

Smarter technology for all

# Back to Work with a Smarter Infrastructure

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On behalf of:



Lenovo

# Smarter Technology for All

Our commercial business vision:

To Empower Business users with world's smartest computing solutions

## Smarter Devices

Empower users with intelligent device choices



**ThinkPad** X1 Nano **5G**

## Smarter Workplaces

Make IT more efficient & enhance user experience



**ThinkSmart**

## Smarter Businesses

Making business smarter through emerging technologies



**ThinkReality** **ThinkSystem**  
**ThinkAgile**

End-to-end Security

**ThinkShield**

Lenovo  
Device as a Service

Lenovo  
Infrastructure as a Service

# Lenovo Smarter Infrastructure from Edge to Cloud, AI to AR

## ThinkAgile Software-Defined Infrastructure

Certified Nodes  
Integrated Appliances  
Integrated Systems

ThinkAgile HX  
NUTANIX

ThinkAgile VX  
vmware

ThinkAgile MX  
Microsoft

## ThinkSystem Enterprise infrastructure & engineered solutions

AI Big Data & Analytics Database DevOps Cloud HPC Backup & Recovery Virtualization IoT/ Edge Blockchain NFV

IBM Hadoop ORACLE SAP SUSE vmware cloudera CITRIX redhat Pivot Microsoft SCALE Veeam

HPC



Storage



Servers



Hyperscale



IoT / Edge



XClarity Platform Management

Services: Solution Design, Implementation, Support, TruScale Infra as a Service





# Lenovo is ...

#1

PC's  
@27.1%

#1

PERFORMANCE  
3x world records

#1

SUPERCOMPUTERS  
36% use Lenovo

#1

RELIABILITY  
7 years in a row

# Being reliable means providing deep optimization expertise

Lenovo's tuning scenarios are designed for key workloads from virtualization to AI

No one else comes close when it comes to world record system tuning

# 242 World record benchmarks

As of March 18, 2021

## 62

### World records

set by servers equipped 3rd Generation Intel® Xeon® Scalable Processors

## 74

### World records

set by servers running 2nd Gen AMD EPYC™ Processors

## 91

### World records

set by servers equipped 2nd Generation Intel® Xeon® Scalable Processors

## 12

### World records

set by servers using 1st Generation Intel® Xeon® Scalable Processors

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# ThinkSystem SR630 V2

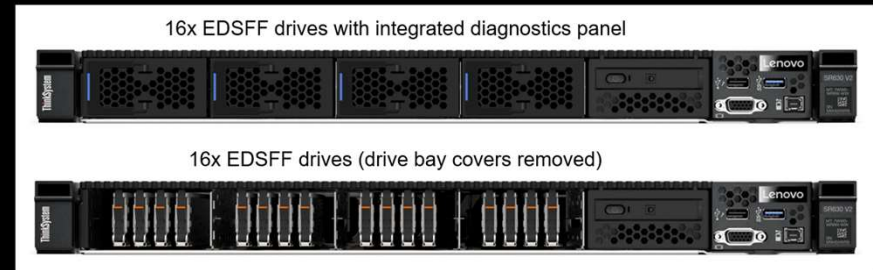


*Packed with performance and reliability to fuel any workload*

- Flexible and scalable internal storage with Lenovo AnyBay™ to allow you to install a U.2 SAS, SATA and U.3 NVMe drives. Plus up to 16x EDSFF E1.S drives!
- Consistently the industry's most reliable server featuring platform firmware resiliency (PFR), HS redundant fans, HS drives and power supplies
- Simplify and centralize enterprise systems management and increase data center agility with Lenovo XClarity Controller standard/advanced/enterprise

## SR630 V2 Specification Highlights

- 2x 3<sup>rd</sup> generation Intel® Xeon® Scalable processors – max 270W
- Support for up to 8TB 512GB Intel Optane Persistent Memory 200 Series modules
- 32x DIMM memory slots @ 3200 MHz | Max 8TB using 256GB RDIMMs
- Up to 12x 2.5" drives | Max 12x NVMe drives (10 front + 2 rear) | Optional M.2 boot drives | Up to 16x E1.S EDSFF drives.
- Tri-mode RAID cards support U.3 NVMe, SAS and SATA drives
- Up to 3 single width 75W GPUs
- 3x PCIe Gen4 slots , additional 1x OCP 3.0 slot for LOM
- Dual redundant PSUs (up to 1800W Platinum)



