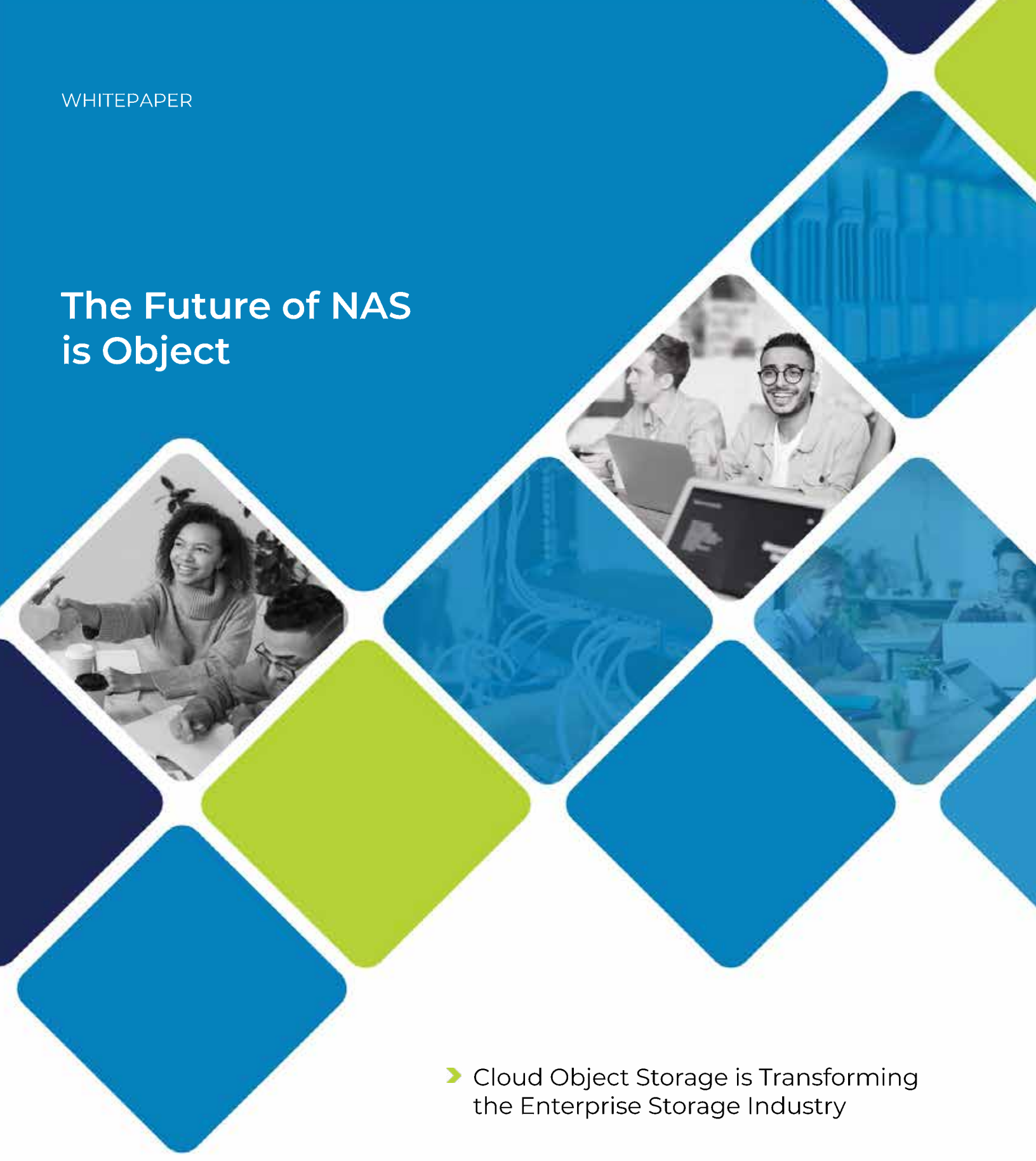
WHITEPAPER

The Future of NAS is Object



Cloud Object Storage is Transforming the Enterprise Storage Industry

If you have been around the computer industry long enough, you have witnessed multiple major shifts in technology. If you were working in the 1970's you remember the major shift from mainframe computing to workstations. In the 1980's, we witnessed the shift from proprietary workstations to personal computers. Most recently, we saw the major shift from personal computing to the smart phone. In each example, the incumbent technology never disappeared, but its growth slowed considerably in favor of new technology that pulled the entire market in a complete new direction.

