

MegaRAC® Solutions for Intel® Rack Scale Design Standards



Intel® Rack Scale Design-compliant Node Management Solutions from American Megatrends

WHAT IS RACK SCALE DESIGN?

Intel® Rack Scale Design (RSD) is an open framework that defines the standards for composing logical servers from disaggregated pools of storage, network and compute resources. Intel Rack Scale Design Software APIs simplify resource management and provide the ability to dynamically compose resources based on workload-specific demands.

MegaRAC Solutions for Intel Rack Scale Design are focused on enabling high efficiency for building, managing and improving cloud infrastructure in a software-defined data center. These solutions are fully compliant with Intel RSD and DMTF Redfish® standards, including MegaRAC Pooled System Management Engine (PSME) firmware solutions and MegaRAC Composer™ Pod Management Software.

WHY RACK SCALE DESIGN?

The Rack Scale Design (RSD) standard offers unique and important benefits to both manufacturers and end users, including increased performance through pooled network, compute, and storage resources, along with hyper-scale agility thanks to a flexible, modular architecture and improved data center operations with analytics-based telemetry.

AMI has built a unique value proposition for OEM and ODM customers through its RSD solution offerings by leveraging the strengths and advantages of this standard. The MegaRAC RSD product line from American Megatrends enables OEMs/ODMs to build a fully integrated, out-of-band, fail-safe Rack Scale solution that truly meets the needs of the industry right out of the box. Through its state-of-the-art, industry-leading MegaRAC product line, once again AMI offers the best in class, robust productized RSD solution and a solid support model which has been trusted by OEM/ODM customers for decades.

RACK SCALE DESIGN SOLUTIONS FROM AMI

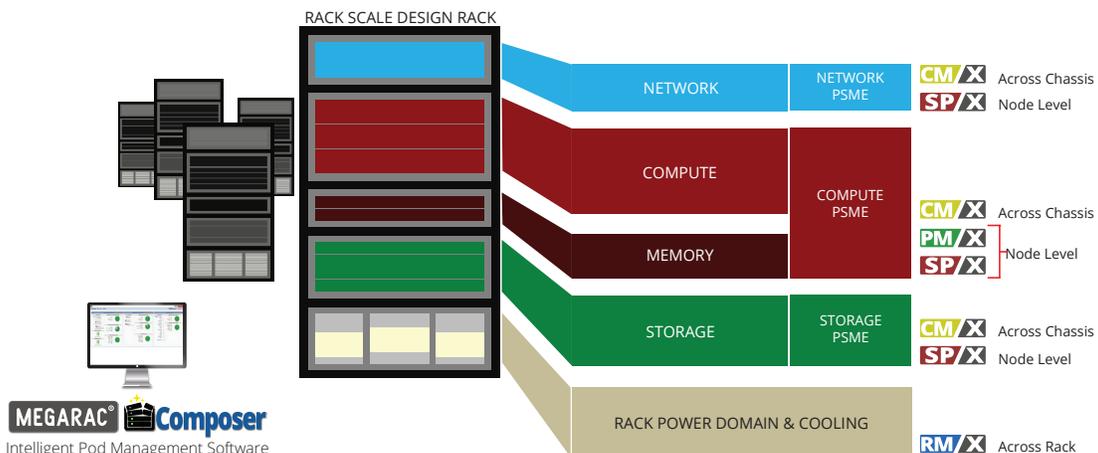
MegaRAC PSME Firmware Solutions

MegaRAC PSME firmware solutions are hardened, production-worthy and tightly integrated to function with the MegaRAC manageability firmware stack used by nearly every ODM - and within most hyper-scale data centers. These solutions can be deployed in a single image to the popular (BMC) service processors, but are also configurable to run stand-alone on x86 or other architectures, and with custom OEM manageability firmware stacks. MegaRAC PSME solutions can not only run on compute nodes integrated with the server BMC, but also on Chassis or Rack Management Modules, as well as run as a Container under the Pod Manager. These solutions all work under a Redfish Framework, making it easy to add extensions, such as Fabric Management.

