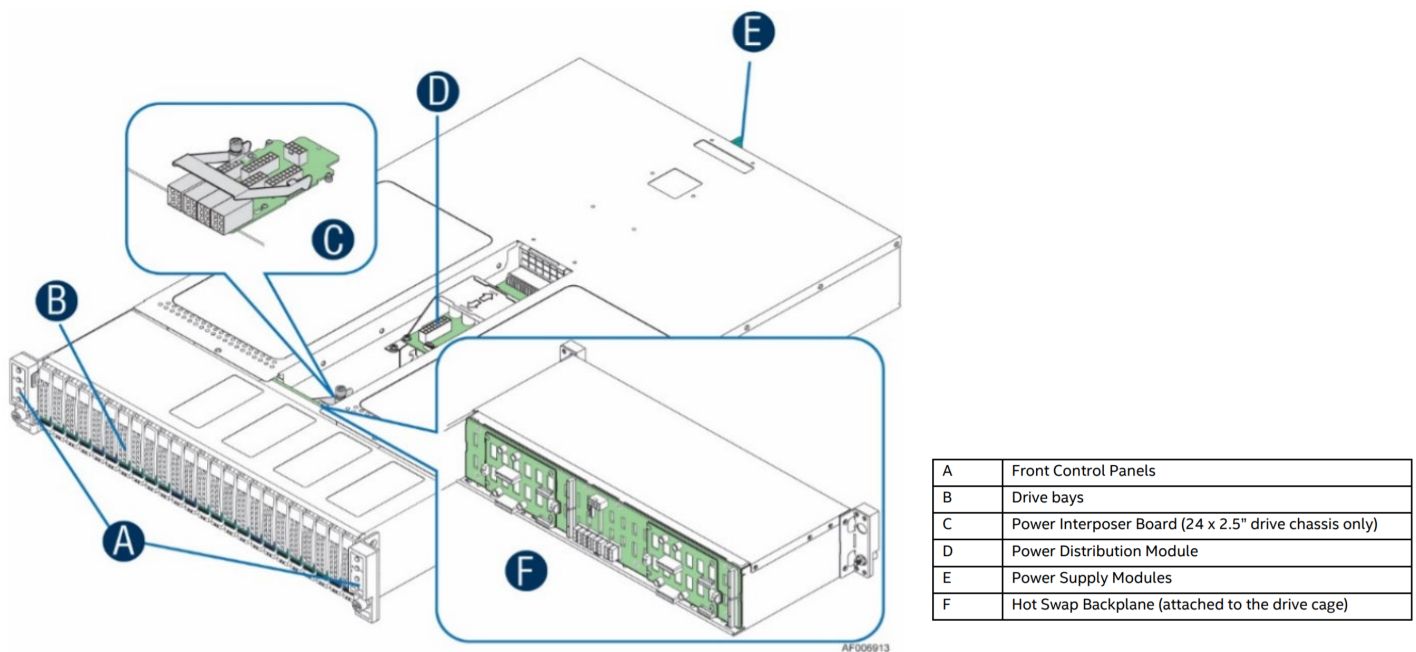
The product table in this section provides order code information and detailed descriptions for the following:

- Intel Server Chassis H2224XXLR3 and Intel Compute Module HNS2600BPB24NUR.
- Intel Server Chassis H2224XXLR3 and Intel Compute Module HNS2600BPS24NUR.
- Intel Server Chassis H2312XXLR3 and Intel Compute Module HNS2600BPSNUR.

Items identified by Intel Product Code (IPC) are orderable accessories or spares. The table identifies:

- Included components shipped with the server chassis.
- Included components shipped with each compute module. Four compute modules are required.
- Required items that include hardware necessary to achieve basic functionality using the default system feature set.
- Optional accessories that include some of the accessories available to enhance the basic feature set of the server system. Find additional accessories in Chapter 3.

