



▶ Commvault® Validated Reference Design Specification

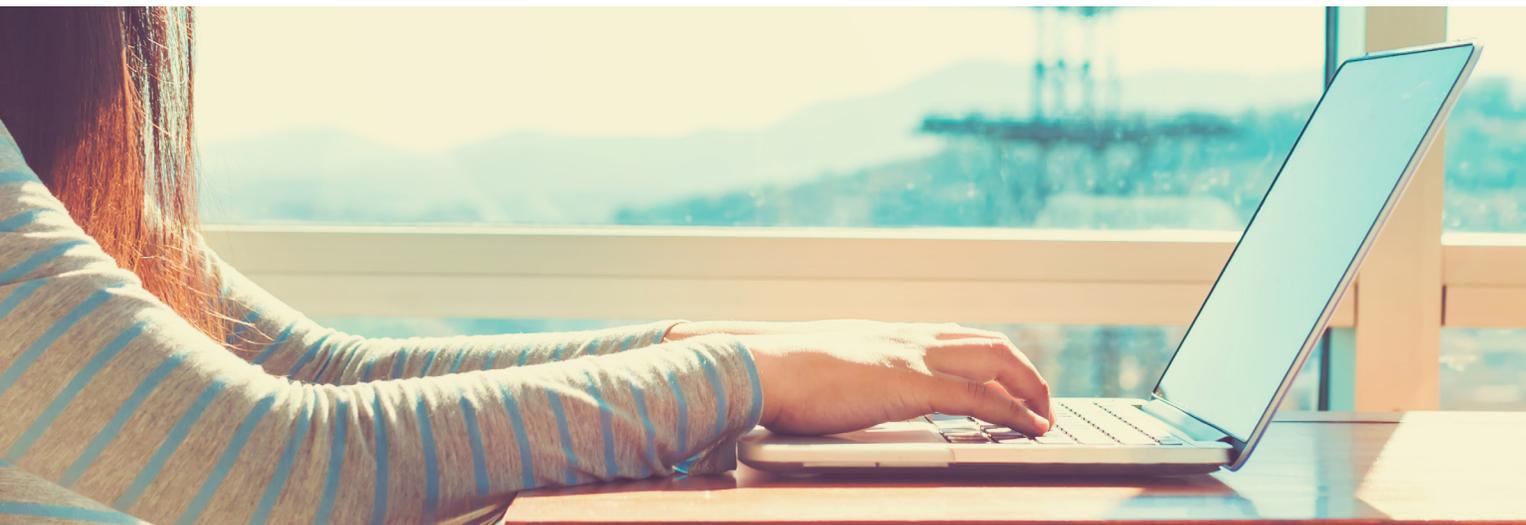
HUAWEI FUSIONSERVER 2288H V5

▶ INTRODUCTION TO COMMVault HYPERSCALE™ SOFTWARE

With Commvault HyperScale™ Technology, you can build a unified, modern data protection and management platform that delivers cloud-like services on-premises. The purpose of this technical specification is to detail the Huawei FusionServer RH2288H V5 Server for the Commvault Validated Reference Design. By building these services on a scale-out infrastructure and leveraging Commvault capabilities, you'll enable:

- Cloud-like agility, resiliency and availability to on-premises data and applications
- Greater end-user efficiency with automation and self-service capabilities
- Improved hardware utilization and optimized costs from general-purpose hardware
- Seamless storage scalability with predictable performance without requiring forklift upgrades
- Better, more secure data protection, utilization and movement by eliminating point product and data silos

By shifting the secondary storage and data management infrastructure to this architecture, enterprises can go a long way in transforming their data centers to be as operationally efficient, resilient and scalable as public cloud infrastructure. Lower hardware costs, operational efficiencies and simplified support allows the replacement of limited and legacy backup tools with a modern cloud enabled data management solution at the cost of replacing legacy purpose-built backup appliance (PBBA). More importantly, this architecture, which extends into public cloud, allows enterprises to offer consistent sets of services to all workloads running on-premises or in public cloud, independent of the underlying infrastructure for true cloud based data management.



