Название: RRNS Base Extension Error-Correcting Code for Performance Optimization of Scalable Reliable Distributed Cloud Data Storage

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Аннотация: Ensuring reliable data storage in a cloud environment is a challenging problem. One of the efficient mechanisms used to solve it is the Redundant Residue Number System (RRNS) with the projection method, a commonly used mechanism for detecting errors. However, the error correction based on the projection method has exponential complexity depending on the number of control and working moduli. In this paper, we propose an optimization mechanism using a base extension and Hamming distance to reduce the number of calculated projections. We show that they can be reduced up to three times than the classical projection method and, hence, the time complexity of data recovery in the distributed cloud data storage.

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