Zensar

STaaS:
The Dawn of a New Era in Data Storage

Whitepaper

An RPG Company

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Executive summary

Storage-as-a-service (STaaS) is a unique business model where storage is rented out on a platform-as-a-service (PaaS) or infrastructure-as-a-service (IaaS) basis. This solution will be cost-effective for customers with varied data storage preferences and requirements such as on-premise storage, private cloud, and public cloud.

Business users can access and extract data seamlessly and securely across locations and devices. The service operates by associating with multiple cloud providers and exporting a unified view of the data across multiple data centers.

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STaaS at a glance: Market research

According to market research, the rise of data backup — either on the cloud or physical archives — is fast becoming the need of the hour across business verticals. The global data backup and recovery market is expected to grow from $5 billion in 2020 to $9.8 billion in 2027 . The industry's growth rate for 2021-2027 is projected to be 9.8 percent.

The demand for storage is driven by the increasing adoption of hybrid cloud storage, the internet of things (IoT), blockchain, big data, artificial intelligence and machine learning (AI/ML), social media platforms, and other fast-growing applications.

Journey to STaaS

The road to STaaS has evolved with high-performance computing, big data, content management, and other technologies that demand storage across formats such as archives, backups, flash storage, hybrid storage, etc. Furthermore, with businesses requiring these applications to be constantly available across devices, the challenges have grown. Several architectures are now available to serve various business needs, such as infrastructure-as-a-service, platform-as-a-service, database-as-a-service, and backup-as-a-service.

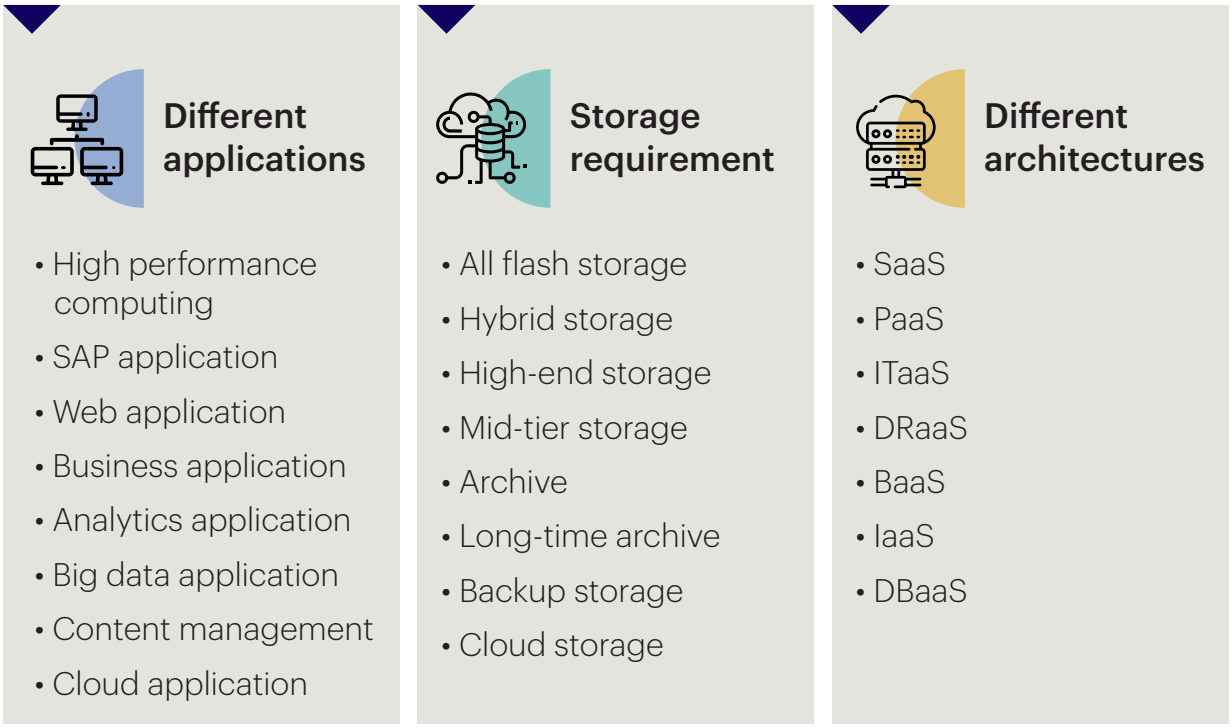


Figure 1: Understanding types of applications from a storage perspective

Over the years, enterprises and their business lines have relied on the cloud for flexible infra-structure like the pay-as-you-consume model. The future of storage lies in the one-click manage-ment of these solutions.

