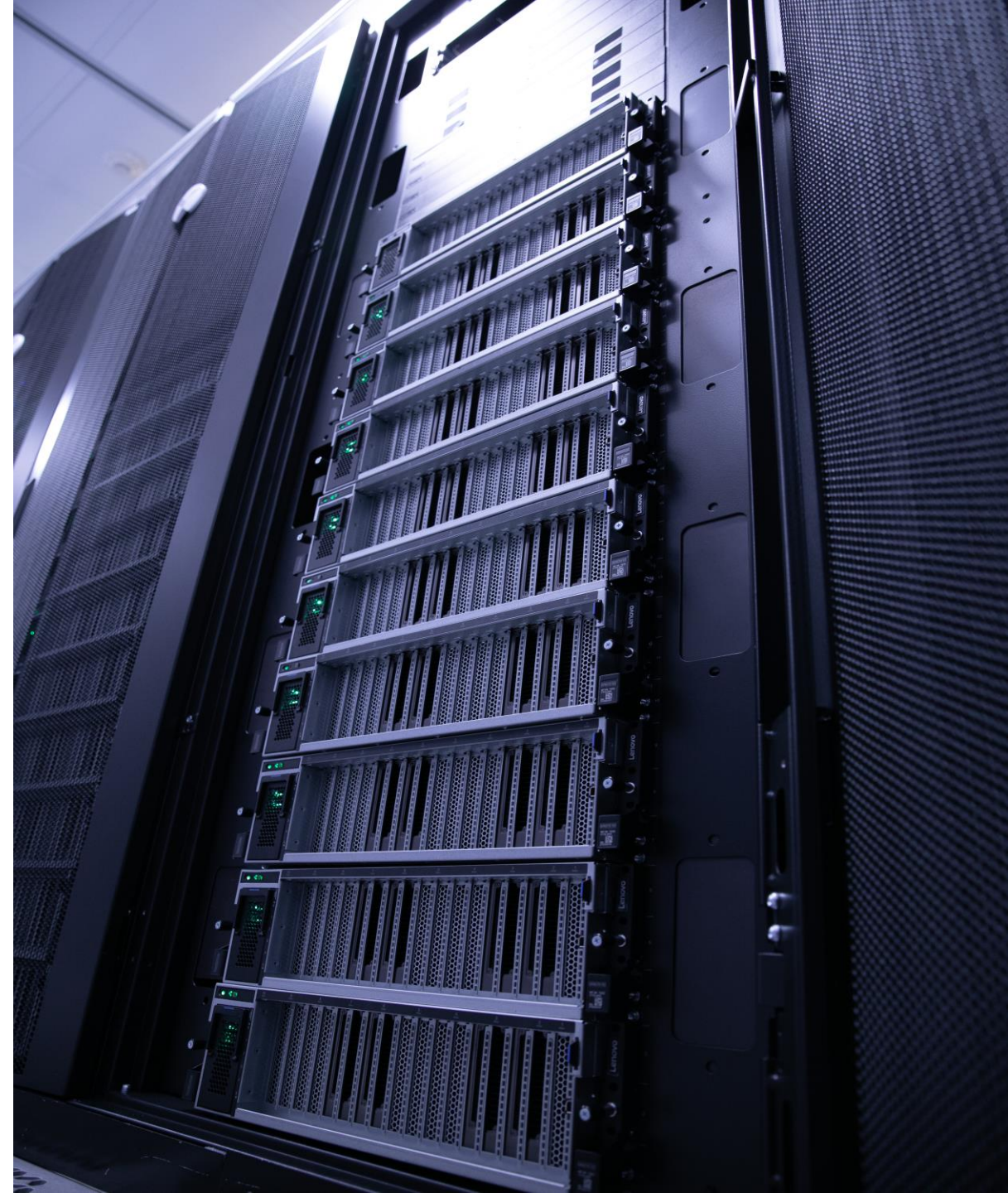


HPC @ Lenovo

Marc Fisher, Director HPC/AI Sales NA

Agenda

- Lenovo in HPC
 - Our Mission
 - Industry Perspective
- HPC Solutions
 - Neptune Liquid Cooling
 - Alternative Cooling Options
 - Storage Highlights





