Supermicro Solutions



Better Faster Greener™ © 2023 Supermicro

Solutions Portfolio

Media & Entertainment Solutions	Big Data & Enterprise Solutions	AI / ML Solutions	Storage Solutions	IoT & Networking Solutions
				

Supermicro's solutions are based on the latest technologies, including Intel Xeon Scalable processors, AMD EPYC processors, and NVIDIA GPUs, as well as NVMe storage and PCIe Gen 5.0 interconnects.

Designed to be energy efficient with innovative liquid cooling technologies and customized for a variety of use cases for HPC, AI, cloud computing, IoT networking and storage workloads.

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All Solutions

Storage Solutions

Storage Solutions Portfolio

High-performance, storage solutions

Software-Defined Storage



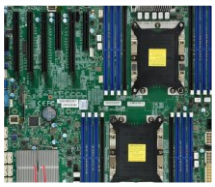
- OSNEXUS
- DAOS
- WekaIO X12 BigTwin

File Storage



- Qumulo MnE solution
- Qumulo Public
- Qumulo LS
- Atempo - Automates video editing process

NVMe Storage



- Kioxia in SMCI,
- Supermicro TPCxHCI,
- AMD-Oracle 7002-vs-7003

High-Performance Storage



Supermicro EMACX

All Solutions

Storage Solutions

Storage Solutions: OSNexus Software Defined Storage (SDS)

Supermicro and OSNexus: scalable, secure SDS solution with QuantaStor SDS platform, transforming x86 servers and VMs into storage systems

Software Defined Storage

Benefits

- Scalability: scale to over 50PB, in single cluster
- Versatility: supports a wide range of workloads
- Security: End-to-End Security robust access control, encryption, & security compliance
- Cost-Effective: reduces storage costs
- Open-Source: avoids vendor lock-in and delivers rapid innovations



Use Cases

- HPC: climate modeling, drug discovery, and financial analysis
- Media and entertainment: video on demand (VOD), live streaming, and post-production
- Virtualized environments: store and manage VMs for a cloud-based infrastructure



Solution Components

OSNEXUS

Hardware:

- Supermicro NVMe 2U24 server, AS -2114S-WN24RT.
- Supermicro 4U 60/90, SSG-640SP-E1CR60/90.
- Supermicro 1U X13 All flash E1.S Petascale Storage Server, SSG-121E-NES24R.

Software:

- OSNexus QuantaStor, a software-defined storage platform.
- QuantaStor's hardware integration spans a broad selection of Supermicro servers and JBODs.
- Grid technology, easy to manage all storage systems

Storage Solutions: Distributed Storage System & Intel DAOs

All Solutions

Storage Solutions

Supermicro designed an efficient distributed storage system with Intel DAOs

Software Defined Storage

Benefits

- DAOS solution: high performance in a compact package
- High levels of IO performance: for complicated I/O patterns
- High levels of metadata & object IO performance: for easy and HARD workloads
- Balanced architecture: to minimize the data transfer bottleneck



Use Cases

- HPC: climate modeling, drug discovery, financial analysis, simulation, artificial intelligence
- Media & Entertainment & Virtualized environments: video on demand (VOD), live streaming, VR, AR
- Big Data Analytics & Edge computing: smart cities, industrial IoT



Solution Components

PDF

intel

Hardware:
- Supermicro Ultra Server Family
- Intel® Optane™ Persistent Memory (PMem)
- NVMe class SSDs (3D NAND TLC or QLC)
- 3rd Generation Intel® Xeon® Scalable Processors
- PCIe
- Gen4 NVMe SSDs

Software:
- DAOS (Distributed Asynchronous Object Storage) software stack
- Operating System: openSUSE Leap 15.2

Storage Solutions: Weka Ready Storage System

All Solutions

Storage Solutions

Supermicro SuperServers & WekaIO: cost-effective, scalable solutions with the fastest software-defined parallel file storage systems

Software Defined Storage

Benefits

- High-Density & Efficiency: efficient, multi-node high-density computing
- Performance Storage: Scalable All-flash NVMe / hybrid storage
- Low Latency: WekaIO enables rapid data access, critical for AI/ML applications
- Flexibility: deployment across HW configurations
- Data Management: WekaIO ensures efficient data management



Use Cases

- Scientific simulations: financial modeling
- Media & entertainment: video editing and VFX applications
- Web applications: e-commerce, social media







Solution Components

PDF

WEKA

intel

Hardware:

- 2x Intel Xeon Scalable processors
- 128GB DDR4 memory
- Supermicro X12 BigTwin server
- NVMe SSDs

Software:

- WekaIO WOS-4 storage SW, WekaIO Mgmt SW

Cooling: Liquid cooling

Storage Solutions: Qumulo Storage System

All Solutions

Storage Solutions

Media & Entertainment storage solution &Qumulo & AMD all-Flash NVMe platform for media workloads, optimizing CAPEX & OPEX

File Storage – Media Entertainment

Benefits

- High-performance: reliable user responsiveness to all media applications
- Cloud-native software: for collaboration of creative teams
- Scalability: for petabyte-scale capacities for billions files
- Security: built-in enterprise-level content security protection



Use Cases

- Media & Entertainment: remote creative post-production, animation / visual effects, games, broadcast, corporate video production
- Data Management: robust management, storage, protection for HD, 4K, and 8K content on-prem / public cloud







Solution Components

PDF

AMD Qumulo

Hardware:

- Supermicro AS -1114S-WN10RT: 1U All-NVMe server, configurations of 30TB, 76TB, 153TB per node
- AMD EPYC 24 core 2.8 GHz CPU,
- 4 x 100GbE network ports, 128GB memory.

Software:

- Qumulo Core: High-performance data access, robust management, and storage for petabyte levels of content across on-prem and public cloud environments.

Storage Solutions: Qumulo Storage System

All Solutions

Storage Solutions

High-performance, scalable file data platform for life sciences and bioinformatics

File Storage – Life Science and Bioinformatics

Benefits

- Performance: efficiently processes volumes of file-based data
- Scalability: scales from 4 to 100-node clusters, 68TB to 11.4PB
- Insights: real-time control for petabyte-scale file systems
- Optimization: tuned for Supermicro's All-NVMe platform



A + Single AMD EPYC™ 7003/7002 Series All-Flash NVMe Platform - AS -1114S-WN10RT

Use Cases

- Life Science & Bioinformatics: genomic sequencing, drug discovery, microscopy, 3D imaging, blood analysis, proteomics, biomedical research
- Forecasting and Modeling: weather forecasting systems



Solution Components

PDF

AMD Qumulo

Hardware:

- Supermicro All-NVMe Server model AS -1114S-WN10RT
- AMD EPYC 24 core 2.8 GHz CPU
- 4 x 100GbE network ports, and 128GB memory.

Software:

- Qumulo Core- File Data file data platform. Real time multi-petabyte data scale in the cloud.

Storage Solutions: Qumulo Storage System

All Solutions

Storage Solutions

Solution for public sector, with Qumulo high-performance, scalable file storage with unparalleled data security & Real-Time analytics

File Storage – Public Sector

Benefits

- Scalability: unprecedented scalability, optimized performance
- Flexibility: single file solution across on-prem, hybrid, and multi-cloud
- Real-Time Analytics: integrated, real-time Mgmt. analytics & visibility
- Data Security: encryption for data in flight & at rest, along with integrated data protection via snapshot replication



Use Cases

- Public Sector: designed for performance needs of public sector apps
- Data Management: reliable, high-performance data access and management for sensitive file data on-prem and in the cloud
- Scalability: scales to billions of files and store all file sizes efficiently







Solution Components

PDF

AMD Qumulo

Hardware:

- Supermicro All-NVMe Server model AS -1114S-WN10RT: 1U server with configurations of 30TB, 76TB, 153TB per node, AMD EPYC 24 core 2.8 GHz CPU, 4 x 100GbE network ports, and 128GB memory.

Software:

- Qumulo File Data Platform: A high-performance, distributed file system designed to meet the performance and capacity demands of public sector organizations.

