



Intel® Data Center Blocks for Cloud – VMWare* vSAN ReadyNode

System Deployment and Configuration Guide

This document provides guidance for operating system installation and identification of available system options for Intel Data Center Blocks for Cloud supporting 2nd Generation of Intel® Xeon® Scalable processors.

Rev 2.20

June 2021

<Blank page>

Document Revision History

Date	Revision	Changes
January 2018	1.0	Initial release
October 2018	1.1	Implemented changes (MM#s, SSD models) to reflect transition to the new U.2 SSD devices (S4500 -> S4510, S4600 -> S4610, P4500 -> P4510) and to the new M.2 SSD devices (P3100 -> P4101) driven by EOL process according to the PCN 116499. Added statement to paragraph 2.2 about the HDD requirement to be in VMWare CG and in Intel HCL to maintain vSAN compatibility
October 2018	1.2	Updated paragraph 2.1 regarding possible configuration changes
November 2018	1.3	Updated link to the allowed configuration changes from VMWare Blog to VMWare KB
January 2019	1.4	Implemented changes (MM#s, SSD models) to reflect transition to the new M.2 SSD devices driven by EOL process (S4500 -> S4510) according to the PCN 116682. Corrected error in Seagate HDD model number
March 2018	1.9	The first revision for the “Refresh” product line
April 2019	1.95	Removed VRN2208WFAF84R and VRN2208WFAF85R models with Intel® Optane™ DC persistent memory module pending support from VMWare
April 2019	1.96	Updated the MM#s for VRN2224BPAF6R, VRN2224BPHY6R and VRN2224BPHY4R
April 2019	1.97	Updated AEN and UPC codes
April 2019	1.98	Corrected included items list for VRN2208WFAF81R, VRN2208WFAF61R, VRN2208WFAF41R
April 2019	1.99	Added screenshot helping select the drive for ESXi installation, moved reference to the platform Configuration Guides to the end of paragraph 4.1, updated base platform BOM
May 2019	2.00	Clarified guidance for Intel software stack update in paragraph 2.1
June 2019	2.10	Corrected “ReadyNode” term. Reviewed/modified/approved by tech writer.
June 2021	2.20	Added back the VRN2208WFAF84R as certified and listed on VCG

Disclaimers

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Learn more at Intel.com, or from the OEM or retailer.

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, the Intel logo, Xeon, and Intel Optane 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.

Copyright © Intel Corporation. All rights reserved.

Table of Contents

1. Introduction	7
2. VMWare* vSAN Certification and the Intel® DCB for Cloud	8
2.1 Maintaining VMWare* vSAN ReadyNode Certification	8
2.2 Hybrid System Configurations	8
3. VMWare* vSAN Installation Requirements	10
4. System Configuration Options	12
4.1 Rail Kit Options	22
5. Drive Extraction and Installation	23
5.1 Drive Carrier Extraction	23
5.2 Drive Carrier Insertion/Installation	23
5.3 2.5" HDD/SSD Drive Carrier Assembly	24
Appendix A. Glossary	26

List of Figures

Figure 1. Intel® Server multi-node systems VRN2224BPAF6R, VRN2224BPHY6R, and VRN2224BPHY4R.....	7
Figure 2. Intel® Server single-node systems VRN2208WFAF82R, VRN2208WFAF81R, VRN2208WFAF61R, VRN2208WFAF41R, and VRN2208WFHY6R	7
Figure 3. Intel® Server single-node system VRN2208WFAF83R.....	7
Figure 4. Select M.2 SSD for operating system installation	11
Figure 5. Drive carrier extraction from chassis	23
Figure 6. Drive carrier insertion into chassis.....	23
Figure 7. 2.5” drive carrier assembly – drive/drive Blank Removal.....	24
Figure 8. 2.5” Drive carrier assembly – drive installation into carrier.....	24
Figure 9. 2.5” Drive carrier assembly – alignment features	25

List of Tables

Table 1. Certified hard drives for hybrid configurations	8
Table 2. Specified boot drives for operating system installation – certification requirement	10
Table 3. Intel® Server System VRN2224BPHY4R	12
Table 4. Intel® Server System VRN2224BPHY6R	13
Table 5. Intel® Server System VRN2224BPAF6R.....	14
Table 6. Intel® Server System VRN2208WFHY6R	15
Table 7. Intel® Server System VRN2208WFAF41R.....	16
Table 8. Intel® Server System VRN2208WFAF61R	17
Table 9. Intel® Server System VRN2208WFAF81R.....	18
Table 10. Intel® Server System VRN2208WFAF82R	19
Table 11. Intel® Server System VRN2208WFAF83R	20
Table 12. Intel® Server System VRN2208WFAF84R	21
Table 13. Intel® Rail Kit accessory options for VRN2208WFXXR models	22

1. Introduction

Intel® Data Center Blocks (Intel® DCB) configurations are purpose-built with all-Intel® technology, optimized to address the needs of specific market segments. These fully-validated blocks deliver performance, reliability, and quality for solutions customer want and can trust to handle their demanding cloud workloads.

The Intel Data Center Blocks for Cloud – vSAN ReadyNodes are fully validated, pre-configured server systems that include VMWare* certifications for vSAN. With these vSAN ReadyNodes from Intel, resellers have access to the software-defined storage market, making it easier to deliver Software Defined Storage (SDS) solutions to customers.

vSAN ReadyNodes from Intel are powered by the latest Intel technology, and include Intel® Server Boards, Intel® Server Chassis, second generation of Intel® Xeon® Scalable processors, Intel® Solid State Drives (SSDs), Intel® Optane™ Technology and third-party memory in configurations optimized and pre-certified for VMware vSAN. Available in both all-flash and hybrid configurations, these server systems are optimized for outstanding storage performance. The second generation of Intel Xeon Scalable processors family accelerates virtualized storage with features such as Intel® AVX 2.0 and Intel® Virtualization Technology. Intel SSDs provide high throughput and low latency, which maximizes performance while reducing cost and space requirements. All-flash (AF) configurations deploy Intel's high-endurance NVMe* SSDs for the caching tier, delivering excellent performance, high IOPS, and low latency.

The following are examples of Intel single- and multi-node systems.



Figure 1. Intel® Server multi-node systems VRN2224BPAF6R, VRN2224BPHY6R, and VRN2224BPHY4R



Figure 2. Intel® Server single-node systems VRN2208WFAF82R, VRN2208WFAF81R, VRN2208WFAF61R, VRN2208WFAF41R, and VRN2208WFHY6R



Figure 3. Intel® Server single-node system VRN2208WFAF83R

2. VMWare* vSAN Certification and the Intel® DCB for Cloud

Servers within this product family offer Intel customers with preconfigured systems that are VMWare vSAN ReadyNode certified. Intel has extensively tested these systems to ensure best operation and reliability within the VMWare vSAN operating environment. This certification must be maintained to ensure continued best operation and reliability.

2.1 Maintaining VMWare* vSAN ReadyNode Certification

To maintain VMWare vSAN ReadyNode certification, be cautious with the changes to the predefined system configuration. Changes to the pre-defined server system configuration that may impact VMWare certification include:

- Modification of the component firmware and/or driver.
- Changing processor model and quantity.
- Changing the system memory.
- Adding or changing I/O devices such as add-in PCIe* cards or modules.
- Changing storage controller.
- Adding or changing storage devices such as hard disk drives (HDD) and solid state drives (SSD).

Further details can be found on the VMware website at <https://kb.vmware.com/s/article/52084>.

In addition to meeting the VMWare requirements, the components that can be used inside Intel DCB for Cloud should be listed in the Intel Hardware Compatibility List (HCL). To check if a component is supported on Intel DCB for Cloud, visit <https://www.intel.com/content/www/us/en/support/articles/000024153/server-products/server-boards.html?wapkw=server+hardware+compatibility+list>.

To find if a device is in the Intel Hardware Compatibility List, start with the “Intel Server Board S2600WF, HNS2600BP and S2600ST Families”. To find compatible device for VRN2208WFxxx models, select R2208WF0ZS from the “System/Chassis” list and corresponding device category from the “Compatible Options”. Similarly, to find compatible devices for VRN2224BPxxx models, select the H2224XXLR3 system.

2.2 Hybrid System Configurations

Hybrid systems have both HDDs and SSDs. Intel preinstalls certified boot and cache SSD drives. HDDs for hybrid configurations are not included and must be purchased separately. Only like certified HDDs should be installed in hybrid system configurations to maintain VMWare vSAN ReadyNode certification. The following table identifies the HDD model that was used for certification and locations.

