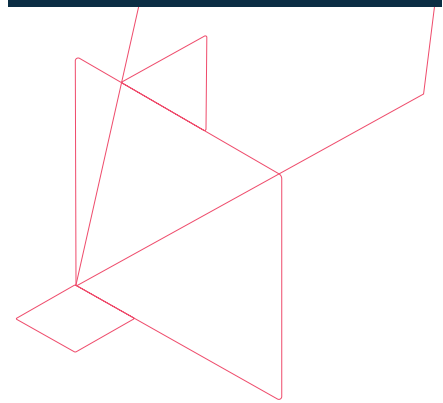


Commvault® Validated Reference Design specification

Commvault HyperScale™ X Software on SuperMicro CSE-815TQC-R706WB2



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 resilience. 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 in the cloud
- Enhanced resilience 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 from Commvault's Validated Reference Design program is to provide details on SuperMicro CSE-815TQC-R706WB2 server for running Commvault HyperScale™ X Software.

General availability designation

This configuration is classified as a generally available 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 as a result of hardware life cycles. Validated Reference Designs are developed to provide optimized costs, resiliency, and performance. Commvault collaborates with SuperMicro to create fully supported design specifications. 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 SuperMicro. 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. The document is broken into a high-level component section detailing the configuration and specific component options that can be selected to satisfy storage capacity and connectivity requirements. This document does not cover overall architecture and design of the Commvault HyperScale™ X solution, and should be considered as a supplement specific to the SuperMicro server.

SuperMicro CSE-815TQC-R706WB2 summary

Server overview

Technical specification	
Form factor	1U rackmount
Motherboard chipset	Intel® C622 chipset
Processors	Intel® Xeon® Silver 4208 – 8 core CPU
Memory	256 GB RAM (8x32 GB RDIMM)
Free slots*	3x PCIe slots

*Free slots: These are the slots available in each server for hosting Ethernet and fiber-channel (FC) cards. Please ensure any additional cards purchased will physically fit in the server.

Note: Smaller form factor cards can fit in larger form factor slots. However, larger form factor cards cannot fit into smaller form factor slots. For example, an x4 size card can fit in an x8 size slot, however an x8 size card cannot fit in an x4 size slot.

Boot and metadata storage

Boot storage houses the operating system and core Commvault HyperScale™ X binaries. The metadata storage provides caching areas for such operations as deduplication, indexing, logs and extents. The design specifies dedicated storage for Commvault metadata.

Data storage options

Data storage houses the protected data. Data storage selection dictates the amount of data that each node can accommodate. Initial deployment of Commvault HyperScale™ X requires a 3-node configuration, each with identical hard disk drive (HDD) capacity. Subsequent expansion of the storage pool can be done by adding individual or multiple nodes. Overall sizing and retention varies per customer and therefore is beyond the scope of this document. Please refer to [Commvault HyperScale™ Technology sizing documentation](#) to determine the drive size (and node quantity) required for the specific deployment.

Networking options

A minimum of two (2x) 10 GB ports are required per node for Commvault HyperScale™ X installs, one for protected data and one for storage communication between the nodes. It is recommended to have a total of four (4x) ports per node, preferably on two separate cards, two (2x) for data and two (2x) for storage for failover and redundancy. These builds have been designed with this recommendation.

Optional I/O add-on cards

The design includes all core components to support Commvault HyperScale™ X Technology. Flexibilities to accommodate a specific customer use-case comes in the form of number of available PCIe slots in the selected server and is limited to the available options in the "I/O & add-on cards" section below. For example, optional I/O cards for SAS, Ethernet or Fiber Channel connectivity require a free PCIe slot in the server being considered. SAS Connectivity is typically used for direct tape integration, while Fiber Channel (FC) cards are used for Commvault IntelliSnap® technology operations or tape libraries. Additional Ethernet cards may be required for dedicated replication network or to connect to Clients in isolated networks.

