



3. Economic HW Solution



Speaker



Aleksandr Makhov
Senior Field Application Engineer



DISCLAIMER

Super Micro Computer, Inc. may make changes to specifications and product descriptions at any time, without notice. The information presented in this document is for informational purposes only and may contain technical inaccuracies, omissions and typographical errors. Any performance tests and ratings are measured using systems that reflect the approximate performance of Super Micro Computer, Inc. products as measured by those tests. Any differences in software or hardware configuration may affect actual performance, and Super Micro Computer, Inc. does not control the design or implementation of third party benchmarks or websites referenced in this document. The information contained herein is subject to change and may be rendered inaccurate for many reasons, including but not limited to any changes in product and/or roadmap, component and hardware revision changes, new model and/or product releases, software changes, firmware changes, or the like. Super Micro Computer, Inc. assumes no obligation to update or otherwise correct or revise this information.

SUPER MICRO COMPUTER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE CONTENTS HEREOF AND ASSUMES NO RESPONSIBILITY FOR ANY INACCURACIES, ERRORS OR OMISSIONS THAT MAY APPEAR IN THIS INFORMATION.

SUPER MICRO COMPUTER, INC. SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT WILL SUPER MICRO COMPUTER, INC. BE LIABLE TO ANY PERSON FOR ANY DIRECT, INDIRECT, SPECIAL OR OTHER CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF ANY INFORMATION CONTAINED HEREIN, EVEN IF SUPER MICRO COMPUTER, Inc. IS EXPRESSLY ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

ATTRIBUTION

© 2020 Super Micro Computer, Inc. All rights reserved.

❖ What is Clouds and Cloud Computing?

❖ Public, Private, Hybrid...

❖ Advantages and disadvantages

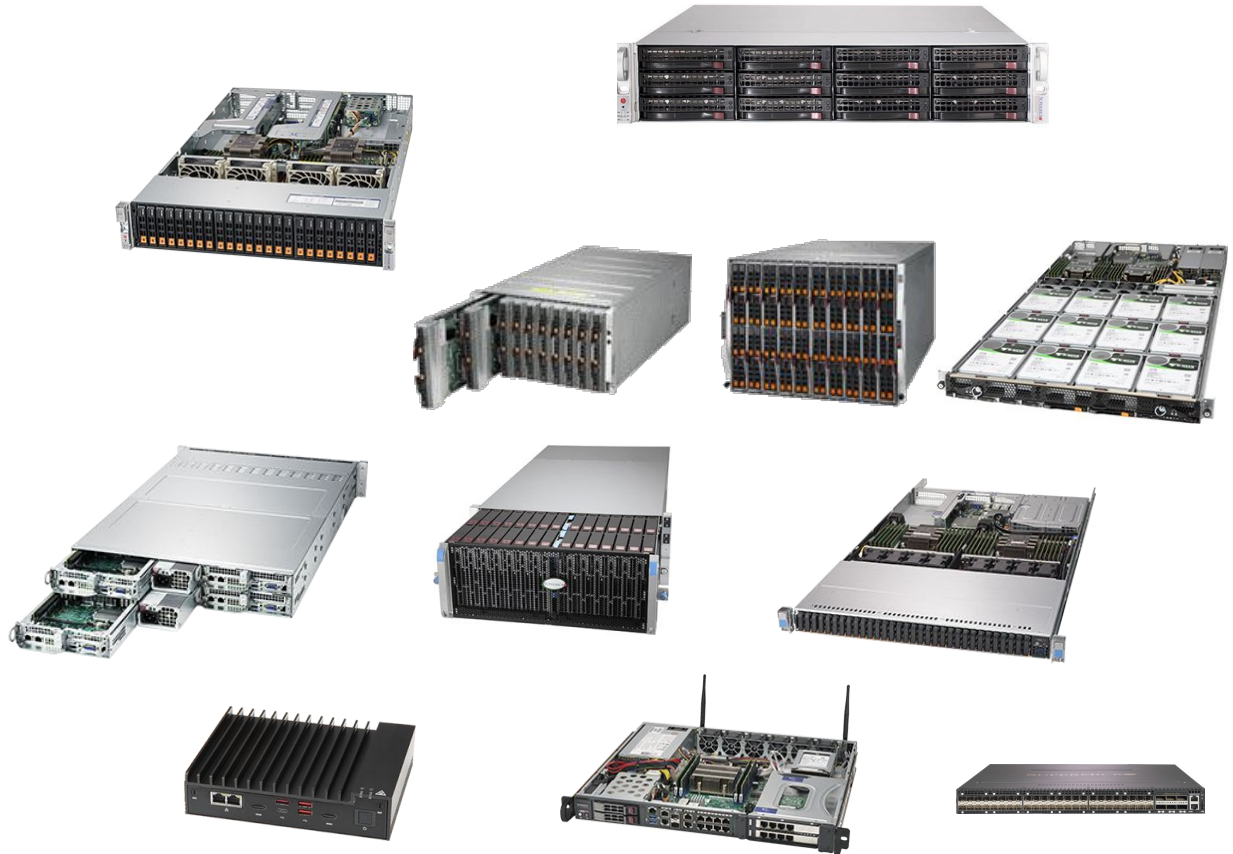
❖ Why we use Cloud Computing?

❖ IaaS, PaaS, SaaS, DaaS

❖ Market overview



- ❖ Rackmount Servers
- ❖ Multi-node Blades
- ❖ Multi-node Twins
- ❖ Storage systems
- ❖ EDGE and IoT
- ❖ Networking
- ❖ Etc, etc,
etc...