Table 1. Certified hard drives for hybrid configurations

Model	Vendor	Model Number	Description	Quantity	Install Location
VRN2224BPHY6R	Seagate*	ST2000NX0433	2.5" HDD, 12Gb/s SAS 512E 2TB	16	Slots: 2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 16, 17, 20, 21, 22, 23
VRN2224BPHY4R		ST1000NX0453	2.5" HDD, 12Gb/s SAS 512E 1TB		
VRN2208WFHY6R	Seagate*	ST2000NX0433	2.5" HDD, 12Gb/s SAS 512E 2TB	6	Slots: 2, 3, 4, 5, 6, 7

If the HDD of different make/model is selected, check that this device is listed in the VMware Compatibility Guide to maintain vSAN compatibility. This device also should be listed in the Intel Hardware Compatibility List (HCL) to be supported by Intel Technical Support.

To check if the HDD is vSAN compatible, visit <https://www.vmware.com/resources/compatibility/search.php>.

To check if the HDD is supported in the Intel® DCB for Cloud Server System, visit

<https://www.intel.com/content/www/us/en/support/articles/000024153/server-products/server-boards.html?wapkw=server+hardware+compatibility+list>.

To find if the HDD model for use with a hybrid system is in the Intel Hardware Compatibility List, start with the “Intel Server Board S2600WF, HNS2600BP and S2600ST Families”. To find compatible drives for VRN2208WFHY6 model, select R2208WFTZS from the “System/Chassis” category and HDD-SATA from “Compatible Options” category. Similarly, to find compatible drives for VRN2224BPHY6 model, select the H2224XXLR3 system.

See Section 5 for drive installation instructions.

3. VMWare* vSAN Installation Requirements

For the Intel® DCB for Cloud Server System to function, a VMWare* vSAN operating environment must be installed by a customer.

This section provides information necessary to appropriately install the VMWare vSAN operating environment onto the Intel DCB for Cloud Server System. To maintain and comply with the VMWare vSAN certification, follow the installation steps as specified.

Note: Deviating from the documented operating system installation requirements may invalidate the VMWare vSAN certification performed by VMWare and Intel.

1. Acquire the appropriate software license from a VMWare partner or authorized VMWare distributor/reseller.
2. Create bootable USB drive with VMWare software image and attach it to the server system.
3. Power on the server. After POST completes, press the <F6> key to open the boot menu.
4. Select the USB device with installation media.
5. Install VMWare vSAN operating environment onto the dedicated M.2 SSD device (see Table 2). Follow the VMWare Installation wizard to complete the installation.
6. Restart the server after the installation has concluded.
7. Follow the remaining VMWare instructions to complete the installation.

Note: To maintain VMWare vSAN ReadyNode certification for any Intel DCB for Cloud Server System, VMWare vSAN operating environment must be installed to a specific storage device within the specific Intel DCB for Cloud Server System configuration.

The following table identifies the required boot device to install VMWare vSAN operating environment for each Intel DCB for Cloud Server System configuration listed.

Table 2. Specified boot drives for operating system installation – certification requirement

System Model	Storage Device Vendor	Storage Device Model Number	Device Location in the Server System
VRN2224BPAF6R VRN2224BPHY6R VRN2224BPHY4R	Intel	Intel® SSD DC P4101 (256GB M.2, 80mm)	Installed in M.2 connector on the slot 2 riser card AHW1UM2RISER2
VRN2208WFAF83R VRN2208WFAF82R VRN2208WFAF81R VRN2208WFAF61R VRN2208WFAF41R VRN2208WFHY6R	Intel	Intel SSD D3 S4510 Series (480GB, M.2, 80mm)	Installed in the M.2 port 1 on the motherboard

During installation process, the setup utility asks to select the target device for the VMWare ESXi environment. Intel® SSD DC P4101 (256GB M.2, 80mm) drive is seen as SSDPEKKA25, while Intel® SSD D3 S4510 (480GB, M.2, 80mm) drive is seen as SSDSCKKB48. Usually, the M.2 SSD is the drive with the lowest capacity in the list of all drives presented. Select this drive as the target for operating system installation. In the example below, the first NVMe* device with name INTEL SSDPEKKA25 is the M.2 SSD.

