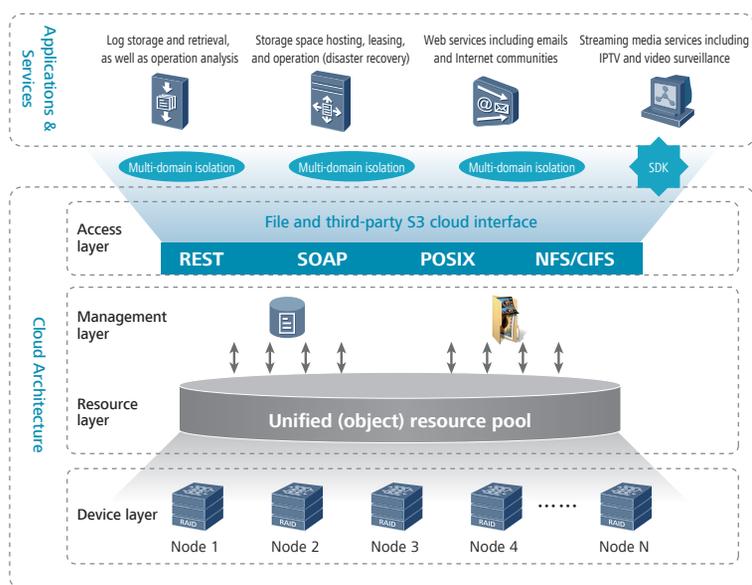


# OceanStor CloudStor CSS Distributed File System



The CloudStor CSS Distributed File System is a powerful all-in-one data storage system featuring cutting-edge distributed system architecture and intelligent resource allocation and management. Also, the CloudStor CSS Distributed File System is optimal for the scenarios of mass storage and heavy service load as it fulfills high performance, large capacity, flexible expansion, and automated management.

The CloudStor CSS Distributed File System is designed for the following application scenarios that require mass unstructured data storage: video surveillance, streaming media applications (such as IPTV and broadcasting and television), Internet applications (such as Web disks), and content distribution (system storage for CDN).

Additionally, the CloudStor CSS Distributed File System can work in combination with the upper-layer CloudStor Cloud Service Engine (CSE) to offer value-added data storage services including online storage and backup, and to provide comprehensive service operation management functionality.

## Highlights

### High Reliability

- Delivers compound data protection measures including disk-level data protection, node-level data protection, and domain-to-domain data protection.
- Supports the Erasure code redundancy technology for improved system reliability and disk utilization.

### Outstanding Performance

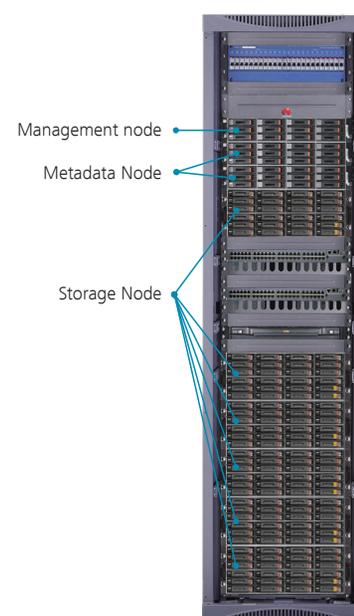
- Uses SSDs for enhanced metadata access performance.
- Eliminates the bottleneck of standard storage nodes and metadata nodes while enabling cross-node concurrent access.

### High Scalability

- Supports mass data storage in scale-out expansion mode.
- Implements performance and capacity linear expansion as the numbers of disks and nodes increase.

### Robust Manageability

- Employs the all-in-one architecture for centrally managing hardware, networks, and database services.
- Supports automatic performance statistics and analysis.
- Offers a namespace-based deduplication technology for maximum storage capacity utilization and reduced overall costs and management complexity.



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## Technical Specifications

Primary Feature	Sub Feature	Description
System Specifications	System capacity	Supports a maximum of 128 domains of total 185 PB.
	Capacity of a single domain	A single domain supports a maximum of 22 storage nodes of total 1.45 PB.
	Number of clients	A single domain supports a maximum of 64 client connections, whereas the systems support a maximum of 512 client connections.
	Number of files	A single domain supports a maximum of 1.2 billion files.
File System Functions and Features	System architecture	Employs the distributed and asymmetrical object storage architecture.
	File/Directory management	Supports various basic operations against files and directories, including opening, closing, reading, and writing files as well as creating, deleting, and modifying directories.
	Supported protocol	Standard POSIX
	File size	The maximum size of a single file is 2 TB.
	Data migration	Supports cross-node data migration within the same domain.
	Data deduplication	Supports namespace-based deduplication and scheduling.
	Load balancing	Supports performance- and capacity-specific load balancing among storage nodes.
	Thin provisioning	Supports thin provisioning for file systems to allocate space according to the actually required capacity.
Reliability	Node-level data protection	Supports cross-standard-node data duplication or multiplication, which can recover the data of a failed node using other nodes.
	Metadata node reliability	Supports the intra-domain A/P mode for metadata nodes.
Scalability	Hard disk	Supports online adding and deletion of hard disks.
	Standard storage node	Supports online adding and deletion of standard storage nodes.
	Domain space	Supports online expansion and contraction of domain space.
Maintainability	Automatic deployment	Supports automatic deployment and configuration for software platforms.
	Online upgrade	Supports online upgrade without interrupting ongoing read/write services nor affecting system settings, logs, alarms, and users' data.
	Status monitoring	It can monitor the operating status of the entire system and that of each node.
	Performance monitoring	It can monitor system performance including read/write performance, I/O performance, and network bandwidths.
	Resource monitoring	It can dynamically monitor system resources including disk space, CPUs, memories, network traffic, and file systems.
	Device discovery	Supports device discovery and automatic discovery for newly added devices against user-defined IP addresses, network segments, and subnets.
	Remote maintenance Alerting	Supports remote maintenance using SSH or Web and remote log collection. Supports GUI-based alerting and various remote alerting modes including SMS and email alerting.
	Permission management	Supports three levels of management users, namely super administrator, administrator, and read-only user, and supports permission- and domain-specific user management.
Client Compatibility	Client (POSIX)	Supports SUSE Linux 10 sp1, SUSE Linux 10 sp2, SUSE Linux 11 sp1, and RHEL 5.
	NFS client	Supports SUSE Linux 10 sp2 and SUSE Linux 11 sp1.
	CIFS client	Supports Windows 2003 and 7.

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