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Eigen DA

EigenDA is a high-throughput, decentralized data availability (DA) service designed for rollups on the Ethereum blockchain. It uses EigenLayer restaking primitives to ensure a secure and scalable infrastructure for data availability.

Key Features

Scalability

EigenDA offers scalable data availability with a throughput of up to 10 MBps, demonstrated in private testing. Plans to scale to 1 GBps are underway, enhancing the performance of blockchain networks significantly.

Security

EigenDA leverages EigenLayer's restaking primitives to provide a secure DA infrastructure. Techniques like erasure coding and KZG commitments ensure efficient and secure data storage and retrieval.

Cost Efficiency

EigenDA minimizes the costs associated with data availability by leveraging a shared security model. This approach reduces capital costs of staking and operational costs for operators.

Design Principles

Erasure Coding and KZG Commitments

EigenDA uses erasure coding to break data into smaller chunks, which are then distributed across multiple operators. KZG commitments ensure the integrity and availability of these chunks.

Congestion Management

EigenDA manages congestion through higher throughput capabilities and bandwidth reservation, making data availability more predictable and cost-effective for rollups.

Components

1. Operators:
2. Run EigenDA node software and are responsible for storing data chunks.
3. Disperser:
4. An untrusted service that encodes blobs, generates KZG commitments and proofs, and registers storage on Ethereum.
5. Retrievers:
6. Query operators for data chunks, verify them, and reconstruct the original blob for users.
- 7.

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