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Data Retrieval System that Provides Retrieval of Data to Any Point in Time

INVENTOR • Ken Qing Yang

ABSTRACT

This new disk array architecture is capable of providing timely recovery to any point-in-time for user data stored in the array, referred to as TRAP (Timely Recovery Any Point) array. This new architecture has little negative impact on application performance while providing continuous data protection capability, additional security and reducing storage space requirements.

APPLICATION

- Data retrieval for record keeping purposes such as in distributed electronic healthcare information systems (EHS), electronic news information record keeping systems, and Internet information record keeping systems.
- Data recovery due to information system failures.

FEATURES & BENEFITS

This system reduces the amount of data to be stored and transferred in a networked storage system.

It includes a disk array architecture that provides timely recovery to any point-in-time, referred to as TRAP-Array (Timely Recovery Any Point). TRAP recovers data to any point-in-time very quickly upon a failure and also uses less storage space than traditional daily differential backup/snapshots.

Architecture: TRAP-Array opens up another dimension for storage arrays. It is orthogonal and complementary to RAID (Redundant Array of Independent disks) in the sense that RAID protects data in the dimension along an array of physical disks while TRAP protects data in the dimension along the time sequence.

With a direct and fast encoding scheme, the TRAP architecture presents dramatic space savings because of content locality that exists in real world applications. Furthermore, it provides faster data recovery to any-point-in-time than traditional techniques because of the drastically smaller amount of storage space used.

The implementation is file system and application independent. Any file system or database application may readily run on top of a system of the invention. The software prototype is a

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CONTACT TO DISCUSS LICENSING OPTIONS

Andrew Grand-Pierre
Director, Marketing &
Business Development
URI Research Foundation
andrew_grandpierre@urirf.org
401-874-9206
<http://urirf.org>

PATENT STATUS

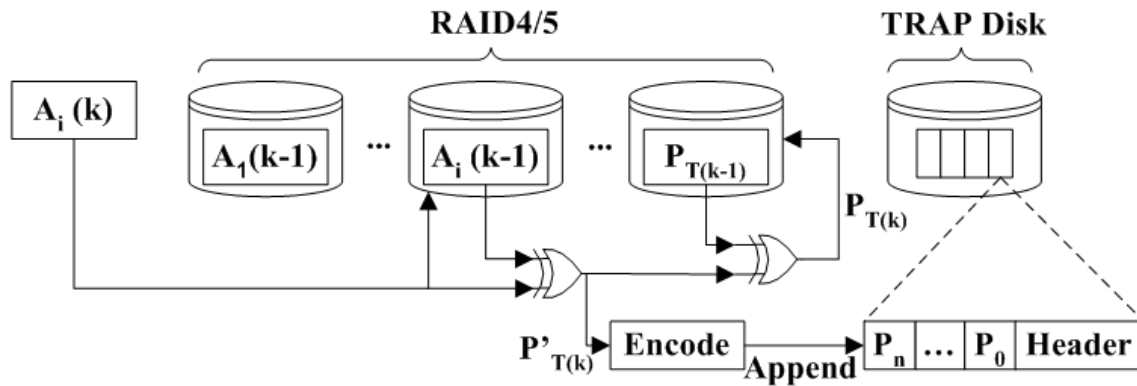
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AVAILABILITY

Technology is available for licensing.

block level device driver. The driver takes write requests from a file system or database system at block level, then the system performs normal write into the local primary storage and at the same time performs parity computation.

The storage architecture includes a plurality of data storage mediums, an encoder system and a time stamp circuit. The plurality of data storage mediums each include a parity bit that provides an indication of the parity of the data in each respective data storage medium.



Block Diagram of TRAP-4 Design