



Powering Scale-Out Cyber Resilience with Lenovo ThinkSystem SR650 V3 Server and Commvault Cloud HyperScale X Software

Solution Brief

Commvault Cloud Hyperscale X

Commvault, a global leader in cyber resilience solutions, offers a unified approach to data protection, recoverability, and security. HyperScale X is an intuitive and easy-to-deploy integrated 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. Benefits include:

- Simple, flexible protection and accelerated recoverability for all workloads, on—premises or in the cloud, including containers, virtual, and databases.
- Enhanced, multi-layered ransomware protection with AI-driven anomaly detection to uncover threats faster and immutable storage to prevent critical data from being encrypted, modified, or deleted.
- Optimized scalability to easily grow capacity in single-node increments as needed.
- Advanced storage efficiency and resilience with intelligent load balancing of data across disks and nodes and the ability to support concurrent hardware failures.
- Cost-optimized cloud data mobility with native integration to move data to, from, and between clouds, avoiding vendor lock-in.

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.

ThinkSystem SR650 V3 Server - Maximizing Scalability and Performance

The Lenovo ThinkSystem SR650 V3 server is a powerhouse designed for versatility, capacity, and performance. Built on the 5th generation Intel Xeon Scalable processor family, it offers exceptional computing power for a wide range of workloads. The server's modular design allows organizations to customize and scale their infrastructure according to evolving business requirements.

- **Performance:** Equipped with the latest Intel® Xeon® processors, the ThinkSystem SR650 V3 offers high-performance computing capabilities, accommodating resource-intensive tasks effortlessly. 5th Gen Intel® Xeon® Scalable Processors enable 2.3x increase in virtual machines*
- **Scalability:** A modular design allows organizations to scale computing, storage, and networking resources independently, ensuring flexibility and future-proofing infrastructure investments.
- **Reliability:** Lenovo's reputation for reliability is embedded in the SR650 V3, providing continuous operations and minimizing downtime
- **Security:** Advanced security features, including hardware-based encryption and firmware resilience, safeguard sensitive data against evolving cyber threats
- **Management:** ThinkSystem Intelligent Monitoring offers proactive system management, optimizing performance and simplifying day-to-day operations
- **Efficiency:** Improved energy efficiency with 77% better performance per watt*

* When comparing SR650 V3 to the SR650

The following figure shows the SR650 V3 with 12x 3.5-inch front hot-swap drive bays.



Figure 1. Lenovo ThinkSystem SR650 V3 with 3.5-inch front drive bays

ThinkSystem SR650 V3 specifications

The following table lists the key specifications for the SR650 V3. For a complete list of detailed specifications, please consult the [Lenovo ThinkSystem SR650 V3 Product Guide](#).

Table 1. ThinkSystem SR650 V3 specifications

Specification	SR650 V3 functionality
Form Factor/Height	2U rack server
Processors	Up to 2x 5th Gen Intel® Xeon® Scalable processors, up to 64 cores and 350W TDP
Drive Bays	Up to 20x 3.5" or 40x 2.5" drives Up to 36x NVMe drives supported with PCIe retimer adapters Rear: 2x 2.5"; 7mm SATA/NVMe hot-swap boot drives, support RAID Internal 2x M.2 SATA/NVMe boot drives, support RAID Direct NVMe, VROC/VMD, and onboard SATA with SW RAID (0,1,5,10)
Memory	Supports up to 32x TruDDR5 3DS/RDIMMs
Expansion Slots	Up to 12x PCIe 4.0/5.0 slots, 1x OCP 3.0 slot, 1x cabled internal HBA/RAID adapter that does not occupy a standard PCIe slot
GPUs	Up to 8x single-width GPUs or 3x double-width GPUs
Network Interface	LOM adapter installed in the OCP 3.0 slot, optional for front access Networking PCIe adapters
Ports	Front: 1x USB 3.1 G1, 1x USB 2.0 with XClarity Mobile support, 1x VGA (optional), 1x external diagnostics handset port (optional) Rear: 3x USB 3.1 G1, 1x VGA, 1x 1GbE RJ-45 (management), 2nd 1GbE management port (optional in OCP slot location), 1x Serial port (optional)
HBA/RAID Support	SATA with SW RAID (0,1,5,10); Common building blocks including standard and Internal PCIe RAID/HBA adapters.
Power	Dual Redundant AC & DC (multiple wattages); Platinum & Titanium; 750W PT/TT, 1100W PT/TT, 1800W PT/TT, 2400W PT, 2600W TT and 1100W -48V DC PT
Systems Management	Lenovo XClarity Controller
OS Support	Microsoft, SUSE, Red Hat, VMware. Visit https://lenovopress.com/osig for details.

