



OSM Object Storage Manager

Flexible, Seamless Scalability, Unparalleled Content Security - A Smart Choice

THE STORAGE CHALLENGE

The continuous growth of enterprise data, especially unstructured data, is creating increasing challenges for IT managers. Each new primary storage device added to address the issue increases the backup workload.

For unstructured data that is static and unchanging this is an unnecessary use of resources. Those files should be securely protected for only as long as an organization requires them, before being automatically deleted to make room for new data. As up to 80% of an organization's files are typically static, removing them from the backup allows the process to be streamlined, speeding both backup and restore activities. Similarly, files that need to be retained for pre-determined periods, to meet internal mandates or compliance rules, are best stored outside of an organization's primary storage infrastructure.

The solution for managing and storing unstructured data needs to be flexible, affordable, easily scalable and secure. With most solutions an organization has to trade off at least one of these requirements. If they find a fast, secure solution it often is too expensive and offers no flexibility. If low-cost then the solution does not scale, is too slow and provides limited security.

THE QSTAR OSM - OBJECT STORAGE MANAGER

QStar took a fresh look at data management when developing its Object Storage Manager (OSM) Solution. Combining an innovative object-based storage engine with existing QStar software technology, OSM offers the flexibility to store a user definable number of copies of unstructured data on low-cost, industry standard, hard disk systems and tape or optical libraries. This eliminates the need for external backup.

The solution uses standard S3 API commands for integration with third party applications and optionally SMB or NFS through a file gateway, making OSM available for all other applications that cannot use S3.

As businesses change over time, the solution allows for seamless scalability to multiple petabytes and to store billions of files. New storage technologies can be added without disruption, to complement existing technology. The QStar OSM solution is self-managing and self healing; continuously monitoring and assuring the immutability and reliability of your data, until the final phase of the data lifecycle when the data is securely destroyed.

Encryption options are included in the solution, allowing only authorized access to on-line and off-line archive files. For disaster prevention, this flexible solution can create remote replica or mirror copies using QStar's Network Migrator, Archive Replicator or Data Director.

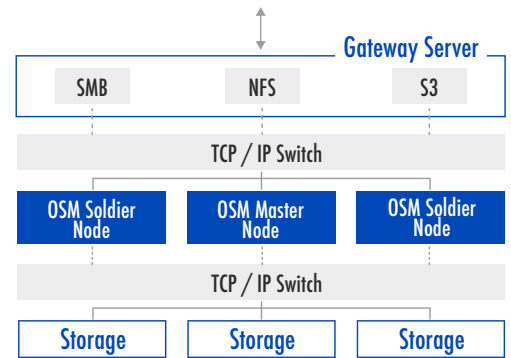
QStar's Object Storage Manager provides a comprehensive data storage solution using multiple technologies, for those businesses and organizations already dealing with hundreds of terabytes or petabytes of data, and for those who are thinking about how to manage and protect future petabytes.

FLEXIBLE INTEGRATION AND SEAMLESS SCALABILITY	UNPARALLELED CONTENT SECURITY AND PROTECTION	A SMART CHOICE
<ul style="list-style-type: none"> • Use low-cost industry standard storage solutions with a minimum of 3 nodes • Future proof' easy integration, keeping costs down when adding new technologies • Self-managing storage provisioning and load balancing as additional nodes for performance and capacity are added • Seamless scalability to over 10PB using the maximum configuration of 64 nodes • Use of approved iSCSI, FC, SAS or Infiniband storage systems • Scale Up and Scale Out architecture allows more Compute Nodes and more Storage Nodes to be added independently 	<ul style="list-style-type: none"> • Provides a foundation for compliance • Self Healing - Continuous storage monitoring eliminates data loss. In the event of a drive failure, OSM will automatically create new copies of data to new drives • Retention and disposal management creates a WORM storage environment to assure file data integrity, authenticity, and protection • Encryption options included allows secure yet easy authorized file access • Legal Hold prevents deletion of data during an e-discovery process. • Cold object copy options for disaster prevention 	<ul style="list-style-type: none"> • Optimizes storage resource utilization • Provides compression to reduce disk requirements • No hardware vendor lock-in • Reliable data availability • Eliminates the need for archive backup • Supports greener storage technologies • Reduces administrative costs, capital and operational costs • Delivers low Total Cost of Ownership • Promotes long term investment protection • Power down of CPUs, nodes or disks to reduce power costs and create Cold Storage environment

