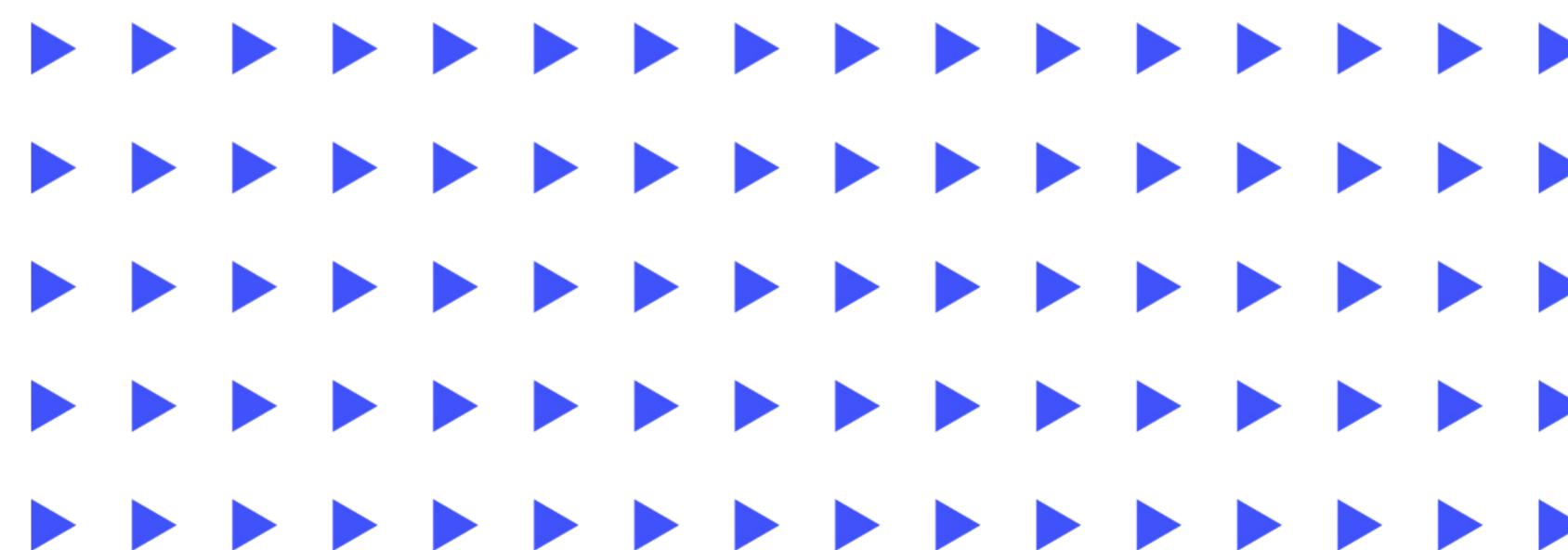
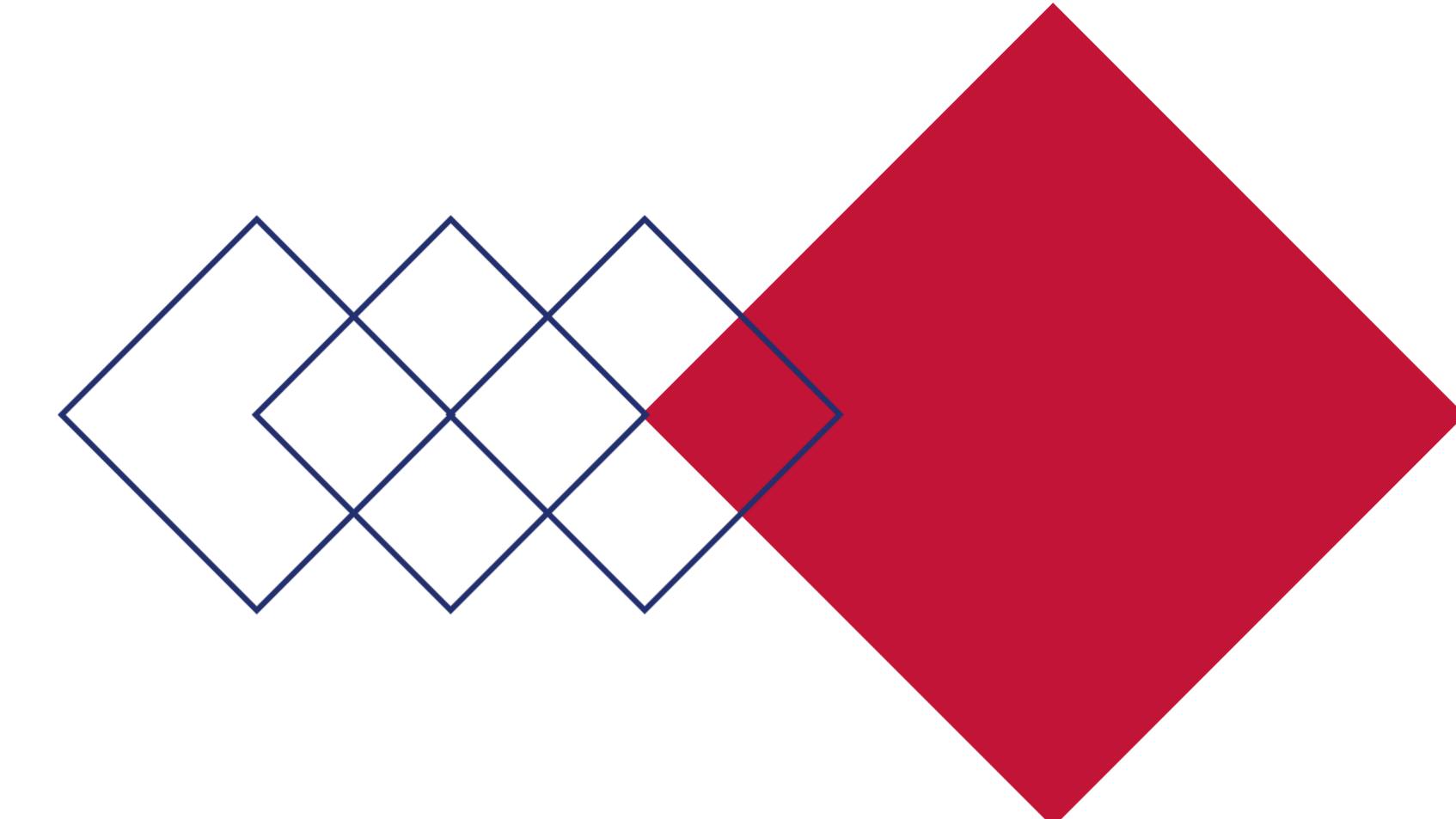


