

**Smarter technology for all**

# **Lenovo agile infrastructure for next-gen workloads**

**Grigory Pryalukhin**  
Senior Business Development Manager | Lenovo ISG

**Lenovo**





# Made in Europe for Europe

- Lenovo delivers customized solutions in the heart of Europe from our manufacturing plant in Ullo, Hungary.
- Our Ullo plant shipped one million workstations & servers in its first year, enabling deeper collaboration, transparency, and understanding with Lenovo customers across the EMEA region.





## A collage of various electronic devices, including laptops, desktop monitors, smartphones, and tablets, arranged in a circular pattern. The devices are shown in different orientations and colors, set against a dark background. The collage includes a large desktop monitor displaying a colorful abstract image, a laptop showing a video call interface, a smartphone with a blue screen, a tablet with a red screen, and a desktop tower unit. Other devices include a laptop with a game on the screen, a laptop with a colorful abstract image, a smartphone with a red screen, a tablet with a blue screen, and a desktop monitor displaying a colorful abstract image. The devices are arranged in a circular pattern, with some overlapping others. The background is dark, and the devices are shown in various colors and orientations.

Lenovo  
**ThinkReality**

Lenovo  
**ThinkSmart**

Lenovo  
**ThinkBook**

Lenovo  
**ThinkStation**

Lenovo  
**ThinkVision**

Lenovo  
**ThinkPad**

Lenovo  
**ThinkPad X1**

Lenovo  
**ThinkShield**

**ThinkPhone**  
by motorola

Lenovo  
**YOGA**

 **motorola**

Lenovo  
**LEGION**



# Global footprint and supply chain security

**#1** Asia/Pacific Supply Chain Top 10  
Gartner

**#3** High Tech Supply Chain  
Gartner

**#8** Global Supply Chain  
Gartner

Lenovo  
Zero Trust Supply Chain

Lenovo  
Trusted Supplier Program

**ISO 9001:2015**  
Certified

**30+** Manufacturing sites  
**180** Markets

**Secure**  
Facilities & shipping

- Research center
- Manufacturing
- Company location



# Our Commitment: investing in EECA markets

**10  
Markets**



**200+  
Covered  
Customers**

**30+  
ASP  
(Service  
Providers)**



**>\$1M**  
Investment in  
Premier Support  
with Local Stocks  
of Spare Parts



**#1 OEM for  
Nutanix**

**Local  
Professional  
Service  
Engineers**



**>100% YoY  
Growth**

**30+  
Gold & Platinum  
Partners**

# The AI revolution is radically changing the IT landscape



**\$225B**  
Software

**\$14B**  
Applications

**\$407B**  
by 2027<sup>3</sup>

**\$84B**  
Services

**\$15B**  
IT Services

**\$56B**  
Hardware

**\$49B**  
Servers

## AI Adoption

Enterprises in 2022 <sup>4</sup>

**42%**  
Exploring

**35%**  
Using

## Global Datasphere

~ 90%  
of world's data  
generated in the  
last two years <sup>2</sup>

**64ZB** <sup>1</sup>  
2020

**120ZB** <sup>2</sup>  
2024

**180ZB** <sup>1</sup>  
2025



# Bring AI to the Data



**\$2.2B**

AI Investment  
Commitment



**#3**

Global AI  
Infrastructure  
Provider



**80**

AI Optimized  
Infrastructure  
Products



**4**

Global  
AI Innovation  
Centers



**165**

AI Solutions in  
AI Innovators  
Program



AIFI Refresh  
AIFI Build  
AIFI To-Go

Sybil Automotive

alwaysAI Smart Retail  
alwaysAI Smart Construction  
alwaysAI Smart Manufacturing  
alwaysAI Smart Venues

Patient Room of the future  
Operating room of the future  
Clinic of the future  
Command Center of the future  
Assisted Living Facility of the future

Aupera VMSS for Retail  
Aupera VMSS for Smart Cities  
Aupera VMSS for Manufacturing

AI Services

Bikal AI Platform  
Bikal AI Security  
Bikal AI Services

CFD Suit  
Cognitive Services Suit (Manufacturing)  
Cognitive Services Suit (Automotive)  
Cognitive Services Suit (QSR)

C2RO Entera for Manufacturing  
C2RO Entera for Retail / Mall  
C2RO Entera for Smart City

Chooch AI Vision Platform  
Chooch Image Chat

Coright Fortify  
Coright RESTful API

cnvrg.io platform

Deci AutoNAC

Dataloop Data Management Platform  
Dataloop LIDAR  
Dataloop Automation Platform

EAGLE Automated Vehicle Access Control (AVAC)  
EAGLE Access Control Solution for Visitors  
EAGLE Density Analytics  
EAGLE Thermography Monitoring Solution

Evercheck Visual AI Platform  
Everdoor Visual AI Platform  
Evershelf Visual AI Platform

Supersonic  
Eyecue  
Digital Menu Boards

FedML AI App Ecosystem  
FedML Open source  
FedML Octopus  
FedML Parrot  
FedML Beehive  
FedML Spider  
FedML Cheetah

LabVista  
UrbanVision  
siteinsights  
Vista Mart  
Vista Karma  
G-Safe

Automated Intelligent Drive-Through Assistant (AIDA)  
Analytics Dashboard  
Conversational AI Core Engine

Infinia ML Document Processing

DeepChain  
DeepPack  
DeepPCB

Industrial Metaverse  
Retail Metaverse

NR1 NAPU  
NR1 M  
NR1 S

IBM Maximo Asset Management  
IBM Maximo Predictive Maintenance  
IBM Maximo Remote Monitoring  
IBM Maximo Visual Inspection

NearbyOne AI Platform

Pathr.ai Spatial Intelligence Solution

SAS Viya  
SAS Anti Money Laundering  
SAS Fraud Detection  
SAS Customer Intelligence 360  
SAS Econometrics  
SAS Visual Forecasting

Signatrix Instore Analytics  
Signatrix Loss Prevention

Smartia MAIO  
Smartia Energy  
Smartia Predictive  
Smartia Services

Deming ROVR  
Deming RANGR  
Deming OVSERVIR  
HoverTouch Platform

StorMagic SvSAN

Sunlight HyperConverged Edge  
Sunlight NexCenter  
Sunlight NexVisor

BCMS Ventur  
BCMS Ventur X

StoreOS  
EasyOut  
EasyStock

Vistry AI Drivethru  
Vistry AI Kitchen  
Vistry AI Platform

Machine Listening Software

DataCaptor  
VisionCaptor  
VSBILITY Vector  
Retail Hardware Solutions

V7 Labs Labellig Platform

Video Surveillance as a Service AI Platform

Data Activation Platform  
Edge to Cloud  
Data Migrator

Vsphere  
Aria UI

WaitTime AI Platform

Robotics Process Automation  
Computer Vision  
Supervisory Control and Data Acquisition System (SCADA)  
Power Substation Automation (PSA)

>50  
AI Software Providers

>30k  
Channel partners

# Lenovo AI Innovators

## Partner Ecosystem

>165  
Enterprise AI Solutions

180  
Countries served

10

# Portfolio Overview - From Far Edge to Core

## Edge Client

				
<b>SE10/SE10-I</b>	<b>M90n-1</b>	<b>SE30</b>	<b>SE50</b>	<b>SE70</b>
				
-20°C to +60°C Intel ATOM Up to 32 GB RAM	0°C to +50°C Intel Celeron, i3 Up to 8GB RAM	-20°C to +60°C Core™ i3, i5 Up to 16GB RAM	0°C to +50°C Core™ i3, i5, i7 Up to 32GB RAM	-20°C to 60°C NVIDIA Jetson Up to 16GB RAM

## Edge Server

				
<b>SE350*</b>	<b>SE350V2</b>	<b>SE360V2</b>	<b>SE450</b>	<b>SE455 V3</b>
				
0°C to 55°C Xeon® D-2100 Up to 256GB RAM	0°C to 55°C Xeon® D-2700 Up to 256GB RAM	-20°C to 65°C Xeon® D-2700 Up to 256GB RAM	-5°C to 55°C Xeon® SP 3 <sup>rd</sup> Gen Up to 1TB RAM	-5°C to 55°C AMD EPYC 8004 Up to 576GB RAM

## Datacenter


<b>SR630, SR645</b>
 
0°C to 35°C

## Gateways

### Diverse Portfolio

From ultra compact gateways to data center grade products.

## Base Station / DC Closet

### Highest Performance

CPU & GPU rich systems for ultimate performance.

## Data Center

### Flexible Deployment

In harsh environments with ruggedized devices & unique cooling capabilities.



