

Intel® Data Center Blocks for Cloud – VSAN Ready Node

System Deployment and Configuration Guide

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

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Document Revision History

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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 Ready Nodes are fully-validated, pre-configured server systems that include VMware* certifications for VSAN. With these VSAN Ready Nodes from Intel, resellers have access to the software-defined storage market, making it easier to deliver Software Defined Storage (SDS) solutions to customers.

VSAN Ready Nodes from Intel are powered by the latest Intel technology, and include Intel® Server Boards, Chassis, Intel® Xeon® Scalable processors, Intel® Solid State Drives (SSDs), 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 Intel Xeon Scalable processors product 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 power while reducing cost and space requirements. All-Flash configurations (AF) 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 VRN2224BPAF6 and VRN2224BPHY6



Figure 2. Intel® Server Single-Node Systems VRN2208WFAF82, VRN2208WFAF81 and VRN2208WFHY6



Figure 3. Intel® Server Single-Node System VRN2208WFAF83

1.1 VMWare* VSAN Certification and the Intel® DCB for Cloud Server System

Server systems within this product family were specifically created to offer Intel customers with preconfigured systems that are VMWare VSAN 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.

1.1.1 Maintaining VMWare* VSAN Certification

To maintain VMWare VSAN certification, no changes can be made to the predefined system configuration. Changing the system configuration may invalidate the VMWare VSAN certification performed by VMWare and Intel.

Changes to the pre-defined server system configuration that may impact VMWare certification include:

- Updating the factory-installed system software stack with revisions that are not VMWare-certified. The system software stack includes: system BIOS, BMC firmware, and ME firmware.¹
- Changing processor model and quantity.
- Changing the system memory.
- Adding or changing I/O devices such as add-in PCIe cards or modules.
- Adding or changing to non-matching (different manufacturer and/or model number) storage devices such as Hard Disk Drives (HDD) and any type of Solid State Drives (SSD) other than those shipped in the original system configuration.²

Further details can be found on the VMware website at

<https://blogs.vmware.com/virtualblocks/2017/03/14/can-not-change-vsan-readynode/>.

Notes:

1. Intel releases updates to the system software stack for its standard server boards and systems via the System Update Package (SUP), which can be downloaded from the Intel website. However, since the Intel® DCB for Cloud server systems is VMWare-certified, refrain from changing the pre-installed system software stack unless updating it to another system software stack which has passed VMWare certification for that specific system configuration. Users of Intel® DCB for Cloud server systems should update the system software stack ONLY when a downloaded SUP identifies it as VMWare-certified for Intel® DCB for Cloud server systems. Check the README file included with every posted SUP for each server product family.
 2. Adding or swapping like storage devices as shipped in the original system configuration is permitted and does not invalidate the VMWare certification.
-

1.1.2 Hybrid System Configurations

Hybrid systems have both HDDs and SSDs. Only like certified HDDs should be installed in hybrid system configurations to maintain VMWare certification. HDDs for hybrid configurations are not included and must be purchased separately. The following table identifies the certified HDD that was used for certification. . Intel preinstalls certified boot and cache tier drives in all slots not identified in the next table. See Section 3 for drive installation instructions.

Table 1. Certified hard drives for hybrid configurations

Model	Vendor	Model Number	Description	Quantity	Install Location
VRN2224BPHY6	Seagate*	T2000NX0433	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
VRN2208WFHY6	Seagate	T2000NX0433	2.5" HDD, 12Gb/s SAS 512E 2TB	6	Slots: 2, 3, 4, 5, 6, 7

2. 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 OS 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. Attach the installation media with the operating system installation image to the server system.
3. Identify the required boot device (see note below).
4. Power on the server. Press the <F2> key to enter the BIOS Setup Utility.
5. Make the device identified in step 3 the primary boot device.
6. Save changes and exit the BIOS Setup Utility by pressing the <F10> key.
7. Install VMWare VSAN operating environment onto the specified boot device. Follow the VMWare Installation wizard to complete the installation.
8. Restart the server after the installation has concluded.
9. Follow the remaining VMWare instructions to complete the installation.