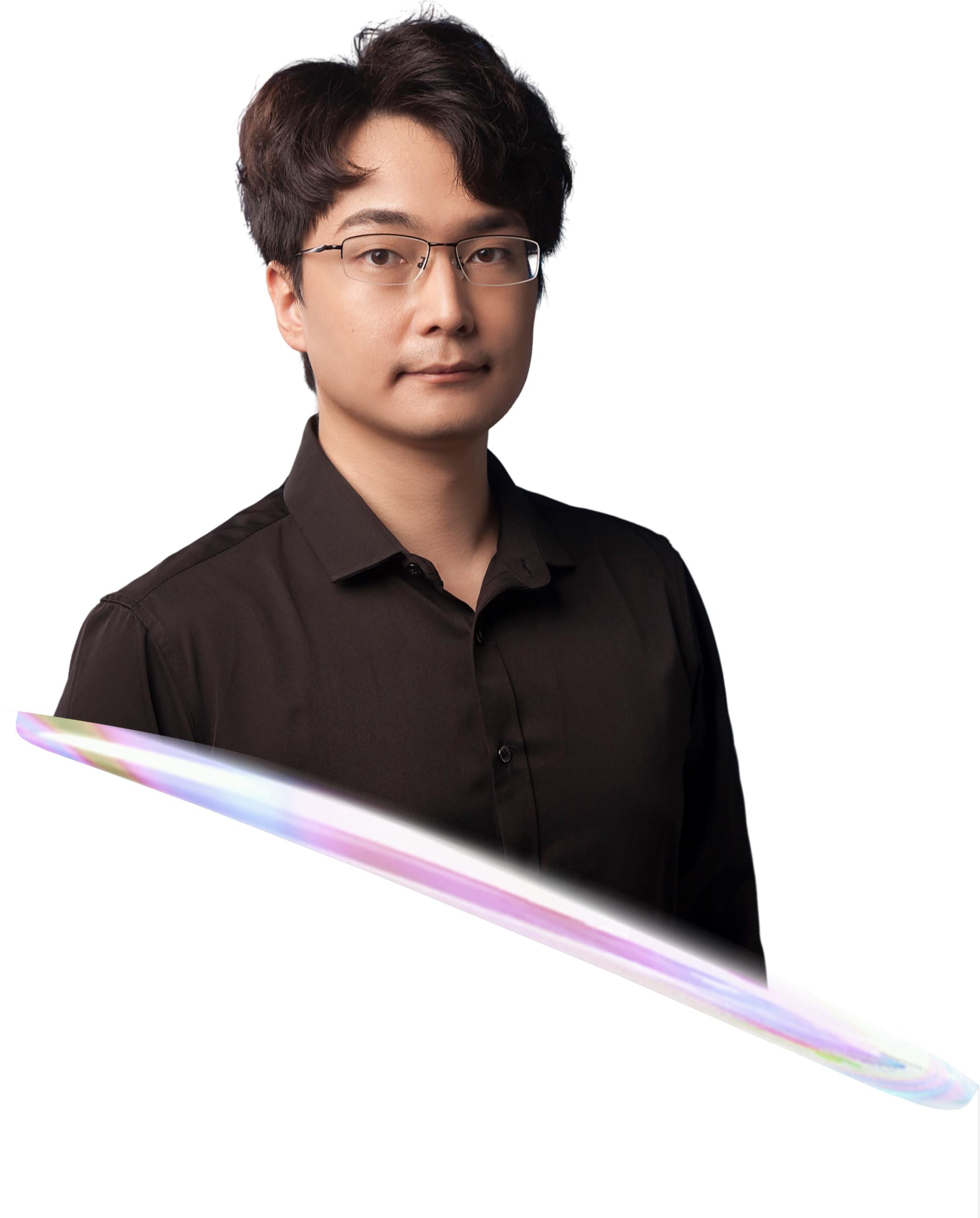
TiDB:

你的下一个 MySQL 何必是 MySQL



{ 王琦智 PingCAP TiDB 生态系统架构师 }





王琦智

7 年编程与架构经验。曾在腾讯音乐、锦江等公司担任重要职务，始终致力于代码的开发与精进，并专注于开发者生态建设，研发效率及体验提升，开发者赋能。

目前，在 PingCAP 负责 TiDB 生态系统架构及开发者 Advocate。实现 TiDB 与 AWS、GORM、MySQL Connector、Hibernate、DBeaver 及 vscode-sqltools 等平台集成。并撰写了 TiDB 的开发者文档，使得开发者获得更流畅的 TiDB 开发体验。同时作为业务开发者代表，保障 TiDB 在开发者间的持续竞争力。

