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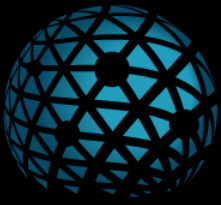
Data Protection in the Cloud Era

WHITEPAPER SERIES

THE NEXT GENERATION ENTERPRISE STORAGE SYSTEM

STRATISTOR™: UNLOCKING THE GLOBAL DATASPHERE





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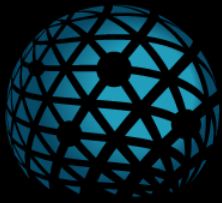
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EXECUTIVE SUMMARY

THE GLOBAL DATASPHERE

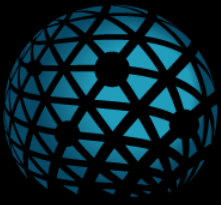
Today's information technology landscape faces a monumental challenge. Managing the massive amounts of data generated on a daily basis (i.e. online production data) across the world. As significant as that is, it is nowhere near the amount of data which continues to accumulate in the form of offline data (i.e. backups, archives). When you consider the total sum of all data globally, it is easy to conclude: *traditional storage technologies are not designed to handle this scale of data management.*

By 2025, the amount of data generated globally every day will be 500 exabytes (500 billion gigabytes). To put this into perspective, imagine starting a Zoom video call 238,000 years ago. This would generate just ONE exabyte of data over that period and still today's world would be outpacing that rate by 500x, *per day*. It's a staggering amount of data and it is accelerating.

Traditional storage technologies are unable to adequately address a data acquisition rate of this magnitude and the problems introduced at this scale. A new approach to data storage must be adopted. This approach must provide a superior level of security, flexibility, reliability, and adaptability in order to take on the challenges of the emerging landscape.

OPERATIONAL AND FINANCIAL

In today's enterprise environments, data is stored on physical devices such as storage arrays or SANs, which reside in the data center. Every day, more and more data is deposited on these devices. Eventually, the inevitable hardware refresh is needed, a large procurement process begins and all the data must be migrated off to another newer device. This perpetually occurs throughout the lifecycle of the data set.



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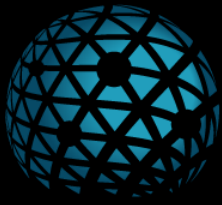
Additionally, between refresh cycles, there are always components which need to be replaced due to failure or added to address new demands for capacity. When capacity demands exceed what the current platform can withstand, more hardware must be purchased and the data migrated. This cycle becomes a tremendous burden both operationally and financially for the organization.

Storage manufactures have recently attempted to shift the financial model from capex to opex. However, this proved difficult because creative ways were needed to address their long term hard costs. Even within these new opex models, there is still a significant amount of capex spend and often a complicated consumption model attached which ends up eroding the opex model benefits.

DATA CONTAINMENT

The only way to effectively address the problems introduced by this level of scale is through parallelism. Historically parallelism was focused on delivering performance within a data storage system. However, we must now expand that to include parallelism in terms of the number of workers responsible for managing and containing the data set. In other words, we must divide the larger problem into smaller problems and concern ourselves both with performance and the addressability of the entire data set.

This is precisely what StratiSTOR is designed to solve.



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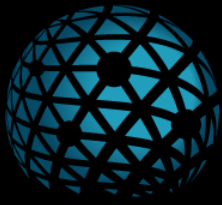
WHAT THIS MEANS FOR EDGE DATACENTER OPERATORS

Since 2006, hyperscaler service providers such as Amazon, took on the challenge of building a global compute and storage cluster (known today as the cloud). The design was able to scale to unlimited capacities in order to take on the massive amounts of demand which would soon follow.

This endeavor would have failed technically and financially had not the hyperscalers leveraged highly specialized software along with commodity hardware as the basis of their service delivery. The software was (and is) complex and requires large teams of developers and operators to manage and maintain it, well beyond what most organizations would be willing to commit to.

The problem the core hyperscalers faced in 2006 is now the same problem edge providers face today. In other words, the data overflow has grown to such an extent it is now spilling over to the edge providers. To make matters even worse, according to Gartner, in 2025, 75% of all the data generated will occur at the edge. The result is an extreme amount of data pressure on the edge datacenters who largely operate with traditional storage solutions.

StratiSTOR was developed to address this problem and to provide a way for edge providers to scale just like Amazon did through the last two decades, but without the extreme complexity and cost. The power of this solution comes from its software-defined nature which places the operator in complete control over the economic and technical landscape.



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WHAT IS STRATISTOR?

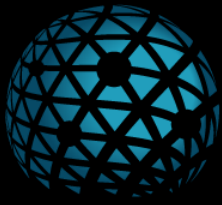
StratiSTOR is a secure, massively scalable, software-defined storage cluster which delivers enterprise class storage services, reliability, and performance for today's most demanding environments. It replaces the need to deploy traditional physical storage resources in the data center, avoiding all of the challenges and complexities associated with these types of traditional technologies.

