

# MegaRAC® Solutions for Rack Scale Design Standards



*MegaRAC Rack Scale Design-compliant Node Management Solutions from American Megatrends*

## WHAT IS RACK SCALE DESIGN?

Intel® Rack Scale Design 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 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 Rack Scale Design and DMTF Redfish standards, including MegaRAC Pooled System Management Engine (PSME) firmware solutions and the 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 resources (network, compute, and storage), 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 through its RSD solution offerings to leverage 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 the box, out of band, fail-safe Rack Scale solution that truly meets the needs of the industry. 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 OXM customers for decades.

## RACK SCALE DESIGN SOLUTIONS FROM AMI

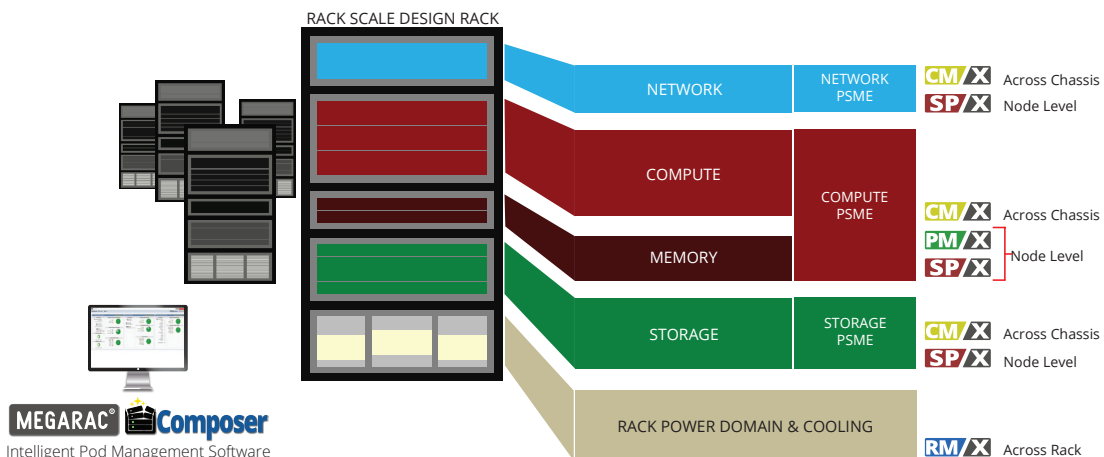
### MegaRAC PSME Firmware Solutions

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 or they can 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 allowing 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 RACK SCALE DESIGN

## FULLY INTEGRATED

OxMs can integrate the Rack Scale functionality within the BMC or other Management controller firmware on participating RSD hardware units. This includes compute node, storage node or a switch. What does this mean? Now OxMs can build Rack Scale solutions using the existing BMC development skills and infrastructure they already have. Being integrated on the BMC firmware, it ensures a quick path to production without calling for any alteration in the manufacturing process.

## OUT-OF-THE-BOX

All Rack Scale intelligence is pre-built and comes out of the server hardware that the OxM produces. What does this mean? OxMs have the ability to create their custom proprietary solution through IP on the hardware they contribute and control.

## OUT-OF-BAND

The solution is one hundred percent out-of-band. This eliminates the requirement of running necessary RSD software components on dedicated server nodes. What does this mean? It frees up the server node for doing more compute jobs and doesn't tie up processing power for running RSD tasks only.

## FAIL-SAFE ARCHITECTURE

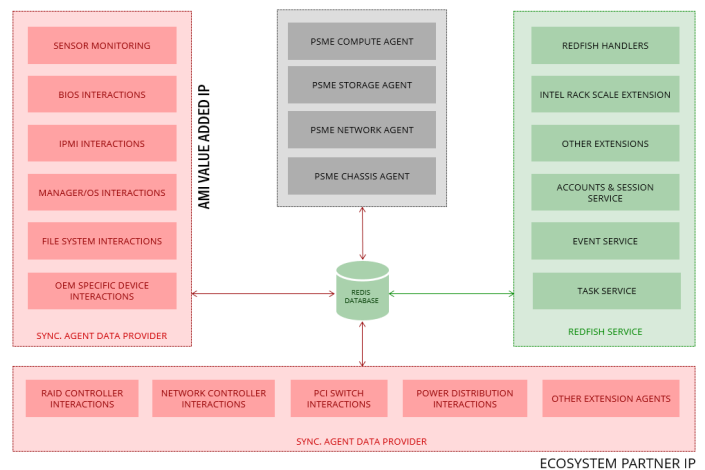
MegaRAC solutions are distributed BMC-based solutions on server nodes in a rack as opposed to running vital components on a dedicated server node in a rack. What does this mean? Dedicated server-based solutions impose "single point of failure" threat. In the event of that server crashing, the entire rack results in losing Rack Scale capability for all nodes. This inherently demands a failover deployment practice for the dedicated hardware running RSD software. This adds to the CAPEX as well as resulting loss of productivity due to occupying two or more compute nodes taken away from the main compute pool.

## LOWER TCO IN THE DATACENTER

Being integrated at the existing on-board firmware and being part of the Life Cycle management in place of a datacenter, such uniquely positioned RSD solutions from AMI lowers the TCO significantly. What does this mean? There is no need for maintaining servers running RSD software, employing failover strategies for these servers running RSD management software and paying for extra power drawn by these servers, which is just a few of the key TCO sensitive items.

## RACK DESIGN FLEXIBILITY

Now OxMs can build racks with flexible server (compute, storage and switch) designs that can comply with all industry standards without asking for any hardware change. What does this mean? Server hardware with manageability designed with the MegaRAC firmware stack can be compliant with major industry standards like OCP (Open Compute Project), Scorpio and even an OEM proprietary rack solution. Rack Scale features can complement all of these standards immediately.



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