Zerto and Mantle Secure Distributed Storage

As ransomware becomes increasingly common, individuals, businesses, and organizations are at risk of significant harm if they don't protect their data. Distributed storage and immutability play a critical role in the fight against ransomware. Mantle Secure Distributed Storage (SDS) and Zerto, a Hewlett Packard Enterprise company, are two cybersecurity services that combine to provide industry-leading protection against ransomware through unique distributed storage, immutability, and extended journal copies (EJCs).

How Do Distributed Storage and Immutability Protect Against Ransomware?

Distributed storage and immutability both defend against encryption, which is how ransomware attacks organizations. Ransomware is a type of malware that encrypts a user's files and demands payment in exchange for the decryption key.

Distributed storage frustrates this process by storing data across multiple nodes in a network rather than on a single, centralized server. This makes it more difficult for ransomware to encrypt all the data because it would need to infect multiple network nodes to do so. Additionally, having multiple data copies allows for recovery in the event that some data is lost or encrypted.

Immutability means that data cannot be changed once it has been written. Once a file is stored immutably, it cannot be altered or deleted. This makes it impossible for ransomware to modify or encrypt the data, as it can only read or copy it.

Who Is Mantle?

Founded in 2017, Mantle is a Montreal cybersecurity startup with a mission to bridge gaps in the cybersecurity space by innovating on disruptive technologies. The team has a deep expertise in distributed systems, blockchain, and advanced cryptography, such as zero-knowledge proofs.

Mantle offers a fundamentally different approach to protection of data at rest: they store data as meaningless and disposable fragments in many different locations. This new method, called secure distributed storage (SDS), has many benefits, including privacy, resilience, and sovereignty.

What Is Mantle SDS?

Mantle SDS is an emerging distributed object storage platform precisely tailored for the backup industry. Mantle SDS connects directly to leading backup and disaster recovery (DR) software, such as Zerto, and complements EJC functionality.

Fragmentation of Data at Rest

Mantle SDS creates small, meaningless data fragments. These fragments are disposable in the sense that the complete data can still be recreated even if some fragments are corrupted, unavailable, or completely missing. This gives the fragment creation process built-in resiliency, removing the need for data duplication.

A compromised fragment does not leak any data about the original file on a cryptographic level. Unlike encryption, where attackers have an unlimited amount of time to decrypt and ultimately access the original data, fragments are only 15% of the bits and are scrambled in a fashion that cannot be rebuilt. Although Mantle SDS is compatible with existing encryption at rest, there is no notion of key management within the process itself, which makes it less complex to manage and prevents system lockout.

Data Routing

Mantle SDS has a data router that allows the fragments to be stored in numerous independent storage locations. This enables protection against a single point of failure. Data routing also restores control to the original owner of the data, allowing them to access it where it is stored, in its particular jurisdiction and use case.

Data routing also brings infrastructure sovereignty. At any moment, users can seamlessly change infrastructure providers from one to another. This flexibility completely removes lock-in and ultimately lowers storage costs. The router can also be configured to only interact with infrastructure in a given geography, or even only support independent and greener data centers.

Who Is Zerto?

Zerto provides enterprise-grade DR and data mobility solutions for cloud and virtualized environments. This industry-leading replication technology is based on a foundation of continuous data protection (CDP), bringing together DR and data protection across on-premises, hybrid, and multi-cloud environments. Users benefit from a single, unified, and automated recovery and data management experience across all virtualized, cloud-native, and container-based workloads.

What Is Zerto Extended Journal Copy?

The EJC functionality expands the journal service to an immutable S3-compatible repository. When enabled, a scheduled copy or "retention set" of the journal and all relevant protected files from a specified point in time is sent to that repository.

In case of a complete infrastructure meltdown at both production and DR sites, this offsite repository acts as a "save point" to retrieve. Once Zerto is reinstalled at those sites, this journal copy can be pulled down from that repository to begin a restore. Zerto retention sets benefit from copying to a repository that has object lock or similar immutability features, ensuring append-only, completely secure copies of the Zerto retention sets.