Weather
Better prediction



Genomics
Prevent disease



Smart Medicine
Personalized treatment

Helping solve humanity's greatest challenges



Seismic
Earlier warning



Climate Change
The future of our planet



Space
Understand our universe



Modelling
New designs faster



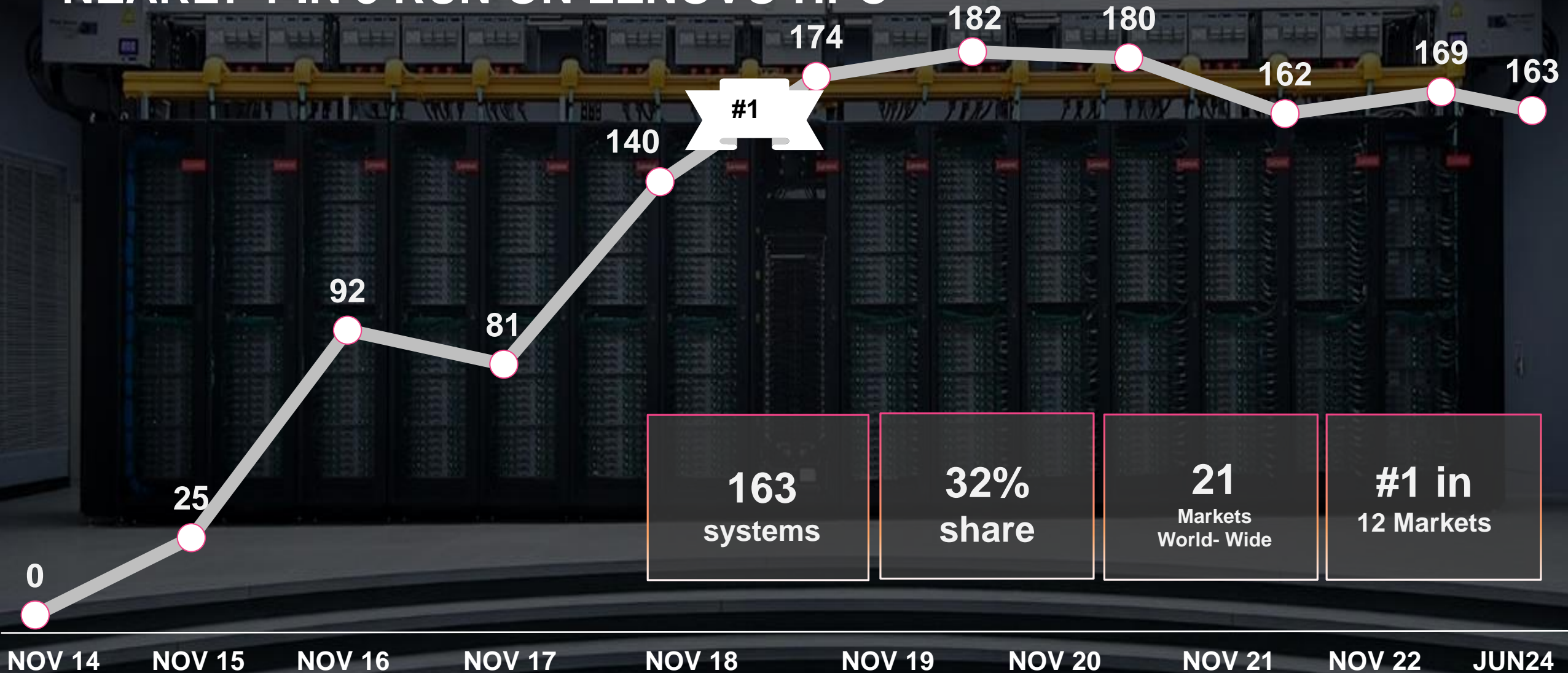
Agriculture
Food security



MFG Excellence
Better quality & cost

#1 PROVIDER OF SUPERCOMPUTERS IN THE WORLD

NEARLY 1 IN 3 RUN ON LENOVO HPC