Note: To maintain VMWare 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 OS installation – certification requirement

System Model	Storage Device Vendor	Storage Device Model Number	Device Location in the Server System
VRN2224BPAF6 VRN2224BPHY6	Intel	Intel® SSD P3100 (256GB M.2, 80mm)	Installed on the slot 2 riser card AHW1UM2RISER2
VRN2208WFAF83 VRN2208WFAF82 VRN2208WFAF81 VRN2208WFHY6	Intel	Intel SSD S3520 Series (480GB, M.2, 80mm)	Installed in the M.2 port 1 on the motherboard

3. System Configuration Options

Table 3. Intel® Server System VRN2224BPHY6

<p>Intel Product Code (iPC): VRN2224BPHY6</p>  <p>Fully integrated 2U, 4-Node system including: CPUs, Memory, and SATA SSDs</p>	<p>Order Information: MM#: 961114 UPC: 00735858363341 EAN: 5032037118682 Product Type: Fully Integrated Server System Chassis Form Factor: 2U Rack Mount Chassis Dimensions: L=733mm, W=438mm, H=86.9mm Outer Box Dimensions: L=983mm, W=577mm, H=260mm</p>
<p>Intel product code VRN2224BPHY6 includes the following:</p> <ul style="list-style-type: none">(1) 2U Chassis (24x2.5") H2224XXLR3, which includes these components:<ul style="list-style-type: none">(1) Front Panel FH2000FPANEL2(1) Power Distribution Board FXXCRSPDB2(1) Power Interposer Board FXXCRSPIB(2) 2130W 80 Plus Platinum Power Supply Units (PSU) FXX2130PCRPS(1) 24 x 2.5" Hot-Swap Drive Bay, which includes:<ul style="list-style-type: none">(24) Tool-less Drive Carriers FXX25HSCAR3(1) Backplane HW24X25HS12G(4) Blank Compute Module Slot Fillers(1) Basic Rack Rail Kit AXXELVRAIL<p>NOTE: The rail kit only supports the specific rack type with 3/8" square and 7.1mm round holes.</p>(4) Compute Module (w/TPM 2.0, 2x10GbE SFP+ & 2x1GbE ,RDMA) HNS2600BPS24, which includes:<ul style="list-style-type: none">(1) 1U Node Tray(1) Intel® Server Board S2600BPS(1) Power Docking Board FHWBPNPB24(3) 40x56mm Dual Rotor Managed Fans FXX4056DRFAN2(1) 1U Passive Heatsink for CPU #1 CuAl FXXHP78X108HS(1) 1U Passive Heatsink for CPU #2 Al FXXEA78X108HS(2) Standard Carrier Clips(1) Air Duct(1) External VGA Port Bracket(1) Riser Slot 2 Riser Card w/80mm M.2 SSD slot AHW1UM2RISER2(8) Intel® Xeon® Gold 5115 processor (10 Cores, 2.4Ghz, 85W) CD8067303535601(4) Bridge Board - 12G, IT mode-only AHWBPBGB24(4) Intel® Remote Management Module Lite 2 Accessory Key AXXRMM4LITE2(4) Intel® Solid State Drive (SSD) P3100 256GB (M.2, 80mm) SSDPEKKA256G701(8) Intel® Solid State Drive (SSD) S4600 960GB 2.5" SFF SATA SSDSC2KG960G701(32) Micron* RDIMM 32GB – DDR4, 288-pin, 2666MHz (8 DIMMs per node/32 DIMMs per system) 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 purchase:</p> <ul style="list-style-type: none">(16) – Seagate* 2TB SAS 2.5" HDD – ST2000NX0433	

Systems shipped to the US and Canada include two (2) North American power cords.

For a complete list of available FRU replacement parts, refer to the Intel® Server Board S2600BP Product Family Configuration Guide at the following Intel web site:

<https://www.intel.com/content/www/us/en/motherboards/server-motherboards/server-board-s2600bp.html>

