

Smarter technology for all

# HPC 決勝高效運算 突破 x 領先

氣冷 + 水冷 + 全方案 快速到位 高效運算

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Lenovo

# #1 PROVIDER OF SUPERCOMPUTERS IN THE WORLD

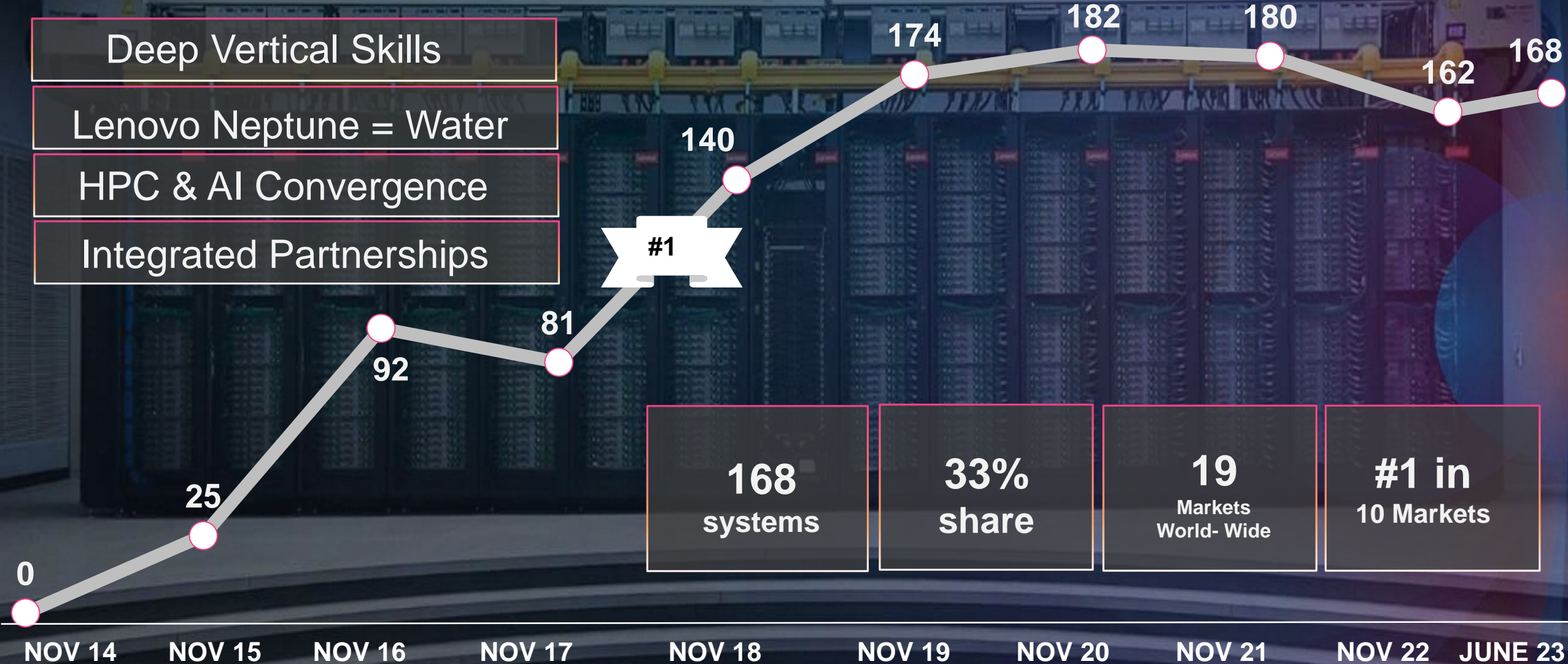
## 1 IN 3 RUN ON LENOVO HPC

Deep Vertical Skills

Lenovo Neptune = Water

HPC & AI Convergence

Integrated Partnerships



#1

168  
systems

33%  
share

19  
Markets  
World- Wide

#1 in  
10 Markets

Based on count of listing on the TOP500.org May 2023 list.