MegaRAC Composer Pod Management Software

MegaRAC Composer from American Megatrends is a pod management software solution that allows users to browse physical resources at the rack, chassis and system level through an intuitive web-based user interface. Administrators can then compose and assign those physical resources to create a logical node, which provides the advantage of demand-driven dynamic scaling to optimize datacenter resource utilization.

MegaRAC Composer also allows for the composition of physical resources based on templates, which can then be stored in the software and reused as a time-saving feature. In addition, MegaRAC Composer gives users the ability to power on, force off, and gracefully shutdown composed nodes.



ADVANTAGES OF MEGARAC SOLUTIONS FOR INTEL RACK SCALE DESIGN

FULLY INTEGRATED

OEM/ODMs can integrate the Rack Scale Design functionality within the BMC or other management controller firmware on participating RSD hardware units, including compute and storage nodes, as well as switches. Now, OEM/ODMs can build RSD solutions using the existing BMC development skills and infrastructure they already have. Because this functionality is integrated with the BMC firmware, it ensures a quick path to production without calling for any alteration in the manufacturing process.

OUT-OF-THE-BOX

All RSD intelligence is pre-built and on board the server hardware that an OEM/ODM produces. This gives OEM/ODMs the ability to create custom, proprietary solutions through IP on hardware that they contribute and control.

OUT-OF-BAND

MegaRAC RSD solutions are also 100% out-of-band, eliminating the need to run required RSD software components on dedicated server nodes. This frees up server nodes for additional compute jobs and processing power for tasks other than RSD-specific ones.

FAIL-SAFE ARCHITECTURE

MegaRAC solutions are distributed, BMC-based solutions on server nodes in a rack rather than reserved, vital components on a dedicated server node within a rack, to eliminate the “single point of failure” threat imposed by dedicated server-based solutions. Typically, in the event of crash of a dedicated server, the entire rack loses Rack Scale capability across all nodes.

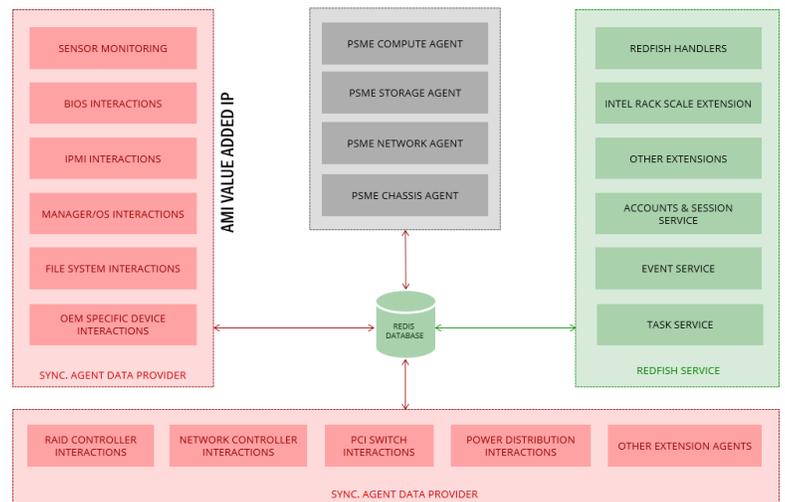
Such arrangements demand a failover deployment practice for the dedicated hardware running RSD software, adding to CAPEX and affecting productivity as two or more compute nodes are taken away from the main compute pool. In contrast, MegaRAC RSD solutions can offer greater productivity, efficiency and reliability thanks to their distributed architecture.

LOWER TCO IN THE DATACENTER

Because they are integrated with existing on-board firmware and a part of the Life Cycle Management framework of a datacenter, MegaRAC RSD solutions from AMI can significantly lower datacenter total cost of operations (TCO). There is no longer a strict need for maintaining dedicated servers to run RSD software, employ failover strategies for RSD management servers or pay for extra power drawn by these servers - just a few ways that MegaRAC RSD solutions can help reduce TCO.

RACK DESIGN FLEXIBILITY

Now, OEM/ODMs can build racks with flexible server designs (compute, storage and switch) that comply with all industry standards - without radical hardware changes. Server hardware with manageability under the MegaRAC firmware stack can be compliant with major industry standards such as OCP (Open Compute Project), Scorpio, or even an OEM’s proprietary rack solution, since RSD features can complement these standards immediately.



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