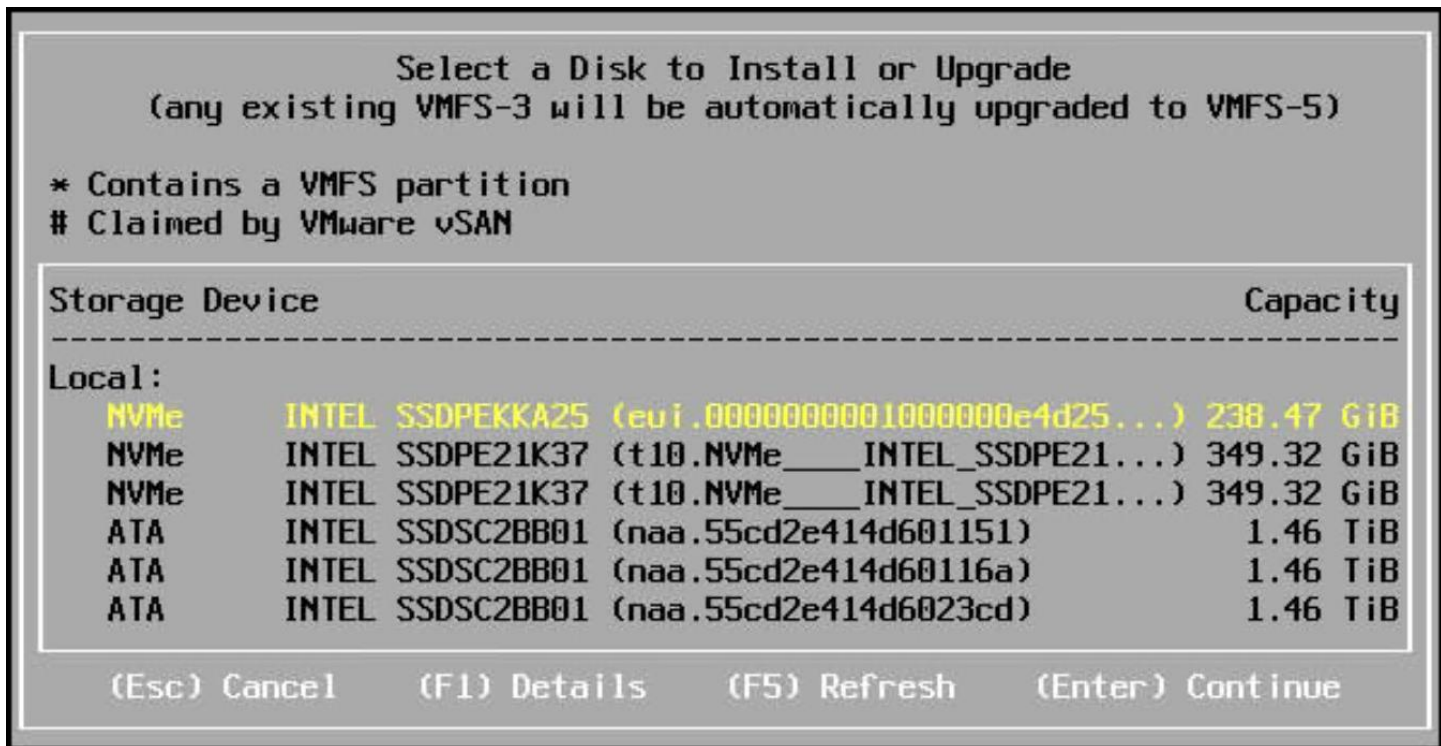


Figure 4. Select M.2 SSD for operating system installation

4. System Configuration Options

Table 3. Intel® Server System VRN2224BPHY4R


Intel® DCB for Cloud Server System VRN2224BPHY4R Fully integrated 2U, 4-node system including processors, memory, and SATA SSDs																	
	<table border="0"> <tr> <td>iPC</td> <td>VRN2224BPHY4R</td> </tr> <tr> <td>MM#</td> <td>999KFH</td> </tr> <tr> <td>UPC</td> <td>00735858420938</td> </tr> <tr> <td>EAN</td> <td>5032037163484</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>733 x 438 x 86.9 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2224BPHY4R	MM#	999KFH	UPC	00735858420938	EAN	5032037163484	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	733 x 438 x 86.9 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2224BPHY4R																
MM#	999KFH																
UPC	00735858420938																
EAN	5032037163484																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	733 x 438 x 86.9 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2224BPHY4R includes the following:</p> <ul style="list-style-type: none"> (1) – 2U chassis H2224XXLR3 (24x2.5"). Includes: <ul style="list-style-type: none"> (1) – Front panel – iPC FH2000FPANEL2 (1) – Power distribution board – iPC FXXCRPSPDB2 (1) – Power interposer board – iPC FXXCRPSPIB (2) – 2130W 80 PLUS* Platinum power supply units (PSU) – iPC FXX2130PCRPS (1) – 24 x 2.5" hot-swap drive bay. Includes: <ul style="list-style-type: none"> (24) – Tool-less drive carriers – iPC FXX25HSCAR3 (1) – Backplane – iPC HW24X25HS12G (4) – Blank compute module slot fillers (1) – Basic rack rail kit – iPC AXXELVRAIL <p>NOTE: The rail kit only supports the specific rack type with 3/8" square and 7.1mm round holes.</p> (4) – Intel® Compute Module HNS2600BPS24R (w/TPM 2.0, 2x10GbE SFP+ & 1GbE, RDMA). Includes: <ul style="list-style-type: none"> (1) – 1U node tray (1) – Intel® Server Board S2600BPSR (1) – Power docking board – iPC FHWBPNPB24 (3) – 40 x 56 mm dual rotor managed fans – iPC FXX4056DRFAN2 (1) – 1U passive heat sink – CPU1 – CuAL – iPC FXXHP78X108HS (1) – 1U passive heat sink – CPU2 – CuAL – iPC FXX2678X108HS (2) – Standard carrier clips (1) – Air duct (1) – External VGA port bracket (1) – Slot 2 riser card with 80 mm M.2 SSD slot – iPC AHW1UM2RISER2 (8) – Intel® Xeon® Silver 5215 processor (10 Cores, 2.5GHz, 85W) – iPC CD8069504214002 (4) – Bridge board (12G, IT mode-only) – iPC AHWBPBGB24 (4) – Intel® Remote Management Module Lite 2 accessory key – iPC AXXRMM4LITE2 (4) – Micron* 7300 Pro SSD 480GB (M.2 80mm NVMe*) – iPC (4) – Intel® Solid State Drive (SSD) D3 S4610 960GB (2.5" U.2 SATA) – iPC SSDSC2KG960G801 (16) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz (8 DIMMs per node/32 DIMMs per system) – iPC J47951-001 <p>The following components are system-certified ingredients that are customer-supplied and do not ship with the Intel® DCB for Cloud server system:</p> <ul style="list-style-type: none"> (16) – Seagate* 1TB SAS 2.5" HDD – iPC ST1000NX0453 																	

Table 4. Intel® Server System VRN2224BPHY6R


Intel® DCB for Cloud Server System VRN2224BPHY6R																	
Fully integrated 2U, 4-node system including processors, memory, and SATA SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2224BPHY6R</td> </tr> <tr> <td>MM#</td> <td>999KFG</td> </tr> <tr> <td>UPC</td> <td>00735858420921</td> </tr> <tr> <td>EAN</td> <td>5032037163477</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>733 x 438 x 86.9 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2224BPHY6R	MM#	999KFG	UPC	00735858420921	EAN	5032037163477	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	733 x 438 x 86.9 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2224BPHY6R																
MM#	999KFG																
UPC	00735858420921																
EAN	5032037163477																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	733 x 438 x 86.9 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2224BPHY6R includes the following:</p> <p>(1) – 2U chassis H2224XXLR3 (24x2.5"). Includes:</p> <ul style="list-style-type: none"> (1) – Front panel – iPC FH2000FPANEL2 (1) – Power distribution board – iPC FXXCRPSPDB2 (1) – Power interposer board – iPC FXXCRPSPIB (2) – 2130W 80 PLUS* Platinum power supply units (PSU) – iPC FXX2130PCRPS (1) – 24 x 2.5" hot-swap drive bay. Includes: <ul style="list-style-type: none"> (24) – Tool-less drive carriers – iPC FXX25HSCAR3 (1) – Backplane – iPC HW24X25HS12G (4) – Blank compute module slot fillers (1) – Basic rack rail kit – iPC AXXELVRAIL <p>NOTE: The rail kit only supports the specific rack type with 3/8" square and 7.1mm round holes.</p> <p>(4) – Intel® Compute Module HNS2600BPS24R (w/TPM 2.0, 2x10GbE SFP+ and 1GbE, RDMA). Includes:</p> <ul style="list-style-type: none"> (1) – 1U node tray (1) – Intel® Server Board S2600BPSR (1) – Power docking board – iPC FHWBPNPB24 (3) – 40 x 56 mm dual rotor managed fans – iPC FXX4056DRFAN2 (1) – 1U passive heat sink – CPU1 – CuAL – iPC FXXHP78X108HS (1) – 1U passive heat sink – CPU2 – CuAL – iPC FXX2678X108HS (2) – Standard carrier clips (1) – Air duct (1) – External VGA port bracket (1) – Slot 2 riser card with 80 mm M.2 SSD slot – iPC AHW1UM2RISER2 <p>(8) – Intel® Xeon Gold 5215 processor (10 Cores, 2.5GHz, 85W) – iPC CD8069504214002</p> <p>(4) – Bridge board (12G, IT mode only) – iPC AHWBPBGB24</p> <p>(4) – Intel® Remote Management Module Lite 2 accessory key – iPC AXXRMM4LITE2</p> <p>(4) – Micron* 7300 Pro SSD 480GB (M.2 80mm NVMe*) – iPC</p> <p>(8) – Intel® Solid State Drive (SSD) D3 S4610 960GB (2.5" U.2 SATA) – iPC SSDSC2KG960G801</p> <p>(32) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz (8 DIMMs per node/32 DIMMs per system) – iPC J47951-001</p> <p>The following components are system-certified ingredients that are customer-supplied and do not ship with the Intel® DCB for Cloud server system:</p> <p>(16) – Seagate* 2TB SAS 2.5" HDD – iPC ST2000NX0433</p>																	

Table 5. Intel® Server System VRN2224BPAF6R


Intel® DCB for Cloud Server System VRN2224BPAF6R																	
Fully integrated 2U, 4-node system including processors, memory, and Intel® Optane™ DC and SATA SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2224BPAF6R</td> </tr> <tr> <td>MM#</td> <td>999KFD</td> </tr> <tr> <td>UPC</td> <td>00735858420914</td> </tr> <tr> <td>EAN</td> <td>5032037163460</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>733 x 438 x 86.9 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2224BPAF6R	MM#	999KFD	UPC	00735858420914	EAN	5032037163460	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	733 x 438 x 86.9 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2224BPAF6R																
MM#	999KFD																
UPC	00735858420914																
EAN	5032037163460																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	733 x 438 x 86.9 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2224BPAF6R includes the following:</p> <p>(1) – 2U chassis H2224XXLR3 (24x2.5"). Includes:</p> <ul style="list-style-type: none"> (1) – Front panel – iPC FH2000FPANEL2 (1) – Power distribution board – iPC FXXCRPSPDB2 (1) – Power interposer board – iPC FXXCRPSPIB (2) – 2130W 80 PLUS* Platinum power supply units (PSU) – iPC FXX2130PCRPS (1) – 24 x 2.5" hot-swap drive bay. Includes: <ul style="list-style-type: none"> (24) – Tool-less drive carriers – iPC FXX25HSCAR3 (1) – Backplane – iPC HW24X25HS12G (4) – Blank compute module slot fillers (1) – Basic rack rail kit – iPC AXXELVRAIL <p>NOTE: The rail kit only supports the specific rack type with 3/8" square and 7.1mm round holes.</p> <p>(4) – Intel® Compute Module HNS2600BPS24R (w/TPM 2.0, 2x10GbE SFP+ and 1GbE, RDMA). Includes:</p> <ul style="list-style-type: none"> (1) – 1U node tray (1) – Intel® Server Board S2600BPSR (1) – Power docking board – iPC FHWBPNPB24 (3) – 40 x 56 mm dual rotor managed fans – iPC FXX4056DRFAN2 (1) – 1U passive heat sink – CPU1 – CuAL – iPC FXXHP78X108HS (1) – 1U passive heat sink – CPU2 – CuAL – iPC FXX2678X108HS (2) – Standard carrier clips (1) – Air duct (1) – External VGA port bracket (1) – Slot 2 riser card with 80 mm M.2 SSD slot – iPC AHW1UM2RISER2 <p>(8) – Intel® Xeon Gold 5218 processor (16 Cores, 2.3GHz, 125W) – iPC CD8069504193301</p> <p>(4) – Bridge board (12G, IT mode only) – iPC AHWBPBGB24</p> <p>(4) – Intel® Remote Management Module Lite 2 accessory key – iPC AXXRMM4LITE2</p> <p>(4) – Intel® Solid State Drive (SSD) DC P4101 256GB (M.2, 80mm NVMe) – iPC SSDPEKKA256G801</p> <p>(4) – Micron* 7300 Pro SSD 480GB (M.2 80mm NVMe*) – iPC</p> <p>(20) – Intel® Solid State Drive (SSD) D3 S4510 1.92TB (2.5" U.2 SATA) – iPC SSDSC2KB019T801</p> <p>(32) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz (8 DIMMs per node/32 DIMMs per system) – iPC J47951-001</p>																	