Solution Overview

Commvault Cloud Hyperscale X software represents a breakthrough in scale-out cyber resilience, providing a turnkey, high performance solution to meet the security and recoverability needs of the modern hybrid cloud. Built on the ThinkSystem SR650 V3 server, HyperScale X offers an integrated solution for cyber recovery and ransomware protection. Combining the SR650 V3 server and Commvault Hyperscale X software creates a powerful data protection solution that delivers exceptional performance, scalability, and efficiency.

- **Optimized Performance:** The computing power of the SR650 V3 combined with Hyperscale X's intelligence and efficiency ensures optimal performance during backups and restores.
- **Flexibility:** Commvault Cloud HyperScale X on SR650 V3 servers enables organizations to scale their infrastructure and data protection capabilities granularly to match their growth and business needs.
- **Reliability and Data Integrity:** Lenovo's server reliability complements Hyperscale X's built-in resiliency, ensuring data integrity and availability.
- **Unified Management Interface:** Integrated management interfaces allow administrators to oversee both hardware and software components seamlessly, reducing complexity in daily operations.
- **Cost-Effective Solution:** with HyperScale X on Lenovo ThinkSystem, organizations can achieve significant cost savings through simplified deployment and management, optimized resource utilization, and reduced downtime.

Bill of Materials

The following table lists the bill of materials (BOM) for the ThinkSystem SR650 V3 and Commvault Cloud Hyperscale X solution.

Table 2. Bill of Materials

Component	Feature Code	Description	Qty
MTM	7D76CTO1WW	ThinkSystem SR650 V3 - 3yr warranty	1
MTM	7D75CTO1WW	ThinkSystem SR650 V3 - 1yr warranty	1
Chassis	BLKJ	ThinkSystem SR650 V3 12x3.5" Chassis	1
	BFYE	Operating mode selection for: "Efficiency – Favoring Performance Mode"	1
Select One, Quantity: 2			
Processors	BQ69	ThinkSystem SR650 V3 Intel Xeon Silver 4416+ 20C 165W 2.0GHz Processor Option Kit w/o Fan	2
Processors	BQ6L	ThinkSystem SR650 V3 Intel Xeon Gold 5416S 16C 150W 2.0GHz Processor Option Kit w/o Fan	2
Processors	BQ6H	ThinkSystem SR650 V3 Intel Xeon Gold 5418N 24C 165W 1.8GHz Processor Option Kit w/o Fan	2
Processors	BQ66	ThinkSystem SR650 V3 Intel Xeon Gold 5418Y 24C 185W 2.0GHz Processor Option Kit w/o Fan	2
Processors	BQ65	ThinkSystem SR650 V3 Intel Xeon Gold 5420+ 28C 205W 2.0GHz Processor Option Kit w/o Fan	2
Processors	BQ6C	ThinkSystem SR650 V3 Intel Xeon Gold 6416H 18C 165W 2.2GHz Processor Option Kit w/o Fan	2
Processors	BQ6B	ThinkSystem SR650 V3 Intel Xeon Gold 6418H 24C 185W 2.1GHz Processor Option Kit w/o Fan	2
Processors	BPQF	ThinkSystem SR650 V3 Intel Xeon Gold 6426Y 16C 185W 2.5GHz Processor Option Kit w/o Fan	2

