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Optimizing Storage Management Techniques for High-Performance Distributed Big Data Architectures

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Abstract: *The rapid growth of data due to IoT, social media, and analytics workloads has driven the need for distributed big data systems that can store, retrieve, and process massive datasets at high speed. Storage management is a fundamental component of these systems, affecting throughput, latency, scalability, and cost. This review paper discusses key storage management techniques, including data partitioning, replication strategies, indexing, caching, compression, and tiered storage. We compare performance impacts and provide insights into optimization strategies that improve system efficiency.*

Keywords: Data Partitioning, Query Optimization, Distributed Databases

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