Table 4. Intel® Server System VRN2208WFHY6

<p>Product Code (iPC): VRN2208WFHY6</p>  <p>Fully integrated 2U, 1-Node system, including: CPUs, Memory, and SATA SSDs</p>	<p>Order Information MM#: 962688 UPC: 00735858363358 EAN: 5032037118699 Product Type: Fully Integrated Server System Chassis Form Factor: 2U Rack Mount Chassis Dimensions: L=712mm, W=439mm, H=89mm Outer Box Dimensions: L=983mm, W=577mm, H=260mm</p>
<p>Intel product code VRN2208WFHY6 includes the following:</p> <p>(1) Intel Server System w/S260WFO, 2U1N, 8x2.5" R2208WFOZS, which includes these components:</p> <ul style="list-style-type: none"> (1) 2U Chassis with Quick Reference Label affixed to top cover (1) Intel® Server Board S260WFO (No on-board LAN) S2600WFO (2) PCIe Riser Card Brackets: <ul style="list-style-type: none"> (2) 3-slot PCIe* Riser Cards A2UL8RISER2 (1) 2-slot Low Profile PCIe* Riser Card A2UX8X4RISER (8) – 2.5" Hot-Swap Drive Bays with drive carriers and drive blanks <ul style="list-style-type: none"> (1) SAS/NVMe Combo Backplane F2U8X25S3PHS (8) 2.5" Hot-Swap Drive Tool-Less Carriers FXX25HSCAR3 (1) – Standard Control Panel Assembly <ul style="list-style-type: none"> Board-only FXXFPANEL2 300mm FP Cable H34381-xxx (1) – Front I/O Panel Assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> 620mm USB 3.0 Cable H76899-xxx 400mm Video Cable H62114-xxx (1) – 250mm Backplane I2C Cable H91166-xxx (2) – 730mm Mini SAS HD Cable AXXCBL730HDHD (1) – 675mm Backplane Power Cable H82108-XXX (1) – Standard 2U Air Duct H90554-xxx (6) – Hot-Swap System Fans FR2UFAN60HSW (8) – DIMM slot blanks G75158-00x (1) – 1300W AC Power Supply Module (PSM) AXX1300TCRPS (1) – Power Supply Bay blank insert (2) – AC Power Cord retention strap assembly H23961-00x (2) – CPU Heat Sink FXXCA78X108HS (2) – CPU Heat Sink "NO CPU" mylar spacer insert J16115-XXX (2) – Standard CPU Carrier H72851-xxx (1) – 3x RMFBU Mounting Bracket H18238-00x (1) – 250mm Fixed Mount Solid State Drive (SSD) Power Cable <p>(2) Intel Xeon Gold 5115 (10 Cores, 2.4Ghz, 85W) CD8067303535601</p> <p>(2) Intel® Solid State Drive (SSD) S4600 960GB 2.5" SFF U.2 SSDSC2KG960G701</p> <p>(1) Intel® Solid State Drive (SSD) S3520 480GB (M.2, 80mm) SSDSCKJB480G701</p> <p>(1) Intel Remote Management Module Lite 2 AXXRMM4LITE2</p> <p>(1) Intel® RAID Controller RS3UC080J (IT Mode) RS3UC080J</p> <p>(1) 1300W AC Common Redundant Power Supply AXX1300TCRPS</p> <p>(1) Ethernet OCP Dual SFP+ X527DA2OCPG1P5</p> <p>(12) RDIMM 32GB - DDR4, 288-pin, 2666MHz J47951-001</p> <p>(1) Trusted Platform Module (TPM) 2.0 AXXTPMENC8</p> <p>These components are system-certified and customer-supplied but do not ship with the Intel® DCB for Cloud server system:</p> <ul style="list-style-type: none"> (6) – Seagate 4TB SAS 3.5" HDD - ST4000NM0034 	

Systems shipped to the US and Canada include two (2) North American power cords.

For a complete list of available FRU parts, refer to the Intel® Server Board S2600WF Product Family Configuration Guide at: <https://www.intel.com/content/www/us/en/motherboards/server-motherboards/server-board-s2600wf.html>

Table 5. Intel® Server System VRN2224BPAF6


<p>Product Code (iPC): VRN2224BPAF6</p>  <p>Fully integrated 2U, 4-Node system, including: CPUs, Memory, and SATA and Optane™ SSDs</p>	<p>Order Information MM#: 961104 UPC: 00735858363334 EAN: 5032037118675 Product Type: Fully Integrated Server System Chassis Form Factor: 2U Rack Mount Chassis Dimensions: L=733mm, W=438mm, H=86.9mm Outer Box Dimensions: L=983mm, W=577mm, H=266mm</p>
<p>Intel product code VRN2224BPAF6 includes the following:</p> <ul style="list-style-type: none"> (1) 2U Chassis (24x2.5") H2224XXLR3, which includes these components: <ul style="list-style-type: none"> (1) Front Panel FH2000FPANEL2 (1) Power Distribution Board FXXCRPSPDB2 (1) Power Interposer Board FXXCRPSPIB (2) 2130W 80 Plus Platinum PSUs FXX2130PCRPS (1) 24 x 2.5" Hot-Swap Drive Bay, which includes: <ul style="list-style-type: none"> (24) Tool-less Drive Carriers FXX25HSCAR3 (1) Backplane HW24X25HS12G (4) Blank Compute Module Slot Fillers (1) Basic Rack Rail AXXELVRAIL <p>NOTE: The rail kit only supports specific rack type with 3/8" square and 7.1mm round holes.</p> (4) Compute Module (w/TPM 2.0, 2x10GbE SFP+ & 2x1GbE, RDMA) HNS2600BPS24, which includes: <ul style="list-style-type: none"> (1) 1U Node Tray (1) Intel Server Board S2600BPS (1) Power Docking Board FHWBPNPB24 (3) 40x56mm Dual Rotor Managed Fans FXX4056DRFAN2 (1) 1U Passive Heat Sink for CPU #1 CUAL FXXHP78X108HS (1) 1U Passive Heat Sink for CPU #2 AI FXXEA78X108HS (2) Standard Carrier Clips (1) Air Duct (1) External VGA Port Bracket (1) Riser Slot 2 Riser Card w/80mm M.2 Solid State Drive (SSD) slot AHW1UM2RISER2 (8) Intel® Xeon Gold 5118 processor (12 Cores, 2.3Ghz, 105W) CD8067303536100 (4) Intel® Optane™ SSD DC P4800X 375GB, 2.5in PCIe x4 SSDPE2KE016T701 (4) Intel Solid State Drive (SSD) P3100 256GB (M.2, 80mm) SSDPEKKA256G701 (20) Intel Solid State Drive (SSD) DC S4500 1.9TB, 2.5in SATA 6Gb/s SSDSC2KB019T701 (4) Bridge Board - 12G, IT mode only AHWBPBGB24 (4) Intel Remote Management Module Lite 2 AXXRMM4LITE2 (32) Micron RDIMM 32GB – DDR4, 288-pin, 2400MHz (8 DIMMs per node/32 DIMMs per system) J47951-001 	