REFERENCE DESIGN WITH HUAWEI

The Huawei FusionServer servers improve upon their existing extensive portfolio of modern solutions to drive IT transformation in the data center. The Huawei FusionServer 2288H represents a suited platform for Commvault's HyperScale software to expand and transform capabilities for customers in today's evolving software-defined world. The highly optimized Huawei FusionServer 2288H will ensure that the acquisition, deployment, and upkeep are streamlined. The FusionServer RH2288H V5 is a versatile server that is great for high performance computing while being in a very small foot print.

HOW TO USE THIS DOCUMENT

This document covers the design components of the HyperScale architecture, providing options for purchasing the infrastructure for a Commvault HyperScale solution. Commvault Validated Reference Designs deliver tested configurations with leading hardware vendor technology that provide validated designs complemented by best practice configurations that will accelerate ROI, reduce complexity, and add customer value.

The document is broken into a high level component section detailing out the configuration and specific component options that can be selected depending on the storage density, metadata, and optional I/O components that are required. Each subsection provides guidance for ordering configurations.

This document does not cover overall architecture and design of the HyperScale solution, and should be considered as a supplement specific to the applicable hardware vendor.

▶ HUAWEI FUSIONSERVER 2288H V5 SPECIFICATION SUMMARY

CORE COMPONENTS

Core Components represent features of the build that do not change. They include Chassis, CPU, Memory and other critical elements that need to be ordered.

Country-specific components such as power cables are not listed and can be changed as required.

CORE COMPONENTS	TECHNICAL SPECIFICATIONS
FORM FACTOR	2U Rackmount
NODE FORM FACTOR	Medium Density – 12LFF
MOTHERBOARD CHIPSET	Intel® C622
PROCESSORS	Intel® Xeon® Silver 4110
MEMORY	256GB RAM (8x32GB RDIMM)
NETWORKING	LOM: 2x10GE + 2xGE ports Intel 82599 10 Gigabit Ethernet Controller
STORAGE CONTROLLER	SR450C-M 2G (Avago3508) SAS/SATA RAID card
OPTIONAL I/O CARDS CAPABLE	Yes

BOOT AND METADATA STORAGE OPTIONS

Boot storage houses the operating system and core HyperScale binaries, while the Metadata storage provides caching areas for such operations as deduplication, Index Cache, and extents. This storage option can be either configured together as a single unit, or housed separately. At this time Huawei only has one storage option that can be used.

BOOT/METADATA CONFIGURATIONS	TECHNICAL SPECIFICATIONS
COMBINED BOOT/METADATA CONFIGURATION	4x 960GB SATA SSD, 6Gbps – RAID5

DATA STORAGE OPTIONS

Data storage houses the data footprint for the customer environment. Data storage configuration directly impacts the amount of data that each node in the solution is able to store.

When deploying nodes inside of the same block (e.g. 3 node initial configuration), choose identical HDDs. If the nodes in a block have different HDD sizes, the lowest size will be chosen for the data storage, which would lead to underutilized resources on nodes with larger HDDs.

Separate node blocks in the same grid may use different HDDs (e.g. mixing a 3 node 6TB block with a second 3 node 10TB block in the same grid).

Overall sizing and retention varies per customer and therefore is beyond the scope of this document. Please refer to Commvault HyperScale sizing documentation to determine the drive size (and node quantity) required for the specific deployment.

DATA STORAGE CONFIGURATION	TECHNICAL SPECIFICATIONS
STORAGE CONFIGURATION – DATA STORAGE STORAGE TYPE	4TB, NL-SAS or SATA, 12 Drives 6TB, NL-SAS or SATA, 12 Drives 8TB, NL-SAS or SATA, 12 Drives 10TB, NL-SAS or SATA, 12 Drives 12TB, Not supported at this time as per Huawei

OPTIONAL I/O ADD-ON CARDS

The design includes all core components to work with Commvault’s HyperScale Technology. There are specific times where additional I/O connectivity is desired as part of the overall solution. Optional I/O cards for SAS and fibre channel connectivity are validated and included as part of the design, the quantity and type of these I/O cards are customizable, and there are multiple valid configurations possible.

SAS Connectivity is typically used for direct tape integration, while fibre channel cards are used for IntelliSnap operations or tape libraries.