## ThinkSystem SR630 V2 rack server

### Market & Workloads

- Medium to Large Enterprise
- Financial Services
- Government
- Education
- HPC
- Virtualization
- Cloud
- Computing
- Gaming
- Analytics

### Security & Reliability

- Lenovo ThinkShield
- TPM 2.0
- Platform Firmware Resiliency (PFR)
- ASHRAE A4 standard
- Enterprise class RAS



XClarity Controller is the embedded management engine in every ThinkSystem server, featuring Redfish compliant REST APIs. It allows for simplified centralized management of ThinkSystem and ThinkAgile infrastructure



Professional services & transformative support

Lenovo

# Modernizing IT with Lenovo ThinkAgile VX HCI (VMware)

ThinkAgile

# 2.3x

More Cores<sup>1</sup>

Introducing Lenovo ThinkAgile VX with VMware, ideal for Virtual Desktop Infrastructure, Data-Intensive and Storage-Dense Workloads

## Key Benefits

- **Provides a choice in HCI solutions** with the **first** Lenovo ThinkAgile VX solution with VMware vSAN on AMD 3<sup>rd</sup> Gen EPYC™ processors
- Enhanced Security with memory encryption via AMD Infinity Guard
- **Improves administrator productivity** via simplified lifecycle management with Lenovo xClarity Integrator and VMware vCenter



Lenovo ThinkAgile VX now with 3rd Gen AMD EPYC™ processors



VX3575-G, VX7575 Integrated Systems  
VX7576 Certified Node



VX5575 Integrated System

Available 2Q/21



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# ThinkSystem SR670 V2 – 3U & 8x A100's, AI/ML “PowerPlant”

Lenovo Neptune™

## Acceleration EveryScale



- Efficient Aircooling
  - Designed for best airflow
  - Neptune™ liquid-to-air hybrid cooling technology
- HPC&AI Convergence
  - Simulate, Train, Infer
- Versatile Architecture
  - 8 SW/DW PCIe or 4 HGX GPU's
  - NVLink
- Fit for your datacenter
  - Passive, SW/DW, Front or Rear IO
  - Up to 3 PCIe Gen4 x16 adapters
  - Up to 200 GbE, ConnectX-6

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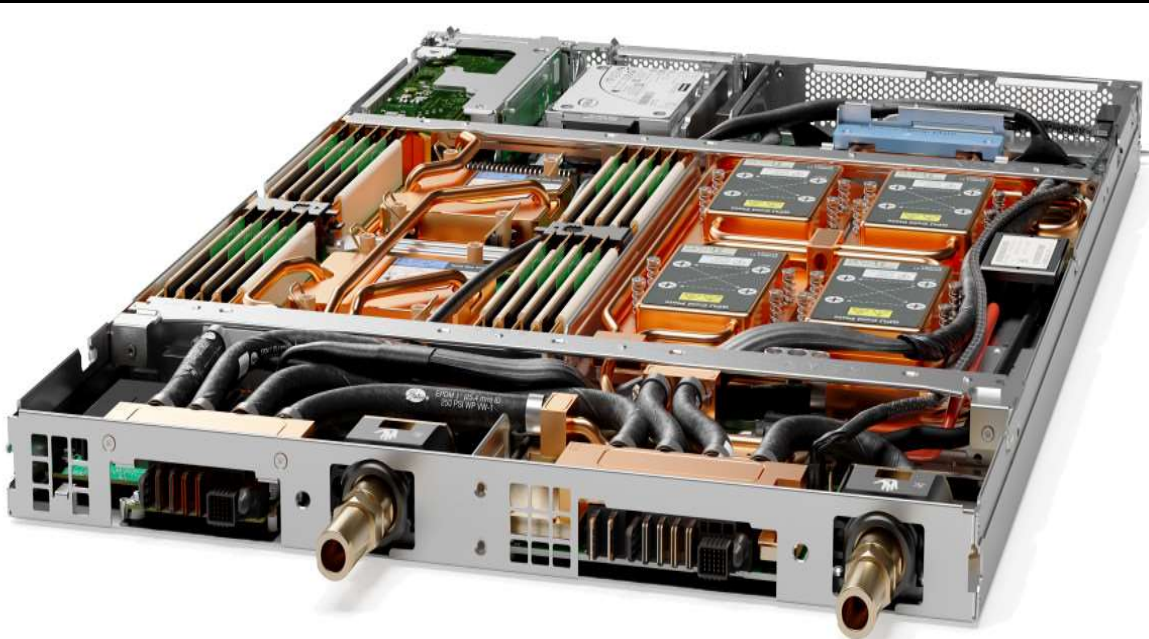
NVIDIA

