

Modernize SQL Server with S3 Data Lake

Cloudian HyperStore running on SQL Server 2022

Challenges

SQL server data warehouse environments are growing rapidly with organizations seeing their relational and nonrelational data proliferate exponentially on-premises, in the cloud, at the edge, and in hybrid environments. The current architecture based on traditional storage infrastructure solutions cannot keep up with the required scale and can get expensive very quickly. Enterprise customers are increasingly looking at the cloud data warehouse model to modernize their data warehousing environment and overcome the current challenges that range from scalability and flexibility to cost in order to gain a business advantage.

Solution

With SQL Server 2022, Microsoft introduces the capability to use a cloud data warehouse architecture on-prem. SQL Server 2022 has been enhanced with a new S3 connector which uses the S3 REST API to connect to any S3-compatible object storage. Cloudian's HyperStore solution with native S3 for on-prem or in the cloud, provides customers a complete solution with limitless scalability, and integrates seamlessly with SQL server 2022. HyperStore is fully validated to run SQL Server workloads for external tables ingesting data directly from S3 data lakes built on HyperStore, as well as a solution to backup native SQL Server tables for data protection.



Solution Benefits

- Cloud-like – Modernize your data warehousing solution and get the flexibility of the cloud with scalability to exabytes
- Disaster Recovery– Ensure uptime with fully-managed DR within HyperStore
- S3 API- connect to any provider of S3-compatible object storage, example HyperStore
- Performance- Accelerate query performance and tuning with no code changes required
- Data protection - Use immutable ledger to protect data from tampering

Use Cases

- Modern Data Warehousing with S3 Data Lake - High-performance, low-cost all-flash storage available
- Backup / Restore SQL Server data to S3 for Data Protection



Solution Advantages

Drop-In Integration

Microsoft SQL server 2022 integrates seamlessly with Cloudian HyperStore, the industry's leading on-prem S3 storage system, using S3 API based platform for the hybrid cloud. Only Cloudian offers a 100% native S3 API for objects on-prem. Together, the solution of Microsoft and Cloudian provides customers with a robust cloud data warehousing solution, on-prem, built on a scalable S3 data lake with high data durability and fast recovery times at up to 70% less cost than traditional storage solutions.

Exabyte-Scalability Handles the Largest Microsoft Environments

SQL server 2022 separates scalability of compute from storage, enabling customers to scale the resources most required. Cloudian HyperStore, a massively scale-out object storage platform, that provides a fast, cost-effective storage solution ideal for data lakes of structured or unstructured data. Available as an appliance or as software on bare metal or virtualized modern apps. HyperStore lets customers start small and expand seamlessly from tera-bytes to exa-bytes with no down time. High-performance all-flash Cloudian HyperStore is also an option for performance-sensitive apps – at 3X better price/performance than leading competitors.

Data Resiliency

Data lakes built on HyperStore provide 14 nines of resiliency. HyperStore provides storage policies (administrator selectable) for implementing data protection based on Replication (RF) or Erasure Coding (EC). Administrators can configure the number of replicas or type of erasure code scheme required to meet SLA and cost objectives. Storage policies also provide fine grain control of data placement across data centers, taking into consideration factors such as cost efficiency, security levels, and proximity.

Secure Solution

HyperStore provides extensive, military grade security features that make it possible to deploy and operate a cost-effective data lake that keeps customers’ data extremely secure. These features include, data encryption and transparent key management, AES-256 server-side encryption for data stored at rest, SSL for data in transit (HTTPS), role-based access controls with specified levels of access, audit trail logging, and WORM (Write Once Read Multiple) for storage immutability.

Hybrid Cloud Ready

Cloudian is on-prem S3 private cloud storage that integrates directly with S3 public cloud storage services. Employ policy-based tools to replicate or tier data to AWS, GCP, Azure, or other Cloudian HyperStore clusters for geo-distributed disaster recovery, capacity expansion, or data analysis in the cloud.

Multi-Tenancy

The solution allows multiple users to analyze data sitting on a single or multiple shared data lake infrastructures without compromising security. HyperStore gives role-based access to system and group administrators and to end users. Tenants can select and provision storage services on-demand from a service catalog. Billing, Metering, and QoS are built into the HyperStore platform to enable a full multi-tenant deployment.

Cloud Economics - Up to 70% Less Cost Than Conventional Storage

Running on commodity hardware, Cloudian drives down the cost of on-prem, disk-based storage to ½¢/GB/month or less, including support. High-performance all-flash Cloudian HyperStore is also an option for performance-sensitive apps – at 3X better price/performance than leading competitors.

Learn more about the SQL Server 2022 + Cloudian HyperStore joint solution at [Cloudian.com/Microsoft](https://cloudian.com/microsoft).



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