Cloudian HyperStore & HyperStore Flash

CLOUDIAN®

Consolidate your unstructured data—both objects and files—to a single, limitlessly scalable storage pool with Cloudian® HyperStore® and HyperStore Flash. Available as either standalone software or fully integrated appliances, HyperStore enterprise object storage provides unlimited capacity scalability, intuitive management tools, uncompromising data protection and the industry's most compatible S3 API implementation—all at 70% less cost than traditional disk-based storage systems.

Start Small and Grow

Start small with initial deployments of just a few HyperStore nodes. As demand grows, expand capacity non-disruptively by adding nodes to your cluster. Unlike some systems that require all nodes to be identical, HyperStore lets you add nodes of any size. Flexibly grow from terabytes to petabytes with no down time.

Works with Your Applications

Only HyperStore offers a 100% native S3 API for objects, plus SMB/NFS for files. Proven in over six years of deployments, HyperStore's S3 API offers guaranteed compatibility with your S3-enabled applications. For files, select the optional SMB/NFS interface. Deploy with your applications, or leverage our growing partner ecosystem.

Save 70% vs Conventional Storage

At costs down to ½ cent per GB per month, HyperStore's efficient architecture and industry-standard components save you 70% on CAPEX. Massive scalability and lights-out management result in 95% less overhead. And you'll save on rack space: up to 980TB in just 4U height.

Uncompromising Data Durability

Get up to 14 nines data durability and configurable data protection. Only HyperStore lets you customize data protection for various data types within a cluster. Select from multiple levels of data replication and erasure coding.

Integrated Disaster Recovery

Implement DR using HyperStore's integrated tools. Deploy across multiple data centers or regions to provide redundancy and resilience in the event of a data center failure. Configurable consistency levels let you select either synchronous or asynchronous replication.

FEATURES/BENEFITS

- Choose from HDD or all-flash versions
- Limitlessly scalable capacity
- Start with just three nodes and grow
- Non-disruptive capacity expansion
- 100% native S3 API for guaranteed compatibility
- Replication and erasure coding
- Bucket-level granularity for all storage policies
- Encryption for secure data storage
- Comprehensive multi-tenant services
- Quality of Service (QoS) controls
- Integrated billing, management, and software
- Geographically distributed replication

USE CASES

- Backup and disaster recovery
- File consolidation
- Media active archive
- Collaboration
- File lifecycle management
- AI / Machine Learning
- Storage-as-a-Service (STaaS)
- Data analytics

Scalable Performance

Processes multiple requests in parallel, across all nodes in HyperStore's sharednothing cluster. This eliminates bottlenecks and allows performance to grow as you add nodes. For large file transfers, multi-part upload lets you transfer files seamlessly between sites or to the public cloud.

Multi-Tenancy

Establish multiple user spaces with HyperStore's multi-tenancy capabilities. Provide individual management domains and namespaces within a shared cluster. Cloudian offers QoS controls and billing features that let you manage bandwidth and chargebacks.

Intuitive Management

Manage Cloudian via the intuitive webbased GUI or automate tasks using the RESTful API. Cluster management tasks are simple as well. Add or remove nodes and update system software without disruption.

Public Cloud Integration

Cloudian offers integration with all major public cloud services, including Amazon AWS, Google GCP, and Microsoft Azure Blob Storage. Use policy-based tiering to either migrate or replicate data from the Cloudian cluster. View both public cloud data and local data on a single screen. Bimodal access lets public cloud-based applications directly access cloud-resident data.

Variable-size Metadata Tags

Record metadata along with user data to facilitate data management and data search. Elastic Search integration provides near real-time search capability. Variable metadata tag sizes give you flexibility not found in other object storage systems.

Security

HyperStore AES-256 Server-Side Encryption enables enterprises and service providers to easily encrypt data stored at rest. SSL encryption ensures data confidentiality for data in transit (HTTPS). And with S3 compatible ACLs, bucket policies, and IAM, system administrators can better manage access to buckets and objects.

