Lenovo™ Storage Solution with WekaFS™ Software

FEATURES

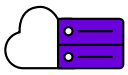
INDUSTRY-LEADING PERFORMANCE
World's fastest file system with native NVMe support for CPU and GPU workloads

EXASCALE CAPACITY
Scale to petabytes of NVMe and exabytes of Object storage

UNIFIED ACCESS
POSIX-compliant with support for NFS and SMB

EASY TO MANAGE
Simple, intuitive management via GUI, API, or CLI

ADVANCED DATA PROTECTION
Distributed data protection and end-to-end data integrity



HYBRID CLOUD INTEGRATION
Snapshot to the cloud for Disaster Recovery and compute elasticity

INTEGRATED STORAGE TIERING
Tier to multiple S3 targets for infinite capacity scaling and lowest cost

BREAKTHROUGH ECONOMICS
High rack density and low power and cooling consumption

ACCELERATE HIGH-PERFORMANCE AND TECHNICAL COMPUTE WORKLOADS

The boom of Big Data has created amazing new opportunities for innovation but also unforeseen problems for data-intensive applications, particularly in artificial intelligence (AI), machine learning (ML), deep learning (DL), financial analytics, genomics and life sciences, and high-performance computing (HPC). These compute and data-intensive applications demand maximum performance even while their datasets scale to extreme capacities. Legacy storage solutions were designed to solve yesterday's problems and cannot take on the storage challenges that organizations running leading-edge applications are facing now or will in the future.

WekaFS (Weka) is a modern file system that is uniquely built to solve big problems that previously had no solution. Weka eliminates the complexity and compromises associated with legacy storage (DAS, NAS, SAN). It offers unmatched performance at ANY scale while still providing the enterprise features and benefits of legacy storage, all at a fraction of the cost. By meeting the stringent storage demands of key industry workloads, WekaFS accelerates the process of obtaining insight from mountains of data and enhances the promise of discovering breakthrough innovation and solutions for major problems.

The workloads that address these problems require a modern infrastructure with extreme performance in compute, storage, and networking resources. The engineered solution from Lenovo and Weka addresses these needs and can help you gain the insight that you need to gain a competitive advantage, deliver customer value, and grow your business.

The Lenovo ThinkSystem SR630 server platform and WekaFS work together for maximum acceleration and reduced training times, delivering unmatched performance at scale. This combined solution is ideal for all of today's data-intensive applications mentioned previously. This storage solution has proven scalable performance, delivering over 10x more performance than all-flash scale-out NAS and 3x more than locally attached NVMe SSDs. Together, Lenovo and Weka support high-performance workloads in AI, finance, genomics, and technical computing. Because these workloads consist of billions of files, small and large, the storage system must deliver high throughput, low latency, and excellent metadata performance at extreme scale to keep these high-performance applications saturated with data. This is unattainable by legacy storage systems, but it is made possible with Weka's modern NVMe-optimized, distributed, and parallel file system running on Lenovo servers.

This storage solution leverages WekaFS software to support a hybrid cloud model, allowing enterprises to leverage on-demand public compute resources for cloud-bursting, remote backup, and disaster recovery.

CHOOSE A SOLUTION THAT DELIVERS PERFORMANCE, FLEXIBILITY, AND VALUE

With the Lenovo ThinkSystem server platform, WekaFS software, and Mellanox network adapters, you can take advantage of a plug-and-play solution that helps extract greater value from data. The solution allows you to start small and flexibly scale to meet your performance and capacity requirements.

The Lenovo ThinkSystem SR630 offers uncompromising performance, scalability, and density in a 1U form factor. WekaFS is a POSIX-compliant file system that distributes both data and metadata evenly across the entire storage cluster to ensure massively parallel access. WekaFS reduces time to innovation by delivering more data to the applications that need it, faster than any other storage system. With a single namespace that offers on-premises storage and cloud connectivity, the software delivers simplified storage management and data protection. Mellanox adapters provide Ethernet and InfiniBand connectivity to deliver 100 Gb/sec bandwidth in a single network port, the lowest available latency, and application hardware offloads, satisfying even the most demanding application requirements.

DERIVE BENEFITS FOR YOUR BUSINESS

This high-performance storage solution not only addresses your specific needs based on workload types and performance and capacity requirements, but goes beyond that to provide greater overall benefits for your business:

- optimization of your IT environments with a modern storage infrastructure and simplified storage management
- data center agility with faster data access and effective resource utilization
- data transformation for AI, analytics, and technical computing with faster time to value and insight

Weka recommends the following minimum entry-level building block for your initial storage deployment, and gives you the ability to scale out to much larger capacities and performance levels by adding more servers:

- 8x Lenovo ThinkSystem SR630 server
- 161 TB or 322 TB of usable storage capacity

The 161 TB usable capacity option provides a great entry point with the ability to scale for small environments, and the 322 TB option is perfect for those who need a capacity-optimized storage solution with the best cost per GB. See the table below for more details on the minimum configuration building block.

Weka delivers a differentiated solution that goes beyond the current market and performance standards for storage. Together with Lenovo, a best-of-breed-technology alliance partner, Weka delivers the best solutions for your IT and business challenges.

LENOVO STORAGE SOLUTION WITH WekaFS SOFTWARE (MINIMUM CONFIGURATION)

Server	Lenovo ThinkSystem SR630	
# of Servers	8	
Drives/Server	10	
SSD Capacity	3.84 TB	7.68 TB
Usable Capacity	161 TB	322 TB
CPU	2x Intel Xeon® Silver 12C/24T	
Networking[1]	• 1x Lenovo LOM 10GbE 2-port Base-T • 1x Mellanox HDR100 QSFP56	
Software	WekaFS	
Data Protection	• Distributed Data Protection[2] (N+2 or N+4) • Drive Virtual Hot Sparing • Error Detection: End-to-End Data Protection • In-Flight and At-Rest Data Encryption	
Protocols	POSIX, NFS, SMB, S3 via Gateway	
Snapshots and Clones	File System Level, Up to 4096 Snapshots	
Tiering	S3 Compatible Cloud Object Store (Public or Private)	
Storage Monitoring	Cloud-based Monitoring and Analytics for Application Tuning and Remote Support	
System Management	ThinkSystem XClarity Controller Enterprise	
Dimensions per Server	1 Rack Unit, Max Depth: 715 mm	
Support Team	• Software: 3-Year, Including Same Day Support • Hardware: 3-Year, Next Business Day Support	
Estimated Performance[3,4]	Up to 45 GB/sec of Read Throughput Up to 5.8 Million Read IOPS	

Notes:
[1]Networking configuration is not yet validated.
[2]N+4 is available only for a cluster with 14 or more servers.
[3]Performance estimates are for an 8-server cluster.
[4]For the most up-to-date performance numbers, check with your technical teams as WekaFS continues to improve with new releases.

Configuration details are subject to change without notice. Additional capacity, drive, and server configurations are available. Please call your Lenovo representative for more information.

Additional Resource: WekaFS Data Sheet: https://bit.ly/39gUTmK

WEKA

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