

BROCHURE



# Data Center Building Block Solutions<sup>®</sup>



OCTOBER 2025

# Supermicro Data Center Building Block Solutions®



**Speed up Time-to-Market  
and Time-to-Online**



**One-Stop Shop Total Solution with  
Optimized Quality and Performance**



## Key DCBBS Components



### AI & Compute Systems

Broadest AI, compute, and storage system portfolio with unmatched customization and liquid cooling



### In-Rack Solutions

Complete in-rack integration—cooling distribution units & manifolds, hose kits, networking, power shelves and more



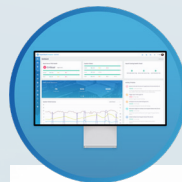
### In-Row Solutions

Scalable liquid cooling from 200kW Liquid-to-Air Sidecars to 1.8MW In-Row CDUs, plus SuperCluster solutions



### Site Infrastructure Solutions

Site-level cooling infrastructure with water and dry cooling towers, power, and optimized cabling



### Management Software Suite

End-to-end software delivering unified infrastructure control, deployment automation, developer tools, and more



### Services and Onsite Deployment

Comprehensive professional services from data center design and solution validation to on-site deployment and ongoing support

**Supermicro DCBBS** includes all critical computing, power, cooling infrastructure, software, and services. The modularized building block solution architecture—from system, to rack, to data center—reduces cost and speeds up time-to-online.



