

## 05 – Building a Bw-Tree Takes More Than Just Buzz Words

### 1. Overview of Idea

Original Bw Tree has lack of its performance optimization. Using some optimization technique can improve Bw Tree's performance. But, it cannot beat other lock-based data structure like B+Tree, MassTree.

### 2. Main Finding

Lock-Free data structure doesn't always guarantee performance improvement than lock-based data structures.

### 3. Systems used and its Specifications

Customized Bw Tree is used

#### A. Pre-allocation of delta chain

allocate static length of delta chain to decrease memory allocation overhead and improve memory locality

#### B. Local garbage collection using epoch

decentralize GC to lower overhead of central GC's contention

#### C. Fast consolidation & search

use some technique to reduce consolidation overhead and search operation executing time.

### 4. Workloads evaluated

YCSB benchmark is used.