

Intel® Data Center Blocks for Microsoft* Azure* Stack HCI

System Deployment and Configuration Guide

This document provides guidance for operating system installation and identification of available system options for Intel® server systems supporting 2nd Generation of Intel® Xeon® Scalable processors.

Rev 2.2

April 2020

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Document Revision History

Date	Revision	Changes
November 2017	1.0	Initial public release.
March 2018	1.1	Corrected HDD model name on page 8. Changed template, added header, style corrections
May 2018	1.2	Corrected errors in configuration information (section 3). Modified section 1.1.1 and 1.1.2.
October 2018	1.3	Implemented changes (MM#s, SSD models) to reflect transition to the new SSD devices driven by EOL process: S4500 -> S4510, S4600 -> S4610, P4500 -> P4510, P4600 -> P4610, P3100 -> P4101. Reflected addition of the SAS expander RES3TV360 to MCB2208WFHY2 model to meet Microsoft requirement for SCSI Enclosure Services (SES) support. Added statement about the HDD requirement to have Microsoft SDDC and Intel HCL
December 2018	1.4	Updated MM#s for MCB2208WFHY2, MCB2208WFAF4, MCB2208WFAF5 and MCB2208WFAF6 to reflect replacement of S3520 M.2 drive with S4510 M.2 drive as the boot device according to the PCN 116645.
March 2019	1.9	First version of the document for the "Refresh" product line supporting 2nd Generation of Intel Xeon Scalable processors optimized for Windows 2019
April 2019	1.91	Updated EAN and UPC codes. Added comment about boot device identification in Chapter 2.
April 2019	1.92	Added instructions for configuring Intel® Optane™ DC persistent memory modules into APP Direct mode to Chapter 3
April 2019	1.93	BOM corrections applied
May 2019	1.94	Added guidance for Intel software stack update in paragraph 1.1.1
May 2019	1.95	Corrected DCPMM mode in MCB2208WFAF8R and MCB2208WFAF10R models described in chapter 3.
May 2019	2.00	Promoted to the public release as version 2.00
May 2019	2.01	Corrected MM#s for BNP based models, corrected picture for MCB2208WFAF10R
April 2020	2.1	Updated all SKUs with Cascade Lake Refresh CPUs.
April 2020	2.2	Updated product name to Intel® Data Center Blocks for Microsoft* Azure* Stack HCI

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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 optimized for Microsoft* Azure* Stack HCI are unbranded server systems that optimize the features and performance of Windows Server* to help accelerate the path to software-defined storage and private cloud. They include both single node and multi-node server systems.

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



Figure 1. Intel® Server multi-node systems MCB2224BPHY1R and MCB2224BPAF3R

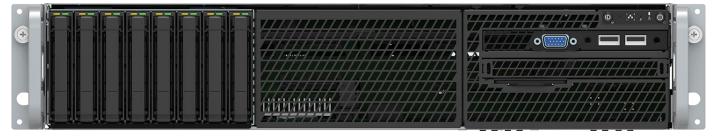


Figure 2. Intel® Server single-node systems MCB2208WFAF4R, MCB2208WFAF5R, MCB2208WFAF6R, MCB2208WFAF7R, MCB2208WFAF8R and MCB2208WFAF10R



Figure 3. Intel® Server single-node system MCB2208WFAF9R



Figure 4. Intel® Server single-node system MCB2312WFHY2R

1.1 Microsoft Windows Server* Certification and the Intel® DCB for Microsoft* Azure* Stack HCI

Server systems within this product family were specifically created to meet the Microsoft Windows Server* certification requirements. Intel has extensively tested these systems to ensure best operation and reliability within the Microsoft Windows Server 2016 Datacenter edition and Microsoft Windows Server 2019 Datacenter edition operating environments.

Support for Intel® Optane™ DC persistent memory modules was introduced the first time in the Microsoft Windows Server 2019 operating system. Therefore, Intel DCB models with Intel Optane DC persistent memory modules (MCB2208WFAF8R and MCB2208WFAF10R) are certified only for Microsoft Windows Server 2019.

Intel DCB model MCB2224BPHY1R is certified for Microsoft Windows Server 2016 with SATA hard disk drives (HDDs) only. The same Intel DCB model running Microsoft Windows Server 2019 operating system can use either SAS or SATA HDDs without breaking certification.

All other Intel DCB models are certified for both Microsoft Windows Server 2016 and Microsoft Windows Server 2019 operating environments.

1.1.1 Maintaining Microsoft Windows Server* Certification

To maintain Microsoft Windows Server certification, be cautious with the changes to the predefined system configuration. Changing the system configuration may invalidate the Microsoft Windows Server certification performed by Microsoft and Intel.

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

- Updating the factory-installed system software stack with revisions that are not Microsoft-certified. The system software stack includes system BIOS, BMC and Intel® Management Engine (Intel® ME) firmware.¹
- Changing processor model and quantity.
- Changing the system memory with non-matching (different manufacturer and/or model number)
 DIMMs.²
- 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) solid state drives (SSDs) compared to those shipped in the original system configuration.²
- Adding HDDs not certified for Microsoft Software-Defined Data Center Premium.

Notes:

- 1. Intel releases updates to the system software stack for server boards and systems via the System Update Packages (SUP), which are available from the Intel® Download Center. However, since the Intel DCB for Cloud server system is Microsoft-certified, refrain from changing the pre-installed system software stack unless updating it to another system software stack which has passed Microsoft certification for that specific system configuration. At the time of the initial launch in April 2020, all models have been certified with SUP 02.01.0009. Please check if new certified SUP versions are available at https://www.intel.com/content/www/us/en/support/articles/000021862/server-products.html under Intel® Data Center Blocks for Cloud -> Cloud Blocks for Microsoft Azure Stack HCI*.
- 2. Adding or swapping like storage devices and DIMMs (same manufacturer and part number) as shipped in the original system configuration is permitted and does not invalidate the Microsoft certification.

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1.1.2 Hybrid System Configurations

Hybrid systems have both HDDs and SSDs. Intel preinstalls certified boot and cache tier SSD drives. HDDs for hybrid configurations are not included and must be purchased separately.