Storage Solutions: Kioxia and Supermicro

All Solutions

Storage Solutions

High density server and storage solution, designed for applications that require high performance at very low latency and ultra-dense

NVMe storage

Benefits

- Performance: low latencies and high throughput
- Density: up to 128TB in 1U SSG-1029P-NES32R
- Cooling: integrated heat sinks in XD6 Series SSDs
- Throughput: achieves 30,316.44 operations/second
- Latency: average read / update latencies 5.54 ms and 11.34 ms respectively
- Efficiency: completes 2 billion operations in 18.33 hours for a 300 million records



Supermicro SSG-1029P-NES32R

Use Cases

- Data Centers: high-performance computing, artificial intelligence, machine learning
- Enterprise: file sharing, backup, disaster recovery







Solution Components

PDF

KIOXIA

Hardware:

- Server: Supermicro SSG-1029P-NES32R
- CPU: Two Intel® Xeon® Gold 6226R processors, featuring 16 processing cores, 2.90 GHz frequency
- Memory: 192 gigabytes (GB) of DDR4 DRAM
- Storage: KIOXIA XD6 PCIe 4.0 DC NVMe SSD 3.84TB

Software:

- OS: Ubuntu® v20.04.3 (Kernel 5.4.0-89-generic)
- Application: MongoDB v5.0.3
- Test Software: Synthetic tests run through YCSB software (version 0.17.0)

Storage Solutions: Supermicro AMD & Vmware - TPCx-HCI

All Solutions

Storage Solutions

The world's first TPCx-HCI Benchmark results using VMWARE HCI & Supermicro A+ powered by AMD EPYC 7003 series processors

NVMe storage

Benefits

- High Performance: scored 4,790.18 tpsHCI @ $49.60 USD / tpsHCI
- Efficient: load Balancing and VM migration
- Rapid Recovery: after node failure, surpassing TPCx-HCI Data Accessibility requirements
- High Scalability: up to 8TB of DDR4-3200MHz



Use Cases

- Data Centers: high-performance computing, artificial intelligence, machine learning
- Enterprise: file sharing, backup, disaster recovery
- Stress & Performance testing: of virtualized HW & SW compute, storage, & networking



Solution Components

PDF

AMD vmware

Hardware:

- Server: Supermicro AS -1114S-WN10RT
- CPU: 64-core AMD EPYC™ 7713 processor
- Memory: 1TB
- Storage: Kioxia CM6 3.84TB NVMe (cache layer), Kioxia CD6 3.84TB NVMe (capacity layer)

Software:

- OS: RHEL 7.7
- DBMS: PostgreSQL 10.6
- Virtualization: VMware vSphere® 7.0 Update 2
- Management: VMware vCenter®

Storage Solutions: Supermicro-AMD-Oracle 7002-vs-7003

All Solutions

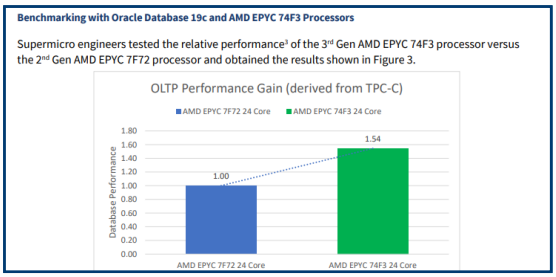
Storage Solutions

Supermicro servers equipped with 3rd Gen AMD EPYC processors boost Oracle database 19c performance by 54%

NVMe storage

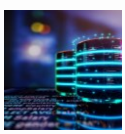
Benefits

- Performance: AMD EPYC™ 7003 - up +19% instructions per cycle (IPC), up to 2x performance per watt vs previous generation
- Scalability: up to 64 cores & 128 threads per socket, scalability for demanding workloads
- Security: AMD Infinity Guard & Secure Encrypted Virtualization



Use Cases

- Database Applications: optimized for running Oracle Database
- High-Performance Computing: scalability & efficiency for cloud compute
- Virtualization: supports a multiple virtual machines (VMs) per server







Solution Components

PDF

AMD ORACLE

Hardware:

- Supermicro A+ Server 2124GZ-NART+ with AMD EPYC™ 7003 Series Processors

Software:

- Oracle Linux 8.3 with Unbreakable Enterprise Kernel (UEK) Release 6 Update 2



Storage Solutions: Supermicro EMACX

All Solutions

Storage Solutions

Empowering green buildings: Real-Time Carbon monitoring and energy management for a sustainable future

High-performance storage

Benefits

- Real-Time Monitoring & Compliance: assess GHG emissions
- Transparency: full visibility from building to individual meter levels
- Energy Mgmt: reduce Identify high-energy-consumption meters/tenants Reporting & Risk Mgmt: report & audit carbon emissions
- Reliability: durable E100-9W-IA-E fan-less for peak performance in mission-critical deployments



Use Cases

- Real-time Carbon Footprint Monitoring: control for commercial buildings, hospitals, universities
- Compliance: with greenhouse gas emissions laws
- Energy management: and kWh Harvesting







Solution Components

PDF

emacx SYSTEMS

Hardware:

- Device: Supermicro Fanless SYS-E100-9W-IA-E IoT Gateway

Software:

- ACIEX Pulse Software by Emacx Systems Inc.



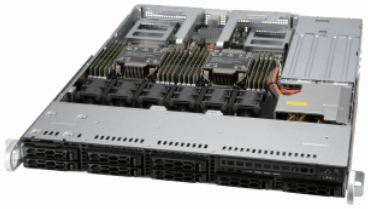
Storage Solutions: Supermicro & Atempo Solution

Supermicro and ATEMPO Data Migration solution for unstructured data. Miria, a data migration software platform for Petascale unstructured files

File Storage

Benefits

- Supports multiple storage: platforms and protocols
- Scalable: solution with the ability to adjust performance by adding or removing a Data Mover
- Minimal impact on production: & fast cutover to new storage
- Automatic integrity checks: on all migrated files
- User-friendly web interface: monitor migration processes



Use Cases

- Migration Usages: Local to Cloud, Cloud to Cloud, change cloud provider, data from public to private cloud. Cloud to Local or on-prem Local to Local, Migration between storage vendors
- Markets: Media, Banking, Healthcare, Education, Research, Industrial





Solution Components

Hardware:

- SYS-510P-WTR: Single-socket server
- SYS-110P-WTR: Single-socket server
- SYS-120C-TR: Dual-socket server
- 3rd Gen Intel® Xeon®

Software: Atempo

- Miria Server: Hosts a central repository to monitor the complete Miria infrastructure and provide reporting and statistical information.
- Data Mover: Simultaneously reads data from a source storage & writes data to at maximum speed.

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All Solutions

AI/ML Solutions

AI / ML Solution Portfolio

High-performance, AI/ML solutions

Simulation



NVIDIA Omniverse Enterprise

Cloud Computing



- H12 HPC AI SuperBlade AMD Instinct
- NVIDIA HGX A100 VCS
- NVIDIA HPC AI

Edge Computing



- SMCI-AMD-NVIDIA-RedHat Edge AI Enterprise
- TTTech – Industry 4.0

Inference & Training



- Habana Gaudi
- Rack Scale AI
- Liquid Cooling AI Dev Platform (NVIDIA)
- AI-ML Horovod SuperBlade
- cnvrg.io

Enterprise



- SMCI NVIDIA AI Enterprise
- NVIDIA AI Enterprise & Vmware

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AI / ML Solutions: NVIDIA Omniverse Enterprise

All Solutions

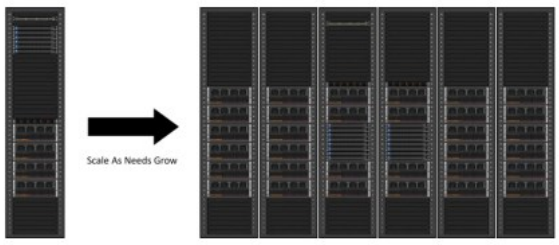
AI/ML Solutions

Supermicro and Nvidia: streamlined OVX deployments for large scale 3D simulations and intensive workloads with Omniverse Enterprise™

