

# Thales and Zettaset

## Delivering Enterprise-Class Encryption for Big Data Environments

*A majority of the data being collected and stored by enterprise organizations today is unstructured, and thus Hadoop represents an ideal solution for storing and organizing that data in a cost-effective manner. However, important sensitive data also requires protection from misuse or undetected modification to ensure privacy and compliance with regulatory mandates such as PCI DSS, HIPAA, and SOX.*

The most proven and widely-accepted defense against data breaches is to protect the data itself with encryption. The reliability of encryption raises the security level in a Hadoop environment and makes it consistent with the level of security that exists in legacy databases. This makes Hadoop a much more viable solution for organizations that require strict data security controls, whether driven by regulatory compliance or corporate best practices.

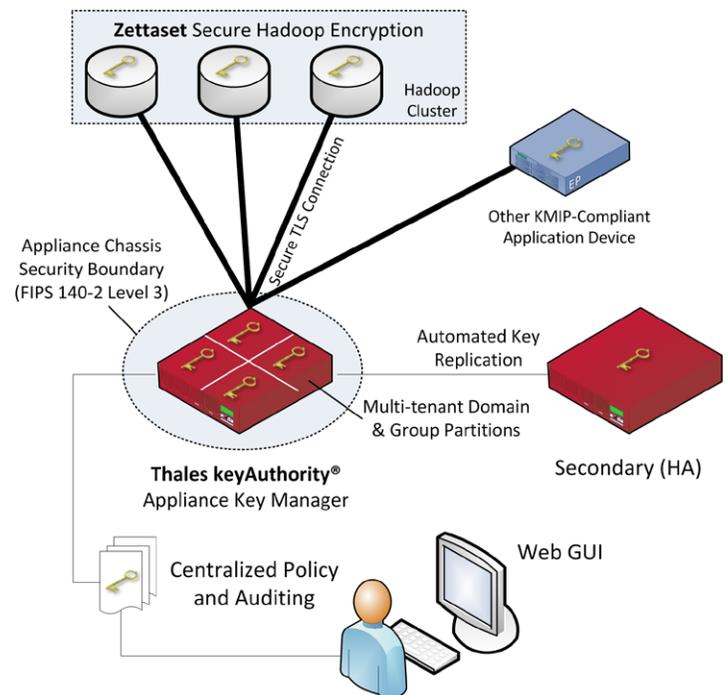
Thales and Zettaset deliver a high-assurance, scalable key management and encryption solution for locking down sensitive information contained in Hadoop clusters. The solution combines high-performance, hardened key manager appliances with flexible software encryption components that are designed to ensure smooth interoperability in any data center environment. The combined approach delivers reliable security that meets enterprise policies, while following industry standards for interoperability.

### Comprehensive Data Protection

Zettaset Secure Hadoop Encryption transforms data-at-rest that resides on storage media in Hadoop nodes (where HDFS files are stored), such as a hard drive, in a way that makes it unreadable. The encrypted data is now protected, unless it is decrypted with the proper key. The key itself remains separate from the encrypted data in a hardware-based key manager appliance as a best practice to avoid the risk of access with collocated data. This approach prevents data visibility in the event of an unauthorized access attempt on the key, or theft of the data and its storage media.

### Higher Security Assurance

Long-term retention of encrypted data requires protection of encryption keys over an extended period. Mishandling of keys allow unauthorized access to data. Thales keyAuthority manages keys throughout their entire lifecycle end-to-end within a FIPS 140-2 Level 3 security boundary for higher assurance and reliable, long-term protection. The hardware devices are redundant to achieve high availability. If you lose access to the keys,



*The standards-based Zettaset-Thales encryption solution provides a strong security defense and is designed to be an integral part of an organization's compliance management program.*

## Benefits and Features

### Key Manager Appliance Delivers Higher Security Assurance and Availability

Using the Thales keyAuthority key manager appliance, key management services are controlled from a single, unified console, alongside other cluster services

### Virtually No Cluster Performance Impact

Running an encrypted Hadoop cluster with no substantial impact on performance reduces hardware requirements

### Easy to Install and Deploy for Quick Time to Value

Encryption and key management are easily installed as a turnkey, integrated solution through using standard web-based interfaces for setup

### Compliance Support for Consistent Enforcement of Controls

- Encryption complements existing access control and LDAP/AD policy enforcement capabilities in Orchestrator
- Can be used within an overall corporate or regulatory compliance program to protect sensitive data from unauthorized access
- Complies with the KMIP standard for interoperability, allowing Hadoop encryption applications to coexist under a unified key management system for consistent policy enforcement and improved economies across the enterprise

you lose access to the data -- the equivalent of digital shredding. Your keys require the best protection to ensure privacy and integrity of your encrypted data. And when a key is revoked, for example, you have the assurance that every Hadoop application under management will enforce a consistent policy that complies with regulatory mandates and your data protection goals.

## Centralized, Automated Controls & Audit

Maintaining a central point for both policy enforcement and auditing simplifies encryption deployment from an operational standpoint across a mixed estate of encryption applications. Thales keyAuthority provides multi-tenancy to allow different applications, various roles of responsibility, and encryption rule enforcement to be cohesively managed and delegated, without gaps in controls or errors due to misalignment in policies. Top-down auditing becomes simplified with a complete picture for control attestation and visibility, saving the manual processes and time required to audit individual applications. keyAuthority helps customers avoid the proverbial "2am fire drill" by providing remote access via a web UI across the global environment for quick investigation into key lifecycle enforcement.

## Security with Performance

Data security can sometimes take a toll on data center performance, but not with Zettaset Secure Hadoop Encryption. That's because Zettaset takes a unique approach by performing the encryption below the file system at the kernel level. Since encryption/decryption is done in the kernel, it introduces almost no latency. As a result, Zettaset's encryption process is transparent to the end user and has virtually no impact on performance.

Although encryption is not the only solution for protecting your data, it should be part of a comprehensive data security plan that provides protection at multiple levels within your network and data center architecture. Secure Hadoop Encryption from Zettaset can be deployed as part of the Orchestrator management and security suite, or deployed as a standalone application. Either way, customers are assured of seamless interoperability with Thales keyAuthority for central key management.

Secure Hadoop Encryption from Zettaset represents another innovative security feature within the Zettaset Orchestrator application for Hadoop cluster management, which also includes fine-grained role-based access control, security policy enforcement via tight LDAP/AD integration, and activity monitoring and centralized logging for compliance audit and reporting.

## About Zettaset

Zettaset is an enterprise software company and the leader in Big Data security and management. Zettaset solutions can be effectively applied in on-premises as well as cloud deployments. Zettaset provides its critical enabling technology through a network of strategic partners. **For more information about Zettaset, contact [sales@zettaset.com](mailto:sales@zettaset.com)**

**For more information about Thales, go to: [www.thales-ecurity.com/keyAuthority](http://www.thales-ecurity.com/keyAuthority)**



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