Table 6. Intel® Server System VRN2208WFHY6R

Intel® DCB for Cloud Server System VRN2208WFHY6R																	
Fully integrated 2U, single-node system including processors, memory, and SATA SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2208WFHY6R</td> </tr> <tr> <td>MM#</td> <td>999HFA</td> </tr> <tr> <td>UPC</td> <td>00735858420907</td> </tr> <tr> <td>EAN</td> <td>5032037163453</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>712 x 439 x 89 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2208WFHY6R	MM#	999HFA	UPC	00735858420907	EAN	5032037163453	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	712 x 439 x 89 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2208WFHY6R																
MM#	999HFA																
UPC	00735858420907																
EAN	5032037163453																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	712 x 439 x 89 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2208WFHY6R includes the following:</p> <p>(1) – Intel Server System R2208WFOZSR (2U1N, 8x2.5"). Includes:</p> <ul style="list-style-type: none"> (1) – 2U chassis with Quick Reference Label affixed to top cover (1) – Intel® Server Board S2600WFOR (no onboard LAN) (2) – PCIe* riser card brackets. Includes: <ul style="list-style-type: none"> (2) – 3-slot PCIe* riser cards – iPC A2UL8RISER2 (1) – 2-slot low profile PCIe* riser card – iPC A2UX8X4RISER (8) – 2.5" hot-swap drive bays with drive carriers and blanks. Includes: <ul style="list-style-type: none"> (1) – SAS/NVMe* combo backplane – iPC F2U8X25S3PHS (8) – 2.5" hot-swap drive tool less carriers – iPC FXX25HSCAR3 (1) – Standard control panel assembly (board only – iPC FXXFPANEL2) <ul style="list-style-type: none"> o 300 mm front panel cable – iPC H34381-xxx (1) – Front I/O panel assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> o 620 mm USB 3.0 cable – iPC H76899-xxx o 400 mm video cable – iPC H62114-xxx (1) – 250 mm backplane I2C cable – iPC H91166-xxx (2) – 730 mm mini SAS HD cable – iPC AXXCBL730HDHD (1) – 675 mm backplane power cable – iPC H82108-XXX (1) – SATA optical drive power cable 300 mm – iPC H23901-001 (1) – SATA optical drive bay mounting kit – iPC H19168-xxx (1) – Standard 2U air duct – iPC H90554-xxx (6) – Hot-swap system fans – iPC FR2UFAN60HSW (8) – DIMM slot blanks – iPC G75158-00x (1) – 1300W AC power supply module – iPC AXX1300TCRPS (1) – Power supply bay blank insert (2) – AC power cord retention strap assembly – iPC H23961-00x (2) – CPU heat sinks – iPC FXXCA78X108HS (2) – CPU heat sink "NO CPU" Mylar* spacer insert – iPC J16115-XXX (2) – Standard CPU carrier – iPC H72851-xxx (1) – 3x Intel® RAID Maintenance Free Backup unit mounting bracket – iPC H18238-00x (1) – 250 mm fixed mount SSD power cable – iPC J29245-xxx <p>Spares for each screw type included</p> <ul style="list-style-type: none"> (2) – Intel® Xeon® Gold 5215 processor (10 Cores, 2.5GHz, 85W) – iPC CD8069504214002 (1) – Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2 80mm SATA) – iPC SSDSCKKB480G801 (2) – Intel® Solid State Drive (SSD) D3 S4610 960GB (2.5" U.2 SATA) – iPC SSDSC2KG960G801 (1) – Intel® Remote Management Module Lite 2 – iPC AXXRMM4LITE2 (1) – Intel® RAID Controller RS3UC080J (IT Mode) – iPC RS3UC080J (1) – 1300W AC Common Redundant Power Supply – iPC AXX1300TCRPS (1) – Ethernet OCP* Dual SFP+ – iPC X527DA2OCPG1P5 (8) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz – iPC J47951-001 (1) – Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 <p>The following components are system-certified ingredients that are customer-supplied and do not ship with the Intel® DCB for Cloud server system:</p> <ul style="list-style-type: none"> (6) – Seagate* 2TB SAS 3.5" HDD – iPC ST2000NX0433 																	

Table 7. Intel® Server System VRN2208WFAF41R

Intel® DCB for Cloud Server System VRN2208WFAF41R																	
Fully integrated 2U, single-node system including processors, memory, and Intel® Optane™ DC and SATA SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2208WFAF41R</td> </tr> <tr> <td>MM#</td> <td>999HF9</td> </tr> <tr> <td>UPC</td> <td>00735858420891</td> </tr> <tr> <td>EAN</td> <td>5032037163446</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>712 x 439 x 89 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2208WFAF41R	MM#	999HF9	UPC	00735858420891	EAN	5032037163446	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	712 x 439 x 89 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2208WFAF41R																
MM#	999HF9																
UPC	00735858420891																
EAN	5032037163446																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	712 x 439 x 89 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2208WFAF41R includes the following:</p> <p>(1) – Intel Server System R2208WFOZSR (2U1N, 8x2.5"). Includes:</p> <ul style="list-style-type: none"> (1) – 2U chassis with Quick Reference Label affixed to top cover (1) – Intel® Server Board S2600WFOR (no onboard LAN) (2) – PCIe* riser card brackets. Includes: <ul style="list-style-type: none"> (2) – 3-slot PCIe* riser cards – iPC A2UL8RISER2 (1) – 2-slot low profile PCIe* riser card – iPC A2UX8X4RISER (8) – 2.5" hot-swap drive bays with drive carriers and blanks. Includes: <ul style="list-style-type: none"> (1) – SAS/NVMe* combo backplane – iPC F2U8X25S3PHS (8) – 2.5" hot-swap drive tool less carriers – iPC FXX25HSCAR3 (1) – Standard control panel assembly (board only – iPC FXXFPANEL2) <ul style="list-style-type: none"> o 300 mm front panel cable – iPC H34381-xxx (1) – Front I/O panel assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> o 620 mm USB 3.0 cable – iPC H76899-xxx o 400 mm video cable – iPC H62114-xxx (1) – 250 mm backplane I2C cable – iPC H91166-xxx (2) – 730 mm mini SAS HD cable – iPC AXXCBL730HDHD (1) – 675 mm backplane power cable – iPC H82108-XXX (1) – SATA optical drive power cable 300 mm – iPC H23901-001 (1) – SATA optical drive bay mounting kit – iPC H19168-xxx (1) – Standard 2U air duct – iPC H90554-xxx (6) – Hot-swap system fans – iPC FR2UFAN60HSW (8) – DIMM slot blanks – iPC G75158-00x (1) – 1300W AC power supply module – iPC AXX1300TCRPS (1) – Power supply bay blank insert (2) – AC power cord retention strap assembly – iPC H23961-00x (2) – CPU heat sinks – iPC FXXCA78X108HS (2) – CPU heat sink "NO CPU" Mylar* spacer insert – iPC J16115-XXX (2) – Standard CPU carrier – iPC H72851-xxx (1) – 3x Intel® RAID Maintenance Free Backup unit mounting bracket – iPC H18238-00x (1) – 250 mm fixed mount SSD power cable – iPC J29245-xxx Spares for each screw type included (2) – Intel® Xeon® Gold 5215 processor (10 Cores, 2.5GHz, 85W) – iPC CD8069504214002 (1) – Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) – iPC SSDSCKKB480G801 (1) – Intel® Optane™ SSD DC P4800X 375GB (2.5" U.2 NVMe*) – iPC SSDPE21K375GA01 (4) – Intel® Solid State Drive (SSD) D3 S4510 960GB (2.5" U.2 SATA) – iPC SSDSC2KB960G801 (1) – Intel® Remote Management Module Lite 2 – iPC AXXRMM4LITE2 (1) – Intel® RAID Controller RS3UC080J (IT Mode) – iPC RS3UC080J (1) – OCuLink cable – 470mm – iPC AXXCBL470CVCR (1) – 1300W AC Common Redundant Power Supply – iPC AXX1300TCRPS (1) – Ethernet OCP* Dual SFP+ – iPC X527DA2OCPG1P5 (4) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz – iPC J47951-001 (1) – Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 																	

