

Lenovo Data Management

- Storage Portfolio
- High Density Storage
- Lenovo – WEKA Partnership
- Ransomware



LENOVO STORAGE MOMENTUM

#1 in Storage <\$25K*

Lenovo growth: 179%
Market growth: 2.8%

#5 Overall in Storage*

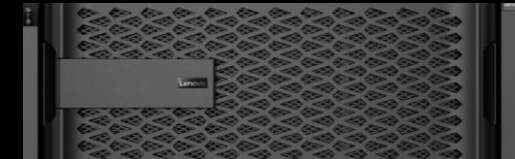
Lenovo growth: 138%
Market growth: 6.2%

22% growth in Midrange Storage*

Market: 11.1%

Triple digit growth in All Flash Array (AFA) Storage*

Market: 13.6%



Footnotes:

- #1 in storage under \$25,000 based on Lenovo storage revenue ranking in IDC Price Bands 1-4, IDC Enterprise Storage Systems Tracker, Q4 2022 (March 2023)
- #5 overall in storage market based on revenue across all IDC Price Bands, IDC Enterprise Storage Systems Tracker, Q4 2022 (March 2023)
- 179% growth in <\$25K and market growth of 2.8%, respectively, based on Year-to-Year revenue growth in IDC Price Bands 1-4, IDC Enterprise Storage Systems Tracker, Q4 2022 (March 2023)
- 138% growth in overall storage and market growth of 6.2%, respectively, based on Year-to-Year revenue growth in all IDC Price Bands, IDC Enterprise Storage Systems Tracker, Q4 2022 (March 2023)
- 22% growth in Midrange storage growth and market growth of 11.1%, respectively, based on Year-to-Year revenue growth in IDC Price Bands 5-8, IDC Enterprise Storage Systems Tracker, Q4 2022 (March 2023)
- Triple digit growth in All Flash Array (AFA) based on Year-to-Year revenue growth in all AFA, IDC Enterprise Storage Systems Tracker, Q4 2022 (March 2023)

Lenovo External Enterprise Storage Data Platforms

ThinkSystem DM SERIES

Lenovo Scalable NAS/SAN/Unified

- ONTAP Data Management OS
- AFA and Hybrid
- Anti-Ransomware
- Unified multi-protocol file and block
- Cloud Tiering



Protocols: FC, FCoE, iSCSI, SAS, NVMe/TCP, NVMe-oF, CIFS/SMB, NFS, S3

Hybrid-Cloud Enabled

Powerful data management

Superior all-flash performance

Key Workloads/ Use Cases

- Transactional databases and analytics
- Virtualization and VDI
- Unstructured datasets
- Edge consolidation

ThinkSystem DE SERIES

Lenovo Performance Block

- AFA and Hybrid Block
- Asynch & Synch Replication
- Price Performance leadership
- Ease of use



Protocols: FC, iSCSI, SAS

Simple scale-up architecture

High performance

Resource efficient

Key Workloads/ Use Cases

- Database / Analytics
- Backup and archive
- HPC / AI
- Video Surveillance

Lenovo Data Management Portfolio



Lenovo TruScale

Lenovo TruScale
Infrastructure as a Service

Lenovo TruScale
Infinite Storage

Lenovo TruScale
Backup as a Service
with Veeam

ThinkSystem
Enterprise Storage

DE Series DM Series D Series Storage Networking Tape Solutions

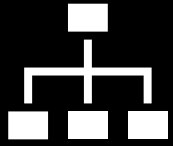
ThinkAgile
HCI
Hyperconverged Infrastructure

NUTANIX HX Microsoft MX vmware VX

ThinkSystem
SDS
Software Defined Storage

CLOUDIAN WEKA Unstructured Data DSS

Facilitate Maximum Data Efficiency



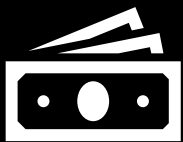
Efficient Data Management

Unified data management consolidates data on one platform for easy management and protection



Fast efficient data storage

High performance AFA systems with advanced 3:1 data efficiency accelerates data while lowering OPEX and CAPEX costs



Ease of Management

Easy-to-use, all-in licensing + premier services + validated solution and workload guidance reduces time-to-value and costly data.




New High Density Enclosure: 62% Lower Power & 60% Less Space

The new D4390 high density JBOD for Software Defined Storage delivers dramatic power and datacenter space savings vs. the predecessor, to reduce data carbon footprint and datacenter space




Transition to new
model



A thick yellow arrow points from the existing D3284 enclosure to the new 4U90 enclosure.