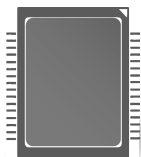




More Powerful

More Flexible

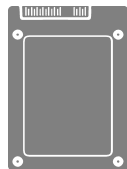
More Optimized



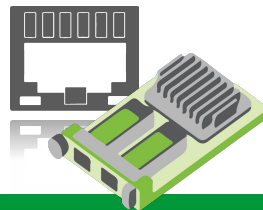
2 CPUs
1U 165W TDP
2U 280W TDP



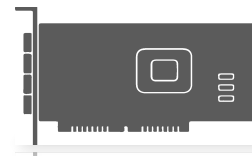
DDR4-3200
16 DIMM Slots



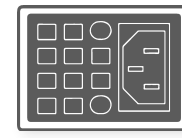
10 Drives in 1U
12 Drives in 2U
Up to 12 NVMe



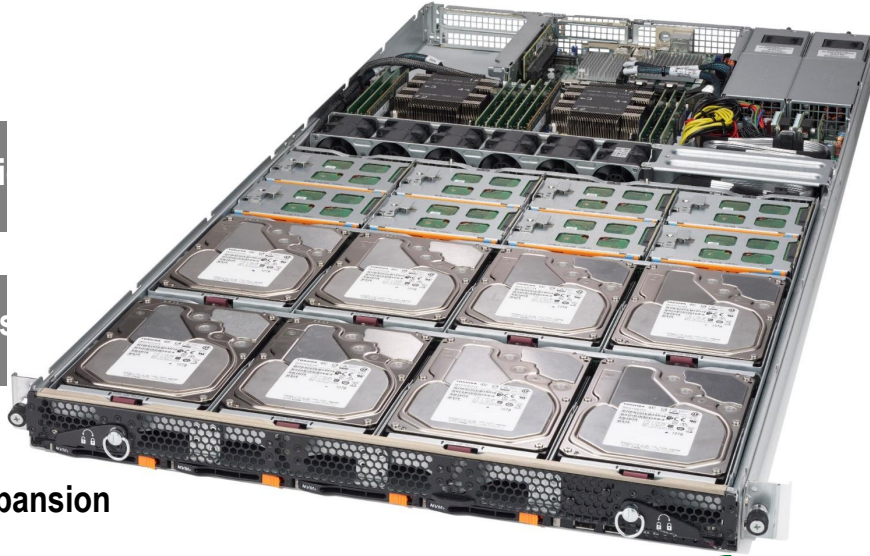
2 AIOM
(OCP 3.0 NIC)
1 Dedicated IPMI



2 AOCs in 1U
(2 PCIe 4.0 x16 FHHL)
6 AOCs in 2U
(2 PCIe 4.0 x16 + 4 PCIe 4.0 x8
FHHL)



Redundant PWS
1U 750W / 2U 1200W
94% - 96% Efficiency



High Density Storage Solution

Reliable System Structure Design

Flexible Networking Options

Efficient Air Cooling with High Performance CPU

2 PCIe G4 + 1 AIOM Expansion Slots

1U Drawer

High Density Storage

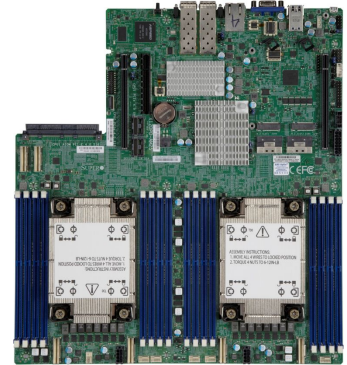
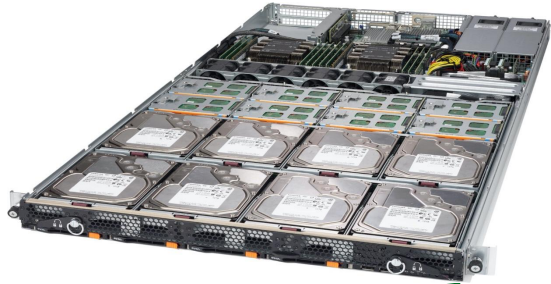
Flexible Networking

Standard SKU, 12x LFF SAS + 4x SFF NVMe/SATA
Hybrid SKU, (8x SFF + 8x LFF) SAS + 4x SFF NVMe/SATA

2 PCIe G4 + 1 AIOM Expansion Slots

- Front Access Server 1U10Bay
- Slim Storage 1U12Bay + 4NVMe

- Database, GPU 2U12Bay
- Dense Storage 2U24Bay + 8NVMe



OpenBMC Supported on ALL Systems



X12/H12 Ultra Series

Highest Performance and Flexibility for Enterprise Applications

**2U Ultra Short-Depth**

Optimized for 5G and Telco

SYS-220U-MTNR: 6x 2.5" NVMe/SAS/SATA

**1U Ultra 2.5"**

Compute & Storage Powerhouse

SYS-120U-TNR: 12x 2.5" NVMe/SAS/SATA
AS -1124US-TNRP: 12x 2.5" NVMe/SAS/SATA**1U Ultra 3.5"**

Compute Optimized

SYS-610U-TNR: 4x 3.5" NVMe/SAS/SATA
AS -1024US-TRT 4x 3.5" NVMe/SAS/SATA**2U Ultra 2.5"**

IOPS Optimized Storage

SYS-220U-TNR: 22x 2.5" NVMe/SAS/SATA + 2 SAS/SATA
SYS-220U-E1CR: 24x 2.5" SAS/SATA (via Expander, 4 NVMe Hybrid)
AS -2124US-TNRP: 24x 2.5" NVMe/SAS/SATA**2U Ultra 3.5"**

Capacity Optimized Storage

SYS-620U-TNR: 12x 3.5" NVMe/SAS/SATA
AS -2024US-TRT : 12 hot-swap 3.5" Drive Bays**KEY FEATURES****Modular Components for Building Application-optimized Solutions from 5 New Streamlined Base Models**