# Delivering tomorrow's oil & gas experience today with AI

## Lenovo AI Innovators

It provides certified AI solutions, and helps customers build up their own through our AI Discover Labs



- Behavior analysis
- Customer journey
- Front & back of Store analytics

GRAYMATICS

- Employee Safety and compliance
- Automated Security perimeters

Or build your own AI solutions with:



cnvrg.io



Lenovo  
**AI Discover**  
Center of Excellence

Lenovo  
**AI Discover**  
Launch Workshops



Adv. Multi-phase simulations

nybl.

- Well-Lifecycle
- Predictive Maintenance
- Reservoir Management

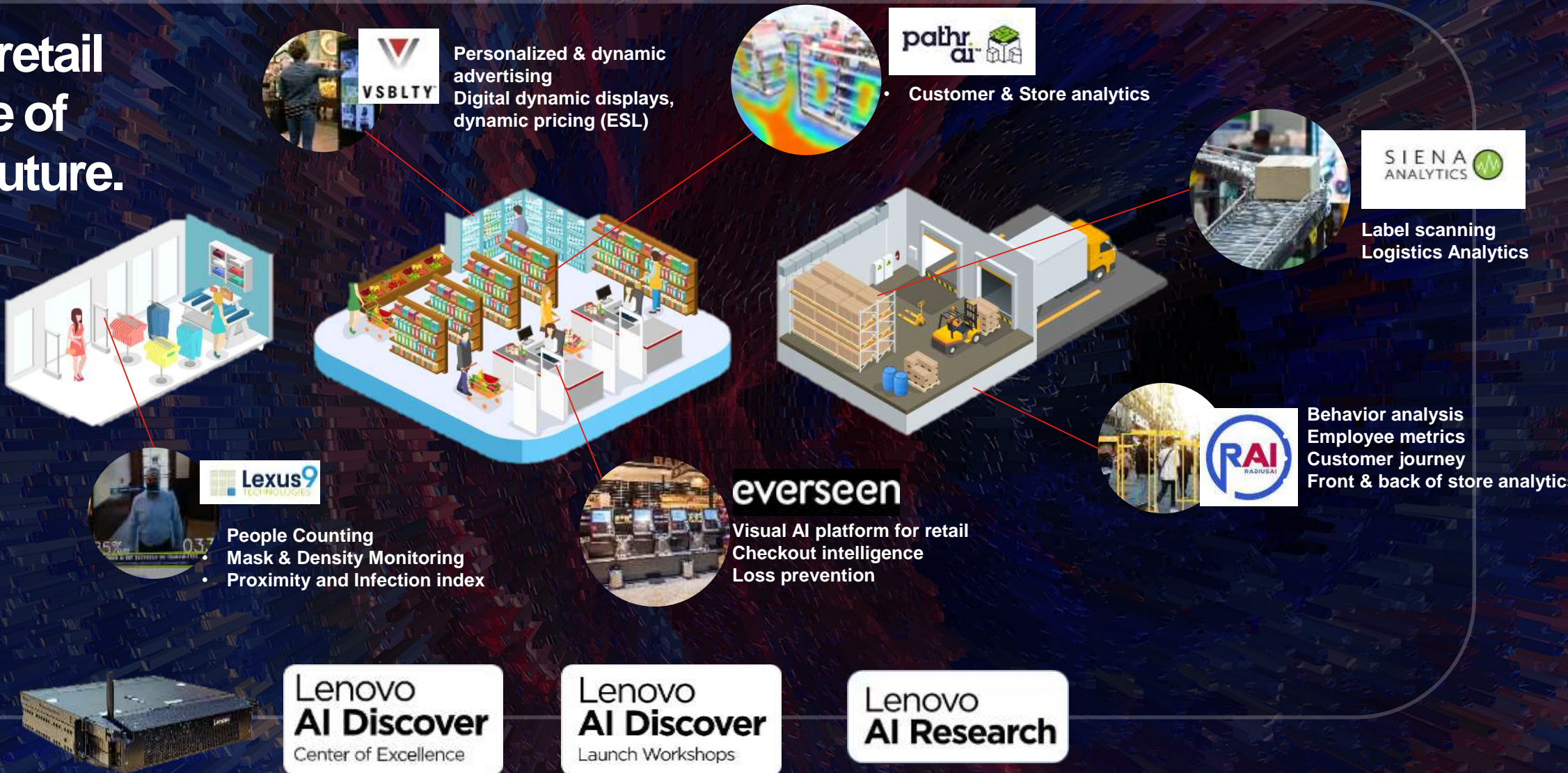
byte  
**LAKE**

- Automated Visual Inspection
- Comp. Fluid Dynamics
- Bespoke AI Solutions



# Delivering tomorrow's retail experience today with AI

The retail store of the future.





# Lenovo delivering tomorrow's Banking experience today with AI

## The Bank of the Future

- Data Security
- Video & Audio Recognition
- Fraud Prevention & Security

- AI Ready Servers
- Virtual Assistants
- Remote Conferencing
- Edge Computing

- CX Focused Transaction Zones
- Smart Devices for Customer Service

- Smart ATMs
- Assisted Online Banking
- Automation
- Digital Twins

**Lenovo  
AI Discover**  
Center of Excellence

**Lenovo  
AI Discover**  
Launch Workshops

**Lenovo  
AI Research**



# Lenovo Data Management and Storage History





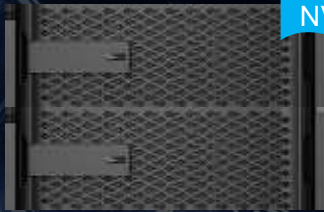
# ThinkSystem

Performance SAN



NVMe

DE Series



NVMe

DM Series

# ThinkSystem

Enterprise Unified



QLC

DG Series



NVMe

DM Series

# ThinkSystem

Data Infrastructure



Storage  
Networking



Tape Solutions



D Series

# ThinkSystem

Software Defined  
Storage (SDS) Solutions



DSS-G



WEKA



# ThinkSystem DE Flash & Hybrid Arrays

Workload focus: Databases, AI, analytics, backup and archive, media, video surveillance

## Performance

Best value for performance  
All-Flash NVMe Array up to 2M IOPS,  
44GB/s throughput

---

## Scalability

All-Flash scalability to 1.84PB. Hybrid scalability to  
8.64PB

---



## Reliability

Fully redundant, active-active  
architecture. Up to six nines availability.

---

## Data Protection

Simplified snapshots and asynchronous  
and synchronous replication

---

## Efficiency

Easy to configure, manage, and scale  
Improve the overall efficiency of your  
IT operations.

---

## Deployment Flexibility

iSCSI, Fibre Channel , NVMe/IB,  
NVMe/RoCE, and NVMe/FC

---



# ThinkSystem DE Series Storage Array Portfolio

All-Flash



DE4000F (2U24)



DE6000F (2U24)



DE6400F  
(2U24 NVMe)



DE6600F  
(2U24 NVMe)

Hybrid



DE2000H (2U24)



DE2000H (2U12)



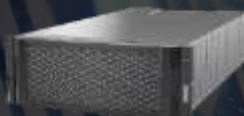
DE4000H (4U60)



DE4000H (2U24)



DE4000H (2U12)



DE6000H (4U60)



DE6000H (2U24)

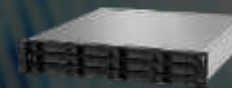


DE6400H  
(2U24 NMVE+SAS Expansion)



DE6600H  
(2U24 NMVE+SAS Expansion)

SAS Expansion



DE120S (2U12)



DE240S (2U24)



DE600 (4U60)



# ThinkSystem DM Flash & Hybrid Arrays

Workload focus: AI, analytics, virtualization, VDI, unstructured datasets, edge consolidation

## Performance

Superior all-flash performance with NVMe over TCP & Fibre Channel

---

## Efficiency

Unified file, block, and object storage for advanced data efficiency

---

## Scalability

All-flash scalability to 88.5PB. Hybrid scalability to 57PB

---



## Data Protection

Integrated ransomware protection and immutable snapshots and copies

---

## Reliability

Fully redundant, active-active architecture, synchronous replication (MetroCluster), and snapshots

---

## Hybrid Multi-Cloud

Integrated hybrid multi-cloud: Amazon, Azure, Google, and IBM

---



# ThinkSystem DM Series Storage Array Portfolio

All-Flash



Hybrid



DM Series Expansions



# ThinkSystem DG Arrays

Workload Focus: AI/ML and analytics, data lakes, media/rendering, backup consolidation

## Price/Performance

Up to 6x faster at 50% less cost\* with budget-friendly high-capacity all-flash QLC storage

---

## Scalability

Up to 17.6PB raw capacity in 24-node NAS cluster NAS and up to 8.8PB raw capacity in 12-node SAN cluster

---



## Sustainability

Delivering substantial power savings versus hybrid arrays, enabling workload consolidation to reduce rack space and datacenter footprint

---

## Security

Best-in-class data security and ransomware protection

---

\*Internal calculations comparing Lenovo ThinkSystem DG Enterprise Storage Arrays to previous generation hybrid models (June 2023).