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OSM – SYSTEM VIEW

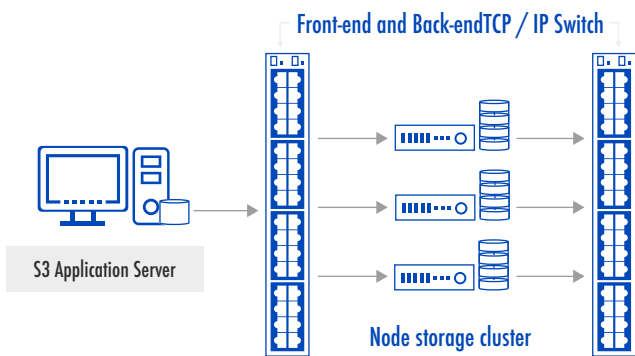
- OSM Gateway presents S3 API or optionally SMB, NFS or FTP for network storage
- Front-end TCP/IP switch allows any OSM Node to deal with requests (read, write, verify)
- One Node negotiates to become the “Master” Node, others become “Soldiers”
- Back-end TCP/IP switch allows communication between nodes – heartbeat is constantly monitored
- TCP/IP switch allows iSCSI storage devices or SMB / NFS storage devices to be used
- Optimum Solution consists of three nodes and disassociated storage (using iSCSI, SAS or FC) – requires additional SAS or FC switch
- Supports cold object copy (supporting multiple targets) to prevent object loss, data hijacking (ransomware) and virus protection
- additional levels of redundancy



This comprehensive solution allows for flexible options to suit each organizations archive needs. Below are some common configurations.

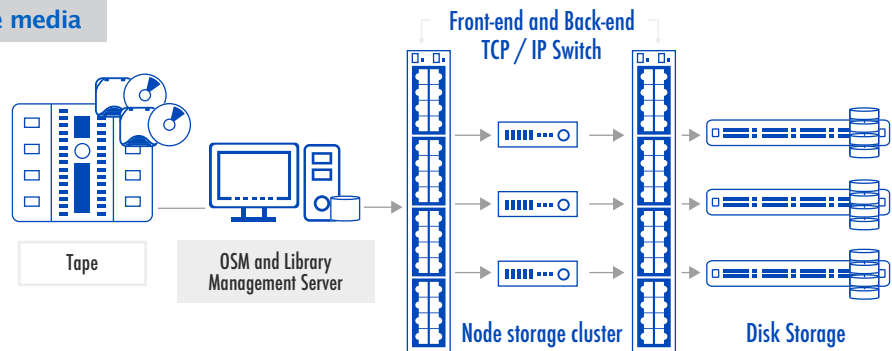
Entry Level Configuration

A very affordable solution; Node with integral JBOD or RAID are configured to store and manage a user definable number of copies of static data.



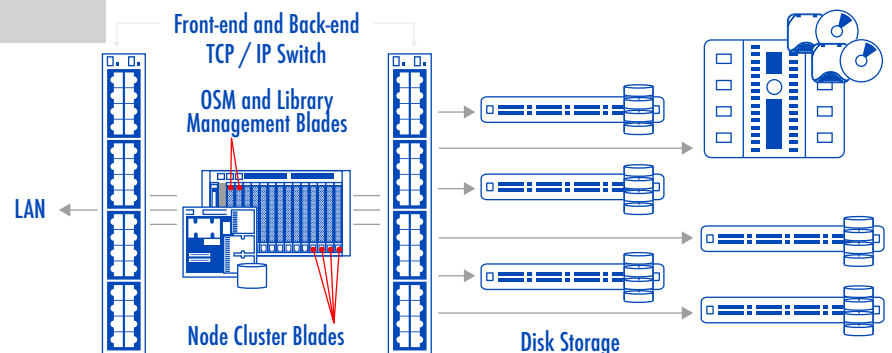
Preferred Configuration with copy to removable media

Offering more flexibility by using iSCSI, SAS, or FC attached disk to the OSM servers, which disassociates the storage for improved resilience. Optionally, a replica of data can also be stored to tape or optical.



Optimal Configuration

The use of blade technology offers significantly more scalability of capacity and performance. Optionally, tape or optical can become part of the solution. This allows data verification to be run on files stored on removable media in a library. Scale Up or Scale Out through the addition of independent compute nodes or storage nodes



QStar also provides “Kaleidos”, a object storage solution that includes preconfigured hardware nodes using OSM.

For more information, please contact the archiving experts at QStar:



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