INGESTING, PROTECTING, AND PRESERVING DATA

StorNext File System Delivers End-to-End Lifecycle Management for Unstructured Data

Consider the lifecycle of data: On your vacation, you take a picture and share it with others to show them how great your vacation was. You may choose to create a postcard from the picture for the holidays or make it into a thank you card. After a while, you are not looking at the picture as much, but it is still valuable and irreplaceable. You might print it or put it into a cloud archive and retain it for a long time. The same happens with data created across industries.

1. **Ingest** - At the time of data creation it must be ingested into an environment that can accommodate key operations, such as analysis, manipulation, rendering, synthesis, and streaming. This step requires predictable performance and ease of access.
2. **Protect** - Once data has been ingested, it must be protected against unintended events, such as deletion, infrastructure failure, disasters, ransomware, and corruption. To ensure protection, an offline copy of the data must be created.
3. **Preserve** - Unique instances of data retained for long periods of time require integrity assurances. It is important to be certain that data created today is accessible five, ten, twenty, fifty years later. Preserving data over time requires periodic health checks, resiliency of underlying infrastructure, and standards-based access to data.

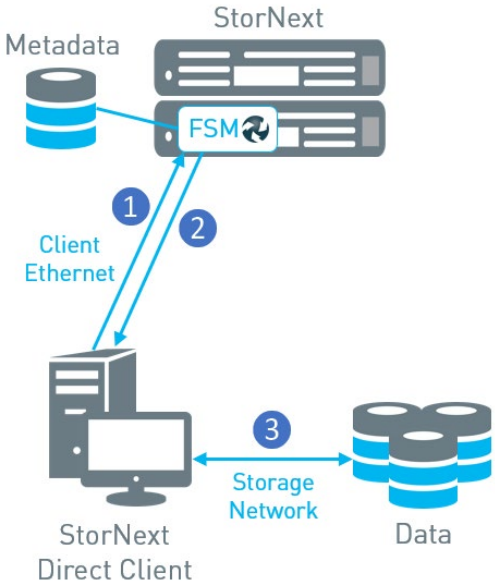
StorNext®

FEATURED BENEFITS

- **High Performance When Needed**
  Delivers highly parallel access to data at low latency for the most demanding application workloads.
- **Automate Data Placement**
  Move data to the most appropriate storage tier for optimized efficiency of performance and capacity.
- **Protect Data**
  Ensure data availability whether it is active or static. Protect against data corruption or unintended deletion by creating a secondary, independent copy.
- **Preserve Data over Its Lifecycle**
  Deliver data integrity assurance, redundancy against ransomware and site failures while leveraging most cost-effective infrastructure.