- All-hybrid hot-swappable drive bays - NVMe, SAS, or SATA

Better Thermals with New Optimized Airflow Designs

- 1U: Up to 250W TDP processors
- 2U: Up to 280W TDP processors

New Levels of Compute Performance and Flexibility

- Support future generation Intel® Xeon® Scalable (Ice Lake) processors
- Large memory footprint for up to 8TB
- Vast expansion slots supporting double-wide GPUs and FPGAs (PCI-E Gen 4)
- Dynamic storage
 - Every platform supports direct-attached full-hybrid all-NVMe for lower latency with higher throughput and IOPS
- 1U: up to 12 hybrid NVMe
- 2U: up to 24 hybrid NVMe
- Flexible on-board networking options for up to dual 25G Ethernet
 - Also support standard PCI-E network interface card
- Redundant AC/DC Titanium (96%) Level Power Supplies
- **New! 2U Ultra Short-Depth Model (22.6")**



Form Factor

1U and 2U Rackmount



Processors

Dual 3rd generation Intel® Xeon® Scalable and AMD EPYC Milan



Memory

32 DIMM slots, up to 8TB
Support new Intel® Optane™
Persistent Memory 200 Series (Barlow Pass)

Input/Output

1U: 3 PCI-E 4.0 x16 (1 LP, 1 internal LP)
2U: 2 PCI-E 4.0 x16 (1 LP) + 6 PCI-E 4.0 x8 (1 internal LP)

Networking

Flexible on-board networking and AIOM



Drives

1U: 12x 2.5" or 4x 3.5"
2U: 6x 2.5", 24x 2.5", or 12x 3.5"
NVMe/SAS/SATA (SAS via AOC)

Power

2000W/1200W Redundant Titanium (96%) Level



X12 HYPER Series

Next Generation Supermicro High-Performance Rackmount Architecture

**2U HYPER Short-Depth**

Optimized for 5G and Telco

SYS-220HE-RTNR: 6x 2.5" NVMe/SAS/SATA

**1U HYPER 2.5"**

Compute & Storage Powerhouse

SYS-120H-TNR: 12x 2.5" NVMe/SAS/SATA

**2U HYPER 2.5"**

IOPS Optimized Storage

SYS-220H-TNR: 24x 2.5" NVMe/SAS/SATA

**2U HYPER 3.5"**

Capacity Optimized Storage

SYS-620H-TNR: 12x 3.5" NVMe/SAS/SATA

KEY FEATURES**Best-in-Class Compute Performance and Flexibility**

- Support future generation Intel® Xeon® Scalable (Ice Lake) processors
- Large memory footprint for up to 8TB DDR4-3200
- Vast expansion slots (PCI-E 4.0) with front & rear IO options
- Supporting double-wide GPUs and FPGAs
- Dynamic storage
 - Every platform supports direct-attached full-hybrid all-NVMe for lower latency with higher throughput and IOPS
- 1U: up to 12 hybrid NVMe
- 2U: up to 24 hybrid NVMe
- Flexible networking options up to 100G with Supermicro AIOM modular networking
 - Also supports OCP NIC 3.0 standard network devices
- Redundant AC/DC Titanium (96%) Level Power Supplies

Ease of Use for Maintenance and Upgrades

- Tool-less system design for easy removal/installation of key components

Carrier Grade 2U Configurations Available for 5G and Telco

- 2U Short depth (574mm) chassis for space constraint requirements



Form Factor

1U and 2U Rackmount



Processors

Dual future generation Intel® Xeon® Scalable (Ice Lake) processors



Memory

32 DIMM slots, up to 8TB
Support new Intel® Optane™
Persistent Memory 200
Series (Barlow Pass)

Input/Output

1U: Up to 3 PCI-E 4.0 Slots
2U: Up to 8 PCI-E 4.0 Slots

Networking

AIOM/OCP 3.0 NIC Slot(s)
with network options up
to 100G

Drives

1U: 12x 2.5"
2U: 6x 2.5", 24x 2.5", or 12x
3.5"
NVMe/SAS/SATA (SAS via AOC)

Power

2600W/1600W
Redundant
Titanium (96%) Level



REDUCE: Optimized shared resources for up to 50% reduction in Power and Cooling TCO
Multi Node Power and Cooling



REUSE: Multi-generation infrastructure for up to 65% CAPEX Savings
Disaggregated Server Architecture
Building Block Solutions – Application Optimized

REFRESH: Modular upgrades for maximum performance and efficiency
Refresh: 45-60% Savings in Hardware Refresh Costs



Up to 50% Reduction in
Power and Cooling Costs

45%-65% Lower
Acquisition Costs

100% Free-Air Cooling
Operating Temperature
up to 45°C

Super Storage Family Portfolio

Cloud Density Storage



Enterprise Building Block



Storage Bridge Bay



Petascale Solid-State Storage



Capacity, TCO

Unstructured, Objects

Latency, Throughput

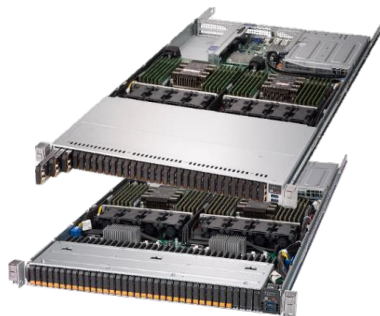
Structured, Block & File

Higher Storage Density, Capacity and Performance with Lower Latencies



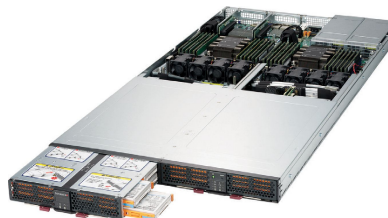
E1.L

Up to **1PB NVMe** in 1U
DP Xeon™ Scalable up to
205W
24 DIMM w/ optional Optane
DC



E1.S

Up to **0.5PB NVMe** in 1U
DP Xeon™ Scalable up to
250W
24 DIMM w/ optional Optane
DC



U.2/U.3

Up to **1PB NVMe** in 1U
DP Xeon™ Scalable up to
165W
24 DIMM w/ optional Optane
DC


EDSFF – Open Standards (Enterprise & Datacenter SSD Form Factor)