Lenovo HPC – Industry Recognition

9 Awards This Year – our most ever



BSC, MareNostrum5



University of Cardiff



Flatiron Institute, Henri



NCMSA, Saudi Arabia



University of Birmingham



University of Birmingham

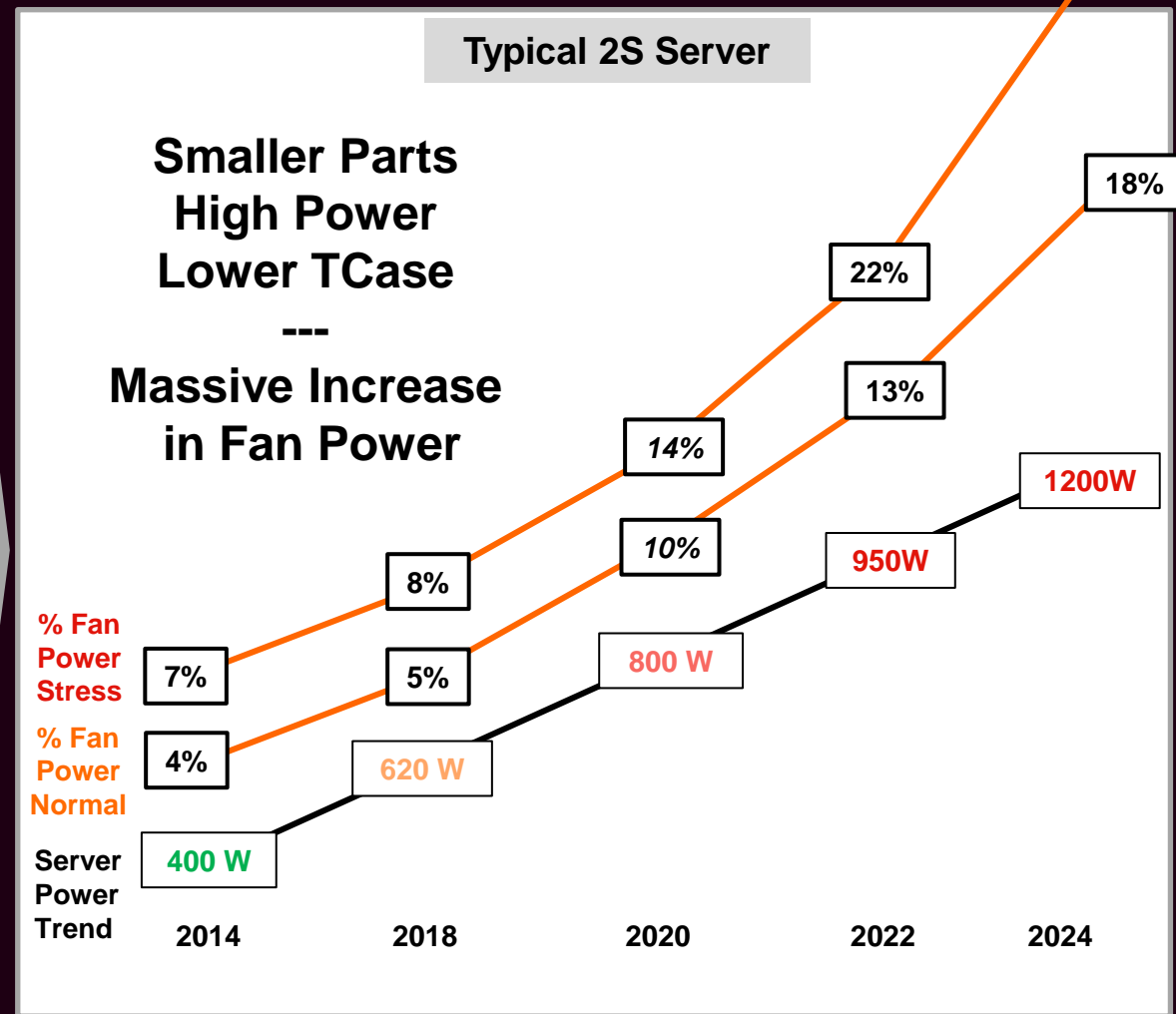
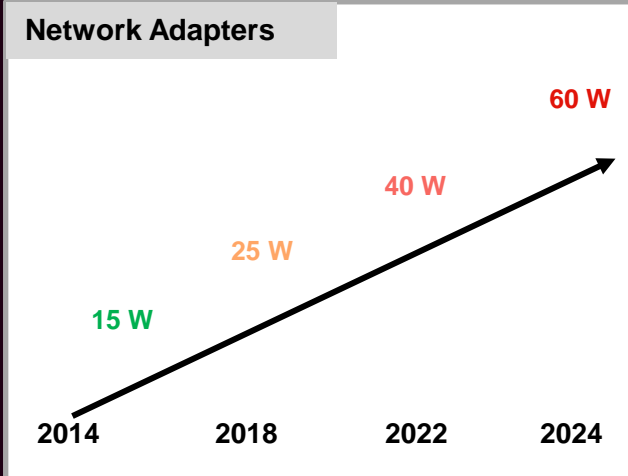
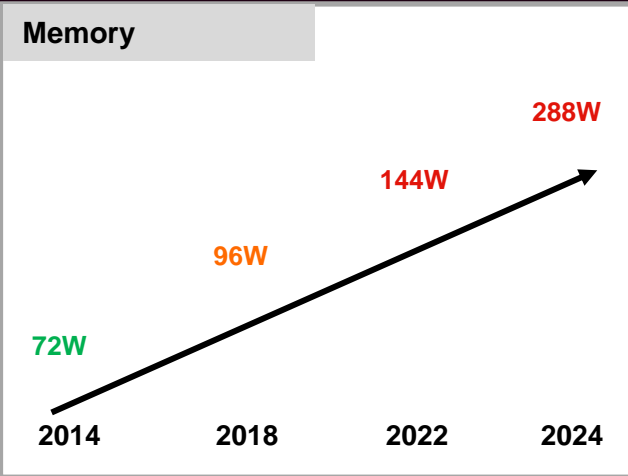
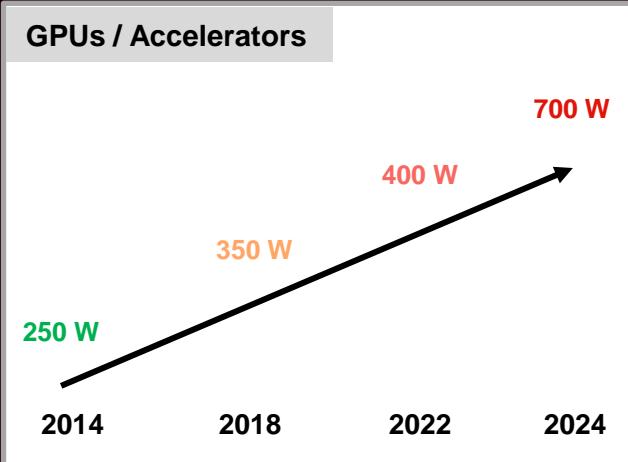
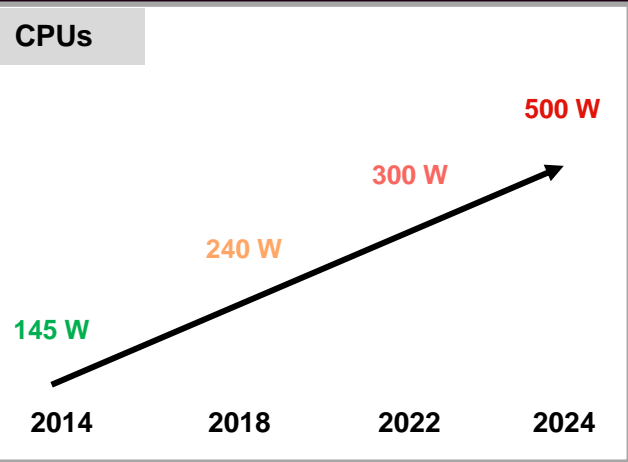