# Customers want to transform from hybrid to all flash

But price is often a limiting factor

## Hybrid Flash



DM7100H



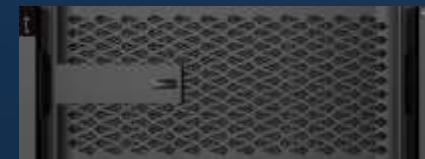
DM5000H



DM3000H

5–10ms latency, \$'s

## Performance Flash



DM7100F



DM5100F



DM5000F

Sub-ms latency, \$\$\$'s

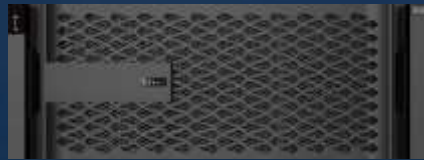




# ThinkSystem DG Series: Accelerate All-Flash Transformation

Workload Focus: AI/ML and analytics, data lakes, media/rendering, storage consolidation

## Hybrid Flash



DM7100H



DM5000H



DM3000H

## Capacity Flash



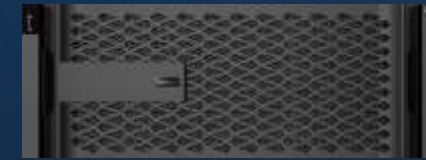
DG7000



DG5000



## Performance Flash



DM7100F



DM5100F



DM5000F

5–10ms latency, \$'s

2–4ms latency, \$\$'s

Sub-ms latency, \$\$\$'s



# ThinkSystem DG Series: TCO & Sustainability

Reduce up to 80% of rack space with high-density capacity flash



Hybrid Flash Array



ThinkSystem DG5000

\*Based on internal testing results. Lenovo ThinkSystem DG5000 vs. previous generation hybrid array, August 2023



# ThinkSystem DG Series Storage

## Business Benefits



Up to 6x faster at 50% less cost compared to HDD arrays



Reduce rack space and achieve better energy efficiency compared to traditional HDD arrays



Keep data available, protected, and secured with Lenovo Unified Complete



Manage data on-premises or in the cloud



DG is performance optimized and rapidly scalable to meet the demands of the tuning and inference stages in Enterprise AI LLMs





# DM/DG Series is born Feature Rich

Protocols	Efficiency	Anti-ransomware	Data protection	Tenancy and scale
<ul style="list-style-type: none"><li>• NAS / File<ul style="list-style-type: none"><li>• NFS</li><li>• SMB</li></ul></li><li>• SAN / Block<ul style="list-style-type: none"><li>• FC</li><li>• iSCSI</li><li>• NVMe/FC</li><li>• NVMe/TCP</li></ul></li><li>• Object (S3)</li></ul>	<ul style="list-style-type: none"><li>• Leading raw-to-usable</li><li>• Deduplication, compression, compaction</li><li>• Thin provisioning</li><li>• Data tiering to hybrid, object, or cloud</li></ul>	<ul style="list-style-type: none"><li>• Near-real-time detection</li><li>• Tamper-proof Snapshot recovery</li><li>• Multi-admin verification</li><li>• Blocking of known malicious files</li></ul>	<ul style="list-style-type: none"><li>• App-integrated backup</li><li>• Business continuity</li><li>• Sync/async disaster recovery</li><li>• Snapshot</li><li>• Clones</li><li>• Immutable</li></ul>	<ul style="list-style-type: none"><li>• Multitenancy</li><li>• QoS</li><li>• Clusterwide scaling</li></ul>

## ONTAP Data management software

Delivering automation, efficiency, data protection, and security capabilities for file, block, and object





# At-a-Glance: DG Series

All-flash, high-capacity flash storage systems

## Sustainable

- Outstanding price/performance
- Leading raw-to-effective data efficiency
- Tier to hybrid flash or cloud
- Better energy efficiency

## Secure

- Ransomware protection
- Business continuity, disaster recovery
- Application-integrated backup and recovery

## Scalable

- Entry capacity aligned with needs
- Clustered scalability
- Connect to performance flash or hybrid flash

## Cloud-connected

- Disaster recovery to cloud
- Back up to cloud
- Tier to cloud



Form factor: 2U/4U (+2U Expansions)

Max drive count:

DM7000: 96x 30TB SSD = 2.94PB Raw

DG5000: 48x 30TB SSD = 1.47PB Raw

Storage Protocol support:

NAS (File): NFS, CIFS/SMB

SAN (Block): iSCSI, FC, NVMeoF (FC & TCP)

OBJECT: S3



# Lenovo Software Defined Storage (SDS) Portfolio

## High Performance File Solution (HPFS) powered by WEKA

- High-performance, large-scale workloads
- AI/Analytics, Finance High-frequency Training, Genomics/Life Science, Media & Entertainment

Increase  
productivity  
up to

**90%**

Improvement in deep  
learning time

Improve  
resource ROI

**75%**

Reduction in workload  
wall clock time

Lower  
storage costs

**65%**

Savings over traditional high-  
performance computing



## Object Storage Solution powered by Clodian

- Capacity-intensive enterprise workloads
- Backup/Archive, Video/Images, Healthcare/Life Sciences, Research, IoT, Video Surveillance, Data Lakes

Lower  
Storage costs

**70%**

Compared to traditional  
storage systems

Reduce primary  
backup tier cost  
up to

**40%**

Superior RTO/RPO for fast  
restore times

Reduce TCO  
by

**33%**

Compared to legacy storage  
systems

**ThinkSystem**





# Lenovo ThinkSystem Ready Nodes for HS350X V3

Workload focus: Object and scale-out file, backup and recovery, Big data analytics, multimedia streaming, surveillance, AI/data lakes, data observability, video capture/retrieval, and content delivery networks

## Optimized Infrastructure

Single-socket storage server built for maximum capacity.

---

## Powerful Efficiency

Supports the latest Intel Xeon Scalable processor family for maximum efficiency and peak computational resources.

---



## Maximum Density

Supports 24 3.5" hard drives in a 2U form factor (8 drives per tray).

---

## Hybrid Cloud-ready

Scalable, efficient, and cost-effective infrastructure for your on-premises or cloud workloads.

---

## Reliable

Lenovo continues to lead the industry in best uptime among all x86 platforms.\*

---

## Innovative Design

The three-tray design allows users to access the hot-swap drives without powering off the system.

---



# Lenovo SAN Storage Solutions



## ThinkSystem Storage

- Simplified data management
- Entry to High performance block
- Flash and Hybrid models
- Easy to configure, manage, and scale.

ThinkSystem Fibre Channel HBA and SAN support 32 Gb/s, NVMe, and now Autonomous.



Lenovo Servers &  
Emulex FC HBAs

Brocade  
**GEN6**  
FIBRE CHANNEL



DB610S



DB620S



DB630S

Brocade  
**GEN7**  
FIBRE CHANNEL



DB720S



DB730S



Directors



# Lenovo Data Management

Multi-Workload  
Enterprise Storage

Performance Tuned Storage  
Single-Workload Exa-scale

**Tier 0**

- RPO 0, RTO 0, Sync Replication
- Low Latency
- High IOPS
- NVMe
- Application Integration for Snapshots

**Tier 1**

- Integrated Workflow Automation
- Snapshots Thin provisioning
- Data Efficiency (Compression, Compaction, Deduplication)
- Adaptive Quality of Service
- Application Based Balanced placement (Performance)
- Local Storage Caching

**Tier 2**

- Scale out Storage Clusters
- High Throughput
- Dynamic capacity expansion
- Remote Storage Caching
- Asynchronous replication
- Backup Software Integration

**Tier 3**

- S3 Object Storage Integration w/ Cloud
- Encryption & Trusted Platform Module (TPM) support
- WORM (Write Once Read Many) Data protection
- AWS, Google, Azure Integration and other Cloud Providers
- Dual Parity RAID Protection, Enhanced Parity (Erasure Coding, etc.)
- Ransomware Protection