Bill of materials

Commvault has partnered with SuperMicro to create SKU's for the validated Commvault HyperScale™ X server. There are also component level SKU's for optional Ethernet and Fiber-Channel (FC) connectivity. The number and type of nodes and the specific optional SKU's to be purchased is dependent on the desired backend capacity and connectivity requirements of the customer. The set of SKU's below allow for easy ordering and fulfilment of required hardware without deviating from the tested configuration. Supported components are shown under the heading "I/O & add-on cards". Each server purchase should also include the SKU for hardware service warranty (SMSAD3). Each component listed below has been tested and validated and substitutions cannot be supported. Country-specific components such as power cables are not listed and can be changed as required.

Commvault HyperScale™ X SKU	Description	Usable - capacity/node
PIO-6019P-WTNRT-A1-CS071	One SuperMicro CSE-815TQC-R706WB2 server, with 2x Intel 4208 CPU's, 256G RAM, 3108 RAID Controller, 1x 480G OS SSD, 1x 3.2 TB NVMe drive. 4x 4 TB SAS 12 GB/s HDD. NO Ethernet or FC ports.	~ 8 TiB
PIO-6019P-WTNRT-A2-CS071	One SuperMicro CSE-815TQC-R706WB2 server, with 2x Intel 4208 CPU's, 256G RAM, 3108 RAID Controller, 1x 480G OS SSD, 1x 3.2 TB NVMe drive. 4x 8 TB SAS 12 GB/s HDD. NO Ethernet or FC ports.	~ 16 TiB

I/O & add-on cards

There are three (3x) available PCIe slots in each server node. These PCIe slots need to be populated optimally to provide a minimum of 4x 10/25G Ethernet ports per server and any other connectivity such as Fiber-Channel (FC) for Intellinap/ tapeout or additional Ethernet for a dedicated replication network. It is therefore important to use the correct (dual or quad-port) Ethernet NIC. Network bonding and zoning best-practices recommend the use of ports from separate cards for better resilience. Following are the supported components for this server.

SuperMicro SKU	Description
AOC-QLE2742SR	QLE2742-SR Dual-port Gen6 32G FC,PCI-E x8 3.0
AOC-QLE2672	Logic QLE2672 16 GB Dual Port FC HBA PCIE GEN5
AOC-STG-I4S	4-port 10GbE Standard LP with SFP+
AOC-STG-I4T	4-port 10GBase-T controller based on Intel® XL710 and X557 chipsets

Ordering examples

Backend capacity	Required connectivity/node (ethernet + FC ports)	Required SKU's (ordering)	Comments
20 TiB	4x 10G SFP+ Ethernet ports	3x PIO-6019P-WTNRT-A1-CS071 + 3x AOC-STG-I4S + 3x SMSAD3	3x Commvault HyperScale™ X Nodes, each with 4x 4 TB HDD's, 4x 10G SFP+ Ethernet ports and support. Usable Capacity = 25 TiB
45 TiB	4x 10Base-T Ethernet ports + 2x 16G FC ports	3x PIO-6019P-WTNRT-A2-CS071 + 3x AOC-STG-I4T + 3x AOC-QLE2672 + 3x SMSAD3	3x Commvault HyperScale™ X Nodes, each with 4x 8 TB HDD's, 4x 10G Copper Ethernet ports, two 16G FC ports and support. Usable Capacity = 50 TiB
60 TiB	6x 10Base-T Ethernet ports	4x PIO-6019P-WTNRT-A2-CS071 + 8x AOC-STG-I4T + 4x SMSAD3	4x Commvault HyperScale X™ Nodes, each with 4x 8 TB HDD's, 8x 10G Copper Ethernet ports and support. Usable Capacity = 66 TiB

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 SuperMicro CSE-815TQC-R706WB2 server can be found [here](#) >

Please forward requests for quotes (RFQ) to the mail alias commvault2SMC@supermicro.com >

Commvault HyperScale™ X Technology integrates with storage arrays, hypervisors, applications and the full range of cloud provider solutions to support the most diverse and dynamic environments. [Learn more](#) >