Predictive analytics also helps reduce gaps between requirements and solutions by providing recommendations on how best to optimize data placement and cut down expenses. Reports state that cloud-based storage is likely to increase and become cheaper over five or ten years.

Challenges in the landscape

In today's technology-focused scenario, with the continuously changing approach to business processes, maintaining a competitive advantage requires performance, reliability, scalability, and agility. Traditional storage is expensive, with a high total cost of ownership (TCO) and relatively low return on investment (ROI). It is also inefficient in terms of maintenance and management. Delivering high-performance on-premise has been one of the most significant challenges in hardware and software.

Poor storage performance often draws complaints from system administrators and users. Also, lack of data mobility, fear of lock-in, and lack of visibility of data centers present challenges to adopting traditional storage for mission-critical workloads.

Some of the current challenges in traditional storage are depicted below:

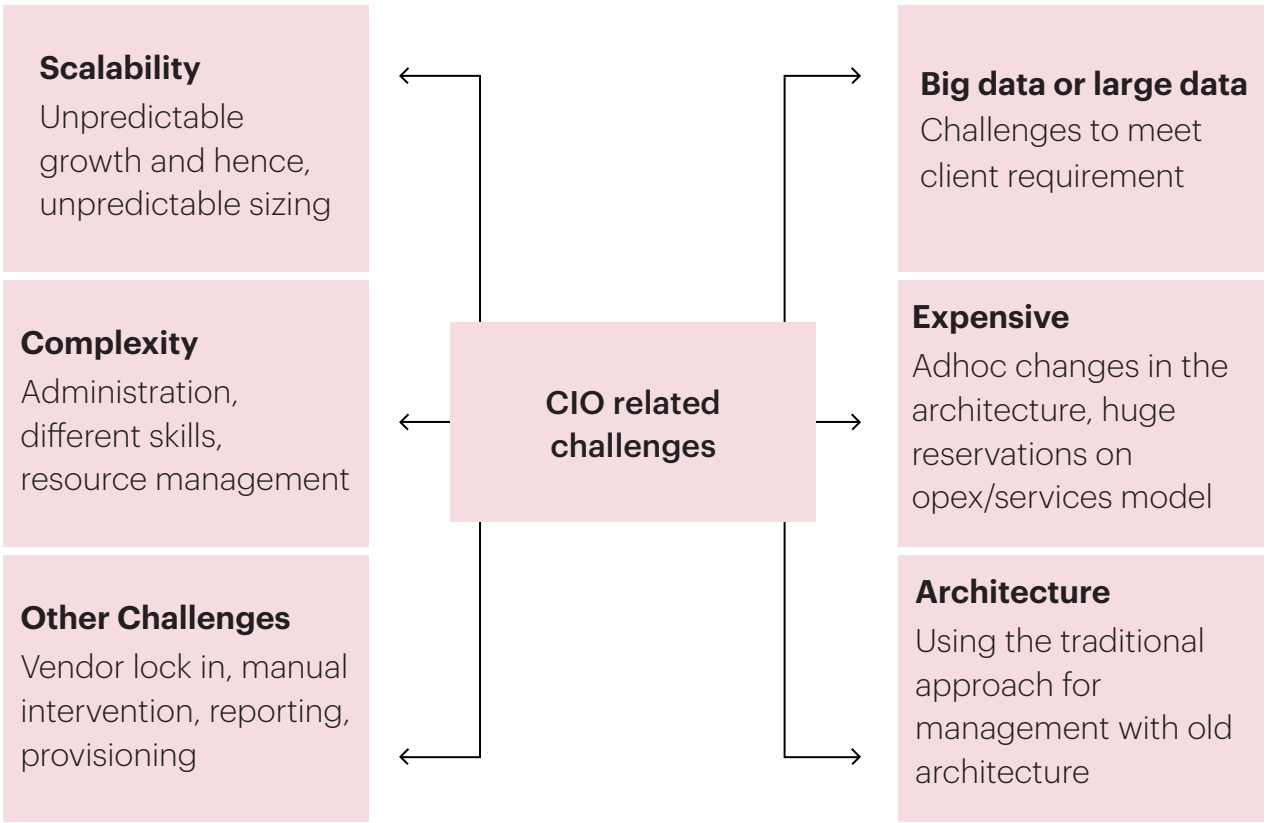


Figure 2: Challenges of traditional storage methods

Traditional services vs. Cloud services

Due to previous investments in legacy systems and compliance concerns, most organizations hesitate to move to modern solutions and still use traditional storage methods. As the organization's dependency on data increases, scalability and reliability are significant factors influencing the decision to migrate.

New research has clarified that both storage area networks (SANs) and local storage have merits and drawbacks. Using traditional storage solutions in non-standard data centers can bring risks, including electricity outages, water damage, and man-made accidents. Human error and misuse of information are veritable risks too.

Modern solutions such as cloud storage distribute data across different systems to optimize performance, capacity, protection, and availability. Cloud storage brings the kind of simplicity, efficiency, and economy that server virtualization brings to computation. It allows businesses to eliminate inefficient, purpose-built hardware and use more agile, transparent, and automated systems.