Systems shipped to the US and Canada include two (2) North American power cords.

For a complete list of available FRU replacement parts, refer to the Intel® Server Board S2600BP Product Family Configuration Guide at the following Intel web site:

<https://www.intel.com/content/www/us/en/motherboards/server-motherboards/server-board-s2600bp.html>

Table 6. Intel® Server System VRN2208WFAF81

<p>Product Code (iPC): VRN2208WFAF81</p>  <p>Fully Integrated 2U, 1-Node system, including: CPUs, Memory, and SATA + Optane SSDs</p>	<p>Order Information MM#: 961061 UPC: 00735858363327 EAN: 5032037118668 Product Type: Fully Integrated Server System Chassis Form Factor: 2U Rack Mount Chassis Dimensions: L=712mm, W=439mm, H=89mm Outer Box Dimensions: L=983mm,W=577mm, H=260mm</p>
<p>Intel product code VRN2208WFAF81 includes the following:</p> <p>(1) Intel Server System w/S260WFO, 2U1N, 8x2.5" R2208WFOZS, which includes the following components:</p> <ul style="list-style-type: none"> (1) 2U Chassis with Quick Reference Label affixed to top cover (1) Intel Server Board S2600WFO (No Onboard LAN) S2600WFO (2) PCIe Riser Card Brackets: <ul style="list-style-type: none"> (2) 3-slot PCIe* Riser Cards A2UL8RISER2 (1) 2-slot low profile PCIe* Riser Card A2UX8X4RISER (8) – 2.5" Hot-Swap Drive Bays with drive carriers and drive blanks <ul style="list-style-type: none"> (1) SAS/NVMe Combo Backplane F2U8X25S3PHS (8) 2.5" Hot-Swap Drive Tool-Less Carriers FXX25HSCAR3 (1) – Standard Control Panel Assembly <ul style="list-style-type: none"> Board-only FXXFPANEL2 300mm FP Cable H34381-xxx (1) – Front I/O Panel Assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> 620mm USB 3.0 Cable H76899-xxx 400mm Video Cable H62114-xxx (1) – 250mm Backplane I2C Cable H91166-xxx (2) – 730mm Mini SAS HD Cable AXXCBL730HDHD (1) – 675mm Backplane Power Cable H82108-XXX (1) – Standard 2U Air Duct H90554-xxx (6) – Hot-Swap System Fans FR2UFAN60HSW (8) – DIMM slot blanks G75158-00x (1) – 1300W AC Power Supply Module AXX1300TCRPS (1) – Power Supply Bay blank insert (2) – AC Power Cord retention strap assembly H23961-00x (2) – CPU Heatsink FXXCA78X108HS (2) – CPU Heatsink "NO CPU" mylar spacer insert J16115-XXX (2) – Standard CPU Carrier H72851-xxx (1) – 3x RMFBU Mounting Bracket H18238-00x (1) – 250mm Fixed Mount Solid State Drive (SSD) Power Cable <p>(2) Intel Xeon Gold 5118 (12 Cores, 2.3Ghz, 105W) CD8067303536100</p> <p>(2) Intel Optane SSD DC P4800X 375GB, 2.5in PCIe x4 SSDPE2KE016T701</p> <p>(1) Intel SSD S3520 480GB (M.2, 80mm) SSDSCKJB480G701</p> <p>(6) Intel SSD S4500 1.92TB 2.5" SATA SSDSC2KB019T701</p> <p>(1) Intel Remote Management Module Lite 2 AXXRMM4LITE2</p> <p>(1) Intel RAID Controller RS3UC080J (IT Mode) RS3UC080J</p> <p>(1) OCuLink Cable – 530mm AXXCBL530CVCR</p> <p>(1) OCuLink Cable - 470mm AXXCBL470CVCR</p> <p>(1) 1300W AC Common Redundant Power Supply AXX1300TCRPS</p> <p>(1) Ethernet OCP Dual SFP+ X527DA2OCPG1P5</p> <p>(12) RDIMM 32GB - DDR4, 288-pin, 2666MHz J47951-001</p> <p>(1) Trusted Platform Module (TPM) 2.0 AXXTPMENC8</p>	