To maintain Microsoft certification, HDDs for use with hybrid Intel DCB models must be certified for Windows Server Software-Defined Data Center Premium. In addition, for the MCB2224BPHY1R hybrid systems running Microsoft Windows Server 2016, only SATA HDDs can be used. Check the Microsoft Windows Server Catalog (https://www.windowsservercatalog.com) to verify that the drive is certified for Software-Defined Data Center Premium on the corresponding version of Windows Server.

In addition, all HDDs installed into a hybrid Intel DCB model should be validated by Intel on Intel® Server Systems. 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 Hardware Compatibility List. Start with the "Intel Server Board S2600WF, HNS2600BP and S2600ST Families". To find compatible drives for MCB2312WFHY2R model, select R2312WF0NPR from the "System/Chassis" category and HDD-SATA from "Compatible Options" category. Similarly, to find compatible drives for MCB2224BPHY1 model, select the H2224XXLR3 system.

The following table identifies locations of the HDDs in hybrid systems. See Section 4 for drive installation instructions.

Description **DCB Model HDD Type** Requirement Quantity **Install Location** Slots: 2, 3, 4, 5, SATA for Windows* 2016 Certified for Microsoft 8, 9, 10, 11, 14, MCB2224BPHY1R SAS or SATA for Windows 16 Software-Defined Data 15, 16, 17, 20, 2.5" HDD, 2019 Center Premium 21, 22, 23 2TB and present in Intel Hardware Compatibility List Slots: 0, 1, 2, 3 4 MCB2312WFHY2R SAS or SATA

Table 1. Certified hard drives for hybrid configurations

2. Microsoft Windows Server* Installation Requirements

For an Intel® DCB for Microsoft* Azure* Stack HCI to function, a Microsoft Windows Server* 2016 or Microsoft Windows Server 2019 operating system must be installed by the customer. To maintain Microsoft certification for any Intel DCB for Cloud Server System, the Microsoft Windows Server operating system must be installed to a specific storage device within the specific Intel DCB for Cloud Server System configuration.

The following table identifies the dedicated boot device to install Microsoft Windows Server for each Intel DCB for Microsoft Azure Stack HCI 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
MCB2224BPHY1R MCB2224BPAF3R	Intel	Intel® SSD DC P4101 (256GB, M.2, 80mm)	Installed on the M.2 slot of riser card 2 AHW1UM2RISER2
MCB2312WFHY2R MCB2208WFAF4R MCB2208WFAF5R MCB2208WFAF6R MCB2208WFAF7R MCB2208WFAF8R MCB2208WFAF9R MCB2208WFAF10R	Intel	Intel® SSD D3 S4510 Series (480GB, M.2, 80mm)	Installed in the M.2 port 1 on the motherboard

During installation process, the Windows setup utility asks to select the target device for the operating system location. The M.2 SSD is the drive with lowest capacity in the list of all drives presented. Select this drive as the target for operating system installation.

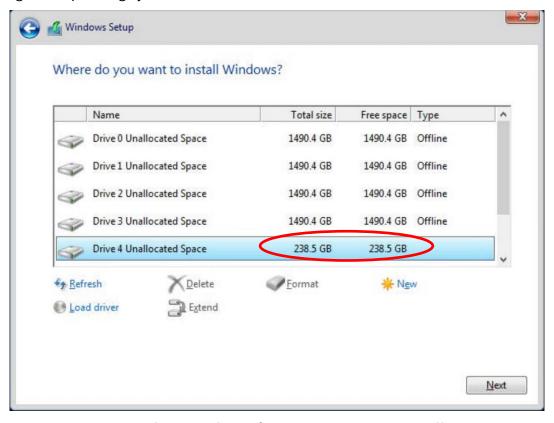


Figure 5. Select M.2 drives for operating system installation

3. Intel® Optane™ DC Persistent Memory Module Configuration

Intel® Optane $^{\text{m}}$ DC persistent memory represents a groundbreaking technology innovation. Delivered with 2^{nd} Generation Intel® Xeon® Scalable processors, this workload optimized technology helps businesses extract more actionable insights from data – from cloud and databases, to in-memory analytics, and content delivery networks.

Intel Optane DC persistent memory is an innovative memory technology that delivers a unique combination of affordable large capacity and support for data persistence. These features supported by programming Intel Optane DC persistent memory module into one of two distinctive modes: Memory Mode or Application Direct. By default, all Intel Optane DC persistent memory modules are factory programmed into the Memory Mode. When they are installed into a server system following the rules, they are seen by an operating system as high capacity RAM. To unleash the persistent feature of Intel Optane DC persistent memory, it should be configured into Application Direct mode.

Intel DCB for Cloud MCB2208WFAF8R and MCB2208WFAF10R models include Intel Optane DC persistent memory modules. The MCB2208WFAF8R model designed to use Intel Optane DC persistent memory in the Memory Mode and no additional configuration is needed. The MCB2208WFAF10R is designed to use Intel Optane DC persistent memory in the Application Direct mode and requires some configuration steps in the BIOS and in operating system. This chapter provides step-by-step procedure to achieve this goal.

3.1 Configuring Intel® Optane™ DC Persistent Memory Modules in BIOS

First, ensure that all Intel Optane DC persistent memory modules installed at the factory are visible by BIOS and are operational. Boot the system into the BIOS setup utility by pressing the <F2> key after POST completes. The total amount of detected RAM is shown in the top right corner of the summary screen. This number should be equal to the total Intel Optane DC persistent memory modules capacity.

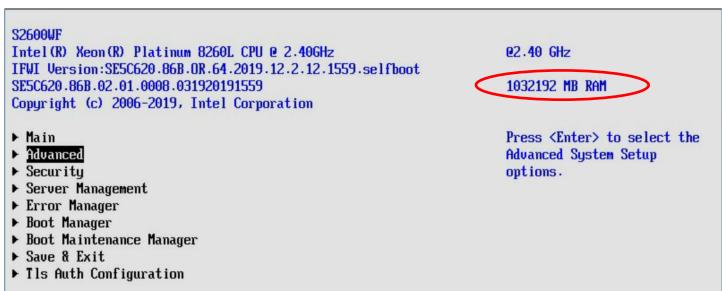


Figure 6. Total amount of RAM visible to system

The "DCPMM" line in the Memory Configuration section of the Main page shows how the Intel Optane DC persistent memory module is configured. The example in Figure 7 shows that the total Intel Optane DC persistent memory module capacity of 1008GB is configured for Memory Mode (the second number in line) and zero is allocated for Application Direct mode (the third number).