▶ BILL OF MATERIALS

This bill of materials represents the configuration that is in progress to being validated as part of the Commvault Reference Design Program. There are four main sections of this document. Core Components, Data Storage Options, Metadata Storage Options, Optional Components.

QTY.	PART NUMBER	DESCRIPTION
1	02311TYB	2288H V5 (12*3.5 inch hard disk chassis, onboard 2*GE+2*10GE optical port (excluding optical modules)) H22H-05
2	02311TLF	PAC900S12-BE AC power supply unit
2	02311XJV	Intel Xeon 4110 (2.1GHz/8-core/11MB/85W) processor (with a radiator)
8	06200214	DDR4 RDIMM Memory, 32GB, 2400MT/s, 2Rank (2G*4bit), 1.2V, ECC
1	03024JMY	SR450C-M 2G(Avago3508) SAS/SATA RAID Card, RAID0, 1, 5, 6, 10, 50, 60, 12Gb/s, 2GB Cache
1	02311WDP	Supercapacitor of the 3508/3516 RAID card
1	02311TWT	1*x8 (x16 slot) + 1*x8 RISER3 module
1	02311TYP	4*3.5 "rear hard disk backplane component
1	02310YHP	Ethernet adapter -10Gb optical port (Intel 82599) -dual ports -SFP+ (excluding optical modules) -PCIe 2.0 x8
4	02318169	Optical Transceiver, SFP+,10G, Multi-mode Module (850nm,0.3km,LC)
1	21240434	2U Static Rail Kit

BOOT & METADATA STORAGE OPTIONS

There are two options for Boot and Metadata storage configurations, select only one option.

OPTION 1 – COMBINED BOOT/METADATA STORAGE

QTY.	PART NUMBER	DESCRIPTION
4	02312DXY	Solid state disk -960GB-SATA 6Gb/s-read/write hybrid-5200 PRO series -2.5 inch (3.5-inch)

DATA STORAGE OPTIONS

For Data Storage choose the appropriate configuration. The 6Gbps SATA Drives are listed for this configuration, should the customer wish to deploy either 12Gbps or NL-SAS variants of these drives they are considered validated as part of this design. Currently all know variants of 6/12Gbps and NL-SAS/SATA drives are validated.

QTY.	PART NUMBER	DESCRIPTION
12	02311AYV	Function Module, Servers, HDD, 4000GB, SATA 6Gb/s, 7.2K rpm, 128MB cache or above, 3.5inch (3.5inch Drive Bay)
12	02311DYQ	Function Module, Servers, Hard Disk, 6000GB, SATA 6.0Gb/s, 7200rpm, 3.5 inch, 64 MB,Hot-swap
12	02311JRE	Function Module, Servers, Hard Disk, 8000GB, SATA 6.0Gb/s, 7200rpm, 3.5 inch, 128 MB, Hot-swap,
12	02311SXE	Function Module, Servers, HDD, 10TB, SATA 6Gb/s, 7.2K rpm, 256MB,3.5inch

OPTIONAL I/O ADD-ON CARDS

The Optional I/O cards are used for connectivity to tape and Fibre Channel connections. The quantity and type of these I/O cards is customizable, and there are multiple valid configurations. Specific cards can be housed in individual nodes and do not have to be matched identically across all nodes.

QTY.	PART NUMBER	DESCRIPTION
1	06030220	Qlogic, FC HBA, 8Gb (QLE2562), 2-Port, SFP+ (with 2x Multi-mode Optical Transceiver), PCIe 2.0 x4
1	06030217	Emulex, FC HBA, 8Gb (LPe12002), 2-Port, SFP+ (with 2x Multi-mode Optical Transceiver), PCIe 2.0 X4 PCIe 1.0 x8

▶ ADDITIONAL RESOURCES

Additional information regarding the Huawei FusionServer 2288H V5 can be found on the Huawei website.

- [Huawei FusionServer 2288H V5 Technical Specifications Guide \(US version\)](#)

- ▶ Bringing a scale-out infrastructure to the Commvault Data Platform, [Commvault HyperScale™ Technology](#) integrates with storage arrays, hypervisors, applications and the full range of cloud provider solutions to support the most diverse and dynamic environments.

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