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什么是分布式数据库

02

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03

传统数据架构有什么问题

04

All in one 数据库帮助开发者减负

05

Vector type within TiDB > TiDB + Vector Database

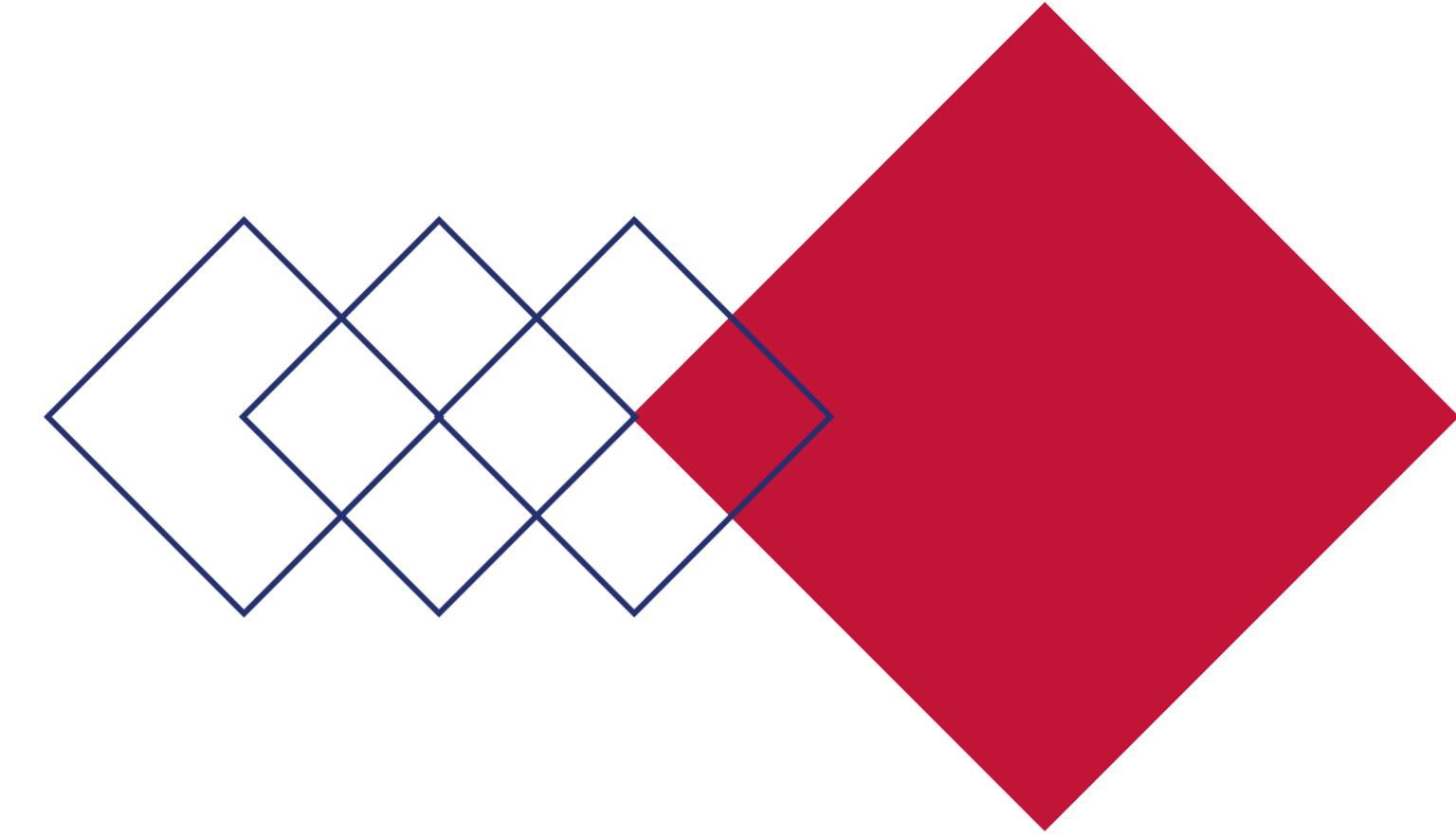
06

TiDB 的支持

