# Supermicro's Total Solution for Ceph
## Scale-Out Cloud Storage - powered by Red Hat Ceph Storage and Supermicro

## Designed for Reliable Large Scale Storage Deployments

With the advancement of large scale cloud computing platforms like OpenStack, the business of data storage has been forever changed. Scale out software defined storage solutions are rapidly becoming pervasive as the implementation model of choice for large scale deployments. Agile business models require equally agile platforms to build upon. By replacing the proprietary data silos of the past with flexible server hardware, cloud providers have more control of their environments resulting in better value for their customers. Supermicro has embraced this change, offering the widest selection of server hardware in the industry.

## Ready to Deploy Configurations

- **Role specific cluster configurations** – turn-key cluster configurations offer performance, capacity, and density to fit popular application workloads. Memory and networking options are easily customized to meet specific requirements
- **Optimized network configurations** – cluster and rack level integration offers streamlined deployment of Red Hat Ceph Storage and infrastructure with consistency not attainable using improvised methods
- **Storage/Media Ratios to fit user applications** – deployment of flash and rotating magnetic media allows the solution to meet workload tuned performance and density targets

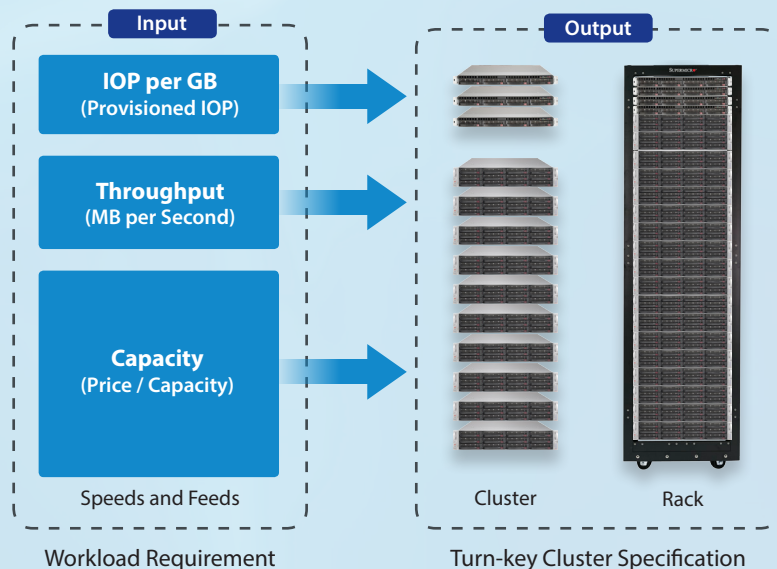## Object-based Storage with Block and Object Interfaces

Organizations prefer object-based storage when deploying large-scale storage systems because it stores data more efficiently. Object-based storage systems separate the object namespace from the underlying storage hardware — This simplifies data migration.

## The Ceph Storage Difference

Ceph's CRUSH algorithm liberates client access limitations imposed by centralizing the data table mapping typically used in scale-out storage. Ceph continuously re-balances data across the cluster-delivering consistent performance and massive scaling. The self-healing capabilities of Ceph provide aggressive levels of resiliency. Data redundancy is achieved by replication or erasure coding allowing for extremely efficient capacity utilization.

http://www.supermicro.com/Storage_Ceph

## Workload Optimized Cluster-level Building Blocks



Input

**IOP per GB**
(Provisioned IOP)

**Throughput**
(MB per Second)

**Capacity**
(Price / Capacity)

Speeds and Feeds

Workload Requirement

Output

Cluster          Rack
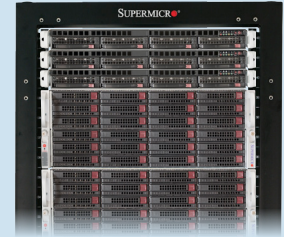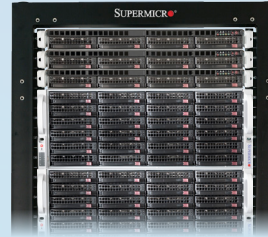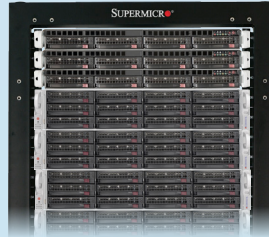
Turn-key Cluster Specification

