

Distributed State Management

Conflict-free Replicated Data Type for Application Developers

CRDT Uncomplicated

Distributed application and data systems can deliver lower latency, greater resilience, greater scalability, and lower costs than their centralized counterparts. However, for use cases involving high-velocity counting, standard distributed systems fail to maintain accuracy. For many, this limitation has bound them to high-latency centralized architectures that limit user engagement.

According to Google, delivering low latency experiences can dramatically reduce your bounce rate. One Google study found that having a load time between 1 to 5 seconds can increase bounce rates by 90% compared to sub-second load times – highlighting how accurate and low latency experiences can improve engagement.

Built for distributed applications, HarperDB solves the challenge of low-latency distributed counting. By leveraging Conflict-free Replicated Data Types (CRDT), HarperDB ensures that high-velocity incrementations stay accurate even in highly geo distributed scenarios. Below are a few use cases that see enhanced latency, resilience, scaling, and accuracy benefits when architected with HarperDB.

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Use Cases Across Industries

General Use

Rate Limiting

Maintaining efficient rate-limiting mechanisms is paramount for ensuring fair use. With HarperDB's CRDT, you can have simplified and accurate distributed rate limiting that is accurate, scalable, resilient, and low latency.

Digital Commerce

Inventory Management & Warehouse Logistics

Efficient inventory management and streamlined warehouse logistics are critical for a successful digital commerce business. HarperDB modernizes these processes with a distributed architecture that ensures real-time visibility and accurate tracking of inventory across locations. Coupled with HarperDB's unified system architecture, CRDT-powered digital commerce systems are more capable and cost-efficient. By leveraging CRDT technology with HarperDB, you can have accurate omni-channel inventory and perfectly synchronized logistics.

Social Media & Content Delivery

Engagement Counting

Tracking user engagement is essential for optimizing user experience while driving business growth. HarperDB's CRDT-based approach provides a reliable engagement counting mechanism, delivering precise insights across distributed systems. Whether it's monitoring website visits, app interactions, or content engagement, HarperDB ensures accurate real-time metrics. Enabling businesses to make data driven decisions that enhance user engagement strategies.

Gaming

Multi-Player Score Tracking

Accurate score tracking across distributed game servers is vital for immersive and competitive gaming experiences. Optimized for this requirement, HarperDB CRDT technology synchronizes player scores across distributed servers. With HarperDB, developers ensure that multiplayer gaming experiences remain fair, competitive, and engaging, with real-time scores across all game instances, regardless of geographical distribution.

IoT

Multi-Entrance Occupancy Counting

Efficiently managing occupancy levels in multi-entrance facilities such as parking garages, airports, and event venues requires precise and real-time occupancy counting. For scenarios with intermittent connectivity, HarperDB's unified system architecture can provide accurate and scalable occupancy counting. By using HarperDB as the backbone for occupancy counting systems, venue managers ensure optimal crowd management, enhance security protocols, and even personalized experiences.



A Win Today, Breakthrough Efficiency Tomorrow

Solving some of the use cases above previously required creating advanced, home-baked solutions, that needed to be built, debugged, and maintained. For others, it required using legacy third-party solutions that struggle to meet today's demands. Only HarperDB lets you keep up with the requirements of scale while positioning your team for even greater savings tomorrow.

HarperDB's unified system architecture, ensures these use cases fit effortlessly into your platform while giving you an edge for the next decade of innovation. There is so much more to discuss; reach out to hello@harperdb.io to get the conversation started.

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