Simulation

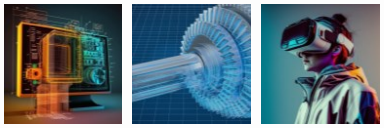
Benefits

- High Performance: optimized for HPC workloads. Latest CPUs, GPUs, and NVIDIA Omniverse™ Enterprise SW
- Scalability: multi-rack, plug-an-play for workload growth & scalable Omniverse platform
- Quick Deployment: fully tested and validated design operation ready, including Omniverse integration



Use Cases

- Design & Visualization: metaverse apps, product design, architecture, and engineering
- Virtual Collaboration: digital twins: virtual replicas of physical systems
- Simulation: simulate real-world environments for product design



Solution Components

PDF

NVIDIA

Hardware:

- Device: Supermicro SYS-420GP-TNR GPU servers
- CPU: Dual 3rd Gen Intel® Xeon® Scalable processors
- Memory: Up to 4TB (16 DIMMS)
- Storage: Up to 24 of the 2.5” hot-swap drive bays
- Network: Dual 10GBase-T LAN
- GPUs: NVIDIA L40 GPUs
- Networking: NVIDIA ConnectX-7 200Gbps NICs

Software:

- NVIDIA Omniverse™ Enterprise software stack
- NVIDIA RTX™ and high-speed networking technologies

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AI / ML Solutions: Rack Scale AI & Liquid Cooling

All Solutions

AI/ML Solutions

Designed to remove AI infrastructure obstacles & bottlenecks for large scale AI training, and accelerating Deep Learning (DL) performance to the max

Inference & Training

Benefits

- Scalability: for future deployments
- Unprecedented performance: of Deep Learning applications
- Customizable: storage solutions
- Energy efficiency: superior cooling technologies



Use Cases

- Primary – Large Scale Distributed DL Training: Training neural networks with billions of parameters, high-efficiency parallelism & extreme node-to-node bandwidth
- Secondary – DL Inference & Hyperparameter Search: for hyperparameter search, customizable networking






Solution Components

PDF

AMD intel NVIDIA

Hardware:

- Supermicro GPU servers: SYS-821GE-TNHR or AS -8125GS-TNHR
- NVIDIA HGX™ H100 GPUs
- 4th Gen Intel® Xeon® Platinum Processors or AMD EPYC™ 9004 Processors

Software:

- Integrates with parallel filing systems: WekaIO, BeeGFS

Cooling:

- Air and liquid cooling options (Direct To Chip, Rear Door Heat Exchangers, Immersion Cooling)

AI / ML Solutions: Liquid Cooled AI Dev System

All Solutions

AI/ML Solutions

Supermicro SYS-751GE-TNRT-NV1 is a quiet, high-performance AI development and execution powerhouse, designed for office or home environments

Inference & Training

Benefits

- Performance: over 2 Petaflops of AI performance, AI training and inference
- Low latency: for real-time applications
- Scalable: and flexible
- Easy to use: and maintain
- Cost-effective:



Use Cases

- AEC Architecture, Engineering & Construction: 3D modeling & animation, rendering, virtual reality, media & entertainment, Gaming
- HPC: deploy large-scale AI models for climate modeling, drug discovery, financial analysis, fraud detection
- Data Science & Research: analyzing large datasets to identify patterns and trends, developing new AI and ML algorithms







Solution Components

PDF

AMD NVIDIA

Hardware

- Processors: Dual 4th Gen Intel® Xeon® Gold 6444Y
- GPUs: 4 NVIDIA A100-LC 80GB PCIe GPUs
- Memory: 512GB DDR5-4800MHz

Software

- Operating system: Ubuntu OS 22.04
- Preloaded software: NVIDIA AI Enterprise Suite

Liquid Cooing

Mobility:

Can be moved from one office to another

All Solutions

AI/ML Solutions

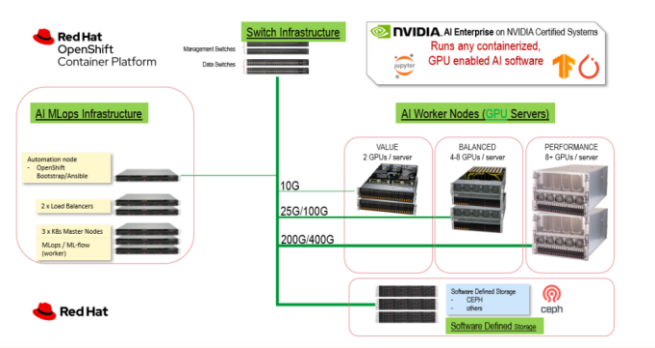
AI / ML Solutions: NVIDIA AI Enterprise & Red Hat OpenShift

Build and deploy AI models faster and easier with Red Hat OpenShift and NVIDIA AI Enterprise

Edge Computing

Benefits

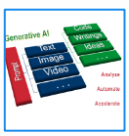
- High performance: up to 100 teraFLOPS
- Scalability: support hundreds of GPUs
- Ease of use: unified management interface
- Energy efficiency design: reduce TCO

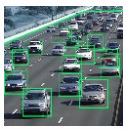


Use Cases

- Artificial Intelligence: machine learning, natural language processing, computer vision
- Data science: data mining, predictive analytics, big data analytics







Solution Components

Red Hat

AMD

NVIDIA

Hardware:

- Supermicro servers with AMD EPYC™ processors
- NVIDIA H100 SXM GPUs
- NVMe SSDs
- High-speed networking
- Redundant power supplies
- Liquid cooling system

Software:

- Red Hat OpenShift platform
- NVIDIA AI Enterprise software

AI / ML: SuperBlade & AMD for Distributed AI & ML Training

All Solutions

AI/ML Solutions

Supermicro SuperBlade powered by AMD EPYC processors excel at scaling distributed AI & ML training. Superior AI performance scalability with Horovod

Inference & Training

Benefits

- High performance: up to 100 teraFLOPS of performance
- Scalability: support hundreds of GPUs, ideal for large-scale AI
- Ease of use: Red Hat OpenShift platform - unified Mgmt. interface
- Energy efficiency: designed to be energy efficient, reduce TCO



Use Cases

- Artificial Intelligence: machine learning, natural language processing, computer vision
- Data Science: data mining, predictive analytics, big data analytics







Solution Components

PDF

HOROVOD

AMD

NVIDIA

Hardware:

- SuperBlade Enclosure (SBE-820H-822): 8U enclosure hosting up to 20 SuperBlade servers.
- SuperBlade Servers (SBA-4114S-T2N & SBA-4119SG)
- AMD EPYC™ 7713 processors & 2TB M.2 NVMe SSDs
- NVIDIA® A100™ GPU.
- Networking: 200G HDR InfiniBand & 2 25GbE Switches

Software:

- Horovod framework for scaling deep learning training.

AI / ML Solutions: SuperBlade & AMD Instinct solution

All Solutions

AI/ML Solutions

Supermicro H12 HPC AI SuperBlade powered by AMD Instinct to scale HPC, AI and Data Science workloads

Cloud Computing

Benefits

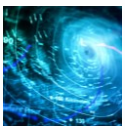
- High performance: H12 HPC AI SuperBlade AMD Instinct solution can deliver up to 100 petaflops of performance.
- Scalability: H12 HPC AI SuperBlade AMD Instinct solution scalability for growing needs of organizations.
- Cost-effectiveness:



Use Cases

- HPC: weather forecasting, drug discovery, material science
- AI: machine learning, natural language processing, computer vision
- Data science: data mining, predictive analytics, big data analytics







Solution Components

PDF

AMD NVIDIA

Hardware:

- Supermicro SuperBlade® servers powered by 2nd or 3rd Gen AMD EPYC™ processors
- AMD Instinct MI100 or MI210 GPU accelerators
- 8 DIMM slots for up to 2 TB of memory per node
- Integrated InfiniBand fabric -up to 200-Gbps HDR

Software:

- AMD ROCm software stack
- NVIDIA HPC SDK
- OpenCL

AI / ML Solutions: NVIDIA AI Enterprise & Vmware solution

All Solutions

AI/ML Solutions

Delivering AI to enterprises with Nvidia AI Enterprise and Vmware solution

Inference & Training

Benefits

- Easy integration of AI: into existing enterprise virtualization environment
- Scalability: for deployment in multiple racks
- Pretested solutions: through rigorous certification process
- High performance: and reliable systems

SYS-740GP-TNRT

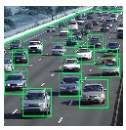


Use Cases

- HPC: data center, machine learning: such as fraud detection, customer segmentation, and predictive maintenance
- Visualization: interactive, high-quality visualizations for applications such as data analytics and 3D design
- Edge Computing: smart cities, industrial IoT, automotive etc.