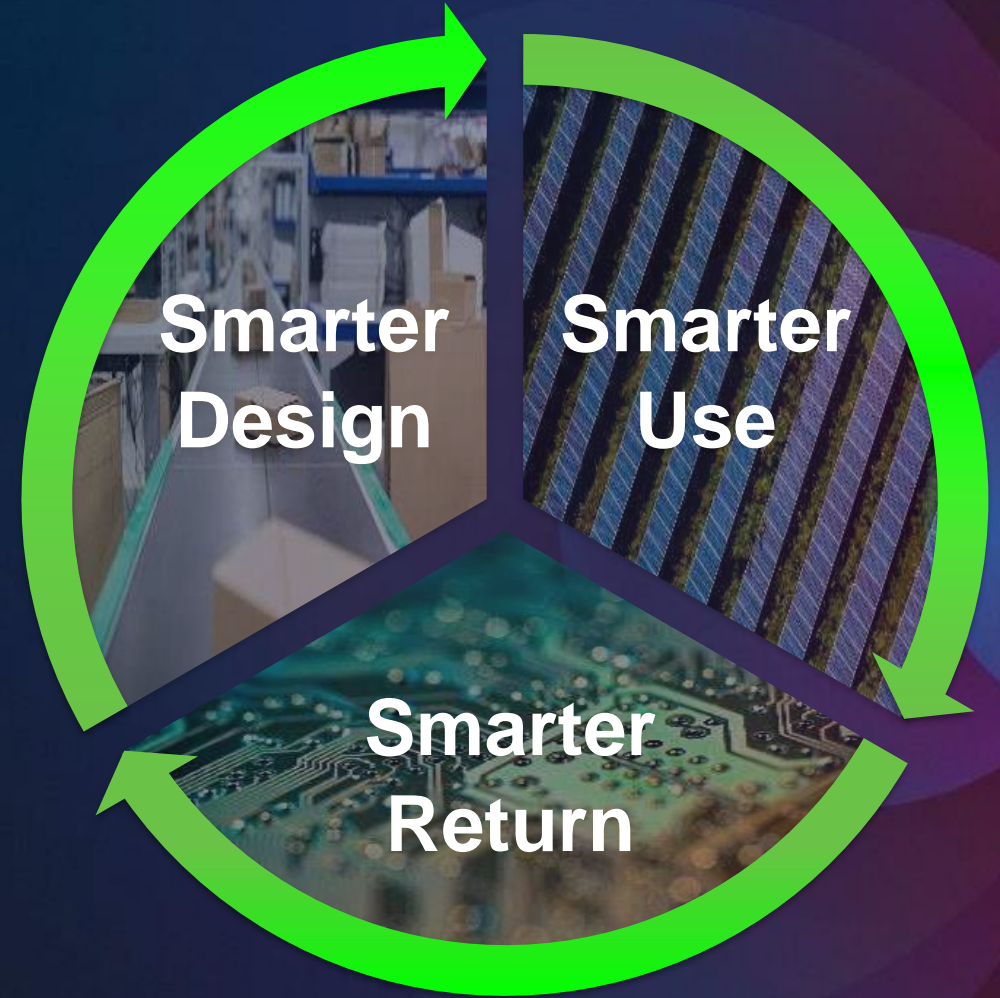
# Smarter Solutions

## The Next Big Leap in Computing

- Performance
- Infrastructure
- Sustainability
- ESG
- Power Saving

## Additional Readiness check list:

- Rack Space?
- Power requirement?
- Water cooling ready data center?
- ...



# 端到端永續服務，降低資料中心碳足跡



## CO<sub>2</sub> 碳補償服務

碳補償信用資助項目，包括重新造林、可再生能源和太陽能



## Lenovo Neptune™ 水冷技術

節省高達 40% 電費、提升3.5倍熱轉換效能，並可解決數據中心的用水問題



## 100% 可回收包材

用於服務器包裝的袋子(聚乙烯)的90%使用海洋塑料回收製成



## Lenovo TruScale™

隨需擴充、降低過度配置，減少能源消耗以減少碳足跡



## 工廠預載整機輸出

5年內節省 350 萬磅紙板和 180 萬磅塑料



## Lenovo Asset Recovery (ARS)

15年資產回收經驗，妥善處置超過100萬+ IT 資產設備

# Lenovo Neptune<sup>®</sup> Technologies – Save Power

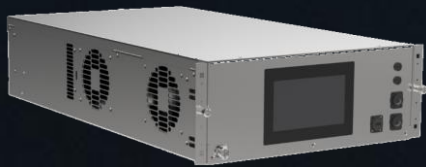


## RACK WATER COOLING

Rear Door Heat Exchanger (RDHX)

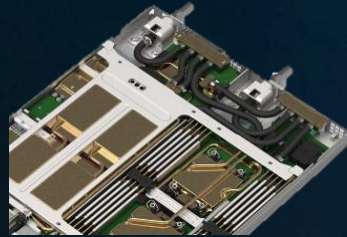


In-rack Cooling Distr. Unit (CDU)

