QSTAR® TECHNOLOGIES

Joint Solution Brief

QStar Archive Manager and Spectra Logic Tape Libraries

QStar Technologies software and Spectra Logic tape libraries together provide a scalable, secure, and cost-effective long-term data management solution designed for organizations facing rapid data growth, compliance requirements, and the need for resilient cyber protection.

By combining QStar's intelligent data management and archiving software with Spectra Logic's enterprise-class tape infrastructure, customers can deploy a highly efficient archival platform that supports both operational and deep archive use cases across high performance computing, media and entertainment, government, video surveillance, telecommunications, and many other types of large enterprise environments.

QStar Network Migrator and QStar Archive Manager software deliver policy-driven data lifecycle management that enables organizations to automatically migrate and manage data into lower cost tiers, including disk, object storage, cloud, and tape.

QStar Network Migrator intelligently moves inactive or infrequently accessed data from expensive flash-based primary storage to lower-cost archival storage while preserving accessibility and metadata integrity.

QStar Archive Gateway Products

	Archive Manager	Data Director (Archive Manager with mirrored writes)	Archive Replicator	Global ArchiveSpace™
Servers / Nodes	Single	Single	Single / Dual (local / remote)	2 to 64 Nodes
3-2-1 Archive Strategy	Write to primary media and copy later	Write to primary and secondary media simultaneously	Write up to four copies to same or different archive technologies	Provides all three options (copy, mirror or replicate)
Operating System	Windows or Linux	Windows or Linux	Windows or Linux	Linux
Protocols Supported	S3, SMB or NFS	S3, SMB or NFS	S3, SMB or NFS	S3, SMB or NFS
Archive Technology Supported	One of Tape, Cloud, Object Storage or Disk	Tape	Any combination of Tape, Cloud, Object Storage or Disk	Any combination of Tape, Cloud, Object Storage or Disk
Retention Management / WORM features	Yes	Yes	Yes	Yes

Archive Manager completes the software layer by presenting archived data through a transparent file system interface or cloud bucket, allowing users and applications to continue accessing files without changing workflows.

Archive Manager can also be upgraded to allow replicated writes to multiple locations and / or to multiple technologies (tape, public cloud and private cloud). This provides enhanced data protection by simultaneously creating multiple instances of the same archived data and multi-node configurations for high performance.

Spectra Logic tape libraries provide highly reliable, high-capacity storage infrastructure optimized for long-term retention and cyber resilience. Spectra libraries support modern LTO technology and enterprise tape environments, offering exceptional storage density, energy efficiency, and media longevity.
Tape remains one of the most economical and sustainable storage media available for large-scale archives, especially for organizations retaining multiple petabytes of unstructured data over many years.

Together, the integrated solution enables organizations to reduce primary storage costs while maintaining rapid visibility into archived content. QStar software can be installed on latest Windows or Linux servers and automates file placement policies based on age, size, project status, or user-defined criteria.
Once archived, data is securely stored on Spectra Logic tape systems, which can be configured for offline or air-gapped protection against ransomware and cyber threats. This layered approach provides both operational efficiency and enhanced security for critical digital assets.

"Our archive environment had to support both preservation of decades of Earth observation data and continuous real-time ingestion from active missions. QStar Data Director (Archive Manager with mirrored writes) and Spectra Logic T950 gave us a modern replacement for our end-of-life Oracle Library and SAM/FS infrastructure while allowing a smooth migration path from legacy LTO and proprietary T10000 media to LTO-9. The scalability and policy-driven management were essential in helping us protect more than 25PB of mission-critical scientific data for the long term."

Dott. Daniele Iozzino
Head of Storage Management
ESA – European Space Agency

Spectra Logic Tape Library Range supported by QStar

Library	TFinity Plus	T950	Spectra Stack
Max. No. of Frames / Modules	45	8	7
Max Slot Count	56,400 | LTO	10,020 | LTO	560 | LTO
Max Native Capacity	2.2 EB	400.8 PB	22.4 PB
Max Compressed Capacity [1]	5.6 EB	1 EB	56.0 PB
Max Drives [2]	168	120	42 HH | 21 FH
Max Native Throughput (TB/hr.)	241.9	172.8	45.4 HH | 30.2 FH
Max Compressed Throughput (TB/hr.)	725.8	518.4	113.4 HH | 90.7 FH
Max SLS Partitions	16	16	20
Tape Drives Supported	LTO | IBM TS11XX | Oracle T10000	LTO	LTO
Dual Robotics	Yes	N/A	N/A

1. LTO compression ratio is 2.5:1
2. Drive types are LTO-10 full-height unless noted.

The joint solution also supports hybrid and multi-tier storage strategies. Frequently accessed content can remain on high-performance disk or object storage, while inactive data is migrated to Spectra tape libraries for economical preservation. QStar's hierarchical storage management capabilities ensure seamless movement between tiers without disrupting end-user access.
This architecture allows organizations to scale archival capacity independently from production storage, improving infrastructure efficiency and budget predictability.

QStar provides enterprise-class data archiving solutions for High Performance Computing (HPC) environments, enabling organizations to efficiently manage and protect massive datasets generated by research, engineering, AI, and scientific workflows. QStar's platform integrates seamlessly, using DMAPI (Data Management API) with leading parallel file systems including Lustre, IBM Spectrum Scale (GPFS), and BeeGFS, delivering policy-driven data movement, transparent tiering, and long-term archive capabilities without disrupting active compute operations. By intelligently migrating inactive or completed project data from expensive primary HPC storage to lower-cost disk, object, tape, or cloud storage tiers, QStar helps organizations optimize performance, reduce storage costs, and maintain accessibility to critical data.

"Scientific research generates enormous volumes of heterogeneous data, and we needed a storage platform that could scale without compromising accessibility for researchers. With QStar Network Migrator's integration into our Lustre environment along with QStar Archive Manager and Spectra Logic Stack tape infrastructure, we can automatically migrate inactive data to tape while keeping it transparently accessible to users. The solution gives us the flexibility to support both high-performance active workflows and cost-effective long-term archival growth."

Dott.ssa Alessandra Zanichelli
Researcher and Head of Storage Area
INAF Bologna – Institute of Radio Astronomy

"We are digitizing one of Italy's most important audiovisual archives, and every piece of content is culturally unique and irreplaceable. QStar Archive Replicator and Spectra Logic Stack Libraries provided a reliable platform that allows us to preserve millions of digitized films with the integrity, authenticity, and accessibility required for permanent retention. The ability to manage data replication between our Rome and Turin sites was also a key part of our long-term preservation strategy."

Ing. Giorgio Balocco
Head of Storage and Archive Management Area
RAI Teche

For media and entertainment customers, the solution supports preservation of high-resolution video assets, completed projects, and raw production files while enabling collaborative access to archived material.
Government agencies, research institutions, and surveillance environments benefit from the solution's ability to retain massive datasets with strong durability and chain-of-custody controls.

The combination of QStar Archive Manager and Spectra Logic tape libraries delivers a future-ready archival platform that balances accessibility, scalability, and cost efficiency. By integrating intelligent data management software with proven tape storage technology, organizations can modernize long-term data retention strategies while improving cyber resilience, reducing operational costs, and ensuring reliable preservation of critical information for decades to come.

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