Mantle Complements Zerto Extended Journal Copy (EJC)
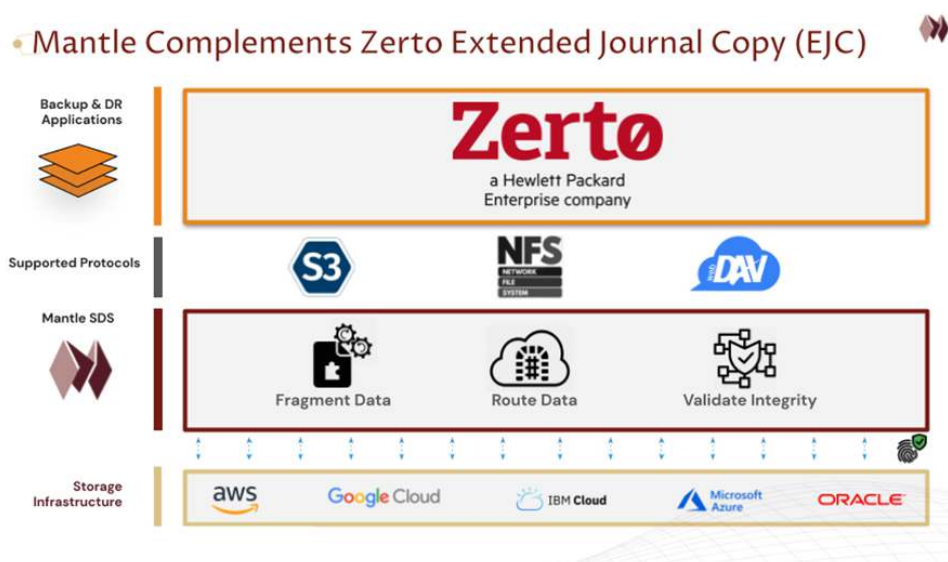
Why Zerto and Mantle?

By leveraging Mantle SDS as a target repository for Zerto's EJC functionality, users can parse and retain immutable copies of the Zerto journal and the protected files associated with the retention sets. In doing so, users immediately gain the following benefits.

Secure, Distributed, Ransomware-Proof Repository

Mantle SDS can (essentially) split stored replica copies of the Zerto journal and its contents and spread them out across multiple object storage repositories (or buckets). Leveraging Mantle SDS, Zerto retention sets are stored in immutable and parsed file pieces, which are then sent to **multiple immutable, S3-compatible, cloud-based repositories with a simple change to a few lines of code.**

More Immutable Storage for Less

Mantle's method of spreading data into small meaningless fragments reduces total storage footprint because it removes the need for extra data duplicates. Mantle SDS reduces total storage costs and requires less total storage to achieve higher resiliency and data availability. Enterprises can save up to 60% in storage infrastructure costs through duplication and safeguarding EJCs at rest while simultaneously benefiting from increased security, resilience, and ransomware protection.

Infrastructure Sovereignty

Both Mantle SDS and Zerto are infrastructure-agnostic. Distributing the EJC across multiple infrastructures ultimately allows enterprises to unlock complete control and sovereignty over infrastructure providers while remaining within the existing and familiar Zerto systems.

Easy Integration

Moving EJC onto Mantle SDS requires only a low effort thanks to the integration between both technologies. Users can simply add the Mantle SDS bucket name, access key, and secret access key when configuring a new repository from the Zerto Virtual Manager dashboard.

Zerto and Mantle SDS Offer Unparalleled Ransomware Resilience

In today's digital market, it's more important than ever to be prepared for the growing threat of ransomware. With Zerto and Mantle, organizations are protected by distributed storage that includes industry-leading CDP and EJC that works hand-in-hand with Mantle SDS. These features synergize to lower storage footprint and infrastructure costs, increase infrastructure freedom, and simplify DR.

Ready to try Zerto and Mantle together for yourself? Sign up for the Zerto Hands-on Labs, and be sure to check out the Mantle website!

Hands-on Labs   **Mantle Website**