

Locally Invertable Convergent and Commutative Replicated Data Types

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Abstract

This is the paper's abstract . . .

1 Introduction

Maintaining consistency across replicas in a distributed system normally requires maintaining a global order of operation. Convergent or commutative replicated data types (CRDT) are shown to be a key way to maintain eventual consistency or optimistic replication without synchronizing across a distributed system. [1]

As CRDTs require no synchronization, they are an attractive building block for highly available distributed systems. However, they provide a challenge when trying to build an inverted index to make the data in the distributed system queryable — when should the data be considered available for indexing? Typical strategies in building a column index for databases are described by Abadi *et al.* involve a column store index build step that requires freezing the value for a given key ahead of time. [2]

In this paper, the author discusses a strategy for using CRDTs in a two phase database system. Initially, CRDTs are used to accept writes and serve as the basis or a write optimized store, while a column store is used for read optimized querying. A strategy for

Definition 1. *Here is a new definition*

- *test*
- *test2*

Convergent Replicated Data Types (CrRDT) and Commuative Replicated Data Types (CmRDT) (collectively known as CRDTs) are a useful collection of data structures for highly available distributed systems aiming for eventual consistency. These data structures define a *semilattice* with a [1]

Outline The remainder of this article is organized as follows. Section 2 gives account of previous work. Our new and exciting results are described in Section 3. Finally, Section 4 gives the conclusions.

2 Previous work

A much longer $\text{\LaTeX} 2_{\epsilon}$ example was written by Gil [1].

3 Results

In this section we describe the results.

4 Conclusions

We worked hard, and achieved very little.

References

- [1] Marc Shapiro, Nuno Preguiça, Carlos Baquero, Marek Zawirski. A comprehensive study of Convergent and Commutative Replicated Data Types. [Research Report] RR-7506, 2011, pp.50. [⟨inria-00555588⟩](#)

- [2] Daniel Abadi, Peter Boncz, Stavros Harizopoulos, Stratos Idreos, Samuel Madden. The Design and Implementation of Modern Column-Oriented Database Systems. Foundations and Trends in Databases, Vol. 5, No. 3 (2012) 197-280.