YCSB++: Benchmarking Advanced Features of Cloud Databases
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YCSB++

- Understand, improve scalable table store systems
  - Explore HBase, IcyTable (IBT), etc.
- Extend YCSB version 1.3 to add:
  - Synchronized concurrent testers (zookeeper)
- High ingest rate exploration
  - Vary write behind (batch writer)
  - Presplit tablets anticipating lots of inserts
- Bulk load: pre-build “mapfile” then “drop into” table
- Read side exploration
  - Read-after-write – what latency eventual consistency?
- Offloading filtering to servers
- Security ACLs – what impact on performance?
- Monitoring – integrate metrics from all other services
- Built on Otus – per service reporting

Case Studies (IcyTable, unless marked)

- Batch insert for throughput vs. eventual consistency lag time

YCSB Client

- Offloading selection filtering to servers
  - from a table with 100 column families, scan sets of rows returning only one column
  - filtering at server effective for large scans
  - inhibit server read-ahead to avoid wasted work

• Benefit of presplitting tablets before insert burst

• Inserting with credential as function of ACL complexity
  - 0, 4, 5, ... ACLs, where all non-zero ACLs are the same total size

• Offloading selection filtering to servers

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