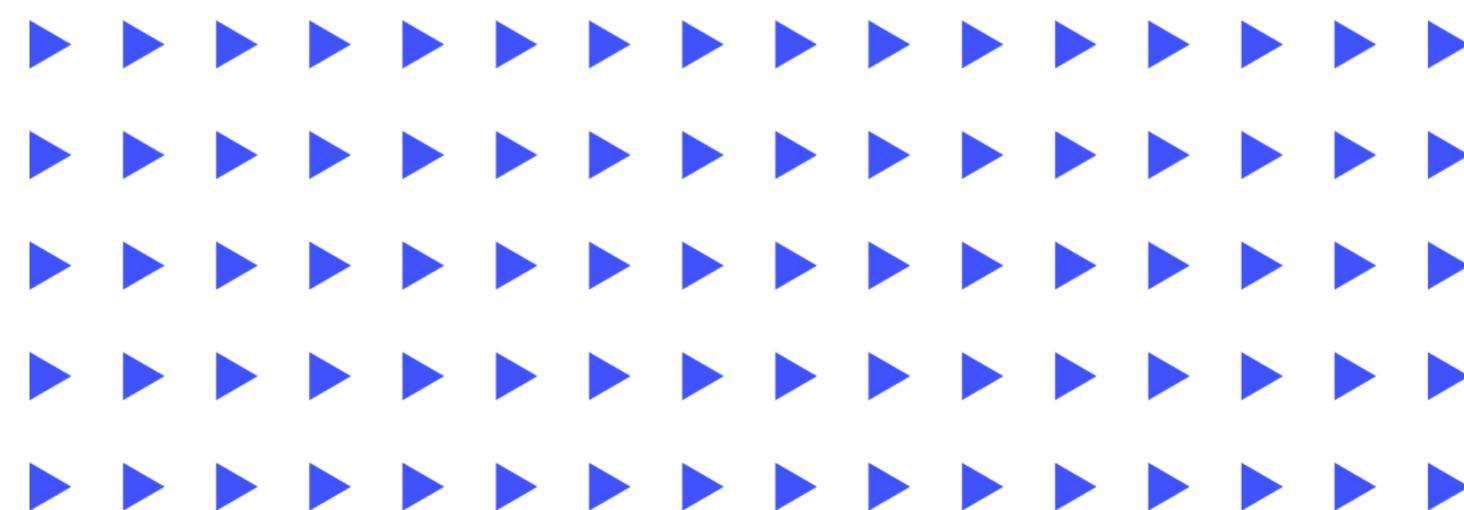
07

Ending

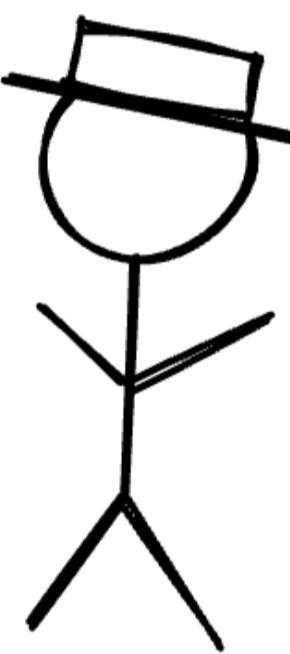
_ Part 01



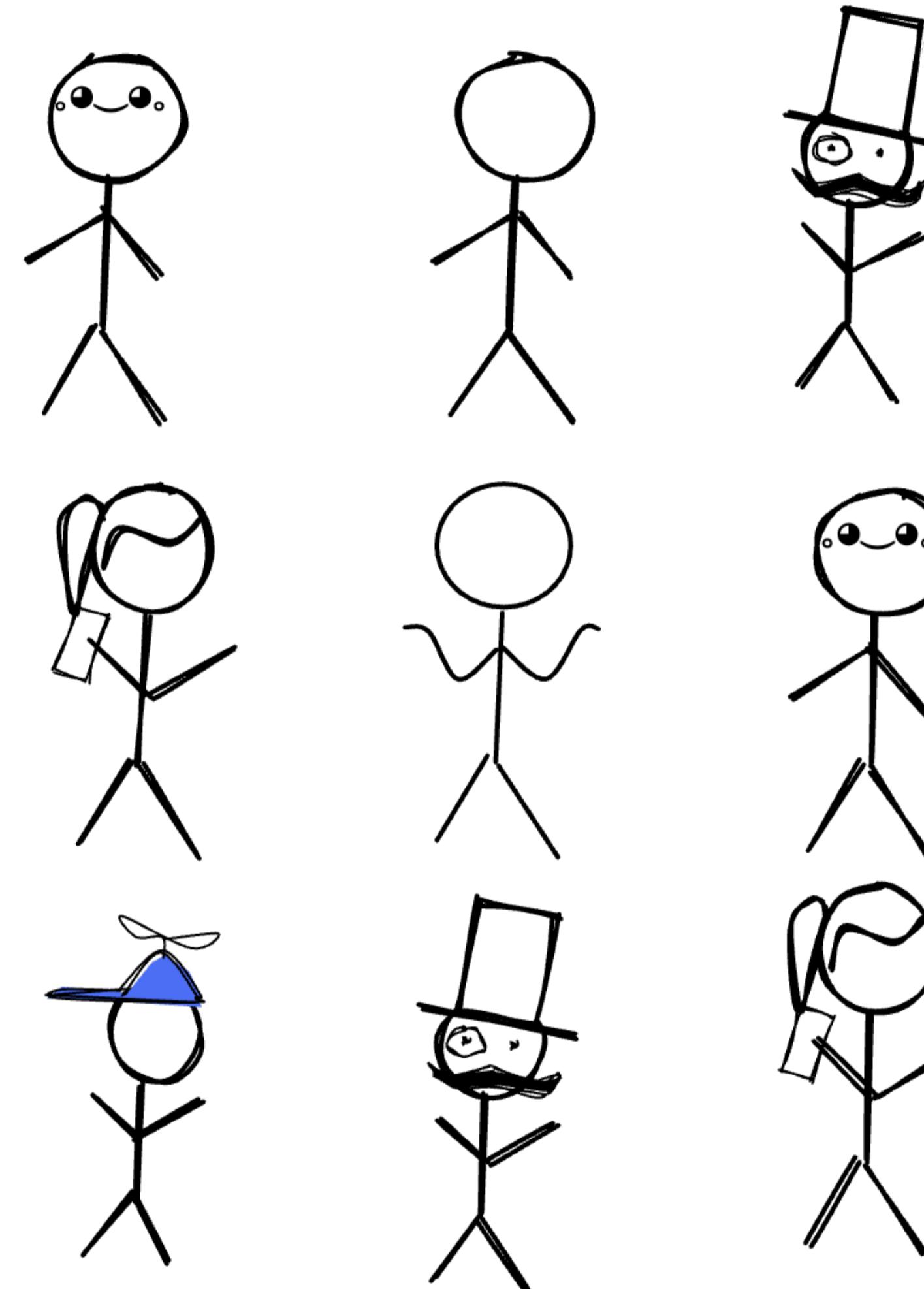
什么是分布式数据库



分布式 + 数据库



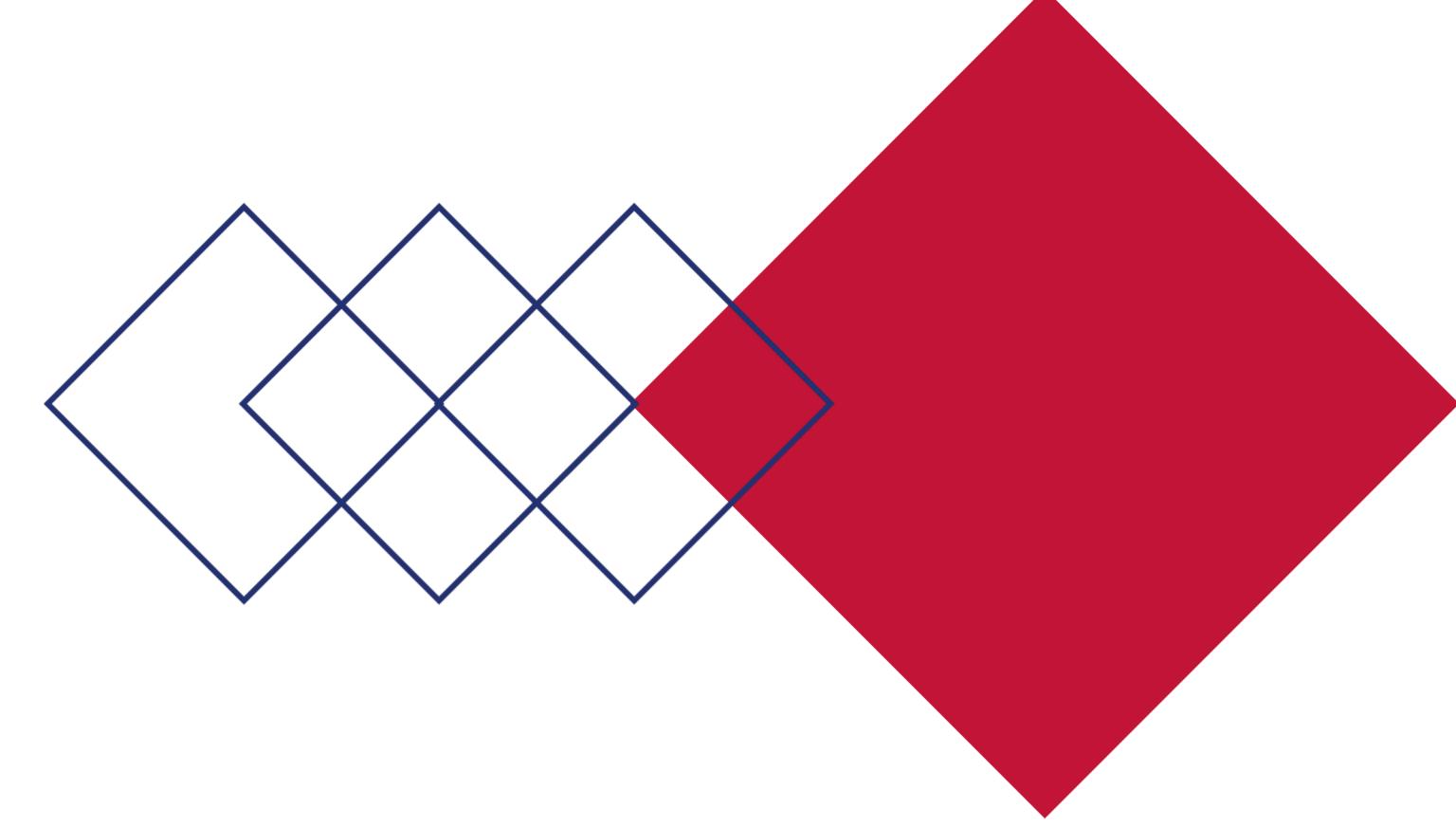
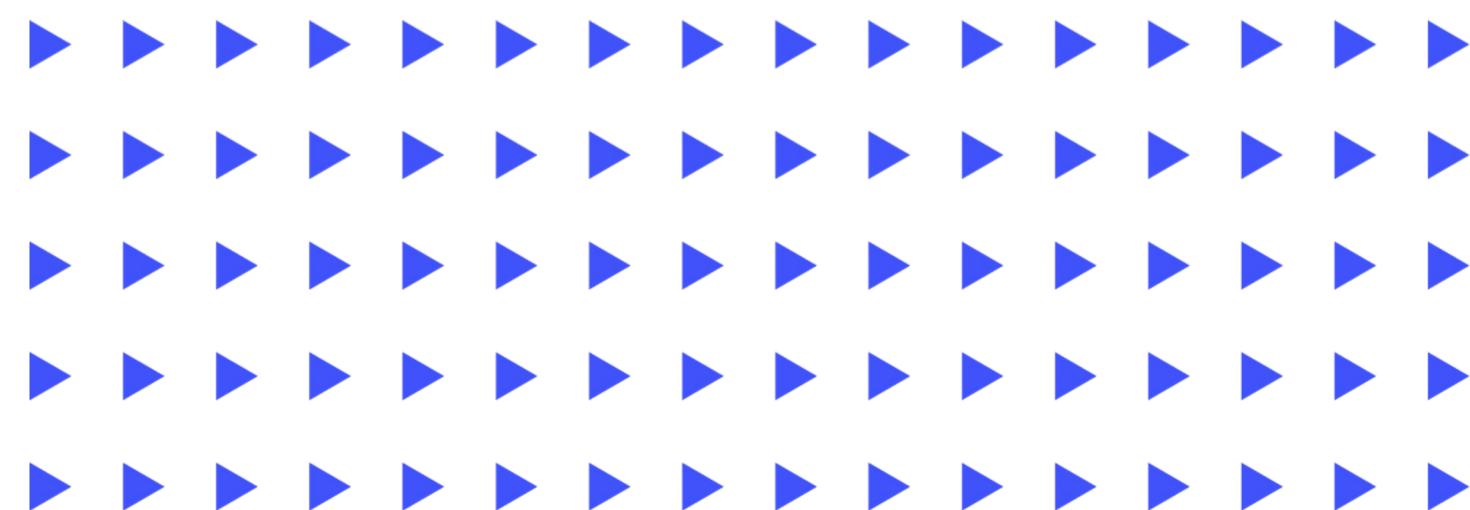
Full Stack