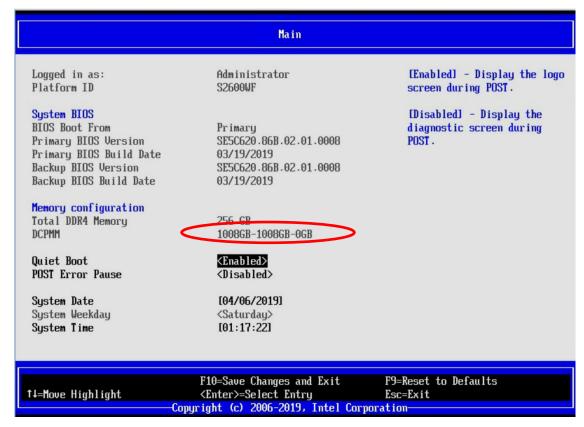


Figure 7. Intel® Optane™ DC persistent memory module capacity allocation

To check individual Intel Optane DC persistent memory module status, go to Advanced > Memory Configuration. This page shows the location of the Intel Optane DC persistent memory modules and their capacities split between Memory and Application Direct modes similar to how it presented on the Main page:

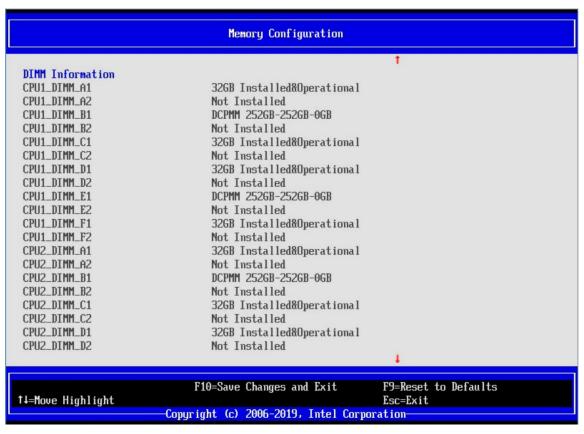


Figure 8. Intel® Optane™ DC persistent memory location

To configure the Intel Optane DC persistent memory module for Application Direct mode, navigate to Advanced > PCI Configuration > UEFI Option ROM Control > Intel Optane DC Persistent Memory Configuration > Regions > Create goal config.

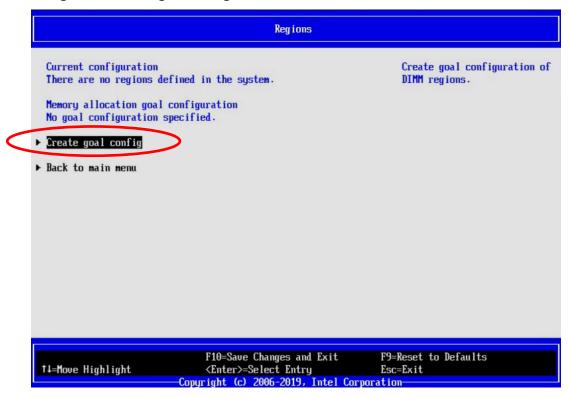


Figure 9. Create goal config option

By default, the new configuration ("Goal") for the Application Direct mode is set for the whole platform and App Direct is preselected for the Persistent memory type field. This page allows allocation of some Intel Optane DC persistent memory module capacity to Memory Mode. The rest is allocated to App Direct mode.

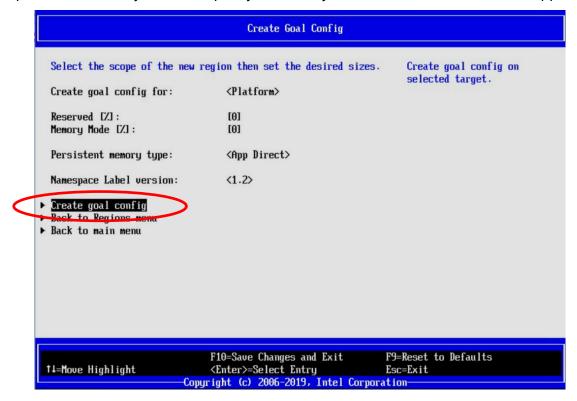


Figure 10. Goal configuration page

Confirm configuration by selecting the **Create goal config** action line at the bottom. The new screen shows memory allocation goals for individual Intel Optane DC persistent memory modules.

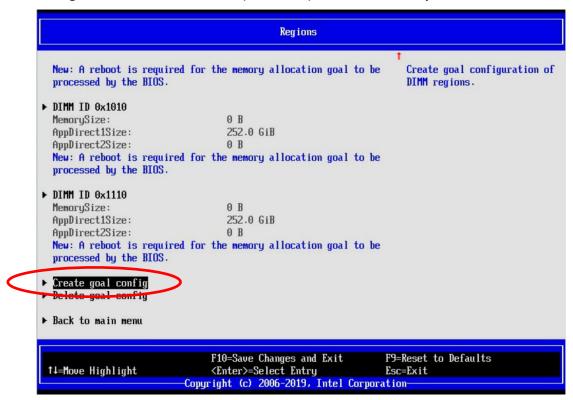


Figure 11. Confirm goal creation

Confirm the configuration by selecting **Create goal config** again and restart the server system for the new Intel Optane DC persistent memory module configuration to be applied. Bring the system into BIOS setup by pressing the **<F2>** key after POST completes. The amount of RAM on the summary page now shows only DDR4 memory.

