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Achieve EPYC Performance and Density with Next-Gen Supermicro H13 Systems

The Supermicro H13 Advantage

Supermicro Total IT Solutions

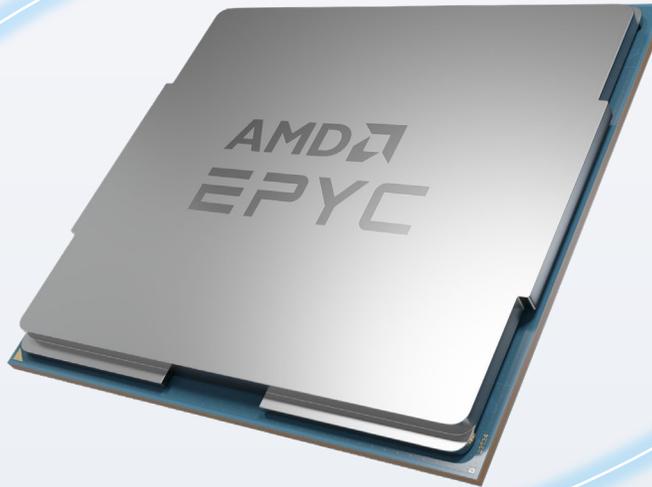
- A+ systems with over 50 world record performances achieved
- Rack Scale plug-and-play service delivers complete, validated solutions in weeks, not months
- Production capacity of 4,000 racks per month worldwide
- Made in the USA program
- Industry standard compliance for attestation of components throughout the entire supply chain



Workload Optimized 4th Gen EPYC™ CPU Portfolio

EPYC™ 97X4 “Bergamo”

Cloud Native
Available Now



EPYC™ 9004

“Genoa”

General Purpose
Available Now

“Siena”

