CLOUDIAN®

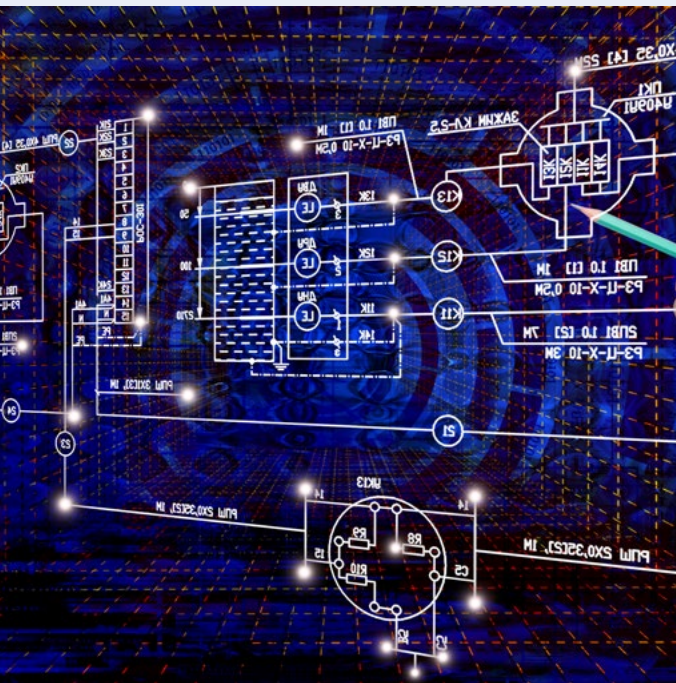# Insider's Guide to Cost-Effective Storage Solutions for Higher Education

Cost-effective storage for private clouds and capacity-intensive workloads

COOLSPIRiT™

Technology is shaping higher education. From applications that optimize data access, to online instruction videos, to the use of supercomputers for advanced research and analytics, institutions are using technology to expand knowledge, enhance learning and drive student success.

More technology on campuses has led to rapid growth in the quantity and type of data being stored. Each department generates troves of data with unique requirements for storage, access, security and data durability. As an IT decision maker, you face the challenge of providing sufficient data storage capacity to serve the wide-ranging needs of different departments while managing your storage budget and your management workload.

Cloudian® addresses the storage challenge with innovative solutions that put cloud technology in your data center. Designed to start small and grow without disruption, Cloudian lets you manage up to an exabyte of data in a single storage environment at 70% less cost than traditional SAN and NAS systems.

Scalable Storage for Unstructured Data

IT managers face the dual challenges of rapid data growth and the need for real-time data access. Examples are easy to find:

- **Health sciences departments:** Generate massive amounts of unstructured data in genetic research, yet require continuous access for ongoing analysis

- **Athletics and performing arts departments**: Transition to 4K video content substantially increased capacity needed to store, edit, distribute and archive media files

- **Research labs:** High-resolution data collection with sensors, scanners, cameras, etc., creates massive amounts of data that must be readily available for analysis

To satisfy these diverse requirements, you need a storage platform that not only will scale easily to accommodate rapid growth but also will handle different types of data – all while meeting your tight budget constraints.

Cloudian storage systems can start small with as few as three appliances, then scale non-disruptively to as much as an exabyte. A Cloudian system can handle a variety of structured/ unstructured data and can scale up to hundreds of nodes across multiple data centers, supporting millions of users.

Compatible with all applications that support Amazon S3 storage, and with file-based applications, Cloudian opens the door to cost savings and management simplicity in hundreds of use cases across the campus.

