

# Cisco Cloud Object Storage

Cisco® Cloud Object Storage is a video-optimized, software-defined storage solution capable of storing petabytes of data to meet the increasing storage requirements for unstructured data. Unlike traditional file systems, Cisco Cloud Object Storage provides a distributed storage system capable of handling large and small media objects such as video and media files offering unprecedented performance and low TCO. The solution provides highly resilient modern scale-out storage using clusters of Cisco Unified Computing System™ (Cisco UCS®) C3x60 series rack servers or x86-based JBOD servers and offers high throughput and low latency. It supports OpenStack Swift and S3-like APIs and delivers guaranteed Quality of Service (QoS) for video and media workflows with HTTP extensions for media resources.

Cisco Cloud Object Storage unifies media storage for telco, cable and Internet delivery models, allowing service providers to simplify their operations. It can store existing MPEG transport stream-based content used for traditional linear delivery, as well as Adaptive Transport Stream (ATS) content that is conditioned to facilitate ABR delivery to IP-only endpoints.

Cisco Cloud Object Storage is pre-integrated with Cisco's [Virtualized Video Processing](#) (V2P) platform supporting end-to-end video workflow chaining. V2P is a media application and hosting platform for orchestrating end-to-end workflows from video acquisition to delivery. Built on a cloud-based Network Function Virtualization (NFV) architecture, V2P enhances your business agility and reduces the complexity of video workflow operations. The combination of Cloud Object Storage and V2P offers service providers the rapid deployment and simplified storage configuration they need to reduce Capital Expenditures (CapEx) and Operating Expenses (OpEx).

Cisco Cloud Object Storage provides a scalable storage platform for demanding video applications with guaranteed delivery including but not limited to the following use cases:

- Video on Demand (VoD)
- Live linear
- Time-shifted TV and cloud DVR

## Hardware Platforms

Cisco Cloud Object Storage continuously adds support for new hardware platforms listed in latest Cloud Object Storage product release notes.

## Features and Benefits

Table 1 describes Cisco Cloud Object Storage features and benefits.

**Table 1.** Features and Benefits

Feature	Benefit
<b>Scale-out storage</b>	<ul style="list-style-type: none"><li>• Scales horizontally using Cisco UCS innovations and other x86 servers</li><li>• Scales to billions of objects and exabytes of storage</li><li>• Huge and flat namespace, highly scalable read/write access</li></ul>
<b>RESTful API</b>	<ul style="list-style-type: none"><li>• OpenStack Swift compatibility allows for private cloud self-service deployment model</li><li>• Storage Cluster Management</li></ul>
<b>Data protection</b>	<ul style="list-style-type: none"><li>• Highly distributed fault-tolerant design for carrier-grade availability</li><li>• Supports programmable Local Erasure Coding (LEC) and Distributed Erasure Coding (DEC), able to sustain multiple disk and node failures</li><li>• Built-in replication engine for data mirroring with configurable number of accounts, container and object copies for high availability</li><li>• Flexible SLA designed to support any business goals</li></ul>
<b>Guaranteed Quality of Service (QoS)</b>	<ul style="list-style-type: none"><li>• Specify rate of delivery in Mbps for required for video streaming applications</li><li>• Guaranteed delivery of previously committed stream data is never compromised</li><li>• Fully deterministic reads per node</li></ul>
<b>Stream objects that are still being written</b>	<ul style="list-style-type: none"><li>• Deliver HTTP files prior to completion of write, which is required for live-to-VoD and cloud DVR applications</li></ul>
<b>Self-healing</b>	<ul style="list-style-type: none"><li>• Data integrity protected by Reed-Solomon error correction</li><li>• Background content validation and autohealing</li><li>• Autobalance of content with addition of nodes</li></ul>
<b>Built-in management utilities</b>	<ul style="list-style-type: none"><li>• Account and container management: create, add, verify, delete users</li><li>• Monitoring: capacity, host, network, cluster, and node-level health</li><li>• Bare metal PXE based provisioning for hands off installation with industry standard tools</li><li>• Manage lifecycle of the product with effortless rolling upgrades for large multi-petabyte clusters</li><li>• Enable analytics for log and metrics via cloud based services</li></ul>
<b>Low latency</b>	<ul style="list-style-type: none"><li>• First-byte latency of less than 100ms</li></ul>
<b>Disk-aware scheduling</b>	<ul style="list-style-type: none"><li>• Future disk I/O activity is tracked and projected for every video stream</li><li>• Disk performance measured as a predictor of future disk capacity</li></ul>
<b>Active congestion prevention</b>	<ul style="list-style-type: none"><li>• Disk execution timing is evaluated, and congestion bottlenecks are identified a priori</li><li>• I/O on drives with upcoming congestion bottleneck is accelerated</li></ul>
<b>NoSQL database</b>	<ul style="list-style-type: none"><li>• Higher performance, no bottlenecks</li><li>• Elastic scalability: allows you to easily add capacity online to accommodate more capacity and more data</li><li>• Always-on architecture: contains no single point of failure, resulting in continuous availability for mission-critical applications</li><li>• Fast linear-scale performance: enables subsecond response times with near-linear scalability</li></ul>

## Unified, Automated Provisioning and Management

Cisco Cloud Object Storage is integrated with the V2P Controller, providing the tools for video operators to provision, manage, and monitor large deployments.

The V2P Controller provides an easy-to-use, browser-based user interface, as well as web services APIs for back-office integration, and highly secure user and group role-based access.

The V2P Controller facilitates flexible and scalable device management, making it simple to add server nodes within a Cloud Object Storage cluster. It also provides centralized node configuration and software upgrade capabilities.

The Cisco V2P Controller orchestrates all aspects of the storage environment. Additionally, the V2P Controller monitors devices and services, providing a graphical alarm console and corresponding Simple Network Management Protocol (SNMP) traps to northbound Network Management Systems (NMSs). (See Table 2.)

**Table 2.** Cisco V2P Controller for Cloud Object Storage

Description	Features
V2P controller	<ul style="list-style-type: none"> <li>• Virtual machine-based application used to manage Cloud Object Storage clusters</li> <li>• Deployment and management of Cloud Object Storage nodes</li> <li>• Capacity management</li> <li>• Monitoring real-time and trending view of system performance indicators and alerts</li> <li>• Transparent upgrades with no downtime</li> <li>• Smart failover of COS Manager: 3 instances minimum required full redundancy/failover</li> </ul>

## Platform Support and Compatibility

Cisco Cloud Object Storage contains both appliance-based components and software-based components. The software components can be deployed on Cisco UCS hardware.

## Ordering Information

Table 3 lists the Cisco Cloud Object Storage product part numbers required to place an order, including application and feature licenses.

To place an order, visit the [Cisco Ordering Home Page](#).

**Table 3.** Cisco Cloud Object Storage Software Application

Description	Specification
CDACOS-336-CIB-R	Cloud Object Storage App Software CIB (336 TB) License
CDACOS-448-CIB-R	Cloud Object Storage App Software CIB (448 TB) License
CDACOS-560-CIB-R	Cloud Object Storage App Software CIB (560 TB) License

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