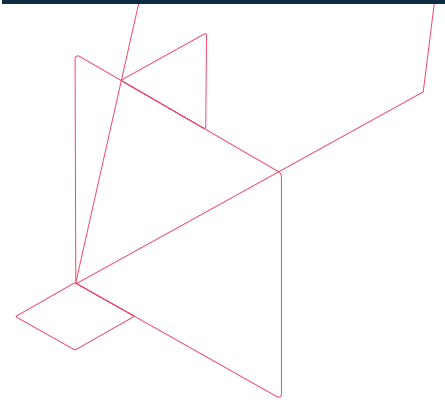


# Commvault® Validated Reference Design specification

Commvault HyperScale™ X Software on Hitachi Advanced Server HA820



## 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 Hitachi Advanced Server HA820 for running Commvault HyperScale™ X Software.

### General availability designation

This configuration is classified as generally available, 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 as a result of hardware life cycles. Validated Reference Designs are developed to provide optimized costs, resiliency, and performance. Commvault collaborates with Hitachi Vantara 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 Hitachi Vantara. This configuration is currently orderable for customer deployment and supported.

### How to use this document

This document details the necessary design components of the Commvault HyperScale™ 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. The reader is referred to a Hitachi HA820 link for details on individual server configurations, validated with Commvault's HyperScale™ X Software. This document does not cover overall architecture and design of the Commvault HyperScale™ solution, and should be considered as a supplement specific to Hitachi HA820 server.

## Hitachi HA820 general summary

### Server overview

Technical specification	Hitachi HA820
Form factor	Validated 2RU server, each with 12x LFF HDD's
Motherboard chipset	Intel® C620 series
Processors	Dual Intel® Xeon® Silver 4216 CPU's
Memory	512 GB RAM (16x 32 GB RDIMM)
Free PCIe slots*	Please see note below for details

\*Free PCIe slots: This is the remaining PCIe slots available for use in each server, after the core components such as RAID controller and ethernet network interface cards (NIC) have been installed. Please ensure any additional cards added 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™ binaries. The metadata storage provides caching areas for such operations as deduplication, indexing, logs and extents. The design specifies dedicated storage for Commvault metadata on SSD's.

### Data storage options

Data storage houses the protected data. Data storage selection dictates the amount of data that each node can accommodate. Initial deployments of Commvault HyperScale™ X require a 3-node configuration, each with identical hard disk drive (HDD) capacities. Subsequent expansion of the Storage Pool can be done with individual or multiple nodes. Overall sizing and retention varies per customer and therefore is beyond the scope of this document. Please refer to the section titled "Bill of Material" below and [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 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, two (2x) for data and two (2x) for storage for resilience against network failures. 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. Hardware flexibility to accommodate a specific customer use-case will require the use of PCIe slots and is limited by the number of free PCIe slots. For example, optional I/O cards for SAS, Ethernet or Fiber Channel connectivity. 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. Other services provided as options are also listed in the table below.

## Bill of materials

Commvault has partnered with Hitachi Vantara to create validated Commvault HyperScale™ X configurations. The HyperScale™ X node can also include optional components for Ethernet and Fiber-Channel (FC) connectivity. The number of nodes and the specific optional parts to be purchased is dependent on the desired usable capacity (TiB) and connectivity requirements of the customer. The method allows for easy ordering and fulfilment of required hardware without deviating from the tested configuration. Initial deployment of Commvault HyperScale™ X requires three nodes, each with identical hard disk drive (HDD) capacity. Subsequent expansion of the storage pool can be done by adding individual or multiple nodes. Details on the available configurations are as follows:

Server configuration	Disk options	Usable – capacity/node
Standard: One Hitachi HA820 server, with 2x Intel 4216 CPU's, 512G RAM, RAID Controller, 2x 480G OS SSD's, 2x 3.2 TB SSD's, 4x 10/25G Ethernet ports and two free PCIe slots*.  Options: Installation & Professional services, Premium/Standard Maintenance, Additional Ethernet/FC cards, 10/25Gb Transceivers, HS X Perpetual/Subscription software license for 12-Drive Node.	12x 14 TB SAS 12Gb/s HDD's	~ 87 TiB
	12x 16 TB SAS 12Gb/s HDD's	~ 99 TiB
	12x 18 TB SAS 12Gb/s HDD's	~ 112 TiB

\*Free PCIe slots: Two additional PCIe slots are available on each Hitachi HA820 server for optional I/O such as Ethernet NIC and/or FC HBA.

## Additional resources

Additional details on the Hitachi HA820 server can be found in the Commvault HyperScale X™ configuration tool, accessible to your partner. The list of partners can be found [here >](#)

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 >](#)