intel



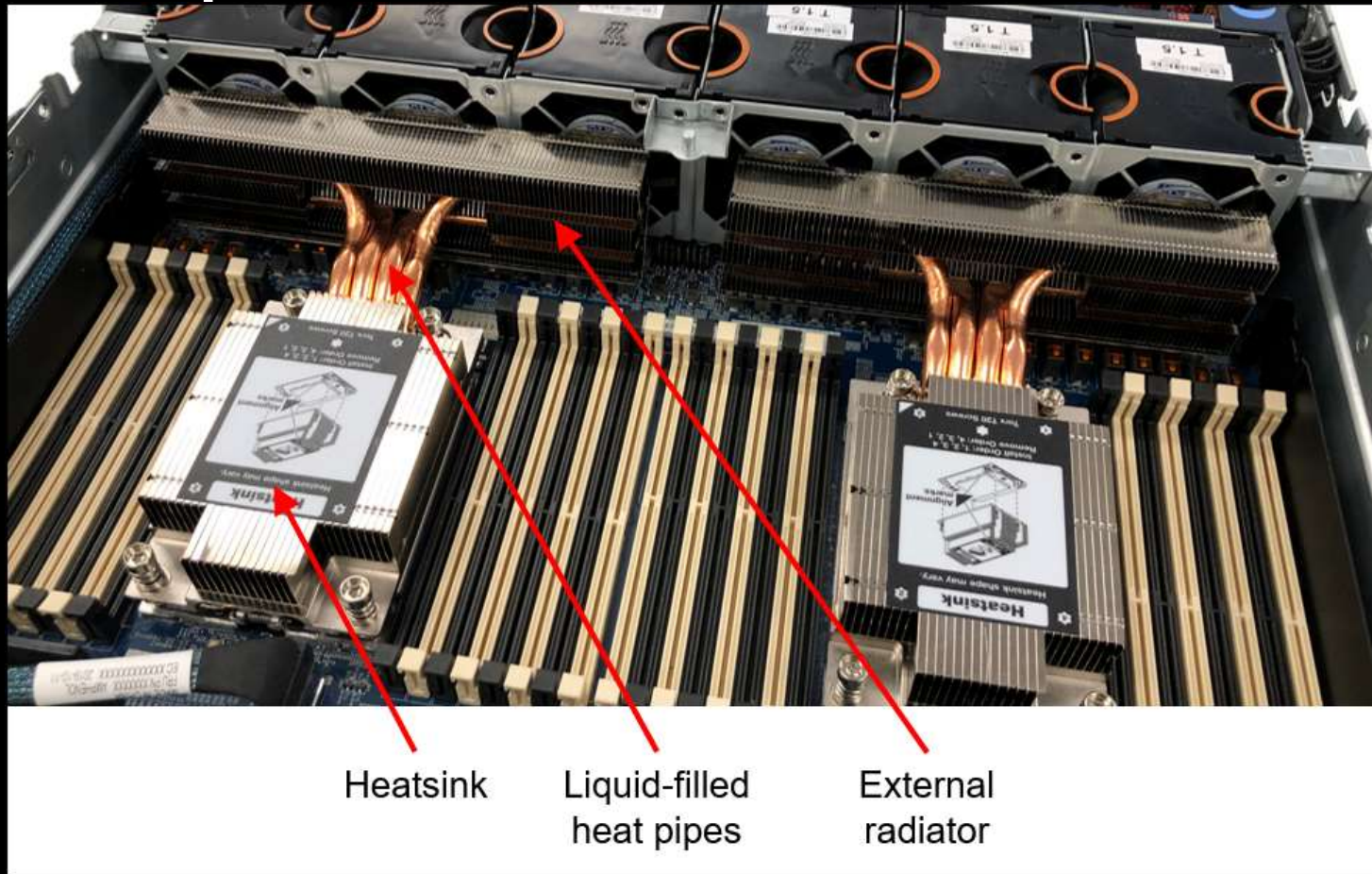
# SD650-N V2 with NVIDIA 4 x HGX A100's

Lenovo Neptune™



- Direct Watercooling
  - ✓ Up to 45° C or ~90% @ 40° C
- Acceleration
  - ✓ 1U with 4x NVLink connected SXM4 A100 GPUs
- Thermals & cooling
  - ✓ 270W CPU & 400W GPU's
- Connectivity
  - ✓ 2x PCIe Gen4 x16, 25Gb LOM
  - ✓ Up to 200 GbE, ConnectX-6
- Density
  - ✓ Up to 6 servers per chassis

# Lenovo SR665 with performance heatsinks and external radiator – closed loop





# Lenovo Cooling Technologies



## Smart control software

- Dynamically adjusts CPU frequently
- Minimizes power consumption

## Thermal transfer module

- 24% increase in processing power over air cooled systems
- \$2,100 / year per rack energy savings

## Rear door heat exchanger

- 3.5X more efficient than air only
- Heat removed could power 4,000 LED bulbs

## Direct to node

- 45% increase in processing power over air cooled systems
- Up to 40% reduction in power costs



# Lenovo Server Differentiation

## Performance

- Tuning expertise and world record performance benchmarks

## Energy Efficiency

- UEFI operating modes, component construction, power supplies, smart VRD designs

## Thermals

- Supports 280 watt sku's in 1U and 2U, advanced performance heatsinks

## Memory

- 2 DPC at 3200 MHz

## Drive & GPU density

- Up to 40x 2.5" drives, up to 32x u.2 NVMe drives. Up to 8x T4's, up to 3x A100's.

## Security & System Management

- ThinkShield™: Root of Trust, Secure Boot, Platform Firmware Resiliency
- XClarity, DMTF/Redfish, Ansible playbooks

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# CDW – One Lenovo Partner across PC's & Servers