A similar technology shift took place in 1992 when NetApp, Inc. was founded. NetApp pioneered a new enterprise storage technology called Network Attached Storage (NAS). Compared to traditional direct attached storage (DAS) and storage area network (SAN) storage, NAS storage offered access to large amounts of storage in an easy to manage appliance. NAS was enabled by improved network technology and new high capacity disk drives. NetApp combined the new technology in such a way to revolutionize the enterprise storage market.

It has been 25 years since its introduction and NAS remains a highly viable enterprise storage solution. But, 25 years is a long time for any technology and NAS is beginning to show its age. Two major changes are taking place in the computer market that are directly impacting NAS. The first is the exponential growth in unstructured data. In each era, data use changed dramatically. In the mainframe era, data belonged solely to the System Admin and it consisted of structured database information. In the Personal Computer era, control of data moved to the individual and unstructured files proliferated in the form of word documents, spreadsheets and graphics. Most recently in the current era of smart phones and Internet of Things (IoT), data growth has exploded in the form of multi-media files and device/ machine data.

To respond to rapidly growing file stores, organizations added more capacity. Storage vendors responded by introducing new models with increased capacity and lower cost per gigabyte (GB). Adding more storage increased the number of NAS devices and created critical management challenges, particularly when NAS devices were not all the same brand. In short, NAS management has become a major challenge for enterprises. File virtualization, global namespaces and gateways, are all attempts to make large NAS environments easier to manage, but ultimately, they fail due to the complexity, performance and proprietary technology lock-in issues. The bottom line is data growth has pushed the usefulness of NAS to its breaking point.

CLOUD OBJECT STORAGE

The second major change that is impacting NAS is Cloud Object Storage. Google, Amazon and Facebook pioneered the development of a new form of storage based on low-cost, commodity hardware and open source software. Now cloud storage is available to organizations that need access to large amounts of storage at a very affordable price point. Additionally, cloud storage offers built-in data protection and is available around the world. Leading examples of cloud storage are Amazon Web Services (AWS) S3 and Microsoft Azure Blob storage. For just pennies per GB per month, enterprises can store terabytes (TBs) of data at a fraction of the cost of traditional on premises NAS storage.

The open source storage software that powers cloud storage is referred to as Object Storage. Object Storage is designed for extreme scalability and high availability. It is designed around the principle of distributed storage nodes each with its own compute and storage resources. Storage nodes are combined to provide unlimited scale. Data is replicated across storage nodes to provide data protection. Access to storage is enabled using a RESTful API. A RESTful API is a type of programming language that is based on simplicity, using just a handful of basic commands (e.g. PUT and GET). AWS S3 is one example of Object Storage, and because of its widespread use, has become the defacto standard for Object storage.

For applications that require access to large amounts of storage capacity, cloud storage is best choice. Cloud storage can be used to replace on premises NAS storage. Besides unlimited capacity, cloud storage offers built -in data protection and distributed access. The following are ways which cloud storage can transform and modernize your data center.

DATA CENTER MODERNIZATION

The data center is a major cost center for enterprises and new cloud storage technology provides the opportunity to significantly reduce total data center expense. As a replacement for on premises NAS storage, cloud storage is the perfect choice. Cloud storage offers unlimited capacity for just pennies per GB per month. Unstructured data consisting of Office files, sales invoices, engineering design files, contracts, and more are perfect candidates to move to object storage. These files contain valuable business information that must be preserved for business records, regulatory compliance and potential legal discovery. These records can be stored for years, depending on the content they contain.

Best practice is to use cloud storage is a third tier of storage. First tier storage is needed to support enterprise applications such as accounting, CRM and ERP, and second tier storage delivers value for current employees who need local network file storage. But when invoices and financial records exceed one year, legal cases come to an end, engineering project finish or employees depart the company, it is time for unstructured files to move to cloud storage. Here files are secure and remain accessible for years at a very low cost. Additionally, by removing them from the local environment, they reduce the workload on your IT staff, whose job it is to maintain local NAS with backup protection, software updates and hardware maintenance.

