



Server & Enterprise Software

Private Perspectives: InfluxDB - Specialized databases are the future

Industry Overview

What we learned about real-time analytics

Last week, we hosted a web session with InfluxData's CEO Evan Kaplan. Mr. Kaplan shared thoughts on the emerging new database segment (time-series) that is well-suited for real-time monitoring / analysis of large datasets. Time-series databases can be used in many use cases, notably in the Observability infrastructure software category. Our discussion focused on relevant topics such as database types, and implications for powering use-cases such as Al, observability, and enterprise analytics.

Time-series database vendors likely AI beneficiaries

With the emergence of AI use-cases in the enterprise, customers are looking for places to store data for model-training purposes. A popular solution has been the vector database, which can store and tag various datatypes, much like a document database. Given this similarity, MongoDB was quick-to-market with their Atlas vector solution, and likely has an advantage in the product development and refinement. Given data storage is mission-critical to the proliferation of AI use-cases, we see strong database vendors as AI beneficiaries.

What we learned: DB offerings are rapidly evolving

The database (DB) industry has fragmented as new use cases have risen. Relational databases (store data in cross-linked tables) started in the 1970s with Oracle dominating the segment. Relational databases were initially architected to run on standalone computers and struggled under Internet applications generating massive volumes of data. Fifteen years ago, open-source databases such as MySQL emerged, enabling greater scalability and better node failure tolerance. These served as the precursor to databases tailored to specific use-cases, such as MongoDB for documents, Neo4j for graphs, Pinecone for vectors, and InfluxDB for time-series. Over time, incremental improvements to tailor databases to specialized use-cases add up, making it unlikely that databases ever become generalized again and consolidate in the future. This database specialization trend supports the view that differentiated and best-of-breed database vendors stand to benefit and likely take share over the medium-term.

Time-series implications for observability

In addition, we spoke on how time-series databases, such as InfluxDB, are playing a role in the observability space. While many customers will opt for platforms with strong out-of-the-box capabilities such as Datadog and Dynatrace, there are others who can build-out more tailored solutions by ingesting logs, metrics, and traces into an open-source time-series database and generating dashboards using an open-source tool like Grafana. In our view, this is a datapoint affirming that at a certain ARR thresholds or developer expertise, customers can be faced with a build versus buy decision. This could hinder share gains for observability vendors such as Datadog, Dynatrace, and Elastic. Even if a customer does not outright replace existing vendors, a time-series database could be adopted in conjunction, which could slow broader adoption of solutions such as Dynatrace Grail and Datadog Husky, which provide data storage for observability.

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ARR: annual recurring revenue

Al: artificial intelligence

Data lakehouses rising in importance

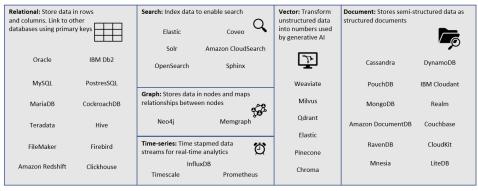
Connecting data across organizations is critical for insights, productivity, and Al use cases, in our view. The trend of leveraging data lakehouses is being driven from a high focus on big data architectures (e.g., Hadoop) over the last decade which often led to frustration and disappointment in performance and experiences. A new architecture that combines the benefits of data lakes and data warehouses especially for time-series applications are data lakehouses such as Databricks, MongoDB and tools provided by the Public Cloud vendors such as Microsoft Azure, Amazon Web Services and Google Cloud.

Database taxonomy

We explain the various database types and use-cases for each. As each database type evolves to meet different use-cases, incremental improvements add up over time, making it harder for vendors to expand into other database categories.

Exhibit 1: Databases have evolved to address disparate use-cases

The competitive landscape typically has minimal overlap between different database types



Source: BofA Global Research

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