Professional service integrating server, storage, switch, and rack products to deliver application-optimized, end-to-end solutions to data centers of any organization.

With this service, customers can accelerate deployment schedules, re-focus internal resources, improve quality, and reduce expenses.

The result: a tested, turn-key solution ready for your production environment.
World-Class Engineering and Deployment of your Data Center Solutions

Today’s cutting edge technologies introduce unique implementation and integration challenges. It is more important than ever to have a trusted team to identify and engineer solutions to these challenges. Supermicro Rack Integration Services provides a “one-stop shop” for your data center needs. Our team has the confidence, flexibility, and expertise to handle all phases of your data center integration project. From requirements gathering to the delivery of a fully integrated system – and all phases in between – you can rely on Supermicro Rack Integration Services as your central resource for project success.

With our extensive portfolio of server, storage, switch and rack products, we can provide a wide range of solutions with a focus on customer satisfaction, quality, and energy efficiency. Our global footprint, dedicated and skilled professionals, and integrated supply-chain will ensure you get what you need, when you need it, no matter where in the world you are.

From initial consultation to deployment and maintenance, the Supermicro Rack Integration Services team can manage all phases of your project to ensure success. Our customers can count on us to design a solution utilizing a broad line of server, storage, switch, and rack products to deliver an application-optimized rack system. By leveraging our team, customers are able to accelerate deployment schedules, re-focus internal personnel, and reduce overall operational expenses. As your trusted partner, our dedicated professionals can deliver high-quality, cost-effective, customized solutions using proven industry best practices. The result: a tested, turn-key solution ready for your production environment.
Customer Benefits

One-Stop Shop
From manufacturing to deployment, Supermicro is the only vendor you need for your project needs

Extensive Product Portfolio
Comprehensive line of “Green” server, storage, switch and rack products

Global Footprint
With centers in the US, Europe, and Asia, Supermicro services customers all over the world

Reduced Costs
Our customers save anywhere from several thousand to tens of thousands of dollars in OpEx per rack deployment

Re-focus Internal Staff
By leveraging Supermicro's integration team, customers can re-deploy internal personnel to focus on core-competencies resulting in accelerated deployment schedules and agility

Customized and Flexible
Our solutions are customizable to your requirements. Our team has the flexibility and confidence to work with and integrate 3rd party equipment into your final solution
## Rack Integration Process

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### Design

#### Application Analysis

Supermicro analyzes customers’ applications such as: search engines, databases, finance, education, healthcare, research and development, and graphic design in order to select the most suitable hardware platform for the underlying application. Experienced rack integration engineering teams review customers’ rack integration requirements along with server, switch and PDU configurations to optimize rack dimensions, cabling arrangements, and PDU selections to meet the customers’ specifications for onsite deployment. Engaging Supermicro early can help the customer select an optimal solution to best fit their needs.

#### Power Budget

Supermicro selects servers and networking devices to fit the platform and customers’ power constraints. Power budgets are created utilizing both 120V AC and 240V AC inputs, and are calculated for maximum and actual power utilization of the solution. The Supermicro power team delivers fast, accurate power budget reports to increase server density, decrease solution footprint, and lower TCO. Supermicro works closely with the customer to ensure that the equipment being installed is within power parameters imposed by space, connection and/or region.

#### BOM Creation

Based on the calculated power budget, customers may choose the appropriate PDU from a list; or Supermicro’s experienced personnel can recommend suitable PDUs able to supply sufficient power. Together with the chosen PDU, servers and networking devices, a Bill of Materials is created and entered into Supermicro’s BOM system for cost analysis and price quotation. BOMs created
in Supermicro’s logistics systems can provide price lists for program control to meet customer’s schedule and minimize operation cost. Supermicro’s ECO system ensures the highest levels of quality. The completed Bill of Materials for a Supermicro end-to-end solution will include the items and quantities based on design, and will provide an easy-to-understand price quotation.