**Save Power and Cost with  
Reduced OPEX and CAPEX**



**Tested and Validated  
Before Shipping**



## Featuring the Industry's Widest Selection of System-Level Building Blocks



4U NVIDIA HGX™  
B300 DLC-2



4U NVIDIA HGX  
B200 DLC



4U AMD  
MI355X DLC



E3.S All-Flash AI  
Storage



SuperBlade®  
Multi-Node



8U NVIDIA HGX  
B300



10U NVIDIA HGX  
B200



8U AMD  
MI350X



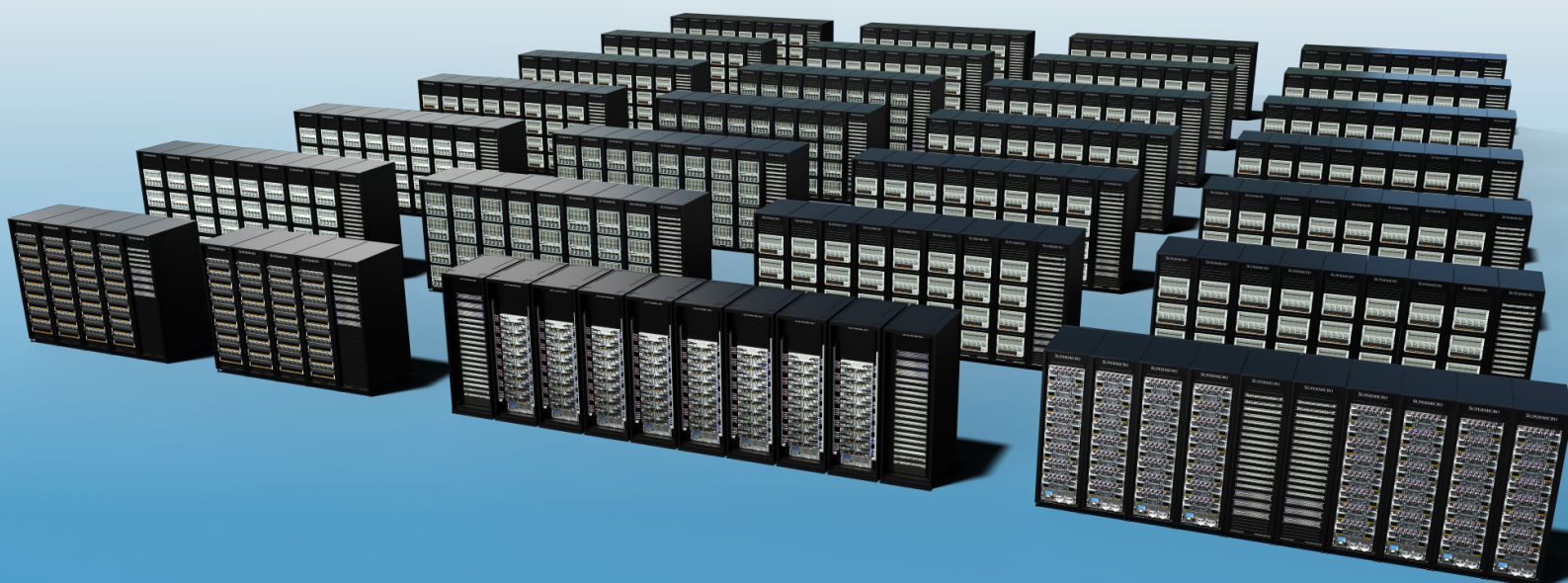
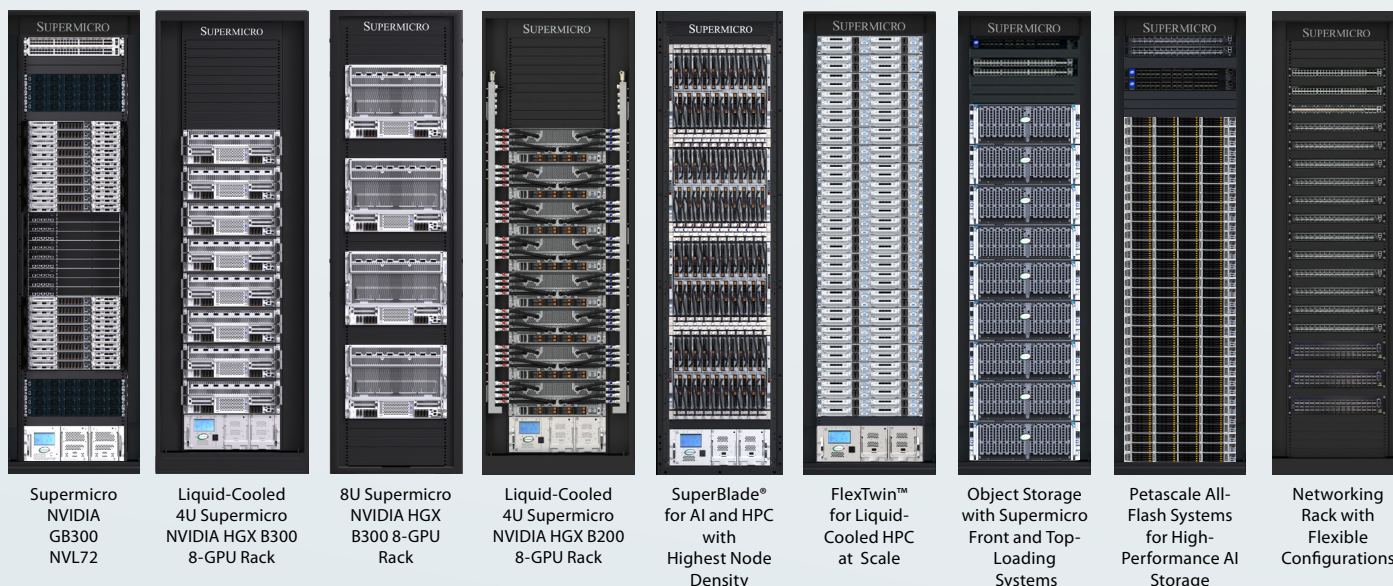
4U 90-Bay  
Scale-Out Storage



FlexTwin™  
Multi-Node

# Rack and Cluster-Level Building Blocks

Once systems are defined, they're integrated into rack-level building blocks, the organizational backbone of your cluster. Racks are fully integrated and validated at cluster level with L11 and L12 testing to accelerate time to online and to assure plug-and-play deployment.



To achieve the complex building process of large AI clusters, such as 256 system node clusters, it can be made simpler by dividing it into smaller parts. These “scalable units” consist of groups of systems, interconnected with rail-optimized network topology, that can be further multiplied to achieve the desired cluster size.