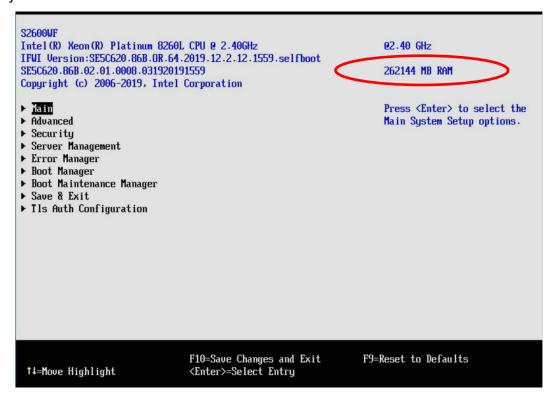


Figure 12. RAM equal to DDR4 memory

The Main page shows the new Intel Optane DC persistent memory module allocation. In the example shown in Figure 13, the whole Intel Optane DC persistent memory module capacity is allocated to Application Direct mode.

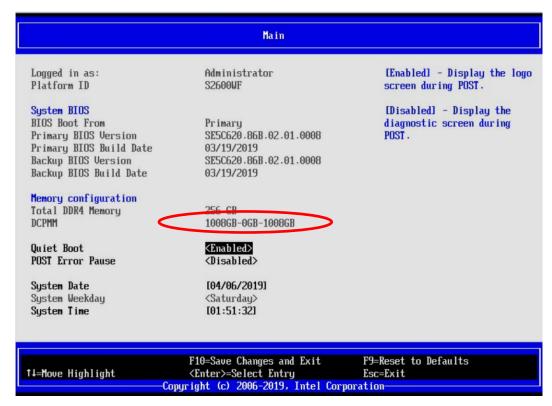


Figure 13. DCPMM capacity allocated to App Direct mode

Navigate to Advanced > PCI Configuration > UEFI Option ROM Control > Intel Optane DC Persistent Memory Configuration > Regions to see that two new App Direct regions have been created (one per CPU).

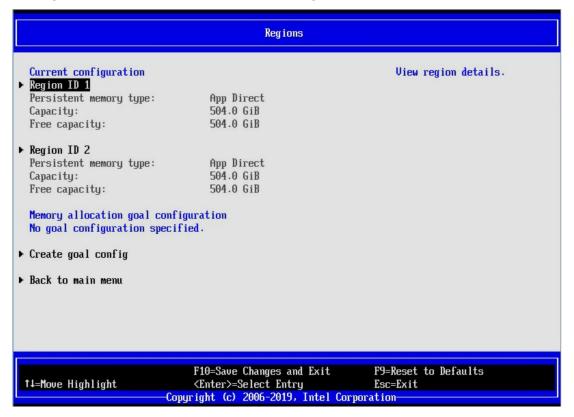


Figure 14. App Direct regions created

3.2 Configuring Intel® Optane™ DC Persistent Memory Modules in the Operating System

Support for Intel Optane DC persistent memory modules was introduced the first time in Microsoft Windows Server* 2019 operating system. Therefore Microsoft Windows Server 2019 must be installed on the server system. After installation, configure Intel Optane DC persistent memory modules in the operating system. Start Power Shell as Administrator and execute the cmdlets shown in Figure 15.

```
PS C:\Users\Administrator> Get-PmemPhysicalDevice
DeviceId DeviceType
                              HealthStatus OperationalStatus PhysicalLocation FirmwareRevision Persistent
10
         Intel INVDIMM device Healthy
                                           {0k}
                                                             CPU1 DIMM B1
                                                                              102005346
                                                                                               252 GB
1010
        Intel INVDIMM device Healthy
                                           {0k}
                                                             CPU2 DIMM B1
                                                                                               252 GB
                                                                              102005346
110
         Intel INVDIMM device Healthy
                                           {0k}
                                                             CPU1 DIMM E1
                                                                              102005346
                                                                                               252 GB
1110
         Intel INVDIMM device Healthy
                                           {0k}
                                                             CPU2 DIMM E1
                                                                              102005346
                                                                                               252 GB
PS C:\Users\Administrator> Get-PmemUnusedRegion
RegionId TotalSizeInBytes DeviceId
      1
             541165879296 {10, 110}
             541165879296 {1010, 1110}
PS C:\Users\Administrator> Get-PmemUnusedRegion | New-PmemDisk
Creating new persistent memory disk. This may take a few moments.
Creating new persistent memory disk. This may take a few moments.
PS C:\Users\Administrator> Get-PmemDisk
DiskNumber Size
                HealthStatus AtomicityType CanBeRemoved PhysicalDeviceIds UnsafeShutdownCount
26
           504 GB Healthy
                               None
                                             True
                                                          {10, 110}
                                                                            2
27
           504 GB Healthy
                               None
                                             True
                                                          {1010, 1110}
                                                                            2
PS C:\Users\Administrator>
```

Figure 15. Create persistent memory drives

The first two cmdlets show characteristics of the Intel Optane DC persistent memory modules and the regions that have been created through previous BIOS configuration steps. The last two cmdlets create two new persistent memory disks and show their characteristics. From this point they look and behave like other disk drives. Create partitions, format, and assign drive letters like in the example shown in Figure 16.

