



# Key Management for Cloud Document Security



## Business Situation

Headquartered in the US, and with offices in the UK and Australia, NetDocuments is a leader in cloud-based document and email management, with hundreds of thousands of users around the globe. They operate an expanding network of datacenters in the US, Europe and Asia-Pac to service this worldwide customer base and meet growing customer demand.

A guiding strategic principle and differentiator is to provide the highest level of protection, compliance, and availability to the digital assets, addressing all potential risks. All data is encrypted to the highest standards, with one or more levels of encryption delivered at a customer level.

## Challenge

NetDocuments is expanding their databases to meet steep customer growth while continuing to enhance the protection provided, which is an important component of their brand and image. As part of this effort, they want to implement the best-in-class key management to generate and secure the master and document encryption keys for each of their customers.

The NetDocuments team is globally satisfied with existing solutions, but wants to assess new options to maintain the company's leadership position, grow their customer base, and deploy an additional encryption layer for an even higher level of security.

There were several high priority considerations when assessing the solution:

- **Unbeatable security:** a primary consideration was to deliver the best foundation for strong encryption, delivering security, compliance to regulatory requirements and peace of mind to customers.
- **Interoperability and flexibility:** the solution needed to integrate seamlessly with existing infrastructure to deliver a high performing and cost effective implementation.
- **Scalability and speed:** the solution needed to be able to handle large amounts of data without performance degradation, and to allow flexible expansion as the customer base continued to grow.

The above requirements needed to be met in a cost competitive manner.

# CASE STUDY



## Solution

The solution is made up of multiple, redundant, and replicating qCrypt-xStream™ appliances that will be deployed in NetDocuments datacenters around the world. These will be implemented in a multi-master configuration providing highly available key generation, storage, and lifecycle management from all active nodes.

For the highest security, the qCrypt-xStream appliance incorporates a quantum-based high speed true random number generator ensuring that all keys have full entropy, removing reliance on deterministic random numbers and delivering output that is totally independent for each key and each user. The 1Gbit/s throughput of the random number generator provides sufficient throughput to meet the master key needs for each datacenter with room for expansion. The solution provides centralized control and management, is fully interoperable and delivers best-in-class key management functionalities such as full key life-cycle management, object and usage policy management, fine grained policy control and logging. It delivers full replication assurance allowing both logical and physical segregation of managed cryptographic objects into separate domains to meet multi-level, regulatory, and operational security needs.

NetDocuments application servers will provide the user interface and business logic for the service. Customer documents will be encrypted with unique keys generated by qCrypt-xStream. Document keys will be wrapped using master keys to ensure isolation between customers, and to provide very high scalability – supporting over one billion uniquely encrypted individual documents. Dual control for document access will be supported as an option by using two layers of key wrapping with one set of wrapping keys managed by the customer, and a second set of wrapping keys managed by the NetDocuments application.

## Benefits

The key management solution delivered by QuintessenceLabs will allow NetDocuments to:

- Continue the growth of their datacenters and customer base without sacrificing quality or security and meeting the compliance needs of their global customer firms and corporations.
- Reinforce their brand as the leader in terms of data security by using the highest quality keys with full replication.
- Manage multiple layers of encryption keys for their customers
- Integrate seamlessly and flexibly with existing and planned infrastructure through vendor-neutral interfaces

This unique blend of capabilities provided a clear demonstration to NetDocuments' end users that the security of their digital information is in the best possible hands, reinforcing NetDocuments' position and helping grow their market share.



## QuintessenceLabs – the Global Leader in Quantum Security

QuintessenceLabs' portfolio of modular products addresses the most difficult security challenges, helping implement robust security strategies to protect data today and in the future.

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