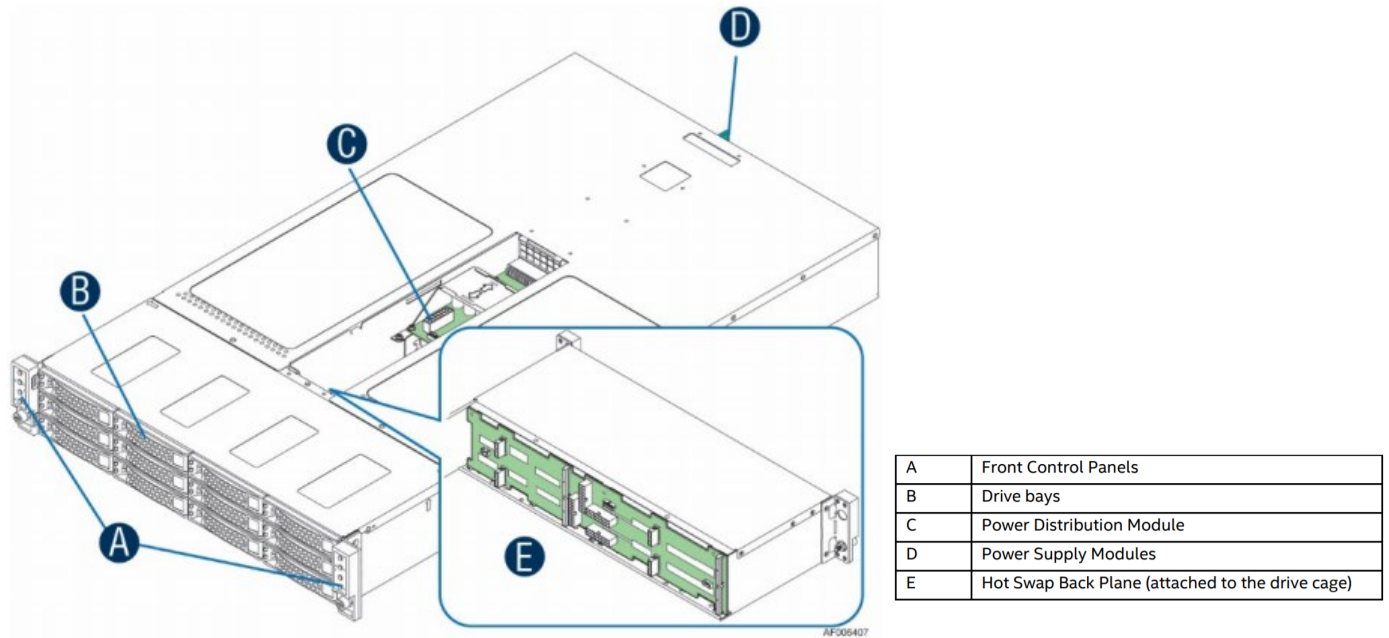
To identify the feature set of the Intel® Server Chassis H2224XXLR3, refer to Figure 2.



**Figure 2. Intel® Server Chassis H2224XXLR3 feature set identification**

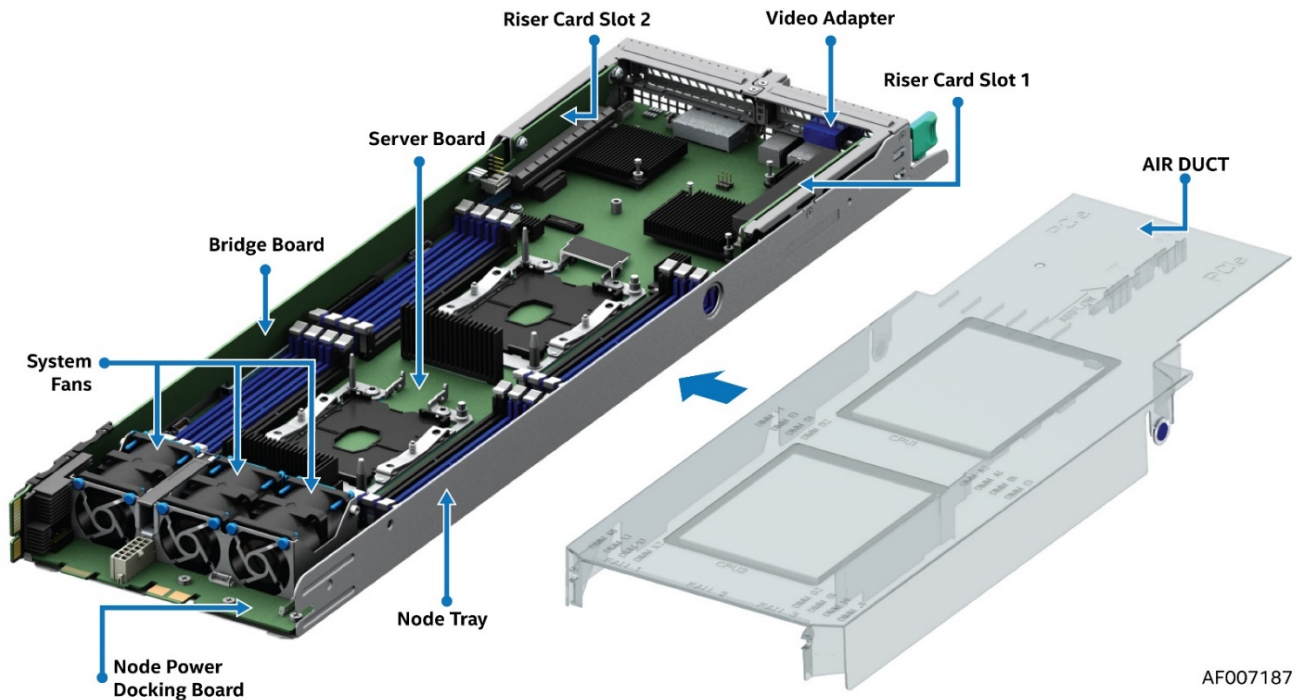


To identify the feature set of the Intel® Server Chassis H2312XXLR3, refer to Figure 3.



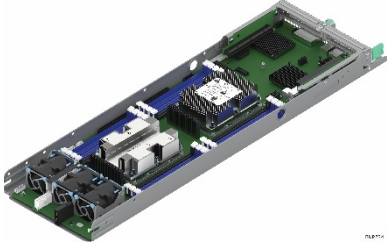
**Figure 3. Intel® Server Chassis H2312XXLR3 feature set identification**

To identify the feature set of the Intel® Compute Module HNS2600BP family that includes HNS2600BPB24NUR, HNS2600BPS24NUR and HNS2600BPSNUR , refer to Figure 4.