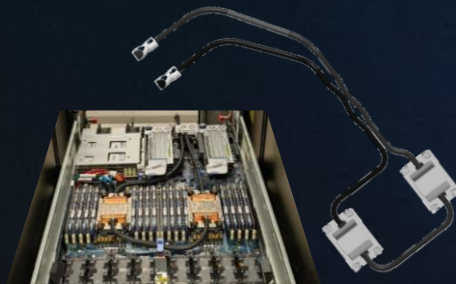


## DIRECT WATER COOLING

Full System

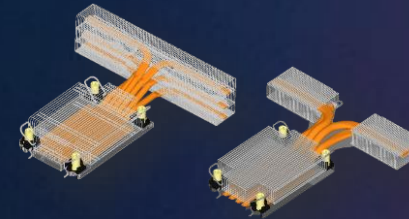


Core System

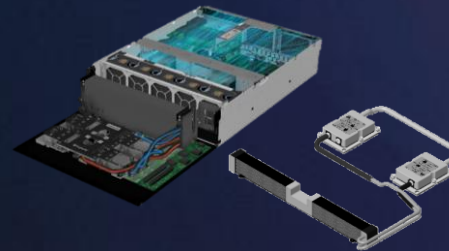


## LIQUID ASSISTED COOLING

Thermal Transfer Module (TTM)



Liquid to Air Module (L2A)



