



NEURO RX

CASE STUDY



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INTRODUCTION

NeuroRx is dedicated to working with the pharmaceutical industry to facilitate clinical trials of new drugs for multiple sclerosis (MS) and other neurological diseases. NeuroRx provides professional management of all MRI-related study activities and promptly delivers precise MRI outcome measurements that are performed in a regulatory compliant environment.

NeuroRx uses advanced image analysis techniques to provide precise outcome data that maximize study power. Images are corrected for inhomogeneity and co-registered for perfect realignment and increased precision. Analyses are conducted in 3D, rather than on slices, so that information can be properly related to structures that span multiple slices. Customized automatic segmentation techniques are combined with expert supervision to maximize the precision of outcome measures related to both lesional and non-lesional pathology, as well as brain volume changes.

NeuroRx also has extensive experience with acquisition and analysis of non-conventional MRI techniques, including magnetization transfer imaging (MTR) and magnetic resonance spectroscopy (MRS). **To meet the needs of customers worldwide NeuroRx must protect and handle data in accordance with each regulating body as well as ensure efficient and cost effective data processing and reporting.**

BACKGROUND AND CHALLENGES

To meet the regulatory and compliance requirements for the health patient information and brain images NeuroRx needed a performant

Company:

NeuroRx Research

Industry:

Life Sciences

Challenges:

Data Encryption without impact to performance

Ability to manage, rotate and destroy encryption keys

Reliable replication between sites

Scalability to support growth and long term data retention

Meet expanding data security regulatory requirements

Solution:

2 x BrickStor TI-3202

Benefits:

AES-256 FIPS 140-2 Encryption with zero impact to performance

Integrated encryption key management

Single Pane of Glass Management

Self-healing architecture detects and corrects bit errors for paramount data integrity

Multiprotocol Support (SMB, NFS, AFP, iSCSI)

Inline lossless compression

Increase capacity without downtime

Lower power space and cooling requirements

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“We needed a storage solution that had encryption with internal key management along with policy-based data retention and replication to meet all of our global compliance requirements. We have had the system in production for over a year and we’ve been very satisfied with the product, and especially with the support we’ve gotten from RackTop.”

Christopher Murtagh, *Director of IT Operations*
NeuroRx

data storage solution to encrypt all of their data at rest and to replicate data between their primary and secondary facility for data backup and disaster recovery purposes. NeuroRX required a solution that would support a variety of workstations including: Linux, Windows and Apple desktops. With data center space at a premium they also needed a solution with minimal size weight and power (SWaP) requirements.

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Christopher Murtagh

- Director of IT Operations, NeuroRx

THE VISION

NeuroRx needed a solution to:

- Encrypt data at rest without a performance impact
- Efficiently replicate data between the primary and secondary data center for disaster recovery and backup
- Offered WAN efficient replication with bandwidth throttling
- Easily implement before an impending audit

NeuroRx wanted to avoid:

- Purchasing additional software for data encryption
- Needing to use third party software for replication between the primary and secondary data center

THE SOLUTION: 2 X BRICKSTOR TI-3202

BRICKSTOR

After comparing options available in the marketplace, NeuroRx selected Racktop Systems and its data storage and management solution BrickStor with the myRack manager user interface.

The BrickStor solution is designed specifically to meet life sciences’ regulatory challenges and compliance requirements. BrickStor’s Operating System (BSROS) is capable of managing AES-256 Self Encrypting Drives using its internal key management solution. Admins can set, rotate and destroy keys to meet critical health patient information (HPI) regulatory requirements without additional software.

BrickStor’s internal data protection and replication capabilities allow data sets to be snapshotted and versioned based on policies set by the customer to meet organizational recovery point objectives (RPO). Data protection policies are automatically applied as the storage is provisioned making it atomic and immune to human error. Individual data sets are replicated to a secondary location using WAN efficient compressed block replication of changed data only. Integrated bandwidth throttling allows customers to restrict bandwidth usage at any time or during configurable peak business hours without the need for third party software.

myRack Manager allows the management of both the primary and secondary BrickStor from the same pane of glass. All operations from provisioning new data sets, to configuring replication, or restoring files can be performed from myRack manager.

OTHER BENEFITS OF BRICKSTOR

Superior Data Integrity. Using an advanced 256-bit checksum BrickStor ensures each block of requested data is intact and can detect and correct errors on the fly. BrickStor can correct errors plaguing hardware RAID based storage systems including bit rot, silent data corruption, misdirected reads and writes, and DMA parity errors.

Scalability. BrickStor is capable of quickly scaling to petabytes within a single name space. Customers can add capacity as needed and without downtime, which enables customers to grow storage capacity at the pace of their business.

CONCLUSION

Choosing the **RackTop BrickStor** solution not only delivered a robust high-performant environment while giving users a superior experience with the **myRack Manager**, but also provided the necessary scalable capabilities to support growth and long-term data retention.

BrickStor's fully configurable, built-in internal data protection, replication and compliance capabilities exceeded industry standards while ensuring efficient and cost-effective data processing and reporting.

ABOUT RACKTOP

RackTop Systems is a leading provider of high-performance Software-Defined Storage embedded with advanced security, encryption and compliance that empowers both government and commercial organizations. Its flagship product is BrickStor, an all-in-one data storage and management platform that protects sensitive data from cyberattacks while meeting internal and regulatory compliance requirements. RackTop is headquartered in Fulton, Maryland, and was founded in 2010 by veterans of the U.S. intelligence community who have been solving the most complex data and security problems for more than two decades.

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