



# Ceph Object-Based Storage Cluster

Next Generation Object, Block, S3 and OpenStack Storage Platform for Dynamic Enterprise Environments

## 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. Often called “the serverization of storage”; the replacement of purpose-built/proprietary data silos with economical server hardware, has proven itself to be both more reliable and more resilient. Supermicro has embraced this change, offering the widest selection of server hardware in the industry.

## Ready to Deploy Configurations

- **Role specific server models** – base server configurations offer performance, capacity and density to fit popular storage applications. Components are easily customized to meet specific requirements
- **Optimized network configurations** – rack level integration offers streamlined deployment of storage and infrastructure with consistency not attainable using improvised expansion methods
- **Storage/Media Ratios to fit user applications** – deployment of SSD and rotating media allows the solution to meet demanding performance and density targets

## Object-based Storage

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.

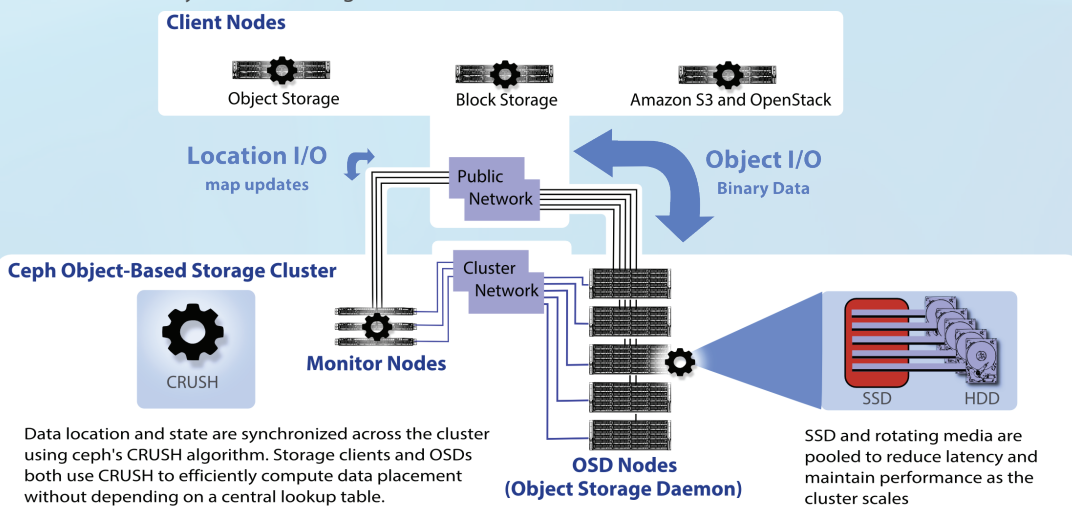
## The Ceph Storage Difference

Ceph’s CRUSH algorithm liberates storage clusters from the scalability and performance limitations imposed by centralized data table mapping. It replicates and re-balances data within the cluster dynamically— eliminating this tedious task for administrators while delivering high performance and infinite scalability.

[http://www.supermicro.com/Storage\\_Ceph](http://www.supermicro.com/Storage_Ceph)

## Typical Deployment Model

The following diagram highlights optimized data path for clients to read and write shared objects and blocks directly from the storage nodes.



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

- Ceph Optimized Server Configurations
- Object and Block Level Storage with S3 and OpenStack Integration
- Hybrid Disk configurations deliver low-latency performance
- 12Gb/s SAS3 architecture
- 10G SFP+ Supermicro networking
- Out-of-Band Server Management Software (OOB)
- Full Rack Integration with Onsite Service Available



## System Specifications



Coming Soon!