The features of StratiSTOR are designed to far exceed that of today's enterprise class storage platforms:

- Leverages local disk and/or cloud-backed storage resources
- Rapid provisioning and deployment on physical or virtual servers
- Non-disruptive linear scalability as number of nodes increase
- Highly available (N+X) and high-performance (> GB/s)
- Unlimited scalability
- Native in-flight and at-rest data encryption
- Superior data survivability and integrity features
- Seamless application integration leveraging universally compatible network protocols such as clustered NFS, SMB, S3, iSCSI and HTTPS

The benefits of StratiSTOR are extremely compelling:

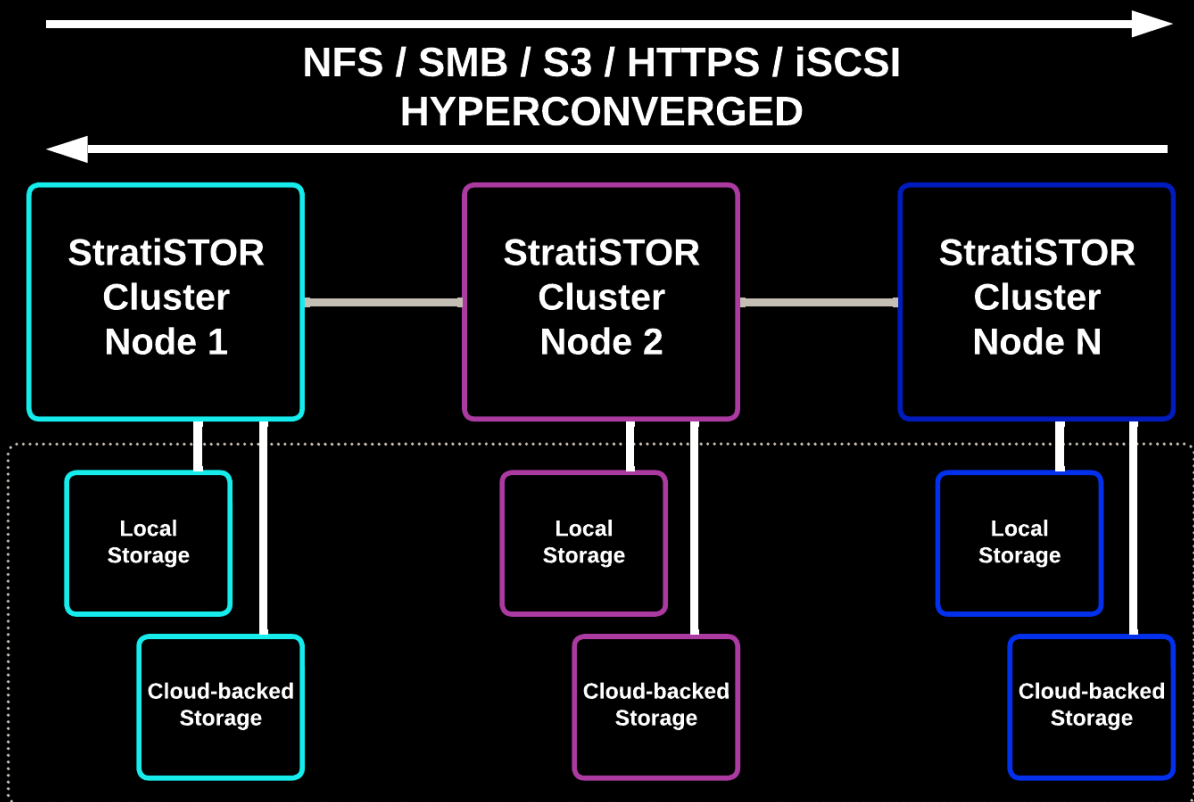
- Fully provisioned and managed
- Start small, grow as you go
- Supports hyperconvergence (virtual machines and containers)
- Fully decouples data eliminating all hardware dependencies
- Static and budgetable monthly opex cost model
- Granular, modular and non-disruptive refresh cycle
- No migration of data needed ever again
- Compatible with all operating systems and applications
- Provides hyper-scaler storage services with data locality

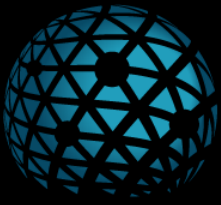


THE STRATISTOR ARCHITECTURE

StratiSTOR is deployed as a secure, highly-available, high-performance cluster across any arrangement of storage (local or cloud-backed). The cluster requires a minimum of three nodes, but is capable of scaling to hundreds of nodes as necessary to fulfill the performance and capacity demands within the environment.

StratiSTOR Storage Cluster





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PRIMARY USE CASES

StratiSTOR can be utilized in many different scenarios ranging from:

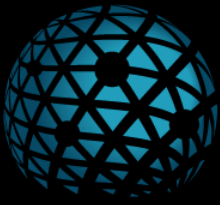
<u>TIER</u>	<u>STORAGE TYPE</u>	<u>APPLICATION TYPE</u>
Tier-1	production storage	databases, analytics
Tier-2	hot storage	file and web servers
Tier-3	warm storage	backups
Tier 4	cold storage	archival

Tier-1: specifically designed to provide the highest level of performance and availability for the most demanding applications, at scale.

Tier-2: scales to meet the demand of concurrency achieving maximum workload density within enterprise environments.

Tier-3: scales to any level of capacity you need today or in the future for backup, data protection, and business continuity applications.

Tier-4: manage massive-scale capacity and large retention applications such as archival data sets with ease.



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CONCLUSION



The demand for storage continues to grow at unprecedented levels as more and more data intensive applications are brought online such as artificial intelligence, IoT, data analytics, and other emerging workloads.

Traditional storage architectures are not capable of providing the degree of parallelism required to meet this demand. Even platforms which do provide parallelism are limited due to extreme cost and hardware lock-in.

StratiSTOR is a truly hardware-independent, massive-scale enterprise-grade storage platform delivering complete control and flexibility over the storage architecture, meeting the demands of intensive next-generation workloads.

Throughout history, storage technologies have evolved to meet the requirements of the present demand. Today, we live in a digital world which demands a new approach, one that is unbound in terms of hardware, capacity and performance. StratiSTOR is the storage platform for the next-generation.