Multi-Role Team

_ Part 02

什么是 TiDB



XXXXXXXXXXL Size 的 MySQL

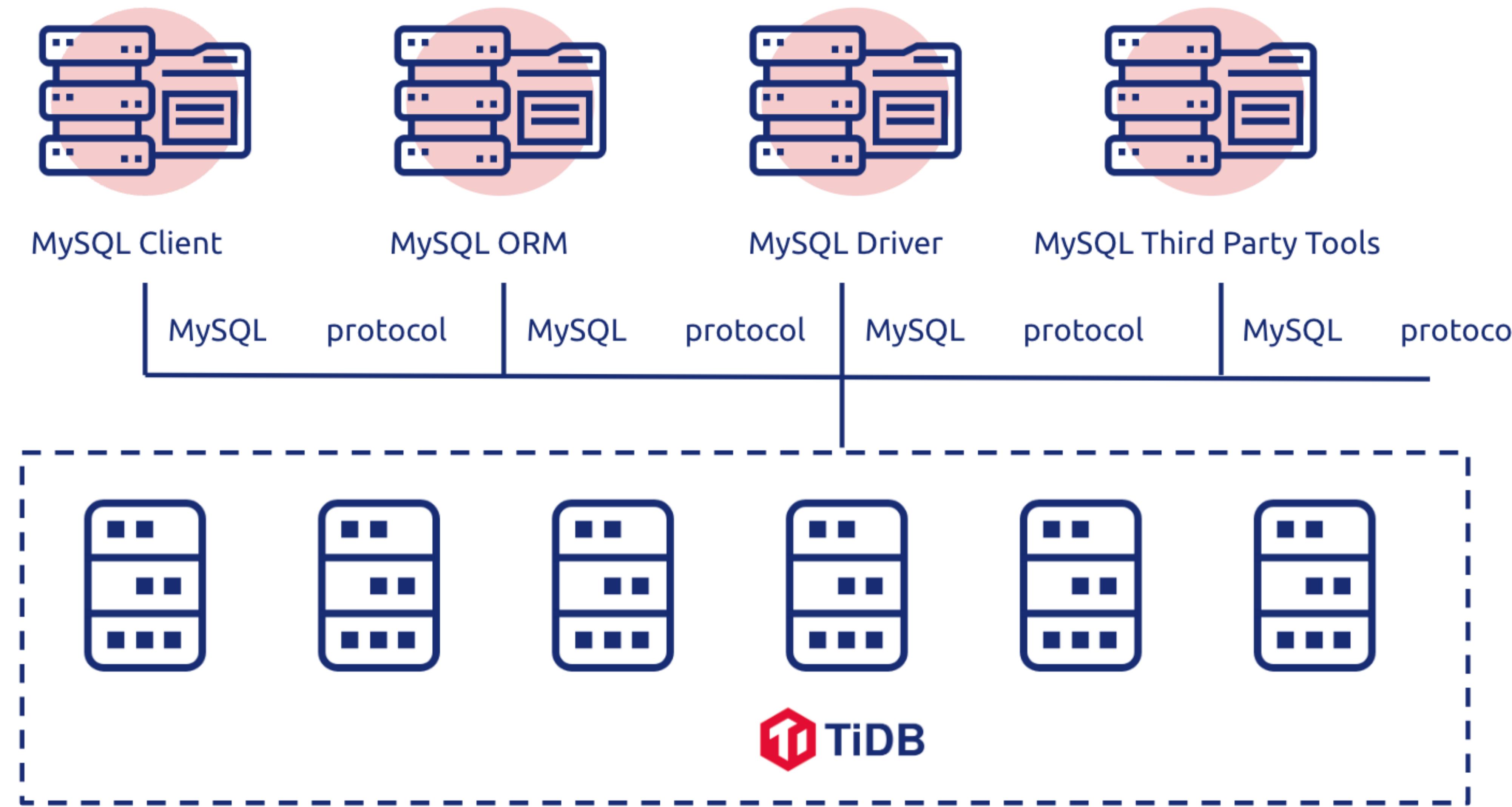


MySQL

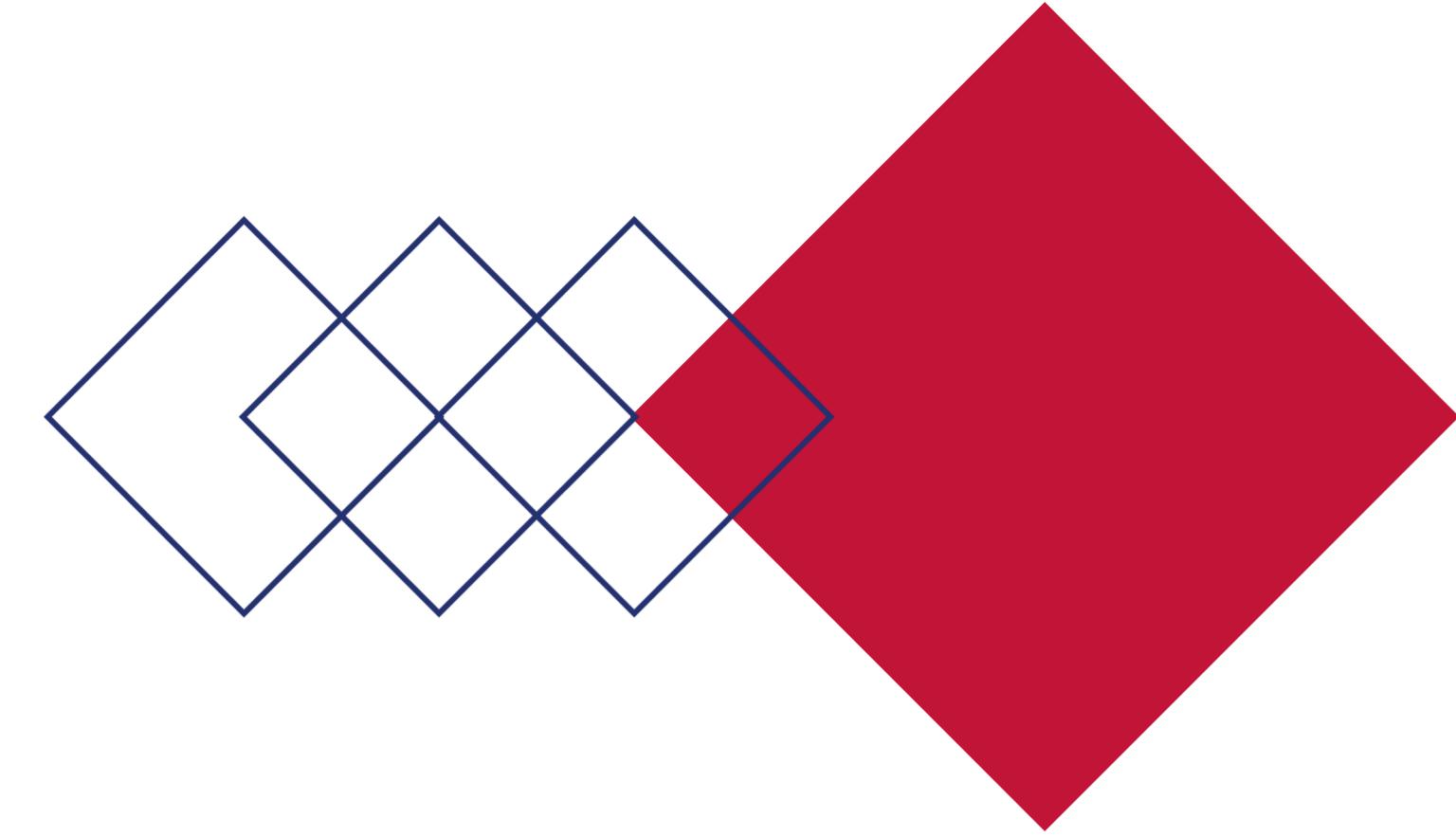


TiDB

