DATA SHEET

Commvault Cloud® Validated Reference Design Specification

Commvault Cloud Hyperscale X Reference Architecture on Lenovo

INTRODUCTION

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 Lenovo 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 Lenovo to create fully supported design specifications. Substitutions or modifications to validated design specifications could result in unsupported configurations. Both Commvault and Lenovo 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 Lenovo 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 Lenovo servers.

LENOVO THINKSYSTEM GENERAL SUMMARY

Server overview

Technical specification	ThinkSystem SR650 V3	ThinkSystem HS350X V3
Form factor	2U Rack Mount with 12 x LFF HDD	2U Rack Mount with 24 x LFF HDD
Processors (Minimum)	Dual Intel® Xeon® Silver 4514 CPU	Single Intel Xeon Gold 6448 32Core CPU
Memory (Minimum)	512 GB RAM	512 GB RAM
Free PCIe Slots*	4	1

***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.

BOOT AND METADATA STORAGE

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. 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 20 TB drives are NOT supported.

NETWORKING OPTIONS

A minimum of two (2x) 10 GB ports are required per node for HyperScale X installs, one for protected data and one for storage communication between the nodes. We 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. Please use Lenovo's Data Center Solution Configurator to access the predetermined server configuration. They are located under the sever customizations page for the above server models under the BUDR section of OS & Software section.

- ThinkSystem SR650 V3
- ThinkSystem HS350X V3

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 Lenovo ThinkSystem servers can be found on the following Lenovo websites:

- Lenovo ThinkSystem SR650 V3 Datasheet
- Lenovo ThinkSystem SR650 V3 Product Guide
- Lenovo ThinkSystem HS350X V3 Datasheet
- Lenovo ThinkSystem HS350X V3 Product Guide

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.**