Even the most recent developments in delivering storage are undergoing a revolution due to a new approach called distributed replicated block devices (DRBD) or distributed block storage. DRBD is a flexible and versatile storage solution that takes each local storage array and facilitates the replication of stored data between a passive and an active system, enabling one to continue if the other fails. A redundant array of independent disks (RAID) is a data virtualization technique that combines multiple drives into one single array and combines each storage or compute node into one huge array cloud-wide.

Let's look at the differences between traditional and cloud-based storage solutions:

Traditional storage

- Applications access physical storage connected using standard Storage Area Network (SAN) architecture
- Daily operations become dependent on the technical know-how of the storage system
- The manual maintenance requirement is high
- A high initial effort is required, and there is less reliability
- There is no scope for automation or orchestration
- Object storage is accessed from physical storage

Cloud storage

- There is no visible infrastructure or vendor lock-in
- STaaS is vendor-agnostic, and there is no dependency on knowledge about the storage system
- Easy to maintain as service providers usually take care of maintenance
- Highly reliable and flexible
- Self-provisioning and works on web-based applications
- Object storage is web-based storage connected using APIs

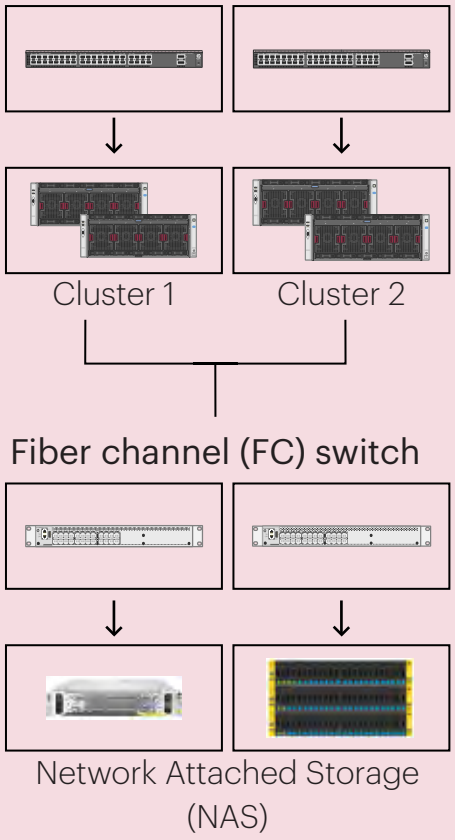
The logical flows of both methods are illustrated below:

Traditional storage

- Work in silos
- No scalability
- No on-demand provision
- Fixed price
- No automation and orchestration

Cloud storage

- On-demand and data mobility
- Agile, scalable, reliable, and secured
- Cost-effective
- Pay-as-you-use
- Automation and orchestration



Differentiators

- Automation and orchestration
- Choice of any storage service
- Software-defined storage
- Skilled resources

Figure 3: Comparing traditional and cloud-based storage approaches

Exploring the capabilities of STaaS

Storage-as-a-service can be delivered as a cloud-like experience with a pay-as-you-consume model and 24/7 monitoring and management solutions. This approach helps clients cost-effectively deploy enterprise-class storage.