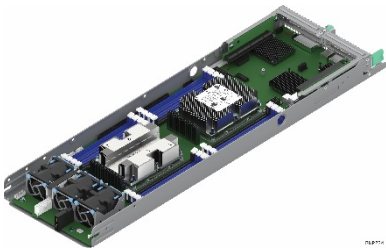
**Figure 4. Intel® Compute Module HNS2600BP family feature set identification**

**Table 3. System based on Intel® Compute Module HNS2600BP family**

<b>Intel® Server Chassis H2224XXLR3</b>	
<b>Included with Intel® Server Chassis</b>	<ul style="list-style-type: none"> <li>(1) – Standard control panel assembly – iPC FXXFPANEL2</li> <li>(1) – 24 x 2.5" hot-swap drive bay. Includes: <ul style="list-style-type: none"> <li>• (1) – 12 Gb SAS backplane – iPC HW24X25HS12G</li> <li>• (24) – 2.5" hot-swap drive tool-less carriers – iPC FXX25HSCAR3</li> </ul> </li> <li>(2) – 2130 W common redundant power supply (80 PLUS® Platinum) – iPC FXX2130PCRPS</li> <li>(1) – Power distribution board – iPC FXXCRPSPDB2</li> <li>(1) – Power interposer board – iPC FXXCRPSPIB</li> <li>(1) – Enhanced value rail – iPC AXXELVRAIL</li> </ul>
<b>Intel® Compute Module HNS2600BPB24NUR and HNS2600BPS24NUR – (4) nodes per chassis</b>	
	
<b>Included with Intel® Compute Module</b>	<ul style="list-style-type: none"> <li>(1) – Intel® Server Board S2600BPB – iPC S2600BPB <ul style="list-style-type: none"> <li>• Includes (2) integrated 10 GbE RJ-45 connectors based on Intel® Ethernet Adapter X550</li> </ul> </li> <li>(1) – Power docking board – iPC PHWBPNPB24</li> <li>(1) – Front 1U passive heat sink – iPC FXX2678X108HS</li> <li>(1) – Rear 1U passive heat sink – iPC FXXCA78X108HS</li> <li>(3) – 40 x 56 mm dual rotor fan – iPC FXX4056DRFAN2</li> <li>(1) – Slot 1 PCIe* x16 riser card for low-profile PCIe card – iPC AHW1URISER1</li> <li>(1) – Slot 2 PCIe x16 riser card for low-profile PCIe card and M.2 device – iPC AHW1UM2RISER2</li> <li>(1) – External VGA cable bracket – iPC AXXBPVIDCBL</li> <li>(1) – 6-port SAS 12 Gb/s (NVMe*) bridge board – iPC AHWBPBGB24</li> <li>(1) – SSD DC S3520 series (150 GB, M.2 80 mm SATA 6 Gb/s, 3D1, MLC) – iPC SSDSCKJB150G701</li> <li>(1) – M.2 add-in card (AIC) – iPC ABPM2A2T1P</li> <li>(1) – M.2 AIC cable – iPC AXXCBL135HD7S</li> <li>(1) – Intel® Remote Management Module – iPC AXXRMM4LITE</li> <li>(1) – Standard 2U air duct</li> <li>(1) – 1U node tray</li> </ul>
<b>Required items</b>	<ul style="list-style-type: none"> <li>• (2) 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors (see Section 2.3.1)</li> <li>• Up to (12) ECC DDR4 DIMMs (see Section 2.3.2)</li> <li>• Up to (24) SATA SSDs (see Section 2.3.3)</li> <li>• DDR4 RDIMM/LRDIMM, Up to 2933 MT/s, 1.2V</li> <li>• DDR4-compatible Intel® Optane™ DC PMM, Up to 2666 MT/s, 1.2V</li> </ul>
<b>Optional accessories</b>	<ul style="list-style-type: none"> <li>• 2U premium rail – iPC AXXFULLRAIL</li> <li>• Intel® Ethernet adapter <ul style="list-style-type: none"> <li>○ Intel Ethernet Converged Network Adapter X550-T2 – iPC X550T2</li> <li>○ Intel Ethernet Converged Network Adapter X710-DA2 – iPC X710DA2</li> <li>○ Intel Ethernet Network Adapter XXV710-DA2 – iPC XXV710DA2</li> </ul> </li> </ul>

**Intel® Server Chassis H2312XXLR3****Included with Intel® Server Chassis**

- (1) – Standard control panel assembly – iPC FH2000FPANEL2
- (1) – 24 x 2.5" hot-swap drive bay. Includes:
  - (1) – 12 Gb SAS backplane – iPC FHW12X35HS12G
  - (12) – 3.5" hot-swap drive tool less carriers – iPC FXX35HSCAR2
- (2) – 2130 W common redundant power supply (80 PLUS® Platinum) – iPC FXX2130PCRP5
- (1) – Power distribution board – iPC FXXCRPSPDB2
- (1) – Power interposer board – iPC FXXCRPSPIB
- (1) – Enhanced value rail – iPC AXCELVRAIL