CLUSTER ROLE	MONITOR NODE	OSD NODE	OSD NODE	OSD NODE
<b>Server Model</b>	SYS-6017R-MON1	SYS-F618H-OSD288P SSG-6028R-OSD072 SG-6028R-OSD072P	SSG-6048R-OSD216 SSG-6048R-OSD216P	SSG-6048R-OSD432 SSG-6048R-OSD360P
<b>Key Features</b>	<ul style="list-style-type: none"> <li>4x 3.5" HDD Bays</li> <li>Dual 10G (SFP+)</li> </ul>	<ul style="list-style-type: none"> <li>12x 3.5" HDD Bays + 2x Internal 2.5" OS drives (mirrored 80GB SSD) (OSD288P features SATADOM)</li> <li>2U/12-bay or 4x node front I/O</li> <li>Dual 10G (SFP+)</li> </ul>	<ul style="list-style-type: none"> <li>36x 3.5" HDD Bays + 2x Internal 2.5" OS drives (mirrored 80GB SSD)</li> <li>x8 SAS3 Connectivity</li> <li>Quad 10G (SFP+)</li> </ul>	<ul style="list-style-type: none"> <li>72x 3.5" HDD Bays + 2.5" Hot-swap OS drives (mirrored 80GB SSD)</li> <li>x8 SAS3 Connectivity</li> <li>Quad 10G (SFP+)</li> </ul>
<b>Processor</b>	Dual Intel E5-2630 V2 6-Core 2.6G 15M 7.2GT/s QPI	Single Intel E5-2630 V3 8-Core 2.4G 20M 8GT/s QPI	Dual Intel E5-2630 V3 8-Core 2.4G 20M 8GT/s QPI	Dual Intel E5-2690 V3 12-Core 2.6G 30M 9.6GT/s QPI
<b>Memory</b>	64GB per node	64GB per node	128GB per node	256GB per node
<b>Networking</b>	On-board Dual Port 10G (SFP+)	AOC-STGN-I2S Dual Port 10G (SFP+)	AOC-STGN-I2S Quad Port 10G (SFP+)	AOC-STGN-I2S Quad Port 10G (SFP+)
<b>Drive Configuration</b>	4x 300GB HDDs (SAS3)	1X 800GB PCI-E Flash cards (internal) 12x 6TB HDDs, 72TB raw capacity	36x 6TB HDDs, 216TB raw capacity, or 2X 800GB PCI-E Flash cards (internal) 36x 6TB HDDs, 216TB raw capacity	72x 6TB HDDs (432TB raw capacity), or 12X 400GB SATA3 SSD, 60x 6TB HDDs (360TB raw capacity)
<b>Form Factor</b>	1U w/Redundant Hot-swap 700W Power Supplies	4U/4x Node, w/Redundant 1680W Titanium Power Supplies 2U w/ Redundant 920W Platinum Power Supplies	4U w/Redundant Hot-swap 1280W Platinum Power Supplies	4U w/Redundant Hot-swap 2000W Titanium Power Supplies



## Rack Level Specifications

	QUANTITY/MODEL/ PART NUMBER	DESCRIPTION
<b>Ceph Rack</b>	SRS-42E136-CEPH-03	42U Fully Integrated Rack, 48" Deep
<b>Servers</b>	3x SYS-6017R-MON1 9x SSG-6048R-OSD216P	3 Monitor Nodes 9 Storage Nodes
<b>Network Switch</b>	2x SSE-X3348SR 1x SSE-G24-TG4	10G For Client/Back End GbE For IPMI Network
<b>Power Specification</b>	1x SRK-00PD-02	30A 3PH PDU Dual AC Plug

## Server Management Software

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

Supermicro Server Management Details are here:

[http://www.supermicro.com/products/nfo/SMS\\_SSM.cfm](http://www.supermicro.com/products/nfo/SMS_SSM.cfm)

[http://www.supermicro.com/products/nfo/SMS\\_SUM.cfm](http://www.supermicro.com/products/nfo/SMS_SUM.cfm)

SUPERMICRO MODEL#	Description
<b>SSG-6028R-OSD072</b>	2U-12 Ceph OSD Node, 72TB, Ceph-OSD-Storage Node
<b>SSG-6028R-OSD072P</b>	2U-12 Ceph OSD Node, 1x 800G NVMe, 72TB, Ceph-OSD-Storage Node
<b>SSG-6048R-OSD216</b>	4U-36 Ceph OSD Node, 216TB, Capacity Optimized Ceph-OSD-Storage Node
<b>SSG-6048R-OSD216P</b>	4U-36 Ceph OSD Node, 2x 800G NVMe, 216TB, Ceph-OSD-Storage Node
<b>SSG-6048R-OSD432</b>	4U-72 Ceph OSD Node, 432TB, Capacity Optimized Ceph-OSD-Storage Node
<b>SSG-6048R-OSD360P</b>	4U-72 Ceph OSD Node, 12x SSDs, 360TB, Ceph-OSD-Storage Node

For more information, call your sales representative and ask about Supermicro Ceph Solutions.

[www.supermicro.com](http://www.supermicro.com)