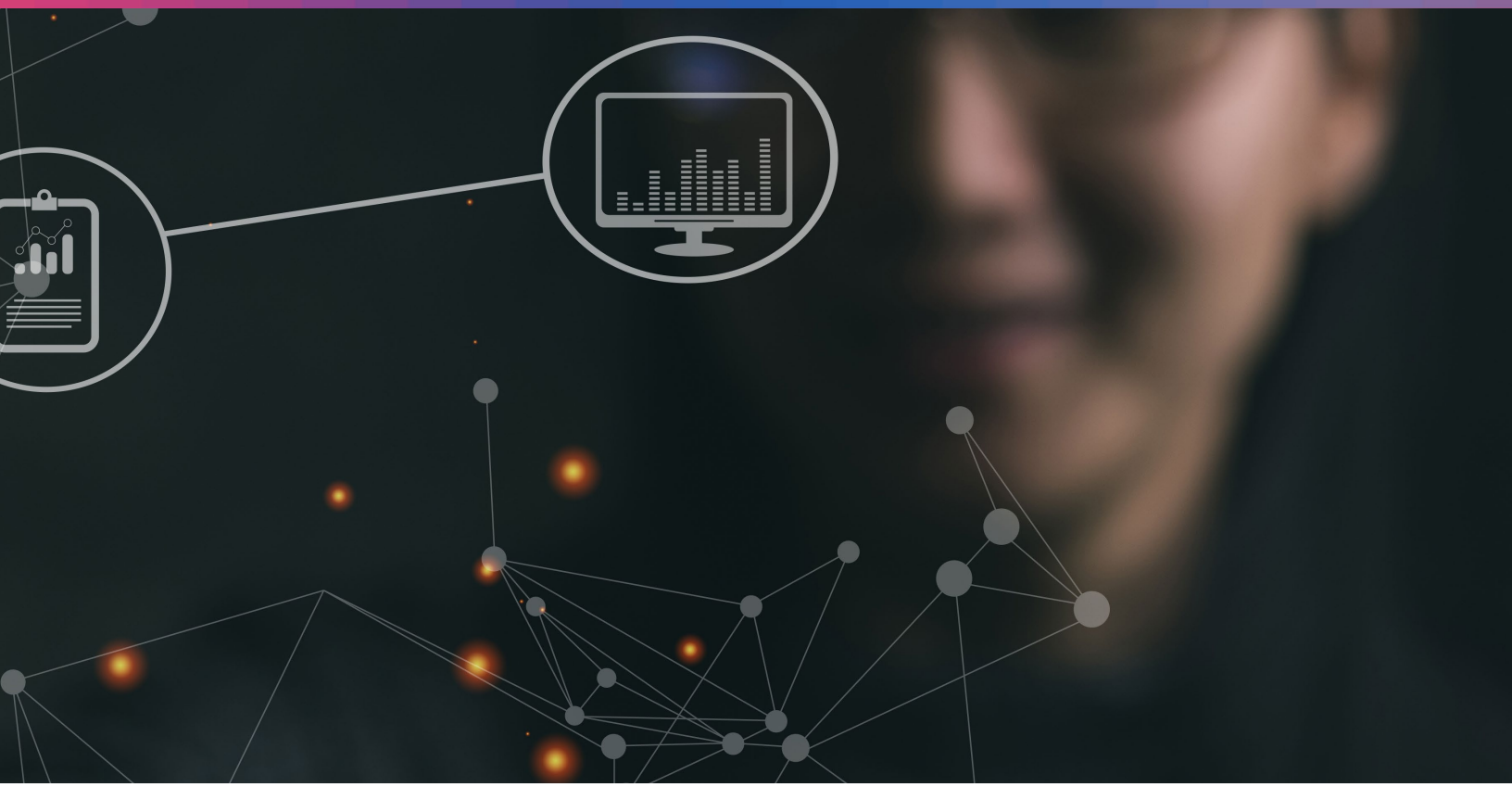
HIGH-SPEED, LOW-LATENCY DATA INGEST

StorNext File System delivers high throughput at low latency. Whether it is data streaming from sensors collecting information about atmosphere or the flow of traffic at a given intersection; data created by microscopes, telescopes, or cameras; or data generated by financial application, AI, or multi-dimensional models, the key is that data is delivered at low latency, high throughput, and in parallel streams. Performance can scale independent of capacity, where capacity of the overall system consists of fast tier cache and lower-cost tiering of storage without affecting file accessibility or visibility.



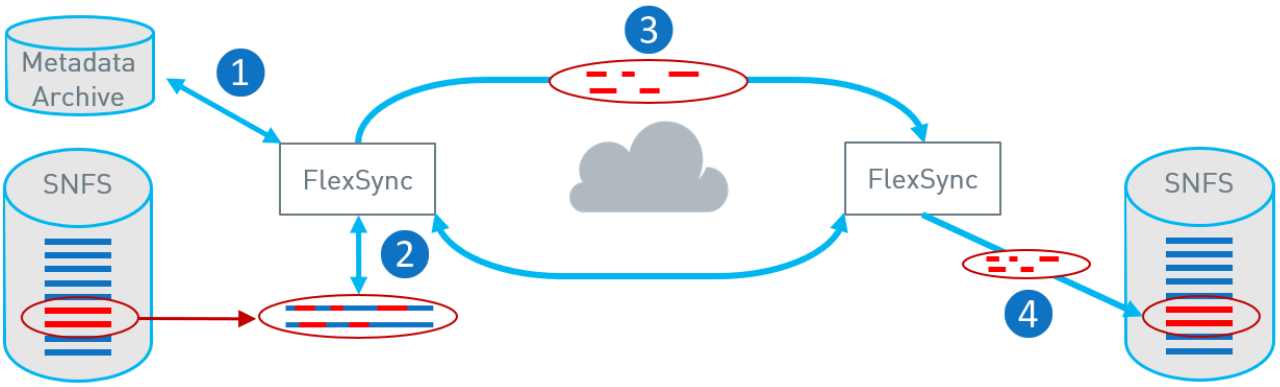
No.	Steps During Read	Steps During Write
1	Where's the data for file ABC?	Where can I write?
2	FSM: Block XX to YY	FSM: Block AA to BB
3	Read data direct from storage	Write data direct to storage

StorNext Clients communicate directly with storage for maximum performance.