**Intel® Compute Module HNS2600BPSNUR– (4) nodes per chassis****Included with Intel® Compute Module**

- (1) – Intel® Server Board S2600BPSR – iPC S2600BPSR
  - Includes (2) integrated 10 GbE SFP connectors based on Intel® Ethernet Adapter X550
- (1) – Power docking board – iPC PHWBPNPB24
- (1) – Front 1U passive heat sink – iPC FXX2678X108HS
- (1) – Rear 1U passive heat sink – iPC FXXCA78X108HS
- (3) – 40 x 56 mm dual rotor fan – iPC FXX4056DRFAN2
- (1) – Slot 1 PCIe\* x16 riser card for low-profile PCIe card – iPC AHW1URISER1
- (1) – Slot 2 PCIe x16 riser card for low-profile PCIe card and M.2 device – iPC AHW1UM2RISER2
- (1) – External VGA cable bracket – iPC AXBPVIDCBL
- (1) – 4-port SAS 12 Gb/s bridge board – iPC AHWBP12GBGBIT
- (1) – SSD DC S3520 series (150 GB, M.2 80 mm SATA 6 Gb/s, 3D1, MLC) – iPC SSDSCKJB150G701
- (1) – M.2 add-in card (AIC) – iPC ABPM2A2T1P
- (1) – M.2 AIC cable – iPC AXXCBL135HD7S
- (1) – Intel® Remote Management Module – iPC AXXRMM4LITE
- (1) – Standard 2U air duct
- (1) – 1U node tray

**Required items**

- (2) 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors (see Section 2.3.1)
- (6) or (12) ECC DDR4 DIMMs (see Section 2.3.2) per node
- minimum (1) SATA SSDs per node (see Section 2.3.3)
- DDR4 RDIMM/LRDIMM, Up to 2933 MT/s, 1.2V
- DDR4-compatible Intel® Optane™ DC PMM, Up to 2666 MT/s, 1.2V



<b>Optional accessories</b>	<ul style="list-style-type: none"> <li>• 2U premium rail – iPC AXXFULLRAIL</li> <li>• Intel® Ethernet adapter <ul style="list-style-type: none"> <li>○ Intel Ethernet Converged Network Adapter X550-T2 – iPC X550T2</li> <li>○ Intel Ethernet Converged Network Adapter X710-DA2 – iPC X710DA2</li> <li>○ Intel Ethernet Network Adapter XXV710-DA2 – iPC XXV710DA2</li> </ul> </li> </ul>
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## 2.3 Required Options

### 2.3.1 Processor Options

Intel® Data Center Blocks for Nutanix® Enterprise Cloud Platform supports 2<sup>nd</sup> Generation Intel® Xeon® Scalable processors. The system based on the Intel Server Board 2600WF family supports single or dual processors, while the system based on the Intel Compute Module HNS2600BP family supports dual processors only. For dual processor systems, the processors must be identical. Currently all Cascade Lake processors (with configuration exceptions based on TDP) are supported. Please refer to <https://ark.intel.com/content/www/us/en/ark/products/codename/124664/cascade-lake.html> for the complete list of Cascade Lake processors which lists the set of compatible processors that Intel recommends for each system. For a comprehensive guide on what processors to use on S2600WF and S2600BP, please refer to Table 20 in [S2000BP Technical Product Specification](#) and Table 82 in the [S2000WF Technical Product Specification](#). For configuring your needs, please rely on this tool [Configure to order tool](#), which comes pre-populated with the Intel® Data Center Blocks for Nutanix® Enterprise Cloud Platform offerings. Contact Intel Sales for details on processor SKUs that are not listed in the links.

### 2.3.2 Memory Options

The system based on the Intel Server Board 2600WF family supports up to 24 DIMMs (12 DIMMs per processor), while the system based on the Intel Compute Module HNS2600BP family supports up to 12 DIMMs per node. All DIMMs in a system must be identical. The following memory options are available for both systems:

- 16 GB (1x16 GB) RDIMM, DDR4, 2 Rank, 2666 MHz
- 32 GB (1x32 GB) RDIMM, DDR4, 2 Rank, 2666 MHz
- 64 GB (1X64 GB) LRDIMM, DDR4, 4 Rank, 2666 MHz
- 16 GB (1x16 GB) RDIMM, DDR4, 1 Rank, 2933 MHz
- 32 GB (1x32 GB) RDIMM, DDR4, 2 Rank, 2933 MHz
- 64 GB (1X64 GB) LRDIMM, DDR4, 4 Rank, 2933 MHz

For Nutanix certification purposes, only memory populations of 100% or 50% are allowed (that is, 12 or 24 DIMMs with Intel Server Board S2600WF; 6 or 12 DIMMs per node with Intel Compute Module HNS3600BP). For DIMM Population guidelines, please refer to Section 4.3.1 of [S2600BP Technical Product Specification](#) and Section 4.3.1 of the [S2600WF Technical Product Specification](#).