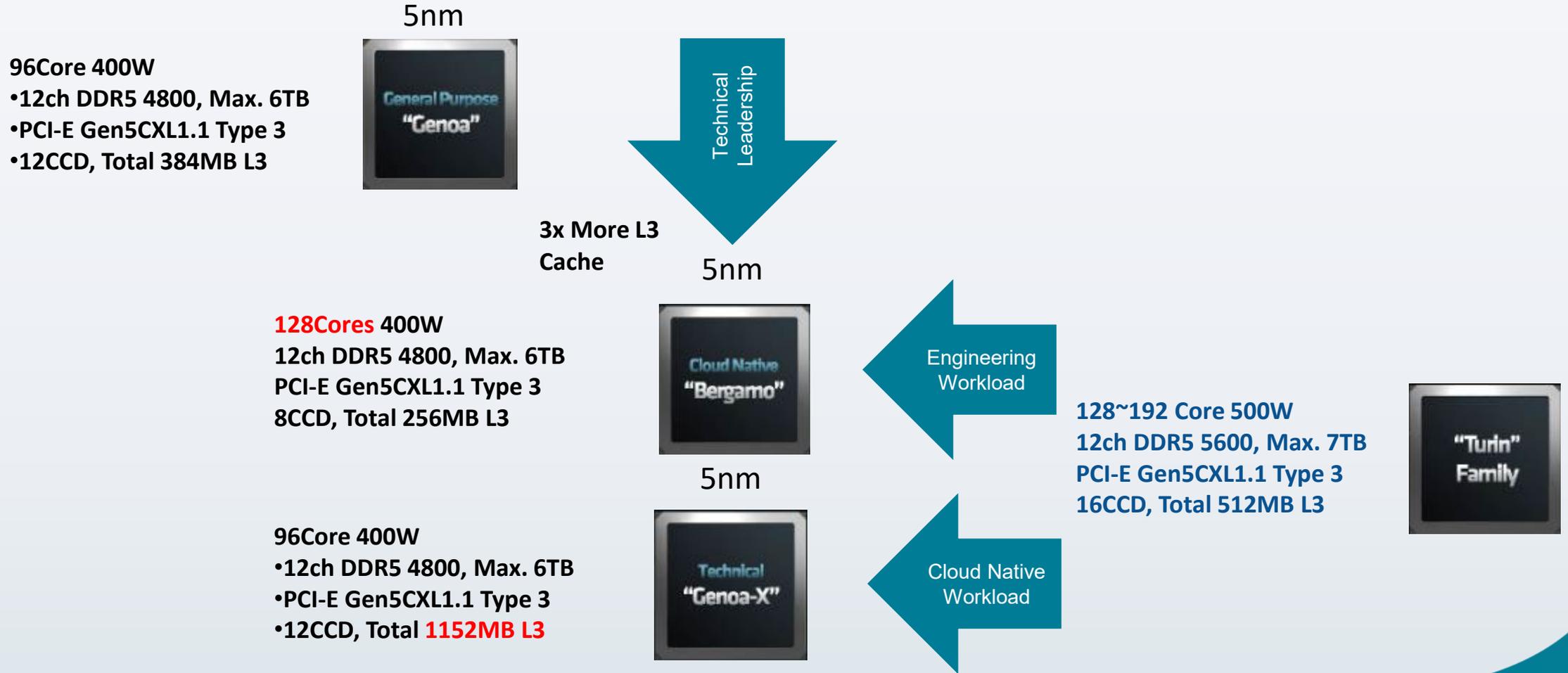
Telco/Edge
Available 2H23

EPYC™ with AMD 3D V-Cache™ Technology

“Genoa-X”

Technical Compute
Available Now

AMD EPYC™ 9004 Series CPUs



AMD Bergamo Processor SKUs

AMD EPYC™ 97x4 Processors												
Model #	Cores	Max Threads	Base Freq (GHz)	Max Boost Freq ¹¹ (GHz)	Default TDP (w)	L3 Cache (MB)	DDR Channels / Max Memory Capacity per CPU	Max DDR5 Freq (1DPC)	Per-Socket Memory Bandwidth (GB/s)	PCIe® Gen 5 (lanes)	Socket Density	Workload Affinity
9754	128	256	2.25	3.10	360w	256	12ch / 6TB	4800	460.8	x128	1P/2P	High session density cloud-native computing, M&E
9734	112	224	2.80	3.60	340w	256	12ch / 6TB	4800	460.8	x128	1P/2P	High session density Performance-intensive, Enterprise

AMD EPYC™ 9004 Processors with AMD 3D V-Cache™ technology	
Target Workload Examples	
Foundational OS	N/A
Database	N/A
AI/ML	N/A
High Performance Computing	OpenFOAM®, WRF®
Technical Compute	Ansys® Fluent®, Ansys® CFX®, Ansys® LS-DYNA®, Siemens® Star-CCM™, Altair® AcuSolve™, Dassault PowerFLOW™, Synopsys VCS®
Others	N/A

4.375 Watts per Core

Zen-3 Architecture Zen-3 Architecture



64-Core Milan

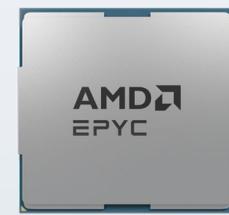


64-Core Milan



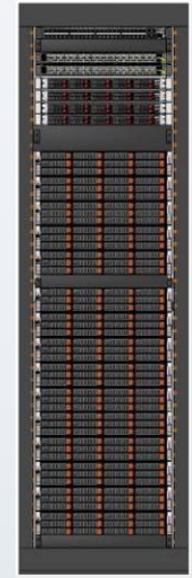
2.8 Watts per Core

Zen-4 Architecture



128-Core Bergamo

36% Energy Savings



Massive Savings

½ the Rack Space or Double the Performance

AMD EPYC™ 9754 CPU (or) EPYC™ 9754 Processor, 2.25 GHz/3.10 GHz, 128C/256T, 256M L3 Cache, 360W TDP, DDR5-4800