Table 8. Intel® Server System VRN2208WFAF61R


Intel® DCB for Cloud Server System VRN2208WFAF61R																	
Fully integrated 2U, single-node system including processors, memory, and Intel® Optane™ DC and SATA SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2208WFAF61R</td> </tr> <tr> <td>MM#</td> <td>999HF8</td> </tr> <tr> <td>UPC</td> <td>00735858420884</td> </tr> <tr> <td>EAN</td> <td>5032037163439</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>712 x 439 x 89 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2208WFAF61R	MM#	999HF8	UPC	00735858420884	EAN	5032037163439	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	712 x 439 x 89 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2208WFAF61R																
MM#	999HF8																
UPC	00735858420884																
EAN	5032037163439																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	712 x 439 x 89 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2208WFAF61R includes the following:</p> <ul style="list-style-type: none"> (1) – Intel Server System R2208WFOZSR (2U1N, 8x2.5"). Includes: <ul style="list-style-type: none"> (1) – 2U chassis with Quick Reference Label affixed to top cover (1) – Intel® Server Board S2600WFOR (no onboard LAN) (2) – PCIe* riser card brackets. Includes: <ul style="list-style-type: none"> (2) – 3-slot PCIe* riser cards – iPC A2UL8RISER2 (1) – 2-slot low profile PCIe* riser card – iPC A2UX8X4RISER (8) – 2.5" hot-swap drive bays with drive carriers and blanks. Includes: <ul style="list-style-type: none"> (1) – SAS/NVMe* combo backplane – iPC F2U8X25S3PHS (8) – 2.5" hot-swap drive tool less carriers – iPC FXX25HSCAR3 (1) – Standard control panel assembly (board only – iPC FXXFPANEL2) <ul style="list-style-type: none"> o 300 mm front panel cable – iPC H34381-xxx (1) – Front I/O panel assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> o 620 mm USB 3.0 cable – iPC H76899-xxx o 400 mm video cable – iPC H62114-xxx (1) – 250 mm backplane I2C cable – iPC H91166-xxx (2) – 730 mm mini SAS HD cable – iPC AXXCBL730HDHD (1) – 675 mm backplane power cable – iPC H82108-XXX (1) – SATA optical drive power cable 300 mm – iPC H23901-001 (1) – SATA optical drive bay mounting kit – iPC H19168-xxx (1) – Standard 2U air duct – iPC H90554-xxx (6) – Hot-swap system fans – iPC FR2UFAN60HSW (8) – DIMM slot blanks – iPC G75158-00x (1) – 1300W AC power supply module – iPC AXX1300TCRPS (1) – Power supply bay blank insert (2) – AC power cord retention strap assembly – iPC H23961-00x (2) – CPU heat sinks – iPC FXXCA78X108HS (2) – CPU heat sink "NO CPU" Mylar* spacer insert – iPC J16115-XXX (2) – Standard CPU carrier – iPC H72851-xxx (1) – 3x Intel® RAID Maintenance Free Backup unit mounting bracket – iPC H18238-00x (1) – 250 mm fixed mount SSD power cable – iPC J29245-xxx <p>Spares for each screw type included</p> <ul style="list-style-type: none"> (2) – Intel® Xeon® Gold 5218 processor (16 Cores, 2.3Ghz, 125W) – iPC CD8069504193301 (1) – Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) – iPC SSDSCKKB480G801 (2) – Intel® Optane™ SSD DC P4800X 375GB (2.5" U.2 NVMe*) – iPC SSDPE21K375GA01 (6) – Intel® Solid State Drive (SSD) D3 S4510 1.92TB (2.5" U.2 SATA) – iPC SSDSC2KB019T801 (1) – Intel® Remote Management Module Lite 2 – iPC AXXRMM4LITE2 (1) – Intel® RAID Controller RS3UC080J (IT Mode) – iPC RS3UC080J (1) – OCuLink cable – 530mm – iPC AXXCBL530CVCR (1) – OCuLink cable – 470mm – iPC AXXCBL470CVCR (1) – 1300W AC Common Redundant Power Supply – iPC AXX1300TCRPS (1) – Ethernet OCP* Dual SFP+ – iPC X527DA2OCPG1P5 (8) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz – iPC J47951-001 (1) – Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 																	

Table 9. Intel® Server System VRN2208WFAF81R


Intel® DCB for Cloud Server System VRN2208WFAF81R																	
Fully integrated 2U, single-node system including processors, memory, and Intel® Optane™ DC and SATA SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2208WFAF81R</td> </tr> <tr> <td>MM#</td> <td>999HF7</td> </tr> <tr> <td>UPC</td> <td>00735858420877</td> </tr> <tr> <td>EAN</td> <td>5032037163422</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>712 x 439 x 89 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2208WFAF81R	MM#	999HF7	UPC	00735858420877	EAN	5032037163422	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	712 x 439 x 89 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2208WFAF81R																
MM#	999HF7																
UPC	00735858420877																
EAN	5032037163422																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	712 x 439 x 89 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2208WFAF81R includes the following:</p> <ul style="list-style-type: none"> (1) – Intel Server System R2208WFOZSR (2U1N, 8x2.5"). Includes: <ul style="list-style-type: none"> (1) – 2U chassis with Quick Reference Label affixed to top cover (1) – Intel® Server Board S2600WFOR (no onboard LAN) (2) – PCIe* riser card brackets. Includes: <ul style="list-style-type: none"> (2) – 3-slot PCIe* riser cards – iPC A2UL8RISER2 (1) – 2-slot low profile PCIe* riser card – iPC A2UX8X4RISER (8) – 2.5" hot-swap drive bays with drive carriers and blanks. Includes: <ul style="list-style-type: none"> (1) – SAS/NVMe* combo backplane – iPC F2U8X25S3PHS (8) – 2.5" hot-swap drive tool less carriers – iPC FXX25HSCAR3 (1) – Standard control panel assembly (board only – iPC FXXFPANEL2) <ul style="list-style-type: none"> o 300 mm front panel cable – iPC H34381-xxx (1) – Front I/O panel assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> o 620 mm USB 3.0 cable – iPC H76899-xxx o 400 mm video cable – iPC H62114-xxx (1) – 250 mm backplane I2C cable – iPC H91166-xxx (2) – 730 mm mini SAS HD cable – iPC AXXCBL730HDHD (1) – 675 mm backplane power cable – iPC H82108-XXX (1) – SATA optical drive power cable 300 mm – iPC H23901-001 (1) – SATA optical drive bay mounting kit – iPC H19168-xxx (1) – Standard 2U air duct – iPC H90554-xxx (6) – Hot-swap system fans – iPC FR2UFAN60HSW (8) – DIMM slot blanks – iPC G75158-00x (1) – 1300W AC power supply module – iPC AXX1300TCRPS (1) – Power supply bay blank insert (2) – AC power cord retention strap assembly – iPC H23961-00x (2) – CPU heat sinks – iPC FXXCA78X108HS (2) – CPU heat sink "NO CPU" Mylar* spacer insert – iPC J16115-XXX (2) – Standard CPU carrier – iPC H72851-xxx (1) – 3x Intel® RAID Maintenance Free Backup unit mounting bracket – iPC H18238-00x (1) – 250 mm fixed mount SSD power cable – iPC J29245-xxx <p>Spares for each screw type included</p> <ul style="list-style-type: none"> (2) – Intel® Xeon® Gold 5218 processor (16 Cores, 2.3Ghz, 125W) – iPC CD8069504193301 (1) – Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) – iPC SSDSCKKB480G801 (2) – Intel® Optane™ DC SSD P4800X 375GB (2.5" U.2 NVMe*) – iPC SSDPE21K375GA01 (6) – Intel® Solid State Drive (SSD) D3 S4510 1.92TB (2.5" U.2 SATA) – iPC SSDSC2KB019T801 (1) – Intel® Remote Management Module Lite 2 – iPC AXXRMM4LITE2 (1) – Intel® RAID Controller RS3UC080J (IT Mode) – iPC RS3UC080J (1) – OCuLink cable – 530mm – iPC AXXCBL530CVCR (1) – OCuLink cable – 470mm – iPC AXXCBL470CVCR (1) – 1300W AC Common Redundant Power Supply – iPC AXX1300TCRPS (1) – Ethernet OCP* Dual SFP+ – iPC X527DA2OCPG1P5 (12) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz – iPC J47951-001 (1) – Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 																	