ThinkSystem  
**DM\DG Series**

ThinkSystem  
**DE Series**

ThinkAgile  
**VX HX MX**

ThinkSystem  
**Tape**

Lenovo  
**DSS-G**

ThinkSystem  
**WEKA**

ThinkSystem  
**CLOUDIAN**

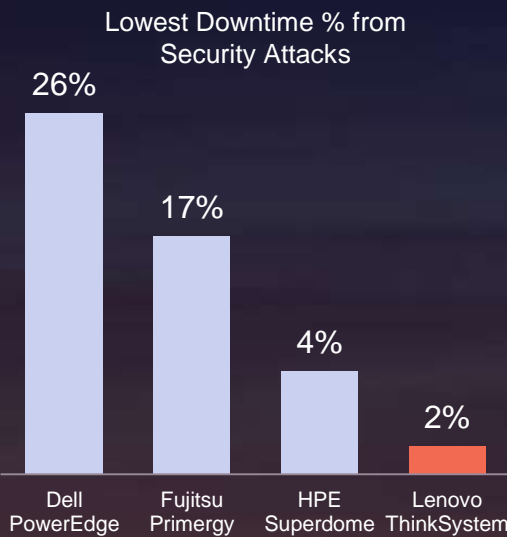
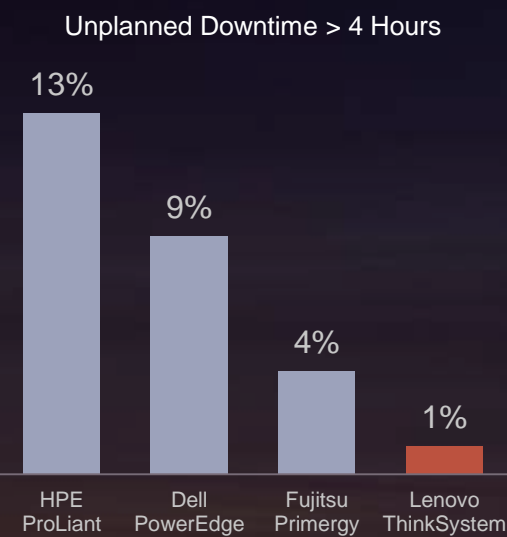
Millions of IOPS  
100's Gbps of throughput  
nVidia GPU Direct  
Snapshots & Cloning

Cloud Bursting  
Snap to S3  
WORM protection  
10's Gbps of throughput

Encryption  
Data Immutability

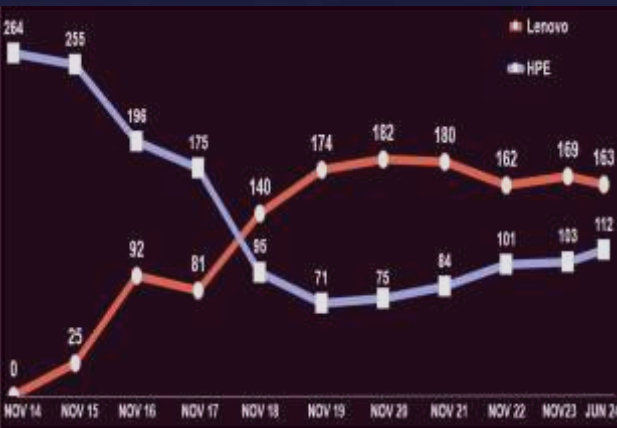


# ISG Server Leadership



**588**  
Current World  
Record Workloads

>6x as many #1 Results



**#1**

x86 Server Reliability for  
10 Consecutive Years

**#1**

x86 Security for  
5 Consecutive Years

**#1**

Current World Record  
Performance Workloads

**#1**

Top 500 Supercomputers  
for 6 Consecutive Years

Source: ITIC (Mar 2024), Benchmark Report (July 2024) & Top500.org (June 2024)





# #1 Server Reliability

**ITIC, March 2024**

(Information Technology Intelligence Consulting Corp.)



Note: 'To maintain objectivity, ITIC accepted no vendor sponsorship'\*

**'Lenovo's ThinkSystem servers provide the best reliability among all x86 servers for the 10th consecutive year and best x86 server security for the last five years'\***

**'averaging between six nines or 31.5 seconds of per server unplanned annual downtime and seven nines or 3.15 seconds of unanticipated per server yearly downtime'\***

\*Source: [ITIC 2023 Global Server Hardware, Server OS Reliability Report](#)





We've  
achieved  
**>6X**  
as many  
current  
#1 world  
records as  
any other  
server vendor

**588** World records in workload performance

**248**

World records  
set by servers running  
2nd 3rd and 4th Gen  
AMD EPYC™

**340**

World records  
set by servers with Intel®  
Xeon® Scalable  
Processors

**71**

World records  
set by servers with 4<sup>th</sup>  
and 5<sup>th</sup> Generation Intel®  
Xeon® Scalable  
Processors

**184**

World records  
set by servers with 3<sup>rd</sup>  
Generation Intel® Xeon®  
Scalable Processors

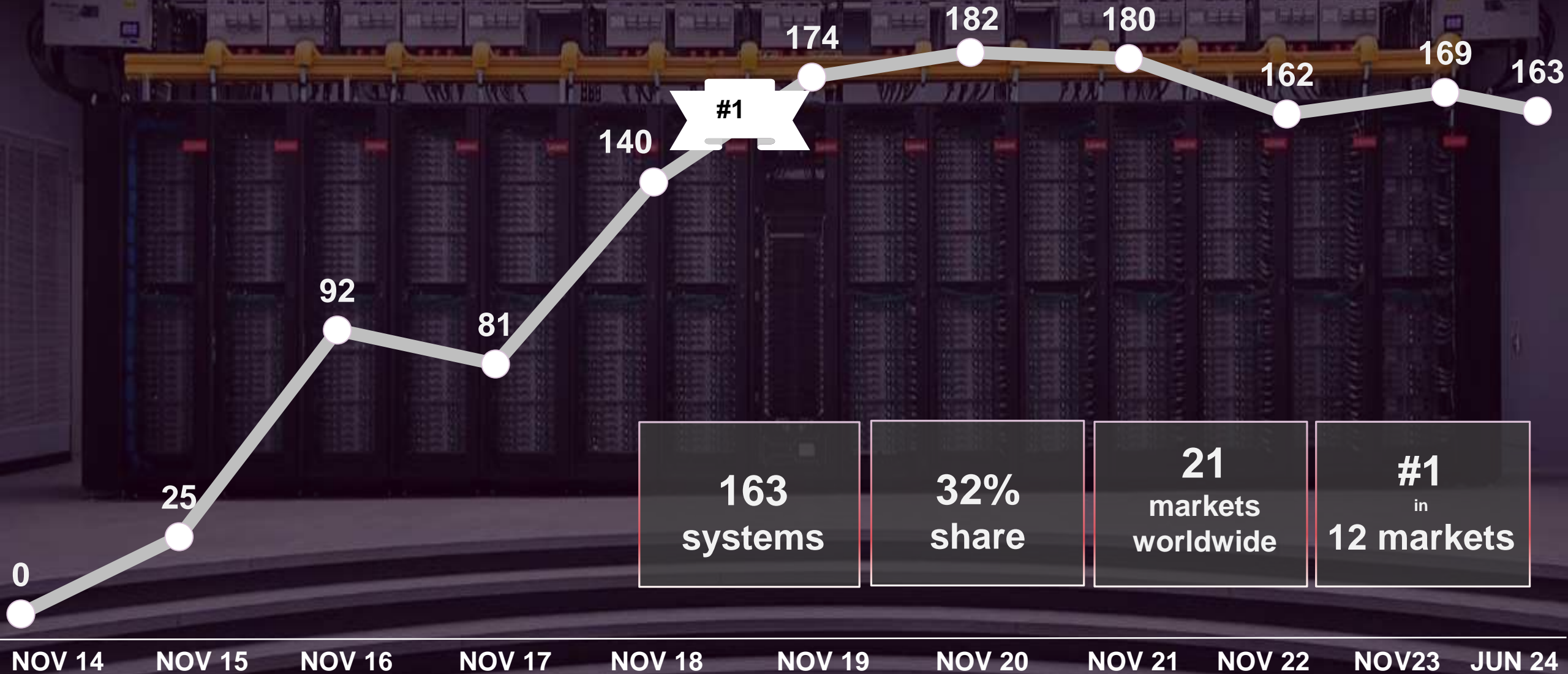
**85**

World records  
set by servers using 1<sup>st</sup>  
and 2<sup>nd</sup> Generation Intel®  
Xeon® Scalable  
Processors



# #1 Provider of Supercomputers in the world

1 in 3 run on Lenovo HPC



Based on count of listing on the TOP500.org June 2024 list.