AMD Genoa-X Processor SKUs

AMD EPYC™ 9004 Series Processor with AMD 3D V-Cache™ Technology Models and Details												
Model #	Cores	Threads	Base Freq (GHz)	Max Boost Freq ¹¹ (GHz)	Default TDP (W)	L3 Cache (MB)	DDR Channels & Max Memory / CPU	Max DDR Freq (1DPC)	Per-Socket Memory Bandwidth (GB/s)	PCIe*5	2P/1P	Example Workload Affinity
9684X	96	192	2.55	3.70	400W	1,152	12 / 6TB	4800	460.8	x128	2P	CFD/explicit FEA, EDA throughput
9384X	32	64	3.10	3.90	320W	768	12 / 6TB	4800	460.8	x128	2P	Per-core licensed FEA/ CFD
9184X	16	32	3.55	4.20	320W	768	12 / 6TB	4800	460.8	x128	2P	EDA (RTL Simulation), quick-turn FEA/CFD

AMD EPYC™ 9004 Processors with AMD 3D V-Cache™ technology Target Workload Examples	
Foundational OS	N/A
Database	N/A
AI/ML	N/A
High Performance Computing	OpenFOAM®, WRF®
Technical Compute	Ansys® Fluent®, Ansys® CFX®, Ansys® LS-DYNA®, Siemens® Star-CCM™, Altair® AcuSolve™, Dassault PowerFLOW™, Synopsys VCS®
Others	N/A

AS -2025HS-TNR



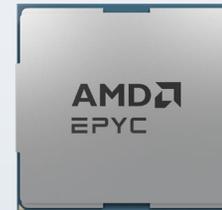
Over 1 GB of L3 Cache Per Genoa-X CPU

Zen-3 Architecture

Zen-3 Architecture

Zen-4 Architecture

Zen-4 Architecture

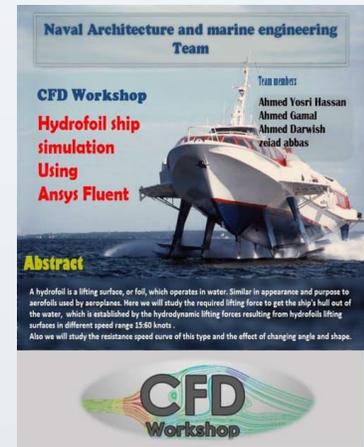


64-Core Milan

64-Core Milan

96-Core Genoa-X

96-Core Genoa-X



CFD Computational Fluid Dynamics
EDA Electronics Design Automation
FEA Finite Element Analysis

AMD EPYC™ 9684X Processor, 2.25 GHz/3.1 GHz, 96C/192T, 1152M L3 Cache, 400W TDP, DDR5-4800

Target Markets

Workload Optimized For:

Cloud infrastructure

AI & Machine Learning

Technical Computing (EDA, CFD, FEA)

Telco

Gaming

Automotive

Finance

Healthcare



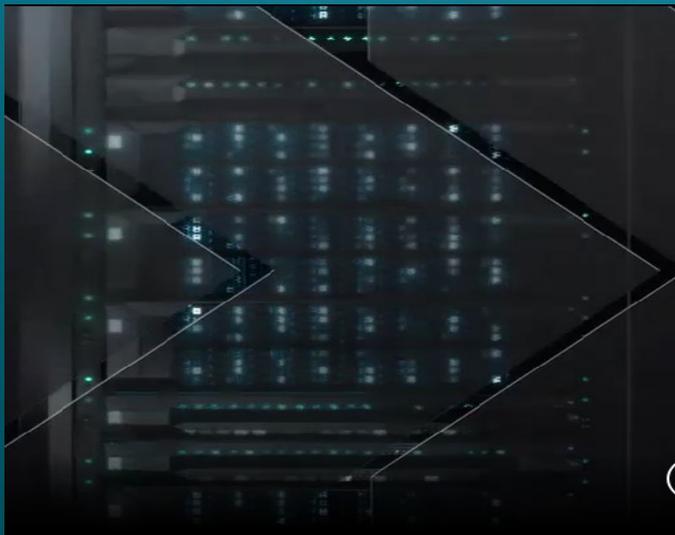


Better Together

THREE PILLARS OF AMD & SUPERMICRO VALUE

Together AMD and Supermicro are solving customers most important challenges across all industries and in all-sized businesses to impact the way we live, learn, and engage in new economies that impact our world. It's technology coming together in the best way to deliver meaningful insights, high-value flexible solutions, and technology innovations that have a positive impact.