A group of 15 companies
working together

Industry standard connector and
form factor optimized for NVMe*

Built for increased operational
efficiency and dense storage






2U4 BigTwin EDSFF

Highest Multi-Node Storage Density
SYS-220BT-HER: 10 NVMe + 2 M.2 SATA

2U 4-Node BigTwin

Compute & Highest Storage Density




SYS-220BT-H Series
AS
-2124BT-HNT
R




SYS-620BT-D Series: 3 NVMe/SAS/SATA
 (per node)

2U 2-Node BigTwin

Compute w/ IOPS Optimized Storage



SYS-220BT-D Series: 12
 NVMe/SAS/SATA
 (per node)



SYS-620BT-D Series: 6 NVMe/SAS/SATA
 (per node)

KEY FEATURES

System Design

- Highly modular multi-node (2U4N or 2U2N) systems with tool-less design
- All-hybrid hot-swappable drives bays - NVMe, SAS, or SATA

Compute

- Support future generation Intel Xeon Scalable (Ice Lake) processors
- Optimized thermal design for higher performance
- 16 DRAM DIMMs + 4 PMMs (Intel Optane Persistent Memory 200 Series)

Storage

- Modular mid-plane with PCI-E Next Gen Storage Controller options
- Hardware RAID 1 support for M.2 NVMe drives

Expansion

- Tool-less PCI-E Next Gen add-on cards
- Support for up to 3 GPUs or FPGAs

Networking

- Onboard AIOM or any compliant OCP 3.0 SFF NIC
- Flexible networking options up to 2x 100G Ethernet

Power

- Redundant AC Titanium Level (96%) Power Supplies

KEY APPLICATIONS

- HCI
- HPC
- CDN
- 5G dUPF
- Cloud Computing



Form Factor
2U rackmount



Processors
Dual 3rd generation Intel® Xeon® Scalable or AMD PYC Milan processors



Memory
Up to 20 DIMM slots, up to 6TB



Input/Output
 2U4N: 1 AIOM + 2x PCI-E 4.0 x16
 2U2N: 1 AIOM + 1 PCI-E 4.0 x16 +
 2x PCI-E 4.0 x8



Drives
Hot-swap 2.5" or 3.5" hybrid drive bays and internal M.2 support (optional RAID)



Power
Redundant 2600W/2200W Titanium Level (96%); Optional 3000W

Highest Efficiency and Serviceability for Enterprise and Datacenter Applications

4U Eight Node

Optimized for High Density Compute

SYS-F610P2-RT Series: 6x 2.5" NVMe/SAS/SATA

AS -F1114S-FT 6x 2.5" NVMe/SAS/SATA



4U Four Node

Optimized for High Capacity Storage

SYS-F620P3-R Series: 8x 3.5" NVMe/SAS/SATA



SYS-F620P3-RTBN: 6x 3.5" SAS/SATA

AS -F2014S-RNTR 6x 3.5" SAS/SATA

KEY FEATURES

Modular Front-Accessible Nodes for Building Application-optimized Solutions

- All-hybrid hot-swappable drive bays - NVMe, SAS, or SATA

Better Thermals with New Optimized Airflow Designs

- Up to 280W TDP processors

New Levels of Compute Performance and Flexibility

- Support future generation Intel® Xeon® Scalable and AMD EPYC processors
- Large memory footprint for up to 2TB
- Vast expansion slots supporting single-width GPUs and FPGAs (PCI-E Gen 4)
- Dynamic storage
 - Every platform supports direct-attached full-hybrid all-NVMe for lower latency with higher throughput and IOPS
 - 4U/8Node: up to 6 hot-swappable hybrid NVMe drives per node
 - 4U/4Node: up to 8 hot-swappable hybrid NVMe drives per node (optional additional 2 drives)
- Flexible on-board networking options for up to dual 25G Ethernet
 - Also support standard PCI-E network interface card
- Redundant AC/DC Titanium (96%) Level Power Supplies



Form Factor

4U 8Node and 4U 4Node Rackmount Systems



Processors

Dual 3rd generation Intel® Xeon® Scalable and AMD EPYC Milan processors



Memory

16 DIMM slots, up to 2TB Support new Intel® Optane™ Persistent Memory 200 Series (Barlow Pass)



Input/Output

4U8Node: 1 PCI-E 4.0 x16 + 1 AIOM networking slot
4U4Node: 2 PCI-E 4.0 x16 + 1 AIOM networking slot



Networking

Flexible on-board networking with AIOM



Drives

4U8Node: 6x 2.5"
4U4Node: 8x 3.5"
NVMe/SAS/SATA (SAS via AOC)



Power

2200W Redundant Titanium (96%) Level



**Highest Performance
Deep Learning Training
System**
16x 300W GPUs
High Performance GPU
Interconnect at 2 PF in
10U



**High Density Deep
Learning Training
System**
4 GPUs in a 1U
No GPU Preheating



**Deep Learning
Training System**
8 GPUs with NVLink
Flexible Single or Dual
Root



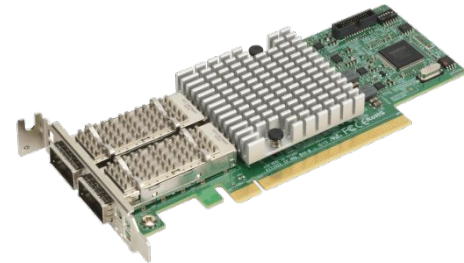
**Highest Throughput
Deep Learning
Inference System**
20 Single-wide GPUs
DP Xeon™ up to 205W
24x 3.5 NVMe/HDD

Industry Wide
Accelerated
Computing
Solutions



Supermicro Networking Solutions

- Bare Metal Ethernet Switches for Open Networking/SDN
- Data-center friendly software and hardware features for High Availability
- Supermicro SIOM – Most Flexible, Cost-Optimized Server I/O