Systems shipped to the US and Canada include two (2) North American power cords.

For a complete list of available FRU parts, refer to the Intel® Server Board S2600WF Product Family Configuration Guide at: <https://www.intel.com/content/www/us/en/motherboards/server-motherboards/server-board-s2600wf.html>


Table 7. Intel® Server System VRN2208WFAF82

<p>Product Code (iPC): VRN2208WFAF82</p>  <p>Fully Integrated 2U, 1-Node system, including: CPUs, Memory and SATA and Optane SSDs</p>	<p>Order Information MM#: 961058 UPC: 00735858363310 EAN: 5032037118651 Product Type: Fully Integrated Server System Chassis Form Factor: 2U Rack Mount Chassis Dimensions: L=712mm, W=439mm, H=89mm Outer Box Dimensions: L=983mm, W=577mm, H=260mm</p>
<p>Intel product code VRN2208WFAF82 includes the following:</p> <p>(1) Intel Server System w/S260WFO, 2U1N, 8x2.5" R2208WFOZS, including these components:</p> <ul style="list-style-type: none"> (1) 2U Chassis with Quick Reference Label affixed to top cover (1) Intel Server Board S2600WFO (No Onboard LAN) S2600WFO (2) PCIe Riser Card brackets: <ul style="list-style-type: none"> (2) 3-slot PCIe Riser Card A2UL8RISER2 (1) 2-slot low profile PCIe Riser Card A2UX8X4RISER (8) – 2.5" Hot-Swap Drive Bays with drive carriers and drive blanks <ul style="list-style-type: none"> (1) SAS/NVMe Combo Backplane F2U8X25S3PHS (8) 2.5" Hot-Swap Drive Tool-Less Carriers FXX25HSCAR3 (1) – Standard Control Panel Assembly <ul style="list-style-type: none"> Board-only FXXFPANEL2 300mm FP Cable H34381-xxx (1) – Front I/O Panel Assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> 620mm USB 3.0 Cable H76899-xxx 400mm Video Cable H62114-xxx (1) – 250mm Backplane I2C Cable H91166-xxx (2) – 730mm Mini SAS HD Cable Axxcbl730hdhd (1) – 675mm Backplane Power Cable H82108-XXX (1) – Standard 2U Air Duct H90554-xxx (6) – Hot-Swap System Fans FR2UFAN60HSW (8) – DIMM slot blanks G75158-00x (1) – 1300W AC Power Supply Module (PSM) AXX1300TCRPS (1) – Power Supply Bay blank insert <ul style="list-style-type: none"> (2) – AC Power Cord retention strap assembly H23961-00x (2) – CPU Heatsink FXXCA78X108HS (2) – CPU Heatsink "NO CPU" mylar spacer insert J16115-XXX (2) – Standard CPU Carrier H72851-xxx (1) – 3x RMFBU Mounting Bracket H18238-00x (1) – 250mm Fixed Mount Solid State Drive (SSD) Power Cable <p>(2) Intel Xeon® Gold 5120 (14 Cores, 2.2Ghz, 105W) CD8067303535900</p> <p>(2) Intel Optane SSD DC P4800X 375GB, 2.5in PCIe x4 SSDPE2KE016T701</p> <p>(1) Intel SSD S3520 480GB (M.2, 80mm) SSDSCKJB480G701</p> <p>(6) Intel SSD P4500 2TB 2.5" NVMe U.2 SSDPE2KX020T701</p> <p>(1) Remote Management Module Lite 2 AXXRMM4LITE2</p> <p>(1) Intel® PCIe Switch AIC (8 ports) AXXP3SWX08080</p> <p>(1) OCuLink Cable – 725mm cable kit A2U8PSWCXCXK1</p> <p>(1) OCuLink Cable – 530mm AXXCBL530CVCR</p> <p>(1) OCuLink Cable - 470mm AXXCBL470CVCR</p> <p>(1) 1300W AC Common Redundant Power Supply AXX1300TCRPS</p> <p>(1) Ethernet OCP Quad SFP+ X527DA4OCPG1P5</p> <p>(12) RDIMM 32GB - DDR4, 288-pin, 2666MHz J47951-001</p> <p>(1) Trusted Platform Module (TPM) 2.0 AXXTPMENC8</p>	

Systems shipped to the US and Canada include two (2) North American power cords.

