Storage Infrastructure as a Service
The Best of Cloud and On-premises Storage
Introduction

Organizations rely on corporate data for everything from product design to order processing; it is their most valuable asset. Today’s enterprise data storage solutions are tasked with storing, managing, protecting and providing access to data in order to support business initiatives. The demands on these storage solutions multiply as organizations become more distributed and corporate data grows exponentially. Simultaneously, IT organizations are under continuous pressure to spend less while also taking responsibility for more strategic initiatives. This combination of factors is driving a need for innovative data storage solutions that manage and distribute data more effectively in this changing business environment.

Recently, cloud storage has emerged as a tool with new capabilities and the potential to solve the storage challenges of today’s enterprise. Leveraging the cloud as a component, Storage Infrastructure as a Service (SlaaS) is a new solution for enterprise data storage that delivers uniform storage with superior functionality across an enterprise organization. After adopting SlaaS, organizations are better equipped to address the data management and user access demands of today’s dynamic enterprise.

Enterprise Storage Today

Today, enterprise storage infrastructure is a complex combination of hardware components that must be separately purchased, installed, managed and updated. As a result, organizations struggle with the expense and resource drain required to manage and maintain these systems. In addition, these hardware-based systems require infrastructure in every location and additional components (such as WAN optimization) in order to efficiently distribute data to users in all locations. Together, these systems represent an expensive capital investment that introduces significant management challenges for IT and often a mixed or poor experience for end-users.

Storage capacity scalability is essential in order to support increasing data volumes from natural growth and the addition of new offices. Using traditional hardware solutions, scaling capacity requires a “ripple effect” expansion of capacity across multiple components, including primary, backup and offsite storage. It can also require the purchase of new hardware and an arduous data migration process. Consequently, this process is often slow and painful, negatively impacting business agility.

With organizational growth, comes added complexity and distribution of people. When users in multiple locations require access to the same set of data, often the result is separate components in each location storing duplicate and outdated copies of data. This distribution of data, hardware and the associated scattering of IT staff causes inefficient data management. It is nearly impossible for the IT organization to have a detailed understanding of where all data resides, how many copies are stored, which is the latest version and who has access to information. This ineffective data management leads to reduced end-user productivity as well as risk of unauthorized access or data loss.

The increasing number and complexity of components in different locations strains today’s IT resources. In many cases, these exacerbate the trade-offs between functionality and cost that organizations are forced to make in smaller offices. As a result, remote and branch offices do not have the same data storage features and functionality as the datacenters, and the lack of uniform infrastructure adds a layer of complexity for IT. This leaves users with an inconsistent experience and IT with the added burden of maintaining disparate solutions.
Enterprise data storage is quickly becoming a business inhibitor due to inflexible infrastructure, inefficient data management, inconsistent user experience and the drain on IT resources. What organizations require is a more flexible solution with tighter control and optimal user experience in order to achieve business goals. Leveraging cloud storage as a component, SIaaS does just that – improves productivity, streamlines costs and delivers the functionality that puts data at the center of business value.

**Storage Infrastructure as a Service**

Organizations often streamline costs and improve efficiency by outsourcing key applications and infrastructure. However, in the case of data storage, enterprise organizations do not want to (and should not have to) sacrifice data security and performance for the benefits of outsourcing. With the right solution, organizations can gain the value of storage as a service with the added benefits of centralized management, improved control and local performance.

Storage Infrastructure as a Service (SIaaS) is a solution that leverages cloud storage and allows IT to centrally manage data storage delivered as a service. The solution is comprised of an on-premises controller combined with cloud storage and powered by an innovative technology, which altogether deliver a full enterprise-class data storage solution. SIaaS simplifies the way organizations consume, manage and integrate storage, transforming from a complex hardware infrastructure distributed throughout the organization, to a centralized service with convenient access from every office and device. This unique approach to enterprise data storage provides significant advantages over the complex hardware components in five key areas:

- Consolidated storage
- Superior functionality
- Uniform infrastructure
- Unlimited scalability
- Everywhere access

**Consolidated Storage**

The number and complexity of components required to work together to effectively store, protect, manage and distribute data is the Achilles heel of current enterprise data storage solutions. SIaaS consolidates these components to one single service, dramatically reducing infrastructure complexity and resources required. Each location connects to the service using an on-premises controller, which integrates into the IT infrastructure the same way unified storage operates: CIFS, NFS and iSCSI. IT no longer has to spend budget and cycles selecting, buying, installing and maintaining hardware components from multiple vendors. Enterprise organizations partner with a single vendor to deliver, monitor and support the complete end-to-end solution, eliminating the cost and confusion of multi-vendor solutions. More importantly, this centralized service enables full visibility and control of all data across the organization.
Superior Functionality
Often, when a solution is consolidated, a tradeoff in functionality or service is required. However, with SlaaS, the user experience, data protection, security and availability are actually superior to traditional storage. In SlaaS, each component of traditional storage infrastructure is replaced with functionality built-in to the solution, delivering more tightly integrated and more robust features compared to individual components patched together.

User Experience – A cache of data in each location delivers an optimal user experience by providing local access to all data stored in the service while keeping local storage demands to a minimum.

Protection – Unlimited, frequent snapshots are regularly synchronized to the service to maintain an unlimited history of data. True geographic redundancy is delivered by storing as many as six copies of data in geographically dispersed locations.

Security – The on-premises controller encrypts all data before it leaves the security perimeter of the company. Encryption keys are managed solely by the customer, so only users at the organization have access to the data.

Availability – The solution is proactively monitored at the customer site and the cloud storage provider 24 hours a day, seven days a week, ensuring the system is operational. Availability of the system is backed by a 100% availability SLA, which puts IT management minds at ease.