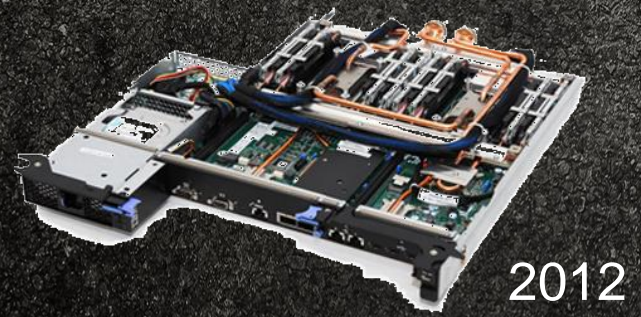
Smarter technology for all

Lenovo Neptune™ Liquid Cooling

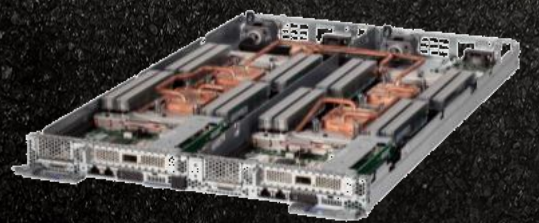
Lenovo

Traditional Cooling Approaches are Reaching Critical Limits

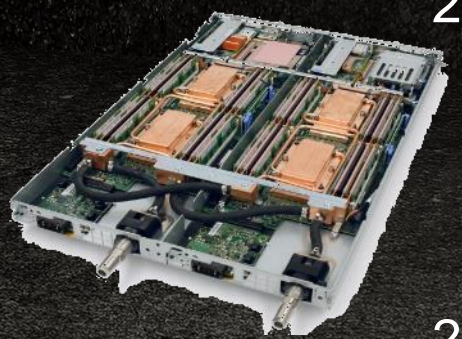




2012



2014



2018

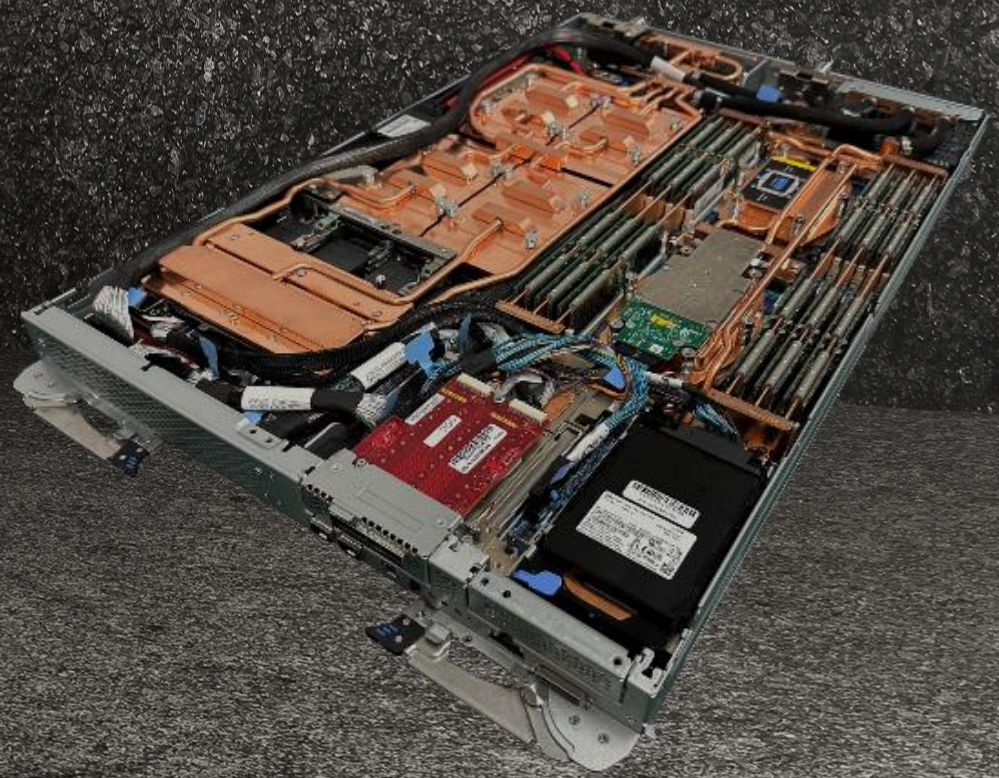