Business Value



Purpose Built



Impactful Innovation





AMD H13 Generation Systems



H13 Hyper

Industry Leading IOPS Server with Energy Efficiency and Flexibility



H13 Hyper-U

Enterprise-Focused Servers Delivering Memory Density, Flexibility, and Power Efficiency



H13 GrandTwin™

Leading Multi-Node Architecture with Front or Rear I/O



H13 CloudDC

All-in-One Servers with Flexible I/O Options for Cloud Scale Data Centers



H13 4U PCIe GPU System

Maximum Acceleration for AI/ Deep Learning and HPC



H13 8U Universal GPU System

Next Generation Machine Learning Platform with 8x H100 GPUs



H13 E3.S Petascale System

All-Flash EDSFF storage server for Software-Defined Data Center Workloads



H13 MicroCloud

High Density Multi-Node System for Cloud and Dedicated Hosting

H13 Hyper-U

Flexible and High Performance for Enterprise Data Center

Supermicro H13 Hyper-U series are the ultimate single processor servers with up to 128 cores and supporting up to 12 channels of DDR5 in 24 DIMM slots capable of offering more cores than most 2 socket servers can. With maximized density and flexible expansion slots supporting GPUs it is ideal for AI as well as cloud native workloads, such as virtualization and HCI.

Optimized for:

- Enterprise Server
- Cloud Computing
- Virtualization
- AI Inference and Machine Learning
- Software-Defined Storage



H13 E3.S Petascale Storage System

Storage Density for Data-Intensive Applications

All-Flash NVMe storage systems powered by AMD EPYC 9004 series processors are designed with the latest EDSFF and CXL technologies allowing unprecedented capacity and performance to enable today's data hungry workloads supporting latest software-defined storage and NVMe over fabrics solutions, as well as in-memory databases.

Optimized for:

- Software-Defined Storage
- Data Intensive HPC
- Private and Hybrid Cloud
- NVMe Over Fabrics Solution
- In-Memory Computing



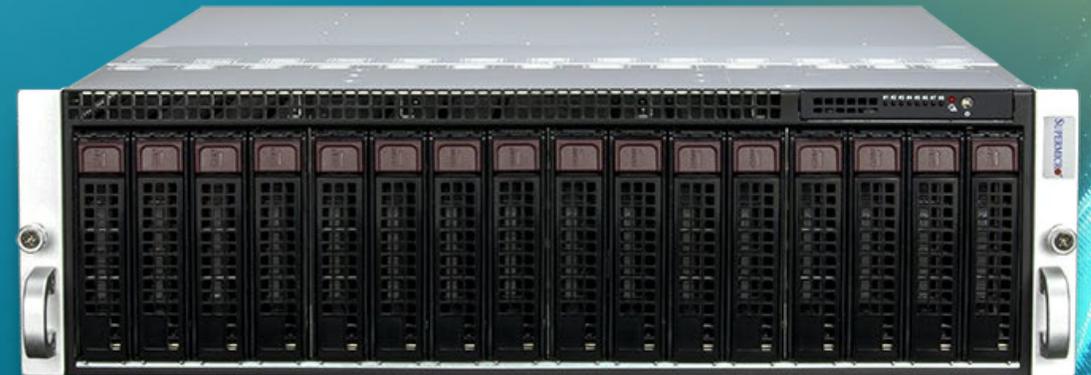
H13 3U MicroCloud

High Density Multi-Node system for Cloud and Dedicated Hosting

Supermicro H13 MicroCloud is a 3U, multi-node server powered by AMD Ryzen(TM) 7000 series processors with 8 single-processor nodes containing up to two front-accessible NVMe U.2, as well as a single 8 lane PCIe 5.0 low profile slot that can be used for GPU accelerators.