For a complete list of available FRU parts, refer to the Intel® Server Board S2600WF Product Family Configuration Guide at: <https://www.intel.com/content/www/us/en/motherboards/server-motherboards/server-board-s2600wf.html>

Table 8. Intel® Server System VRN2208WFAF83

<p>Product Code (iPC): VRN2208WFAF83</p>  <p>Fully Integrated 2U, 1-Node system, including: CPUs, Memory and Optane and NVMe SSDs</p>	<p>Order Information MM#: 961057 UPC: 00735858363303 EAN: 5032037118644</p> <p>Product Type: Fully Integrated Server System Chassis Form Factor: 2U Rack Mount Chassis Dimensions: L=712mm, W=439mm, H=89mm Outer Box Dimensions: L=983mm, W=577mm, H=260mm</p>
<p>Intel product code VRN2208WFAF83 includes the following:</p> <p>(1) Intel Server System w/S260WFO, 2U1N, 8x2.5" R2208WFOZS, which includes these components:</p> <ul style="list-style-type: none"> (1) 2U Chassis with Quick Reference Label affixed to top cover (1) Intel Server Board S2600WFO (No Onboard LAN) S2600WFO (2) PCIe Riser Card Brackets: <ul style="list-style-type: none"> (2) 3-slot PCIe Riser Cards A2UL8RISER2 (1) 2-slot low profile PCIe Riser Card A2UX8X4RISER (8) – 2.5" Hot-Swap Drive Bays with drive carriers and drive blanks <ul style="list-style-type: none"> (1) SAS/NVMe Combo Backplane F2U8X25S3PHS (8) 2.5" Hot-Swap Drive Tool-Less Carriers FXX25HSCAR3 (1) – Standard Control Panel Assembly <ul style="list-style-type: none"> Board only FXXFPANEL2 300mm FP Cable H34381-xxx (1) – Front I/O Panel Assembly (1 x VGA and 2 x USB) <ul style="list-style-type: none"> 620mm USB 3.0 Cable H76899-xxx 400mm Video Cable H62114-xxx (1) – 250mm Backplane I2C Cable H91166-xxx (2) – 730mm Mini SAS HD Cable AXXCBL730HDHD (1) – 675mm Backplane Power Cable H82108-XXX (1) – Standard 2U Air Duct H90554-Xxx (6) – Hot-Swap System Fans FR2UFAN60HSW (8) – DIMM slot blanks G75158-00x (1) – 1300W AC Power Supply Module (PSM) Axx1300tcrps (1) – Power Supply Bay blank insert (2) – AC Power Cord retention strap assembly H23961-00x (2) – CPU Heat Sink FXXCA78X108HS (2) – CPU Heat Sink "NO CPU" mylar spacer insert J16115-XXX (2) – Standard CPU Carrier H72851-xxx (1) – 3x RMFBU Mounting Bracket H18238-00x (1) – 250mm Fixed Mount SSD Power Cable <p>(2) Intel® Xeon Gold 6152 processor (22 Cores, 2.1Ghz, 140W) CD8067303406000</p> <p>(4) Intel Optane SSD P4800 375GB 2.5" SFF U.2 SSDPE21K375GA01</p> <p>(1) Intel Solid State Drive (SSD) S3520 480GB (M.2, 80mm) SSDSCKJB480G701</p> <p>(12) Intel Solid State Drive (SSD) P4500 2TB 2.5" NVMe U.2 SSDPE2KX020T701</p> <p>(1) 2U 8x2.5 Combo HSBP A2U8X25S3PHS</p> <p>(2) Intel PCIe Switch AIC (8 ports) AXXP3SWX08080</p> <p>(2) OCuLink Cable – 875mm Cable Kit A2U8PSWCXCXK1</p> <p>(2) OCuLink Cable – 700mm AXXCBL700CVCR</p> <p>(1) OCuLink Cable – 530mm AXXCBL530CVCR</p> <p>(1) OCuLink Cable - 470mm AXXCBL470CVCR</p> <p>(1) 1300W AC Common Redundant Power Supply AXX1300TCRPS</p> <p>(1) Ethernet OCP Quad SFP+ X527DA4OCPG1P5</p> <p>(24) RDIMM 32GB - DDR4, 288-pin, 2666MHz J47951-001</p> <p>(1) Trusted Platform Module (TPM) 2.0 AXXTPMENC8</p>	

Systems shipped to the US and Canada include two (2) North American power cords.