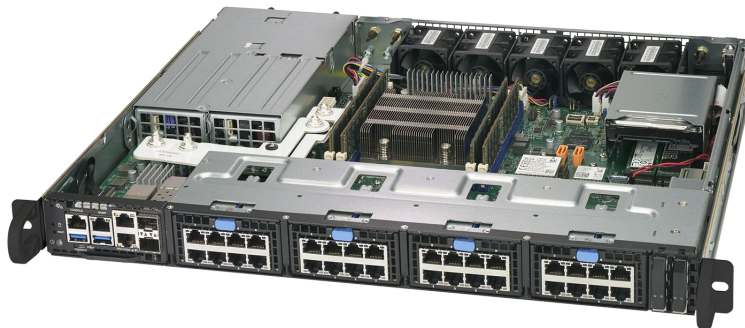




- One stop shopping
 - Supermicro provide total solution to meet all customers need from hardware to software
- Huge selection of networking products
 - Supermicro offer networking solutions in PCI-E, SIOM, Ultra and MicroLP
 - With Supermirco NIC solution, customers have all the freedom to customized the solution that tailored to their business need
- Major networking vendors and in-house expertise
 - Supermicro work with all major networking vendor – Intel, Mellanox, Arista and Broadcom
 - Supermicro have the firsthand engineering support from Intel, Mellanox, Arista and Broadcom
 - Supermicro HW and SW elite design teams are the best of the best from the industry that design the best HW/SW for Supermicro solutions
- 100% Compatibility
 - Supermicro solution gone through highest testing protocol to ensure all hardware are optimized and trouble-free in all aspects
- Advanced features
 - Supermicro offers advanced features that no others offered
 - NC-SI
 - Asset Management
 - Thermal sensor monitor
- Cost optimization
 - Supermicro offers the best cost optimization for all the features offered in our solution

Networking & Other Adapters (AOC) with AIOM (OCP3.0)

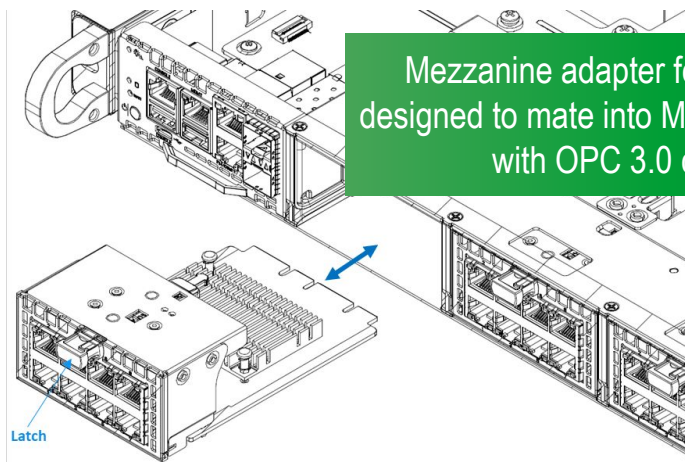
Open Compute Project Spec 3.0 Form Factor
High Performance 1/10/25//100 GbE Ethernet
Adapter Cards



8-Port
1GbE
RJ45



4-Port
10GbE
SFP



Mezzanine adapter form factors cards
designed to mate into Motherboards designs
with OPC 3.0 connectors

OCP 3.0 NIC Modules



Description	Eight-Port GbE	Quad-Port GbE	Dual-Port GbE	Quad-Port GbE	Dual-Port 10GbE	Dual-Port 10GbE	Quad-Port 10GbE	Quad-Port 10GbE	Dual-Port 25GbE	Dual-Port 25GbE & Dual-Port 10GbE	Dual-Port 100GbE
Port	8x RJ45	4x SFP	2x RJ45	4x RJ45	2x RJ45	2x SFP+	4x SFP+	2x RJ45 2x SFP+	2x SFP28	2x SFP28 2x RJ45	2x QSFP28
Speed	1Gbps	1Gbps	1Gbps	1Gbps	10Gbps	10Gbps	10Gbps	10Gbps	25Gbps	25Gbps 10Gbps	100Gbps
Controller	Intel® i350-AM4	Intel® i350-AM4	Intel® i350-AM2	Intel® i350-AM4	Intel® X550-AT2	Intel® X710-BM2	Intel® XL710-BM1	Intel® X710-TM4	Broadcom® BCM57414	Mellanox® CX-4 Lx EN Intel® X550-AT2	Broadcom® BCM57508









Supermicro EDGE systems

- ❖ Small fanless systems with Intel Atom/i3/i5/i7
- ❖ Medium systems with SoC Xeon D
- ❖ Rackmount servers for extreme workloads
- ❖ Wallmount servers for extreme workloads
- ❖ IP65 enclosure for harsh outdoor environments with operating Temperature $-40^{\circ}\text{C} \sim 50^{\circ}\text{C}$ + Solar load

- ❖ AMD EPYC™ 3251 SoC Processor,
8 Core/16 Thread, 2.5GHz/50W



Supermicro NEBS LEVEL3 Server Portfolio

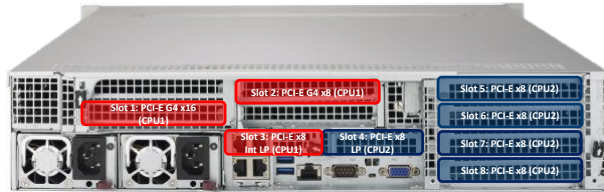
<i>NEBS Level 3 Certified</i>	<i>NEBS Level 3 Certified /GR-487 Testing</i>	<i>Partial NEBS Tested</i>	<i>New Development</i>
 <p>SYS-1029U-TN12RV-NEBS SYS-1029U-TN12RV-NEBS-DC</p>	 <p>SYS-1029GQ-TRT-NEBS-AC SYS-1029GQ-TRT-NEBS-DC</p>	 <p>SYS-2029U-TR4T</p>	 <p>Hyper-E 2U Front Loading Short Depth: SYS-220HE-FTNR-NEBS SYS-220HE-FTNRD-NEBS-DC</p>
 <p>Ultra-E 2U Short Depth: SYS-2029U-MTNRV-NEBS SYS-2029U-MTNRV-NEBS-DC</p>	 <p>Outdoor Edge (Testing based on GR-487)</p>	 <p>SYS-1019D-16C-FHN13TP</p>	 <p>SYS-210P-FRDN6T</p>

