**Commvault**

# Commvault® Validated Reference Design Specification

### Commvault Cloud HyperScale™ X Software on Dell R760XD2

## INTRODUCTION TO COMMVAULT CLOUD HYPERSCALE™ X SOFTWARE

Commvault Cloud Hyperscale™ X Software is an intuitive, easy-to-deploy integrated data protection solution with a distributed scale-out file system that provides unmatched scalability, security, and resiliency. Its flexible architecture allows you to get up and running quickly and grow as your needs demand. Commvault Validated Reference Designs accelerate hybrid cloud adoption and deliver:

- Simple, flexible data protection for all workloads, including containers, virtual, and databases.
- High-performance backup and recovery with enhanced recovery capabilities
- Optimized scalability to easily grow capacity in single-node increments as needed, on-prem and to the cloud.
- Enhanced resiliency with intelligent load balancing of data across disks and nodes and the ability to support concurrent hardware failures.
- Built-in ransomware protection via intelligent monitoring to detect data anomalies and alert users.

By shifting the secondary storage and data management infrastructure to a scale-out architecture, enterprises can help transform their data centers to be as operationally efficient, resilient, and scalable as public cloud infrastructure. Commvault Cloud HyperScale X allows organizations to replace limited and legacy backup tools with a modern hybrid cloud-enabled data management solution that eliminates expensive forklift upgrades. The purpose of this technical specification is to provide the complete Dell R760XD2 Commvault Validated Reference Design for Commvault Cloud Hyperscale™ X Software.

## DESIGN CANDIDATE

This configuration is classified as a general availability design, meaning it has been tested and validated per the Commvault Validated Reference Design Program. This configuration is subject to change due to updated part numbers or replacement hardware because of hardware life cycles. Validated Reference Designs are developed to provide optimized costs, resiliency, and performance. Commvault collaborates with Dell to create fully supported design build. Substitutions or modifications to validated design specifications could result in unsupported configurations. Any substitutions or modifications to validated configurations must be approved by both Commvault and Dell. This configuration is currently orderable for customer deployment and supported through Commvault support channels.

## HOW TO USE THIS DOCUMENT

This document details the necessary design components of the Commvault Cloud HyperScale™ X Technology architecture, providing the key components required when purchasing and configuring the infrastructure for a Commvault Cloud HyperScale™ X Software solution. Commvault Reference Designs deliver validated configurations with leading hardware vendor technology complemented by best practices that will accelerate ROI, reduce complexity, and add customer value.

This document does not cover the overall architecture and design of the Commvault Cloud HyperScale solution and should be considered as a supplement specific to this document.

## DELL R760XD2 SPECIFICATION SUMMARY

### Server overview

| Technical specifications | |
|---|---|
| Form factor | 2U Rack Mount |
| Processors | Minimum Dual Intel Silver 16 Core CPU (Ex: Intel® Xeon® Silver 4316) |
| Memory | Minimum 512GB RAM (768GB RAM REQUIRED for 20TB Drives) |
| Total slots and form factor | (5) x16 LP |

**NOTE: This server can ONLY be installed with the CPR2024 HSX ISO image (available December 2023), this server will NOT work with any prior ISO image and will NOT install and is NOT supported on any prior ISO image.**

### BILL OF MATERIALS

The Bill of Materials lists all components required to configure Commvault Cloud HyperScale nodes.
Each component has been tested and validated. Country-specific components, such as power cables, are not listed and can be changed as required.

### Core Components

Core components are the base parts of the required server and cannot be changed. There can be no modifications made to these components.

| Qty. | Part Number | Description |
|---|---|---|
| 1 | 210-BGSS | PowerEdge R760XD2 Server |
| 1 | 321-BJLL | 3.5" Chassis with up to 24 SAS/SATA Drives, 2xU.2 Rear NVMe Drives, PERC 12, 1 or 2 CPU |
| 1 | 461-AAIG | Trusted Platform Module 2.0 V3 |
| 1 | 329-BJKC | R760XD2 Motherboard with Broadcom 5720 Dual Port 1Gb On-Board LOM |
| 1 | 412-BBDB | Heatsink for 2 CPU configuration, Config 2 |
| 1 | 370-AHCL | 4800MT/s RDIMMs |
| 1 | 780-BCDS | C7, Unconfigured RAID for HDDs or SSDs |
| 1 | 405-ABDG | PERC H965i Controller, Adapter, Low Profile |
| 1 | 528-CTIC | iDRAC9, Enterprise 16G |
| 1 | 330-BCJL | Riser Config 2B, 5x16 LP Slots (Gen4) |
| 1 | 750-BBCG | High Performance Fan x6 |
| 1 | 450-AKLF | Dual, Fully Redundant (1+1), Hot-Plug Power Supply, 1100W MM (100-240Vac) Titanium |
| 1 | 370-AAIP | Performance Optimized |
| 1 | 800-BBDM | UEFI BIOS Boot Mode with GPT Partition |

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## Flexible Components

It is required to select one component (unless otherwise specified) from each of the sections below to complete the BOM, if not the BOM will be invalid, and the design will not work.