## LIQUID IMMERSED COOLING

Self-Contained



Fully Submerged



# Lenovo releases new ThinkSystem V3 Servers

Powered by 4th Generation AMD EPYC™ processors

## General Purpose 2S



SR665 V3



SR645 V3

## General Purpose 1S



SR655 V3



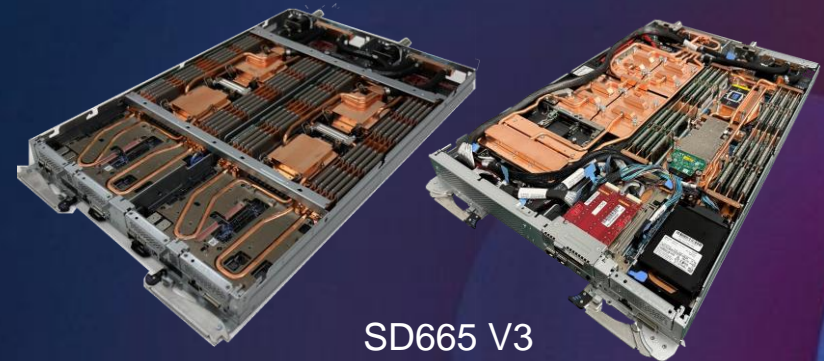
SR635 V3

## GPU-Rich AI System 8 DW GPU



SR675 V3

## High Performance Computing 溫水冷卻電腦



SD665 V3

## Hyper-Converged 幫您選好 測好 打包好 軟硬通包 單一窗口服務



ThinkAgile V3 HX Series



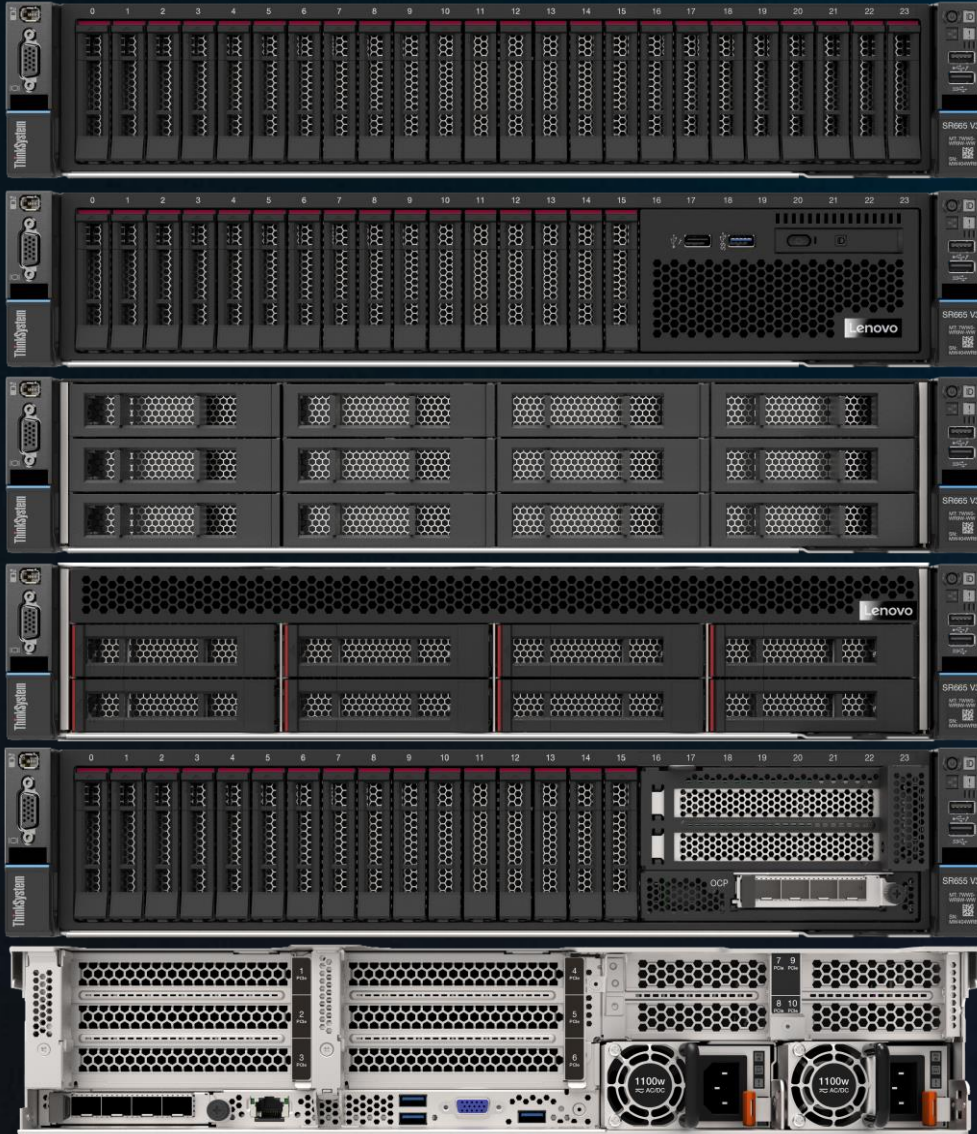
ThinkAgile V3 VX Series

# ThinkSystem *Genoa* Performance Benchmarks

**148** World Records on ThinkSystem with the fourth-generation AMD EPYC processors (codenamed “Genoa”)

SAP	Transaction Processing	Compute	Energy Efficiency	JAVA Application	High Performance Computing
<b>1</b>	<b>3</b>	<b>22</b>	<b>8</b>	<b>14</b>	<b>100</b>
SAP SD 2T & BWoH	TPC-E TPC-H	SPEC CPU	SPECpower	SPECjbb	SPEC MPI SPEC OMP SPEC ACCEL SPECchpc

# ThinkSystem SR665 V3



Feature	SR665 V3
Form Factor	<ul style="list-style-type: none"> <li>• 2U2S Mainstream Rack</li> <li>• 4<sup>th</sup> Gen AMD EPYC™ Processor with 96 Cores; CXL ready</li> </ul>
Memory	<ul style="list-style-type: none"> <li>• 24 DDR5 DIMM slots at 1DPC</li> <li>• Supports 4<sup>th</sup> XGMI @ 32Gb/s</li> </ul>
Storage	<ul style="list-style-type: none"> <li>• Up to 20x 3.5-inch or 40x 2.5-inch hot-swap drive bay</li> <li>• Combinations of SAS/SATA, NVMe, or AnyBay</li> <li>• Boot Drives:               <ul style="list-style-type: none"> <li>□ Two 7mm drives at the rear</li> <li>□ Internal M.2 module supporting up to two M.2 drives</li> </ul> </li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Hot swap redundant fans</li> </ul>
Networking	<ul style="list-style-type: none"> <li>• OCP 3.0</li> <li>• 1GbE Dedicated Management, optional 2<sup>nd</sup> port using OCP slot</li> </ul>
PCI-e	<ul style="list-style-type: none"> <li>• Up to 10 PCIe slots, up to 9x Gen5 slots(rear); Optional 2 Gen4/5 slots(front)(post SS)</li> <li>• Up to 128 lanes via onboard NVMe connectors</li> </ul>
GPU	<ul style="list-style-type: none"> <li>• 3 Double width GPU support, 350W each.(NVFF 5.5)</li> <li>• 6 single width 150W GPU</li> <li>• 8 single width 75W GPU</li> </ul>
Management	<ul style="list-style-type: none"> <li>• ThinkSystem XClarity Controller based on AST2600</li> <li>• Pluggable HW Root of Trust with TPM 2.0</li> </ul>
Storage Controllers	<ul style="list-style-type: none"> <li>• Various HW RAID controllers and HBA via PCIe or internal CFF adapters</li> <li>• Up to 32 onboard SATA ports</li> </ul>
Front IO* and LED	<ul style="list-style-type: none"> <li>• Optional Integrated Diagnostic Panel</li> <li>• 1x USB 3.1 and 1x USB 2.0 with XCC connection for mobile device</li> <li>• 1x VGA Port (Optional)</li> <li>• Optional external Diagnostic Port</li> </ul>
Rear IO and LED	<ul style="list-style-type: none"> <li>• 3x USB 3.1 Ports; 1x VGA Port</li> <li>• 1x Serial (COM) Port (Optional)</li> <li>• System ID LED, Error LED, NMI Button</li> </ul>
Power Supply	<ul style="list-style-type: none"> <li>• Dual redundant AC &amp; DC Supplies with 80PLUS Titanium rating for ErP Lot9 compliance</li> </ul>