STaaS is available on-premise, via the cloud or hybrid cloud models, and affords the flexibility to choose across cloud service providers. Available storage types are block storage, file storage, and object storage. Clients can also leverage archiving and backup solutions.
The pay-as-you-consume pricing models allow clients to exercise high flexibility levels with minimum commitment. Consumption-based pricing and the lack of upfront charges, term commitments, and termination fees enable clients to:

- Reduce upfront capital expenditures (CapEx)
- Meet market demands
- Leverage cost-effective enterprise storage

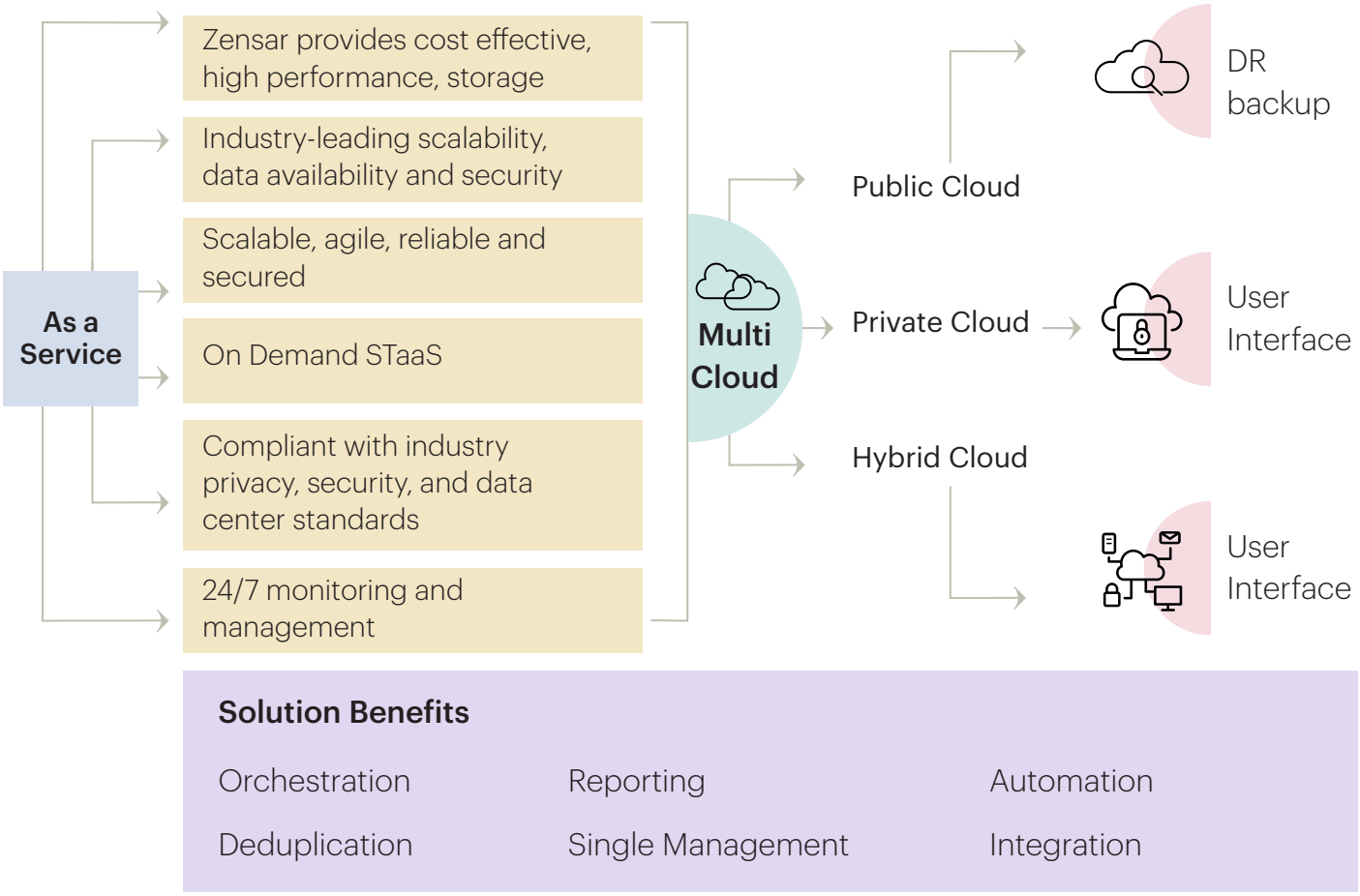


Figure 4: Advantages of the Zensar storage-as-a-service (ZSTaaS) framework

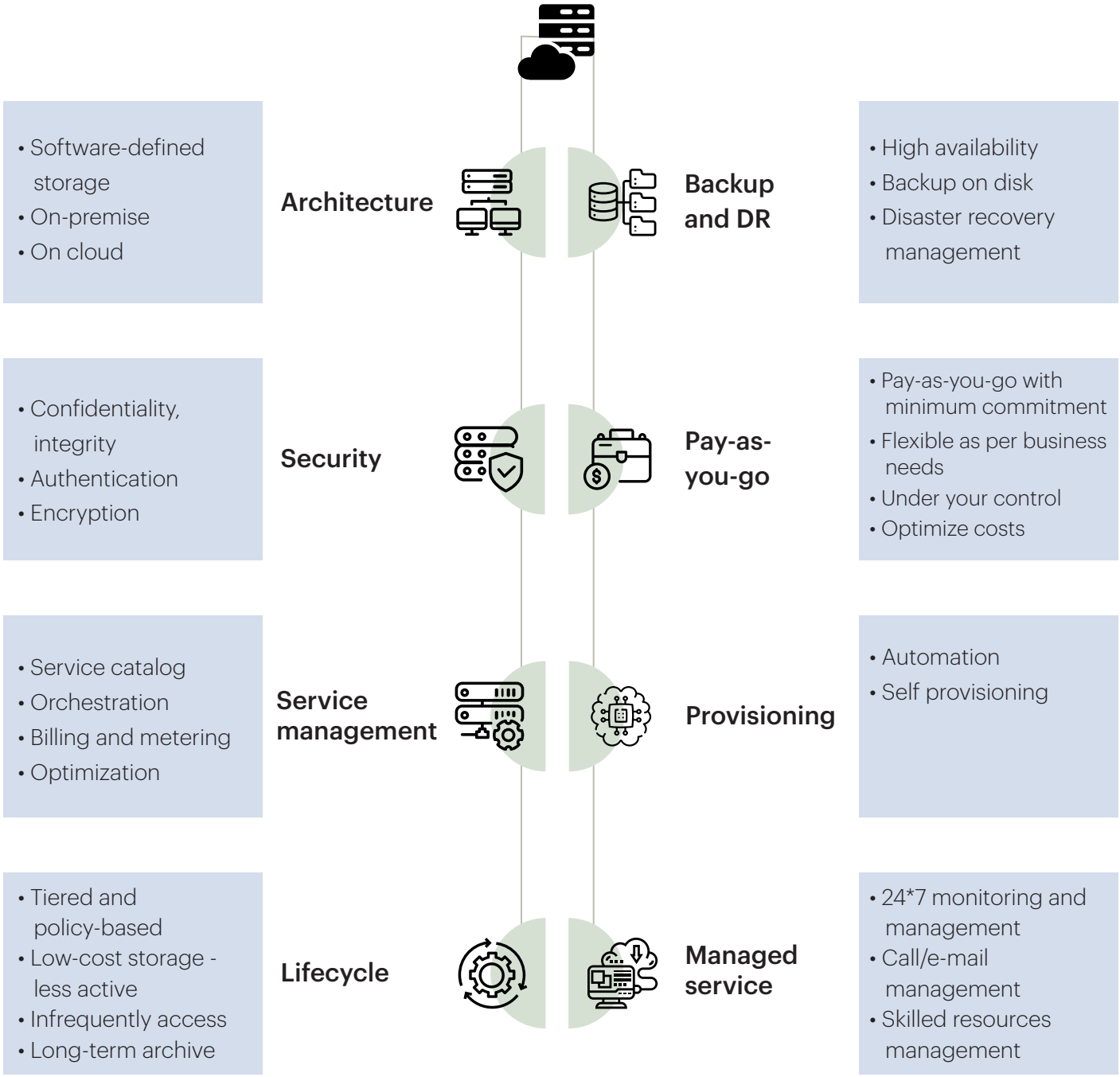


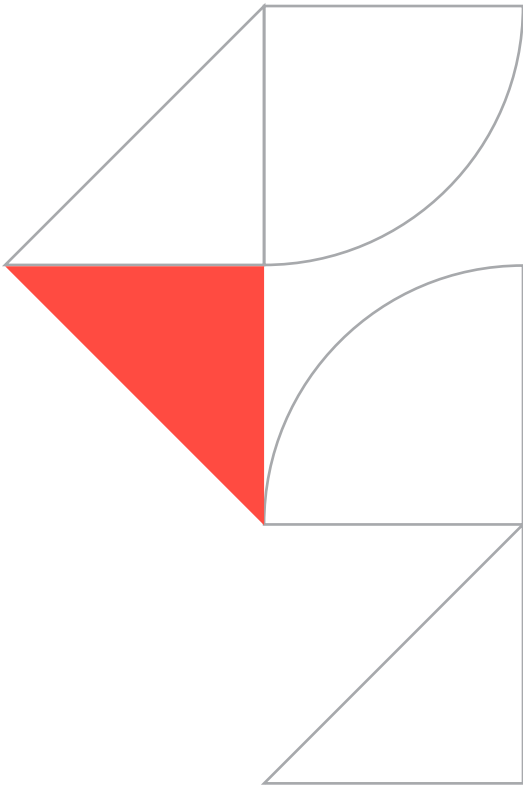
Figure 5: The ZSTaaS framework

Leveraging deep domain expertise

Modern STaaS solutions enable organizations to be more resilient in a rapidly evolving cyber threat landscape. Businesses need to identify partners with deep domain expertise, evaluate their infrastructure accurately, and optimize