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```
PS C:\Users\Administrator> Initialize-Disk -Number 26 -PartitionStyle GPT
PS C:\Users\Administrator> New-Partition -DiskNumber 26 -DriveLetter R -UseMaximumSize
  DiskPath: \\?\scmld#ven 8980&dev 097a&subsys 89804151&rev 0017#3&1b1819f6&0&03018089ff45b746ddcdcb4fa11ea2c
5a6637e9d#{53f56307-b6bf-11d0-94f2-00a0c91efb8b}
PartitionNumber DriveLetter Offset
                                                                       Size Type
                             16777216
                                                                  503.98 GB Basic
PS C:\Users\Administrator> Format-Volume -DriveLetter R -FileSystem NTFS
DriveLetter FriendlyName FileSystemType DriveType HealthStatus OperationalStatus SizeRemaining
                                                                                                     Size
                         NTFS
                                        Fixed
                                                  Healthy
                                                               OK
                                                                                      503.85 GB 503.98 GB
PS C:\Users\Administrator>
```

Figure 16. Initialize persistent memory drives

The drives are now visible in the File Explorer and are ready to be used.

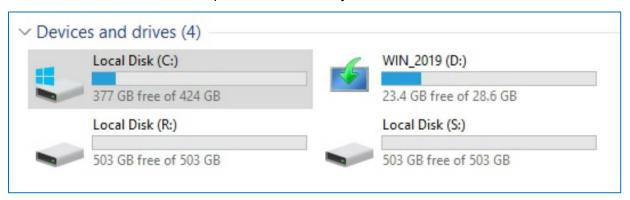


Figure 17. Persistent memory drives in File Explorer

Refer to Microsoft documentation for additional details on operating Intel Optane DC persistent memory modules in the Windows Server environment:

https://docs.microsoft.com/en-us/windows-server/storage/storage-spaces/deploy-pmem

4. System Configuration Options

Table 3. Intel® DCB for Microsoft* Azure* Stack HCI Server System MCB2224BPHY1R

Intel® DCB for Microsoft* Azure* Stack HCI Server System MCB2224BPHY1R

Fully integrated 2U, 4-node system including processors, memory, and SATA SSDs



iPC MCB2224BPHY1R

MM# 99A3JV

UPC 00735858421034 **EAN** 5032037163583

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)

Intel product code MCB2224BPHY1R includes the following:

- (1) 2U chassis H2224XXLR3 (24x2.5"). Includes:
 - (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:
 - (24) Tool-less drive carriers iPC FXX25HSCAR3
 - (1) Backplane -iPC HW24X25HS12G
 - (4) Blank compute module slot fillers
 - (1) Basic rack rail kit iPC AXXELVRAIL

NOTE: The rail kit only supports the specific rack type with 3/8" square and 7.1mm round holes.

- (4) Intel® Compute Module HNS2600BPS24R (w/TPM 2.0, 2x10GbE SFP+ & 1GbE, RDMA). Includes:
 - (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 $^{\circ}$ Xeon $^{\sim}$ Silver 4210R processor (10C, 2.4G, 100W) iPC **CD8069504344500**
- (4) Bridge board (12G, IT mode-only) iPC AHWBPBGB24
- (4) Intel® Remote Management Module Lite 2 accessory key iPC AXXRMM4LITE2
- (4) Intel® Solid State Drive (SSD) DC P4101 256GB (M.2, 80mm) iPC SSDPEKKA256G801
- (8) Intel® Solid State Drive (SSD) D3 S4610 960GB (2.5" U.2 SATA) iPC SSDSC2KG960G801
- (16) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz (4 DIMMs per node/16 DIMMs per system)

The HDD ingredients are customer-supplied and do not ship with the Intel® DCB for Microsoft Azure Stack HCI server system:

(16) – 2TB 2.5" HDD Certified for Microsoft Software-Defined Data Center (SDDC) Premium and included into Intel Hardware Compatibility List. See restrictions in Section 1.1.2.

Table 4. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2312WFHY2R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2312WFHY2R

Fully integrated 2U, single-node system including processors, memory, and SATA and NVMe* SSDs



iPC MCB2312WFHY2R

MM# 99A3JT

UPC 00735858421027 **EAN** 5032037163576

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)

Intel product code MCB2312WFHY2R includes the following:

- (1) Intel® Server System R2312WF0NPR (2U1N, 8x2.5"). Includes:
 - (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:
 - (2) 3-slot PCIe* riser cards iPC A2UL8RISER2
 - (1) 2-slot low profile PCIe* riser card iPC A2UX8X4RISER
 - (12) 3.5" hot-swap drive bays with drive carriers and blanks. Includes:
 - (1) SAS/NVMe combo backplane iPC F2U12X35S3PH
 - (12) 3.5" hot-swap drive tool less carriers iPC FXX35HSCAR3
 - (1) Storage rack handle assembly iPC A2UHANDLKIT
 - o 1 set storage rack handles
 - o Mini front panel (board only) iPC G28538-xxx
 - o 410 mm front panel cable iPC H26893-xxx
 - o 640 mm front panel USB 2.0 cable iPC **H20005-xxx**
 - (1) 175 mm Backplane I2C cable iPC H91172-xxx
 - (1) 800 mm mini SAS HD cable iPC AXXCBL800HDHD
 - (1) 875 mm mini SAS HD cable iPC AXXCBL875HDHD
 - (1) 950 mm mini SAS HD cable iPC **AXXCBL950HDHD**
 - (1) 525/675 mm backplane power cable iPC **H82097-xxx**
 - (1) Standard 2U air duct iPC H90554-xxx
 - (6) Hot-swap system fans iPC FR2UFAN60HSW
 - (16) DIMM slot blanks iPC G75158-00x
 - (2) AC power cord retention strap assembly iPC **H23961-00**x
 - (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
 - (2) Chassis handle (1 set) installed iPC H18229-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™ Silver 4210R processor (10C, 2.4G, 100W) iPC **CD8069504344500**
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (2) Intel® Solid State Drive (SSD) D3 S4510 1.92TB (2.5" U.2 SATA) iPC SSDSC2KB019T801
- (2) Intel® Solid State Drive (SSD) DC P4610 1.6TB (2.5" U.2 NVMe) iPC SSDPE2KE016T801
- (1) Intel® Remote Management Module Lite 2 iPC **AXXRMM4LITE2**
- (1) Intel® RAID Controller RS3UC080J (IT Mode) iPC RS3UC080J
- (1) Intel® RAID Expander RES3FV288 iPC RES3FV288
- (1) OCuLink Cable 600mm iPC AXXCBL600CVCR