Component	Feature Code	Description	Qty
Processors	BPQE	ThinkSystem SR650 V3 Intel Xeon Gold 6442Y 24C 225W 2.6GHz Processor Option Kit w/o Fan	2
Processors	BPQB	ThinkSystem SR650 V3 Intel Xeon Gold 6444Y 16C 270W 3.6GHz Processor Option Kit w/o Fan	2
Quantity Required Based on Choice			
Memory	BNW5	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 9x4 RDIMM	16
Memory	BKTN	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 9x4 RDIMM	8
Memory	BNF6	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 10x4 RDIMM	16
Memory	BNF9	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 10x4 RDIMM	8
Memory	BKTL	ThinkSystem 16GB TruDDR5 4800MHz (1Rx8) RDIMM	32
Memory	BKTM	ThinkSystem 32GB TruDDR5 4800MHz (2Rx8) RDIMM	16
Select one			
Drive Controller	BM50	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA	1
Drive Controller	BM8X	ThinkSystem M.2 SATA/x4 NVMe 2-Bay Adapter	1
Select one, Quantity: 12			
Drive	B0YR	ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD	12
Drive	AUUG	ThinkSystem 3.5" 10TB 7.2K SAS 12Gb Hot Swap 512e HDD	12
Drive	B117	ThinkSystem 3.5" 12TB 7.2K SAS 12Gb Hot Swap 512e HDD	12
Drive	B496	ThinkSystem 3.5" 14TB 7.2K SAS 12Gb Hot Swap 512e HDD	12
Drive	B7EZ	ThinkSystem 3.5" 16TB 7.2K SAS 12Gb Hot Swap 512e HDD	12
Drive	BCFP	ThinkSystem 3.5" 18TB 7.2K SAS 12Gb Hot Swap 512e HDD	12
Drive	BPKU	ThinkSystem 3.5" 20TB 7.2K SAS 12Gb Hot Swap 512e HDD	12
Select One, Quantity: 2			
Driver	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	2
Driver	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	2
Select One, Quantity: 2			
Driver	BYF8	ThinkSystem M.2 ER3 480GB Read Intensive SATA 6Gb NHS SSD	2
Driver	BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	2
Driver	BXMH	ThinkSystem M.2 PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2
Driver	BKSR	ThinkSystem M.2 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2
Select One (total of two NICs)			
NIC	B5ST	ThinkSystem Broadcom 57416 10GBASE-T 2-port OCP Ethernet Adapter	1
NIC	BCD5	ThinkSystem Intel X710-T2L 10GBASE-T 2-port OCP Ethernet Adapter	1
NIC	BN2T	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1
NIC	BCD4	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1

Component	Feature Code	Description	Qty
NIC	BE4T	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1
Select One			
NIC	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	1
NIC	BNWL	ThinkSystem Intel X710-T2L 10GBase-T 2-Port PCIe Ethernet Adapter	1
NIC	BK1H	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter	1
NIC	BCD6	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	1
NIC	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	1
One HBA (Optional - 2x NICs and 1x or 2x FC HBAs)			
Fibre Channel HBA	ATZV	Emulex 16Gb Gen6 FC Dual-port HBA	1
Fibre Channel HBA	ATZC	QLogic 16Gb Enhanced Gen5 FC Dual- port HBA	1
Fibre Channel HBA	BJ3H	ThinkSystem Emulex LPe35002 32Gb 2- port PCIe Fibre Channel Adapter V2	1
Fibre Channel HBA	BA1F	ThinkSystem QLogic QLE2772 32Gb 2- Port PCIe Fibre Channel Adapter	1
Fibre Channel HBA	BLC1	ThinkSystem Emulex LPe36002 64Gb 2- port PCIe Fibre Channel Adapter	1
Select One, Quantity: 2			
Power Supply	BNFH	ThinkSystem 1100W 230V/115V Platinum Hot-Swap Gen2 Power Supply v3	2
Power Supply	BMUF	ThinkSystem 1800W 230V Platinum Hot-Swap Gen2 Power Supply v2	2
Power Supply	BLKH	ThinkSystem 1100W 230V Titanium Hot- Swap Gen2 Power Supply	2
Power Supply	BPK9	ThinkSystem 1800W 230V Titanium Hot- Swap Gen2 Power Supply	2

Conclusion

The integration of Lenovo ThinkSystem SR650 V3 server and Commvault Hyperscale X software offers a powerful and unified solution for organizations aiming to elevate their cyber resilience and data security capabilities. This collaboration empowers enterprises to navigate the complexities of modern hybrid data environments with confidence, ensuring data protection, high performance, and adaptability to meet the challenges of today and tomorrow.

For more information

For more information, see these resources:

- Article, "Lenovo and Commvault Deliver Better Data Protection and Recovery Solutions Together" <https://lenovopress.lenovo.com/lp1831-lenovo-and-commvault-data-protection-and-recovery-solutions>
- ThinkSystem SR650 V3 product page: <https://www.lenovo.com/us/en/p/racks/len21ts0013>
- ThinkSystem SR650 V3 datasheet <https://lenovopress.com/ds0143>

Author

Ben Blomberg is an experienced Product Marketing professional with over 20 years of experience in the IT industry. He has Bachelor's of Business Administration (BBA) in Marketing from the University of Wisconsin-Eau Claire.

Related product families

Product families related to this document are the following:

- [ThinkSystem SR650 V3 Server](#)

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