2020



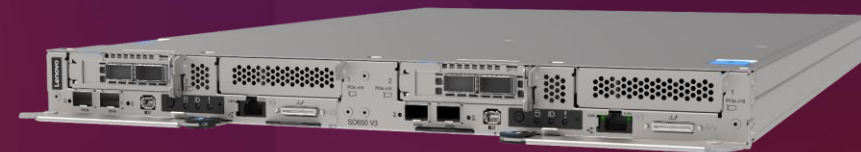
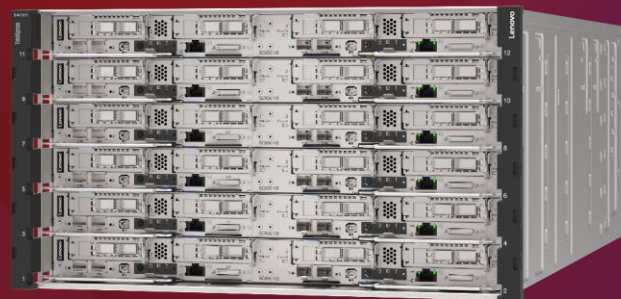
2022

A DECADE OF INNOVATION IN DIRECT WATER COOLING





ThinkSystem SD650 V3
w/ Intel Sapphire Rapids



ThinkSystem SD665 V3
w/ AMD Genoa



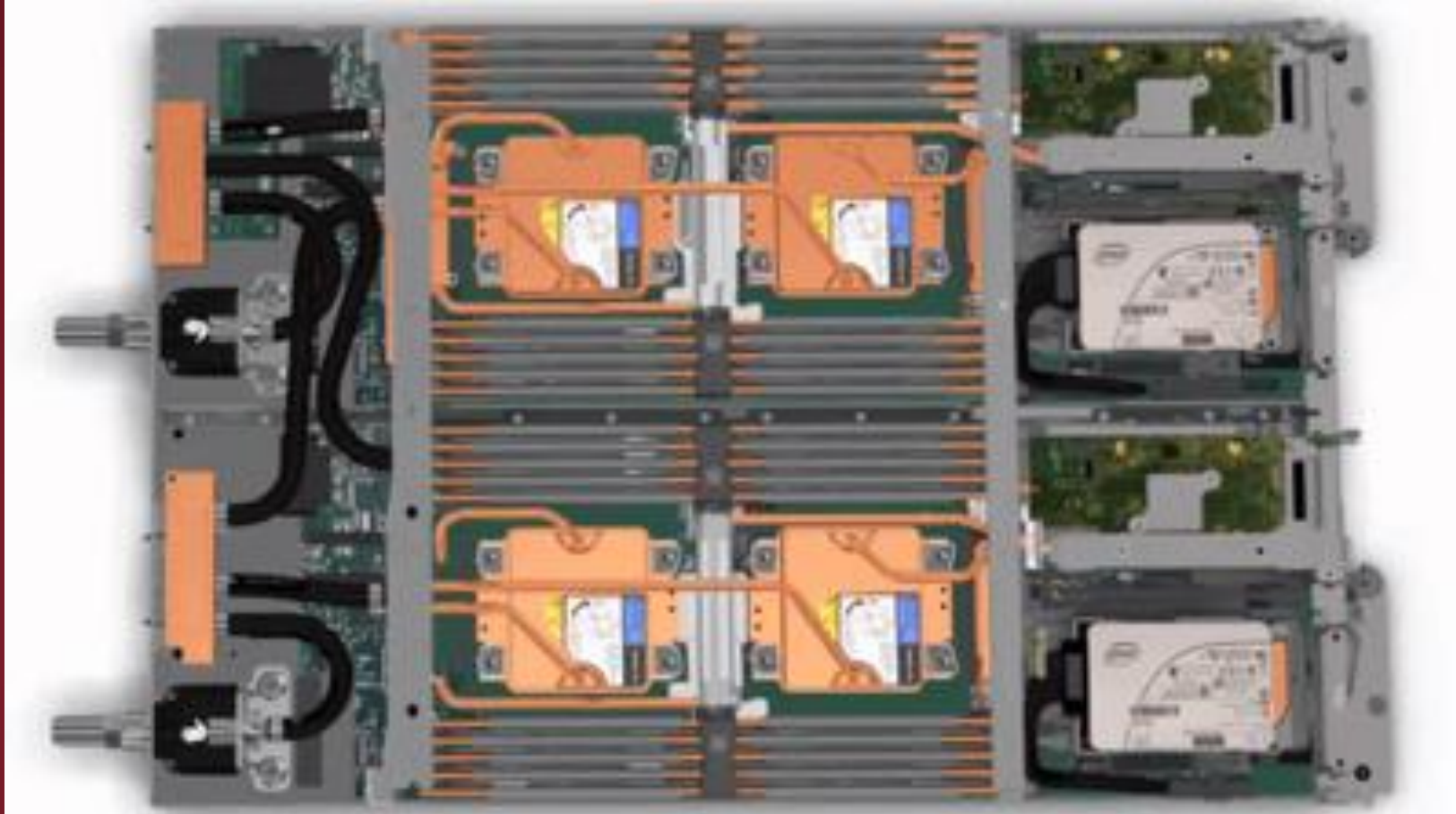
ThinkSystem SD650-I V3
w/ Intel Ponte Vecchio