and transform their data centers. Experienced partners can help businesses design and build new environments while supporting existing frameworks. STaaS allows organizations to confidently navigate the future, leveraging agility, scalability, and reliability improvements.

How a leading US health care company benefited from ZSTaaS

A US-based health care company wanted to migrate storage and use an as-a-service model to address many challenges, including unprecedented growth, ad-hoc changes in the architecture, huge reservations on operating expenses (OPEX)/services model, and high energy consumption. The company was struggling with siloed architecture and storage spread across different locations.



Zensar used an assessment framework for analyzing the customer's existing landscape. Application data gathering and analysis through our proprietary tool – ZappIntellect. The hybrid cloud strategy framework helped efficiently integrate and migrate all the storage, backup, and database.

The client realized many benefits, key among them include:

- Improved application performance due to flash storage disk
- Increased productivity and business efficiency through an agile infrastructure
- Reduced footprint through storage tiering
- Increased efficiency through process standardization
- Improved environment stability through process and tools framework
- Compliance with the service level agreement (SLA)

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Getting the most out of STaaS

Gartner estimates that fewer than 40 percent of companies in 2020 were offering enterprise-grade storage as a consumption-based service. However, they estimate that more than 70 percent of corporate enterprise-grade storage capacity will be deployed as a consumption-based service offering soon .

Since businesses will only require more data storage in the future, understanding public cloud storage costs, security, and availability are critical. A good cloud storage strategy includes understanding data kinds, security policies, and the technology that enables STaaS. While reducing costs and increasing efficiencies, IT leaders must ensure that their organizations' IT services are highly scalable and available.