- (1) OCuLink Cable 620mm iPC AXXCBL620CRCR
- (2) 1300W AC Common Redundant Power Supply iPC AXX1300TCRPS
- (1) Ethernet OCP* Dual SFP+ iPC X527DA2OCPG1P5
- (4) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz
- (1) Trusted Platform Module (TPM) 2.0 iPC AXXTPMENC8

The HDD ingredients are customer-supplied and do not ship with the Intel® DCB for Microsoft Azure Stack HCI server system:

(4) – 2TB 2.5" HDD Certified for Microsoft Software-Defined Data Center (SDDC) Premium and included into Intel Hardware Compatibility List. See restrictions in Section 1.1.2.

Table 5. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2224BPAF3R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2224BPAF3R

Fully integrated 2U, 4-node system including processors, memory, and SATA SSDs



MCB2224BPAF3R MM#

99A3JR

UPC 00735858421010 **EAN** 5032037163569

Fully integrated server system Product type

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 266 mm (L x W x H)

Intel product code MCB2224BPAF3R includes the following:

- (1) 2U chassis H2224XXLR3 (24x2.5"). Includes:
 - (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:
 - (24) Tool-less drive carriers iPC FXX25HSCAR3
 - (1) Backplane iPC HW24X25HS12G
 - (4) Blank compute module slot fillers
 - (1) Basic rack rail kit iPC AXXELVRAIL

NOTE: The rail kit only supports the specific rack type with 3/8" square and 7.1mm round holes.

- (4) Intel® Compute Module HNS2600BPS24R (w/TPM 2.0, 2x10GbE SFP+ and 1GbE, RDMA). Includes:
 - (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 Gold 5218R processor (20 Cores, 2.1Ghz, 125W) iPC CD8069504446300
- (4) Intel® Solid State Drive (SSD) DC P4101 256GB (M.2, 80mm NVMe) iPC SSDPEKKA256G801
- (24) Intel® Solid State Drive (SSD) D3 S4510 1.92TB (2.5" U.2 SATA) iPC SSDSC2KB019T801
- (4) Bridge board (12G, IT mode only) iPC AHWBPBGB24
- (4) Intel® Remote Management Module Lite 2 accessory key iPC AXXRMM4LITE2
- (32) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz (8 DIMMs per node/32 DIMMs per system)

Table 6. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF4R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF4R

Fully integrated 2U, single-node system including processors, memory, and SATA and NVMe* SSDs



iPC MCB2208WFAF4R

MM# 99A3JN

UPC 00735858421003 **EAN** 5032037163552

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)

Intel product code MCB2208WFAF4R includes the following:

- (1) Intel Server System R2208WF0ZSR (2U1N, 8x2.5"). Includes:
 - (1) 2U chassis with Quick Reference Label affixed to top cover
 - (1) Intel® Server Board **S2600WF0R** (no onboard LAN)
 - (2) PCIe* riser card brackets. Includes:
 - (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:
 - (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**)
 - o 300 mm front panel cable iPC H34381-xxx
 - (1) Front I/O panel assembly (1 x VGA and 2 x USB)
 - 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**
 - (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™ Silver 4216 processor (16C, 2.1G, 100W) iPC CD8069504213901
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (2) Intel® Solid State Drive (SSD) DC P4610 1.6TB (2.5" U.2 NVMe*) iPC SSDPE2KE016T801
- (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
- (1) Trusted Platform Module (TPM) 2.0 iPC AXXTPMENC8

Table 7. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF5R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF5R

Fully integrated 2U, single-node system including processors, memory, and NVMe* SSDs



iPC MCB2208WFAF5R **MM#** 99A3R9

UPC 00735858420990 **EAN** 5032037163545

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)

Intel product code MCB2208WFAF5R includes the following:

- (1) Intel Server System R2208WF0ZSR (2U1N, 8x2.5"). Includes:
 - (1) 2U chassis with Quick Reference Label affixed to top cover
 - (1) Intel® Server Board **S2600WF0R** (no onboard LAN)
 - (2) PCIe* riser card brackets. Includes:
 - (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:
 - (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**)
 - o 300 mm front panel cable iPC H34381-xxx
 - (1) Front I/O panel assembly (1 x VGA and 2 x USB)
 - 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
 - (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™ Silver 4216 processor (16C, 2.1G, 100W) iPC CD8069504213901
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (2) Intel® Solid State Drive (SSD) DC P4610 1.6TB (2.5" U.2 NVMe*) iPC SSDPE2KE016T801
- (4) Intel® Solid State Drive (SSD) DC P4326 15.36TB (2.5" U.2 NVMe) iPC SSDPE2NV153T801
- (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* Dual SFP+ iPC X527DA2OCPG1P5
- (12) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz
- (1) Trusted Platform Module (TPM) 2.0 iPC AXXTPMENC8

Table 8. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF6R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF6R

Fully integrated 2U, single-node system including processors, memory, and NVMe* SSDs



iPC MCB2208WFAF6R **MM#** 99A3JL

UPC 00735858420983 **EAN** 5032037163538

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)

Intel product code MCB2208WFAF6R includes the following:

- (1) Intel Server System R2208WF0ZSR (2U1N, 8x2.5"). Includes:
 - (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:
 - (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:
 - (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)
 - o 300 mm front panel cable iPC H34381-xxx
 - (1) Front I/O panel assembly (1 x VGA and 2 x USB)
 - 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
 - (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™ Silver 4216 processor (16C, 2.1G, 100W) iPC **CD8069504213901**
