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.

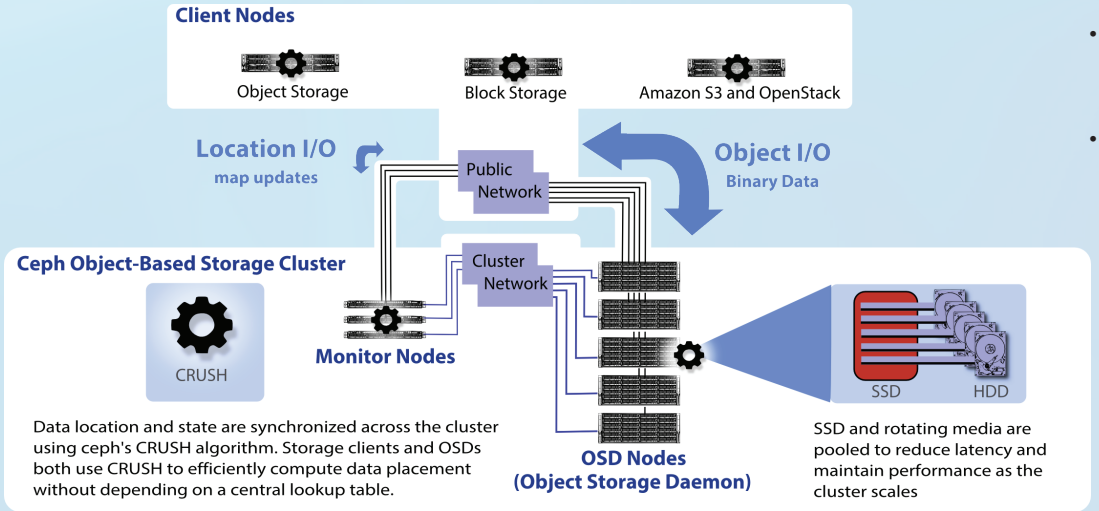
The Inktank Ceph Enterprise Difference

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

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.



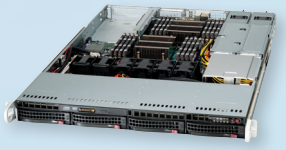
THE SUPERMICRO / CEPH SOLUTION AT-A-GLANCE

- Ceph Optimized Server Configurations
- Object and Block Level Storage with S3 and OpenStack Integration
- Hybrid Disk configurations deliver low-latency performance
- 10G Frontend Networking
- Bonded 10G Backend Networking (20Gb/s OSD-to-OSD)
- Out-of-Band Server Management Software (OOB)
- Full Rack Integration with Onsite Service Available!

SUPERMICRO®

inktank

System Specifications




CLUSTER ROLE	MONITOR NODE	OSD NODE	OSD NODE	OSD NODE
Server Model	SYS-6017R-MON1	SSG-6027R-OSD040H	SSG-6047R-OSD120H	SSG-6047R-OSD240H
Key Features	• 4x 3.5" HDD Bays • Dual 10G (SFP+)	• 12x 3.5" HDD Bays • Rear 2.5" Hot-swap OS drives (mirrored 80GB SSD) • Dual 10G (SFP+)	• 36x 3.5" HDD Bays Internal 2.5" OS drives (mirrored 80GB SSD) • x8 SAS2 Connectivity • Quad 10G (SFP+)	• 72x 3.5" HDD Bays Rear 2.5" Hot-swap OS drives (mirrored 80GB SSD) • x8 SAS2 Connectivity • Quad 10G (SFP+)
Processor	Dual Intel E5-2630 V2 6-Core 2.6G 15M 7.2GT/s QPI	Dual Intel E5-2630 V2 6-Core 2.6G 15M 7.2GT/s QPI	Dual Intel E5-2630 V2 6-Core 2.6G 15M 7.2GT/s QPI	Dual Intel E5-2670 V2 10-Core 2.5G 25M 8GT/s QPI
Memory	64GB per node	64GB per node	128GB per node	256GB per node
Networking	On-board Dual Port 10G (SFP+)	AOC-STGN-I2S Dual Port 10G (SFP+)	2x AOC-STGN-I2S Dual Port 10G (SFP+)	2x AOC-STGN-I2S Dual Port 10G (SFP+)
Drive Configuration	4x 300GB HDDs (SAS3)	2X 400GB SATA3 SSDs, 10x 4TB HDDs (SATA3)	6X 400GB SATA3 SSDs, 30x 4TB HDDs (SATA3)	12X 400GB SATA3 SSD, 60x 4TB HDDs (SATA3)
Form Factor	1U w/Redundant Hot-swap 700W Power Supplies	2U w/Redundant Hot-swap 920W Power Supplies	4U w/Redundant Hot-swap 1280W Power Supplies	4U w/Redundant Hot-swap 2000W Power Supplies

Rack Level Specifications

	QUANTITY/MODEL/ PART NUMBER	DESCRIPTION
Ceph Turnkey Rack	SRS-42E136-CEPH-01	42U Fully Integrated Rack, 48" Deep
Servers	3x SYS-6017R-MON1 9x SSG-6047R-OSD120H	3 Monitor Nodes 9 Storage Nodes
Network Switch	2x SSE-X3348SR 1x SSE-G24-TG4	10G For Client/Back End GbE For IPMI Network
Power Specification	1x SRK-00PD-02	30A 3PH PDU Dual AC Plug

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

Supermicro Server Management Details are here: http://www.supermicro.com/products/nfo/SMS_SUM.cfm

SUPERMICRO MODEL#	Description
SRS-42E136-CEPH-01	42U-1.08PB Integrated Ceph Rack, 3x Mon, 9x OSD, Networking & PDU
SYS-6017R-MON1	1U Ceph Monitor Node E5-2630 v2, 64GB MEM Inktank Ceph-Monitor Node
SSG-6027R-OSD040H	2U-12 Ceph OSD Node, 2x SSDs, 40TB Inktank Ceph-OSD-Storage Node
SSG-6047R-OSD120H	4U-36 Ceph OSD Node, 6x SSDs, 120TB Inktank Ceph-OSD-Storage Node
SSG-6047R-OSD240H	4U-72 Ceph OSD Node, 12x SSDs, 240TB Inktank Ceph-OSD-Storage Node

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