## Data Center Stats:

- 200+ people focused on Data Center
- 500+ Certifications
- 9.8 average years with CDW
- 90+ Inside technical resources
- 25+ Partner Awards



# CDW – Comprehensive Offerings



- Whether you're looking to upgrade specific components of your data center landscape or seeking to redefine your approach using on- and off-premises resources, we can help. And because our experts have experience with solutions of all sizes, from simple hardware upgrades to complex, large-scale rollouts, we're ready for any challenge you throw our way. We'll bring together the latest technologies from our industry-leading partners to create solutions that span:
  - Compute
  - Storage
  - Backup
  - Virtualization
  - Converged Infrastructure
  - Hyperconverged Infrastructure
  - Power & Cooling
  - Software-Defined Networking
  - Automation and Orchestration
  - Containers



**Lenovo**

# Moving at the Speed of our Clients

## Best Performance

Leadership Workload Performance

Advanced Memory Technology

Secure IT Foundation

STAC® Leadership

## Best Reliability

Better Utilize Data

Lower Overall IT Costs

Reduce Downtime

Scale to your Business

## Best Business Value

Focus on Innovation

Leverage AI for Smarter Infra

Get to Market Faster

Show Return on Investment

Choice of CapEx or OpEx

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**We are one Lenovo**

restless  
global  
diverse  
lively  
unexpected  
bold  
different  
better  
customer focused  
entrepreneurs  
discoverers  
disruptors  
risk takers  
experimenters  
innovators  
passionate  
curious  
daring