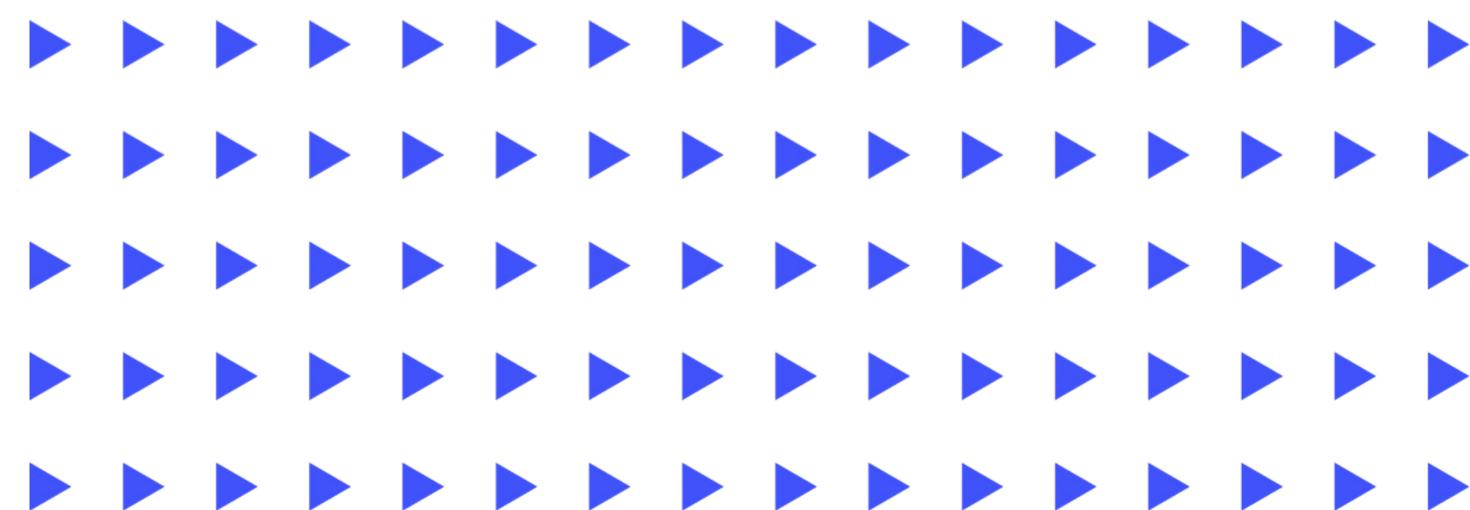
MySQL 生态



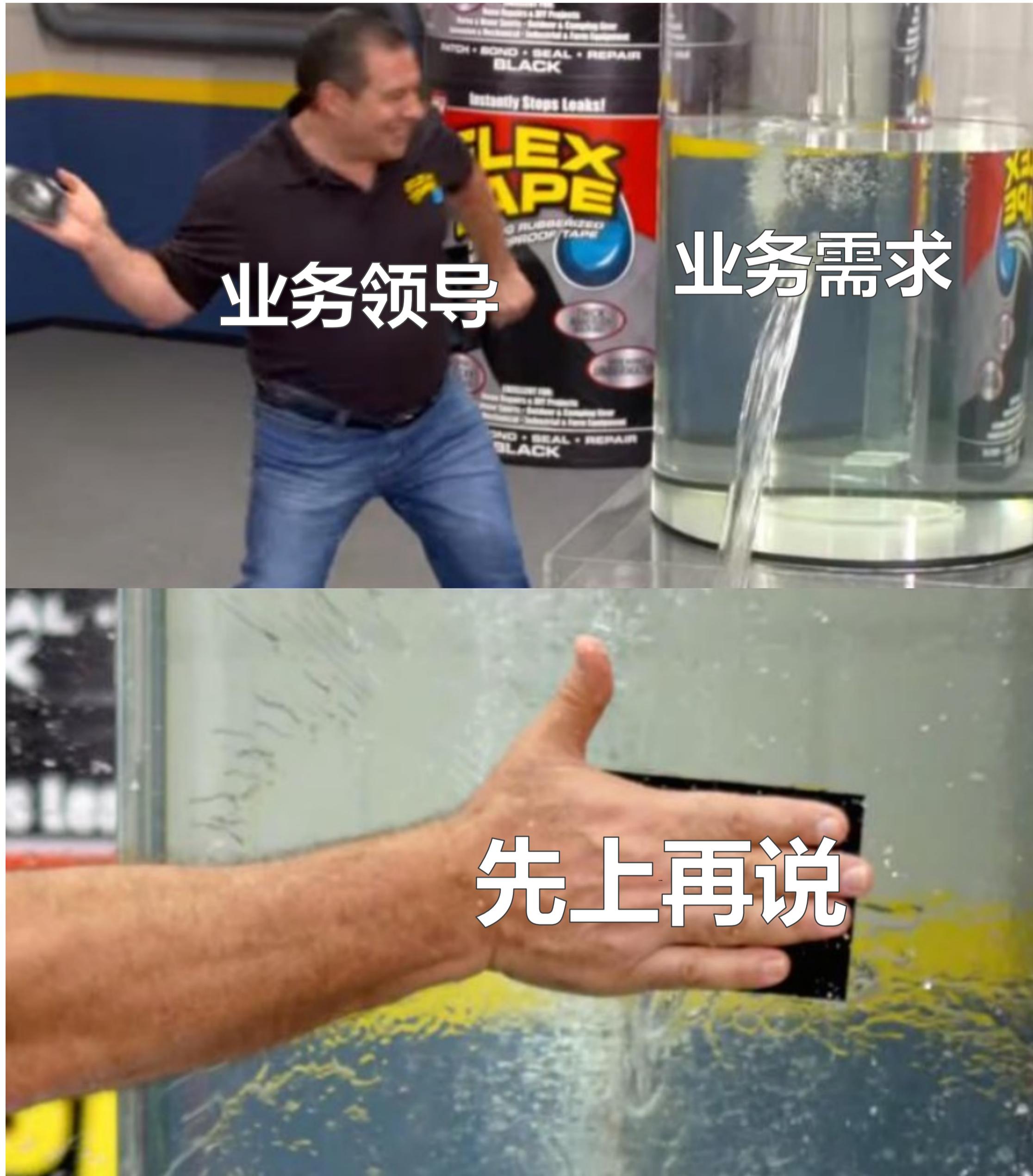
_ Part 03



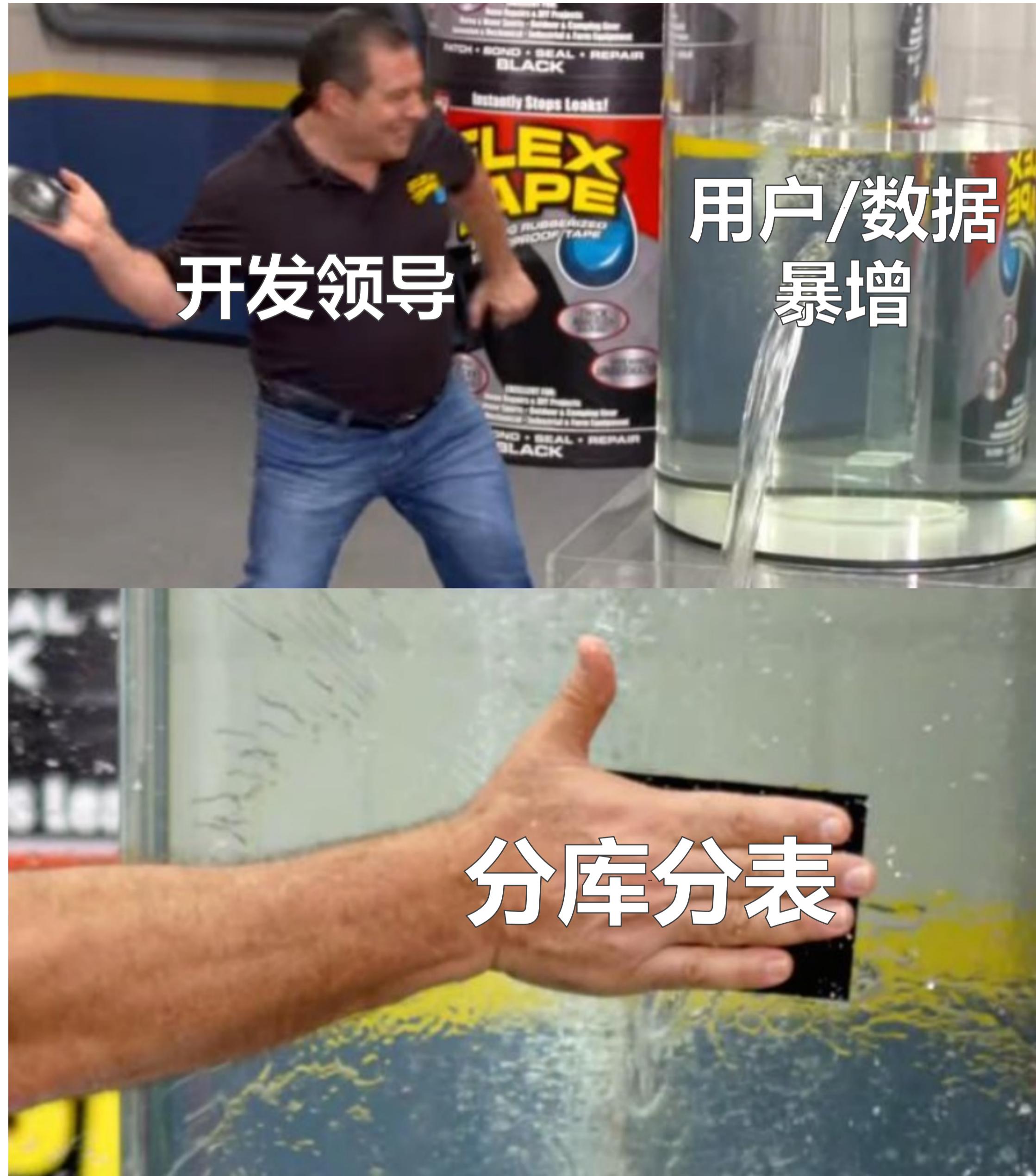
传统数据架构有什么问题



传统架构演进