Optimized for:

- Cloud Computing
- Web Hosting, CDN, Video Streaming
- Web Colocation Services
- Social Networking, Downloads
- Corporate – WINS, DNS, Print, Login



Use Cases

Solutions in action:

Safer and More Secure Autonomous Driving Experience with 8U uGPU



Solving a Challenge:

A multinational automotive and energy company was looking to **advance AI technology for their self-driving vehicles**. They required a top-of-the-line CPU and GPU solution with real-time monitoring, robust cybersecurity and intelligent decision-making algorithms to ensure a secure and smooth autonomous driving experience for both the passengers as well as pedestrians.

The EPYC Solution:

Supermicro's **AS -8125GS-TNHR** 8U GPU servers with **AMD EPYC™ 9004 Series processors** was the ideal solution to tackle this challenge. With dual AMD 4th gen EPYC™ CPU, 24 DIMMs up to 6TB DDR5 memory and supporting 8x NVIDIA HGX H100 GPUs, the powerful 8U GPU system offered **best TTP and over 4K demand** to support customers AI data center and AV dev infrastructure applications.



AS -8125GS-TNHR

Delivering Customer Value:

Customer is very happy with the deployment and continuously working with Supermicro team to test upcoming H13 systems to offer the latest and greatest innovations in security, AI, and autonomous vehicle technology.

Delivering Optimized Search Results with H13 Hyper Solution

Solving a Challenge:

A major SEO providers in Asia was looking to expand their **backend data center computing and storage power**. Their existing solution were no longer enough to meet their ongoing requirements and were looking for powerful solutions with significant amounts of cores and memory to satisfy their customer requirements and meet stringent SLAs.



AS -2125HS-TNR



The EPYC Solution:

After careful consideration and benchmarking, they purchased over six hundred Supermicro AMD based Hyper systems **AS -2125HS-TNR** configured with the new **AMD EPYC™ 9004 series** of processors. With 1.5TB of DDR5 memory and over 120TB of storage space per server and running at a base clock speed of 3.1GHz and an all-core boost speed of 3.75GHz, The Supermicro Hyper system is a top-of-the-line rackmount system with TDP of up to 360W.

Delivering Customer Value:

Customer saw immediately results from the new Supermicro AMD based servers. Even as the business grew, the **response times to customers looking for optimal SEO terms decreased** due to the new generation of Supermicro servers with AMD EPYC 9004 Series processors. As a result, the customer can also offer more services to its customers globally, thus increasing revenue.

Acceleration in EDA and Manufacturing with H13 GrandTwin™

Solving a Challenge:

One of the leading electronic design automation (EDA) and semiconductor manufacturing company looked to supermicro in providing IT infrastructure, storage, and solutions that would help accelerate their EDA process. After careful consideration, Supermicro were amongst the few that offered the unique configuration supporting 4-node, front IO with the highest power efficiency.



The EPYC Solution:

The Supermicro GrandTwin™ Front IO was selected, offering the newest multi-node architecture solution with high density with single AMD EPYC™ Processor and 24 DIMMs up to 3TB memory per node, high power efficiency with shared power, and front IO option providing simple installation and accessibility.