Ultra-E System Overview

SYS-2029U-MTNRV: Ultra 2U Short Depth Server



System Rear View



System Front View



DESIGN FEATURES

- Open Platform Design in 2U Short Depth Form Factor
- AC/DC Power Options
- Supports up to two Double-width GPU

PRODUCT FEATURES

System	Processors	Memory	Drives
2U Short Depth Rackmount (22.6")	Dual Intel® Xeon® Scalable processors up to 205W TDP (up to 165W for NEBS)	Up to 24 DIMM slots, up to 6TB DDR4 memory, Intel® Optane™ DC persistent memory supported (up to 12 DIMMs)	Up to 6x U.2 Full Hybrid (NVMe/SATA) drives
Flexible Networking Options: up to 25G	1 PCI-E 3.0 x16 slot 5 PCI-E 3.0 x8 slots 1 PCI-E 3.0 x8 slot (LP) 1 PCI-E 3.0 x8 slot (internal LP)	6 Heavy Duty 6cm PWM Front Load Fans	Redundant 1600W Titanium (96%) and Optional 1300W DC Power

HYPER-E System Overview

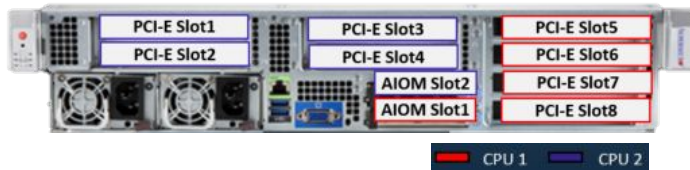
SYS-220HE-FTNR / SYS-220HE-FTNRD (DC Power)



System Rear View



System Front View



DESIGN FEATURES

- 22.6" chassis depth with Front IO and 6 Rear drives bays
- 2 Supermicro AIOM networking slots (OCP NIC 3.0 compatible)
- Supports four double-width GPUs/FPGA in 2U

PRODUCT FEATURES

System	Memory	Power	Management
2U Rackmount	Up to 32 DIMM slots, DDR4-3200 memory	AC Redundant PSU: 2000W 80 Plus Titanium or DC Redundant PSU: 1300W 80 Plus Gold	Open Industry Standard IPMI, Redfish APIs, Rack Scale Management
Processors	Drives	I/O (Front)	Global Services
Dual Processors	Up to 6 U.2 NVMe drives with 2.5" SAS3/SATA3 options and 2 NVMe/SATA M.2 (22x110) internal slots	Up to 8 PCI-E 4.0 slots and 2 AIOM Slots for networking options up to 100G	Worldwide Global Services

Supermicro Servers Compatibility

Certified servers

Computing power tested and certified to perform with Red Hat platforms and technologies.

[Home](#) > [Hardware](#) > Certified servers

Search certified servers

Search

1 - 15 of 155

Red Hat Enterprise Linux 8

Super Micro Computer, Inc.

Clear filters

Provider 1 Clear

Search

SUPERMICR

SuperServer 6018U-TR4+

SUPERMICR

SuperServer 2028RT-HNCR+

SUPERMICR

SuperServer SYS-1029U-TR4

[Home](#) > [Hardware](#) > Certified servers

Search certified servers

Search

1 - 12 of 12

Red Hat Enterprise Linux 8

Super Micro Computer, Inc.

AMD EPYC™ 7003 Series

Clear filters

Provider 1 Clear

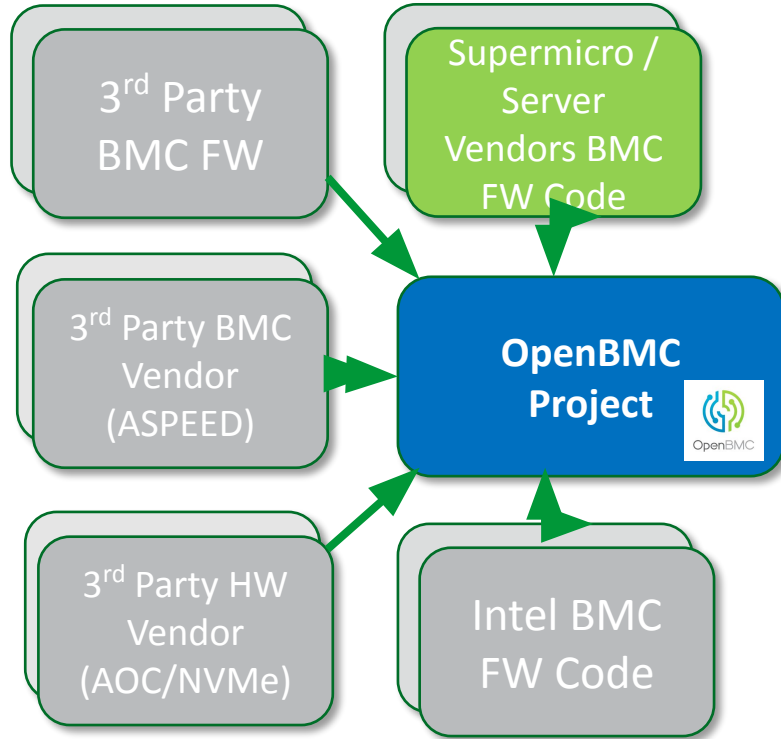
Super Micro Computer, Inc.

