

Zettaset Enables Major Healthcare Company to Maintain Critical HIPAA Compliance

The XCrypt™ Data Encryption Platform helps a leading cloud-based healthcare financial management platform to secure the privacy of Protected Health Information (PHI)



Customer Profile

Simplifying the business of healthcare through the cloud, the customer provides a cloud-based healthcare financial management platform that drives efficiency for benefit administration technology, consumer engagement, and advanced billing and payments.

Designed to serve the needs of the complex Consumer Directed Healthcare (CDH) market, it not only supports thousands of the most sophisticated plan designs for the entire suite of CDH accounts within one complete platform, but it also streamlines the funding, purchasing and payment processes required for informed healthcare financial decision making.

Leveraging a large network of partner organizations that enables the customer to deliver an industry-leading and award-winning solution to 200,000 employers and more than 17 million consumers across the United States and Canada. The cloud platform is used to administer multiple healthcare-related services including defined contribution, HSAs, HRAs, FSAs, VEBAs, PRAs, premium billing, public and private health insurance exchanges, COBRA, wellness plans, and transit plans.

Overview

Business Challenge

- Maintain highest levels of compliance with HIPAA regulatory requirements
- Ensure that protected health information (PHI) is only accessible by authorized parties
- Deploy a proven data-centric security solution that does not impact application performance, and has the flexibility to efficiently respond to the growing volume of data

Zettaset Solution

- XCrypt is an easy-to-deploy, all-in-one solution that includes encryption software as well as virtual key manager and virtual HSM (hardware security module)
- XCrypt is designed for high-volume data environments with dynamic performance and matching scalability

Business Value

- XCrypt's exceptional performance means that critical delay-sensitive applications are not impacted by the encryption process
- The software-defined approach of the Zettaset solution presents no limits to scalability, eliminates the need for proprietary appliances, and reduces cost
- Ease of installation and ongoing deployment reduces operational complexity and IT resource requirements

Business Challenge

The customer handles millions of consumer and business healthcare records, which are classified as protected health information (PHI). Under US law, PHI is any information about health status, provision of health care, or payment for health care that is created or collected and can be linked to a specific individual, and includes any part of a patient's medical record or payment history. As governed by the US Health Insurance Portability and Accountability Act (HIPAA), PHI that is linked to an individual falls under strict privacy and security regulations, and must be treated with special care and carefully protected from unauthorized access.

To comply with HIPAA data privacy requirements, the customer had been relying on peripheral security approaches that include firewalls, IDS, IPS, and network security technologies. While these provided adequate protection, they were concerned about the increase in cyberattacks targeting the healthcare industry. In order to provide even greater safeguards for PHI in their data storage environment, they decided to deploy advanced data encryption technology.

The healthcare organization needed to guarantee that unauthorized users would not be able to access data that was resident on that piece of equipment. The challenge for them was to find a data-at-rest (DAR) encryption solution that was optimized for extremely large volumes of data, that would provide access control through a policy server, and that would not inhibit the performance of their Pivotal Greenplum database platform.

Zettaset Solution

This is where [Zettaset's XCrypt Data Encryption Platform](#) comes into play. Zettaset's XCrypt Data Encryption Platform installs and manages all the necessary components to enable you to encrypt data. Zettaset automates all encryption processes and integrates with any existing key management and HSM (hardware security module) infrastructure. The XCrypt platform also includes a virtual key manager and virtual HSM which can alternatively be deployed if needed. The client chose to use the integrated virtual key manager and HSM features.

Their decision to choose Zettaset was made easier by the fact that product managers at Pivotal Greenplum had already [tested and validated](#) the advantageous deployment and performance attributes of the XCrypt solution.

The figure, below, depicts the mount points typically used to encrypt in a Pivotal Greenplum environment to protect the data. This scenario uses the [Zettaset key management](#) server to store and manage credentials. As the servers in the cluster boot, they perform a key exchange with the Zettaset server following the LUKS specification. A successful exchange enables the server to mount the /data partition as dm-crypt so that the master can read the files it needs out of /data/master. The segment nodes individually go through their own exchange and validations so that they can access the /data partition which contains the files necessary to run the primary and mirror and present their data.

"It only took four hours to perform the initial encryption of HDDs holding 8TB of data. That's fast!"