To conclude, STaaS benefits include the following:

- The pay-as-you-go model enables you to optimize storage expenses
- Rapid scaling and provisioning of storage resources for your applications
- Consistent reliability offered by major cloud service providers
- Streamlined storage management with better collaboration between IT and business

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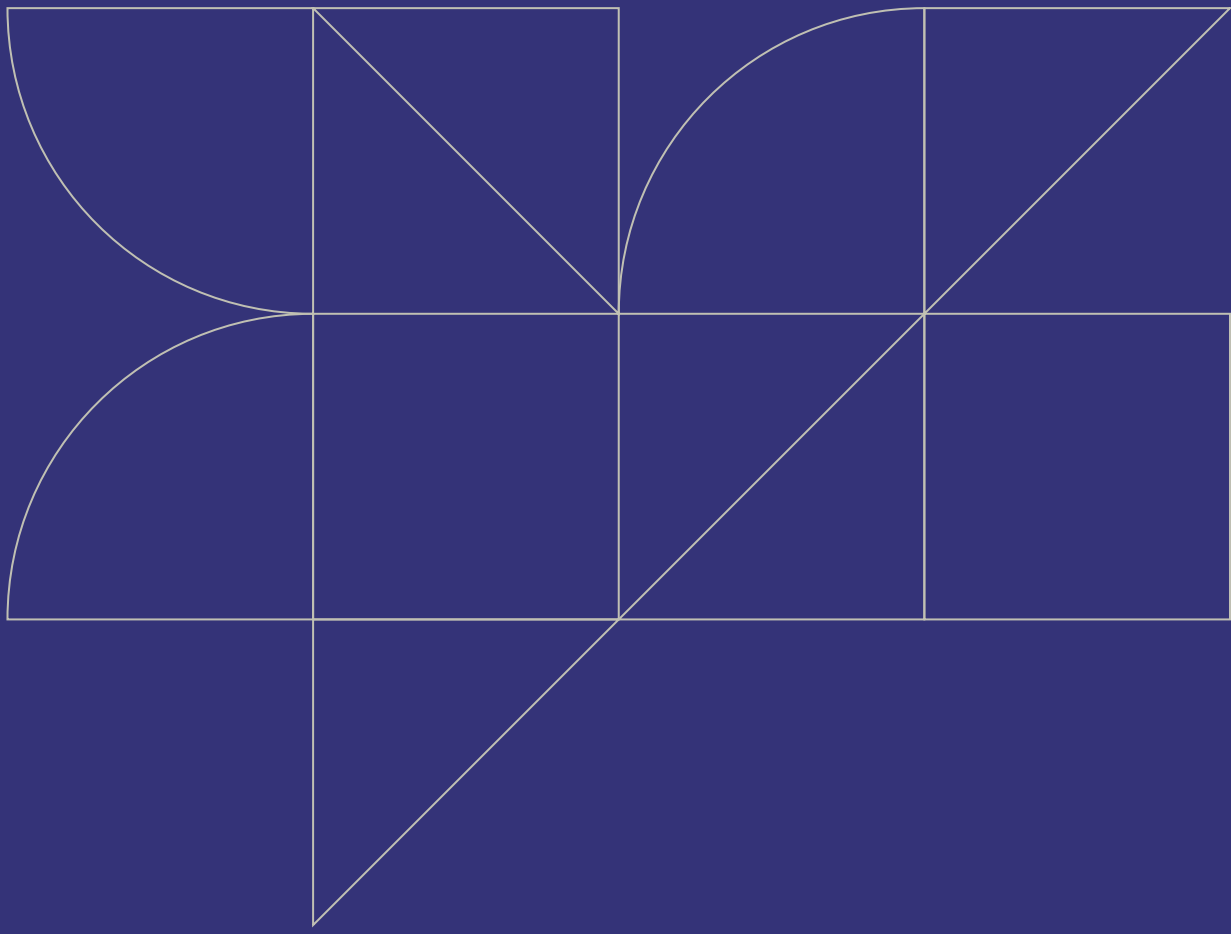

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With headquarters in Pune, India, our 10,000+ associates work across 33 locations, including San Jose, Seattle, Princeton, Cape Town, London, Singapore, and Mexico City.

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