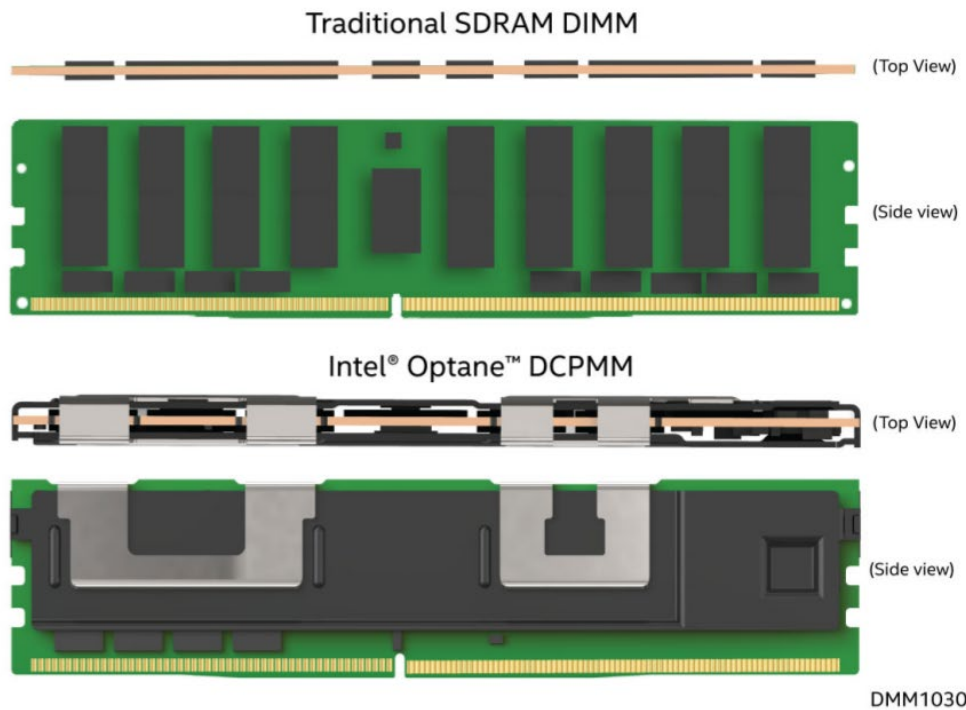
#### 2.3.2.1 Intel® Optane™ DC Persistent Memory Module Support Overview

The 2nd Gen Intel® Xeon® processor Scalable family introduces support for memory type Intel® Optane™ DC persistent memory module. Intel® Optane™ DC persistent memory module enables higher density (capacity per DIMM) DDR4-compatible memory modules with near-DRAM performance and advanced features not found in traditional SDRAM.

**Note:** Use of memory type Intel® Optane™ DC persistent memory module is only supported when the following are true:

- Server board or Compute Module product order codes ends with an 'R'
- Installed processor(s) are 2<sup>nd</sup> Gen Intel® Xeon® processor Scalable family

**Note:** Server Boards and Compute Modules that have non-(R) product codes but have had the system software updated to support 2nd Gen Intel® Xeon® processor Scalable family, are not equivalent to server boards and compute modules with product codes ending in (R). Server Boards and Compute Modules with non-(R) product codes do NOT have support for memory type Intel® Optane™ DC persistent memory module DIMMs.



**Figure 5. Visual differentiation of traditional SDRAM DIMM and Intel® Optane™ DCPMM**

Intel® Optane™ DC persistent memory module supports the following features:

- Always-enabled AES-256 encryption
- Cache coherent: like DRAM, contains evicted information from the LLC
- Byte-addressable memory
- Higher endurance than enterprise class SSDs

Intel® Optane™ DC persistent memory module supports the following operating modes:

- Memory Mode (supported on Intel® Data Center Blocks for Nutanix\* Enterprise Cloud Platform)
- App Direct mode
- Mixed mode

### 2.3.2.2 Intel® Optane™ DC Persistent Memory Module Memory Mode (MM)

In Memory Mode (MM), Intel® Optane™ DC persistent memory works as the main large volatile (non-persistent) system memory. While in Memory Mode, all available traditional DRAM within the same memory

controller functions as the write-back L4 cache for Intel® Optane™ DC persistent memory module. This lowers the cost of total system memory capacity versus only traditional DRAM while maintaining near-DRAM performance. While operating within this mode, the only usable memory is the total capacity of Intel® Optane™ persistent memory. Please note that currently, only Memory Mode is supported Intel® Data Center Blocks for Nutanix® Enterprise Cloud Platform.

For more details, please refer to [Intel® Optane™ DC persistent memory Product Page](#) and the [Intel® Optane™ DC persistent memory Product Brief](#).

### 2.3.3 Storage Options

The system based on Intel Server Board 2600WF family supports up to 16 drive devices in the default configuration with an optional upgrade to support up to eight additional devices for a total of 24. The system is based on Intel Compute Module HNS2600BP family supports up to 24 drive devices or six per node.

Storage can be populated in two tiers as listed below. A minimum of two SSDs are required.