# AI and Compute Systems



## GPU and CPU Systems

- Broad range of density, efficiency, and scalability-optimized systems
- Latest AI and compute technology from NVIDIA, AMD, and Intel in various form factors designed for diverse workloads

Form Factors

1U to 10U

Cooling Types

Air Cooling, Liquid Cooling

## Storage Systems



- Petascale and object storage servers with seamless integration across leading software-defined networking partners
- Maximum throughput and scalability for data-intensive AI workloads

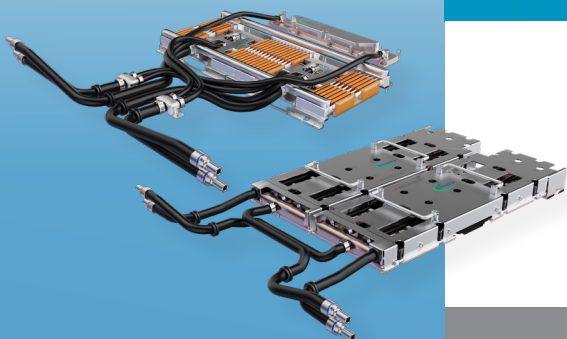
Drive Types

2.5", 3.5", E1.S, E3.S,

Interfaces

NVMe, SAS, SATA

## System Building Blocks, Cold Plates



- Direct-to-Chip Liquid Cooling (DLC) cold plates for CPU, GPU, DIMM, VRM, PCIe Switch, PSU, and more
- Allows for heat capture directly from the chip
- Low thermal resistance

CPU Support

Intel Xeon, AMD EPYC

GPU Support

NVIDIA GPUs, AMD GPUs

# In-Rack Solutions

## In-Rack Coolant Distribution Unit (CDU)



- Supports cooling capacity up to 250 kW
- Features a redundant pump design that ensures uptime
- Includes redundancy control to secure power continuity
- Offers a touch screen and web interface for simplified operation
- Designed for seamless integration with both EIA and OCP rack architectures

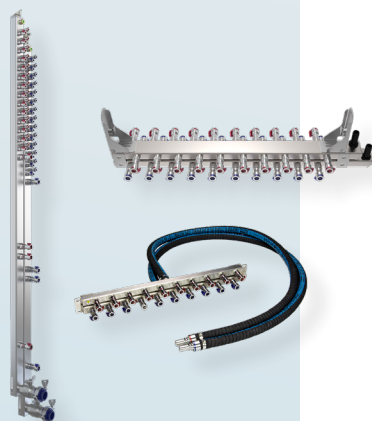
Cooling Capacity

Up to 250 kW

Redundancy

EIA: 2N redundant pumps;  
OCP: N+1 redundant pumps

## Cooling Distribution Manifold (CDM)



- CDM distributes coolant to each server in the rack and returns hot coolant to the CDU
- Horizontal and vertical manifold mounting options available
- Integrated in racks for seamless scaling
- DLC-2 vertical CDM saves rack space and increases density

Mounting Types

Vertical, Horizontal

# In-Rack Solutions



## Rear Door Heat Exchanger (RDHx)

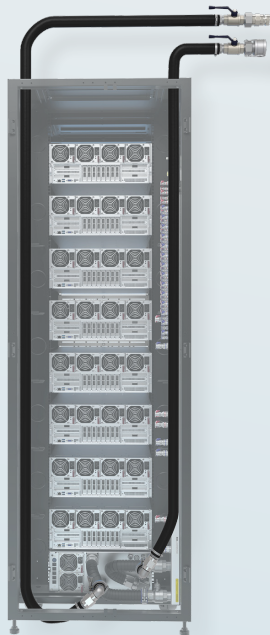
- Supports cooling capacities of 50 kW or 80 kW
- Higher efficiency, intelligent control, and seamless integration with modern AI racks
- Supports quick rack mounting with flexible installation
- High-performance fans for optimal airflow and heat dissipation
- Intelligent anti-condensation system prevents moisture

Cooling Capacity

Up to 80 kW

Redundancy

N+1 Fans



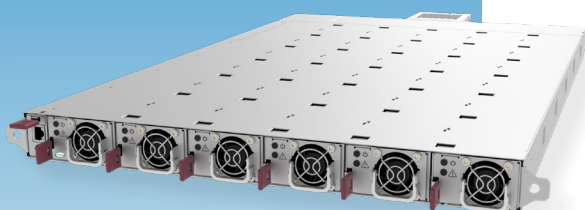
## Hose Kit

- Flexible length design to fit different racks and data center placements
- High liquid pressure tolerance with 10-bar
- Ball valves provide excellent sealing which can prevent facility water and coolant evaporation
- Universal camlock for seamless integration with facility piping

