

## Datomizer® SecureData™ Solution

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### A Highly Secure and Resilient Data Platform for Organizations

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The Internet of Things (IoT) enabling the connection of billions of devices that otherwise would be off-line is enriching people's daily lives, yet also providing cybercriminals an unprecedented opportunity to gain entry and steal data from users and businesses. With the growing use of data analytics and big data, there is an urgent need to secure large amounts of data against cybercriminals. Datomizer® SecureData™ solution enables any company to store highly encrypted, anonymized and randomized data around the world; achieving extreme security while providing high availability at a significantly reduced cost.

#### About Datomizer® SecureData™ Solution

“Big Data” storage systems are complex. They raise data security, performance and scalability challenges in every enterprise. Datomizer® is the only software solution that allows any company to manage “Big Data” storage systems at tens of petabytes scale, with the data secure in transit and at rest. It offers high performance, reliability, scalability and security.

Datomizer® encrypts, anonymizes, randomizes and stores fragments of original data around the world. If one or more nodes within the platform is compromised (for example, hacked or ransomware infected) the compromised part of the system can be brought off-line without affecting any other functioning parts of the platform.

The Datomizer® storage environment ensures that if any part of the system crashes, the workload is immediately directed to other functioning parts of the system, without requiring administrative intervention.

#### About Datomia®

Datomia® delivers a new data platform that allows enterprises to manage and store big data. It sets a new standard in data security, streaming, and high availability storage. Our solution enables data to be stored in a hybrid, and/or multi-cloud environment globally. It is platform agnostic, which means businesses are not locked in to a specific vendor. With our software, high security, high performance, fault tolerance, and complete hardware/vendor independence can all be achieved, along with a low total cost of ownership.

#### Military Grade Security, High Performance, Fault Tolerant, Massive Scale

Businesses depend on data. Datomizer® High SecureData™ Solution puts on-demand, mission-critical data under military-level security protocols. It allows instant and easy access to the data required for smooth and efficient business operation.

## How It Works

Figure 1 shows how the system can be configured. All applications access the data through the Datomizer® global file system. The Datomizer® instances reside in the pre-packaged virtual instances or Dockers, and the actual data resides in low cost storage nodes.

Multiple instances of Datomizer® can be deployed in many data centers and geographical locations, with each having access to the same virtual file system. If one instance is hacked, locked out, or crashed, the other(s) continues to operate. This feature enables localization of a compromised situation while allowing overall system to function without interruption, thus achieving fault tolerance and high availability.

For example, if a location is infected with a ransomware (as in the case of Merck in June 2017), the data node can be taken off-line, while allowing enterprise applications and/or employees access to data stored in other unaffected locations. Similarly, with the famous Sony hack, if Sony had deployed Datomizer® SecureData™ solution, even if the hacker group gained access to a specific data node(s), it would not have been able to make sense of the data obtained.