# Lenovo ThinkSystem Server Portfolio


Comprehensive compute capabilities from the edge to the enterprise


ThinkSystem


ST series


Powered by Intel®


  
ST650 V3

  
ST650 V2

  
ST250 V2

  
ST50 V2

  
ST250 V2

  
ST550


ThinkSystem


SR series


1U


2U


Powered by AMD


  
SR645 V3

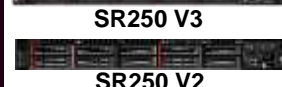
  
SR635 V3


  
SR645


  
SR635


  
SR630 V3


  
SR630 V2

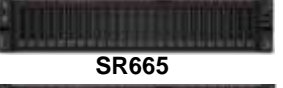
  
SR250 V3


  
SR250 V2


  
SR250


  
SR665 V3


  
SR655 V3

  
SR665

  
SR655

  
SR650 V3

  
SR650 V2

  
HS350X V3


Powered by Intel®


ThinkSystem


Modular


SD series (Multi-Node)


Powered by Intel®

  
SD530  
2U 4N

  
SD630 V2  
2U 4N


  
SD550 V3  
2S2U


  
SD530 V3  
2S1U


  
SD535 V3  
1S1U


Powered by AMD


ThinkEdge


  
SE10


  
SE350 V2


  
SE30


  
SE350

  
SE360 V2

  
SE50

  
SE450


  
SE455 V3

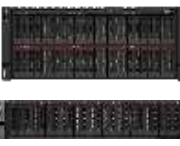
  
SE70


ThinkSystem


Mission Critical

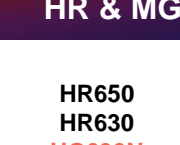
Powered by Intel®

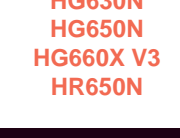
  
SR950 V3  
8 CPUs

  
SR860 V3  
4U up to 4 CPUs

  
SR850 V3  
2U up to 4 CPUs

  
SR950  
4U up to 8 CPUs

  
SR860 V2  
4U up to 4 CPUs

  
SR850 V2  
2U up to 4 CPUs

HR & MGX Systems

HR650


HR630

HG630N

HG650N

HG660X V3

HR650N





ThinkSystem


Segment Optimized

8GPU AI Servers

AMD & Intel®


  
SR680a V3


  
SR685a V3

  
SR780a V3

HPC/AI Optimized

AMD & Intel®

  
SR670 V2 (GPU Rich),  
SR675 V3 (GPU Rich),  
Closed loop liquid option)

  
SD650 V3, SD650-I V3,  
SD665 V3,  
Liquid Cooled:  
SD650-N V3 SD665-N V3

37



New Lenovo ThinkSystem V3 Servers deliver smarter infrastructure solutions ideal for mission-critical, HPC, and cloud-based containerized workloads.



**Most Efficient Servers**

**Fastest SAP Platform**



**World's Highest Performance System**



**World's Most Reliable X86**

**World's Most Secure X86**

**60%**

More VDI Users

**2x**

VM per System

**3.2x**

Performance Increase  
Per Rack

**2x**

AI Modeling



# 1S/2S Rack Servers



## Flexible

- Open architecture servers
- Highly versatile storage
- Multiple GPU support
- Wide selection of I/O cards
- As-a service options

## Reliable

- Industry's most-reliable x86 server for 10 years in a row\*
- Easy to deploy, update and service

## Secure

- #1 Ranking for security\*\*
- First Tier 1 manufacturer to offer Intel Transparent Supply Chain (TSC)\*\*\*



# 1S/2S Tower Servers



## Flexible

- Open architecture servers
- Highly versatile storage
- Flexible support with PCIe Gen4 and Gen5 adapters
- As-a service options

## Reliable

- Industry's most-reliable x86 server for 10 years in a row\*
- ST650 V2 rated by CRN as Product of the Year for 2022\*\*
- Easy to deploy, update and service

## Secure

- #1 Ranking for security\*\*\*
- First Tier 1 manufacturer to offer Intel Transparent Supply Chain (TSC)\*\*\*\*



# Mission Critical Servers



## Performance

- The latest Intel Xeon CPUs
- Ultra-fast DDR5 memory
- Direct NVMe connectivity speeds database response times
- Pre-validated solutions for system stability and reliability

## Agility

- Next-gen workload ready - AI/ML, 3D modeling, and GPU intensive
- Versatile storage and I/O configuration options
- Flexibility to manage multiple workloads on one server

## Scalable

- Highly scalable, reliable, and secure servers that can be configured with two, four, or eight processors
- Versatile storage and I/O configuration options



# High-performance Data Center Infrastructure Solutions optimized for AI

## ML and DL Analytics



- SR850 V3 Intel
- SR860 V3 Intel
- SR650 V2 Intel
- SR650 V3 Intel
- SR655 AMD
- SR655 V3 AMD
- SR665 AMD
- SR665 V3 AMD

## AI Model Training



- ST650 V2 Intel
- ST650 V3 Intel
- SR670 V2 4x PCIe Intel
- SR670 V2 Intel
- SR670 V2 8x PCIe Intel



- SR670 V2 4-GPU HGX Intel
- SR675 V3 4x PCIe AMD
- SR675 V3 8x PCIe AMD
- SR675 V3 4-GPU HGX AMD

**NEW SR680a V3 8 GPU Intel**  
**NEW SR780a V3 5U 8 GPU Intel**  
**NEW SR685a V3 8 GPU AMD**

## Liquid-Cooling Training



- SD650-N V2 Intel
- SD650-I V3 Intel
- SD665-N V3 AMD

**NEW SR780a V3 8 GPU**

Lenovo leverages  
best-in-class  
technologies

ThinkSystem NVIDIA  
H100, H200, L40S GPUs

NVIDIA  
NVLink

AMD Instinct™ MI210  
and MI300X GPU

Intel GPUs



# AI-optimized Servers for Data Centers

- ✓ Introducing two 8U, 2-socket servers with 8 GPUs and high-speed interconnects
- ✓ Highly accelerated systems delivering massive computational capability to handle data and compute-demanding AI and HPC workloads
- ✓ Offering flexible choices in CPUs (Intel or AMD) and GPUs (AMD, NVIDIA) on the industry-leading ThinkSystem platform – secure, reliable, and performant
- ✓ Uses industry-standard 19-inch server racks
- ✓ Includes XClarity Systems Management plus a choice of AI Software Stack
- ✓ Supported by world-class engineering, industry-leading supply chain, in-house manufacturing, and worldwide services

ThinkSystem SR680a V3  
ThinkSystem SR685a V3



Ideal for Model development, training,  
and retraining, machine learning, deep  
learning, LLMs, HPC simulations



# Introducing ThinkSystem SR680a V3

An 8U, two-socket system optimized for massive computational performance with Intel processors and choice of GPUs



## Ideal for both AI and HPC

- AI Workloads: Model development, training and retraining, Machine Learning, Deep Learning, LLMs
- HPC workloads: Modeling and simulation, rendering, financial tech, scientific research

## Performance

- Supports 5<sup>th</sup> generation of Intel® Xeon® Scalable Processors
- Maximum GPU Performance with NVIDIA, and AMD's latest GPUs & accelerators
- Fastest transfer rate with NVIDIA NVLink and AMD's Infinity Fabric

## Flexible

- Support for AMD MI300X, NVIDIA H100/H200 and future GPUs
- Sufficient Thermal Headroom for future higher-power GPUs

## Ease of Deployment

- Lenovo XClarity System Management software improves the efficiency of your infrastructure deployment
- Fits into industry-standard 19-inch racks



# Introducing ThinkSystem SR685a V3

A 2-socket, 8U system workload optimized for performance with AMD processors and GPUs



## Ideal for both AI and HPC

- Industries: Financial services, healthcare, energy, climate science, and transportation
- AI Workloads: Model development, training and retraining, Machine Learning, Deep Learning, LLMs
- HPC workloads: Modeling and simulation, rendering, financial tech, scientific research

## Performance

- Industry-leading 4th Gen AMD EPYC™ processors
- Maximum GPU Performance w/ AMD Instinct™ MI300x
- Interconnects for an ultra-fast transfer rate with AMD Infinity Fabric™ at 800GB/sec

## Flexible

- Support for AMD MI300X, NVIDIA H100 / H200/B100 GPUs
- Drop-in upgrade to AMD next-gen processor
- Easy to manage and simplified deployment with Lenovo XClarity System Management Software
- Fits into industry-standard 19-inch racks

## Advanced Thermals

- Designed with additional thermal headroom to accommodate future, high powered, GPUs
- Advanced Air-Cooled Design