Meta data tier:

- SSD DC P4800X Series (750 GB, 2.5" PCIe x4, Intel® 3D XPoint™ technology)
- SSD DC P4800X Series (1.5 TB, 2.5" PCIe x4, Intel® 3D XPoint™ technology)
- SSD DC P4510 Series (2.0 TB, 2.5" PCIe 3.1 x4, 3D2, TLC)
- SSD DC P4510 Series (4.0 TB, 2.5" PCIe 3.1 x4, 3D2, TLC)
- SSD DC P4610 Series (1.6 TB, 2.5" PCIe 3.1 x4, 3D2, TLC)
- SSD DC P4610 Series (3.2 TB, 2.5" PCIe 3.1 x4, 3D2, TLC)
- SSD D3-S4510 Series (1.92 TB, 2.5" SATA 6Gb/s, 3D2, TLC)
- SSD D3-S4510 Series (3.84 TB, 2.5" SATA 6Gb/s, 3D2, TLC)
- SSD D3-S4610 Series (960 GB, 2.5" SATA 6Gb/s, 3D2, TLC)
- SSD D3-S4610 Series (1.92 TB, 2.5" SATA 6Gb/s, 3D2, TLC)
- SSD D3-S4610 Series (3.84 TB, 2.5" SATA 6Gb/s, 3D2, TLC)
- SSD D3-S4610 Series (7.68 TB, 2.5" SATA 6Gb/s, 3D2, TLC)

Storage tier:




- SSD D3-S4510 Series (3.84 TB, 2.5" SATA 6Gb/s, 3D2, TLC)
- SSD D3-S4610 Series (960 GB, 2.5" SATA 6Gb/s, 3D2, TLC)
- SSD D3-S4610 Series (1.92 TB, 2.5" SATA 6Gb/s, 3D2, TLC)
- Seagate Enterprise Capacity 2.5" HDD ST2000NX0433 128MB Cache - hard drive - 2 TB – SAS
- Seagate 3.5" Exos 7E8 ST4000NM002A 4TB 7200RPM SATA 6Gb/s 256 MB Hard Drive
- Seagate 3.5" Exos 7E8 ST6000NM021A 6TB 7200RPM SATA 6Gb/s 256 MB Hard Drive
- Seagate 3.5" Exos 7E8 ST8000NM000A 8TB 7200RPM SATA 6Gb/s 256 MB Hard Drive
- Seagate 3.5" ST10000NM0086 10TB 7200RPM SATA 6Gb/s 256 MB Hard Drive
- Seagate 3.5" ST12000NM001G 12TB 7200RPM SATA 6Gb/s 256 MB Hard Drive
- Seagate 3.5" ST14000NM001G 14TB 7200RPM SATA 6Gb/s 256 MB Hard Drive
- Seagate 3.5" ST12000NM001G 16TB 7200RPM SATA 6Gb/s 256 MB Hard Drive

### 2.3.4 Networking Options

An Intel® Ethernet adapter is required for systems based on Intel Server Board S2600WF. Choose one of three available Intel® Ethernet adapters described in Table 5.

An Intel Ethernet adapter is an optional accessory for systems based on Intel Compute Module HNS2600BP.

**Table 4. Intel® Ethernet adapters**

Product Image	Details	Description
	<b>Intel® Ethernet Converged Network Adapter X550-T2</b>  <b>iPC</b> X550T2 <b>MM#</b> 940128	Dual-port Ethernet adapter 10 GbE/5 GbE/2.5 GbE/1 GbE/100 Mb
	<b>Intel® Ethernet Converged Network Adapter X710-DA2</b>  <b>iPC</b> X710DA2 <b>MM#</b> 933206	Dual-port Ethernet adapter 10/1 GbE
	<b>Intel® Ethernet Network Adapter XXV710-DA2</b>  <b>iPC</b> FTXXV710-AM2 <b>MM#</b> 954103	Dual-port Ethernet adapter 25/10/1 GbE




For RoCE-based RDMA storage networks, a Mellanox\* MCX4121A-XCAT ConnectX-4 Lx EN adapter can be installed by a system integrator under Nutanix certification criteria. If a Mellanox adapter is used in RDMA mode, the use of a non-RDMA mode Ethernet adapter is also required to allow for standard server/virtual machine network communications.


### 3. Optional Configuration Accessories and Upgrades

#### 3.1 Rail Options

**CAUTION:** Exceeding the rail kit's specified maximum weight limit or misalignment of the server in the rack may result in failure of the rack rails and damage to the systems or personal injury. Using two people or the use of a mechanical assist tool to install and align the server into the rack is highly recommended.

**Table 5. Rail options**





Product Image	Details	Description
	<b>Premium Rail AXXFULLRAIL</b>  <b>iPC</b> AXXFULLRAIL <b>MM#</b> 939209 <b>UPC</b> 735858291989 <b>EAN</b> 5032037070546 <b>MOQ</b> 1	2U premium quality rails with cable management arm (CMA) support. <ul style="list-style-type: none"> <li>• Travel distance of 800 mm</li> <li>• Adjustment within 594.8 mm~813 mm to fit difference depth rack</li> <li>• Full extension from rack</li> <li>• Tool less installation</li> </ul>
	<b>Cable Management Arm AXXCMA2</b>  <b>iPC</b> AXXCMA2 <b>MM#</b> 939211 <b>UPC</b> 735858292009 <b>EAN</b> 5032037070560 <b>MOQ</b> 1  <b>Premium Rail AXXSHRTRAIL</b>  <b>iPC</b> AXXSHRTRAIL <b>MM#</b> 939210 <b>UPC</b> 735858291996 <b>EAN</b> 5032037070553 <b>MOQ</b> 1	Cable management arm compatible with AXXFULLRAIL.  <i>System based on Intel Server Board S2600WF family only.</i>  2U premium quality rails with no CMA support. <ul style="list-style-type: none"> <li>• Travel distance of 788 mm</li> <li>• Adjustment within 594.8 mm ~ 813 mm to fit difference depth rack</li> <li>• Bracket adjustment from 594.8 mm to 813 mm</li> <li>• Full extension from rack</li> <li>• Supports up to 45 kg</li> </ul> <i>System based on Intel Server Board S2600WF family only.</i>
	<b>Enhanced Value Rail AXXELVRail</b>  <b>iPC</b> AXXELVRail <b>MM#</b> 920970 <b>UPC</b> 735858244367 <b>EAN</b> 5032037038980 <b>MOQ</b> 1	Enhanced value rail kit with no CMA support. <ul style="list-style-type: none"> <li>• Maximum travel length of 424.2 mm</li> <li>• Adjustment within 609.6 mm ~ 765 mm to fit difference depth rack</li> <li>• 2/3 extension from rack</li> <li>• Supports up to 59 kg</li> <li>• Tool less chassis attach</li> </ul> <i>System based on Intel Server Board S2600WF family only.</i>