Software or Appliance— Your Choice

Available as either software or a fully-integrated appliance, Cloudian HyperStore lets you choose the deployment model that meets your business needs. Software can be deployed on either industry-standard servers or virtual machines.

HyperStore 1600 Specifications

Form Factor	1U rack mount chassis
Metadata Drives	2x U.2 7mm NVMe Flash
Metadata Drive Sizes	1.92TB and 3.84TB options
Data Drives	12x 3.5" SAS HDD (7200 RPM)
Data Drive Sizes	10TB, 12TB, 14TB
Storage Capacity Raw	120TB, 144TB, 168TB
Data Protection	Replication and erasure coding via storage policies
Redundancy	Hot swappable disk drives; 2x hot swappable power supplies; No single point of failure; Non-disruptive online software upgrades
CPU	2x Intel Xeon Gold 5218R 2.1G 27.5M Cache, 20C/40T
Memory	128GB
Network Interfaces*	1x dual port 10/25GbE OCP Mezz and 1x dual port 10/25GbE NIC, or 1x dual port 10/25GbE OCP Mezz and 1x dual port 40/100GbE NIC
Monitoring/Management	CLI, GUI, API, IPMI, JMX
Power Supply	700W Platinum, 1+1 redundancy 100-127/200-240Vac, 50-60Hz, 9.5A/5A or 240Vdc, 5.5A
Cooling	2 system fan modules
Thermal Rating (max)	1863 BTU/hr
Dimensions	17.6" x 1.7" x 35.07" / 448mm x 43.2mm x 890.85mm
Weight	66.14 lbs. (30 kg max)
IO Ports/Connectivity	1x GbE RJ45 LAN Port (Dedicated IPMI Management port) 2x USB 3.0 ports; 1x VGA port; 1x Micro-USB (serial header port)
Operating Environment	Operating Temperature: 5°C to 35°C (~41°F ~ 95°F) Non-operating Temperature: -40°C to 70°C (-40°F to 158°F) Operating Relative Humidity: 20% to 85% RH (non-condensing) Non-operating Relative Humidity: 10% to 95% RH (non-condensing)

*SFP transceivers and network cabling not included and must be supplied by the customer.
Note: Alternate server models may be substituted with equivalent specs if supply chain challenges are experienced.

HyperStore 4100 Specifications

Form Factor	2 nodes in a 4U rack mount chassis
Metadata Drives	4x U.2 7mm NVMe Flash (2x per node)
Metadata Drive Sizes	1.92TB and 3.84TB options
Data Drives	70x 3.5" SAS HDD (35x per node, 7200 RPM)
Data Drive Sizes	8TB, 10TB, 12TB, 14TB
Storage Capacity Raw	560TB, 700TB, 840TB, 980TB
Data Protection	Replication and erasure coding via storage policies
Redundancy	Hot swappable disk drives; 4x hot swappable power supplies; No single point of failure; Non-disruptive online software upgrades
CPU	4x Intel Xeon Gold 5218R 2.1G 27.5M Cache, 20C/40T (2x per node)
Memory	256GB (128GB per node)
Network Interfaces*	up to 4x dual port 10/25GbE NIC (2x per node), or 2x dual port 10/25GbE NIC and 2x dual port 40/100GbE NIC (1x 10/25GbE and 1x 40/100GbE NIC per node)
Monitoring/Management	CLI, GUI, API, IPMI, JMX
Power Supply	1200W Platinum (nameplate for single PSU) 2+2 redundancy; 100-120/200-240Vac, 50/60Hz, 14/8A
Cooling	5x (4x8056 + 1x6056) dual rotor fan modules (9+1 redundancy)
Thermal Rating (max)	7882 BTU/hr (3941 BTU/hr per node)
Dimensions	17.6" x 6.9" x 35.91" / 447mm x 175.3mm x 912.2mm
Weight	109.02 lbs (49.45kg) without drives; 286.6 lbs (130kg max) fully populated
IO Ports/Connectivity	1x GbE RJ45 LAN Port (Dedicated IPMI 2.0 Management port) 2x USB 3.0 ports; 1x VGA port; 1x RS232 (serial header port)
Operating Environment	Operating Temperature: 5°C to 35°C (~41°F ~ 95°F) Non-operating Temperature: -40°C to 65°C (-40°F to 149°F) Operating Relative Humidity: 20% to 85% RH (non-condensing) Non-operating Relative Humidity: 40% to 90% RH (non-condensing)

