Commvault HyperScale Flex with Lenovo ThinkSystem SR630 V3 & SR650 V3: Scaling Without Limits, Flexible, High-Performance Data Protection for Enterprise Scale

Solution Brief

The Challenge

Large enterprises managing multiple petabytes of data face complex challenges that traditional backup solutions cannot address:

- **Massive Data Volumes**: Data growth from petabytes to multi-petabytes strains traditional backup architectures requiring solutions that scale efficiently without performance degradation.
- **Performance-Critical Workloads**: AI/ML applications, large databases, and mission-critical systems demand low-latency backup and rapid recovery that legacy solutions cannot deliver.
- **Rigid Architectures**: Tightly coupled compute and storage force organizations to over provision resources or accept suboptimal performance as capacity and compute needs evolve independently.
- **Cloud Integration Complexity**: Modern enterprises need seamless hybrid cloud capabilities for secondary copies, air-gap protection, and archival without managing multiple disparate systems.

The Joint Solution: Disaggregated Architecture at Scale

The combined solution of Lenovo ThinkSystem SR630V3 /SR650 V3 servers with Commvault HyperScale Flex delivers a modern, software-defined platform for secure, efficient, and scalable data protection across core, cloud, and edge environments. It merges Lenovo's high-performance infrastructure with Commvault's flexible architecture and cyber resilience capabilities to simplify backup, recovery, and governance for enterprise workloads.

Commvault HyperScale Flex redefines large-scale data protection with a flexible, disaggregated architecture specifically engineered for organizations with very large data volumes and performance-critical workloads. Unlike traditional integrated appliances, HyperScale Flex decouples compute from storage, enabling independent scaling of each component. This design supports petabyte-scale deployments (1PB to multi-PB) with high throughput and low latency, starting with a resilient 2-node configuration expandable in single-node increments. External storage from leading vendors provides flexibility and prevents vendor lock-in, while Commvault's first-call support delivers an appliance-like experience.

The Lenovo ThinkSystem SR650 V3 and ThinkSystem SR630 V3 servers are a powerhouse in different form factor 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 and SR630 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, and SR630 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**: Lenovo XClarity Administrator 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 SR650

ThinkSystem SR630 V3 general specifications

The following table lists the key specifications for the SR630 V3. For a complete list of detailed specifications, please consult the Lenovo ThinkSystem SR630 V3 Product Guide.

The following figure shows the SR630 V3.

Figure 1. Lenovo ThinkSystem SR630 V3

Table 1. ThinkSystem SR630 V3 general specifications

Specification	SR630 V3 functionality
Form Factor/Height	1U Rack Server
Processor	One or two 5th Gen Intel Xeon Scalable processors (formerly codenamed "Emerald Rapids"), or one or two 4th Gen Intel Xeon Scalable processors (formerly codenamed "Sapphire Rapids"). Supports processors up to 64 cores, core speeds of up to 3.9 GHz, and TDP ratings of up to 385 W.
Memory	Up to 32 DIMMs (16 per processor), 2 DIMMs per channel No support for Intel Optane Persistent Memory
Expansion Slots	Up to 2x PCIe Gen 5 slots + 1x PCIe Gen 4 slot (support up to 3x 75W GPUs), Supports either 3x slots (all LP) or 2x slots (LP + FH), 1x OCP 3.0 slot, either rear or front, Supports a RAID/HBA in CFF form factor (does not occupy a PCIe slot)
GPU	Supports up to 3x single-wide GPUs
Network Interface	OCP 3.0 slot with PCIe Gen 5 x16 interface (rear) or PCIe Gen4 x16 interface (front), Additional PCIe adapters supported
Ports	**Front**: 1x USB 3.2 G1 (5 Gb/s) port, 1x USB 2.0 port (also for XCC local management), External diagnostics port, optional VGA port. **Rear**: 3x USB 3.2 G1 (5 Gb/s) ports, 1x VGA video port, 1x RJ-45 1GbE systems management port for XCC remote management. Optional DB-9 COM serial port (installs in slot 3). Optional second RJ-45 1GbE systems management port for XCC remote management (installed in OCP adapter slot). **Internal**: 1x USB 3.2 G1 connector for operating system or license key purposes
HBA/RAID Support	8-port and 16-port RAID adapters with up to 8GB flash, Support for Lenovo and Broadcom adapters, Support for PCIe or Internal cabled (CFF) form factor adapters, Support for NVMe drives connected to 940 RAID adapters (Tri-Mode),Storage HBAs available, PCIe 3.0 and PCIe 4.0 adapter choices with support for Gen 5 adapters when available. **Note**: Commvault does not support VROC configurations, so you must include a RAID card for the boot disks
Power	750W, 1100W, 1800W AC Platinum/Titanium Hot Plug PSU, 1100W -48VDC Platinum general support
Management and security	Integrated XClarity Controller 2
OS Support	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi, Ubuntu Server. See the Operating system support section for specifics.