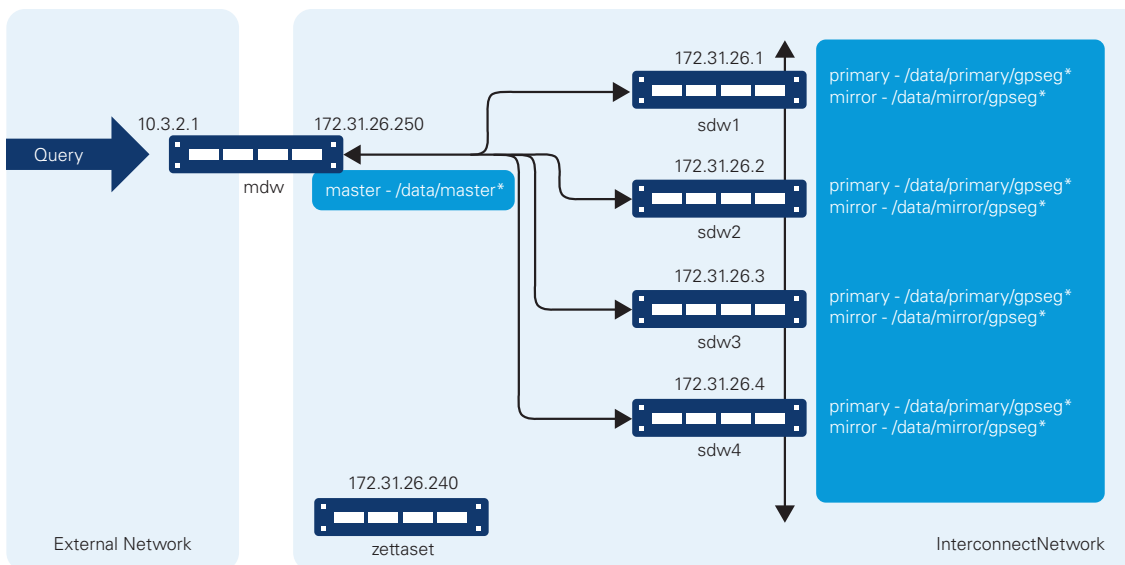


Figure: Pivotal Greenplum with Zettaset Data-at-Rest (DAR) Encryption

Business Value

When encryption is added to a big data architecture, potential performance degradation becomes a key consideration. There are also important standards compliance considerations for [key management interoperability protocol \(KMIP\)](#) and [PKCS #11](#), and XCrypt supports both with certified interoperability for several [key management](#) solutions and [hardware security modules](#).

A major advantage that the healthcare customer found in working with [Zettaset's XCrypt Full Disk solution](#) was how easy it was to deploy. Adding encryption can sometimes be a complicated endeavor. However, Zettaset's installation process is relatively simple.

The customer's senior principle systems engineer was delighted with the ease of installation. "It only took four hours to perform the initial encryption of HDDs holding 8TB of data with the Zettaset encryption software. That's fast!", he says. "Legacy encryption products would typically be much more complex to manage and take longer to install."

He and his team are also pleased with how easy it is to administer the Zettaset encryption software, noting, "Everything that we needed to deploy a fully-functional encryption solution comes bundled with Zettaset XCrypt Platform, including encryption software, virtual key manager and virtual HSM. The software approach means we don't need to invest in proprietary hardware, and presents us with no limits to scalability as we continue expand our encrypted storage environment."

Not only is stored data more securely protected, Zettaset's scale-out encryption solution makes it easy for the systems engineer and his team to expand the encrypted storage environment and has simplified the task of ongoing maintenance and administration. XCrypt's exceptional performance means that critical delay-sensitive applications are not impacted by the encryption process. With the Zettaset XCrypt solution now in place, the healthcare services provider is better able to address strict regulatory compliance requirements mandated by HIPAA for PHI.

"Everything that we needed to deploy a fully-functional encryption solution comes bundled with the Zettaset XCrypt Data Encryption Platform"

Solution Highlights

Attributes	Benefits
Performance	Near-zero latency. Advanced design optimized for high-volume data environments, eliminates lag associated with traditional encryption approaches
Scalability	On-demand elasticity to match the dynamic needs of cloud-based data stores
Cost Savings	All-software solution eliminates requirement for costly proprietary hardware appliances
Ease of Use	Simple to install and manage, complete encryption solution includes software-based key manager and HSM (hardware security module), interoperable with KMIP and PKCS#11 standards
Proven	Adheres to Advanced Encryption Standard (AES) 256, to securely encrypt data and prevent unauthorized access