Solution Components

PDF

vmware

intel AMD NVIDIA

Hardware:

- Supermicro NVIDIA-Certified Systems
- NVIDIA Ampere-based GPUs: A100, A30, A40
- NVIDIA ConnectX-6 & ConnectX-7 network accelerators
- NVIDIA Blue-Field DPUs (Data Processing Units)

Software:

- NVIDIA AI Enterprise software suite
- VMware vSphere environment

AI / ML Solutions: Habana Gaudi HPC Training System

All Solutions

AI/ML Solutions

The Supermicro Habana Gaudi solution is a high-performance, scalable, and easy-to-use platform for AI workloads.

Inference & Training

Benefits

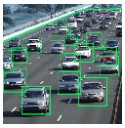
- High-performance AI training: with Habana Gaudi processors
- Efficient resource utilization: for various AI model sizes
- Scalability: with native Ethernet integration
- Cost-effectiveness: due to the wide availability of Ethernet switches



Use Cases

- AI: computer vision model training: manufacturing defects, fraud detection, inventory management, medical imaging, security
- Natural Language Processing: question answering, subject matter query, chatbots, translations, sentiment analysis
- Data Science: data mining, predictive analytics, big data analytics






Solution Components

habana

NVIDIA

intel

Hardware:

- Supermicro's 4U GPU system (SYS-420GH-TNGR)
- Habana Gaudi HL-205 mezzanine cards
- Dual 3rd Gen Intel Xeon Scalable processors
- Two PCIe Gen 4 switches
- Four hot swappable NVMe/SATA hybrid hard drives

Software:

- Habana SynapseAI Software Platform
- Habana Gaudi-specific software stack: drivers, SDK,
- Docker & Kubernetes for containerization & orchestration
- TensorFlow for AI model training
- Habana's Model-References for AI model optimization

AI / ML Solutions: NVIDIA HGX A100 VCS

All Solutions

AI/ML Solutions

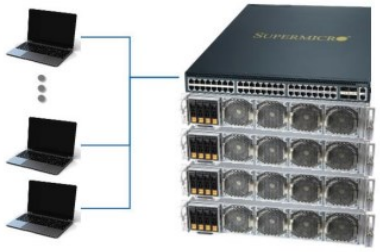
Maximizing AI development & delivery with NVIDIA® Virtual Compute Server (vCS) & Red Hat® Virtualization on Supermicro systems & NVIDIA HGX A100

Cloud Computing

Benefits

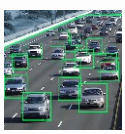
- Flexibility: and scalability for AI workflows
- High-performance: NVIDIA A100 GPUs
- Virtualization: of GPU resources
- Support for multi-tenancy: and Kubernetes infrastructure
- Scalable AI applications: with allocated GPU resources

vCS and Red Hat Enterprise Linux running on Supermicro servers with NVIDIA HGX A100, supporting multiple developers, with on-demand GPU for AI



Use Cases

- Artificial Intelligence: machine learning, natural language processing, computer vision. AI training and inference
- Data Science: data mining, predictive analytics, big data analytics







Solution Components

PDF

Red Hat NVIDIA

Hardware:

- Supermicro NVIDIA-Certified Systems: AS -2124GQ-NART, SYS-220GQ-TNAR
- NVIDIA HGX A100 GPUs
- 3rd Gen AMD EPYC or 3rd Gen Intel Xeon processors
- System memory up to 8TB
- PCIe Gen4 connectivity, NVMe, 200Gbit/s network connectivity

Software:

- NVIDIA Virtual Compute Server (vCS)
- Red Hat Enterprise Linux (RHEL)
- NVIDIA NGC software containers

All Solutions

AI/ML Solutions

AI / ML Solutions: Supermicro & TTTech – AI Edge for industry 4.0

Easily connect and manage manufacturing floors worldwide with Supermicro and TTTech. Nerve Blue – an open software platform designed for Industry 4.0

Edge Computing

Benefits

- Remote management: of software on edge devices
- Open platform: for running diverse software
- Consolidation of devices: on the shop floor
- Offline operation: capability
- Integration: with existing manufacturing equipment



SYS-E100-9AP-IA



SYS-1019D-FHN13TP

Use Cases

- Industrial Automation: Real-Time data analysis at the edge
- Remote Software Management: legacy software migration







Solution Components

PDF

intel TTTech

Hardware:

- Supermicro Edge Devices:
- SuperServer 1019D-16C-FHN13TP,
- SuperServer 5029C-T, SuperServer E100-9AP-IA
- Intel Xeon, Intel Core i3, Intel Atom x5-E3940
- RAM and SSD/HDD storage options

Software:

- Nerve Blue software platform

AI / ML Solutions: Supermicro & Nvidia HPC / AI

All Solutions

AI/ML Solutions

Unleash the future of innovation with HPC & AI. Transforming businesses with a new class of Supermicro and NVIDIA high-performance solutions

Cloud Computing

Benefits

- High-performance: for diverse tasks
- High configurability: reliability, & flexibility
- High rack density: minimal facility footprint
- Energy efficiency: liquid cooling
- Fastest data speed: lowest latency, and resiliency
- Improved efficiency: reduce TCO by 40%–50%



4U w/ NVIDIA HGX A100 8-GPU

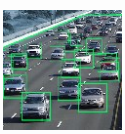


4U w/ 8x NVIDIA A100 PCI-E

Use Cases

- HPC and AI: weather forecasting, drug discovery, material science, machine learning, natural language processing, computer vision
- Data Analytics: machine learning, and deep learning workloads
- Applications Requiring Extreme Capacity: agility, and flexibility







Solution Components

AMD NVIDIA

Hardware:

- Supermicro NVIDIA-Certified Systems: AS -2124GQ-NART, SYS-220GQ-TNAR, 2U Ultra, 8U 20 Node
- NVIDIA HGX A100 GPUs
- 3rd Gen AMD or Intel Xeon Scalable processors
- NVIDIA Mellanox network technologies
- NVIDIA NVLink and NVIDIA NVSwitch

Software:

- NVIDIA A100 power applications

AI / ML Solutions: Supermicro & cnvrg.io

All Solutions

AI/ML Solutions

Launch Any ML or DL Framework with one click. Accelerated workloads and direct integration to optimized containers from both Supermicro, Intel & NVIDIA

Inference & Training

Benefits

- Unified Control Plane: can manage up to 85% of diverse ML/DL workloads.
- High Infrastructure Utilization: up to 30%
- Quick Onboarding: data scientists onboard in less 10 min
- Scalability and Compatibility: with open-source platforms



Use Cases

- MLOps: automate the MLOps lifecycle, data preparation, model training, model evaluation, model deployment and deliver models to production faster
- Compliance with Regulations: model management, tracking model lineage, versioning models, deploying models to production
- Collaboration: collaborate on machine learning projects





Solution Components

cnvrg.io

NVIDIA intel

Hardware

- Supermicro NVIDIA HGX A100 8-GPU Platform
- NVIDIA A100 GPUs
- 3rd Gen Intel Xeon Scalable Processors
- NVIDIA Mellanox network technologies

Software:

- cnvrg.io AI operating system (Unified control plane for managing ML/DL workloads.
- Ceph Storage: Open-source software-defined storage platform for high-capacity storage on a distributed cluster.
- Kubernetes: Open-source platform for automating deployment, operation of application containers

AI / ML Solutions: Liquid Cooled AI Dev System

All Solutions

AI/ML Solutions

Supermicro SYS-751GE-TNRT-NV1 is a quiet, high-performance AI development and execution powerhouse, designed for office or home environments

