DATA SHEET

Commvault® Validated Reference Design Specification

Commvault Grid Software on Dell R760XD2

INTRODUCTION TO COMMVAULT GRID SOFTWARE

Commvault Grid 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 Grid 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 Grid Software.

GENERAL AVAILABILITY DESIGNATION

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 Grid Technology architecture, providing the key components required when purchasing and configuring the infrastructure

for a Commvault Grid 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 Grid 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
Memory	Minimum 512GB RAM (768GB RAM REQUIRED for 20/24TB Drives)
Total slots and form factor	(5) x16 LP

BILL OF MATERIALS

The Bill of Materials lists all components required to configure Commvault Grid 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.	Description
1	PowerEdge R760XD2 Server
1	3.5" Chassis with up to 24 SAS/SATA Drives, 2xU.2 Rear NVMe Drives, PERC 12, 1 or 2 CPU
1	Trusted Platform Module 2.0 V3
1	R760XD2 Motherboard with Broadcom 5720 Dual Port 1Gb On-Board LOM
1	Heatsink for 2 CPU configuration, Config 2
1	PERC H965i Controller, Adapter, Low Profile
1	iDRAC9, Enterprise 16G
1	Riser Config 2B, 5x16 LP Slots (Gen4)
1	High Performance Fan x6
1	Dual, Fully Redundant (1+1), Hot-Plug Power Supply, 1100W MM (100-240Vac) Titanium
1	Performance Optimized
1	UEFI BIOS Boot Mode with GPT Partition
1	UEFI BIOS Boot Mode with GPT Partition

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 N24 designs. If a customer desires more memory, they are free to do so. The RAM listed below gives 768GB RAM to account for 20/24TB hard drives, if lower capacity drives are used, RAM can be 512GB. Below is an example, but whatever configuration gets to the required memory is fine if it is supported by the platform.

Qty.	Description
12	64GB RDIMM, Dual Rank

Boot Drives

For Dell, the BOSS controller is required for boot.

Qty.	Description
1	BOSS-N1 controller card + with 2 M.2 480GB (RAID 1)

CVFS Cache

The CVFS cache requires a minimum of a 6.4TB NVMe drive when using 20 or 24TB drives. Can be either Mix Use or Read Intensive drives.

Qty.	Description
1	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 NVMe drive for N24 designs. Can be either Mix Use or Read Intensive drives.

Qty.	Description
1	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.	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.	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. 24TB drives are the largest supported drives, do not use larger than 24TB. 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 20/24TB 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)
24	24TB Hard Drive (must acknowledge the increased memory requirement)

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's 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 Grid 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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