Cloudian Benefits

- Reduce cost by 70% vs. traditional enterprise storage
- Buy only what you need: Start small and grow without disruption
- Scale to an exabyte in a single system for simple management
- Industry's highest S3-compatibility for guaranteed application compatibility
- Secure access
- Built-in data protection
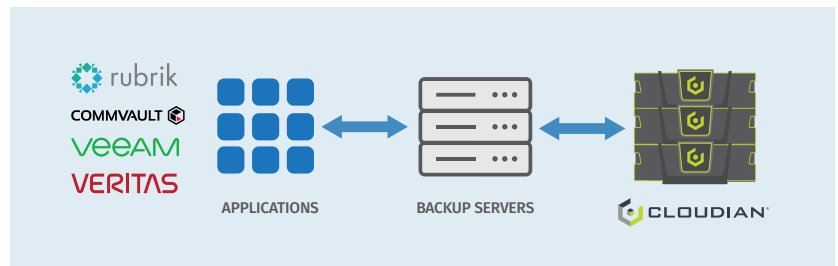- Available as appliances or as software-defined-storage

Use Cases

- **IT:** Data protection
- **Research:** Big data / analytics
- **Athletics and performing arts:** Video content creation and archive
- **Security:** Video surveillance
- **Administration:** Student records management

Scalable Target for Data Backup

Data protection is a critical function in university IT departments. Whether you backup to disk or to tape-based storage, the backup target is the core of this function. The question is which backup target will simultaneously achieve both your cost, scale and performance objectives.
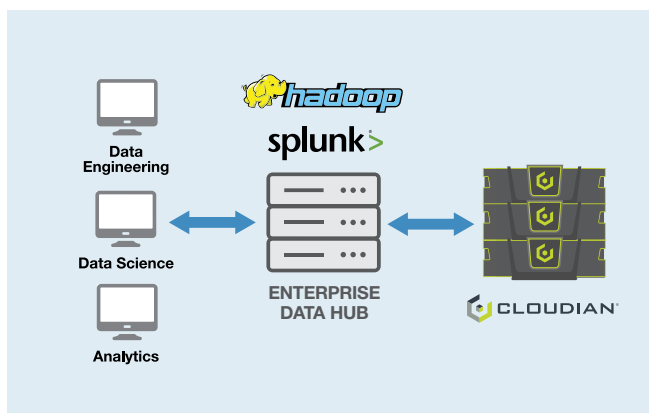
Cloudian makes an ideal backup target that is both fast and 50% to 70% less costly than other disk-based targets. And it's continuously scalable to meet your growing backup needs. All major backup solutions—including Rubrik, Veeam, Commvault, and VERTIAS—now support Cloudian with S3 API connectivity.

A Scalable Data Lake that Grows With Your Needs

Big Data enables institutions to transform themselves with the power of advanced analytics. Whether its applying machine learning on Cloudera's Hadoop platform or collecting and analyzing machine logs from across campus with Splunk, the goal is to discover insights for the betterment of student experiences.

Cloudian fully supports and integrates with big data platforms such as Cloudera and Splunk. Cloudera's support for S3a allows integration with Cloudian as a big data backup target or as an active archive tier for analytics workloads. Splunk SmartStore enables native S3 connectivity with Cloudian, decoupling the compute needs from storage requirements and reducing the overall TCO by more than 60%.

Video Production

Departments across college campuses ranging from athletics, admissions, alumni associations to research and technology, now have in-house video production teams. With the transition to 4K media, these on-campus video production teams need a robust,