Cloud Computing

Benefits

- High AI Performance: provides over 2 Petaflops of AI performance
- Noise Reduction & Cooling: high-performance CPUs & GPUs & liquid cooling reduce noise levels
- Mobility & Redeployment: easy mobility & redeployment
- NVIDIA AI Enterprise Subscription: 3-year subscription
- Scalable Development: for developing apps with 4 GPUs





Use Cases

- AI Development: designed for AI development and execution, on local systems for creating and executing new applications
- AI-Based Applications: suitable for AI apps that require low latency and fast response times, such as interactive use cases
- Data Science & Analytics: efficient AI training & task analysis







Solution Components

PDF

NVIDIA

Hardware:

- Supermicro SYS-751GE-TNRT-NV1 system
- CPU: Dual 4th Gen Intel® Xeon® Gold 6444Y, 16C/32T
- GPU: 4x NVIDIA A100-LC 80GB PCIe GPU

Software:

- NVIDIA AI Enterprise Suite with 3 years subscription
- Cooling System:
- Self-contained liquid cooling system

AI / ML IoT Edge Solutions Supermicro

All Solutions

AI/ML Solutions

Delivering Nvidia AI Enterprise on Red Hat OpenShift from cloud to edge

Edge Computing

Benefits

- Fast AI deployment: using NVIDIA AI Enterprise
- Scalability: via Supermicro's architecture
- Enterprise support: for AI software to hardware


AS -2125HS-TNR


AS -4125GS-TNRT


AS -8125GS-TNHR

Use Cases

- HPC: used to accelerate a wide range of HPC workloads: running large-scale simulations to predict weather patterns & climate change
- Machine Learning: Real Time fraud detection, customer segmentation, predictive maintenance
- Visualization: deliver interactive, visualizations, 3D design, medical imaging





Solution Components

PDF

Red Hat

NVIDIA AMD

Hardware:

- Supermicro's NVIDIA-Certified servers, AMD EPYC processors, up to 8TB memory, PCIe Gen4/Gen5, NVMe drives, 400Gbit/s network.

Software:

- NVIDIA AI Enterprise software suite and Red Hat OpenShift.

Services:

- Enterprise-grade support.

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All Solutions

Networking Solutions

IoT & Networking Solution Portfolio

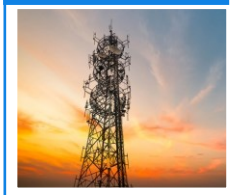
High-performance, networking solutions

Network Infrastructure



- DOCSIS VCMTS
- NETINT
- X12 GrandTwin OpenSSL
- Xilinx FPGAs

5G



- 5G T-Systems 2020
- NVIDIA 5G Telco GPU Computing
- Private 5G ZeroTrust

Wireless



IS Wireless

Manufacturing



Supermicro-Beijer

 © 2023 Supermicro

Networking Solutions: DOCSIS Supermicro

All Solutions

Networking Solutions

Transforming cable networks: powering high-density, high-performance, and energy-efficient connectivity with vCMTS

Network Infrastructure

Benefits

- Cost-Effective: saves costs of legacy CMTS deployment
- Reduced Footprint: reduces footprint by 7x
- Power Efficiency: saves power by 3.5X within the same service group
- High Performance: achieves 8Gbps per service group
- Higher Service Group density: reaches 3X more Service Groups per RU space



Use Cases

- Cable Access Network: for vCMTS data plane processing, allowing cable service groups to be instantiated / scaled independently
- Traffic Simulation: Docker containers use DPDK Pktgen for traffic generation, simulating traffic for vCMTS data plane instances





Solution Components

PDF

DOCSIS

Hardware:

- Device: Supermicro Hyper-E Server SYS-220HE-FTNR
- CPU: Dual 3rd Gen Intel® Xeon® Scalable processors
- Networking: Intel 200G Chapman Beach NIC, Intel 8970 QAT

Software:

- OS: Docker containers - DOCSIS MAC data processing
- Management: Kubernetes for orchestration & Intel
- Telemetry: Collectd for vCMTS data stats and platform KPIs, Grafana for visualization

Networking Solutions: NETINT Streaming

Transforming revolutionizing 4K streaming: Ultra-High Density, Real-Time encoding & cost-effective solutions for interactive video applications

Network Infrastructure

Benefits

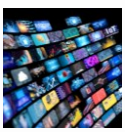
- Density: 10X encoding increase over software encoding
- Real-Time: optimized for live streaming and interactive video
- Low Latency: supports interactive video applications
- Scalability: high throughput for rapid channel deployment
- Cost-Effective: lower TCO, server footprint, power consumption, and emissions



Supermicro AS-1114S-WN10RT

Use Cases

- Live Streaming & Video on Demand (VOD): live stream 4K video content to a large audience, sports broadcasting, concerts, education
- Virtual Reality (VR) & Augmented Reality (AR): gaming, training, and simulation
- Security & Telemedicine: deliver medical consultations over video


Solution Components

NETINT

Hardware:

- Device: Supermicro A+ Server 1114S-WN10RT
- CPU: AMD EPYC™ 7002/7003 Series Processor
- Memory: Up to 4TB (16 DIMMS)
- NVMe Support: 10x
- Network: Dual 10GBase-T LAN
- Transcoders: 10 x NETINT T408

Software:

- FFmpeg for video processing
- NETINT Codensity T408 Video Transcoder for HEVC and H.264 video encoding at up to 4K resolution and with 10-bit HDR

 © 2023 Supermicro

Networking Solutions: X12 GrandTwin OpenSSL

All Solutions

Networking Solutions

Boosting security performance: Supermicro's GrandTwin with Intel QuickAssist, unleashing the power of OpenSSL for high-speed cryptographic operations

Network Infrastructure

Benefits

- High Performance: significant performance gains in cryptographic algorithms when Intel® QAT is enabled
- Enhanced Security: improved security for encryption / decryption operations
- Cost-Effective: reduced processing time with no additional cost to the end user
- Scalability: high-speed cryptographic for large-scale data processing financial transactions



Supermicro GrandTwin™

Use Cases

- Securing: communication between clients and servers
- Enhanced Reliability: and security of applications using OpenSSL
- Security: improving performance of digital signature generation and verification







Solution Components

PDF

intel

Hardware:

- Device: Supermicro SYS-210GT-HNTF GrandTwin
- CPU: Intel® Xeon Scalable 6312U processor
- Memory: 512GB DDR4
- Storage: 480GB SSD
- Network: Dual 10GBase-T LAN

Software:

- OS: Ubuntu 20.04 LTS
- OpenSSL for cryptographic functions
- Intel® QuickAssist Technology (Intel® QAT) for cryptographic operations acceleration

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Networking Solutions: Supermicro Xilinx Accelerator

All Solutions

Networking Solutions

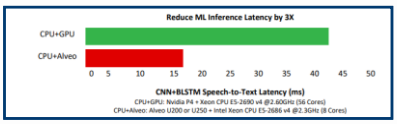
Supermicro's Xilinx accelerator solution – powering dynamic workloads with unmatched efficiency and flexibility for datacenter workloads

Network Infrastructure

Benefits

- High Performance: up to 90X higher performance
- Power Efficiency: 3X higher inference throughput and 3X latency advantage over GPU-based solutions
- Flexibility: adapts to changing acceleration requirements and algorithm standards
- Cost-Effective: reduces the overall cost of ownership

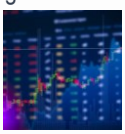




Use Cases

- HPC: accelerate a wide range of HPC workloads
- Machine Learning: train and deploy machine learning models
- Data Analytics: analyze large datasets
- Video & Image Processing: accelerate image classification, object detection, facial recognition







Solution Components

PDF

XILINX

Hardware:

- Supermicro SYS-210GT-HNTF GrandTwin
- CPU: Dual 3rd Gen Intel® Xeon® Scalable processors
- Memory: Up to 4TB (16 DIMMS)
- Storage: Up to 24 of the 2.5” hot-swap drive bays
- Network: Dual 10GBase-T LAN
- Accelerator Cards: Xilinx Alveo U200 & U250
- Xilinx Alveo Data Center accelerator cards for machine learning inference, video transcoding, and database search and analytics

Networking Solutions: Supermicro T-Systems 5G

Supermicro's and T-Systems intelligent edge platform delivers low latency applications for a high-speed, reliable, and scalable 5G future

