DATA SHEET

Commvault® Validated Reference Design Specification

Commvault HyperScale™ X Software on Dell R760

INTRODUCTION TO COMMVAULT HYPERSCALE™ X SOFTWARE

Commvault HyperScale™ X Software is an intuitive and 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 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 R760 Commvault Validated Reference Design for Commvault Hyperscale X Software.

GENERAL AVAILABILITY DESIGN

This configuration is classified as general availability design, meaning it has been tested and validated as 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 HyperScale™ X Technology architecture, providing the key components required when purchasing and configuring the infrastructure for a Commvault 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 overall architecture and design of the Commvault HyperScale solution and should be considered as a supplement specific to this document.

DELL R760 SPECIFICATION SUMMARY

Server overview

Technical specifications	
Form factor	2U Rack Mount
Processors	Minimum Dual Intel Silver 16 Core CPU
Memory	Minimum 512GB RAM
Total slots and form factor	2x8 FH Slots, 2x16 LP Slots

NOTE: This build is only supported with the December 2023 (or later) HSX ISO.

Bill of materials

The Bill of Materials list all components required to configure Commvault 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-BDZY	PowerEdge R760 Server
1	404-BBED	3.5" Chassis with up to 12 SAS/SATA Drives, 4x2.5" Rear NVMe Direct drives, LP Adapter PERC 11,2 CPU
1	461-AAIG	Trusted Platform Module 2.0 V3
1	329-BJLR	Motherboard supports ONLY CPUs below 250W (cannot upgrade to CPUs 250W and above)
1	412-ABCP	Heatsink for 2 CPU configuration (CPU greater than 165W)
1	370-BBRX	5600MT/s RDIMMs
1	780-BCDS	C7, Unconfigured RAID for HDDs or SSDs
1	405-AAYY	PERC H755 Adapter LP
1	528-CTIC	iDRAC9, Enterprise 16G
1	330-BBYJ	Riser Config 6, 2x8 FH Slots (Gen5), 2x16 LP Slots (Gen4)
1	750-ADGJ	Very High Performance Fan x6
1	450-AKKS	Dual, Hot-Plug, FR Power Supply, 1100W MM (100-240Vac) Titanium, Redundant (1+1)
1	370-AAIP	Performance Optimized
1	800-BBDM	UEFI BIOS Boot Mode with GPT Partition
1	540-BDKD	Broadcom 5720 Dual Port 1GbE LOM

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-CPBZ	Intel® Xeon® Silver 4514Y 2G, 16C/32T, 16GT/s, 30M Cache, Turbo, HT (150W) DDR5-4400

Memory

The **minimum required RAM is 512GB** for N12. If a customer desires more memory, they are free to do so. The minimum required RAM is listed below. It is recommended to use 16 DIMMS for better memory performance.

Qty.	Part Number	Description
16	370-BBRY	32GB RDIMM, 5600MT/s, Dual Rank

Boot Drives

For Dell, the BOSS-N1 controller is required for boot.

Qty.	Part Number	Description
1	403-BCRU/470-AFME	BOSS-N1 controller card + with 2 M.2 480GB (RAID 1) with Rear 4x2.5

CVFS Cache

The CVFS cache requires a **minimum of a 3.2TB SSD or NVMe** drive. Please work with the vendor for part numbers.

Qty.	Description
1	3.2TB Enterprise NVMe Mixed Use AG Drive U.2 Gen4 Flex Bay

Commvault Cache

The Commvault cache requires **a minimum of a 3.2TB SSD or NVMe** drive for N12 designs. Please work with the vendor for part numbers.

Qty.	Description
1	3.2TB 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.	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)

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.

Qty.	Description
12	8TB Hard Drive
12	12TB Hard Drive
12	16TB Hard Drive
12	20TB Hard Drive

NOTE: This build is only supported with the December 2023 (or later) HSX ISO.

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 drives required.

Qty.	Form Factor
1	X8 FH

Optional I/O Cards

Qty.	Description
1	QLogic 2772 Dual Port 32Gb Fiber Channel HBA, PCIe Low Profile, V2
1	Emulex LPe35002 Dual Port FC32 Fiber Channel HBA, PCIe Low Profile

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 add-on cards
Additional information regarding the Dell R760 can be found on the Dell website. A couple of useful links have been included:
Dell R760 Technical Guide
Dell R760 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.