AS – 2115GT-HTNF

Delivering Customer Value:

Results showed immediately and customers experience faster manufacturing process and efficiency. On top of that, 24/7 white glove and onsite service was crucial to supporting customer operations, currently testing newest H13 generation solutions

Rack-scale expansion for edge data center computing

Solving a Challenge:

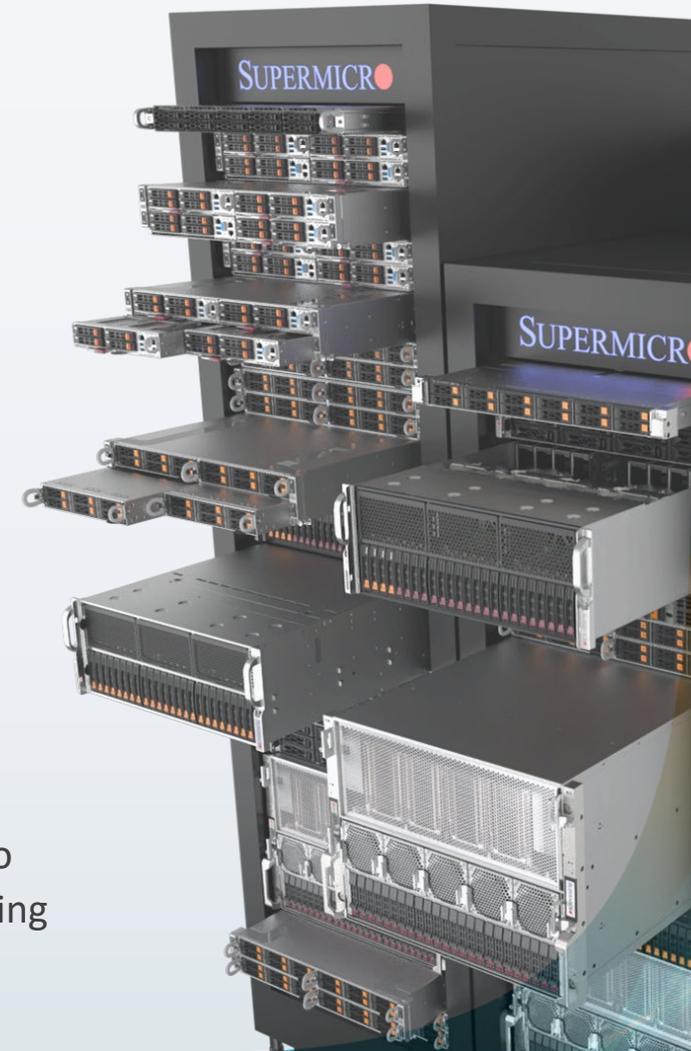
An American video game developer company found themselves in need of expanding their **edge data center computing** due to their rapidly growing customer base. To help scale globally, with their growth, the customer required powerful rack solution with higher capacity, while also **meeting lower power consumption requirements**. Our rack-scale team was introduced and was able to work with the customer every step along the way.

The EPYC Solution:

After close collaboration between our rack team and the customer from design to testing to deployment, supermicro has **deployed over 230+ racks** featuring Supermicro **AS -2014TP-HTR** multi-node system & **AS -1114S-WN10RT** systems powered by **AMD EPYC™ processors**. Each rack offering up to 34x CPUs and supports up to 16x 32G & 32x 64GB DDR4 Memory.