ThinkSystem SR650 V3 general 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.

The following figure shows the SR650 V3 with 24x 2.5-inch front hot-swap drive bays.

Figure 2. Lenovo ThinkSystem SR650 V3 with 3.5-inch front drive bays

Table 2. ThinkSystem SR650 V3 general 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	**Front**: 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 and onboard SATA with SW RAID (0,1,5,10) **Note**: Commvault does not support VROC configurations, so you must include a RAID card for the boot disks
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.

Key Benefits of the Integrated Solution

The combined solution of Lenovo ThinkSystem SR630V3 /SR650 V3 servers with Commvault HyperScale Flex deliver a modern, software-defined platform for secure, efficient, and scalable data protection across core, cloud, and edge environments.

Key Benefits of the Integrated Solution:

- **Petabyte-Scale Capability**: Scale from 1PB to multi-PB in single-node increments; accommodate massive data growth without architectural redesigns or forklift upgrade.
- **Performance Excellence**: Low-latency protection and rapid recovery for performance-sensitive applications; 5th gen Intel Xeon processors deliver the compute power needed for AI/ML and large database workloads.
- **Flexible Architecture**: Disaggregated design enables independent scaling of compute and storage; right-size each component for optimal price-performance without compromise.
- **Enterprise Resilience**: 2-node minimum configuration with built-in redundancy and failover; continuous operations through intelligent load balancing and automated failover.
- **Cloud-Ready Mobility**: Streamlined integration with all major cloud providers for secondary copies, air-gap protection, and long-term archival; unified management across on-premises and cloud.
- **Operational Simplicity**: Appliance-like ordering and deployment experience through approved partners; Commvault first-call support simplifies vendor coordination.
- **Future-proof Investment**: Modular architecture and hardware flexibility ensure infrastructure evolves with business needs; protect capital investments as technologies advance.
- **Vendor Choice**: External storage from leading vendors prevents lock-in; validated configurations ensure compatibility while preserving flexibility.

Use Cases:

- **Enterprise Data Centers**: Scale-out backup and recovery for virtualized, physical, and containerized workloads.
- **Hybrid Cloud Deployments**: Seamless data mobility between on-premises and multiple cloud providers.
- **Service Providers**: Multi-tenant architecture for secure, isolated backup environments.
- **Large-Scale Virtualization**: High-performance protection for thousands of VMs with rapid restore capabilities.
- **Compliance-Driven Industries**: Immutable storage and advanced security for regulated environments like healthcare and finance.
- **AI/Analytics Workloads**: Efficient protection for high-throughput compute clusters and large datasets.

Bill of Materials (BOM) – SR630 V3 or SR650 v3 Compute Node for HyperScale Flex

The following table lists the bill of materials (BOM) for the ThinkSystem SR630 V3 or SR650 V3 Compute Node for Hyperscale Flex solution.

Table 3. Bill of materials (BOM) for the ThinkSystem SR630 V3 or SR650 V3 Compute Node for Hyperscale Flex.

Category	Description
MTM	ThinkSystem SR630 V3 or ThinkSystem SR630 V3 - 3yr Warranty
Chassis	V3 1U 10×2.5" 2U 24x2.5”
CPU	Xeon Silver 4514Y 16C (×2)
Memory	8 × 32GB TruDDR5 5600 (2Rx8)
Boot	M.2 RAID B540i-2i + 2 × 480GB M.2 SATA
Controller	RAID 940-16i 4GB Flash (U.3)
NVMe Capacity	2 × 15.36TB U.3 NVMe
Networking (OCP)	Broadcom 57508 100GbE QSFP56 (2-port)
Networking (PCIe)	Broadcom 57508 100GbE (2-port)
Risers / PSU	V3 1U risers; 1100W Titanium PSU