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HyperStore Appliances

HyperStore appliances are built for simplicity, density and cost effectiveness. Each model is fully integrated with Cloudian HyperStore software. Appliances are available with end-to-end support packages, including options for on-site support.

HyperStore 1600 Appliance
- Ultra-dense 1U platform
- 12x hot-swappable 3.5" disk drives
- Up to 4x hot swappable 2.5" 7mm NVMe drives (including 2x drives for metadata)
- 10/25GbE and 40/100GbE networking options

HyperStore 4100 Appliance
- Ultra-dense 4U platform
- 2 nodes in 1 chassis
- 70x hot-swappable 3.5" disk drives (35 drives per node)
- Up to 4x hot swappable 2.5" 7mm NVMe drives (including 2x drives for metadata)
- 10/25GbE and 40/100GbE networking options

HyperStore Flash 1000 Specifications

Form Factor	1U rack mount chassis
Metadata Drives	2x U.2 15mm NVMe Flash
Metadata Drive Sizes	3.84TB and 7.68TB options
Data Drives	10x U.2 15mm NVMe Flash
Data Drive Sizes	7.68TB and 15.36TB options
Storage Capacity Raw	76.8TB or 153.6TB
Data Protection	Replication and erasure coding via storage policies
Redundancy	Hot swappable disk drives 2x hot swappable power supplies No single point of failure Non-disruptive online software upgrades
CPU	2x Intel Xeon Gold 6230R 2.1G, 35.75M Cache, 26C/52T
Memory	256GB
Network Interfaces*	2x 10GBase-T (built-in and available as data ports) Additional network card options include up to 2x dual port 10/25GbE NIC, or 1x dual port 10/25GbE and 1x dual port 40/100GbE NIC
Monitoring/Management	CLI, GUI, API, IPMI, JMX
Power Supply	1200W Titanium PSU, 1+1 Redundancy, 100-200V AC
Cooling	8 heavy-duty fans w/ optimal fan speed control
Thermal Rating	2700 BTU/hr
Dimensions	17.2" x 1.7" x 29.1" / 437mm x 43mm x 739mm
Weight	54 lbs (24.5 kg)
IO Ports/Connectivity	2x 10GBase-T RJ45 LAN Ports (built-in) 1x RJ45 LAN Port (Dedicated IPMI Management port) 2x USB 3.0 ports 1x VGA port 1x serial header port
Operating Environment	Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F) Non-operating Temperature: -40°C to 70°C (-40°F to 158°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing)

*SFP transceivers and network cabling not included and must be supplied by the customer.
Note: Alternate server models may be substituted with equivalent specs if supply chain challenges are experienced.

HyperStore Flash Appliances

HyperStore all-flash appliances are built for demanding performance centric workflows where deterministic access times and lower latency is more critical. Each model is fully integrated with Cloudian HyperStore software. Appliances are available with several metadata drive, data capacity for object storage, networking connectivity, and end-end support packages including options for on-site service and support.

HyperStore Flash 1000

- High-performance 1U platform
- 12x hot swappable 2.5" NVMe drives (including 2x drives for metadata)
- 76.8TB or 153.6TB raw storage capacity
- 10/25GbE and 40/100GbE networking options

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