DATA SHEET

Commvault® Cloud Validated Reference Design Specification

Commvault Cloud HyperScale X™ Reference Architecture on Hitachi Vantara CommVault HSX Appliances

INTRODUCTION TO HYPERSCALE X REFERENCE ARCHITECTURE

HyperScale X™ Reference Architecture 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. 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 Vantara Commvault HSX Appliance HA820 G2 and N24SG3 servers for running HyperScale X Reference Architecture.

GENERAL AVAILABILITY DESIGNATION

This configuration is classified as a 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 due to hardware lifecycles. Validated Reference Designs are developed to optimize 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. Both Commvault and Hitachi Vantara must approve any substitutions or modifications to validated configurations. 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 HyperScale X Reference Architecture, providing the key components required when purchasing and configuring the infrastructure for a HyperScale X Reference Architecture. 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 includes a high-level component section detailing the configuration and specific component options available to satisfy storage capacity and connectivity requirements. The reader is referred to a Hitachi Vantara Commvault HSX Appliance link for details on individual server configurations, validated with Commvault's HyperScale X Reference Architecture. This document does not cover overall architecture and design of the Commvault Cloud HyperScale X and should be considered as a supplement specific to Hitachi HA820 and N24G3 servers.

HITACHI HA820 G2 & HITACHI N24SG3 COMMVAULT HSX APPLIANCE GENERAL SUMMARY

SERVER OVERVIEW

Technical Specifications	HA820 G2	N24SG3
Form Factor	2U Rack Mount with 12 x LFF HDD	2U Rack Mount with 24 x LFF HDD
Processors (Minimum)	Dual Intel® Xeon® Silver 4314 CPUs	Dual Intel® Xeon® Silver 4314 CPUs
Memory (Minimum)	512 GB RAM	512 or 768[+] GB RAM
Free PCIe slots[*]	4	0

[+]768GB of RAM is required when the system is configured with 20TB drives.

***Free PCIe slots:**

- These are the remaining PCIe slots available in each server after the core components, such as RAID controller and Ethernet network interface cards, are 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 OPTIONS

Boot storage houses the operating system and core Commvault Cloud 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 deployments of 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. Mixing of different server vendors, models, and/or node capacities with a Storage Pool is supported (the number of drives per node must be identical, and individual drive capacity must be equal or larger). Overall sizing and retention vary 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.

NOTE: SAS, NL-SAS and SATA HDDs are supported, however SAS is the recommended option. Larger than 20TB drives are NOT supported

NETWORKING OPTIONS

A minimum of two (2x) 10GB ports are required per node for HyperScale X installs, one for protected data and one for storage communication between the nodes. Best practices recommend a total of four (4x) ports per node, two (2x) for data and two (2x) for storage for resilience against network failures. These builds are designed with this recommendation.

OPTIONAL I/O ADD-ON CARDS

The design includes all core components to support HyperScale X. Flexibility to accommodate specific customer use cases comes in the form of the number of available PCIe slots in the selected server and is limited to the available options in the Flex Component Guidelines section. For example, optional I/O cards for SAS, Ethernet, or Fiber Channel connectivity require a free PCIe slot in the server. 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 a dedicated replication network or to connect to Clients in isolated networks. Where there are validated substitutes, there is a recommended set of components and other options. Thus, multiple valid configurations are possible within the confines of the published reference design.

BILL OF MATERIALS

The Bill of Materials lists all components required to configure HyperScale X nodes. Each component has been tested and validated. Substitutions cannot be supported. Country-specific components, such as power cables, are not listed and can be changed as required.

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
Standard: One Hitachi N24SG3 server, with 2x Intel 4314 CPU's, minimum 512G RAM[1], RAID Controller, 2x 480GNVMe for Boot OS, 1x 3.2 TB and 1x 6.4 TB NVMe for Metadata, 4x 10/25G Ethernet ports Options: Installation, Premium/Standard Maintenance, 10/25Gb Transceivers, HSX Perpetual/Subscription software license for 24-Drive Node.	24 x 14TB SAS 12Gb/s HDD's
	24 x 16TB SAS 12Gb/s HDD's
	24 x 18TB SAS 12Gb/s HDD's
	24 x 20TB[1] SAS 12Gb/s HDD's
Standard: One Hitachi HA820 server, with 2x Intel 4314/4316 CPU's, 512G RAM, RAID Controller, 2x 480G OS SSD's, 2x 3.2 TB SSD's, 4x 10/25G Ethernet ports. Options: Installation & Professional services, Premium/Standard Maintenance, Additional Ethernet/FC cards, 10/25Gb Transceivers, HSX Perpetual/Subscription software license for 12-Drive Node.	12 x 14TB SAS 12Gb/s HDD's
	12 x 16TB SAS 12Gb/s HDD's
	12 x 20TB SAS 12Gb/s HDD's

Note:

1. 768GB RAM is required when select 20TB drives capacity for N24SG3 configuration, failure to follow this will lead to an unsupported configuration. For Disk Option lower than 20 TB drive capacities, 512 GB of RAM will be default RAM configuration in server.

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 Hitachi Vantara CommVault HSX Appliance can be found on the Hitachi Vantara website and partner portal.

Commvault Cloud HyperScale X integrates with storage arrays, hypervisors, applications, and the full range of cloud provider solutions to support the most diverse and dynamic environments. **Learn more here.**