Table 10. Intel® Server System VRN2208WFAF82R


Intel® DCB for Cloud Server System VRN2208WFAF82R																	
Fully integrated 2U, single-node system including processors, memory, and Intel® Optane™ DC and NVMe* SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2208WFAF82R</td> </tr> <tr> <td>MM#</td> <td>999HF6</td> </tr> <tr> <td>UPC</td> <td>00735858420860</td> </tr> <tr> <td>EAN</td> <td>5032037163415</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>712 x 439 x 89 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2208WFAF82R	MM#	999HF6	UPC	00735858420860	EAN	5032037163415	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	712 x 439 x 89 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2208WFAF82R																
MM#	999HF6																
UPC	00735858420860																
EAN	5032037163415																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	712 x 439 x 89 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2208WFAF82R includes the following:</p> <ul style="list-style-type: none"> (1) – Intel Server System R2208WFOZSR (2U1N, 8x2.5"). Includes: <ul style="list-style-type: none"> (1) – 2U chassis with Quick Reference Label affixed to top cover (1) – Intel® Server Board S2600WFOR (no onboard LAN) (2) – PCIe* riser card brackets. Includes: <ul style="list-style-type: none"> (2) – 3-slot PCIe* riser cards – iPC A2UL8RISER2 (1) – 2-slot low profile PCIe* riser card – iPC A2UX8X4RISER (8) – 2.5" hot-swap drive bays with drive carriers and blanks. Includes: <ul style="list-style-type: none"> (1) – SAS/NVMe* combo backplane – iPC F2U8X25S3PHS (8) – 2.5" hot-swap drive tool less carriers – iPC FXX25HSCAR3 (1) – Standard control panel assembly (board only – iPC FXXFPANEL2) <ul style="list-style-type: none"> o 300 mm front panel cable – iPC H34381-xxx (1) – Front I/O panel assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> o 620 mm USB 3.0 cable – iPC H76899-xxx o 400 mm video cable – iPC H62114-xxx (1) – 250 mm backplane I2C cable – iPC H91166-xxx (2) – 730 mm mini SAS HD cable – iPC AXXCBL730HDHD (1) – 675 mm backplane power cable – iPC H82108-XXX (1) – SATA optical drive power cable 300 mm – iPC H23901-001 (1) – SATA optical drive bay mounting kit – iPC H19168-xxx (1) – Standard 2U air duct – iPC H90554-xxx (6) – Hot-swap system fans – iPC FR2UFAN60HSW (8) – DIMM slot blanks – iPC G75158-00x (1) – 1300W AC power supply module – iPC AXX1300TCRPS (1) – Power supply bay blank insert (2) – AC power cord retention strap assembly – iPC H23961-00x (2) – CPU heat sinks – iPC FXXCA78X108HS (2) – CPU heat sink "NO CPU" Mylar* spacer insert – iPC J16115-XXX (2) – Standard CPU carrier – iPC H72851-xxx (1) – 3x Intel® RAID Maintenance Free Backup unit mounting bracket – iPC H18238-00x (1) – 250 mm fixed mount SSD power cable – iPC J29245-xxx <p>Spares for each screw type included</p> <ul style="list-style-type: none"> (2) – Intel® Xeon® Gold 5218 processor (16 Cores, 2.3Ghz, 125W) – iPC CD8069504193301 (1) – Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) – iPC SSDSCKKB480G801 (2) – Intel® Optane™ DC SSD P4800X 375GB (2.5" U.2 NVMe*) – iPC SSDPE21K375GA01 (6) – Intel® Solid State Drive (SSD) DC P4510 2TB (2.5" U.2 NVMe) – iPC SSDPE2KX020T801 (1) – Intel® Remote Management Module Lite 2 – iPC AXXRMM4LITE2 (1) – Intel® PCIe* Switch AIC (8 ports) – iPC AXXP3SWX08080 (1) – OCuLink Cable – 725mm cable kit – iPC A2U8PSWCXCXK1 (1) – OCuLink cable – 530mm – iPC AXXCBL530CVCR (1) – OCuLink cable – 470mm – iPC AXXCBL470CVCR (1) – 1300W AC Common Redundant Power Supply – iPC AXX1300TCRPS (1) – Ethernet OCP* Quad SFP+ – iPC X527DA4OCPG1P5 (12) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz – iPC J47951-001 (1) – Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 																	

Table 11. Intel® Server System VRN2208WFAF83R



Intel® DCB for Cloud Server System VRN2208WFAF83R																	
Fully integrated 2U, single-node system including processors, memory, and Intel® Optane™ DC and NVMe* SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2208WFAF83R</td> </tr> <tr> <td>MM#</td> <td>999HF5</td> </tr> <tr> <td>UPC</td> <td>00735858420853</td> </tr> <tr> <td>EAN</td> <td>5032037163408</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>712 x 439 x 89 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2208WFAF83R	MM#	999HF5	UPC	00735858420853	EAN	5032037163408	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	712 x 439 x 89 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2208WFAF83R																
MM#	999HF5																
UPC	00735858420853																
EAN	5032037163408																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	712 x 439 x 89 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2208WFAF83R includes the following:</p> <ul style="list-style-type: none"> (1) – Intel Server System R2208WFOZSR (2U1N, 8x2.5"). Includes: <ul style="list-style-type: none"> (1) – 2U chassis with Quick Reference Label affixed to top cover (1) – Intel® Server Board S2600WFOR (no onboard LAN) (2) – PCIe* riser card brackets. Includes: <ul style="list-style-type: none"> (2) – 3-slot PCIe* riser cards – iPC A2UL8RISER2 (1) – 2-slot low profile PCIe* riser card – iPC A2UX8X4RISER (8) – 2.5" hot-swap drive bays with drive carriers and blanks. Includes: <ul style="list-style-type: none"> (1) – SAS/NVMe* combo backplane – iPC F2U8X25S3PHS (8) – 2.5" hot-swap drive tool less carriers – iPC FXX25HSCAR3 (1) – Standard control panel assembly (board only – iPC FXXFPANEL2) <ul style="list-style-type: none"> o 300 mm front panel cable – iPC H34381-xxx (1) – Front I/O panel assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> o 620 mm USB 3.0 cable – iPC H76899-xxx o 400 mm video cable – iPC H62114-xxx (1) – 250 mm backplane I2C cable – iPC H91166-xxx (2) – 730 mm mini SAS HD cable – iPC AXXCBL730HDHD (1) – 675 mm backplane power cable – iPC H82108-XXX (1) – SATA optical drive power cable 300 mm – iPC H23901-001 (1) – SATA optical drive bay mounting kit – iPC H19168-xxx (1) – Standard 2U air duct – iPC H90554-xxx (6) – Hot-swap system fans – iPC FR2UFAN60HSW (8) – DIMM slot blanks – iPC G75158-00x (1) – 1300W AC power supply module – iPC AXX1300TCRPS (1) – Power supply bay blank insert (2) – AC power cord retention strap assembly – iPC H23961-00x (2) – CPU heat sinks – iPC FXXCA78X108HS (2) – CPU heat sink "NO CPU" Mylar* spacer insert – iPC J16115-XXX (2) – Standard CPU carrier – iPC H72851-xxx (1) – 3x Intel® RAID Maintenance Free Backup unit mounting bracket – iPC H18238-00x (1) – 250 mm fixed mount SSD power cable – iPC J29245-xxx <p>Spares for each screw type included</p> <ul style="list-style-type: none"> (2) – Intel® Xeon® Gold 6230 processor (20 Cores, 2.1Ghz, 125W) – iPC CD8069504193701 (1) – Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) – iPC SSDSCKKB480G801 (4) – Intel® Optane™ DC SSD P4800X 375GB (2.5" U.2 NVMe*) – iPC SSDPE21K375GA01 (12) – Intel® Solid State Drive (SSD) DC P4510 2TB (2.5" U.2 NVMe) – iPC SSDPE2KX020T801 (1) – Intel® Remote Management Module Lite 2 – iPC AXXRMM4LITE2 (1) – 2U 8x2.5 combo hot-swap backplane – iPC A2U8X25S3PHS (2) – Intel® PCIe* Switch AIC (8 ports) – iPC AXXP3SWX08080 (2) – OCuLink Cable – 875mm cable kit – iPC A2U8PSWCXCXK2 (2) – OCuLink Cable - 700mm – iPC AXXCBL700CVCR (1) – OCuLink cable – 530mm – iPC AXXCBL530CVCR (1) – OCuLink cable – 470mm – iPC AXXCBL470CVCR (1) – 1300W AC Common Redundant Power Supply – iPC AXX1300TCRPS (1) – Ethernet OCP* Quad SFP+ – iPC X527DA40CPG1P5 (16) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz – iPC J47951-001 (1) – Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 																	