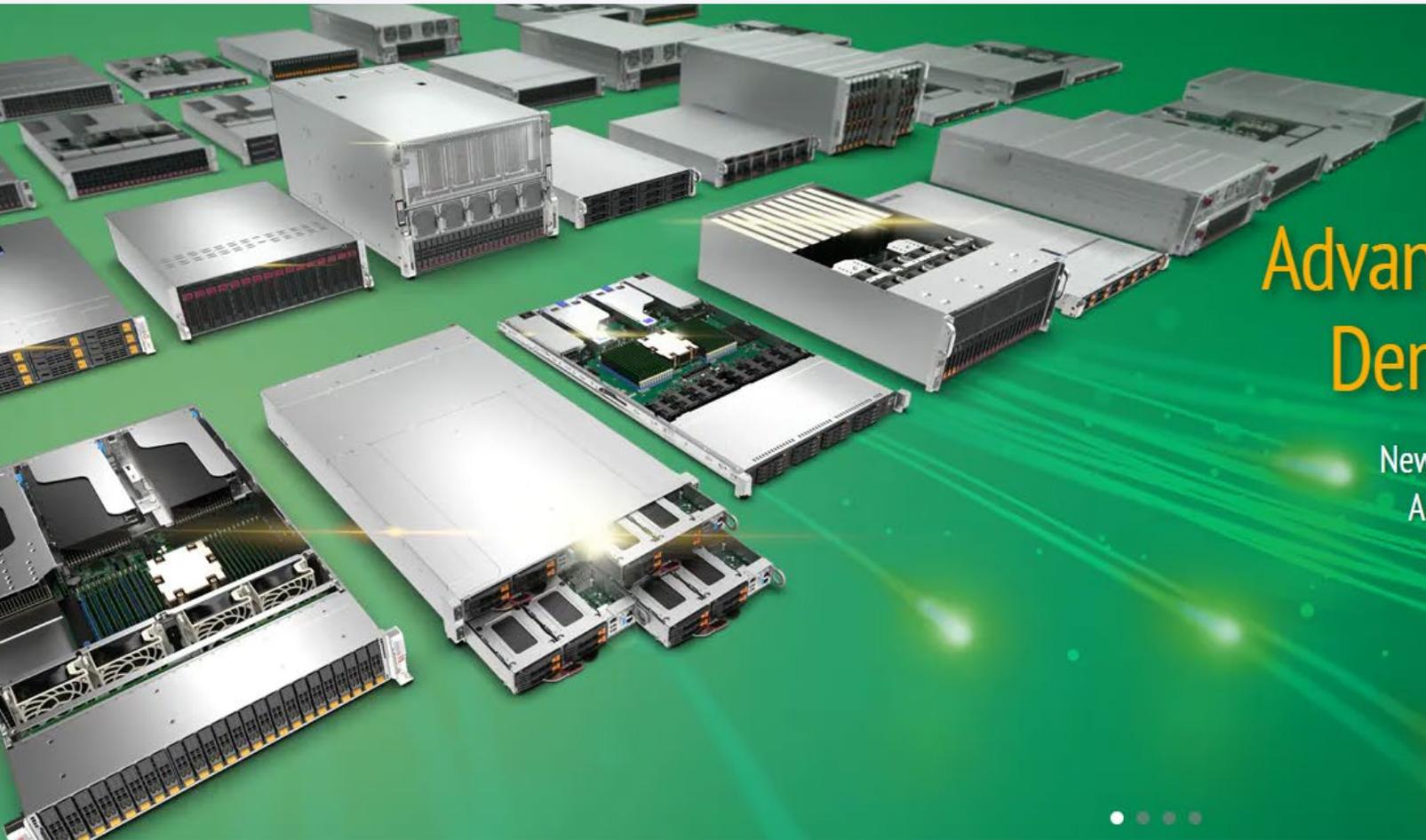
Delivering Customer Value:

The customer were extremely happy with the whole end to end service and how **easy it was to install and replace parts and nodes as needed**. With the L10, and L11 integration that Supermicro provides it **enables flexibility and customers could adjust as needed**. Currently testing and planning to move to H13 generation racks with front IO integration



Aplus Page: www.supermicro.com/aplus

Supermicro solutions powered by AMD



Advancing EPYC Performance and Density with New H13 Systems

New Cloud, AI, and Technical Computing Solutions with 128-Core AMD EPYC™ 9004 Processors and AMD 3D V-Cache™ Technology



Digital Brochure

Supermicro A+ Servers

Outstanding Performance Drives Business Agility

Empower data center customers to handle whatever the market throws at them with industry-leading Supermicro Server Solutions powered by AMD.