5G

Benefits

- High Performance: Intel® Xeon® D Edge-based architectures with Intel® FPGA Programmable Acceleration Card N3000 for low-latency applications
- Reliability: carrier-grade reliability environment - 99.9999% uptime
- Scalability: modular designed for growth & competitive pricing
- Cost-Effective: supports VNFs, VM and containerized workloads for lower costs & increased power efficiency



Supermicro Servers for the Intelligent Edge

Use Cases

- Enterprise IoT: applications with low-latency IoT applications
- Device Management: supporting larger number of devices that attach to the network
- Enabling Multiple Workloads: on a single edge platform





Solution Components

T · · Systems ·

Hardware:

- Device: Supermicro SYS-210GT-HNTF GrandTwin system
- CPU: Dual 3rd Gen Intel® Xeon® Scalable processors
- Memory: Up to 4TB (16 DIMMS)
- Storage: Up to 24 of the 2.5" hot-swap drive bays
- Network: Dual 10GBase-T LAN
- Accelerator Cards: Intel® FPGA Acceleration Card N3000

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Networking Solutions: Supermicro NVIDIA 5G Telco GPU

All Solutions

Networking Solutions

Driving revolutionary 5G Telco applications with high-density GPU computing

5G

Benefits

- Speed & Efficiency: enhanced processing speed for large data loads
- Scalability: scales with growing 5G network demands
- Improved Application Performance: better user experiences
- Real-time Processing: reduced latency, fast data processing
- Energy Efficiency: more computing power per watt



Use Cases

- Facilitating Diverse Workloads: for 5G applications
- AI: autonomous vehicles, robotics, factory automation, cloud gaming, telemedicine, AI, and AR/VR applications
- Managing Various Workloads: in central office, micro data center, and outdoor environments







Solution Components

PDF

NVIDIA

Hardware:

- Supermicro SYS-210GT-HNTF GrandTwin system
- CPU: Dual 3rd Gen Intel® Xeon® Scalable processors
- Memory: Up to 4TB (16 DIMMS)
- Storage: Up to 24 of the 2.5” hot-swap drive bays
- Network: Dual 10GBase-T LAN
- GPU: NVIDIA V100 or V100S Tensor Core GPUs, with future support for NVIDIA® A100 Tensor Core GPU, NVIDIA® A40 GPU for Visual Computing, and other NVIDIA Ampere GPU solutions

Networking Solutions: Supermicro Private 5G Zero-Trust Protection

All Solutions

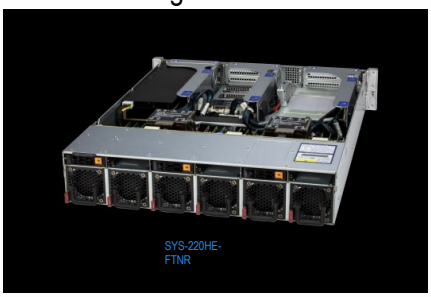
Networking Solutions

Supermicro enables private 5G with Zero Trust protection - for data-sensitive enterprises and government entities

5G

Benefits

- High Flexibility & Reliability: open hardware allows rapid deployment and cost-effective upgrade
- Security: deeply integrated Zero-Trust protection
- Scalability: a scalable management platform without adding unnecessary complexity
- Cost-Effective: a single-pane-of-glass platform with a streamlined, intuitive management interface



Use Cases

- Data-Sensitive Enterprise & Government: deployment of private 5G networks
- Smart Manufacturing: smart manufacturing, smart traffic, AI for video surveillance, etc







Solution Components

zscaler

Saviah

Hardware:

- Supermicro SYS-110P-FWTR SY, S-220HE-FTRN
- CPU: Dual 3rd Gen Intel® Xeon®
- Memory: Up to 4TB (16 DIMMS)
- Storage: Up to 24 of the 2.5” hot-swap drive bays
- Network: Dual 10GBase-T LAN
- Accelerator: Intel® vRAN eASIC Accelerator ACC100

Software:

- HTC RAN on Edge Server
- Saviah 5G Core network software
- Zscaler's Zero-Trust security platform
- SuperMEC application operations Mgmt. system

htc

REIGN TECHNOLOGIES

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Networking Solutions: Supermicro & IS-Wireless OpenRAN Solution

All Solutions

Networking Solutions

Supermicro and IS-Wireless and Red Hat deliver 5G complete ORAN Solution

Wireless

Benefits

- Flexibility& Scalability: open RAN & virtualization, flexible hardware deployment
- Interoperability: open standardized interfaces with multiple vendors
- Cost-Effective: reduces the number of switches required, simplifies management, and lowers power consumption.



SYS-220HE-FTNR

Use Cases

- Deployment of Open RAN: networks
- 4G & 5G mobile networks management
- Managing various workloads: in central office, micro data center, and outdoor environments







Solution Components

Red Hat

is-wireless

Hardware:

- Devices: Supermicro SYS-110P-FWTR, SYS-220HE-FTRN, and SYS-E403-9D-14CN-IPD2
- CPU: Dual 3rd Gen Intel® Xeon® Scalable processors
- Memory: Up to 4TB (16 DIMMS)
- Storage: Up to 24 of the 2.5” hot-swap drive bays
- Network: Dual 10GBase-T LAN

Software:

- IS-Wireless 4G and 5G RAN software for O-RU, O-DU, and O-CU network functionalities
- Red Hat® OpenShift® platform for containers

IoT Edge & Networking Solutions -Beijer

All Solutions

Networking Solutions

Supermicro's hardware integrated with Beijer's software offers a comprehensive tool for manufacturers to remain competitive in the era of Industry 4.0.

Manufacturing

Benefits

- Quality Control: uses IoT and AI for data analysis and early prediction of issues
- Smart Manufacturing: real-time optimization of resources
- Performance: high-performance HW & comprehensive SW
- Maintenance: offers predictive maintenance to reduce downtime
- Competitiveness: reduced operational costs & adopting Industry 4.0



Use Cases

- Manufacturing: applications such as product quality prediction and predictive maintenance
- Edge computing: for applications and harsh environment







Solution Components

PDF

intel

Beijer ELECTRONICS

Hardware:

- Supermicro SaYS-E100-9W-IA: A fanless edge device for real-time monitoring and predicting downtime.
- Supermicro SYS-1019P-FHN2T: Provides computing power and data storage.

Software:

- Beijer iX Software: Offers data acquisition, visualization, and extensive connectivity to other equipment.



 © 2023 Supermicro

All Solutions

Big Data Solutions

Big Data & Enterprise Solution Portfolio

High-performance, Big Data solutions

Backup, Recovery & Data Protection



- Supermicro & Veeam

In-Memory Database



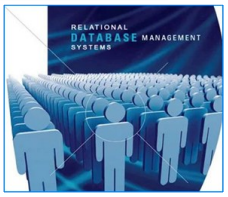
- Red Hat® OpenShift Redis on Supermicro BigTwin
- Redis on Supermicro X12 FatTwin Server Platform
- MemVerge

Data Analytics



- AMD for Data Analytics
- NVIDIA Cloudera Spark

Relational Database Management Systems (RDBMS)



- AMD & Oracle Database

VEEAM · Apache Spark · MemVerge · SCALITY · ORACLE · CLOUDERA · redis · Red Hat · intel · AMD · NVIDIA

 © 2023 Supermicro

Big Data Solutions: Supermicro & Veeam

Modernize your data center with ransomware protection & storage virtualization using Supermicro SuperStorage, Scality RING & Veeam Backup & Replication

Backup, Recovery, Data protection

Benefits

- Enterprise-grade ransomware protection: & Amazon S3 Object Lock support
- Lower cost: smaller-capacity entry points, reduce TCO by 90%
- Compliance: VeeamRule for data protection
- Configuration: for ransomware protection
- High Availability RTOs: of less than 15 minutes



Use Cases

- Data Center: disaster recovery, business continuity, data archiving
- Enterprise: file backup, email backup, system backup






Solution Components

PDF

VEEAM SCALITY

Hardware:

- Supermicro SuperStorage Servers: SSG-620P-E1CR24H,

Software:

- Scality RING software
- Veeam Backup & Replication
- SSG-640SP-E1CR60, and SSG-6049P-E1CR60H

Big Data Solutions: Red Hat® OpenShift Enterprise

Red Hat® OpenShift Enterprise platform for managing hybrid clouds on BigTwin. Double the cache cluster bandwidth for real time applications

In-Memory Database

Benefits

- Reliable: easy deployment of hybrid cloud
- Double memory capacity: Intel® Optane™ PMem 200, cost-effective high performance
- Real-time applications: cost effective Edge to Cloud
- Enhanced DevOps: with streamlined deployment
- Low-latency: persistent storage



Use Cases

- Web Applications: e-commerce, social media, gaming
- Enterprise: Real-Time analytics, fraud detection content delivery





Solution Components

PDF

redis Red Hat intel

Hardware:

- Supermicro X12 BigTwin server, Intel® Optane™ PMem 200 Series, NVMe PCI-E 4.0 drives.