Table 12. Intel® Server System VRN2208WFAF84R

Intel® DCB for Cloud Server System VRN2208WFAF84R																	
Fully integrated 2U, single-node system including processors, Intel® Optane™ DC memory, and Intel® Optane™ DC and NVMe* SSDs																	
	<table> <tr> <td>iPC</td> <td>VRN2208WFAF84R</td> </tr> <tr> <td>MM#</td> <td>999HF4</td> </tr> <tr> <td>UPC</td> <td>00735858420846</td> </tr> <tr> <td>EAN</td> <td>5032037163392</td> </tr> <tr> <td>Product type</td> <td>Fully integrated server system</td> </tr> <tr> <td>Chassis form factor</td> <td>2U rack mount</td> </tr> <tr> <td>Chassis dimensions</td> <td>712 x 439 x 89 mm (L x W x H)</td> </tr> <tr> <td>Package dimensions</td> <td>983 x 577 x 260 mm (L x W x H)</td> </tr> </table>	iPC	VRN2208WFAF84R	MM#	999HF4	UPC	00735858420846	EAN	5032037163392	Product type	Fully integrated server system	Chassis form factor	2U rack mount	Chassis dimensions	712 x 439 x 89 mm (L x W x H)	Package dimensions	983 x 577 x 260 mm (L x W x H)
iPC	VRN2208WFAF84R																
MM#	999HF4																
UPC	00735858420846																
EAN	5032037163392																
Product type	Fully integrated server system																
Chassis form factor	2U rack mount																
Chassis dimensions	712 x 439 x 89 mm (L x W x H)																
Package dimensions	983 x 577 x 260 mm (L x W x H)																
<p>Intel product code VRN2208WFAF84R includes the following:</p> <ul style="list-style-type: none"> (1) – Intel Server System R2208WFOZSR (2U1N, 8x2.5"). Includes: <ul style="list-style-type: none"> (1) – 2U chassis with Quick Reference Label affixed to top cover (1) – Intel® Server Board S2600WFOR (no onboard LAN) (2) – PCIe* riser card brackets. Includes: <ul style="list-style-type: none"> (2) – 3-slot PCIe* riser cards – iPC A2UL8RISER2 (1) – 2-slot low profile PCIe* riser card – iPC A2UX8X4RISER (8) – 2.5" hot-swap drive bays with drive carriers and blanks. Includes: <ul style="list-style-type: none"> (1) – SAS/NVMe* combo backplane – iPC F2U8X25S3PHS (8) – 2.5" hot-swap drive tool less carriers – iPC FXX25HSCAR3 (1) – Standard control panel assembly (board only – iPC FXXFPANEL2) <ul style="list-style-type: none"> o 300 mm front panel cable – iPC H34381-xxx (1) – Front I/O panel assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> o 620 mm USB 3.0 cable – iPC H76899-xxx o 400 mm video cable – iPC H62114-xxx (1) – 250 mm backplane I2C cable – iPC H91166-xxx (2) – 730 mm mini SAS HD cable – iPC AXXCBL730HDHD (1) – 675 mm backplane power cable – iPC H82108-XXX (1) – SATA optical drive power cable 300 mm – iPC H23901-001 (1) – SATA optical drive bay mounting kit – iPC H19168-xxx (1) – Standard 2U air duct – iPC H90554-xxx (6) – Hot-swap system fans – iPC FR2UFAN60HSW (8) – DIMM slot blanks – iPC G75158-00x (1) – 1300W AC power supply module – iPC AXX1300TCRPS (1) – Power supply bay blank insert (2) – AC power cord retention strap assembly – iPC H23961-00x (2) – CPU heat sinks – iPC FXXCA78X108HS (2) – CPU heat sink "NO CPU" Mylar* spacer insert – iPC J16115-XXX (2) – Standard CPU carrier – iPC H72851-xxx (1) – 3x Intel® RAID Maintenance Free Backup unit mounting bracket – iPC H18238-00x (1) – 250 mm fixed mount SSD power cable – iPC J29245-xxx (2) – Intel® Xeon® Gold 6230 processor (20 Cores, 2.1Ghz, 125W) – iPC CD8069504193701 (1) – Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) – iPC SSDSCKKB480G801 (4) – Intel® Optane™ DC SSD P4800X 375GB (2.5" U.2 NVMe*) – iPC SSDPE21K375GA01 (12) – Intel® Solid State Drive (SSD) DC P4510 2TB (2.5" U.2 NVMe) – iPC SSDPE2KX020T801 (1) – Intel® Remote Management Module Lite 2 – iPC AXXRMM4LITE2 (1) – 2U 8x2.5 combo hot-swap backplane – iPC A2U8X25S3PHS (2) – Intel® PCIe* Switch AIC (8 ports) – iPC AXXP3SWX08080 (2) – OCuLink Cable – 875mm cable kit – iPC A2U8PSWCXCXK2 (2) – OCuLink Cable - 700mm – iPC AXXCBL700CVCR (1) – OCuLink cable – 530mm – iPC AXXCBL530CVCR (1) – OCuLink cable – 470mm – iPC AXXCBL470CVCR (1) – 1300W AC Common Redundant Power Supply – iPC AXX1300TCRPS (1) – Ethernet OCP* Quad SFP+ – iPC X527DA4OCPG1P5 (8) – Intel® Optane™ Persistent Memory 128GB Module (1.0) – iPC NMA1XXD128GPSU4 (12) – 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz – iPC J47951-001 (1) – Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 																	




4.1 Rail Kit Options

To install a rack mount server system into a rack, use a rail mounting kit.

Intel® DCB for Cloud server system models **VRN2224BPAF6R**, **VRN2224BPHY6R** and **VRN2224BPHY4R** include Intel® Enhanced Value Rail Kit **AXXELVRAIL**. The premium feature rail kit (**AXXFULLRAIL**) can be ordered separately. No Cable Management Arm (CMA) support is available for models **VRN2224BPAF6R**, **VRN2224BPHY6R**, and **VRN2224BPHY4R**

All other Intel DCB for Cloud server system models do not include rail kits in the shipping product. Rail kits for these systems must be ordered separately. All rail kits supported on **VRN2208WFXXXR** models are listed in the following table.

Table 13. Intel® Rail Kit accessory options for VRN2208WFXXXR models

Product Image	Details	Description
	<p>Enhanced Value Rail AXXELVRAIL</p> <p>iPC AXXELVRAIL MM# 920970 UPC 735858244367 EAN 5032037038980 MOQ 1</p>	<ul style="list-style-type: none"> Works for all 438mm-wide Intel® Rack Chassis 1U, 2U, 4U Bracket adjustment within 609.6mm~765mm 424.2mm maximum travel length 2/3 extension from rack 59 kg max support weight Tool-less chassis attach Tools required to attach rails to rack No Cable Management Arm support
	<p>2U Premium Feature Rail AXXSHRTRAIL (no CMA support)</p> <p>iPC AXXSHRTRAIL MM# 939210 UPC 00735858291996 EAN 5032037070553 MOQ 1</p>	<ul style="list-style-type: none"> Travel distance 788mm Bracket adjustment from 594.8mm to 813mm Tool-less installation Supports up to 45Kg Full extension from rack <p>Kit includes: Rails, screws, installation manual</p>
	<p>2U+ Premium Feature Rail AXXFULLRAIL (with CMA support)</p> <p>iPC AXXFULLRAIL MM# 939209 UPC 00735858291989 EAN 5032037070546 MOQ 1</p>	<ul style="list-style-type: none"> Travel distance 800mm Bracket adjustment within 594.8mm~813mm Tool-less installation Full extension from rack <p>Kit includes: Rails, screws, installation manual Compatible with Cable Management Arm AXXCMA2</p>
	<p>Cable Management Arm AXXCMA2</p> <p>iPC AXXCMA2 MM# 939211 UPC 00735858292009 EAN 5032037070560 MOQ 1</p>	Compatible with AXXFULLRAIL only.

Systems shipped to the US and Canada include two North American power cords.

For a complete list of available FRU parts, refer to:

- Intel® Server Board S2600WF Product Family Configuration Guide at <https://www.intel.com/content/www/us/en/support/articles/000024083/server-products/server-boards.html>
- Intel® Server Board S2600BP Product Family Configuration Guide at <https://www.intel.com/content/www/us/en/support/articles/000024316/server-products.html>

5. Drive Extraction and Installation

Note: To maintain proper system cooling, all externally accessible drive bays must be populated with a drive carrier. Each drive carrier must have a hard disk drive (HDD), solid state device (SSD), or a supplied drive blank installed.

5.1 Drive Carrier Extraction

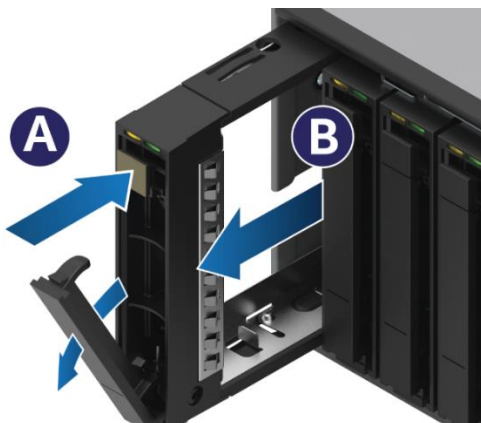


Figure 5. Drive carrier extraction from chassis

Before a new drive can be installed, the current driver carrier must be extracted from the chassis.

1. Remove the drive carrier from the chassis by first pressing the button on the carrier face plate to release the lever (see letter “A”).
2. Using the lever, pull the carrier from the drive bay (see letter “B”).