Connection Type

1.25" standard CDU

# In-Rack Solutions



## Power Shelf

- Power solution for systems that require direct current
- Provides up to 33 kW per power shelf
- Available in standard 19" rack and 21" (ORv3) rack design

Power Capacity

Up to 33 kW

Form Factor

1U, 19" or 21"



## Battery Back-Up Unit (BBU)

- Provides direct current with backup power to ensure safety and continued operation
- Available in standard 19" rack and 21" (ORv3) rack design

Power Capacity

Up to 33 kW

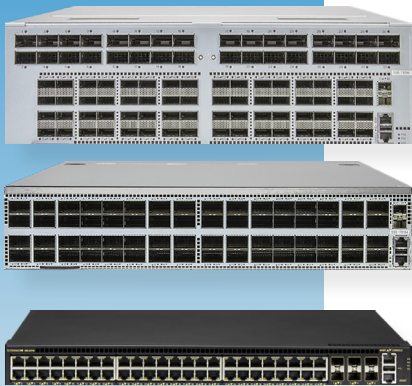
Form Factor

2U, 19" or 21"

Discharge Duration

90 Seconds—33 kW  
240 Seconds—24 kW

# In-Rack Solutions



## Supermicro Networking Switches

- Standard and unique 400G/800G platforms with liquid cooling solutions
- Optimized for AI workloads, high performance storage networks, and enterprise data centers
- Advanced Enterprise SONiC and ONIE support for custom NOS integration
- Open and wide range of validated transceivers and cable options

| Standards | Ethernet                         |
|-----------|----------------------------------|
| Speeds    | 1 Gb/s to up to 800 Gb/s options |



## Partner Networking Switches

- Compute fabric InfiniBand switches supporting end-to-end 800 Gb/s
- Compute fabric ethernet switches supporting up to 800 GbE
- Converged network switches for both high-performance storage and in-band management networks

| Standards | NVIDIA Spectrum Ethernet<br>NVIDIA Quantum InfiniBand |
|-----------|-------------------------------------------------------|
| Speeds    | 1 Gb/s to up to 800 Gb/s options                      |

# In-Row Solutions



## Liquid-to-Air Sidecar CDU

- Supports cooling capacity up to 200 kW
- Ensures uptime and enhances system reliability with a redundant pump design and automatic transfer switch
- Easy control through touchscreen and web interface
- Side-mounted CDU for liquid circulation and heat rejection

|                  |                     |
|------------------|---------------------|
| Cooling Capacity | Up to 200 kW        |
| Redundancy       | N+1 redundant pumps |



## In-Row Coolant Distribution Unit (CDU)

- Supports cooling capacity up to 1.8 MW
- Ensures uptime and enhances system reliability with a redundant pump design and automatic transfer switch
- Provides centralized liquid distribution and flexible row-level deployment
- Easy control through touch screen and web interface

|                  |                     |
|------------------|---------------------|
| Cooling Capacity | Up to 1.8 MW        |
| Redundancy       | N+1 redundant pumps |

## SuperCluster



- Highly customizable, plug-and-play cluster solutions with multiple racks and integrated networking fabric
- Each system undergoes rigorous L11 or L12 validation testing before shipping, ensuring turnkey deployments

|                      |                        |
|----------------------|------------------------|
| Cooling Types        | Air, Liquid Cooling    |
| Compute Network Type | Ethernet or InfiniBand |

# Site Infrastructure Solutions

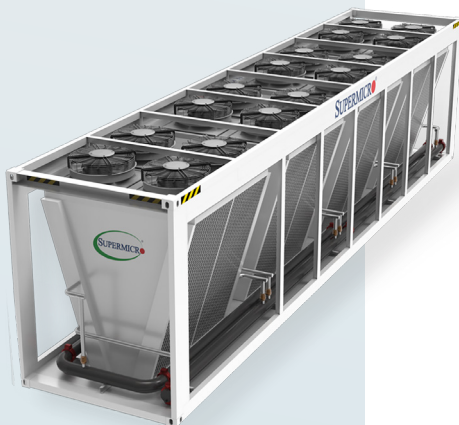


## Water Cooling Tower

- Supports cooling capacities from 1 MW to 50 MW\*
- Adapts to any deployment size with a flexible, modular design
- Maximizes energy efficiency with EC fan design
- Enhances reliability and ensures quieter operation with N+1 submersible pump
- Minimizes risk and maintenance with a closed-loop design

Cooling Capacity

Up to 50 MW or more



## Dry Cooler

- Supports cooling capacities from 1 MW to 50 MW\*
- Adapts to any deployment size with a flexible, modular design
- Low PUE/WUE cooling solutions tailored for water-constrained regions
- Features adiabatic-assisted air pre-cooling for high-temperature environments
- Minimizes risk and maintenance with a closed-loop design

Cooling Capacity

Up to 50 MW or more

\*Note: Higher cooling capacity is possible with adequate site resources.