Product Image	Details	Description
	<b>2-Post Brackets AXX2POSTBRCKT</b>  <b>iPC</b> AXX2POSTBRCKT <b>MM#</b> 918808 <b>UPC</b> 735858245319 <b>EAN</b> 5032037039833 <b>MOQ</b> 1	Fixed mounting brackets for center mount on two-post racks. Tools are required to attach components to the rack.  <i>System based on Intel Server Board S2600WF family only.</i>






### 3.2 System Based on Intel® Server Board S2600WF Family Options

Additional options are available for the system based on Intel® Server Board S2600WF family.

**Table 6. System based on Intel® Server Board S2600WF family options**

Product Image	Details	Description
	<b>2U Hot-Swap 8x2.5" SAS/NVMe* Combo Drive Bay Kit A2U8X25S3PHS</b>  <b>iPC</b> A2U8X25S3PHS <b>MM#</b> 955858 <b>UPC</b> 735858344852 <b>EAN</b> 5032037105569 <b>MOQ</b> 1	Kit includes: (1) – drive bay assembly module (1) – 8x2.5 SAS/NVMe combo backplane (8) – 2.5" drive carriers and drive blanks (1) – 75 mm 6pin – 6pin I <sup>2</sup> C jumper cable (1) – 75 mm 5pin-6pin I <sup>2</sup> C jumper cable  Required (sold separately): (1) – RAID storage adapter RSP3QD160J (2) – Cable kit AXXCBL730HDHD (1) – Rack handle A2UHANDLKIT
  	<b>Intel® Storage Adapter RSP3QD160J</b>  <b>iPC</b> RSP3QD160J <b>MM#</b> 954491  <b>4-Port PCIe Gen3 x8 Switch AIC AXXP3SWX08040</b>  <b>iPC</b> AXXP3SWX08040 <b>MM#</b> 958241	Low-profile, half-length MD2 PCIe* add-in card for use with 2U hot-swap 8x2.5" SAS/NVMe* combo drive bay kit A2U8X25S3PHS.  <b>Note:</b> In the Intel® Configurator Tool, this is automatically populated when the option for eight (8) additional storage devices is selected.  SB X8 4-port switch add-in card allowing four (4) additional PCIe* SSD drives within the system.  <b>Note:</b> In the Intel® Configurator Tool, this switch is automatically populated within Intel® Server Board S2600WF-based systems if more than two (2) NVMe* SSD are used.
	<b>Cable Kit AXXCBL730HDHD</b>  <b>iPC</b> AXXCBL730HDHD <b>MM#</b> 936178 <b>UPC</b> 735858284745 <b>EAN</b> 5032037065030 <b>MOQ</b> 1	Required by 2U Hot-Swap 8x2.5" SAS/NVMe* Combo Drive Bay Kit A2U8X25S3PHS. Includes: (2) – 730 mm cables with straight SFF8643 to straight SFF8643 connectors.



Product Image	Details	Description
	<b>Rack Handle Kit A2UHANDLKIT</b>  <b>iPC</b> A2UHANDLKIT <b>MM#</b> 936038 <b>UPC</b> 735858288866 <b>EAN</b> 5032037068147 <b>MOQ</b> 1	<p>Set of storage rack handles with control panel and USB support. Required by 2U Hot-Swap 8x2.5" SAS/NVMe* Combo Drive Bay Kit A2U8X25S3PHS. These storage rack handles replace the included standard chassis rack handles.</p> <p><b>Note:</b> Kit includes two additional types of replacement handles that are not used.</p>
	<b>Serial Port Cable Kit AXXRJ45DB93</b>  <b>iPC</b> AXXRJ45DB93 <b>MM#</b> 920430 <b>UPC</b> 735858242820 <b>EAN</b> 5032037037525 <b>MOQ</b> 1	<p>This kit provides serial port cables for use with systems that include a back panel cut out to support a DB9 Serial 'B' port as routed from the server board and for systems that include an external RJ45 Serial 'A' port that need to convert the connector to a DB9 style connector. Kit includes:</p> <ul style="list-style-type: none"> <li>(1) – 1040 mm internal serial 'B' port cable (onboard DH10 header) to external mount DB9</li> <li>(1) – 520 mm internal serial 'B' port cable (onboard DH10 header) to external mount DB9</li> <li>(1) – 100 mm DCD RJ45 to DB9 dongle</li> <li>(1) – 100 mm DSR RJ45 to DB9 dongle</li> </ul>
	<b>Trusted Platform Module (TPM) 2.0 AXXTPMENC8</b>  <b>iPC</b> AXXTPMENC8 <b>MM#</b> 955867 <b>UPC</b> 735858291989 <b>EAN</b> 5032037070546 <b>MOQ</b> 1	<p>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.</p>
	<b>Trusted Platform Module (TPM) 2.0 AXXTPMCHNE8</b>  <b>iPC</b> AXXTPMCHNE8 <b>MM#</b> 960608 <b>UPC</b> 735858347341 <b>EAN</b> 5032037107068 <b>MOQ</b> 1	<p>TPM 2.0 for use in China</p>
	<b>AXX1300TCRPS</b>  <b>iPC</b> AXX1300TCRPS <b>MM#</b> 956542 <b>UPC</b> 735858345705 <b>EAN</b> 5032037106191 <b>MOQ</b> 1	<p>1300W AC CRPS 80 PLUS* Titanium efficiency power supply module. Power cord sold separately.</p>