6.7PB data



New 4U90
(Shipping 2023)

- Lower Power consumption**
Smaller Data Center carbon footprint with 62% less power consumption*
- Lower OPEX**
60% reduction in data center space*
- Higher overall performance**
24G SAS connectivity increases data throughput

* Footnote in speaker notes

The image shows a vertical stack of 4 server units, numbered 1 to 4 from bottom to top. The top portion of the enclosure is empty, indicating a high-density design. Each unit has a blue indicator light and a small grid icon.

ThinkSystem DM Systems 9.12 Software Release



The latest DM Series SW release delivers advanced includes innovations that reduce the threats from cyber attacks and increases data management efficiency

- New automated ransomware protection
 - Autonomous ransomware protection
 - Including one-click defense against malicious files
 - Tamper proof Snapshots prevents ransomware deletion
- Hardened Zero Trust architecture that increases defense from insider threats
 - Advanced multifactor authentication
 - Immutable, tamperproof logging
 - Enhanced auditing
- 33% storage efficiency improvement with new 4 to 1 efficiency¹
 - Lenovo All Flash Arrays (AFA) SAN deployments
 - Lowers CAPEX by storing more data with less storage



¹Storage 4:1 efficiency claim, the data reduction ratio of 4:1 is based on using compression, compaction, dedupe, and cloning to allow the end customer to store their logical data (A) in (A/4) physical space

LENOVO-WEKA SOLUTION

Speed

Lowest latency

Industry leading performance and reliability
World's fastest filesystem, supports data pipelines with high I/O, low latency, small files, auto-tuning, mixed workloads & data portability

Simplicity

Throughout lifecycle

Simple to order, install, and manage
Common software stack across:
Core, Cloud or Edge
Smart tiering to S3

Support

Consistent Enterprise Level Support

Available in +150 countries

**Next
generation
data
architecture
for high
performance
workloads**

Scale

Grow with your needs

Non-disruptive scaling
Linear scaling of throughput
Single, global namespace
Tier & backup to public or private cloud

Choose Your Weka Experience

Weka provides value across edge, data center core, and cloud

Edge



LENOVO SR630v2

6 x Lenovo SR630v2 Rack Server
Specifications:
Intel 3rd Generation Xeon 2-socket
256GB DDR4 3200 Memory
6 x TLC NVMe Enterprise SSD
100/200Gb Ethernet/HDR 2-port

From 46TB Usable (6U)

From 48 GB/s BW +
From 5.6 Million IOPS +

Scratch



LENOVO SR630v2

12 x Lenovo SR630v2 Rack Server
Specifications:
Intel 3rd Generation Xeon 2-socket
256GB DDR4 3200 Memory
8 x 15.36 NVMe Enterprise SSD
100/200Gb Ethernet/HDR 2-port

1PB Usable (12U)

340 GB/s BW
22.4 Million IOPS

Hybrid



LENOVO SR630v2

12 x Lenovo SR630v2 Rack Server
Specifications:
Intel 3rd Generation Xeon 2-socket
256GB DDR4 3200 Memory
8 x 7.68 NVMe Enterprise SSD
100/200Gb Ethernet/HDR 2-port

500TB Usable (12U)