# Lenovo Liquid Cooling Technologies

A leader in innovative technology pioneering liquid cooling for the enterprise

## Direct Water Cooling

- Warm water cooling inside the server
- Higher performance than air-cooled servers
- Up to 40% reduction in power costs

## Smart Control Software

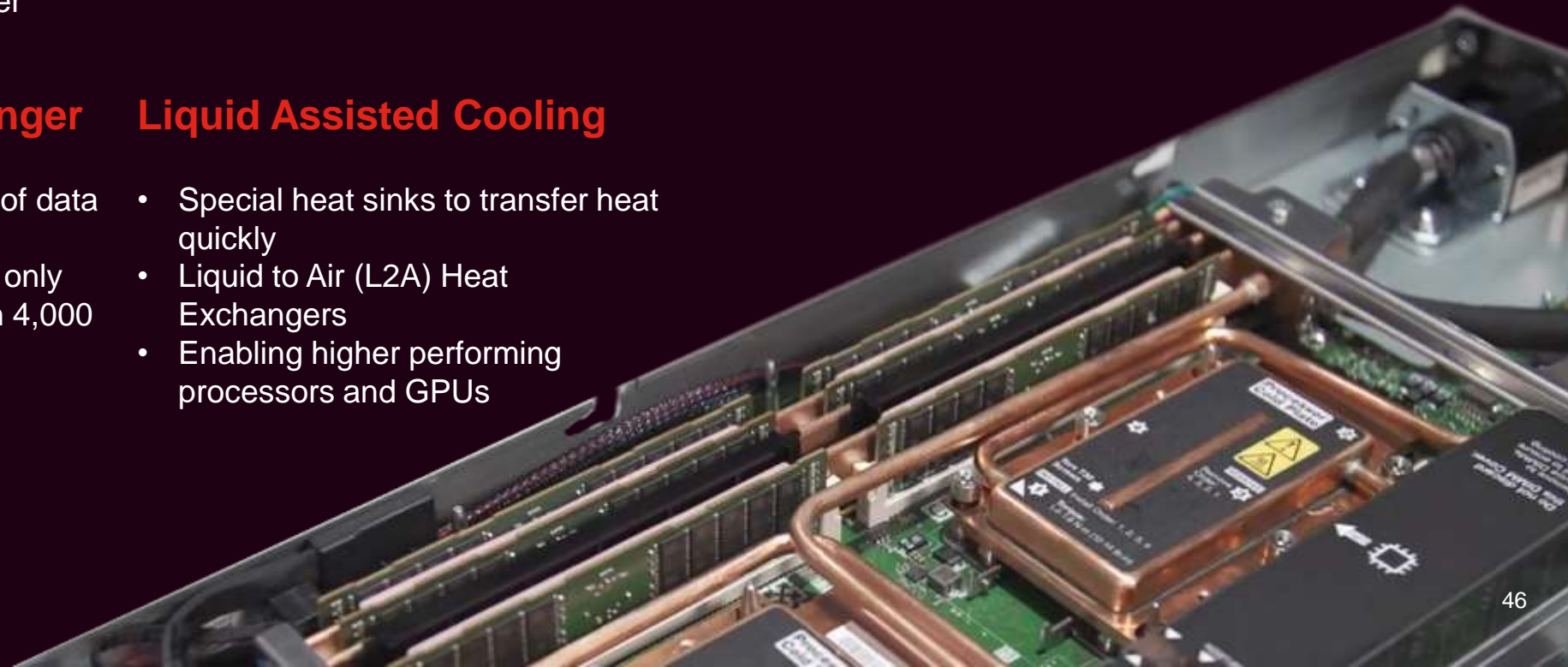
- Minimizes power consumption for each workload using software

## Rear Door Heat Exchanger

- Rack option takes heat out of data center in chilled water
- 3.5X more efficient than air only
- Saves enough power to run 4,000 LED bulbs

## Liquid Assisted Cooling

- Special heat sinks to transfer heat quickly
- Liquid to Air (L2A) Heat Exchangers
- Enabling higher performing processors and GPUs



# Sustainable Data Center Solutions

## Lenovo Energy- Efficient Technologies

### Energy Management Tooling *Measure, manage, optimize power*

#### xClarity Energy Manager (LXEM)



#### Energy Aware Runtime (EAR)



### Efficient Component Selection *Same work, less power*

#### Titanium Power Supplies



#### Idle Power State Controls

Dynamically  
optimize the  
frequency and  
power control

#### Low Loss Materials



## Liquid-Cooling with Lenovo Neptune™

### Heat Mitigation Innovation *Lower fan speed, less power*

#### Liquid to Air Exchanger (L2A)



#### Thermal Transfer Module (TTM)



### Liquid Cooling

*Rethink how cooling gets done*

#### Rear Door Heat Exchanger



#### Direct Liquid Cooled Systems



Neptune™



# New Compute Intensive Portfolio

## ThinkSystem SD520 V4



The ThinkSystem SD520 V4 is a 1U, half-width server powered by Intel® Xeon® 6 maximizes rack density and efficiency for compute-intense, transactional data.

- 1x Intel® Xeon® 6 processor with up to 144 cores
- Up to 1x CPU up to 350W
- Up to 6x 2.5" or 2x E3.S 1TB drives - max storage of 92TB
- Supports 1x 75W GPU
- Up to 8x TruDDR5 RDIMMs up to 1TB
- Supports CXL 2.0 memory expansion
- 2x Gen 5 slots (1x PCIe and 1x OCP 3.0)
- SW RAID (VROC) with both Simple Swap & Hot Swap configs
- Optional Neptune® open-loop liquid-cooling

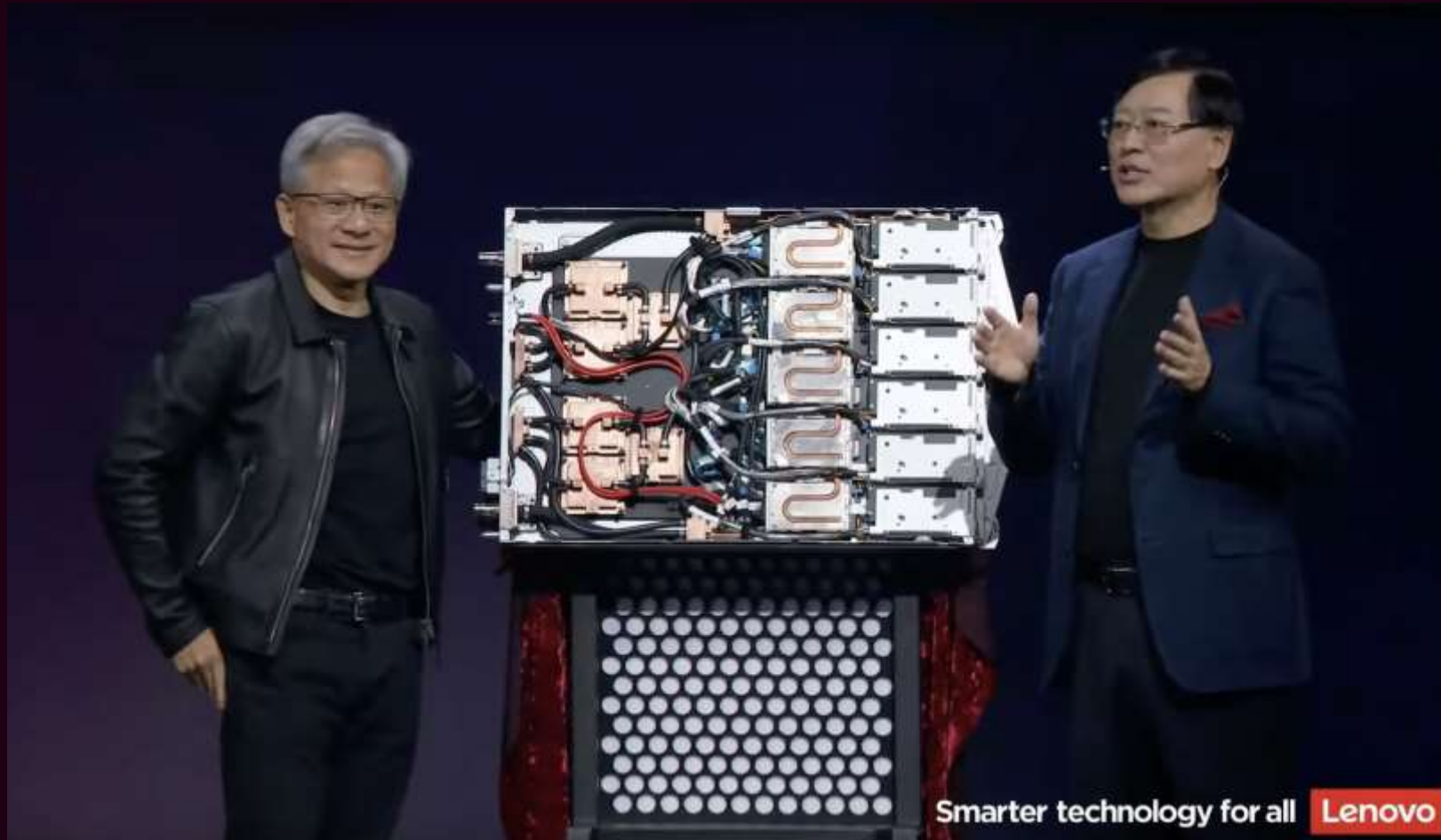
## ThinkSystem SR630 V4



The SR630 V4 with the Intel® Xeon® 6 processors provides speed, reliability, and efficiency to maximize performance for versatile workloads.