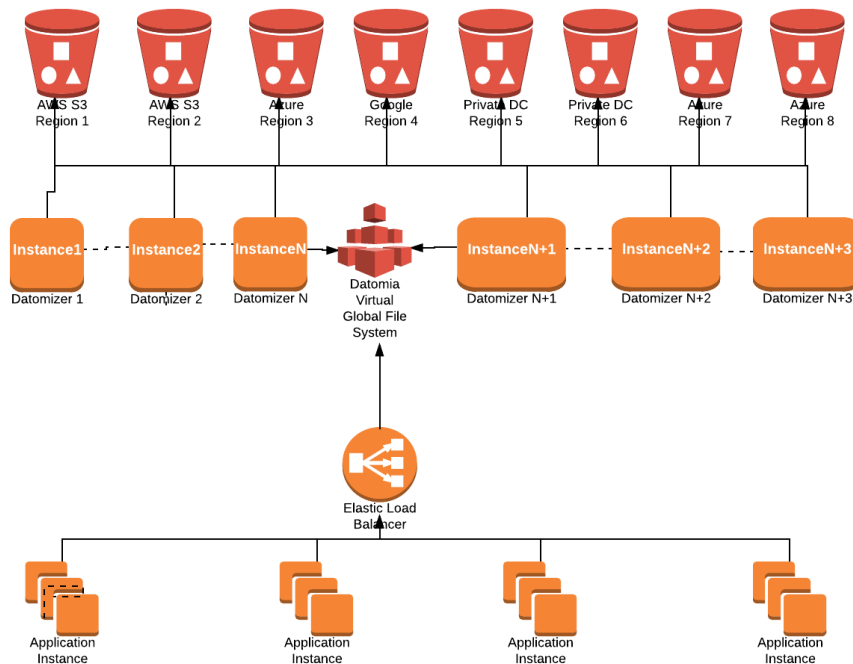


Figure 1: Datomizer® SecureData™ Solution

## **Built-in Security**

Based on Datomia's proprietary algorithm and the use of erasure coding, Datomizer<sup>®</sup> mixes and hides original data in what we call the Data Atoms<sup>®</sup>. These are encrypted and randomized fragments of the original data. Datomizer<sup>®</sup> stores these Data Atoms<sup>®</sup> across a wide range of storage nodes. As a result, the data is extremely secure. Even if a hacker penetrates several data centers and gains access to the data, they won't be able to make sense out of the erasure-coded and encrypted data fragments.

## **Built-in Resilience**

Datomizer<sup>®</sup> allows node failure up to a user-defined number. For example, 6 nodes in a 10-node system. The nodes can be a combination of AWS S3 nodes, other cloud storage providers' nodes, and nodes from other data centers. The nodes can also be in different geographical locations. In case of a disaster in one region or a complete data center outage, applications will still be running as if nothing had happened.

## **Platform Agnostic / Vendor Independent**

Datomizer<sup>®</sup> is platform agnostic. Data can be hosted with any cloud provider, reducing any potential vulnerabilities of being locked in to a specific vendor.

## Benefits of Datomizer

The Datomizer® SecureData™ solution provides the following benefits over traditional solutions:

- **Extreme Data Security:** Datomizer® preserves data confidentiality and integrity by combining information dispersal with military grade encryption. To achieve an elevated level of security and to protect against unauthorized access and theft of customer data, Datomia's patent pending erasure codec mixes and hides the customer's original data, and ensures that no original sequence of information remains in the data fragments (Data Atoms®).
- **Data redundancy and protection:** Datomizer®'s proprietary algorithm requires only an extra 40% of the data to provide redundancy, compared to 200%-400% redundancy required by traditional replication methods. Additionally, Datomizer®'s Failed Node Protection feature secures stored data against system failures in clouds, data centers, processing nodes or network, and keeps businesses running without downtime. Erasure coding is employed to protect data against storage node failures and guarantee fast data retrieval even if several data centers or an entire cloud service are unavailable.
- **Global Access:** Datomizer® can be easily integrated into any application scenario. This includes traditional NAS, SAN and iSCSI storage protocols and modern REST APIs. In addition, users can aggregate disk space located on many storage nodes regardless of geographic proximity. It acts as a single file system namespace which is visible on Unix and Windows environments.
- **Cost Reduction:** Datomizer® enables the use of cheapest type of cloud storage infrastructure, while providing the functionality and performance of locally attached storage. Cost of S3 tier storage plus Datomizer® averages ~\$0.10 per GB/month, while using a traditional method (e.g. S3 vs. EFS) to achieve Datomizer® level of security, data loss protection and performance will cost on average \$0.3 per GB/month – a **savings of more than 60% in storage cost.**

- **Scalability:** Datomizer<sup>®</sup> can be deployed over S3 type of public storage nodes. This means unlimited scalability. In addition, Datomizer<sup>®</sup> allows users to easily add unlimited new storage nodes from private data centers, at any time, with no down time, as storage requirements grow. The system will automatically distribute Data Atoms<sup>®</sup> to newly added nodes for load balancing purposes.
- **Vendor Independence:** With Datomizer<sup>®</sup> a company can easily move between cloud service providers. Businesses have access to the best value at any time and can keep ongoing data storage expenses at a minimum level.
- **Easy to Maintain and Operate:** Datomizer<sup>®</sup> allows administrators to manage the global file and storage system through Datomizer<sup>®</sup>'s UI. This eliminates the need to learn and maintain different user interfaces for different hardware platforms and cloud management systems.

**For more information, please contact us at:  
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