For a complete list of available FRU parts, refer to the Intel® Server Board S2600WF Product Family Configuration Guide at: <https://www.intel.com/content/www/us/en/motherboards/server-motherboards/server-board-s2600wf.html>




3.1 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 **VRN2224BPAF6** and **VRN2224BPHY6** 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 **VRN2224BPAF6** and **VRN2224BPHY6**.

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 **VRN2208WF** models are listed in the following table.

Table 9. Intel® Rail Kit accessory options for VRN2208WF models

iPC – Intel Product Code	Product Order Information	Product Details
<p style="text-align: center;">AXXELVRAIL</p> 	<p>MM# – 920970 UPC – 00735858244367 EAN – 5032037038980 MOQ – 1</p>	<p style="text-align: center;">Enhanced Value Rail Kit</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 style="text-align: center;">AXXSHRTRAIL</p> 	<p>MM# – 939210 UPC – 00735858291996 EAN – 5032037070553 MOQ – 1</p>	<p style="text-align: center;">2U Premium Feature Rails with no CMA Support</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 • Kit includes: Rails, screws, installation manual
<p style="text-align: center;">AXXFULLRAIL</p> 	<p>MM# – 939209 UPC – 00735858291989 EAN – 5032037070546 MOQ – 1</p>	<p style="text-align: center;">2U+ Premium Feature Rails with CMA support.</p> <ul style="list-style-type: none"> • Travel distance 800mm • Bracket adjustment within 594.8mm~813mm • Tool-less installation • Full extension from rack • Kit includes: Rails, screws, installation manual • For Cable Management Arm, order AXXCMA2
<p style="text-align: center;">AXXCMA2</p>	<p>MM# – 939211 UPC – 00735858292009 EAN – 5032037070560 MOQ – 1</p>	<p style="text-align: center;">Cable Management Arm</p> <ul style="list-style-type: none"> • Compatible with AXXFULLRAIL only

4. 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.

4.1 Drive Carrier Extraction

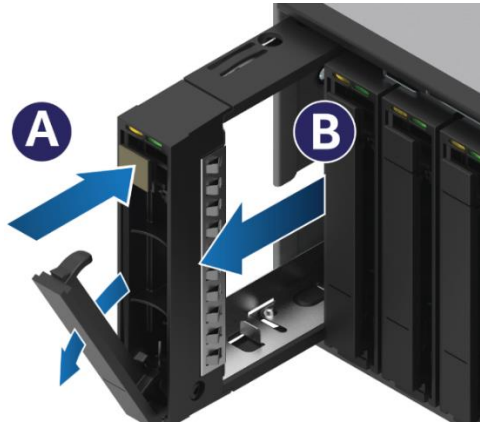


Figure 4. Drive carrier extraction from chassis

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").

4.2 Drive Carrier Insertion/Installation

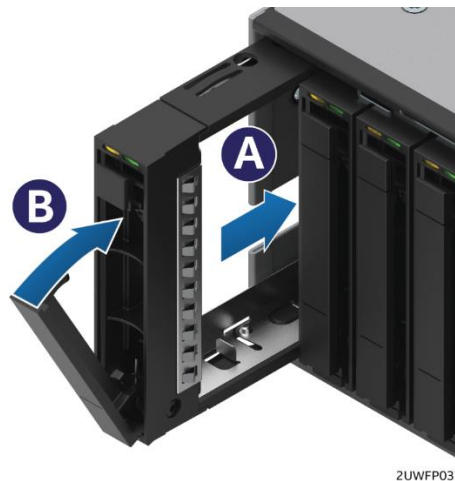


Figure 5. Drive carrier insertion into chassis

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")