Software:

- Red Hat® OpenShift, Redis Enterprise Operator, Kubernetes Engine.

 © 2023 Supermicro

Big Data Solutions: Efficient Redis on FatTwin

Building highly efficient Redis on Flash cluster with Supermicro X12 FatTwin servers for real time applications

In-Memory Database

Benefits

- Enhanced capacity & high-performance: Flash as secondary storage
- Cost-effective performance: efficient data management with RocksDB
- High-density design: for space optimization and robust performance for dense Redis databases
- Consistent low-latency performance



Supermicro X12 FatTwin Server Platform

Use Cases

- Web Applications: e-commerce, social media, gaming
- Enterprise: Real-Time analytics, fraud detection, content delivery





Solution Components

ScaleFlux Pacific redis intel

- Hardware :
- Supermicro X12 FatTwin Server Platform
- ScaleFlux CSD 2000 solid-state storage drive
- Software :
- Redis on Flash with RocksDB.

 © 2023 Supermicro

Big Data Solutions: Supermicro NVIDIA Cloudera Spark solution

Supermicro's Ultra servers, Cloudera private cloud & NVIDIA RAPIDS - a unified platform for accelerating Apache Spark 3X workloads & Data Analytics workloads

Data Analytics

Benefits

- Speed: over 5 times more performance speedup over CPU-based clusters due to GPU acceleration of Apache Spark 3.x workloads
- Scalability: capable of handling large-scale data analytics, from Terabytes to Petabytes of continuous data
- Enterprise support: enterprise-level support from both, Supermicro (hardware) and Cloudera (software)



SYS-220U-TNR

Use Cases

- Data Analytics: the platform uses advanced algorithms to extract insights from large datasets for efficient decision-making
- Deep Learning Preparation: it prepares and optimizes data for deep learning, enhancing AI model performance





Solution Components

PDF

NVIDIA
CLOUDERA
Red Hat

Hardware:

- Supermicro Ultra Servers. Support GPUs and 3rd Gen Intel® Xeon® or 3rd Gen AMD EPYC™.

Software:

- Cloudera Data Platform Private Cloud Base (CDP-PVC-Base): Integrated Apache Spark platform with support.
- NVIDIA RAPIDS: Software libraries built on CUDA-X AI
- Supermicro SuperCloud Composer: Management SW for server cluster monitoring, network OS booting.
- Red Hat Enterprise Linux: Operating system supporting Cloudera Data Platform Private Cloud Base.

 © 2023 Supermicro

Big Data Solutions: Supermicro AMD for Data Analytics Workloads

Delivering word record performance on data analytics workloads, with Supermicro WIO servers

Relational Database Management Systems (RDBMS)

Benefits

- Superior performance: across multiple scale factors. Up to 83% performance metric uplift.
- Cost effective: up to 35% lower Total Cost of Ownership (TCO) based on Price/Performance metrics



Use Cases

- Data Science: data mining, predictive analytics, big data analytics
- Machine Learning: image recognition, natural language processing, speech recognition






Solution Components

PDF

AMD

Hardware:

- Supermicro's WIO servers: These servers are powered by 3rd Gen AMD EPYC™ processors, providing high performance for data analytics workloads.

Software:

- Apache Hadoop CDP Private Cloud Base Edition 7.1.6: used for managing and processing the data.
- SUSE Linux Enterprise Server 12 SP5: operating system running on the servers

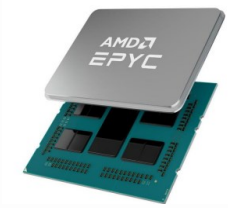
Big Data Solutions: Supermicro AMD & Oracle Database

Supermicro's AMD-based solution - Oracle Database 19C

Relational Database Management Systems (RDBMS)

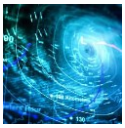
Benefits

- Performance: AMD EPYC 7003 series processors deliver up to 19% more instructions per clock (IPC) than the previous generation (7002 series), leading to improved database performance
- Security: AMD Infinity Guard and Secure Encrypted Virtualization (SEV) provide advanced security features
- Scalability: high scalability with up to 64 cores per processor and 128 lanes of PCIe 4.0



Use Cases

- Enterprise Apps: financial services, healthcare, retail
- HPC Applications: weather forecasting, drug discovery
- Manufacturing
- Virtualized Environments: security for virtualized environments


Solution Components

ORACLE AMD

Hardware:

- Supermicro's A+ Server solutions:
- AMD EPYC 7002 and 7003 series processors: providing high performance and advanced security features.

Software:

- Oracle Database and Applications: The solutions are designed to optimize the performance of Oracle environments.

Big Data Solutions: MemVege Software Defined Storage

All Solutions

Big Data Solutions

Supermicro solutions for the MemVerge Memory Machine. Enterprise class big memory platforms optimized for expanding the universe of Real-Time applications

In-Memory Database

Benefits

- Virtualization: transparent access to DRAM & PMem pool
- Performance & Capacity: superior to Intel Memory Mode
- Low-Latency Replication: RDMA for high-volume, ultra-low latency messaging
- Fast Recovery: ZeroIO™ in-memory snapshots - fast crash recovery
- Database Cloning: snapshot-based terabyte database instance cloning



Use Cases

- HPC & AI/ML: long-running apps need robust checkpoint-restore functionality, memory-intensive applications
- Data Analytics: long analytical pipelines that lack easy parallelization
- Enterprise: file sharing, backup, and disaster recovery



Solution Components

MemVerge

Hardware:

- Supermicro servers in various configurations including
  - CloudDC SuperServer SYS-120C-TN10R,
  - Ultra SuperServer SYS-120U-TNR, and
  - BigTwin SuperServer SYS-220BT-HNTR.

Software:

- MemVerge Memory Machine, a memory virtualization layer between applications and the underlying memory hardware.

Media & Entertainment Solutions Portfolio

All Solutions

Media & Ent. Solutions

High-performance, media solutions

Cloud Gaming & Media Processing & Delivery



- Blacknut Cross Media Scalable Gaming-as-a-Service solution
- Supermicro Media Processing & Delivery

Video Conferencing



- VCDN High-quality video conferencing (workstation)

Workstations



- 2U2N solution
- Deep Insights
- Manufacturing

Red Hat Blacknut RADIANARC

NVIDIA intel AMD Ansys TECHNOLOGY PARTNER

All Solutions

Media & Ent. Solutions

Media Solutions: Blacknut Cross Media Cloud Gaming

Turnkey solution - easily integrate cloud gaming within over-the-top (OTT) & subscription video-on-demand (SVOD) platforms

Cloud Gaming & Media Processing & Delivery

Benefits

- Increased revenue: and increased user engagement
- Expanded content catalog:
- Interactive features: for enhanced user experience
- Cost savings: by eliminating dedicated gaming HW
- Seamless integration: with existing media platforms
- Global availability: low-latency with hybrid cloud



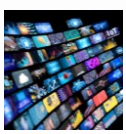
AS-4124GS-TNR

Use Cases

- Cloud Gaming Service: allows providers to offer subscribers cloud gaming, eliminating the need for specific hardware
- Cross-Media Integration: simplifies the combination of gaming content with existing media platforms for a seamless user experience







Solution Components

Blacknut RADIANARC

AMD

Hardware :