Modern web-based applications are driving the adoption of cloud storage. Who would have thought that web-based applications like SalesForce Inc. and Microsoft Office 365, would grow so quickly? In addition to replacing traditional on premises applications with cloud-based equivalents, enterprises should consider enhancing in-house applications to use cloud storage. By using cloud compute and storage, the burden of maintaining on premises hardware and software is eliminated; thereby, freeing your IT staff to attend to more strategic projects.

If you are considering cloud storage, analyze your current environment. How much storage capacity is being used by files that have not been accessed in over a year? How many NAS devices are you currently supporting? What would be the cost savings if you significantly reduced (consolidated) your NAS environment to a lesser number of devices? What would be the cost savings if you standardized your NAS storage on a single vendor and eliminated gateways and virtual filesystems? Has your company planning a merger or acquisition? If so, this is your opportunity to modernize and consolidate your storage resources, and relocate as many old, unstructured files as you can to the cloud.

Your employees stand to benefit from cloud storage. Consider the challenge that laptops and smart phones have created for company data. Mobile devices are easily stolen, lost or damaged and create a significant risk. New cloud-based applications for personal data storage provide anywhere anytime access to data and they do a good job of keeping the data secure. Examples of cloud-based storage are DropBox, Google Drive, Box and Microsoft OneDrive. To move files into these applications, employees can do it manually, or using a 3rd-party migration vendor, you can do it for the entire company.

COMPLIANCE AND SECURITY ISSUES

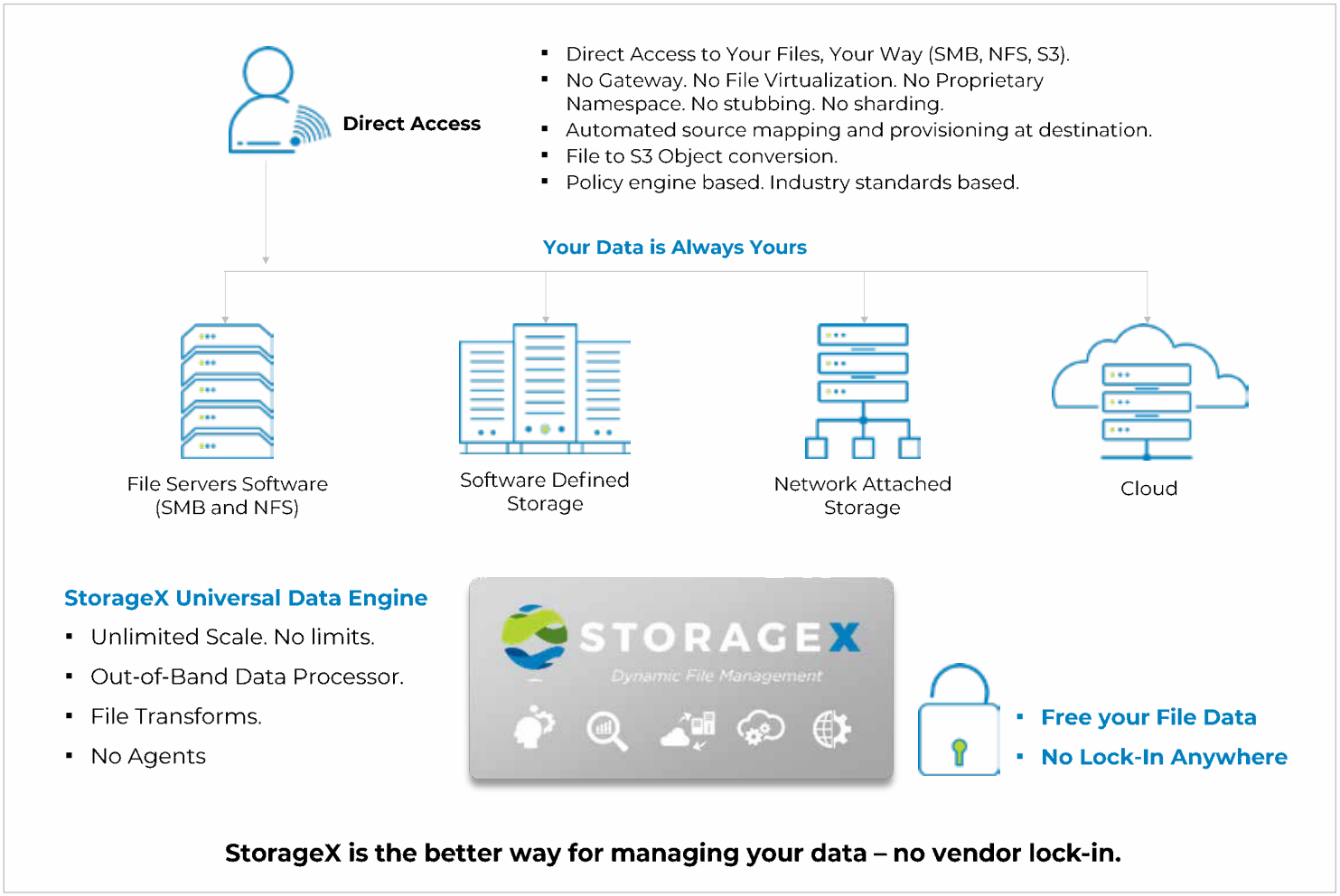
Cloud storage is not without issues and two are compliance and security. For secure, long-term retention, additional measures can be taken to ensure your data is secure. Access permission is an obvious place to start. Same as on premises storage, access permission is controlled and managed by your LDAP server (e.g. Active Directory). Additionally, cloud-based files are protected with file level encryption. Taken together, file security is the same, if not better than your on premises data center. Care should always be taken to manage file access permissions to make sure unauthorized persons (e.g. ex-employees) do not have access to files.