# ThinkSystem SD665 V3

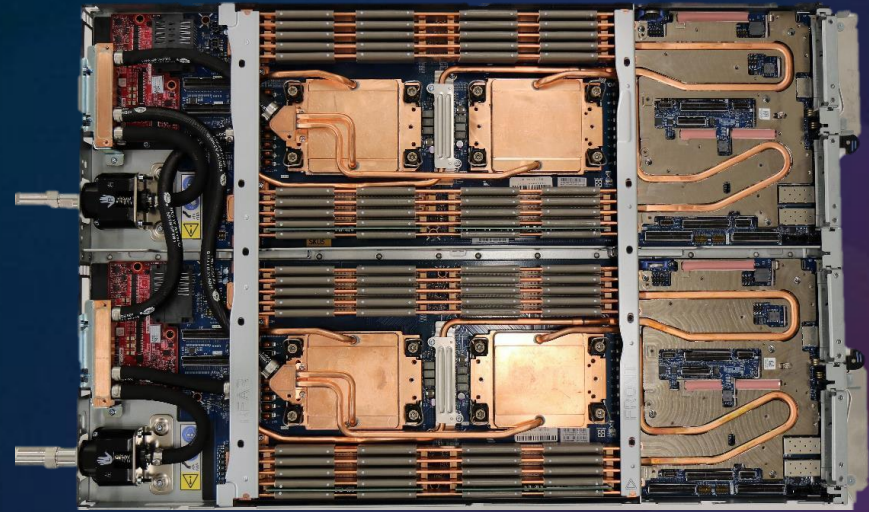
*Designed for High Performance Computing (HPC)*

## Targeted Workloads

- High Performance Computing (HPC)
- Modeling and Simulation
- CAE/CFD/EDA
- AI Inference

## Key Capabilities

- Extreme density with 1/2U form factor while running highest core/frequency 4th Gen AMD EPYC™ CPUs
- Liquid cooling reduces energy use while increasing sustained CPU performance
- Supports high-speed NDR InfiniBand fabric for HPC workloads
- Fan-less design saves energy and reduces data center noise