SUPERMICR

SUPERMICR

SUPERMICR

Open Source implementation of BMC FW for Cloud-Scale Data Centers



OpenBMC:

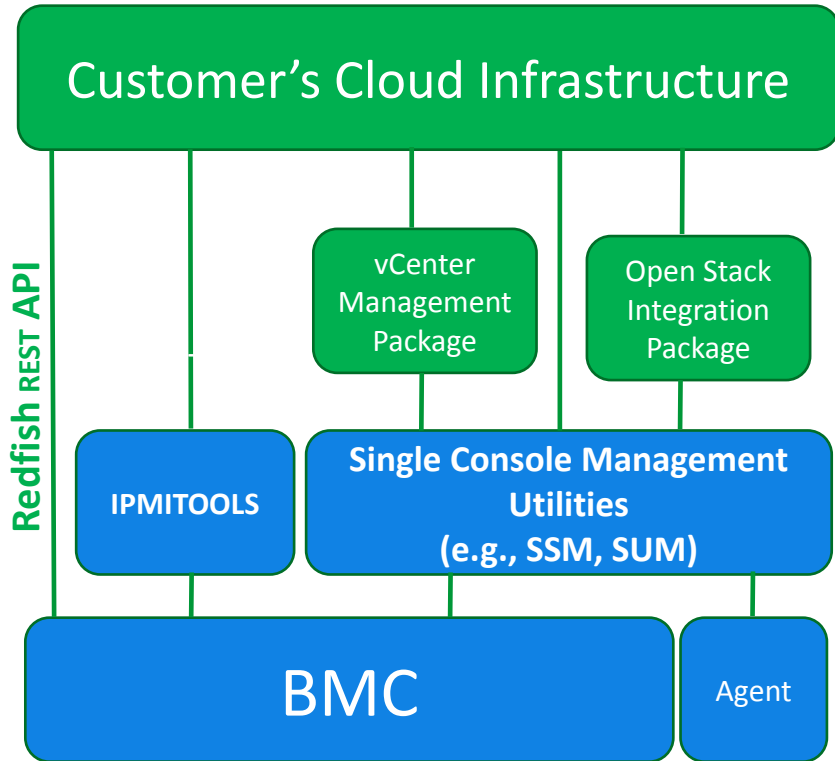
Open Source Management Interoperability
Shared Effort between Hardware Vendors and Firmware Vendors
Accelerate System Management SW of New Products and Technologies across Multiple Server Vendors

Key Advantages:

Management Interface to Server Hardware across Data Center
Monitoring Sensors, Event Logging and Alerts
Remote Server Management
Open **Redfish** RESTful interface for the management of servers, storage, networking, and converged infrastructure



Redfish – Industry Standard Management API



The Redfish API represents a style of programming for IT that is capable of managing systems from hyper-scale to blades to stand alone servers in a consistent manner

Redfish Hybrid-IT Management Tools

V1.0- Redfish Specification with base models

V1.1- Sensor, System inventory listings, Boot override, System power and reset controls, BMC account management

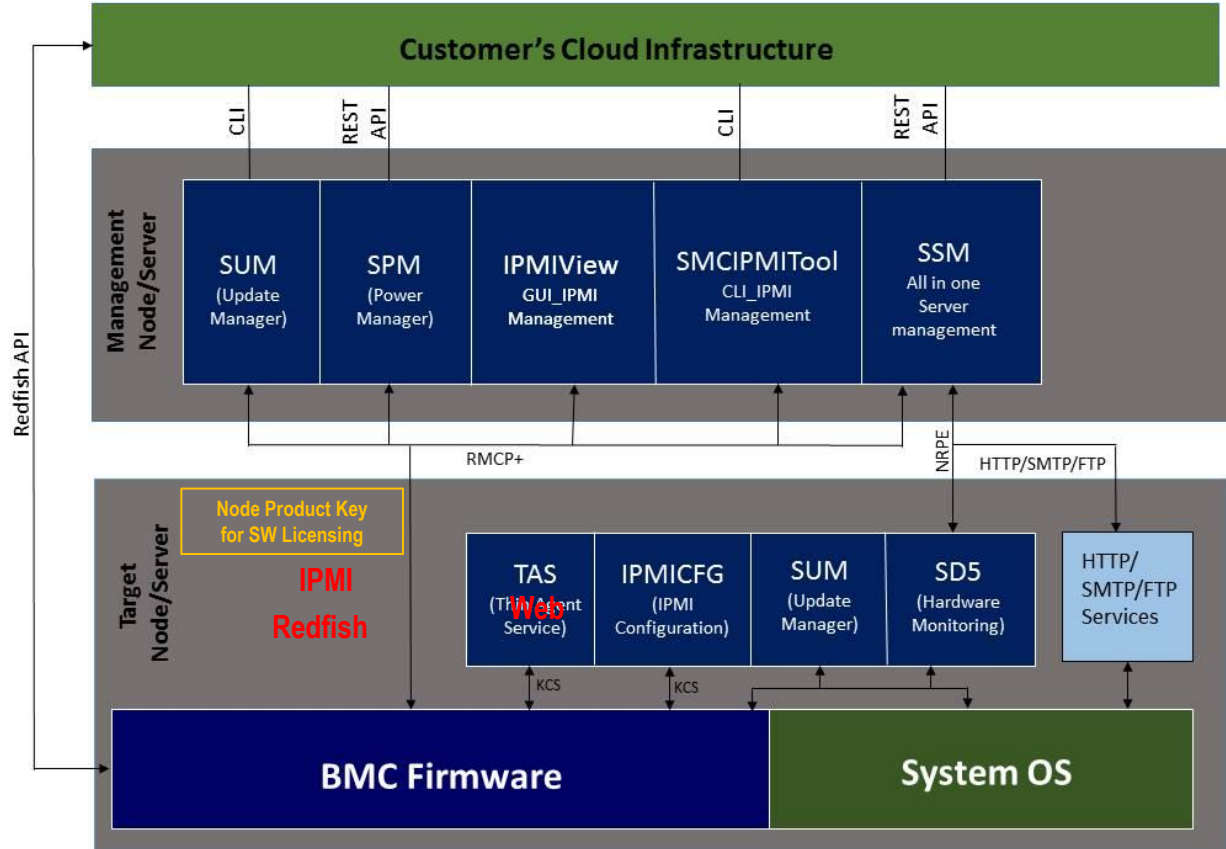
V1.5- Virtual media support, Firmware update, RAID management, BIOS configuration, disk drives, memory, storage, volume (2016.1)