For compliance, government regulations place requirements for long-term retention and privacy. In the United States, the Security Exchange Commission (SEC) requires that financial records be held for seven years. In the health care industry, the Health Insurance Portability and Accountability Act (HIPAA) requires that patient records be preserved for the life of the patient. To protect data privacy, HIPAA has a strict set of rules to protect against unauthorized use of patient health information. The European Union's General Data Protection Regulation (GDPR) has rules to allow consumers to ask that their personal data be removed.
Consult with your company's General Counsel to learn what rules apply to your industry.

STORAGEX FILE MANAGEMENT

StorageX is a proven solution for moving files across heterogenous NAS storage devices. For over fifteen years, the world's largest organizations have trusted StorageX to safely manage and move petabytes (160+ PBs) of data. Data Dynamics is proud that StorageX is used by 24 of the top fortune 100 companies, including 6 of the 12 world's largest banks. New with StorageX 8.0 is file-to-object conversion. StorageX 8.0 moves NFS and SMB files quickly and securely to S3 object storage. StorageX converts your files to S3-complianct object storage automatically during the movement process.

StorageX is unique because it operates 100% out of the data path. Once files are moved, you access files directly with no vendor lock-in. No virtual filesystem, gateway, or global namespace remains between you and your data. Using a S3-compliant browser or S3-compliant REST API, you access your cloud files directly. The only cost you incur is the cost of the S3 object storage, which for AWS is just pennies per GB per month. With object storage, your data remains in its native file format and access is guaranteed for as long as open source software is available (forever).



StorageX is the better way for managing your data – no vendor lock-in.

StorageX is the key to unlocking the potential of your storage assets. Aging data that is isolated on disparate NAS devices is moved to the cloud where it is centrally managed and accessed by Business Intelligence (BI) applications that analyze the data to benefit business processes. A data transformation effect takes place when your data changes from an isolated "tactical" asset to a centrally managed "strategic" asset.

SUMMARY

At Data Dynamics, we believe that the era of NAS is coming to an end in favor cloud object storage. Cloud object storage is the future for enterprises that require access to large amounts of storage in a easy to manage location with global accessibility. Cloud storage is perfect for long-term unstructured file retention and a storage platform to power modern Internet-based applications. At Data Dynamics, we believe You should always control access to Your data – with no vendor lock-in. To learn more about StorageX and its new file to object conversion, go to www.manageyourdata.com

Data Dynamics, a global leader in enterprise data management, stands at the forefront of the industry-wide shift towards Digital Trust & Data Democracy. Trusted by 300+ organizations, including 25% of the Fortune 20, the company is recognized for its commitment to creating a transparent, unified, and empowered data ecosystem. Whether addressing data risk, privacy, sovereignty, optimization, sustainability, or facilitating seamless, policy-driven data migration across hybrid and multi-cloud environments, the company is ushering in a new era where data ownership, control, & actionability reside with the data owners.

DATA DYNAMICS

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