340 GB/s BW
22.4 Million IOPS

Clouidian or Private S3



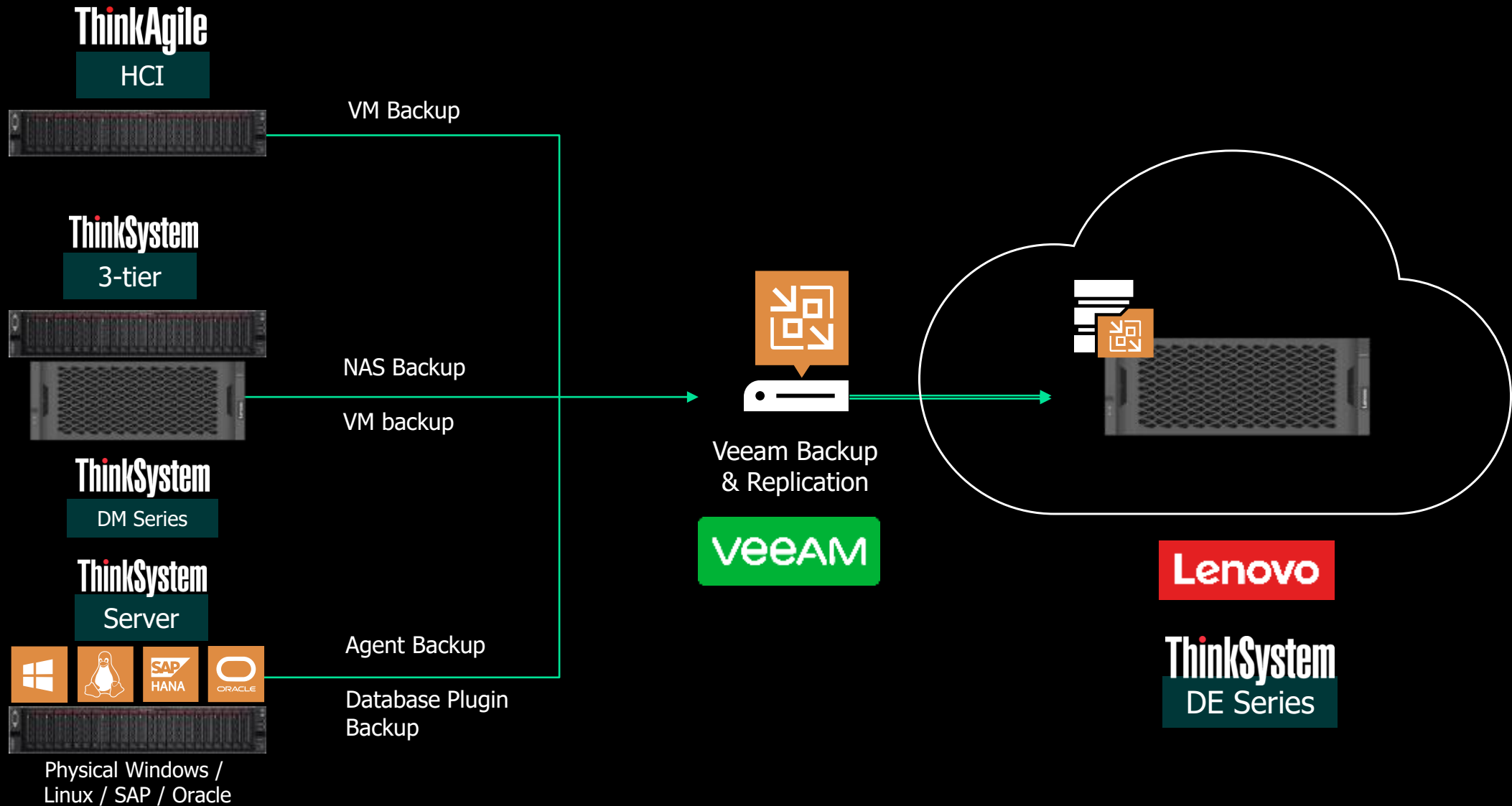
LENOVO SR650v2

6 x HyperStore 4200 Dual-Node
Specifications:
4 x Intel Xeon 5218 20C/40T 2.1GHz
512GB System Memory
60 x 16TB SAS 12Gbps 7200 HDD
4 x 25/40/100Gbps Network ports

3.9PB Usable (24U)

22 GB/s READ BW
13 GB/s WRITE BW

Datacenter protection for multiple workloads



Veeam & Lenovo Ransomware Customer Benefits

Backup is the **FIRST** line of defense!

When ransomware strikes you need 2 things:

1. **Valid, Usable Backup Copies** - That were safe from the attack
2. **Fast Recovery** - Because recovery needs may be extensive
 - **Minimize potential data loss** by reducing window for data loss with OnTap integration for lowest RPOs
 - **Built-in intelligence** with monitoring and reporting on suspicious activity
 - **Protect backup environment** with hardened backup environment, immutable backup repository, Tape, SnapLock (WORM) & AWS S3 Object lock
 - **Recovery assurance** with tested and verified backup recovery
 - **Avoid recovering infected data** with Secure Restore that scans for malware before recovery
 - **Fast recovery** - rapid recovery of large amounts of data (*Ransomware IS a Disaster*)

Lenovo + Veeam Ransomware Results*

Without Veeam + **Lenovo**

\$1.85M Average total cost of attack

\$170K+ Average ransom paid

35% Average data loss

VS

With Veeam + **Lenovo**

<\$5k Total cost of attack

\$0 Ransom paid

0% Data loss

thanks.

Different is better