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# Site Infrastructure Solutions



## Cabling

- Optimized traffic engineering for site scale networking
- Complete cabling design, documentation, and implementation services
- Reduces time-to-online, material costs, and labor while ensuring high-performance data flow



## Data Center Generators\*

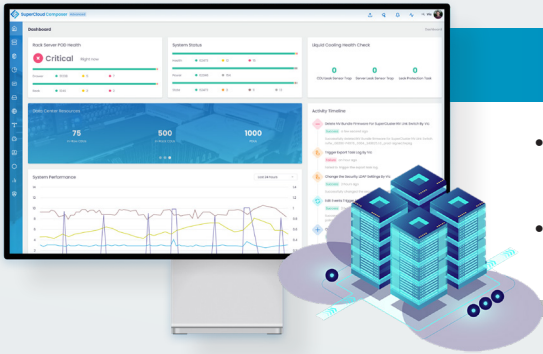
- Standby generators providing fast-start, high step-load acceptance with native paralleling and seamless automatic transfer switch integration
- Build scalable N+1/N+N backup architectures ensuring mission-critical uptime for AI compute environments with unified, predictable operations.



## Power Transformer\*

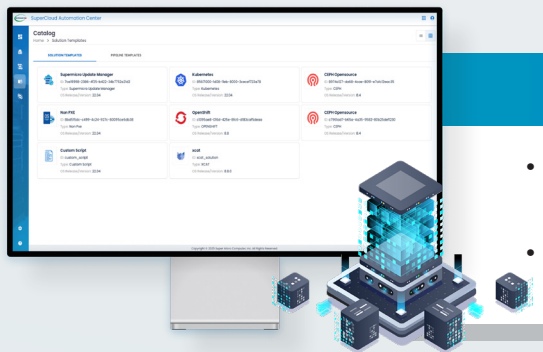
- Pad-mount transformers delivering robust, low-impedance power for AI rows and multi-MW blocks
- Configurable for MV primaries and secondaries with smart monitoring and loop-feed options, integrating seamlessly with MV switchgear, UPS/BESS, and prefabricated skids for fast, resilient deployments

# Management Software Suite



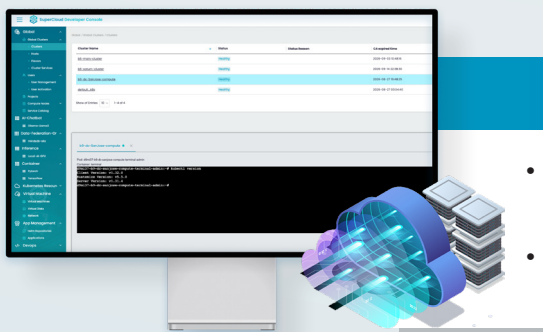
## SuperCloud Composer® for DCBBS

- Unified rack-scale and liquid cooling management across servers, networks, PDUs, CDUs, and 3rd-party systems
- Power management, advanced leak detection, protection, and alerts



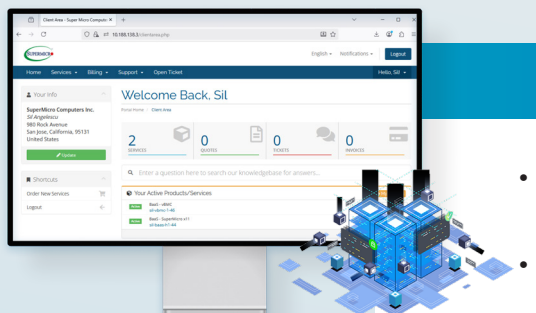
## SuperCloud Automation Center

- Pre-built, enterprise-grade automation for data center and edge infrastructure.
- Covers everything from firmware and OS provisioning to Kubernetes and AI workload enablement