- Up to 2x Intel® Xeon® 6 processors up to 288 cores
- Up to 32x TruDDR5 6400MHz memory up to 8TB
- Up to 12x low latency NVMe SSD high performance storage - 737TB max
- Support 16x EDSFF E3.S NVMe drives
- Supports CXL 2.0 memory expansion
- Maximum 5x PCIe Gen5 slots + 2x OCP 3.0 for I/O flexibility
- Up to 3x 75W GPUs for graphics-intensive workloads
- Optional Neptune® liquid-to-air or open-loop cooling technology

# Lenovo Tech World'24 - ThinkSystem SC777 with NVIDIA Blackwell

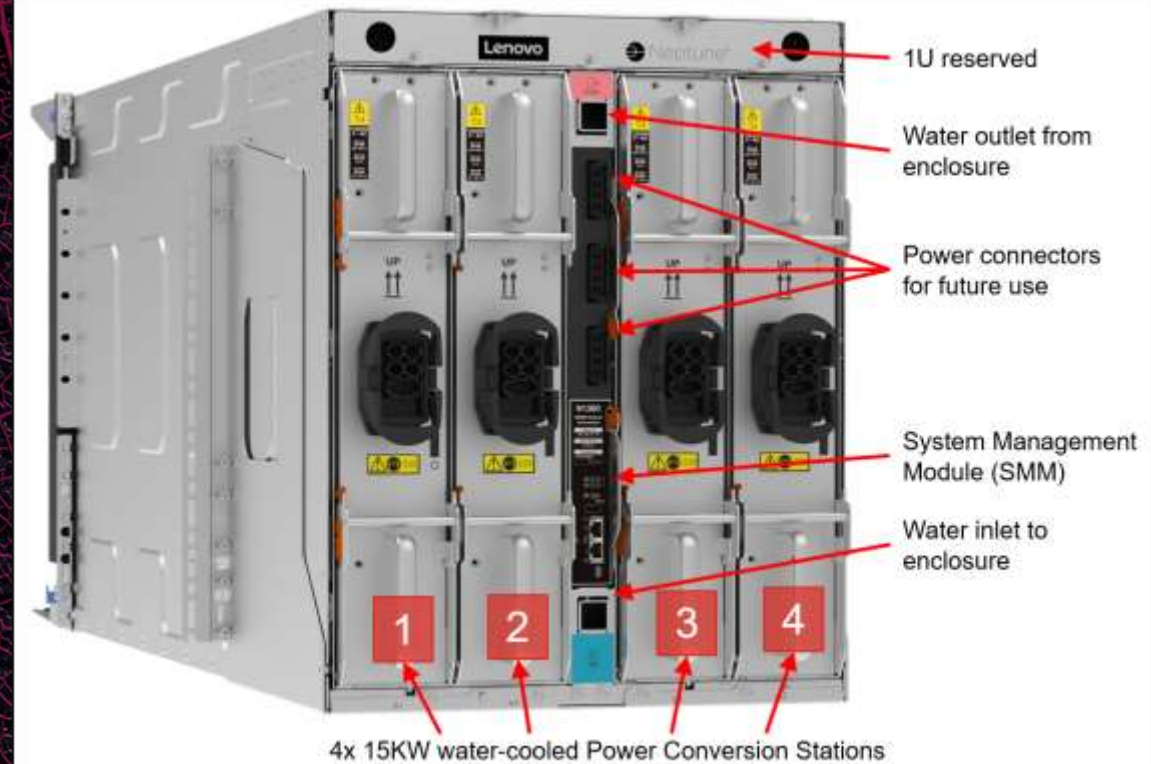




# ThinkSystem SC750 V4 Neptune

ThinkSystem N1380 Neptune

8 trays (16 servers)  
in a 13U enclosure:  
32 processors





# Lenovo ThinkAgile HCI Portfolio

Engineered and validated designs for confident deployment



## ThinkAgile V3 MX and SX Series



- Integrated Appliance with Premier Support
- Integrated Microsoft or Azure Stack with Arc
- Hybrid cloud for Azure with VDI and Microsoft SQL optimization
- Rack scale solutions



## ThinkAgile V3 HX Series



- Integrated Appliance with Premier Support
- Integrated Nutanix Stack
- Datacenter and Edge solutions
- VDI Solutions, SAP HANA, Oracle, and SQL



## ThinkAgile V3 VX Series



- Integrated Appliance with Premier Support
- Integrated VMware Stack
- Datacenter and Edge solutions
- VDI Solutions, SAP HANA, Kubernetes, and VCF



# Lenovo Management & Automation Software



Centralized systems management suite to monitor, manage and automate Lenovo's infrastructure



An automated platform to deploy, optimize and manage cloud infrastructure (bare metal servers, containers, VMs).



Lenovo intelligent computing orchestration (LiCO) brings several open-source components into a single GUI to make the access of computing resources easier for AI development and training and HPC cluster management

# XClarity Software Suite

Cloud automation  
and IT service  
management  
processes

4

**Lenovo**

**XClarity Integrators**

- Integration into leading virtualization management consoles and IT service management tools
- VMware, Microsoft, Cloudforms, Chef, Puppet, ServiceNow, MSFT WAC

Innovative  
Centralized  
Management

3

**Lenovo**

**XClarity Orchestrator**

**Lenovo**

**XClarity Administrator**

- Centralized software-based delivery and management for ThinkSystem servers, storage, and networking
- Mobile app for anywhere management
- REST APIs for ease of integration into software-defined environments

Platform  
Management Tools

2

**Lenovo**

**XClarity Essentials**

- Collection of one-to-one management tools
- Scripting tools
- Bootable Media Creator

Embedded Platform  
Management

1

**Lenovo**

**XClarity Controller**

- Embedded management engine common in all ThinkSystem servers
- Fresh, uncluttered graphical user interface
- Redfish-compliant web-based REST APIs for ease of inter-operability