### THE SUPERMICRO / CEPH SOLUTION AT-A-GLANCE

**Ceph Optimized Server Configurations**

- **Cloud Storage with S3, OpenStack and MySQL Integration**

- **All Flash and Hybrid Disk configurations deliver low-latency performance**

- **NVMe and 12Gb/s SAS3 architectures**

- **10G SFP+ networking with flexible upgrade path**

- **Out-of-Band Server Management Software**

- **Single point of contact service with 4-hour Onsite SLA**

## Supermicro Hardware Specifications

| Workload/ Application | MySQL/Database | Digital Media Serving - Small | Digital Media Serving - Large | Capacity-Archive |
|---|---|---|---|---|
| **Solution SKUs** | SYS-5038MR-OSD006P | SRS-42E112-Ceph-05 SRS- RCS112-Ceph-05 | SRS-42E136-Ceph-05 SRS-RCS136-Ceph-05 | SRS-42E172-Ceph-05 SRS-RCS172-Ceph-05 |
| **I/O profile/Protocol** | IOP / Block | Throughput/Block & Object | Capacity/Object | Capacity/Object |
| **Data Protection** | 2x Replication | 3x Replication | 3x Replication and Erasure code | Erasure code |
| **Form factor** | 3U | 23U (with switches and 3x Monitor nodes) | 41U (with switches and 3x Monitor nodes) | 41U (with switches and 3x Monitor nodes) |
| **Usable capacity** | 3.2TB | 240TB | 1.5 PB using 7+2 Erasure Code | 2.5 PB using 7+2 Erasure Code |
| **Node count** | 8x OSD nodes | 3x Mon, 10x OSD nodes | 3x Mon, 9x OSD nodes | 3x Mon, 9x OSD nodes |
| **Network / Switches** | 10G SFP+ / NA | 10G SFP+ /  1x SSE-X3348SR, 48port SFP+ - Reverse Air Flow, 1x SSE-G24-TG4, 24x port switch | 10G SFP+ /  2x SSE-X3348SR, 48port SFP+ - Reverse Air Flow, 1x SSE-G24-TG4, 24x port switch | 10G SFP+ /  2x SSE-X3348SR, 48port SFP+ - Reverse Air Flow, 1x SSE-G24-TG4, 24x port switch |
| **Rack dimensions & PDU** | NA / NA | 42U (82.4"Hx 23.5"Wx 48"D) / 2x Metered Rack PDU,NEMA L6-30P,IEC 320 C13,C19 | 42U (82.4"Hx 23.5"Wx 48"D) / 2x Metered Rack PDU,NEMA L6-30P,IEC 320 C13,C19 | 42U (82.4"Hx 23.5"Wx 48"D) / 2x Rack PDU 208V 50A 3-Phase |
| **Subscription** | | Capacity based subscription for Red Hat Ceph Storage 1.3 (includes Red Hat Enterprise Linux 7.1) | | |

### Red Hat Ceph Storage Installation and System Burn-in

- Installation services are provided on both the Rack and Cluster level sales
- Customer provides IP address ranges and node naming scheme for Turn-key shipment
- For secure site deployments cluster is configured and burned-in then erased before shipment

### 24/7 Onsite service with 4-hour response

- Toll free number and VIP website is provided for 24/7 support
- Technical Account Manager is assigned for single point of contact
-  Local parts depot is stocked to insure SLA

## Out-of-Band Server Management

Our solutions are designed for easy automation with existing management infrastructure. In data centers, Supermicro Server Management Utilities provides you all the necessary functions

- Remotely managing the health of hardware and operating system services
- Managing power consumption of nodes in cluster.
- Managing BIOS provisioning through BMC/IPMI
- Execute commands on multiple target systems in parallel

*For more Information about Supermicro Server Management, visit:*

### www.supermicro.com/products/nfo/SMS_SUM.cfm