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (8) Intel® Solid State Drive (SSD) DC P4510 2.0TB (2.5" U.2 NVMe*) iPC SSDPE2KX020T801
- (1) Intel® PCIe* Switch AIC (8 ports) iPC **AXXP3SWX08080**
- (1) OCuLink Cable 725mm cable kit iPC A2U8PSWCXCXK1
- (1) Intel® Remote Management Module Lite 2 iPC AXXRMM4LITE2
- (1) 1300W AC Common Redundant Power Supply iPC AXX1300TCRPS
- (1) Ethernet OCP* Dual SFP+ iPC X527DA2OCPG1P5
- (12) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz
- (1) Trusted Platform Module (TPM) 2.0 iPC AXXTPMENC8

Table 9. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF7R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WAF7R

Fully integrated 2U, single-node system including processors, memory, and NVMe* SSDs



iPC MCB2208WAF7R **MM#** 99A3JK

UPC 00735858420976 **EAN** 5032037163521

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)

Intel product code MCB2208WFAF7R includes the following:

- (1) Intel Server System R2208WF0ZSR (2U1N, 8x2.5"). Includes:
 - (1) 2U chassis with Quick Reference Label affixed to top cover
 - (1) Intel® Server Board **S2600WF0R** (no onboard LAN)
 - (2) PCIe* riser card brackets. Includes:
 - (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:
 - (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**)
 - o 300 mm front panel cable iPC H34381-xxx
 - (1) Front I/O panel assembly (1 x VGA and 2 x USB)
 - 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
 - (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 5218R processor (20C, 2.1G, 125W) iPC CD8069504446300
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (2) Intel® Solid State Drive (SSD) DC P4610 1.6TB (2.5" U.2 NVMe*) iPC SSDPE2KE016T801
- (6) Intel® Solid State Drive (SSD) DC P4510 2.0TB (2.5" U.2 NVMe) iPC SSDPE2KX020T801
- (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) Intel® Remote Management Module Lite 2 iPC AXXRMM4LITE2
- (1) 1300W AC Common Redundant Power Supply iPC AXX1300TCRPS
- (1) Ethernet OCP* Quad SFP+ iPC X527DA40CPG1P5
- (12) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz
- (1) Trusted Platform Module (TPM) 2.0 iPC AXXTPMENC8

Table 10. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF8R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF8R

Fully integrated 2U, single-node system including processors, memory, and Intel® Optane™ and NVMe* SSDs



iPC MCB2208WFAF8R

MM# 99A3JJ

UPC 00735858420969 **EAN** 5032037163514

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)

Intel product code MCB2208WFAF8R includes the following:

- (1) Intel Server System R2208WF0ZSR (2U1N, 8x2.5"). Includes:
 - (1) 2U chassis with Quick Reference Label affixed to top cover
 - (1) Intel® Server Board **S2600WF0R** (no onboard LAN)
 - (2) PCIe* riser card brackets. Includes:
 - (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:
 - (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**)
 - o 300 mm front panel cable iPC H34381-xxx
 - (1) Front I/O panel assembly (1 x VGA and 2 x USB)
 - 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
 - (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 5218R processor (20C, 2.1G, 125W) iPC CD8069504446300
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (2) Intel® Optane™ Solid State Drive (SSD) DC P4800X 375GB (2.5" U.2 NVMe*) iPC SSDPE21K375GA01
- (4) Intel® Solid State Drive (SSD) DC P4510 4.0TB (2.5" U.2 NVMe) iPC **SSDPE2KX040T801**
- (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) Intel® Remote Management Module Lite 2 iPC AXXRMM4LITE2
- (1) 1300W AC Common Redundant Power Supply iPC AXX1300TCRPS
- (1) Ethernet OCP* Quad SFP+ iPC X527DA40CPG1P5
- (12) 16GB Micron* DDR4 RDIMM, 288-pin, 2666MHz
- (1) Intel® Optane™ DC 128GB persistent memory module (1.0) 4 Pack iPC NMA1XXD128GPSU4
- (1) Trusted Platform Module (TPM) 2.0 iPC AXXTPMENC8

Table 11. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF9R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF9R

Fully integrated 2U, single-node system including processors, memory, and Intel® Optane™ and NVMe* SSDs



iPC MCB2208WFAF9R **MM#** 99A3JH

UPC 00735858420952 **EAN** 5032037163507

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)

Intel product code MCB2208WFAF9R includes the following:

- (1) Intel Server System R2208WF0ZSR (2U1N, 8x2.5"). Includes:
 - (1) 2U chassis with Quick Reference Label affixed to top cover
 - (1) Intel® Server Board **S2600WF0R** (no onboard LAN)
 - (2) PCIe* riser card brackets. Includes:
 - (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:
 - (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**)
 - o 300 mm front panel cable iPC H34381-xxx
 - (1) Front I/O panel assembly (1 x VGA and 2 x USB)
 - 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
 - (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 5218R processor (20C, 2.1G, 125W) iPC CD8069504446300
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (4) Intel® Optane™ Solid State Drive (SSD) DC P4800X 375GB (2.5" U.2 NVMe*) iPC SSDPE21K375GA01
- (12) Intel® Solid State Drive (SSD) DC P4510 2.0TB (2.5" U.2 NVMe) iPC SSDPE2KX020T801
- (2) Intel® PCIe* Switch AIC (8 ports) iPC AXXP3SWX08080
- (1) 2U 8x2.5 combo hot-swap backplane iPC A2U8X25S3PHS
- (2) OCuLink Cable 875mm cable kit iPC A2U8PSWCXCXK2
- (1) OCuLink Cable 530mm iPC AXXCBL530CVCR
- (1) OCuLink Cable 470mm iPC AXXCBL470CVCR
- (2) OCuLink Cable 700mm iPC AXXCBL700CVCR
- (1) Intel® Remote Management Module Lite 2 iPC AXXRMM4LITE2
- (1) 1300W AC Common Redundant Power Supply iPC AXX1300TCRPS
- (1) Ethernet OCP* Quad SFP+ iPC X527DA40CPG1P5
- (24) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz
- (1) Trusted Platform Module (TPM) 2.0 iPC AXXTPMENC8

