Constellation Network, Inc.

PARTNERSHIP OVERVIEW

Constellation Network / Kinnami Collaboration

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Secure data management is a pressing need for federal agencies and enterprise companies where data is accessed by multiple people across multiple devices, presenting real possibilities for serious security breaches between points of access. Investments into existing centralized data management systems via a patchwork of IT solutions have provided an imperfect approach to data security concerns, usually only protecting data at one point or location, or otherwise using multiple solutions at once, meaning that data is left vulnerable to malicious threat vectors. As well as being expensive, these solutions are unable to efficiently process, validate and manage the volumes of data required for making time sensitive decisions in the field without the risk of security breaches.

To avoid losing sensitive data at an alarming rate, federal agencies and enterprise companies are looking to zero trust networks to provide secure data management solutions. Requiring the interface of different authentication and monitoring technologies, zero trust networks move network defenses from static, network-based perimeters to focus on users, assets and resources. These networks cryptographically verify data without revealing any underlying

information beyond the verification itself. Zero trust assumes there is no implicit trust granted to assets or user accounts based solely on their physical or network location, monitors all users based on their activity and evaluates risks associated with that activity. This allows organizations to mitigate both external and internal security threats by verifying every connection before providing network access. Zero trust networks thereby present a new approach to secure data management that aligns with the needs of federal agencies and enterprise companies who handle and produce sensitive information.

In collaboration, Constellation Network and Kinnami provide a zero trust approach to secure distributed data management by combining a blockchain solution and resilient storage platform to protect data in both transit and storage. In doing so, the collaboration provides a powerful data management solution that avoids the inherent problems with centralized systems.

Constellation Network is the first scalable enterprise-grade blockchain to create a standard for data in transit and use by cryptographically securing complex data structures in contested network environments. It is a highly resilient distributed network with no single point of failure. Constellation Network's blockchain solution uses a new consensus algorithm to establish irrefutable results of categorizing data as they are created in a data stream, providing an audit trail about the content of a datum itself as it changes. By instantaneously processing, notarizing and securing data as it is being created and communicated across networks, Constellation Network makes it possible to significantly increase both validation speed and data security, making it an infinitely scalable solution. By distributing categorization work to computing nodes across the network architecture, Constellation Network can process new data arriving at less than a second. This is ideal for processing the data stream generated by sensors,

IoT/IIoT devices at the edge where data integrity, accuracy and secure data management is critical.

Adding security close to the source of data creation, Constellation Network securely hosts validated data and is also accessible via an API. Developer tools integrated early in the development workflow leverage the resilience of the blockchain network and encryption with compatible architecture and scalability for a range of data management solutions. Importantly, Constellation Network can be used to establish irrefutable, proof of compliance with rules such as government regulations or security policies – providing a suitable solution for federal agencies and enterprise companies that is easy to integrate with existing systems and applications with minimal seamless deployment.

Constellation Network's underlying data relies on an external storage management system that can be referenced by its own platform. This system must be capable of satisfying the security requirements at every site where data may need to be accessed and/or stored. To achieve this, Constellation Network has partnered with **Kinnami** – a resilient and secure storage platform that simplifies, secures and optimizes data sharing, on-going data migration and management in storage devices such as hybrid cloud environments [and everywhere else – from laptops and desktops to mobile devices, removable disks, servers and IoT devices]. The platform integrates data security, data protection and data availability as a single technology, avoiding the need for a patchwork of solutions in these three areas, hence reducing potential data breaches, leaks and corruption resulting from misconfigured solutions. By organizing information into encrypted objects owned by end-users (both people and systems) and storing them across a network of

