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# Goodbye, database complexity. Hello, simplicity.

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Founded in 2012, ByteDance's mission is to inspire creativity and enrich life. With a suite of more than a dozen products, including TikTok, Lark, CapCut, and Lemon8. ByteDance has made it easier and more fun for people to connect with, consume, and create content.

## Database Development Team

Our Database Development Team, which falls under the Technical Infrastructure organization, is responsible for building and owning database products including but not limited to relational databases, graph databases, key-value stores and document stores, which are used across ByteDance. In this team, you'll have the opportunity to develop and enhance a full-stack database management system including storage, query execution engine and query optimizer as well as associated management tool in a cloud native environment. We embrace a culture of self-direction, intellectual curiosity, openness, and problem-solving.

## Infrastructure System Lab

The Infrastructure System Lab in the Technical Infrastructure team works on cutting-edge infrastructure system innovations. Along with the development teams, the lab leads state-of-the-art technology breakthroughs in fields that then lead to the creation of powerful backbones for ByteDance products and corporate partners. These fields include but are not limited to computing, storage, database, network, and security.

## Data Architecture Team

Data Platform-Data Architecture team of ByteDance focuses on building the next generation DBMS kernel aiming for the best-in-class query latency and hardware utilization. The team operates the distributed OLAP infrastructure powering cloud native data warehouse, which is the foundation behind data-driven decision making within ByteDance.

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An open source & unlimited scalable distributed database for data-intensive transactional and real-time operational analytics workloads, with ultra-fast performance that has once achieved world records in the TPC-C benchmark test. OceanBase has served over 1000 customers across the globe and has been supporting all mission critical systems in Alipay.



## Architecture

OceanBase Database adopts the Shared-Nothing architecture to implement node peering. Each node has its SQL engine, transaction engine, and storage engine, and is run on a cluster of ordinary PC servers. This architecture provides benefits such as high scalability, high availability, high performance, high-cost efficiency, and high compatibility with mainstream database systems.



## Published Papers

1. OceanBase: A 707 Million tpmC Distributed Relational Database System; (VLDB2022)
2. LCL: A Lock Chain Length-based Distributed Algorithm for Deadlock Detection and Resolution; (ICDE 2023)
3. OceanBase Paetica: A Hybrid Shared-nothing/Shared-everything Database for Supporting Single Machine and Distributed Cluster; (VLDB 2023)
4. Efficient Distributed Transaction Processing in Heterogeneous Networks; (VLDB 2023)
5. Functionality-Aware Database Tuning via Multi-Task Learning; (ICDE 2024)
6. F3KM: Federated, Fair, and Fast k-means; (SIGMOD 2024)

## Haibei Laboratory of Ant Group

OceanBase Lab serves as the driving force behind OceanBase, dedicated to exploring the frontier core technologies of databases, expanding the boundaries of database technology, and offering customers a reservoir of technical strength for superior database products. The Lab investigates industry-leading Cloud-native distributed HTAP database technology, addressing practical database challenges and meeting the business requirements of both Ant Group and external organizations. This effort significantly enhances OceanBase's influence within the database industry. We are eager to communicate and collaborate with premier research institutions in the database field.

We are hiring: [bit.ly/41qgs0x](https://bit.ly/41qgs0x)

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