- AS-4124GS-TNR: Flexible GPU Server
- AS-1114CS-TNR: Cloud-optimized Mgmt. Server
- SSE-x3548S: Feature-rich ToR Switch

Software :

- Radian Arc GPU Edge Infrastructure
- Blacknut's Cloud Gaming-as-a-Service (GaaS) Platform
- Netint: Container-based solution
- Operating Systems: Windows, Linux, and Android
- APIs: Metadata and integration APIs

Media Solutions: Media Procession & Delivery

All Solutions

Media & Ent. Solutions

Designed for video streaming, transcoding, streaming infrastructure. Efficiently scales to subscribers with smaller data center footprint

Cloud Gaming & Media Processing & Delivery

Benefits

- Extensible IT Portfolio: diverse systems for optimized streaming platform, balancing accelerators, rack density, & cost-effectiveness

Benefits

- Open Standards Architecture: integrating with frameworks like FFmpeg and Intel®'s oneVPL
- Optimized: increasing stream density per server

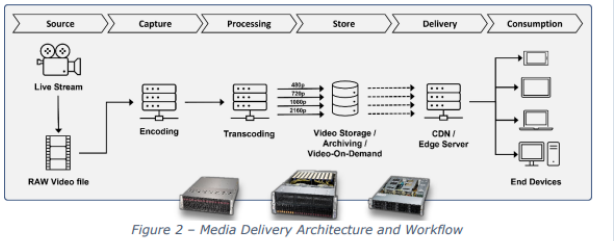


Figure 2 – Media Delivery Architecture and Workflow

Use Cases

- Efficient Video Transcoding: for apps like Netflix or YouTube, as they adapt video content to the viewer's device, optimizing bandwidth
- Media Delivery: comprehensive workflow, essential for live streaming platforms like Twitch
- Cloud Gaming: low latency and high-quality graphics are crucial





Solution Components

Hardware:

- SYS-530MT-H8TNR: Essential performance, low power consumption, balanced workload density for the cloud.
- SYS-420GP-TNR and SYS-220BT-HNTR: with Intel® Xeon® Scalable Processors, for critical workloads and optimized application acceleration.
- Intel® Data Center GPU Flex Series: High-performance and high-quality transcoding. The GPU instances deliver higher throughput. i.e lower cost per video.

Media Solutions: Supermicro Workstations and 2U2N servers

Supermicro's high-performance, energy-efficient workstations and servers for advanced product development with Ansys application

Workstations

Benefits

- High Performance: fast product development with AMD Ryzen Threadripper PRO CPU
- Energy Efficiency: reduced power consumption with dual processor systems
- Versatility: enhanced operations with GPU options
- Scalability: performance and energy savings for Ansys SW



AS-5014A-TT

Use Cases

- Development of Interactive Environment: designers / engineers run complex simulations earlier in the design process
- Mechanical & Mission Critical Apps: fast product development and simulation for enterprises





Solution Components

AMD Ansys TECHNOLOGY PARTNER

Hardware:

- Supermicro 2U-2Node server.
- AMD Ryzen Threadripper PRO CPU up to 64 cores
- Up to 2TB Registered ECC DDR4 3200-MHz Memory
- 6 PCI-E 4.0 x16 slots, M.2 Interface, U.2 Interface
- 4 fixed internal 3.5"/2.5" SATA drive bays
- 2 fixed front 2.5" SATA drive bays, 4 M.2, 1 VGA port,
- 7.1 HD Audio
- 2000W Platinum Level Power Supply.

Software:

- Ansys Fluent and Ansys Mechanical software.

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Media Solutions: Deep Insights solution

All Solutions

Media & Ent. Solutions

Designed for deep learning and artificial intelligence applications. High-performance processors and GPUs to accelerate these demanding workloads

Workstations

Benefits

- High-performance: for enterprise-grade technologies
- Flexibility: support for a wide range of industry-standard components
- Local support: and recommended configurations based on unique workflows



540A-TR



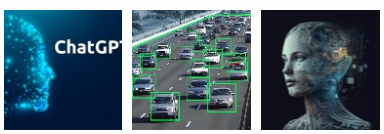
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740GP-TNRT

Use Cases

- Deep learning: for deep learning applications, such as: Image recognition, natural language processing, speech recognition
- Artificial Intelligence: machine learning, robotics



Solution Components

PDF

NVIDIA intel AMD

Hardware:

- Workstations: Supermicro offers a range of high-performance workstations, including single-processor and dual-processor configurations.
  - 540A-TR - Single-processor
  - 5014A-TT - Enterprise-class
  - 740GP-TNRT - Dual processor

Software :

- NVIDIA GPUs: powered by NVIDIA GPUs
- Examples: NVIDIA A30/40, NVIDIA RTX A6000.

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Media Solutions: Manufacturing solution

Next-Generation workstations: powering the future of manufacturing with high-performance Supermicro solutions

Workstations

Benefits

- Performance: exceptional power for demanding workflows
- Flexibility: configurable with standards
- Reliability: enterprise-grade reliability
- Acceleration: unmatched acceleration with NVIDIA GPUs
- Designed for Manufacturing: ruggedized design & temp ranges to meet harsh environments



Supermicro Workstation Family

Use Cases

- Computer-Aided Design (CAD): create 3D models, essential for manufacturing processes: product design & prototyping
- Manufacturing Execution Systems (MES): manage manufacturing process
- Visualization: track product progress, identify problems





Solution Components

PDF

NVIDIA intel

Hardware:

- SYS-5039A-I: Single-processor workstation with Intel® Xeon® W-2200 processor, 128GB DDR4-2933 Memory, NVIDIA RTX™ A2000, and 1TB M.2 NVMe + 6TB HDD.
- AS -5014A-TT: Workstation single-processor workstation that supports the AMD Ryzen™ Threadripper™ PRO 3900WX Series Processor..
- SYS-740A-T: Dual-processor workstation with 3rd Gen Intel® Xeon® Scalable processors, 2TB DDR4-3200 Memory, NVIDIA RTX™ A6000DR4-3200, and 2TB M.2 NVMe + 2x 7.6TB U.2 PCIe Gen 4 SSD.

Media Solutions: VCDN video conferencing

The Supermicro and Intel VCDN offers a scalable platform for visual services, using proven designs to streamline deployment & reduce costs

Video Conferencing

Benefits

- High scalability & performance: high-density, high-throughput for distributed visual services
- Increased infrastructure utilization: visibility across all visual services
- Low TCO: streamlining infrastructure
- Flexibility: rapid addition of visual services in networks



Use Cases

- Cloud Gaming: volumetric video by multiple servers. High-quality video conference, graphics & audio
- Visual Effects: animation, broadcast graphics, virtual reality
- Streamlining Infrastructure: procurement and deployment





Solution Components

Red Hat intel

Hardware:

- Supermicro Ultra SYS-120U-TNR, Intel® Xeon® Gold 5318N processor or 6338N processor, Intel® Optane™ DC SSD P5800X series, Intel® SSD D7-P5510 series or D5-P5316 series, Intel Ethernet 800 series network adapter, Intel server GPU.

Software:

- CentOS or Red Hat Enterprise Linux, open-source CDN caching frameworks such as NGINX, Apache Traffic Server (ATS), and Varnish, open-source media libraries and Scalable Video Technology for media transcoding.

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



SUPERMICRO

Worldwide Headquarters
Super Micro Computer, Inc.
980 Rock Ave.
San Jose, CA 95131, USA
Tel: +1-408-503-8000
Fax: +1-408-503-8008
E-mail: Marketing@Supermicro.com

EMEA Headquarters
Super Micro Computer, B.V.
Het Sterrenbeeld 28, 5215 ML,
's-Hertogenbosch, The Netherlands
Tel: +31-73-640-0390
Fax: +31-73-641-6525
E-mail: Sales_Europe@supermicro.com

APAC Headquarters
Super Micro Computer, Taiwan Inc.
3F, No. 150, Jian 1st Rd., Zhonghe Dist.,
New Taipei City 235, Taiwan
Tel: +886-2-8226-3990
Fax: +886-2-8226-3991
E-mail: Marketing@Supermicro.com.tw

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www.supermicro.com

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