**45%**

Energy Savings

**100%**

Heat Removal Efficiency\*

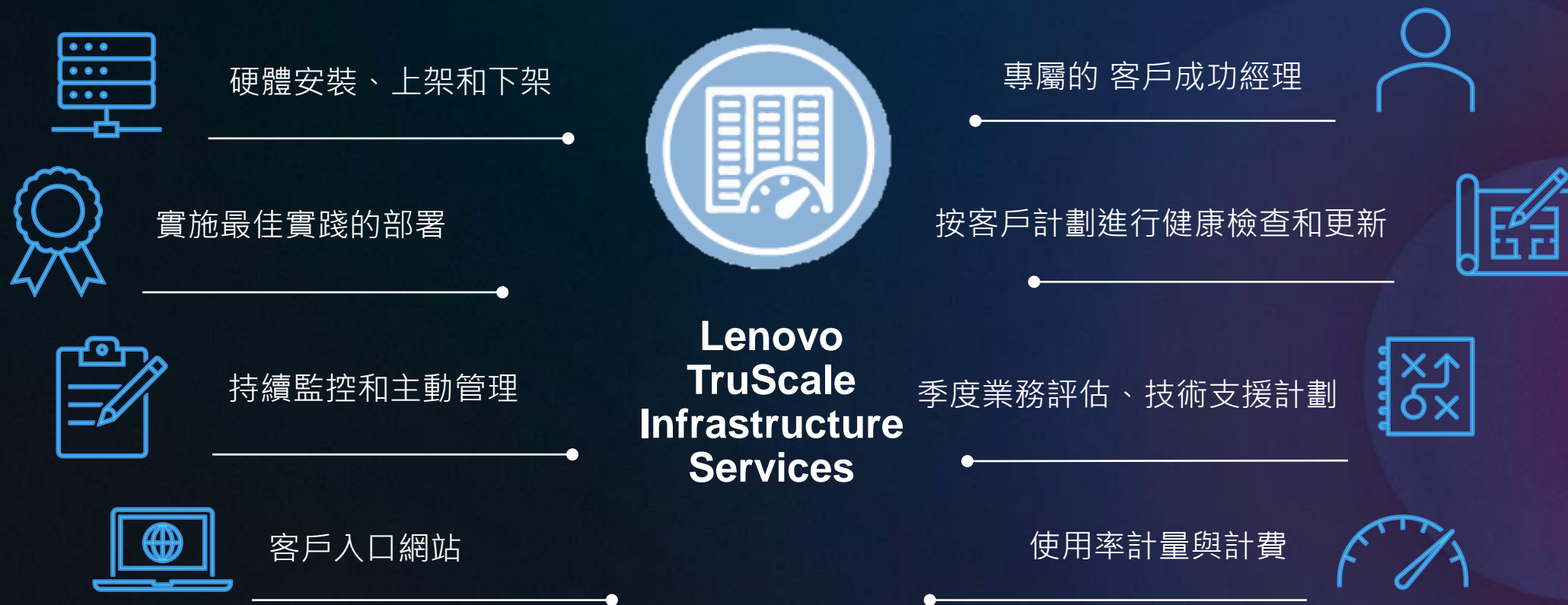
**3X**

More cores per U\*\*

**123%**

Performance Improvement  
on HPC Workloads\*\*\*

# Lenovo TruScale IaaS – 服務項目



全方位的服務提供，涵蓋系統的整個生命週期

# ISG Vision

## 新時代 新算力 全新聯想V3產品組合 協助客戶轉型

To be the most trusted data center partner — empowering customers' Intelligent Transformation and helping solve humanity's greatest challenges.

全世界500大超級電腦 市佔率第一 (168個)

| #1 in the Top500 Supercomputing list (top500.org)

主流儲存設備(2.5萬美元以下) 排名第一

| #1 worldwide storage solutions vendor in the \$25K and under market (IDC)

ITIC服務器可靠性評比 連續9年X86類別第一

| The best uptime among all x86 platforms for the 9th straight year. (ITIC 2022 Global Server Hardware, Server OS Reliability Report)

超過十年的溫水冷卻技術 領先業界

| Industry-Leading Neptune™ Cooling Technology by Delivering Sustainable Computing Solutions

超大型雲服務提供商成績亮眼

| Delivered products to 6 of the top 10 Hyperscalers in the world

全球交付超過二萬套SAP HANA系統

| Shipped more than 20,000 SAP HANA systems worldwide

## ThinkSystem

獨特的設計提供高效能、高靈活、卓越的品質和可靠的系統。  
滿足邊緣、資料中心到雲端、高速運算及人工智慧, 所有關鍵任務求

From growing small businesses to enterprise workloads, Lenovo servers offer unmatched value, flexibility, and industry-leading efficiency to meet mission-critical demands with legendary quality and reliability.

## ThinkEdge

智匯雙全、巨體而微、隨域而安。  
突破伺服器位置的限制, 滿足了邊緣伺服器的獨特要求

Designed and built with the unique requirements for Edge servers in mind, it is versatile enough to stretch the limitations of server locations, providing a variety of connectivity and security options.

## ThinkAgile

幫您選好 測好 打包好 軟硬通包 提供單一窗口服務。  
簡化您的IT架構, 讓您專注於核心業務和開創新領域。

Simplify your IT infrastructure and accelerate your time to value, freeing you to focus on your core business and new capabilities.



## TruScale

一切皆服務, 協助客戶打造完整的新IT解決方案。  
隨時隨地予以響應和支援, 讓一切變得簡單。

Enhance your ability to scale your IT hardware, software and support capabilities as your rapidly changing infrastructure needs evolve.

Smarter  
technology  
for all

Lenovo

thanks.