### CPU

The minimum requirement for the DUAL CPUs, must be an Intel Silver level 16 Core CPU, higher core Silver or Gold CPUs can be used if required. Lower spec'd CPUs are not supported.

| Qty. | Part Number | Description |
|---|---|---|
| 2 | 338-CHTH | Intel® Xeon® Silver 4416+ 2G, 20C/40T, 16GT/s, 38M Cache, Turbo, HT (165W) DDR5-4000 |

### Memory

The minimum required RAM is 512GB for N24 designs. If a customer desires more memory, they are free to do so. The RAM listed below gives 768GB RAM to account for 20TB hard drives, if lower capacity drives are used, RAM can be 512GB.

| Qty. | Part Number | Description |
|---|---|---|
| 12 | 370-AGZR | 64GB RDIMM, 4800MT/s Dual Rank |

### Boot Drives

For Dell, the BOSS-S2 controller is required for boot.

| Qty. | Part Number | Description |
|---|---|---|
| 1 | 403-BCRU/470-BBCP | BOSS-N1 controller card + with 2 M.2 480GB (RAID 1) |

### CVFS Cache

The CVFS cache requires a minimum of a 3.2TB SSD or NVMe drive. MUST be of type Mix Use, Read Intensive drives are NOT supported. Please select only one of the options below. (Note: 6.4TB used here to keep consistent with prior server version).

| Qty. | Part Number | Description |
|---|---|---|
| 1 | 400-BKGP | 6.4TB Enterprise NVMe Mixed Use AG Drive U.2 Gen4 Flex Bay |

### Commvault Cache

The Commvault cache requires a minimum of a 6.4TB SSD or NVMe drive for N24 designs. MUST be of type Mix Use, Read Intensive drives are NOT supported. Please select only one of the options below.

| Qty. | Part Number | Description |
|---|---|---|
| 1 | 400-BKGP | 6.4TB Enterprise NVMe Mixed Use AG Drive U.2 Gen4 Flex Bay |

### Networking

It is recommended to have a total of 4 NIC ports for network redundancy, however 2 ports are a valid configuration. Port speeds must be 10 or 25 Gpbs. Some vendors use Network Daughter or OCP cards which do not use up a PCIe slot, it is recommended to use one of those cards if available. Work with the partner/vendor for part numbers.

## Recommended Configuration

| Qty. | Part Number | Description |
| --- | --- | --- |
| 1 | | Broadcom 57414 Dual Port 10/25GbE SFP28, OCP NIC 3.0 |
| 1 | | Broadcom 57414 Dual Port 10/25GbE SFP28 Adapter, PCIe Low Profile, V2 |

## Alternative Supported Cards – (only listed cards are supported)

| Qty. | Part Number | Description |
| --- | --- | --- |
| 1 | | Broadcom 57416 Dual Port 10GbE BASE-T Adapter, OCP NIC 3.0 |
| 1 | | Broadcom 57416 Dual Port 10GbE BASE-T Adapter, PCIe Low Profile |
| 1 | | Broadcom 57504 Quad Port 10/25GbE,SFP28, OCP NIC 3.0 |
| 1 | | Intel X710-T4L Quad Port 10GbE BASE-T Adapter, PCIe Low Profile |

### Data Disks

Data disks can be of type SAS, NLSAS or SATA. SAS is the recommended option. 20TB drives are the largest supported drives, do not use larger than 20TB. Smaller drive sizes than the ones listed below can be used if desired. Work with your partner/vendor for the part numbers of the drives required. For 20 TB drives 768 GB Ram is a requirement, failure to follow this will lead to an unsupported configuration. For lower than 20 TB drive capacities, 512 GB of Ram is still fine.

| Qty. | Description |
| --- | --- |
| 24 | 8TB Hard Drive |
| 24 | 12TB Hard Drive |
| 24 | 16TB Hard Drive |
| 24 | 20TB Hard Drive (must acknowledge the increased memory requirement) |

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## Additional Add-on Cards

### Free slots available

The slots below are the remaining free slots available for use in the server after all the above components have been installed. Please ensure any additional cards added will physically fit in the server. Work with your partner/vendor for the part numbers of the cards required.

| Qty. | Form Factor |
| --- | --- |
| 3 | X16 LP |

## Optional I/O Cards

| Qty. | Description |
|------|-------------|
| 1 | QLogic 2772 Dual Port 32Gb Fiber Channel HBA |
| 1 | Emulex LPe35002 Dual Port FC32 Fiber Channel HBA |

## Additional Considerations

Please note that due to the differences in each customer environment, some components are not included in the design but must be ordered separately to ensure full functionality and connectivity. These parts include the FC and Ethernet transceivers, as well as the Ethernet, FC, and power cables.

## Additional Resources

Additional information regarding the Dell R760XD2 can be found on the Dell website. A couple of useful links have been included:

Dell R760XD2 Technical Guide
Dell R760XD2 spec sheet

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.

To learn more, visit **commvault.com/hyperscale**

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