## 4. Spare and Replacement Parts

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The following table lists the spare parts that are unique to Intel® Data Center Blocks for Nutanix\* Enterprise Cloud Platform systems. For other spare and replacement parts, refer to the respective system configuration guides listed in Appendix A.


**Table 7. Unique spare parts for Intel® Data Center Blocks for Nutanix\* Enterprise Cloud Platform systems**

Details	Description
<b>M.2 Add-In Card (AIC)</b>  <b>iPC</b> ABPM2A2T1P	M.2 Adapter Add-In_Card (AIC) allows for installation of two M.2 SATA SSDs and one M.2 PCI SSD (or M.2 NVMe* SSD) using a PCIe* adapter card slot. Designed to accommodate M2 in 42, 60 or 80 mm length.
<b>M.2 AIC Cable</b>  <b>iPC</b> AXXCBL135HD7S	Cable to allow for connecting the 7-pin SATA ports of the M.2 AIC to the HD mini-SAS (8643) connector of Intel® Compute Module HNS2600BP.



## 5. Extended Warranties

Table 8. Extended warranties

Product Image	Details	Description
	<p><b>Server System Extended Warranty</b></p> <p>iPC SVCEWHWSY MM# 923113 MOQ 1</p> <p><b>Product type</b> Warranty</p>	Extended warranty for complete server systems.

## Appendix A. Additional Resources

For additional information on Intel® Data Center Blocks for Nutanix\* Enterprise Cloud Platform and Nutanix\*, refer to the following resources.

- [Intel® Data Center Block support page](#)
- [Intel® Server Configurator Tool](#)
- [Nutanix Intel partner site](#)

### A.1. System Based on Intel® Server Board S2600WF Family

For additional information about this family of products and its supported accessories, refer to the following resources.

- [Intel® Server Board S2600WF Family Technical Product Specification](#)
- [Intel® Server Board S2600WF Family Configuration Guide](#)
- [Intel® Server Board S2600WF Family Integration and Service Guide](#)

### A.2. System Based on Intel® Compute Module HNS2600BPB Family

For additional information about this family of products and its supported accessories, refer to the following resources.

- [Intel® Compute Module HNS2600BP Family Technical Product Specification](#)
- [Intel® Server S2600BP Product Family Configuration Guide](#)
- [Intel® Compute Module HNS2600BP Family Integration and Service Guide](#)

### A.3. Intel® Storage Adapter RSP3QD160J Product Specifications

To learn more on the Intel-Nutanix\* qualified storage adapter RSP3QD160J, refer to the following resource:

- [Intel® Storage Adapter RSP3QD160J Product Specifications](#)

### A.4. Intel® Storage Module RMSP3JD160J Product Specifications

To learn more on the Intel-Nutanix\* qualified storage adapter RMSP3JD160J, refer to the following resource:

- [Intel® Storage Module RMSP3JD160J Product Specifications](#)

## Appendix B. Glossary

Term	Definition
<b>AIC</b>	Add-In Card
<b>CMA</b>	Cable Management Arm
<b>CTO</b>	Configure-to-Order
<b>Intel® DCB</b>	Intel® Data Center Blocks
<b>EAN</b>	International Article Number (barcode)
<b>FRU</b>	Field Replaceable Unit
<b>iPC</b>	Intel Product Code
<b>MM#</b>	Master Material order number
<b>MOQ</b>	Minimum Order Quantity
<b>NVMe*</b>	NVM Express (Non-Volatile Memory Host Controller Interface Specification (NVMeHCI))
<b>PCIe*</b>	PCI Express*
<b>RAID</b>	Redundant Array of Independent Drives
<b>Intel® RMM4 Lite</b>	Intel® Remote Management Module 4 Lite
<b>ROC</b>	RAID on Chip
<b>ROHS</b>	Restriction of Hazardous Substance Directive
<b>SAS</b>	Serial Attached SCSI
<b>SATA</b>	Serial ATA
<b>TPM</b>	Trusted Platform Module
<b>UPC</b>	Universal Product Code (barcode)

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