Ingest · Enrich Metadata · Offsite Storage · Edit · Manage · Search/Visualize

scalable storage solution that can handle these use cases, with the flexibility to further scale to support new formats such as 8K, 360, and 60 frame video.
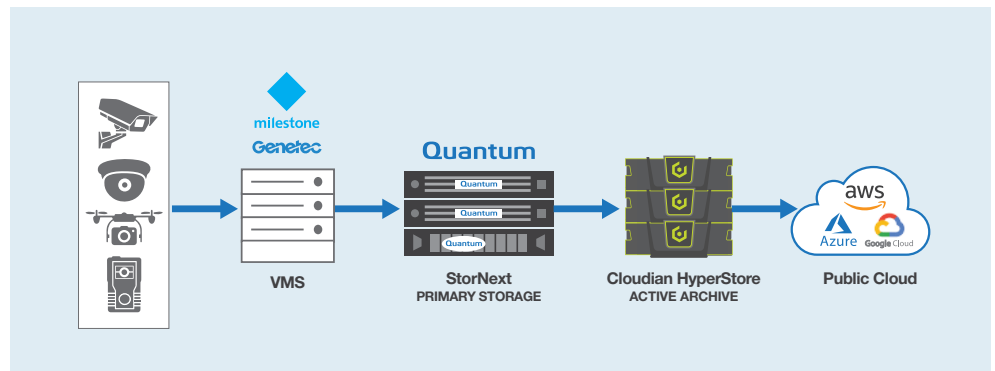
Cloudian provides an exabyte-scalable, disk-based storage system at costs 1/3 of public cloud storage. Now universities can support the video storage needs of all their departments without breaking the bank.

Student Safety

The safety and well-being of students on campus is a top priority at every higher education institution. A university campus is a sprawling environment, which can require hundreds of cameras to protect it. With 4K resolution now the norm for surveillance, these cameras generate

VMS · StorNext PRIMARY STORAGE · Cloudian HyperStore ACTIVE ARCHIVE · Public Cloud

troves of data that must be stored and analyzed. You need a storage platform that can handle large video files and high volumes of streaming data.
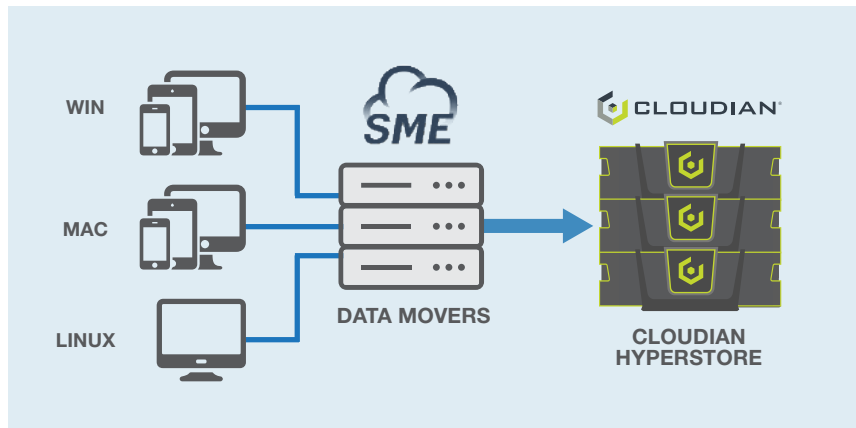
Cloudian HyperStore® is certified with leading Video Management Software (VMS) platforms and is designed to storage massive amounts of high-quality media data. In addition, Cloudian HyperStore allows users to add user-defined metadata, such as descriptions, operational information, geo-tags, etc., to media content, using manual means or automated ML/AI tools to make the data searchable and ready for advanced analytics enabling better forensics.

Secure File Synch and Share

To optimize student success and compete in the highly-competitive higher education market, institutions continue to become more student-centric. Students want the flexibility and access offered by cloud services like Dropbox, Google Drive and others. But providing these capabilities comes at the cost of allowing data outside your university firewall and security domain.