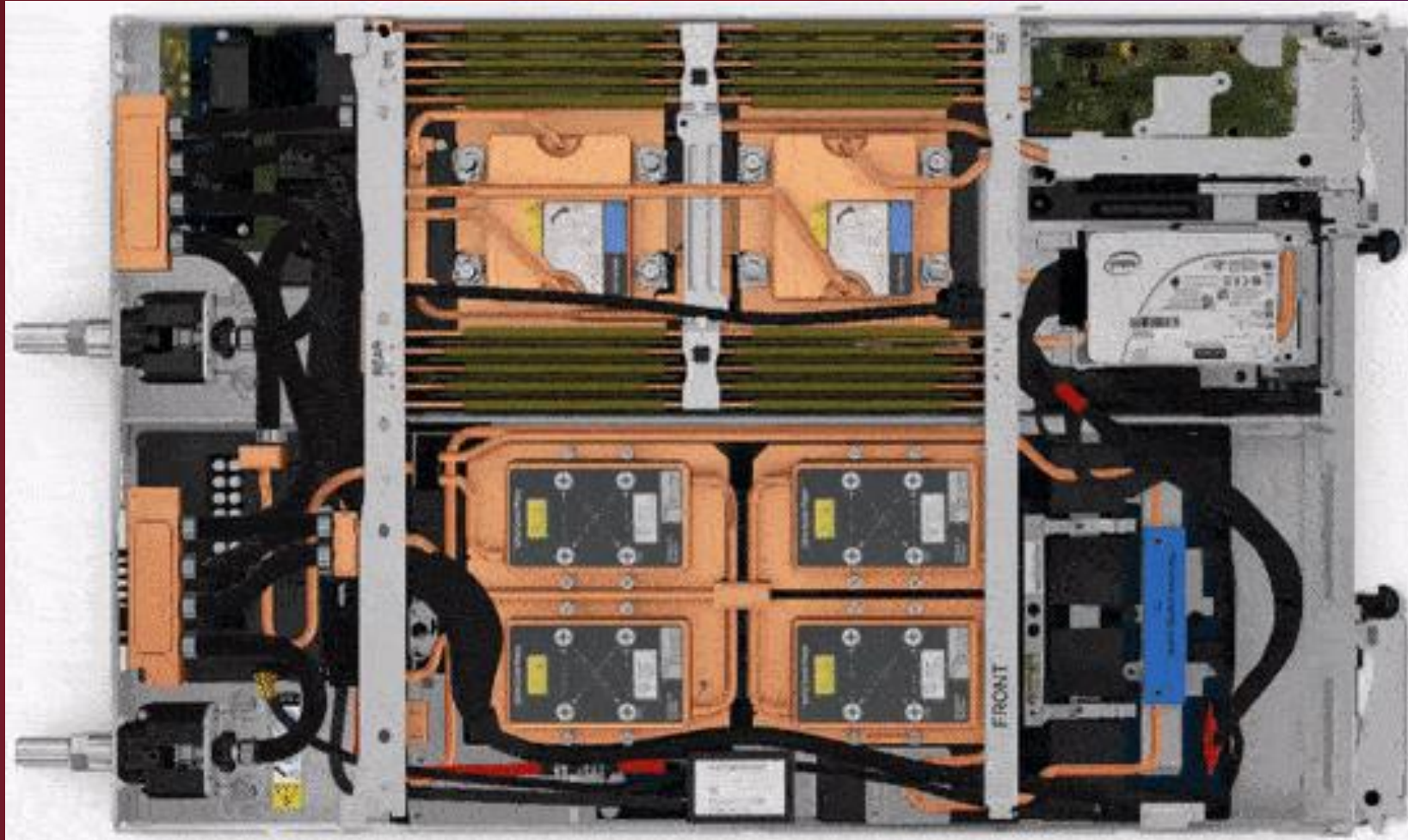
ThinkSystem SD665-N V3
w/ NVIDIA Hopper

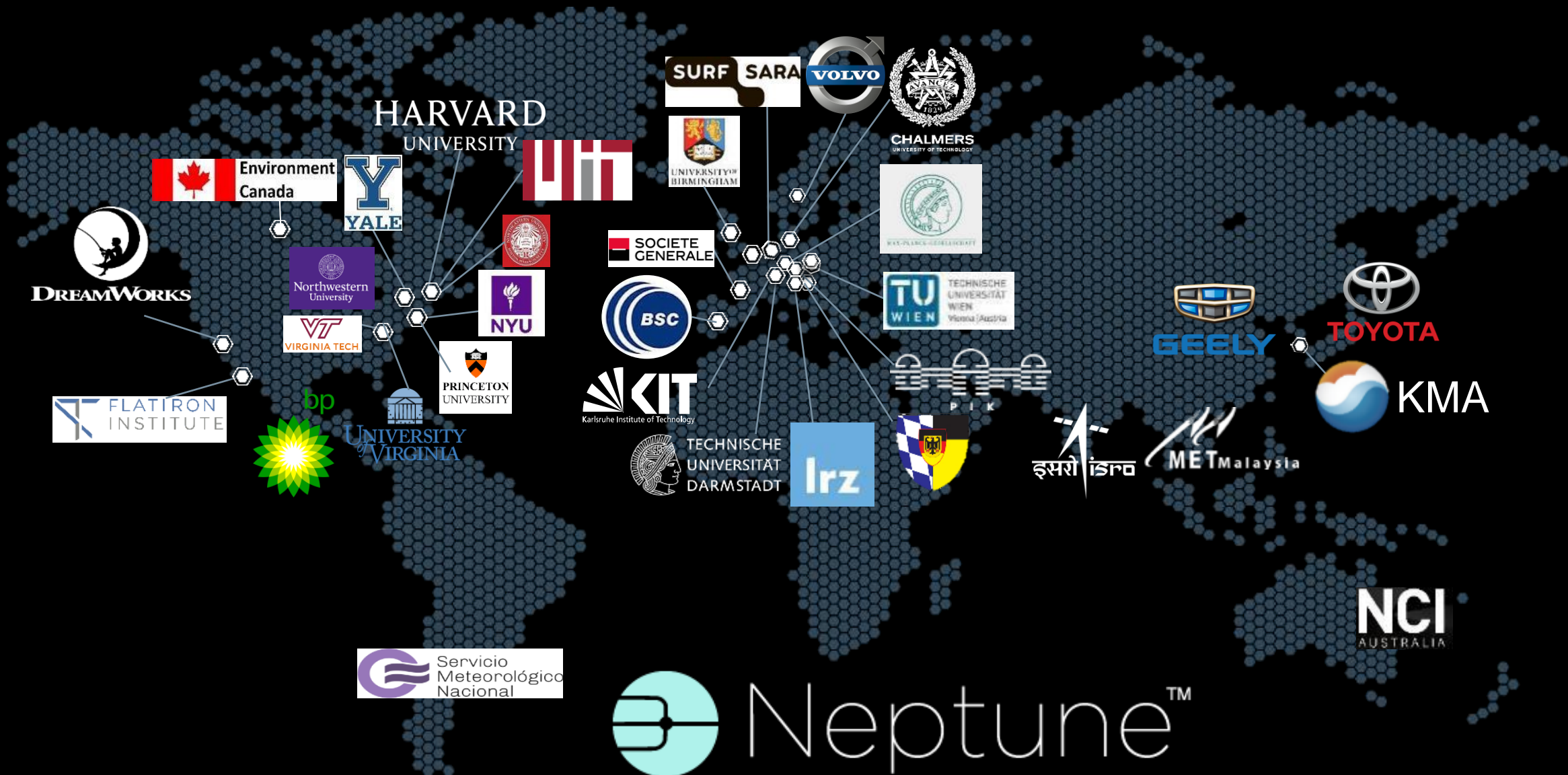
- Flagship Lenovo Neptune Direct Water Cooling Platform
- Single 6U12N chassis supports multiple technologies from Intel, NVIDIA and AMD
- Provides a low-cost approach to deliver exascale performance in a hybrid architecture
- Leverages industry-leading and proven infrastructure design for liquid cooling

How does Neptune™ direct water-cooling work?



How does Neptune™ direct water-cooling work?





Neptune™

Liquid cooling technology



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Lenovo Neptune[®] technologies



RACK WATER COOLING

Rear Door Heat Exchanger (RDHX)



In-rack Cooling Distr. Unit (CDU)



DIRECT WATER COOLING

Full System

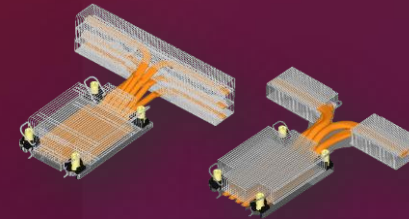


Core System

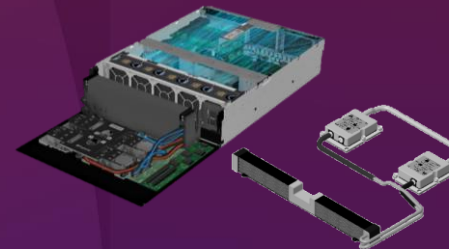


LIQUID ASSISTED COOLING

Thermal Transfer Module (TTM)



Liquid to Air Module (L2A)