5.2 Drive Carrier Insertion/Installation

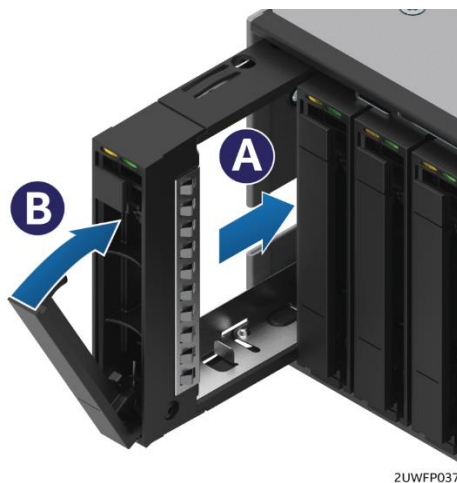


Figure 6. Drive carrier insertion into chassis

1. Align the drive assembly with the open drive bay.
2. With the lever in the open position, insert the drive assembly into the drive bay (See letter “A”) and push forward until the drive makes contact with the backplane.
3. Complete the drive installation by closing the drive assembly lever until it locks into place (See letter “B”).

5.3 2.5" HDD/SSD Drive Carrier Assembly

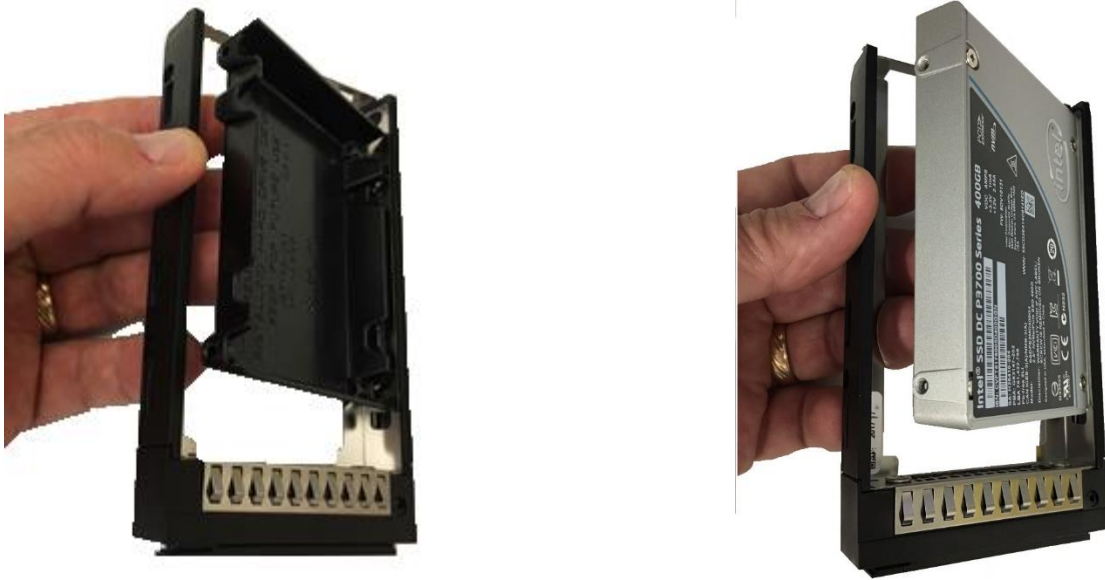
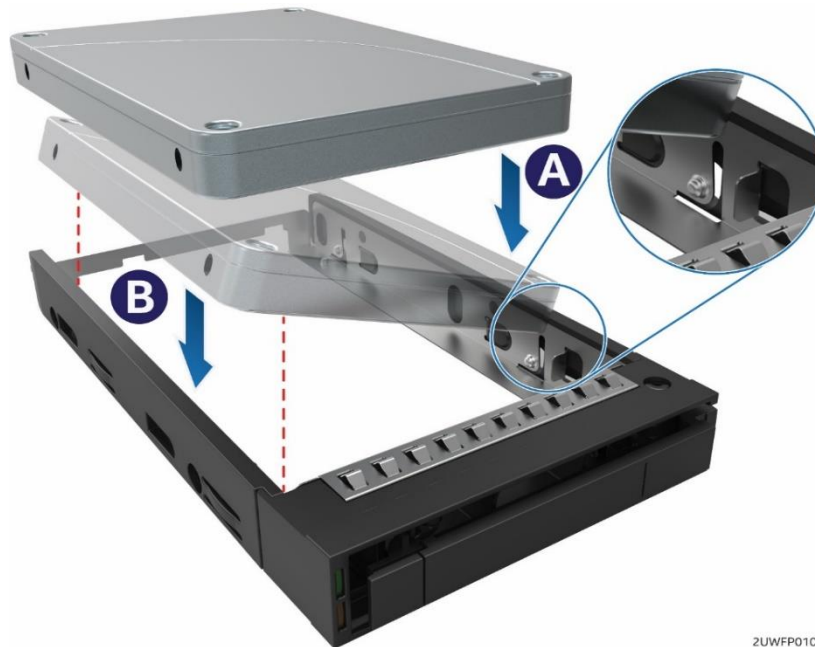


Figure 7. 2.5" drive carrier assembly – drive/drive Blank Removal

1. Remove the drive or drive blank from the carrier by gently rotating the top edge of a carrier rail outwards while at the same time pushing the drive or drive blank up from the bottom (as shown in Figure 7).

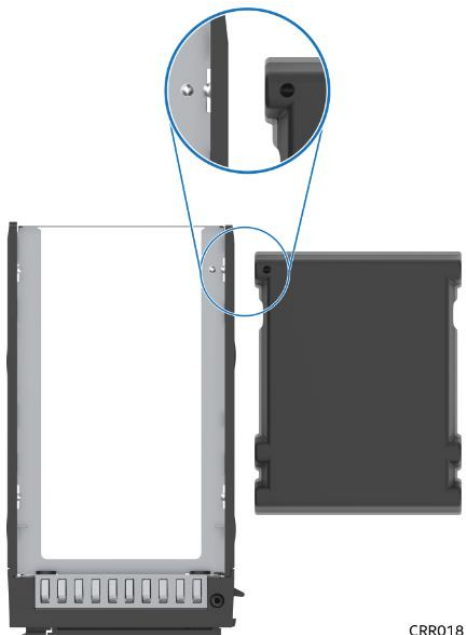


2UWFP0107

Figure 8. 2.5" Drive carrier assembly – drive installation into carrier

2. With the rear drive connector positioned towards the back of the drive carrier, align and position the mounting holes on one side of the drive over the mounting tabs located on the drive carrier side rail (see letter "A").
3. Lower the other side of the drive into the carrier (see letter "B") and press down on the drive until all mounting tabs are locked in place.

Note: The 2.5" drive blank and drive carrier each have an alignment feature (shown in Figure 9) to ensure proper assembly. When re-installing a drive blank into the drive carrier, ensure the features are aligned prior to installation. Failure to properly install a drive blank may result in the carrier assembly not fitting properly in to the chassis drive bay.



CRR018

Figure 9. 2.5" Drive carrier assembly – alignment features

Appendix A. Glossary

Term	Definition
BMC	Baseboard Management Controller
BIOS	Basic Input/Output System
CMA	Cable Management Arm
CPU	Central Processing Unit
CRPS	Common Redundant Power Supply
DCB	Intel® Data Center Blocks
DDR4	Double-Data Rate 4
DIMM	Dual In-line Memory Module
EAN	European Article Number
FP	Front Panel
FRU	Field Replaceable Unit
GB	Gigabyte
GbE	Gigabit Ethernet
GBPS	Gigabytes Per Second
GT/s	GigaTransfers per second
HDD	Hard Disk Drive
IOPS	Input/output Operations Per Second
iPC	Intel Product Code
iPN	Intel Part Number
KB	Kilobyte
LAN	Local Area Network
LED	Light-Emitting Diode
M.2	Specification for internally mounted computer expansion cards and associated connectors
MB	Megabyte
ME	Management Engine
MHz	Megahertz
MM#	Master Material Order Number/Material Management Number
MOQ	Minimum Order Quantity
OS	Operating System
PCIe*	Peripheral Component Interconnect Express*
POST	Power-on Self-Test
PSU	Power Supply Unit
RAM	Random Access Memory
RDIMM	Registered DIMM
RDMA	Remote Direct Memory Access
RMM	Remote Management Module
ROM	Read-Only Memory
SAS	Serial Attached SCSI

Intel® DCB for Cloud – VMWare* vSAN ReadyNode System Deployment and Configuration Guide

SATA	Serial ATA (High-speed serial data version of the disk ATA interface)
SCSI	Small Computer System Interface
SDS	Software Defined Storage
SFF	Small Form Factor
SFF NVMe*	NVMe SSD in a 2.5" Form Factor
SFP+	The enhanced Small Form-factor Pluggable transceiver
SSD	Solid State Drive
SUP	System Update Package
TB	Terabyte
TPM	Trusted Platform Module
TPS	Technical Product Specification
UPC	Universal Product Code
USB	Universal Serial Bus (standard serial expansion bus meant for connecting peripherals)
VGA	Video Graphics Array
vSAN	Virtual Storage Area Network