# VMware by Broadcom Updates – New Bundles

## Previous Products

vSphere Enterprise Plus

vSphere Enterprise

vSphere for Desktop

vSphere Scale-Out

vSphere

vSAN

NSX

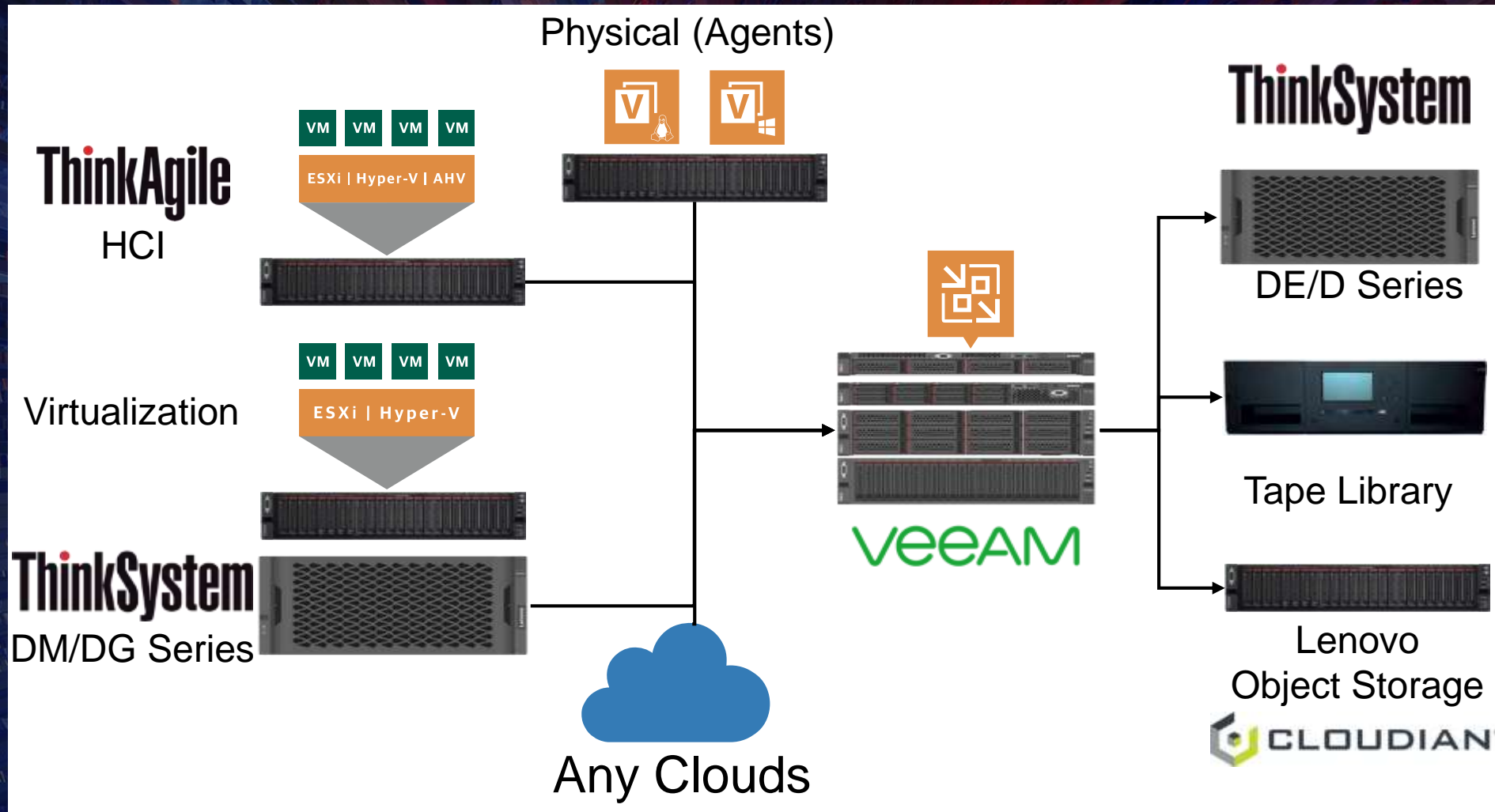
Aria

## Recommendation

vSphere Foundation &  
vSAN Add-on\*

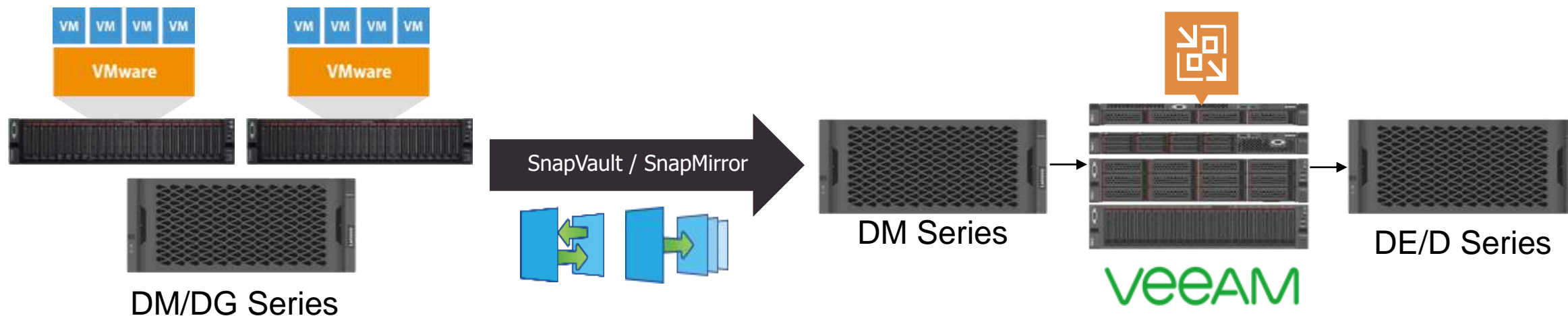
VMware Cloud  
Foundation &  
Firewall\*

# Lenovo & Veeam - Typical System Design





# Lenovo & Veeam – DM/DG Series Integration



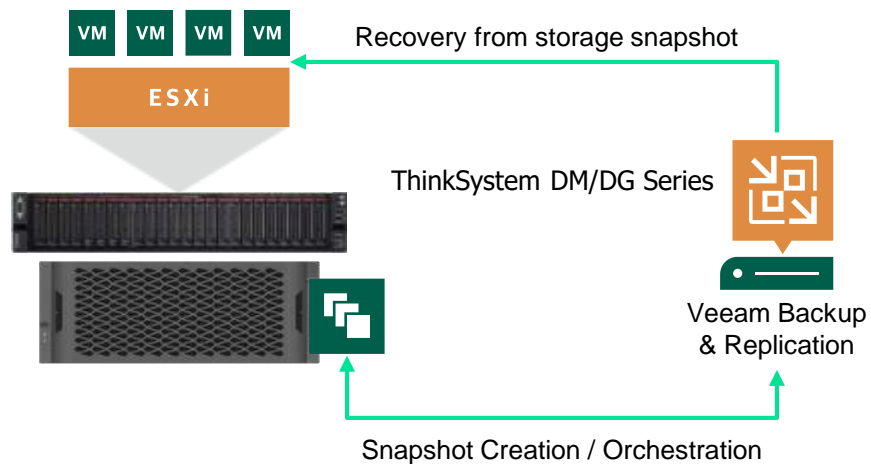
**Faster backups:** Back up VMware virtual machines (VMs) directly from Lenovo storage snapshot copies.

**Quick recovery:** Recover entire VMs or individual items from Lenovo storage snapshot, and SnapMirror software.

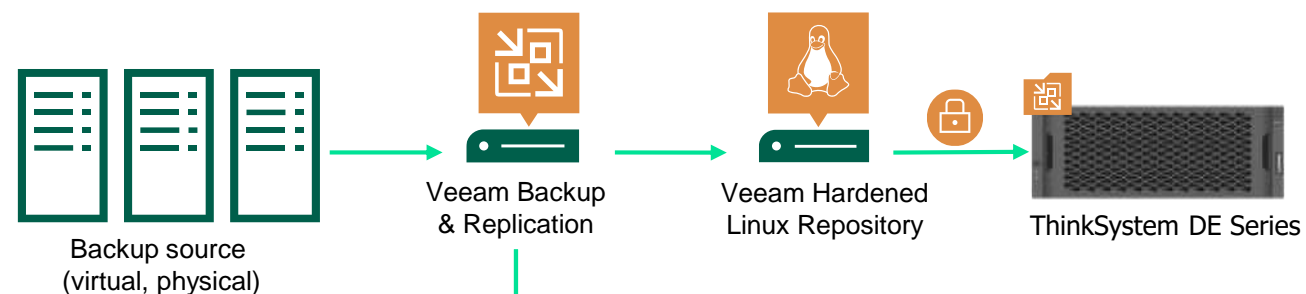
**Improved protection:** Create instant secondary backups from Lenovo storage snapshot copies.

# Lenovo & Veeam – Ransomware Protection

## Immutability Lenovo DM Series SnapLock Snapshots



## Immutability Lenovo DE Series or DAS Hardened Linux Repository



## Immutability Object Storage Cloudian





# Leveraging AI to diagnose cancer **up to 10x faster**

## Ministry of Healthcare of the Republic of Kazakhstan

To help accelerate breast cancer screening at 120 hospitals in Kazakhstan, the Ministry of Healthcare deployed a hyperconverged infrastructure solution powered by 14 Lenovo ThinkAgile HX5520 nodes—enabling rapid, AI-powered processing of radiological images.

### Customer Problem

Cancer is one of the leading causes of mortality in Kazakhstan, but a shortage of radiologists made it difficult for hospitals to screen for the disease effectively.

### Lenovo Solution

The Ministry of Healthcare deployed an HCI solution powered by 14 Lenovo ThinkAgile HX5520 nodes, enabling it to create a central repository to store and analyze radiological images.

### Business Impact

The new solution accelerates screening programs by a factor of three, enabling 10x faster breast cancer diagnosis and a 35% increase in early detection.



Powered by Intel®



“Our achievements include a 375% increase in early detection of pathologies and a 35% increase in early detection of cancer, resulting in improved quality of life for patients and increased treatment effectiveness.”

### Spokesperson

Ministry of Healthcare of the Republic of Kazakhstan



3 million radiological images analyzed



10x faster breast cancer diagnosis



35% increase in early cancer detection







Smarter  
technology  
for all

Lenovo

thanks.