LIQUID IMMERSED COOLING

Self-Contained



Fully Submerged

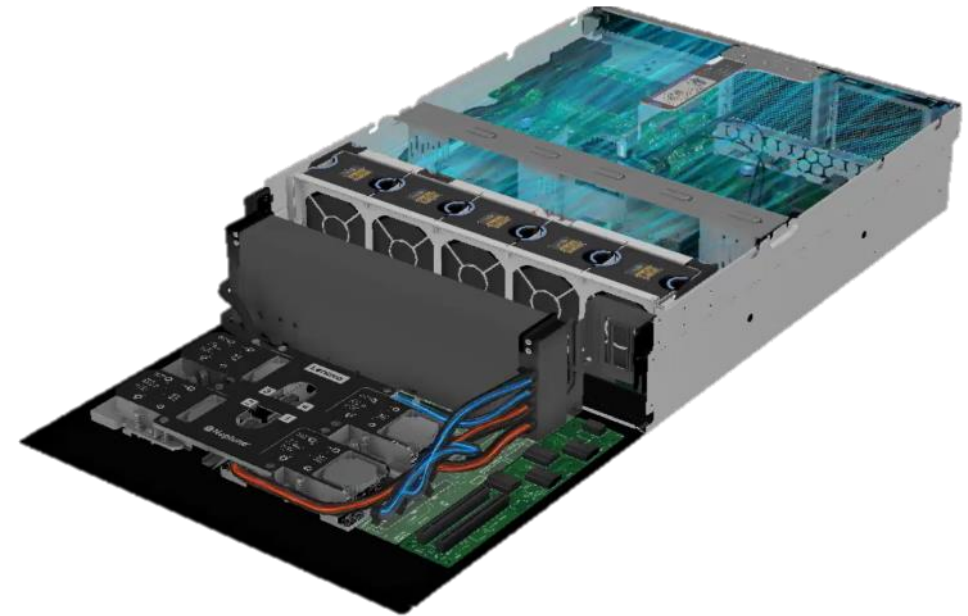


The NEW SR675 V3 with 4X NVIDIA H100 SXM + Lenovo Neptune



LEGACY AIR COOLING

- Shadow GPU design, rear SXM elevated temp
- High fan speeds needed to move heat
- Loud and high-power fans

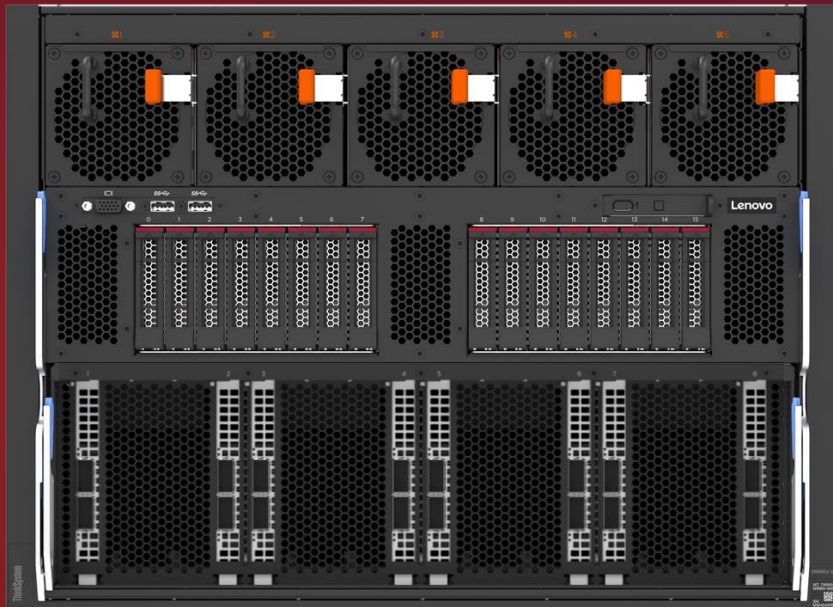


LENOVO NEPTUNE L2A COOLING

- Liquid to Air Heat Exchanger
- Fully sealed, no maintenance
- Liquid moves heat efficiently
- Lowers fan speeds, quieter, lower power

ThinkSystems Designed for LLM

ThinkSystem



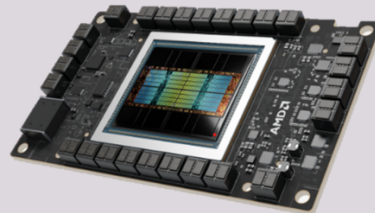
CHOICE OF CPU

AMD

/

intel

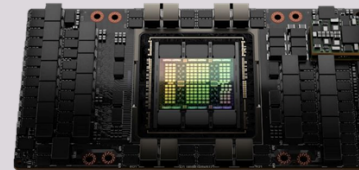
AMD
INSTINCT™ MI300x



New challenger tech for
Generative AI workloads
and HPC applications

- Sampling now
- Emerging SW ecosystem
- Promising performance

nVIDIA
Tensor Core H200



The world's most powerful
GPU for supercharging AI
and HPC workloads

- Sampling in May
- Industry leading ecosystem
- World's first HBM3 memory

intel
Gaudi® 3



Future offering delivering
price/perf leadership for both
deep learning and inference

- Available late 2024
- Aimed purely at AI
- Promising price/performance

Lenovo DSS-G

DSS-G 2xy



Storage Scale

DSS-G-NVX2



Storage Scale

DSS-G 100



Storage Scale

Erasure Code Edition

File System

DDN EXAScaler



Servers & DE

Lenovo Server Series



WEKA

Lenovo DE Series



Storage Scale



BeeGFS

“

Be the **most trusted** partner –
empowering customers' Intelligent Transformation,
and helping solve humanity's greatest challenges

thanks.

Smarter technology for all

Lenovo