H13 Generation Systems

[VIEW H13 A+ SYSTEMS](#)



H12 Generation Systems

[VIEW H12 A+ SYSTEMS](#)

H13 Jumpstart Program w/ Hyper-U & Bergamo



H13 JumpStart Remote Access Program

Remote Access on Supermicro Systems with
AMD EPYC™ 9004 Series Processors



H13 Jumpstart
Program



H13 AIER Program

Academic & Research Program

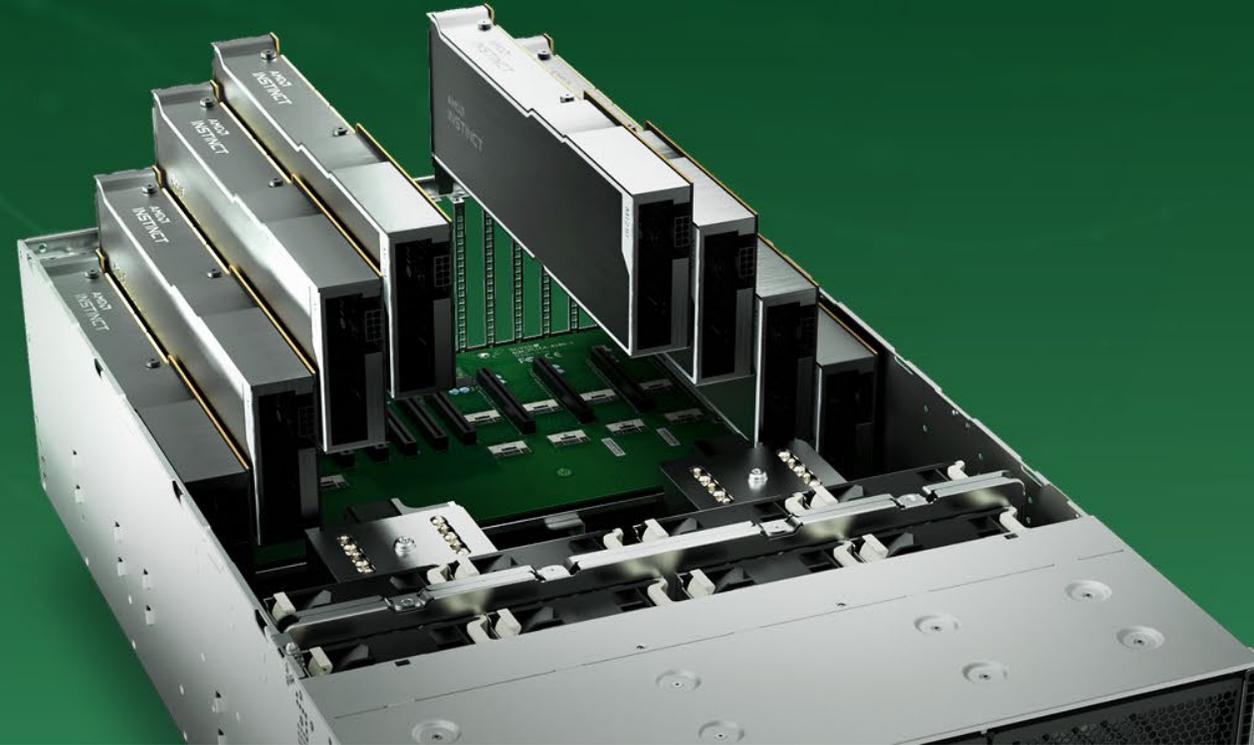
Special Discount on Supermicro's
AMD EPYC™ and Instinct™ Solutions

AMD Instinct™
Education & Research

Global Academic
Pricing Program



AIER 2.0
Application Form



Questions?

Or act now!

Register for H13 JumpStart
Remote Access Program with AMD
EPYC™ 9004 Series Processors



Access the AMD EPYC™ Tools

AMD EPYC™ Processor Selector Tool

AMD EPYC™ SERVER VIRTUALIZATION TCO ESTIMATION TOOL

AMD EPYC™ Bare Metal and Greenhouse Gas Emissions TCO
Estimation Tool



