



MagnaStor

Reliable Archiving. Assured.



Information archiving is an increasingly pressing issue for companies in every industry. In the digital world of today's knowledge-based economy, employees create, communicate and store vast amounts of data every day that is critically important to your business. With the exponential growth in data and a dramatic rise in governmental regulation over how information is preserved and authenticated, organizations are challenged more than ever before to implement efficient and affordable storage systems that will keep pace with their needs.

Whether organizations need to protect their digital assets, demonstrate compliance, respond to e-Discovery requests or simply retrieve data from a precise point-in-time, a reliable data archive solution has become an indispensable part of a sound business strategy.

Introducing

MagnaStor

Magnetic disk offers a high-performance storage option with an ever-shrinking price tag, but its inherent characteristics require careful management to attain the level of reliability needed for long-term data preservation.

MagnaStor is engineered to overcome the limitations of magnetic storage. It offers the fundamental benefits of WORM (write-once, read-many) operation on magnetic media, preventing operations from overwriting previously written physical sectors on the disk. A fully managed environment within the file system itself uniquely tracks and monitors data throughout its lifecycle. Continuous monitoring detects and autocorrects hardware-related errors, tampering or inconsistencies.

The result is a reliable, easy-to-use file system for compliance archiving.

We know data storage.

For over two decades, thousands of companies in dozens of countries around the world have trusted us with the preservation of their sensitive information. MagnaStor is purpose-built to leverage the high performance and low cost of magnetic disk while delivering the reliable data protection benefits demanded by long-term archival storage.

“The way that organizations manage and store digital information has never been under greater scrutiny than it is today. Regulators, courts, shareholders, partners, customers and others have high expectations for the integrity, security, and privacy of the information we control. As such, it is critical that organizations look for storage and archiving solutions that comply with the most stringent requirements while still delivering enterprise-class performance.”

Barclay T. Blair
Director, FCS Information Governance



Reliable disk-based archiving

MagnaStor is implemented as a native Windows installable file system driver with an embedded policy-based journaling engine at its core. The journaling engine examines each file system request against an organization's defined policy. Approved operations – such as creating a file or directory, writing to or renaming a file, and file retention/destruction operations – are permanently recorded in the archive. Digital fingerprints are applied to all file system contents, including the journal, and are used to validate the entire system's integrity and authenticity.

MagnaStor's journaling engine also allows each file to be retrieved and reconstructed from the journal records exactly as it existed at any recorded point in time. The journal operates securely inside the operating system kernel, and is the authoritative source for rendering current and historical views of any file, audit and forensic investigations and chain-of-custody tracking.

MagnaStor checks the validity of every file system structure and all user data before it is delivered to users or applications. Health notifications provide advance warning of potential hardware errors, alerting administrators of potential issues before they occur. Silent data corruption, inconsistencies, or unauthorized attempts to alter data are detected, logged and repaired automatically in real-time.



Unmatched authenticity

The failure to produce emails or files that prove to be unaltered and authentic during an e-Discovery process can be an expensive proposition for companies today – both from a financial and brand perspective. Magnastor is built to withstand the rigors of compliance and designed to support e-Discovery and litigation processes with clear audit trails of the entire chain-of-custody for each file system object.

Competing archival solutions typically segregate elements of the archive and historical records in external, separate systems and databases, each with their own vulnerabilities and implementation complexities that make it very difficult to confidently validate the chain-of-custody for a given file.

MagnaStor's unique approach binds the historical journal record, all file system structures and user data in an unbroken chronological journal for each file. As a result, the file system itself serves as a clear, authenticated and immutable audit trail of the file system. There is no ambiguity in a MagnaStor journal record. All journal entries are permanently recorded and retained across all backup, restore or migration operations. This unified approach to data archiving preserves data intact in a single place, ensuring that there are no disconnects between file data and file history and giving businesses the confidence that all retrieved files reflect their exact, original state. Audit reports, derived directly from the file system journal record, allow auditors or non- IT personnel to easily follow the chain-of-custody for each file and verify its authenticity.