Configuration and Approval Guidelines

1. **No Modifications Without Approval**
   Changes to components, quantities, or feature codes are strictly prohibited unless explicitly approved by both **Lenovo** and **Commvault**.
2. **Mandatory Technical Validation**
   All configurations must undergo technical validation and receive approval from both **Lenovo** and **Commvault** prior to implementation.
3. **Right to Modify**
   Lenovo reserves the right to modify or replace components based on availability, product updates, re-certification requirements, or other operational considerations.
4. **Minimum Cluster Requirement**
   All configurations must include a minimum of two (2) identical nodes per cluster.
5. **For more information on HS Flex Guidelines**, reach out to your Lenovo Sales Representative.

Why Commvault and Lenovo?

The partnership delivers enterprise-grade reliability, performance leadership, and deployment flexibility. Pre-validated Lenovo server configurations with external storage eliminate integration risks. The combination of 5th generation Intel Xeon processors and Commvault's optimized software delivers exceptional throughput for petabyte-scale workloads. Organizations benefit from coordinated support, global service capabilities, and continuous innovation that keeps data protection current to meet the challenges of today and tomorrow.

A Partnership Built on Trust

The Commvault and Lenovo partnership provides the technology, expertise, and support you can trust.

Key Features and Benefits:

- **Best-of-Breed Technology**: Commvault's industry-leading data protection capabilities, combined with Lenovo's smart infrastructure, deliver a fully validated and certified cyber resilience and rapid recovery solution, eliminating integration guesswork.
- **Customer-First Support**: Benefit from a coordinated support model that provides a seamless experience. Whether the issue is software or hardware-related, both companies work together to ensure rapid resolution.
- **Global Reach, Local Expertise**: With a presence in markets around the world, Lenovo and Commvault offer the global scale and local expertise needed to support your business wherever it operates.

Take the Next Step

Ready to simplify your data protection and build a more resilient enterprise?

Learn more and contact us today to schedule a personalized demo and discover how Commvault HyperScale X with Lenovo servers can modernize your data management strategy.

For more information, visit these resources:

- Commvault HyperScale X page:
  https://www.commvault.com/supported-technologies/lenovo
- Commvault Solution Brief
  https://www.lenovo.com/us/en/resources/data-center-solutions/solution-brief-documents/commvault-cyberthreat-protection-and-recovery-solution-brief/
- Lenovo Data Center Solutions page:
  https://www.lenovo.com/us/en/resources/data-center-solutions/
- 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
- A Modern Approach to Data Protection with Lenovo ThinkSystem HS350X V3 Storage Server and Commvault Cloud HyperScale X Software
  https://lenovopress.lenovo.com/lp1961-a-modern-approach-to-data-protection-commvault-cloud-hyperscale-x
- Powering Scale-Out Cyber Resilience with Lenovo ThinkSystem SR650 V3 Server and Commvault Cloud HyperScale X Software
  https://lenovopress.lenovo.com/lp1922-powering-scale-out-cyber-resilience-commvault-cloud-hyperscale-x
- Simplified, Scalable, and Resilient Hyperconverged Data Protection with Commvault HyperScale X and Lenovo
  https://lenovopress.lenovo.com/lp2324-hyperconverged-data-protection-with-commvault-hyperscale-x-and-lenovo
- ThinkSystem SR630 V3 On Demand product guide
  https://www.lenovo.com/us/en/p/racks/len21ts0012
- ThinkSystem SR630 V3 product guide
  https://lenovopress.lenovo.com/lp1600-thinksystem-sr630-v3-server
- ThinkSystem SR630 V3 datasheet
  https://lenovopress.com/DS0142
- Interactive 3D Tour SR630 V3
  https://lenovopress.lenovo.com/lp1620
- ThinkSystem SR650 V3 product guide
  https://lenovopress.lenovo.com/lp1601-thinksystem-sr650-v3-server
- ThinkSystem SR650 V3 datasheet
  https://lenovopress.lenovo.com/datasheet/ds0143-lenovo-thinksystem-sr650-v3
- Interactive 3D Tour SR650 V3
  https://lenovopress.lenovo.com/lp1621

Authors

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Related product families

Product families related to this document are the following:

- ThinkSystem SR630 V3 Server
- ThinkSystem SR650 V3 Server

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