V1.8- PCIe device, PCIe slots, Network Adapters/Devices/Functions, software/firmware inventory & update, Memory Metrics, Boot next, Secure boot

Certificate Management, Adv. communications devices (multi-function NICs), host interface (KCS replacement)

Supermicro X12/H12 platforms will enable entire features stack

System Management Solutions



Design in Hardware Security

Security Through Signed Images
BIOS/FW and Drivers

Managing Security Vulnerabilities
CVE Common Vulnerabilities and Exposures

TPM (Trusted Platform Module)
Onboard secure hardware
through integrated
cryptographic keys

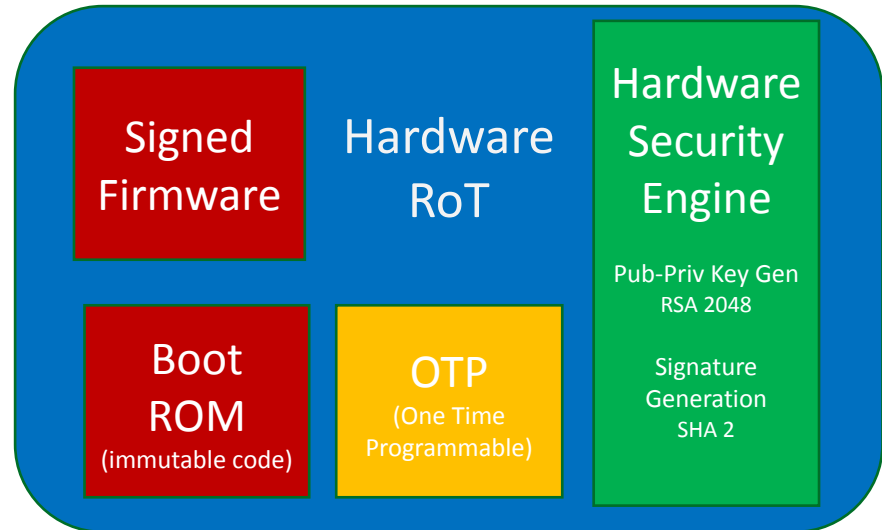
Self-encrypting drive (SED) Full Drive
Encryption

Security Compliance
FIPS 140-2, NIST, TAA

Root Of Trust

Cryptographic Keys Protected by hardware. ID secured to hardware.

Checks, recovers code in flash region before processor loads the code into memory





Design

n
Application analysis
Power budget
BOM creation
Rack layout
Wire map



Configuration

n
BIOS setting
Firmware update
Switch & IP address
setting
OS & customer image



Assembly

y
Node assembly
Rack & stack
Cabling & labeling
Third party
equipment



Testing

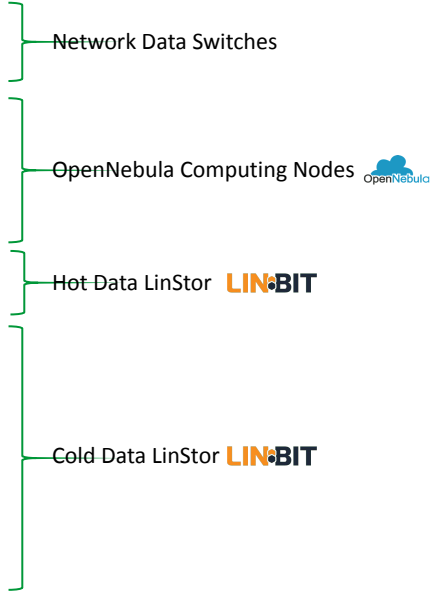
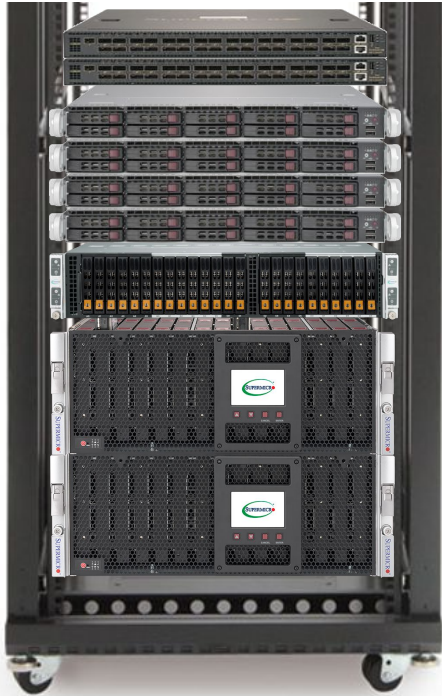
g
Multi-vendor
equipment
compatibility
Full rack burn-in &
QA
Full rack power
measurement
Performance
benchmarks



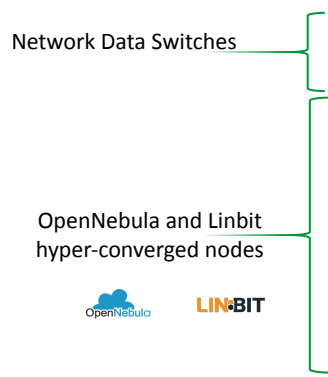
Shipping

g
Asset label and Docs
Unpacking
instructions
Custom user manual
Customer Training

Disaggregated architecture



Hyper-converged architecture



What we can do for you:

A 3D rendering of a server component, possibly a drive bay or a cooling unit, shown in a cutaway view. It is set against a background of a blue grid with various alphanumeric characters and symbols, suggesting a data center or server environment.

**Let Supermicro be Your
Bridge to the Future**

- Architecture Consult
- Field Training
- Proof of Concept

Thank You



www.supermicro.com

Q&A



Questions in chat





contact@opennebula.io
www.opennebula.io

OpenNebula Systems
28223 Pozuelo de Alarcon (Madrid), Spain

OpenNebula Systems
Burlington, MA 01803 USA



sales@linbit.com
www.linbit.com

LINBIT HA-Solutions GmbH
1150 Vienna, Austria

LINBIT USA, LLC
Tualatin, OR 97062