MagnaStor's adherence to industry standard interfaces and focus on portability minimizes cost of ownership and maximizes ROI on both your data and device investments – today and for the future.

Breakthrough TCO in archiving

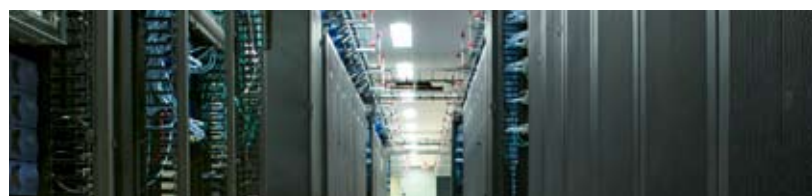
The pressure to reduce IT costs and decrease the burden on IT departments has never been greater. MagnaStor offers a breakthrough in the Total Cost of Ownership for data archiving. As a software solution, MagnaStor is completely hardware agnostic and leverages the cost-effectiveness of magnetic disks. Organizations can protect their existing investment in storage and are not “locked-in” to long-term hardware investments from a single vendor.

A powerful and easy-to-use browser-based graphical user interface (GUI) makes installing, configuring and administering MagnaStor simple. System administration and monitoring is largely automated, demanding minimum operator intervention to maintain the health and integrity of the archive. The native file system interface makes MagnaStor non-disruptive to users and applications can interact with MagnaStor with little or no changes to regular processes. The GUI provides detailed real-time information on file system performance, diagnostics, logging, and auditing as well as the ability to control compliance settings for file retention and disposition.

MagnaStor file system volumes are platform and operating system independent. As your infrastructure evolves, volumes can be easily moved to a new host without requiring rebuilding or conversion.

The solution can be scaled to meet precise business needs. Low system overhead maximizes storage utilization, with each volume supporting up to 2 Petabytes of information. File operations are pre-ordered before writing to the storage system and dispatched with extremely low internal overhead resulting in very low-latency, high-performance file recording and retrieval.

MagnaStor volumes are fully self-contained and have no external dependencies to ensure easy system administration over time. MagnaStor's adherence to industry standard interfaces and focus on portability minimizes cost of ownership and maximizes ROI on both your data and device investments – today and for the future.





Because MagnaStor preserves all file and directory operations intact, the entire file system, directories or individual files from any point in time can be recovered for audit or review purposes.

File preservation now, and for the future

Whether for compliance, corporate governance or digital asset protection, your archive must preserve data in its exact state for easy retrieval and authentication later.

MagnaStor maintains a complete genealogy of every file across limitless hardware and software migrations. When your archive is moved to a new hardware platform, MagnaStor easily migrates the entire archive, individual files, or directory trees while retaining all the historical journal records. Even migrations are recorded in the journal, providing a clear account of the archive's history.

Through its built-in journal, MagnaStor provides a self-checking, tamper-resistant record of the entire file system history. The journal captures each permitted file operation and sequentially allocates new storage at the media level. For each operation, a new event is added to the file system metadata journal and new file data blocks are allocated for each file write operation. As users create or modify data, storage space allocated to both file system metadata and user data is never overwritten or deleted in MagnaStor. Instead, each permitted operation incrementally extends

the internal file system metadata journal, creating an ongoing record of file history and incremental data changes.

The MagnaStor file system ensures your files and data are protected through multiple layers of security and policy checking. However, regardless of the policy in effect, the MagnaStor media continues to operate as a strict WORM device, preventing operations from overwriting previously written physical sectors on the disk. Because MagnaStor preserves all file and directory operations intact, the entire file system, directories or individual files from any point in time can be recovered for audit or review purposes.

MagnaStor provides a flexible approach to policy configuration, allowing users to manage corporate-wide and departmental needs through a tiered Policy Manager that can be applied at the file system, directory or individual file levels. Policy definitions provide exact control over how the file system interacts with users and applications including data retention or disposition rules to ensure that each file is preserved in its original state throughout its lifecycle.



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