Workload Merging Potential in SAP Hybris
DBTest, 2020

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PUBLIC
Motivation

High peak overload spikes on reoccurring events

- Black friday
- Singles day
- Christmas

Workload optimization without acquiring extra hardware?

G. Huang, X. Cheng, J. Wang, Y. Wang, D. He, T. Zhang, F. Li, S. Wang, W. Cao, and Q. Li. X-engine: An optimized storage engine for large-scale e-commerce transaction processing, 2019


(1) https://www.trendreport.de/criteo-black-friday/
(2) https://t3n.de/news/singles-day-schneppchen-angebote-1216220/
(3) Icon made by Freepik from www.flaticon.com
Previous Work: OLTPShare

Hypothesis 1: Workload Analysis

Hypothesis 2: Merging Benefit


Do these hypothesis hold for enterprise workloads?
SAP Hybris: Workload Description

Platform for retailer with more than 160 customers\(^{(1)}\)

Workload Description

Browsing  80%
Add Item to Cart  15%
Buying  5%

SAP Hybris is read heavy, with a few hotspot queries.
SAP Hybris: Merging Potential Analysis

ODBC benchmark

All statement types benefit in throughput and CPU
SAP Hybris: Merging End 2 End

Full landscape, end-to-end

Merge one single select, only

Throughput increase of 20%
Throughput improvement through merging

Hypothesis: Throughput increase of 2x

SAP Hybris

- CPU improvement of 50%
- Throughput increase of 20%

Discussion & Summary

Two evaluation questions

1. Workload characteristics
   - Hypothesis: Ready-heavy, few hotspots
   - SAP Hybris
     - 80% single selects
     - 20 statement strings make 80% of workload