Through its integration with Storage Made Easy (SME), Cloudian gives universities the capability to offer a secure cross-campus file sharing and collaboration solution. Deployed on-premises, Cloudian HyperStore and SME offers a Dropbox-like experience similar to popular public cloud-based sync-share offerings, while reducing the risk of cloud data breaches. Built in governance policies like access controls and usage monitoring lets administrators maintain full control over both storage locations and points of access.
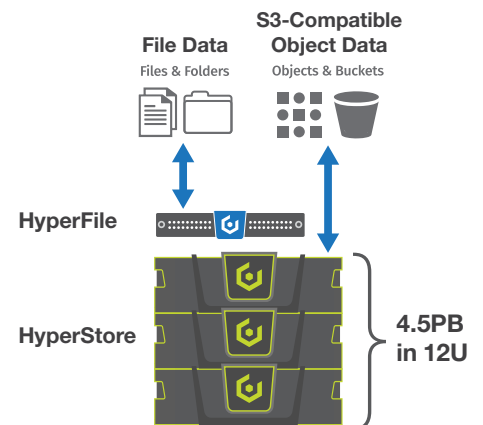
Data Privacy and Security

Higher education institutions store a lot of sensitive data. Administrative systems, for example, keep personally identifiable information (PII)—names, addresses, social security numbers, financial information, and more—on students, faculty, and administrators. Health Sciences systems have patients research and medical records. Research department systems store intellectual capital and detailed information on study findings and participants. Keeping this data secure is a top priority.

Scalable File & Object Storage

Cloudian HyperStore provides extensive security features that make it possible to deploy and operate cost-effective storage that adheres to privacy standards like GDPR and HIPAA. HyperStore offers enterprise-level data protection features, such as data encryption, transparent key management, AES-256 server-side encryption for data stored at rest, SSL for data in transit, fine-grained storage policies, and audit trail logging.

For high data durability, data can be striped across nodes and regions to guard against the risk of a hardware or site failure.

Cloudian Solution

Cloudian HyperStore is an on-premises, scale-out object storage system. Available as appliances or as software-defined-storage, it's designed for storing and managing large volumes of unstructured data.

Span your campus or the globe

HyperStore can be geographically-distributed across multiple locations and/or campuses yet remain accessible from any type of device at anytime from anywhere. As an on-premises platform, it provides you with granular control of data governance and security through policies, so you can deliver the flexible access students need and reduce the risk of data loss.

Hybrid-cloud and multi-cloud ready

If you wish to integrate the public cloud in your storage strategy, you can connect Cloudian to your preferred public cloud provider and combine both your cloud and on-prem data sets in a single management environment. Use policy-based tiering and replication to manage data among locations. Whether on Amazon Web Services (AWS), Google Cloud Platform, or Microsoft Azure, Cloudian provides a simple way to leverage the cloud.

Data resiliency and protection

Cloudian HyperStore provides up to 14 nines of data durability. Protect student information, research data and other university data assets using replication or erasure coding. Erasure coding distributes data across multiple devices, allowing data to be reconstructed in the case of a device failure. Storage policies also offer fine grain control of data placement across sites, whether campus buildings, data centers, or other sites.

Multi-use for cost savings and simple management

Cloudian is suited to any capacity-storage challenge, with proven compatibility across a wide-range of applications. As an object and file solution, Cloudian features the industry's most interoperable S3 API, and a SMB/NFS file connector. To enable secure resource sharing, Cloudian features multi-tenancy, quality of services controls, and billing. Start small with one application, then grow on demand to meet changing needs.

68% less cost than public cloud, and no monthly fees

Cloudian is the industry's most cost-effective enterprise storage.

- 1/3 the cost of private cloud, with no monthly usage fees to forecast and budget
- 70% less expensive than the traditional enterprise storage

Compatible with a wide range of applications

rubrik   splunk>

VERITAS   hadoop

evertz   Hyland

veeam   PURESTORAGE®

DELLEMC   NetApp®

komprise   Quantum

COMMVAULT   GE Centricity Practice Solution®

Learn More

Contact a Cloudian sales representative for more information on our storage solutions for higher education institutions or check out our website at **Cloudian.com**.

COOLSPIRiT have been providing data management solutions and business critical infrastructure for 20 years. We are dedicated to the performance, protection and preservation of enterprise data and we take the time to listen to our customers and find out about their businesses. Only then can we solve their problems with solutions that employ the very latest technology.

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