**Rack Layout, Wire Map**

Along with the BOM, an entire rack-level engineering layout diagram will be created according to the server and networking device power socket and data port positions and the implementation of underlying applications. Professional experienced layout engineers will provide draft and final layouts for customer review and final integration. A detailed cabling layout of networking cables and power cords will be provided to optimize cable length and air cooling and allow service access when hot swapping units. A graphic will be provided with the servers laid out in their positions in the rack systems, along with cabling count types and positions, for approval.

**Assembly**

**Node Assembly**

Depending on the requirements, Supermicro’s production department will assemble servers/nodes according to the server BOM and production SOPs. Networking devices will be integrated and third party devices will be procured in tandem with the assembly process. Supermicro will ensure that each server node meets strict tests and is configured to meet the customer’s requirements. Node information will be well documented with correct labels. Node assembly will be completed by production personnel with all custom parts installed.

**Rack and Stack**

Rack integration engineers and production engineers work closely with experienced operators to integrate rack systems following the agreed-to SOPs. Based on the engineering layout diagram, required servers/nodes will be pulled to Supermicro’s assembly area. Our experienced assembly technicians will stack these parts inside the appropriate rack cabinets according to the SOP. The services team will securely mount servers, switches, power distribution units, and accessories to the racks, with labeling to customers’ specifications or in accordance to industry best practices. Systems interconnections and additional testing will help to guarantee the best possible customer experience.
Cabling and Labeling

After the server systems are stacked inside their respective racks, technicians will wire the data and power cords according to the engineering layout diagrams and wiring-maps. Each cable will also be labeled clearly with a unique identifier. Error checking will be run and, depending upon the Application Analysis, the types / quantities / lengths of the cables will be adjusted to the requirements of the application and design. With professional labeling, provided either by the customer or by Supermicro, rack servicing will be made easier for the customer’s engineers.

Third Party Equipment

Third party equipment will be procured, stacked inside the Supermicro rack cabinets, or drop shipped according to the engineering layout diagram and the customer’s preference. Supermicro equipment is designed to work with industry standard hardware and the services team has the experience to work with other brands of IT hardware and integrate it into an end-to-end solution.

Configuration

BIOS Settings

After a solution is completed, each node’s BIOS settings will be professionally updated, adjusted and tested. Nodes will also be consistent to each other according to the RFQ and to the customer’s preference.

Firmware Update

Supermicro updates the firmware with our professional tools so that it is internally consistent. This greatly reduces human error and optimizes the reliability of running customized applications on Supermicro’s hardware platforms.
IPMI Settings

Supermicro utilizes IPMI utilities, SuperDoctor and other professional tools to remotely configure and manage IPMI setting. The advantages are the ability to remotely manage server deployment, eliminate any impact on applications and to provide easy integration with existing infrastructure.

OS and Customer Imaging

Operating Systems and customer images can be pre-installed and configured into each node with Supermicro’s professional tools. This greatly saves the customer time and effort and provides flexibility for customers to deploy their resources to their core application.

Testing

Multi-Vendor Equipment Compatibility

Multi-vendor equipment involved with the integration process will be tested for compatibility with their related server/nodes, networking devices and other components. This further reduces system and human error and ensures the quality of Supermicro’s complete solution hardware platform.

Full Rack Burn-in and QA

After the above procedures have been completed, a full rack burn-in test will be performed for a standard 8 hours or a testing length preferred by the customer and validated according to Supermicro’s professional quality assurance procedures. This guarantees the reliability of the solution during extended periods in an optimized running environment.

Full Rack Power Measurement

Supermicro’s professional rack power measurement box will be employed to perform a full rack power measurement evaluation. This will further reduce any unexpected errors such as power surges and ensure reliability and optimal stability of the Supermicro end-to-end solution.

Performance Benchmarks

After all the above tests have been performed, a performance benchmark report will be generated and evaluated. Through this step Supermicro can provide solution integration with a consistently high level of quality through an end-to-end validation test, extended burn-in, and test record.