Monopedia: Staying Single is Good Enough

The HyPer Way for Web Scale Applications

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Abstract

- web scale applications: cluster of database servers plus caching layer
- approach: only one MM-DBMS instead
- Monopedia Benchmark: for web scale applications modeled after Wikipedia

Results

- one database server suffices
- even without external caching
- all: up to 70% more requests (2665 mixed requests per second)
- no-wait: 520% more requests
- all-on-time: 150% more load

Traffic Data Analysis: March 25-31, 2017:
- reads (en): 932,228,284 articles
- updates (en): 1,143,247 articles
- average frequency: 1541.38 read requests per second 1.89 write requests per second

Traffic Data Analysis:

| Sourcecode | Apache License 2.0 | https://dbkemper4.informatik.tu-muenchen.de/monopedia |

Conventional Setup

English Wikipedia:
- 6 database servers (MariaDB)
- Slaves
- Master

Monopedia Benchmark

- idea: prove and measure the capability of web scale databases
- solution: replay read/update database queries of Wikipedia (load test)
- benchmark: load test configuration for simulating concrete traffic

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