4.3 2.5" HDD/SSD Drive Carrier Assembly

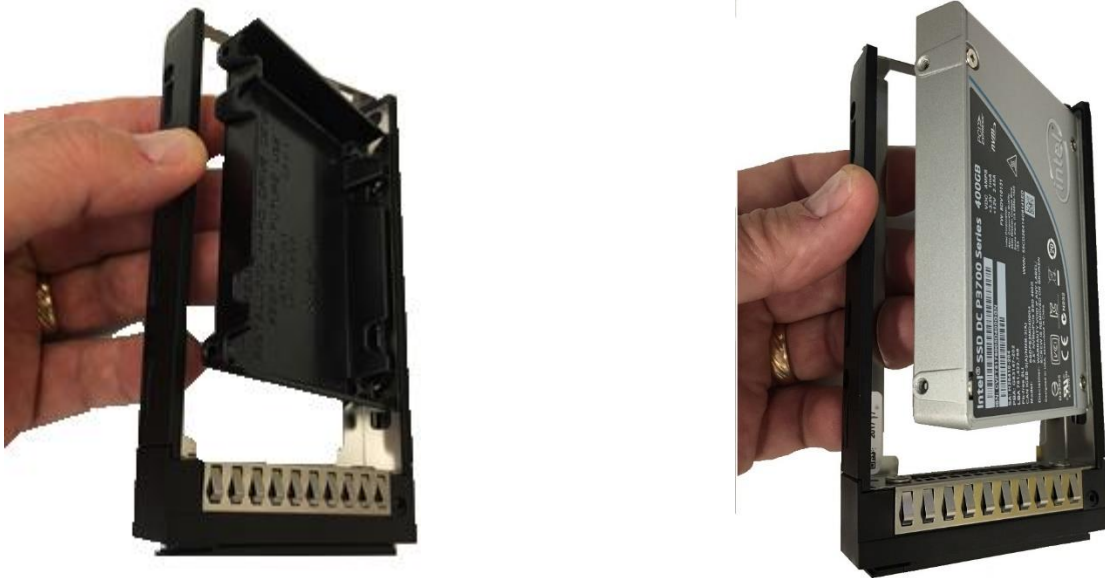


Figure 6. 2.5" Drive Carrier Assembly – Drive / Drive Blank Removal

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 above).

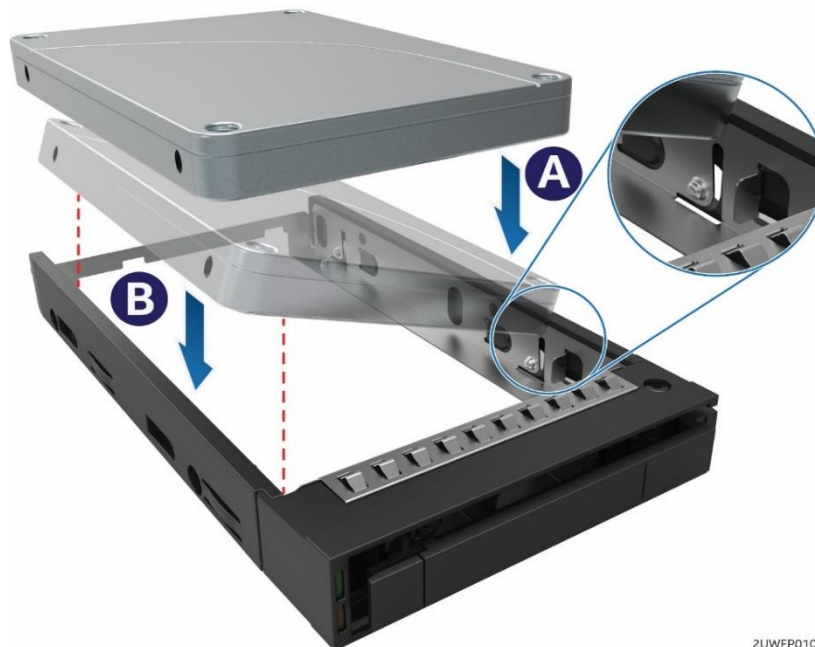
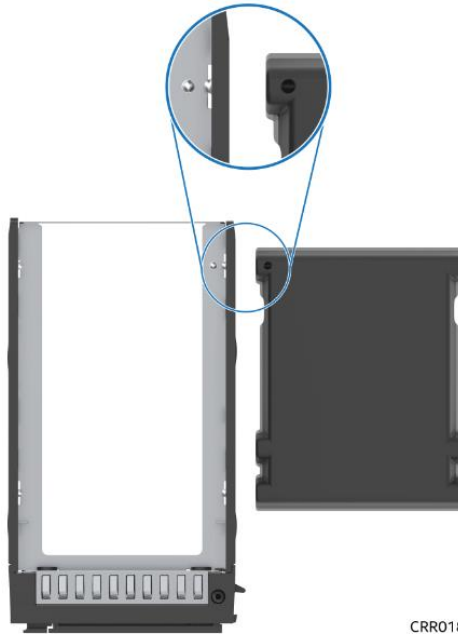


Figure 7. 2.5" Drive carrier assembly – drive installation into carrier

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 above) to ensure proper assembly. When re-installing a drive blank in to the drive carrier, ensure the features are aligned prior to installation. Failure to properly install a drive blank may result with the carrier assembly not fitting properly in to the chassis drive bay.



CRR018

Figure 8. 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

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