## SuperCloud Developer Console

- Developer console that brings together GPU as a Service (GPUaaS), Kubernetes, AI pipelines, and data services
- Featuring self-service provisioning, AI-native workflows, and built in observability



## SuperCloud Director

- Multi-tenant AI cloud control with integrated bare metal, Ethernet & Infiniband network, and storage management
- Optimizes performance, security and developer agility

# Supermicro Services and Support



## Planning and Validation

- Carefully planned projects include designs for the data center floorplan, rack layout, port mapping, and more
- Before shipping, Supermicro goes beyond industry standards with testing that includes rack (L11) and cluster-level (L12) validation

Planning

Topology, floorplan, cabling, and more

Validation

Rack (L11) and Cluster (L12)



## Onsite Deployment

- End-to-end deployment starts with Supermicro's white-glove delivery service, ensuring the utmost care
- On-site service team members handle racking and stacking, with optional software installation available

Capabilities

Comprehensive, from shipment to online



## Onsite Support

- Supermicro ensures a smooth transition after deployment, with full documentation and ongoing support to ensure long-term success
- Global Services provide options for on-site response time as short as 4 hours and parts replacement services

On-Site Response Time

As fast as 4-hours

# Supermicro Data Center Solutions and Services

## Build Service



- Turn-key solution with architecture design, engineering services, permitting, and full general contracting
- Robust redundancy schemes—including modular blocks and systems, redundant chilled water loops, and piping

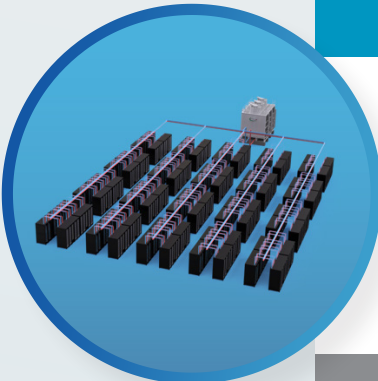
Consideration

Real estate, power, water

Inclusion

Mechanical, Electrical, Plumbing, Building infrastructure

## Retrofit Service



- Take your existing air-cooled facilities and upgrade to our next generation Direct Liquid Cooling (DLC-2)
- Provides the highest efficiency, density, and energy savings

Qualification

Air to Liquid Cooling (DLC-2)

## Data Center Fit-Out Service



- Turn-key solution for building high-performance data center environments
- Designed to meet the demands of modern compute, storage, and networking infrastructures

Consideration

Real estate, power, water

# Better

Better Performance  
Per Watt and Per Dollar



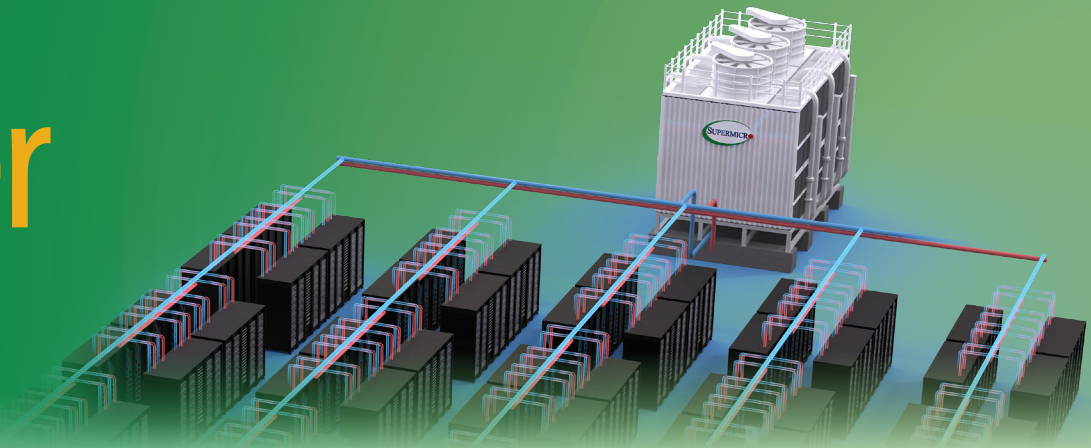
# Faster

First-to-Market Innovation with the  
Highest Performance Server Designs



# Greener

Reduced Environmental  
Impact and Lower TCO



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