COMMVAULT®

Commvault® Validated Reference Design Specification

COMMVAULT HYPERSCALE™ SOFTWARE ON CISCO® UCS® C240 M5

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 Cisco UCS C240 M5 Rack 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 through 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.

Learn more about **Commvault HyperScale™ Software**.

RELEASE CANDIDATE DESIGNATION

This configuration is classified as a release candidate, meaning it is not yet fully validated and could change; however, it is built to the design specification with the vendor and is expected to become the final reference design. Validated Reference Designs are designed to provide optimized costs and match performance requirements for every customer.

Further testing is required before this configuration is fully validated it is built to the design specification with the vendor and serves as the configuration that Commvault is currently testing against.

This configuration is currently orderable for customer deployment and supported through Commvault support channels.

REFERENCE DESIGN WITH CISCO

Cisco UCS C240 M5 Rack Server is well-suited for storage and I/O intensive workloads. Cisco UCS C240 M5 Rack Servers can be deployed as standalone servers or as part of the Cisco Unified Computing System to take advanced of Cisco standards-based unified computing innovations that help reduce customers' total cost of ownership and increase business agility. The UCS C240 M5 represents a suited platform for the Commvault HyperScale™ Software to expand and transform capabilities for customers in today's evolving software-defined world.

HOW TO USE THIS DOCUMENT

This document covers the design components of the Commvault HyperScale™ architecture, providing options for purchasing the infrastructure for a Commvault HyperScale™ Software solution. Commvault Validated Reference Designs deliver tested configurations with leading hardware vendor technology that provide validated designs complemented by best practices 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 Commvault HyperScale™ solution, and should be considered as a supplement specific to the applicable hardware vendor.

CISCO UCS C240 M5 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 SPECIFICATION
FORM FACTOR	2U Rackmount
MOTHERBOARD CHIPSET	Intel® C620
PROCESSORS	Intel® Xeon® Silver 4110
MEMORY	256GB RAM (8x 32GB RDIMM)
NETWORKING	Cisco VIC 1387 Dual Port 40Gb QSFP CNA
STORAGE CONTROLLER	Cisco 12G Modular SAS HBA

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, indexing, and extents.

BOOT/METADATA CONFIGURATIONS	TECHNICAL SPECIFICATION
SEPARATE BOOT/METADATA	
BOOT STORAGE	2x 960GB SATA M.2, RAID1
METADATA STORAGE	1x Cisco 3.2TB 2.5in U.2 SN200 NVMe

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 wasted 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 SPECIFICATION
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, NL-SAS or SATA, 12 Drives

OPTIONAL I/O ADD-ON CARDS

The design includes all core components to work with Commvault 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 Commvault® IntelliSnap® operations or tape libraries.

BILL OF MATERIALS

Commvault has partnered with Cisco to create Solution IDs which are pre-validated Bill of Materials (BOMs) that allows easy quoting by Cisco or a Cisco Reseller while ensuring the configurations are validated and consistent. These Solution IDs include the core hardware components for the HyperScale™ architectures, items such as power cords and country specific region kits are required as part of the ordering process through the Cisco Commerce Workspace (CCW) website.

Note: ScaleProtect™ refers to the joint offering that Cisco and Commvault have in market. ScaleProtect™ with Cisco UCS® is Commvault data protection solution including Commvault HyperScale™ Software running on Cisco UCS infrastructure. The Commvault Validated Design for Cisco UCS Servers utilizes the exact same infrastructure as the ScaleProtect offering.

SOLUTION ID

Each Solution ID represents a single HyperScale node, as outlined in the Data Storage Options, mixing and matching different node sizes within a block is not allowed. Simply choose the required nodes in multiples of 3 to create the architecture for the Commvault HyperScale solution.

QTY.	PART NUMBER	DESCRIPTION
1	Commvault ScaleProtect C240 M5 4TB	Single C240 M5 HyperScale™ Node with 12 x 4TB Drives
1	Commvault ScaleProtect C240 M5 6TB	Single C240 M5 HyperScale™ Node with 12 x 6TB Drives
1	Commvault ScaleProtect C240 M5 8TB	Single C240 M5 HyperScale™ Node with 12 x 8TB Drives
1	Commvault ScaleProtect C240 M5 10TB	Single C240 M5 HyperScale™ Node with 12 x 10TB Drives
1	Commvault ScaleProtect C240 M5 12TB	Single C240 M5 HyperScale™ Node with 12 x 12TB Drives

OPTIONAL I/O ADD-ON CARDS

QTY.	PART NUMBER	DESCRIPTION
1	UCSC-PCIE-QD16GF	Qlogic QLE2692 dual-port 16G FC HBA
1	UCSC-PCIE-BD16GF	Emulex LPe31002 dual port 16G FC HBA

ADDITIONAL RESOURCES

Additional information regarding the Cisco UCS C240 M5 can be found on the Cisco website. A couple of useful links have been included:

- Cisco UCS C240 M5 Rack Server Data Sheet (US version)
- Cisco UCS C240 M5 (LFF) Rack Server Specification Sheet (US version)
- The Cisco Commerce Workspace (CCW)

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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