With SlaaS, organizations have more confidence about their data protection, availability and disaster recovery planning than with the expensive, complex and time-consuming hardware storage solutions in use today.

Uniform Infrastructure
SlaaS replaces traditional hardware infrastructure and centralizes data storage and functionality so every office has easy access to the complete infrastructure suite - regardless of size or location. Each office connects to the service using a virtual or hardware storage controller, providing access to the same superior data protection, availability and user experience without the resource drain of supporting a hardware infrastructure. With SlaaS, organizations avoid having to make functionality and performance tradeoffs and users experience the same local performance whether they are in headquarters or a remote office. Consistent protection, policies and security across the organization result in simpler, more efficient IT management.

Unlimited Scalability
Unlike other storage systems, SlaaS separates the data from the hardware. One logical volume is stored centrally and all locations have access to the same single gold copy of data. It is because of this unique separation of data and hardware that capacity can be changed in an instant. If one location requires additional capacity, it is increased centrally and provisioned to the location and no change to the controller at the edge is required. Each controller in every location has access to the full capacity stored centrally, while maintaining the minimum capacity of local cache required for a premium user experience.

SlaaS is also the most effective storage solution to meet the scaling requirements resulting from adding new offices. When a new location is established or acquired, a controller is deployed to that location and connected to the service. Once deployed, the new controller has immediate access to the corporate data and storage capacity. If additional capacity is required, it can be added instantaneously in the service. This
efficient scaling capability supports growing and changing organizations with minimal disruption to the infrastructure.

**Everywhere Access**
Access to information is highly configurable, controllable and secure with SIaaS. Typically, each location in an organization has a set of data that is unique to that location and a set of information that is shared between locations. Using traditional storage, each location manages different volumes of data independently. With SIaaS, IT is able to configure data distribution and sharing in any combination of user and access permissions from a single control point, resulting in true flexibility. Data can be distributed from one central location, centrally collected from multiple locations or shared between two or more distinct locations. In all scenarios, every user in every location is consistently accessing the same, most current version of the file stored centrally in the service. Additionally, a native mobile client provides access to all files from any mobile device. This unique distribution and sharing functionality provides a secure alternative to unmanaged and unsecured online file services such as Dropbox, and delivers better security and control for IT.

SIaaS not only replaces an organization’s data storage with a consolidated, uniform, superior and feature-rich solution, it transforms the storage infrastructure to deliver real business value. With SIaaS, organizations can achieve increased productivity, streamlined and reduced IT costs, mitigated risk of data exposure and improved agility to support a dynamic business environment.
Increase Productivity
The consolidation of the traditional hardware storage infrastructure into a single streamlined service relieves IT from the burden of managing hardware – saving companies real man-hours per week. Relieved of core infrastructure responsibilities, IT has the freedom to spend time on strategic projects with more business value.

Individual users and teams are more productive because they have local access to information and the ability to effectively distribute, share and access the same files across geographies. The downtime spent waiting for files and the inefficiency of working on outdated files is eliminated. This enhanced productivity drives increased revenue as well as improved end-user experience.

Streamline and Reduce Costs
In addition to the benefit of freeing-up IT man-hours, SlaaS streamlines and reduces data storage costs. IT no longer has to invest in multiple hardware components and “pre-pay” based on projected usage. Organizations pay for the storage they use – when they use it.

Because the solution is consolidated into a single product sold per terabyte, organizations can identify the actual cost of storing, protecting, securing and managing data by volume. This ability to correlate costs to actual volume stored provides the ability to charge back to business line functions rather than view data storage as a required capital investment.

Mitigate Risk
SlaaS delivers superior backup and data protection, mitigating the risk of data loss, simplifying restore and condensing the process for disaster recovery. With direct access to backup, users can restore any file from any point in time. In the case of a hardware failure or business disruption, data is recovered by simply deploying a new storage controller (hardware or virtual) and establishing a connection to the service. With SlaaS, file restore and disaster recovery are fast, painless processes, delivering better data availability and support to the organization.

Improve Agility
Today’s organizations are dynamic – teams and responsibilities move between offices, companies expand and consolidate and priorities change. This changing environment requires IT to be agile in order to adequately support the needs of the business. SlaaS is more flexible than the rigid hardware storage infrastructure in use today. The ability to scale on-demand opens new opportunities to support mergers and acquisitions as well as a sudden influx of data to support a new initiative. Also, the unique ability to instantly distribute and share a single gold copy of data across different locations reliably supports the needs of a distributed enterprise to maximize productivity across geographic boundaries.

Conclusion
Storage Infrastructure as a Service is an innovative data storage solution designed to store, protect, manage and access data more effectively and efficiently than any solution available today. Organizations that adopt SlaaS benefit from better data protection, user experience and availability across their entire organization. With the ability to eliminate hardware costs and management headaches, organizations can shift focus to managing data – making it available when and where it is needed to drive growth. Business initiatives are better supported with a more available, agile and collaborative store of data.
About Nasuni

Nasuni offers a powerful Storage Infrastructure as a Service: a uniform, complete storage solution delivered as a service, enabling distributed organizations to offload the management of the storage infrastructure (including backup, replication and offsite protection) and consume storage on-demand, without any change to the way users access information. With Nasuni, corporate data is uniformly available in all locations, enabling organizations to increase user productivity, streamline costs and improve business agility.

Our team is made up of enterprise storage, security and networking industry veterans with a shared vision of transforming the way enterprise organizations view data storage. We believe that storage should be as easy to purchase, consume and manage as the electricity that keeps the lights on.