

Transforming How Organizations Consume Block Storage in the Cloud

What's Not Working in Today's Cloud Block Storage

Why Cloud Block Storage Holds Back Mission-Critical Workloads



Cost:

In most cloud environments, storage performance (IOPS and throughput) is tightly coupled to instance size. This forces teams to overprovision compute, paying for unnecessary vCPUs or memory, just to meet storage needs. For workloads priced by vCPU or memory, like enterprise databases, this drives up infrastructure and licensing costs, resulting in unpredictable spend and poor ROI.



Security & Resiliency:

Traditional cloud block storage relies on **multi-tenant architectures**, exposing organizations to cross-tenant risks, data locality concerns, and compliance challenges. At the same time, standard volumes often **lack built-in redundancy**, leaving mission-critical workloads vulnerable to data loss during manual or delayed failover events.



Performance Bottlenecks:

Multi-tenant cloud architectures introduce unpredictable latency and degraded throughput and IOPS, particularly under load, disrupting mission-critical databases, analytics pipelines, and AI/ML workloads.



Volumez Solution:

Volumez decouples storage performance from instance size, enabling teams to right-size compute without sacrificing IOPS or throughput. No more overprovisioning just to meet storage needs.

Built directly on your EC2 NVMe instances with no backend sharing, Volumez delivers high-performance, resilient, and secure block storage within your private tenant.

This architecture eliminates cloud storage bottlenecks, simplifies operations, and reduces TCO by up to 76%, with full automation via infrastructure-as-code.



Operational Complexity:

Fragmented storage tooling, manual provisioning, limited visibility, and individual disk management make storage operations time-consuming and prone to errors, especially in dynamic, multi-cloud environments.

Why Customers Choose Volumez



Consistent High Performance at Any Scale

Volumez eliminates cloud storage performance bottlenecks by providing direct access to dedicated NVMe within your private tenant, without any virtualization layer or shared backend. This **ensures consistent low-latency performance, complete isolation from noisy neighbors, and predictable throughput even under heavy load**. As storage needs grow, performance scales linearly by simply adding more NVMe, delivering the reliability and speed required for demanding databases, analytics, and AI/ML workloads.



Cost Reduction Without Tradeoffs

Volumez breaks the storage-compute dependency by **decoupling performance from instance size**, allowing teams to meet storage demands without overprovisioning compute. With **direct access to pooled NVMe**, no backend sharing, and a **simple, predictable pricing model**, customers can right-size infrastructure, eliminate vCPU waste, and reduce cloud costs by up to **72%** while achieving even better performance than premium cloud volumes.



Security, Privacy & Resiliency Built-In

Volumez is built on your own EC2 NVMe instances within a private, single-tenant architecture, no backend sharing. You get full control, isolation, and compliance readiness, with data encrypted at rest and in transit via NVMe-over-TCP. For high availability, Volumez provides native, seamless synchronous mirroring across two AZs, achieving RPO = 0 with sub-millisecond latency and no external tools.



Automation & Simplicity

Centralized management, dynamic scaling, policy-based provisioning, dashboard, and full observability, **all without code changes or application re-architecture**. Volumez eliminates vendor lock-in by running on your own EC2 NVMe, not proprietary cloud storage.





Ideal Use Cases

Volumez is designed for organizations that need consistent high performance, cost savings, and full control over their data infrastructure, particularly for workloads where storage throughput and IOPS directly impact compute cost (vCPU, memory) or licensing.

Enterprise Relational Databases:

(Examples: Oracle, Microsoft SQL Server Enterprise)

These databases often tie licensing and support fees to instance size (vCPUs or RAM). Volumez enables customers to reduce instance footprint without sacrificing performance, allowing for cost-effective architectures that support production, high availability, and disaster recovery, even across availability zones with sub-millisecond latency and RPO=0.

NoSQL Databases – Commercial Editions

(Examples: MongoDB Enterprise, Couchbase, Cassandra)

Many commercial NoSQL platforms are priced based on vCPU or memory. Volumez accelerates performance and recovery in distributed environments by eliminating data rebalancing, improving replication, and allowing efficient volume reattachment after failures.