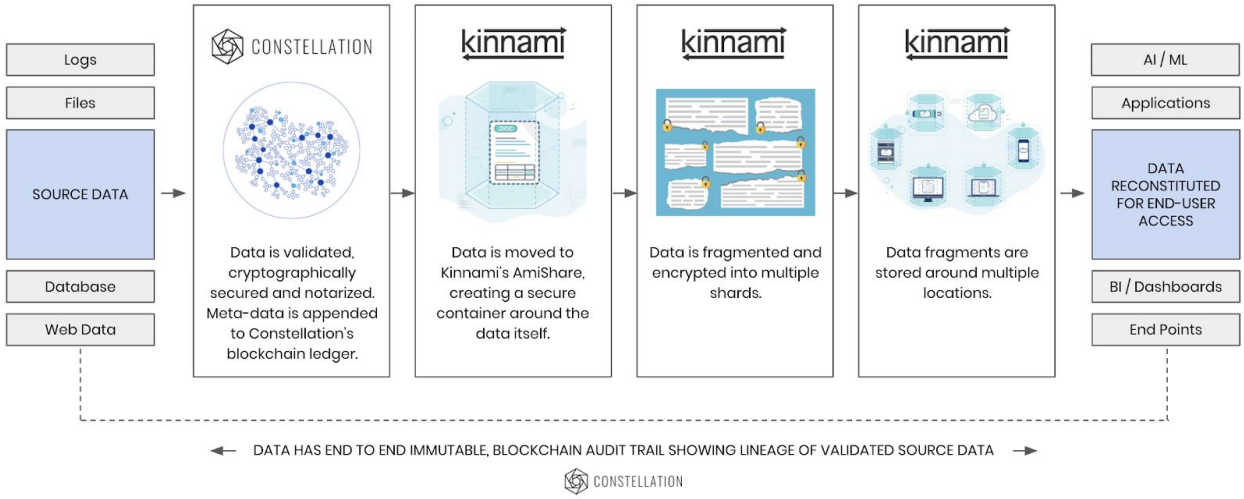
devices, Kinnami cryptographically guarantees that an object is secured before it is stored or transmitted anywhere else.

Kinnami separates the responsibilities of end-users from administrators when working with end-users' data, using security technology to enforce and audit this boundary. End-users create, modify and otherwise use data, but are not responsible for data storage, data protection and data security. Administrators are wholly responsible for storage, security and protection, but are not able to access the data themselves. This provides protection from potential data breaches, leaks or corruption both within and outside of an organization. Using AI, administrators can also define policies to determine whether a particular encrypted object and its versions (the data stream) should be stored at a particular storage device. Conceptually, these storage devices are key-value stores, and can be built on top of any kind of storage system. Encrypted objects are then replicated around the network to storage devices with matching policies using an efficient peer-to-peer data movement protocol that supports unreliable and low-bandwidth networks, or disconnected, autonomous operation. Administrative actions such as moving data between storage devices do not disrupt end-user access of the data, and Kinnami's access system dynamically evaluates the best store from which to retrieve the object's requested version.

Kinnami's platform is designed to operate under limited networking conditions, making it ideal for information access and storage at the edge of the network, such as through IoT and mobile devices. It assumes that any storage device may store data, and all access points and storage devices are treated as hostile to a greater or lesser degree. Consequently, storage devices as well as access points owned and administered by another organization can be used if desired.

The platform includes a Data Loss Prevention component that is integrated into its general auditing system, which logs end-user and administrative actions.

Adding Constellation Network's blockchain solution to Kinnami's platform ensures immutability of the audit trail by providing irrefutable categorization and auditing metadata about data content. Data transactions for command and control are therefore secured across multiple domains in a cross-functional encrypted network, and can be used at different classification levels. Together, Constellation Network and Kinnami provide information assurance and a standard for securely transporting and storing data over zero trust networks. This joint solution overcomes inherent problems with centralized legacy systems that are too costly and inefficient to adequately process the exponential amounts of data being produced by federal agencies and enterprise companies.



By both categorizing and auditing secured information and providing secure storage management, the Constellation Network / Kinnami collaboration manifests as two

complementary systems that together create a powerful zero trust solution for distributed secure data management.

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