Table 12. Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF10R

Intel® DCB for Microsoft Azure Stack HCI Server System MCB2208WFAF10R

Fully integrated 2U, single-node system including processors, memory, Intel® Optane™ DC persistent memory modules, and NVMe* SSDs



iPC MCB2208WFAF10R

MM# 99A3CH

UPC 00735858420945 **EAN** 5032037163491

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)

Intel product code MCB2208WFAF10R includes the following:

- (1) Intel Server System R2208WF0ZSR (2U1N, 8x2.5"). Includes:
 - (1) 2U chassis with Quick Reference Label affixed to top cover
 - (1) Intel® Server Board **S2600WF0R** (no onboard LAN)
 - (2) PCIe* riser card brackets. Includes:
 - (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:
 - (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)
 - o 300 mm front panel cable iPC H34381-xxx
 - (1) Front I/O panel assembly (1 x VGA and 2 x USB)
 - 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
 - (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 5218R processor (20C, 2.1G, 125W) iPC CD8069504446300
- (1) Intel® Solid State Drive (SSD) D3 S4510 480GB (M.2, 80mm) iPC SSDSCKKB480G801
- (8) Intel® Solid State Drive (SSD) DC P4510 4.0TB (2.5" U.2 NVMe*) iPC SSDPE2KX040T801
- (1) Intel® PCIe* Switch AIC (8 ports) iPC AXXP3SWX08080
- (1) OCuLink Cable 725mm cable kit iPC A2U8PSWCXCXK1
- (1) Intel® Remote Management Module Lite 2 iPC AXXRMM4LITE2
- (1) 1300W AC Common Redundant Power Supply iPC AXX1300TCRPS
- (1) Ethernet OCP* Quad SFP+ iPC X527DA40CPG1P5
- (16) 32GB Micron* DDR4 RDIMM, 288-pin, 2666MHz
- (1) Intel® Optane™ DC 256GB Persistent Memory Module (1.0) 4 Pack iPC NMA1XXD256GPSU4
- (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 Microsoft* Azure* Stack HCI Server System models MCB2224BPHY1R and MCB2224BPAF3R 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 MCB2224BPHY1R and MCB2224BPAF3R.

All other Intel DCB for Microsoft Azure Stack HCI 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 MCB2312WFHY2R and MCB2208WFXXR models are listed in the following table.

Table 13. Intel® Rail Kit accessory options for MCB2312WFHY2R and MCB2208WFXXR models

Product Image	Details	Description	
	Enhanced Value Rail AXXELVRAIL iPC AXXELVRAIL MM# 920970 UPC 735858244367 EAN 5032037038980 MOQ 1	 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 	
	2U Premium Feature Rail AXXSHRTRAIL (no CMA support) iPC AXXSHRTRAIL MM# 939210 UPC 00735858291996 EAN 5032037070553 MOQ 1	 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 	
	2U+ Premium Feature Rail AXXFULLRAIL (with CMA support) iPC AXXFULLRAIL MM# 939209 UPC 00735858291989 EAN 5032037070546 MOQ 1	 Travel distance 800mm Bracket adjustment within 594.8mm~813mm Tool-less installation Full extension from rack Kit includes: Rails, screws, installation manual Compatible with Cable Management Arm AXXCMA2 	
	Cable Management Arm AXXCMA2 iPC AXXCMA2 MM# 939211 UPC 00735858292009 EAN 5032037070560 MOQ 1	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

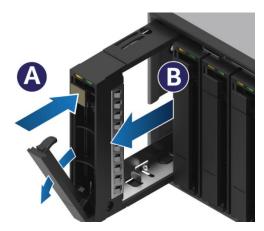


Figure 18. Drive carrier extraction from chassis

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

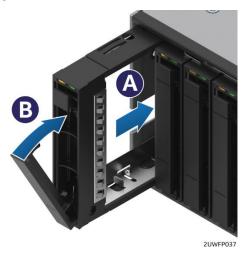


Figure 19. Drive carrier insertion into chassis

- 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 20. 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 20).

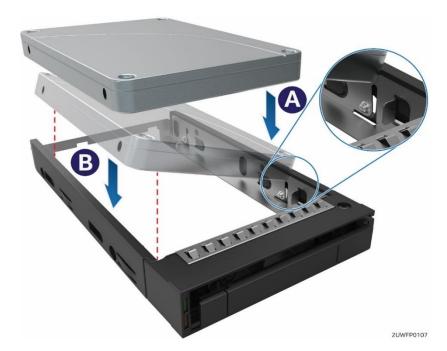


Figure 21. 2.5" drive carrier assembly - drive installation into carrier

- 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 22) 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 in the carrier assembly not fitting properly into the chassis drive bay.

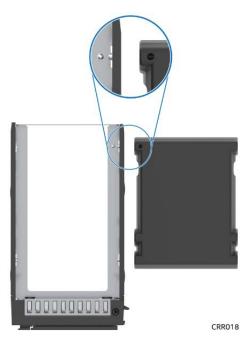


Figure 22. 2.5" Drive carrier assembly - alignment features

Appendix A. Glossary

Term	Definition	
вмс	Baseboard Management Controller	
BIOS	Basic Input/Output System	
СМА	Cable Management Arm	
СРИ	Central Processing Unit	
CRPS	Common Redundant Power Supply	
Intel® DCB	Intel® Data Center Blocks	
DDR4	Double-Data Rate 4	
DIMM	Dual In-line Memory Module (a plug-in memory module with signal and power pins on the front and back of the internal printed circuit board.	
FRU	Field Replaceable Unit	
GB	Gigabyte	
GbE	Gigabit Ethernet	
GBPS	Gigabytes Per Second	
HDD	Hard Disk Drive	
HTTPS	Hyper Text Transfer Protocol Service	
IP	Internet Protocol	
iPC	Intel Product Code	
КВ	Kilobyte	
LAN	Local Area Network	
LED	Light-Emitting Diode	
МВ	Megabyte	
MM#	Master Material Order Number/Material Management Number	
MOQ	Minimum Order Quantity	
os	Operating System	
PCI	Peripheral Component Interconnect (or PCI Local Bus Standard – also called "Conventional PCI")	
PCIe*	Peripheral Component Interconnect Express* (an updated form of PCI offering better throughput and error management)	
POST	Power-on Self-Test (BIOS activity from the time on Power On until Operating System boot begins.)	
PSU	Power Supply Unit	
RAM	Random Access Memory	
RDIMM	Registered DIMM (also called buffered). (Memory modules have an address buffer register between the SDRAM modules and the system's memory controller.)	
ROM	Read-Only Memory	
SAS	Serial Attached SCSI (High-speed serial data version of SCSI)	
SATA	Serial ATA (High-speed serial data version of the disk ATA interface)	
SDRAM	Synchronous Dynamic Random-Access Memory	
SFP+	The enhanced small form-factor pluggable (SFP+) is an enhanced version of the SFP that supports data rates up to 16 GBit/s.	
SSD	Solid State Device	
SUP	System Update Package	
ТРМ	Trusted Platform Module	
USB	Universal Serial Bus (standard serial expansion bus meant for connecting peripherals)	
VGA	Video Graphics Array	