AI/ML Training Infrastructure

(Examples: H2O Driverless AI, DataRobotMLOps (self-managed), SAS Viya, Domino Data Lab, Run:ai)

Training enterprise AI/ML models on GPU-intensive infrastructure is susceptible to I/O bottlenecks. These commercial platforms are typically deployed in the customer's own cloud environment and priced by the size of the compute instances (vCPUs, RAM, GPUs) they consume. Volumez provides high-throughput, low-latency storage that maximizes GPU utilization, accelerates training cycles, and reduces the cost of idle or oversized instances.

Financial Services, Telecommunications, Online Advertising (AdTech), Gaming Platforms, and More

These applications require ultra-low latency, predictable throughput, and continuous availability. Volumez supports synchronous, multi-AZ replication to maintain high availability (RPO=0) while reducing licensing and compute costs associated with traditional HA/DR designs.

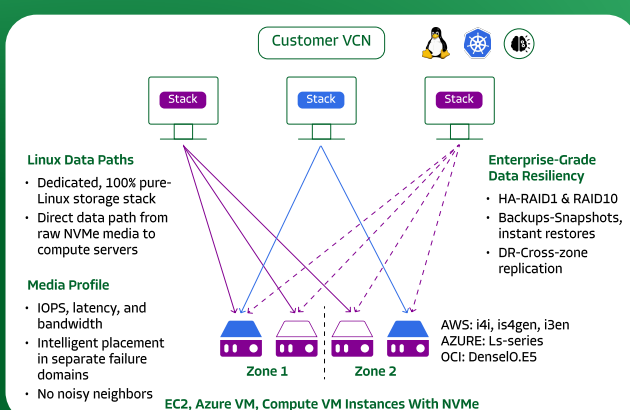
Composable Data Infrastructure

Declarative Policies

- State performance, resiliency, capacity
- Requests similar to CPU & memory in K8s

- Cloud-native, composable data infrastructure for block and file storage
- Orchestration is managed by the Volumez storage control plane, outside of the customer VCN

How it works: Volumez builds high-performance, secure, cost-optimized, and flexible policy-driven storage directly from raw NVMe, with no backend sharing.

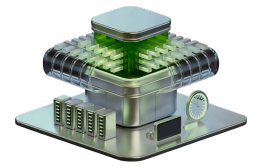


Use Case:

High-Frequency Trading Platform

Industry: Financial Services / Capital Markets

Workload: 27 mission-critical databases processing 2.5M+ trades daily, with bursts of up to 5,000 trades per second



Challenge

The customer faced three key challenges:

1. Throughput Bottleneck – Each EC2 instance was limited to **10 GB/s**, below the 12 GB/s required per Oracle cluster. This led to **system lag** and performance issues.

2. Costly Overprovisioning – To reach 10 GB/s, the customer had to use **128 vCPU instances** instead of the required **32 vCPUs**, resulting in:

2,592 idle vCPUs

\$123M in wasted Oracle licenses

\$459M in 5-year infrastructure cost

3. Strict HA/DR Requirements – The customer needed **multi-AZ synchronous replication** with:

RPO = 0

RTO ≤ 10 min

<1 ms latency

to avoid any transaction loss

Volumez Solution

Volumez enabled the customer to **break past the EC2 throughput ceiling** by decoupling storage performance from instance size. Using local NVMe and Volumez's high-performance block storage platform, the customer achieved a **throughput of over 12 GB/s per cluster with just 32 vCPUs**.

Key benefits:

- **75% fewer vCPUs per cluster**, cutting Oracle licensing and support costs
- **12+ GB/s throughput** without lag, solving performance bottlenecks
- **Native multi-AZ synchronous replication** (<1 ms latency) met RPO=0, RTO ≤ 10 min
- **No need for Oracle Data Guard**, reducing complexity and cost
- **Automation-ready** with full control via Terraform and Ansible
- **5-year TCO slashed from \$459M to \$131M** across 27 clusters

Business Impact

- **\$328M total savings** over 5 years (Oracle licensing + infrastructure) without sacrificing performance or resiliency
- **72% lower TCO:** Reduced from \$459M to \$131M across 27 clusters
- **95% latency reduction:** From 3–8 ms down to 0.3–0.9 ms
- **Zero data loss (RPO=0)** with 99.95% availability and <1 ms sync replication
- **Full control & automation:** Terraform/Ansible-driven deployments
- **Audit-ready architecture:** Ensures data sovereignty & compliance
- **Modern, scalable platform** built for global expansion

Performance at Scale. Control Without Compromise.

Volumez innovates next-generation cloud-native storage that helps organizations realize the true potential of their data and their business. Learn more at volumez.com.

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