

# Next-Generation Backup and Recovery for Cassandra

Rubrik Mosaic™ provides the industry's first cloud-scale, application-centric, data-management platform enabling organizations to protect, mobilize, and monetize all of their application data across private cloud, hybrid cloud, and public cloud environments.

## KEY BENEFITS

### Application Centric

- Application and cluster-consistent point-in-time backups
- Scalable versioning supports large clusters
- Flexible deployment with API-based architecture and native-UI interface

### Recover in Minutes, Not Hours

- Single-click, fully orchestrated recovery
- Recovery to same- or different-sized clusters
- Granular recovery for fastest RTO

### Increase Ops Efficiency

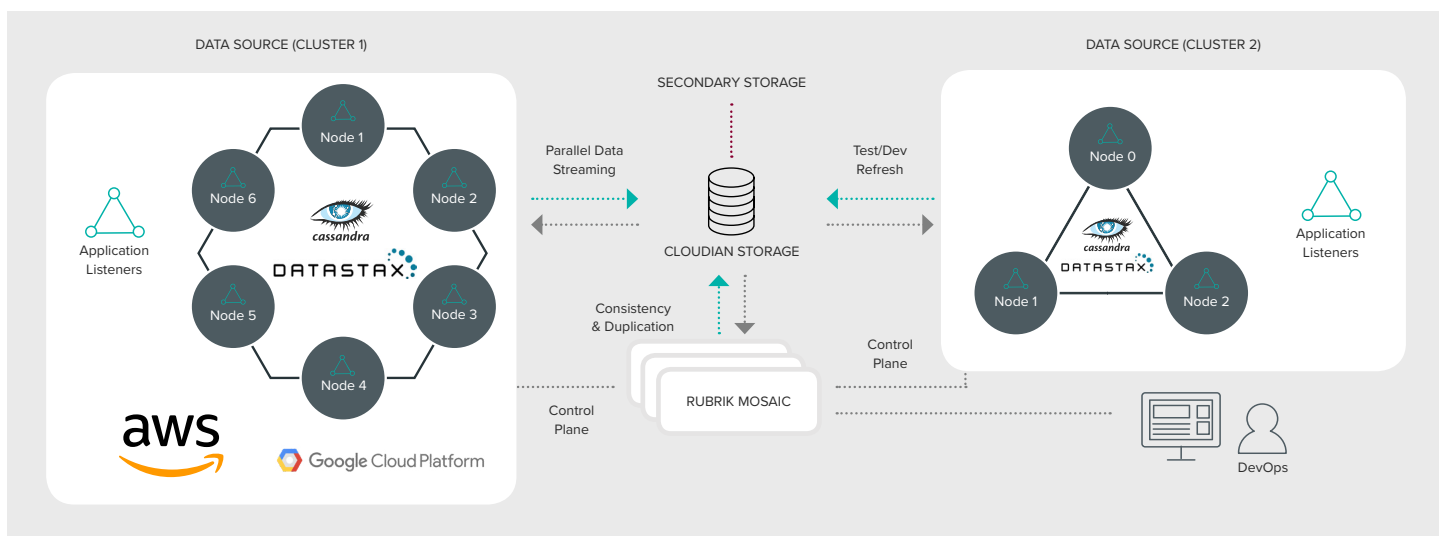
- Semantic deduplication cuts backup storage requirements up to 70%
- Automated Test/Dev refresh
- Use backup copies for migrations, Test/Dev and database cloning

## THE CHALLENGE

Businesses are in the midst of a digital transformation journey. According to research from IDC, 70% of CIOs have a cloud-first strategy. They want to harness the power of the cloud to drive growth by delivering new customer-centric products and services while also driving greater operational efficiency. To handle the data requirements of these modern high-volume, high-ingestion-rate, and real-time applications, enterprises are turning to scalable, nonrelational databases such as Apache Cassandra and DataStax Enterprise rather than traditional scale-up database and storage approaches.

However, this fundamental shift raises critical issues in the life cycle of data management and data protection. Traditional backup and recovery products were originally designed for small-scale databases, tape-based storage media, and legacy on-premises architectures. This leaves modern applications built on nonrelational databases and Big Data filesystems exposed to data loss and downtime.

## RUBRIK MOSAIC FOR CASSANDRA: REFERENCE ARCHITECTURE



## THE SOLUTION: RUBRIK MOSAIC

Rubrik Mosaic is the industry's first and only scale-out data protection software solution to deliver scalable and reliable backup and recovery for modern applications built on Apache Cassandra and DataStax Enterprise databases. With Mosaic, enterprises can deploy business-critical applications on Cassandra and DataStax and be confident in the recoverability of data and the ability to maintain high application uptime.

## FEATURES AND BENEFITS

Rubrik Mosaic is built to address the data protection needs of modern, cloud-native applications deployed on Cassandra and DataStax. Unique capabilities include:

### Application-Consistent Backup and Recovery

By working at the application layer, Mosaic provides a true point-in-time backup copy of eventually-consistent distributed databases — a concept that we refer to as *cluster-consistent versioning*. An application listener captures data before it is distributed on the cluster, ensuring consistency.

Unlike other solutions or script-based approaches, Mosaic can produce a cluster-consistent version without quiescing the database, improving application performance and reducing downtime.

Mosaic scales to support very large clusters, and allows you to back up the database at any interval and at any granularity. The backups are cluster consistent and application consistent, incremental forever, and always maintained in native formats on backup or secondary storage.

### Fully Orchestrated and Granular Recovery

Orchestrated and reliable recovery lets you restore for operational recovery and for Test/Dev use cases, on-premises and across cloud boundaries. All recovery operations result in repair-free restores, leading to reduced application downtime.

Rubrik Mosaic provides fully orchestrated, any-point-in-time recovery. Granular recovery can be selected based upon either time or query for optimal recovery time objective (RTO)/recovery point objective (RPO) and to support governance requirements like the European Union's General Data Protection Regulation (GDPR). Data can be recovered directly back into the same database (operational recovery) or recovered to a different database instance (e.g., Test/Dev refresh) with a different topology where the number of nodes on the destination cluster differs from the node count of the source cluster.

Because the backups are de-duplicated, the recovery process deals with only logical data, making it at least three times faster than traditional approaches, which results in a significant reduction in RTO.

### Semantic Deduplication

Rubrik Mosaic includes *semantic de-duplication*, an industry-first capability that reduces the cost of storing backups of distributed databases over their retention period. These space-efficient backups dramatically reduce the overall storage footprint, resulting in up to a 70% reduction in backup storage requirements.

### Infrastructure and Storage Independence

Mosaic is elastic-compute software that you can deploy on a physical server, a virtual machine, or any cloud compute instance (e.g., Amazon Elastic Compute Cloud [Amazon EC2]), Microsoft Azure, Google Cloud Platform or Oracle Cloud. You can back up data to any Network File System (NFS) or object storage on-premises or in a public cloud (e.g., Amazon Simple Storage Service [Amazon S3]). In addition to command-line interfaces and RESTful APIs, you can use the Mosaic consumer-grade UI to manage your data protection environment.



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Rubrik delivers a single platform to manage and protect data in the cloud, at the edge, and on-premises. Enterprises choose Rubrik's Cloud Data Management software to simplify backup and recovery, accelerate cloud adoption, and enable automation at scale. As organizations of all sizes adopt cloud-first policies, they rely on Rubrik's Polaris SaaS platform to unify data for security, governance, and compliance. For more information, visit [www.rubrik.com](http://www.rubrik.com) and follow [@rubrikinc](https://twitter.com/rubrikinc) on Twitter.

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