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

**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

**Key Workloads/Use Cases**

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

**DE SERIES**

Lenovo Performance Block

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

Protocols: FC, iSCSI, SAS

**Key Workloads/Use Cases**

- Database / Analytics
- Backup and archive
- HPC / AI
- Video Surveillance
Lenovo Data Management Portfolio

Lenovo TruScale
Infrastructure as a Service

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
Unstructured Data

Lenovo TruScale Backup as a Service with Veeam

Services, support & financial modeling
Design | Implementation | Support
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: 62% lower power consumption and 60% lower OPEX.

- **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.

Transition to new model from the existing D3284 (Shipped 2017) to the new 4U90 (Shipping 2023), maintaining 6.7PB data capacity.

* Footnote in speaker notes
ThinkSystem DM Systems 9.12 Software Release

The latest DM Series SW release delivers advanced innovations that reduce the threats from cyber attacks and increase 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 efficiency
  - 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

**Scale**
Grow with your needs
Non-disruptive scaling
Linear scaling of throughput
Single, global namespace
Tier & backup to public or private cloud

**Support**
Consistent Enterprise Level Support
Available in +150 countries

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

---

**Cloudian 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

ThinkAgile
HCI
VM Backup

ThinkSystem
3-tier
VM Backup

ThinkSystem
DM Series
NAS Backup

ThinkSystem
Server
Agent Backup

ThinkSystem
Server
Physical Windows / Linux / SAP / Oracle

Database Plugin Backup

Veeam Backup & Replication

Lenovo

DE Series
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

With Veeam + Lenovo

<5k Total cost of attack
$0 Ransom paid
0% Data loss

Veeam 2021 Ransomware Respective Report
thanks.

Different is better