PROTECT VALUABLE FILE ASSETS WITHOUT AFFECTING PERFORMANCE

StorNext FlexSync™ software tracks the files that have been modified and copies the changes to a separate file system for protection. If something happens to the primary copy of data, applications and users can access data from a secondary location. The system can be configured with how many FlexSync versions are kept over a defined period of time based on business RPO and RTO requirements. If a file is deleted or corrupted, an administrator or end user may go into the backup copy and roll it back to a point in time before the deletion or corruption occurred.



No.	Action
1	Query Metadata Archive for new or changed files on source
2	Compare block checksums, identify new or changed blocks
3	Send new and changed blocks only to target
4	Changes merged into target StorNext File System (SNFS)

FlexSync Delta Block Compression only replicates changed blocks for maximum efficiency.

PRESERVING DATA OVER ITS LIFECYCLE

Data is one of the greatest assets any organization has. At scale, it is challenging for organizations to ensure that these valuable assets are preserved and can be retrieved in a timely manner when necessary. StorNext platform leverages preservation features in its active archive solutions to ensure that data remains valid over time. These features are:

- **Immutability** – In many industries it is critical to know that the data put into an archive is the same data that will be read out years later. Immutability prevents any changes to be applied to the file. The duration of immutability may be set ahead of time and will terminate only when the policy sates it is ok to do so.
- **Data Integrity Checks** – Data stored on any media (disk or tape) may experience silent bit corruption or demagnetization over time. It is important to check on the health of the data over time and be able to correct any errors found.
- **"Set it and forget it"** – Archives must be accessible over long periods of time; they must have the agility to respond to the changes in the market, whether it is the introduction of new media, protocols, or system architectures. The environment must be easy to scale and adaptable. Once it is deployed, no forklift migrations or no complex format conversions.
- **Secure data** – Ransomware has been causing much anxiety in the market; attackers are taking over key data assets and holding them ransom. Ability to protect data through isolation, airgap, and immutability ensures that protection.
- **Disaster Protection** – Things happen, and it is critical the risk of data loss is as close to zero as possible. This requires protection against drive failure, chassis (components) failure, or site failure. Erasure encoding across media (tape and disk) with geographic dispersion allows for the business to set an acceptable risk threshold and deploy the system to reflect it.

StorNext leverages advanced features and architectures of its ecosystem, consisting of Scalar® tape libraries and ActiveScale™ storage to deliver long-term preservation of organizations' most valuable data assets.

SUMMARY

All data has a lifecycle; organizations have struggled with managing their data's lifecycle due to lack of standards, need to move large data sets, cost associated with managing storage systems, ensuring data protection and viability, and maintaining access to data over time. Quantum has integrated its unique products into a comprehensive platform for data lifecycle management. It starts with StorNext File System that offers high throughput at low latency for large data sets. It enables multi-stream ingest and high performance access for data for analytics. Data is always protected using FlexSync software providing administrators and application owners peace of mind. Once data becomes less active, it can be preserved in its active archive tier that offers data integrity, immutability, Ransomware protection, disaster risk mitigation, ease of use and long-term accessibility to data. The end-to-end solution is uniquely positioned to provide value to any organization struggling under the weight of data.

FOR MORE INFORMATION

For more information, visit: www.quantum.com/stornext

Quantum

Quantum technology and services help customers capture, create, and share digital content—and preserve and protect it for decades at the lowest cost. Quantum's platforms provide the fastest performance for high-resolution video, images, and industrial IoT, with solutions built for every stage of the data lifecycle, from high-performance ingest to real-time collaboration and analysis and low-cost archiving. Every day the world's leading entertainment companies, sports franchises, research scientists, government agencies, enterprises, and cloud providers are making the world happier, safer, and smarter on Quantum. See how at **www.quantum.com**.

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SB00205A-v01 Nov 2020