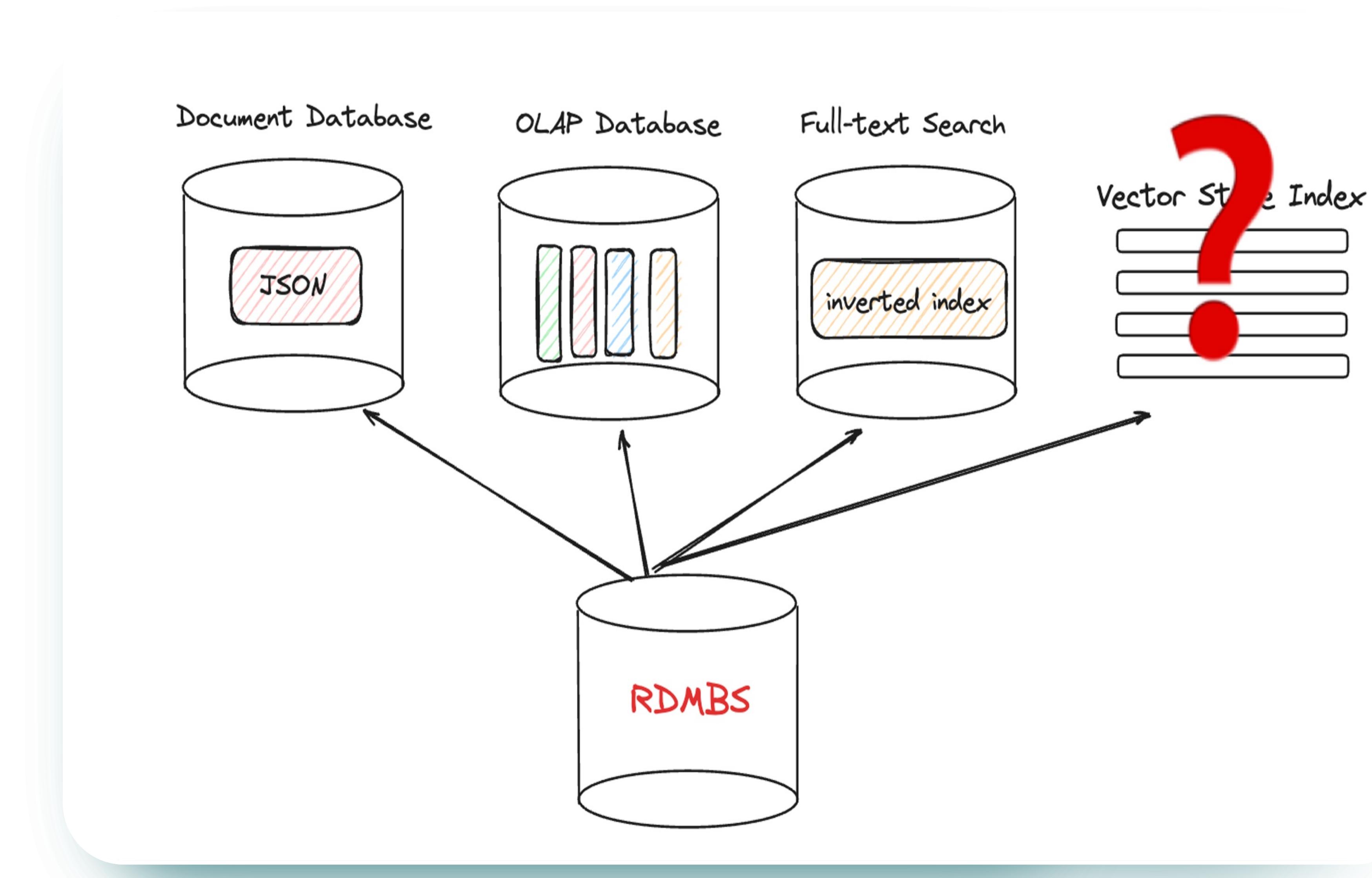


传统架构演进



每当我们在 RDB 内解决不了一个问题的时候

我们总是倾向于创造一个 **全新** 的东西去解决它



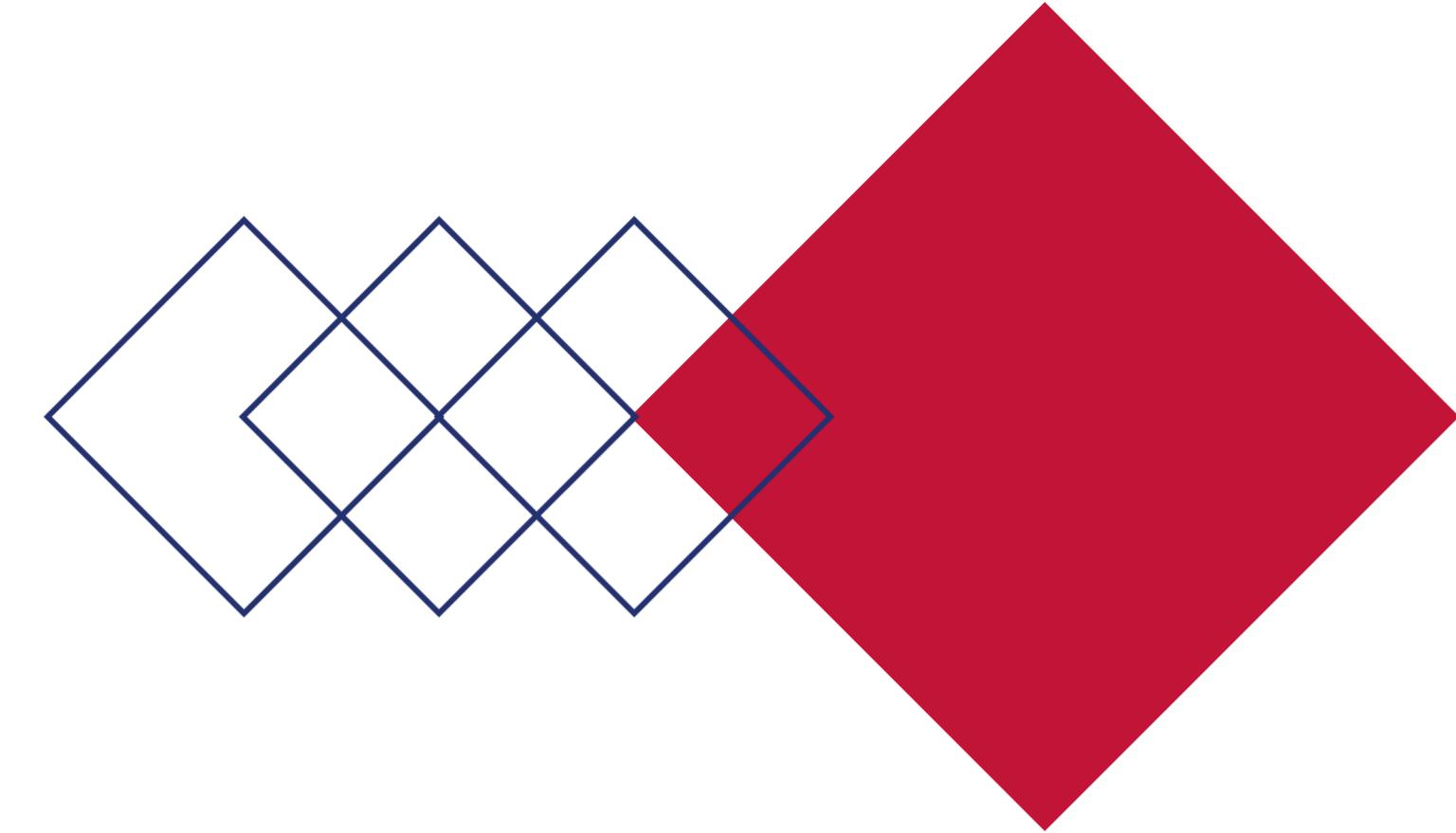
应用开发者 was like:



传统架构核心思想

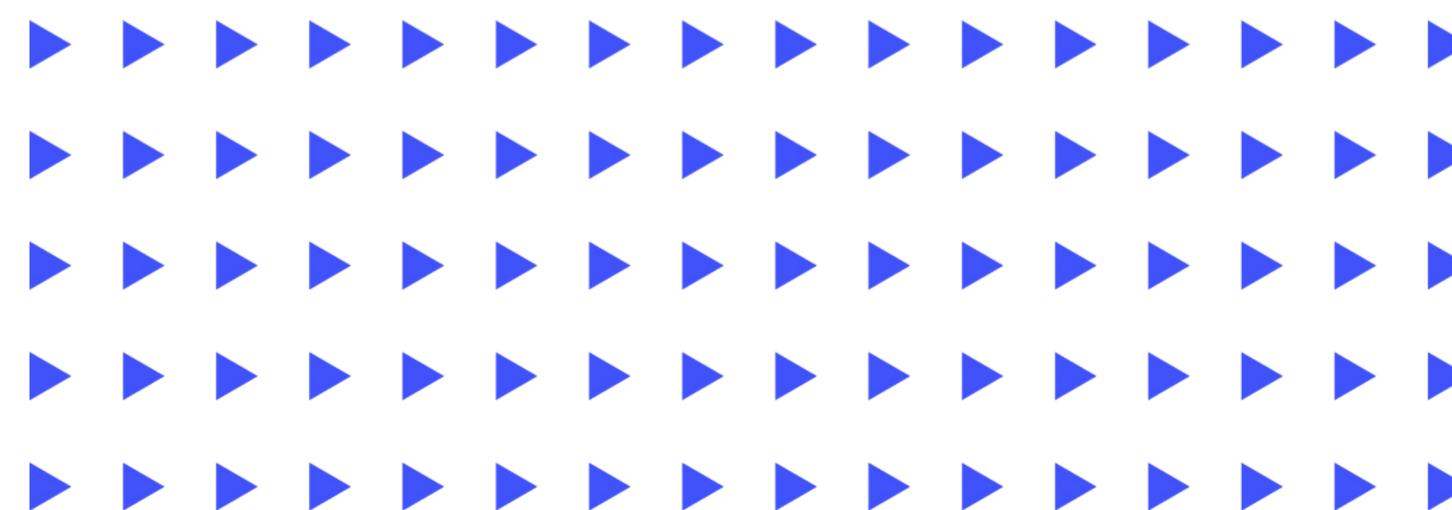


_ Part 04

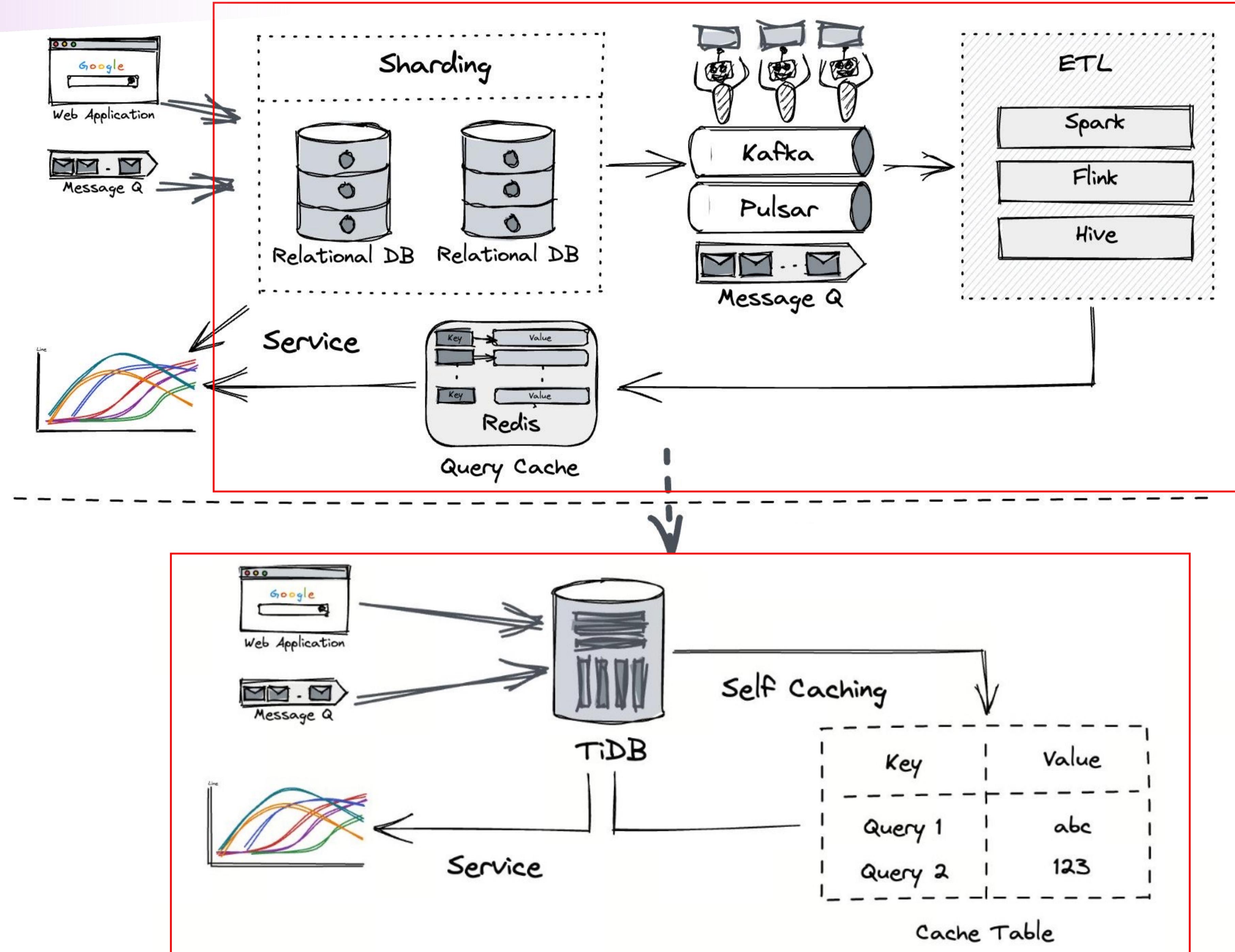


All in one 数据库

帮助开发者减负



架构对比



小集群免费



BETA

Serverless

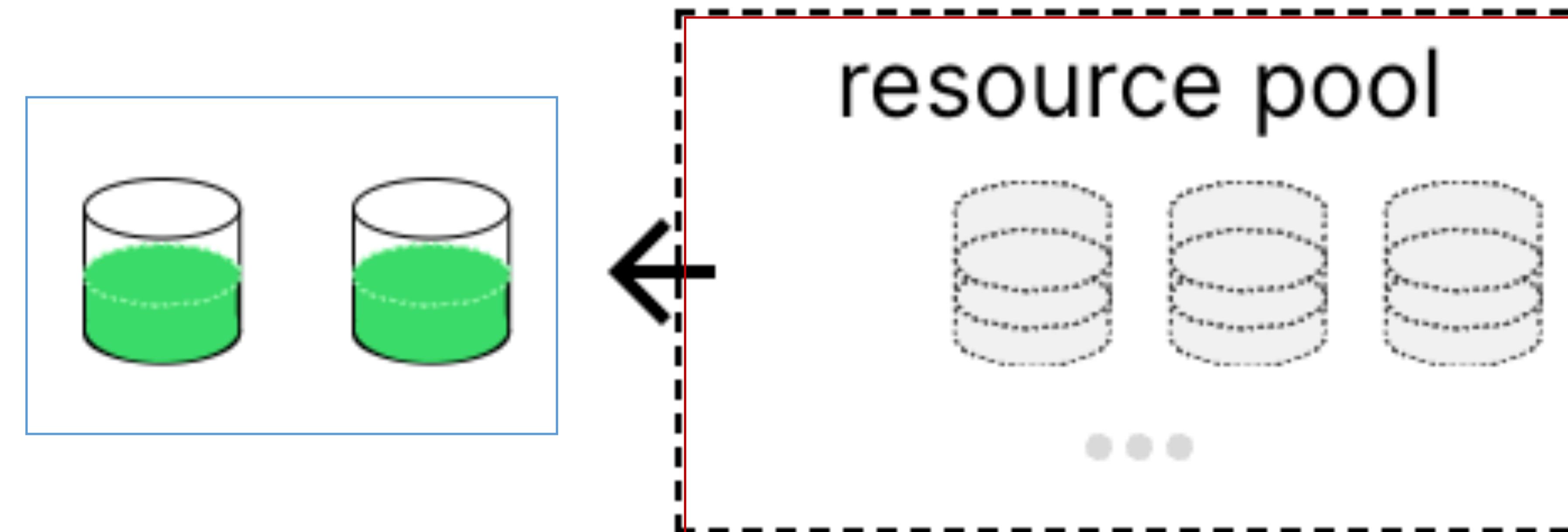
High available elastic clusters with free forever option.

- ✓ Full access to HTAP functionality
- ✓ 5GiB Storage **FREE** forever
- ✓ 50M Request Units **FREE** each month

按需取用，随借随还



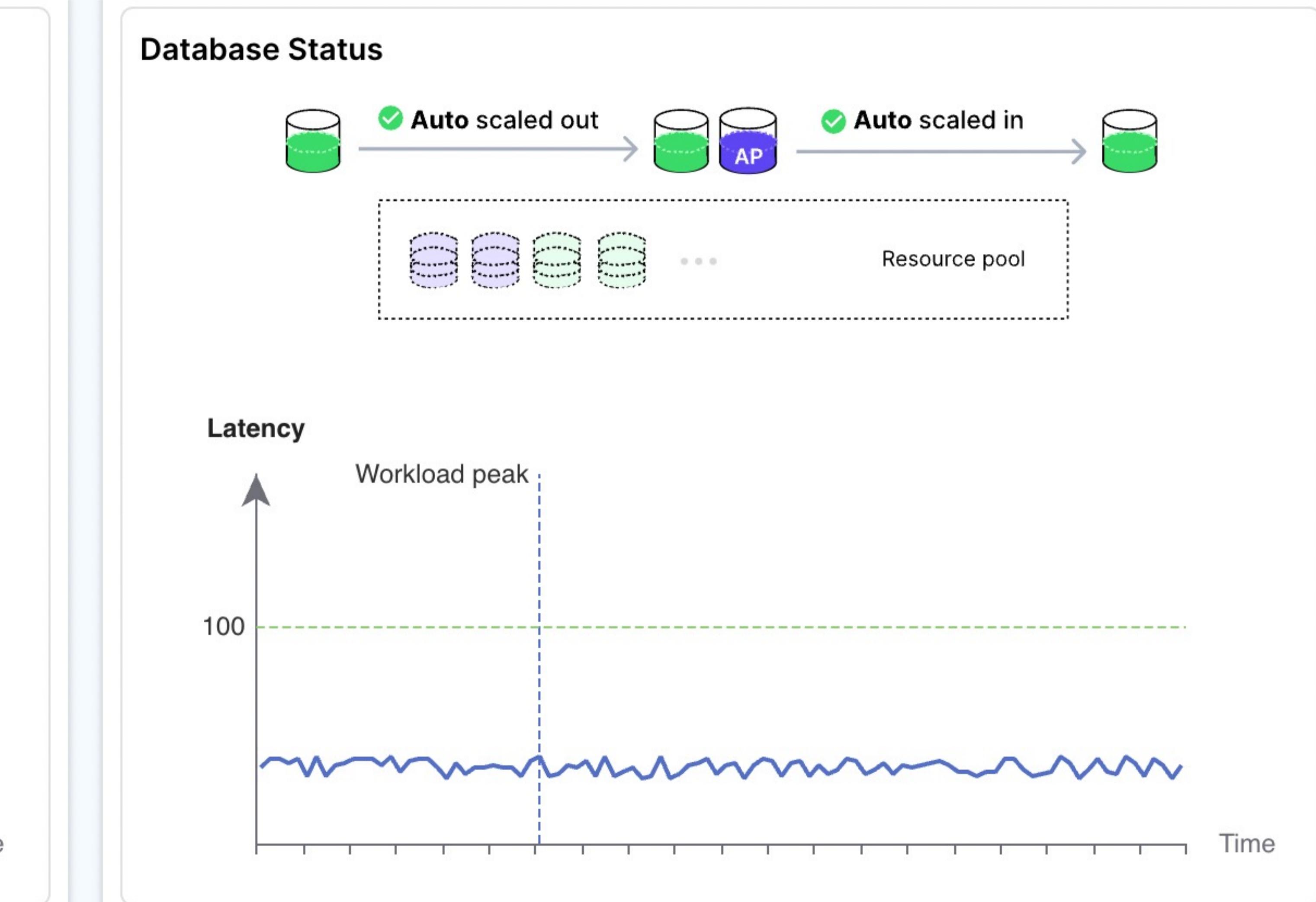
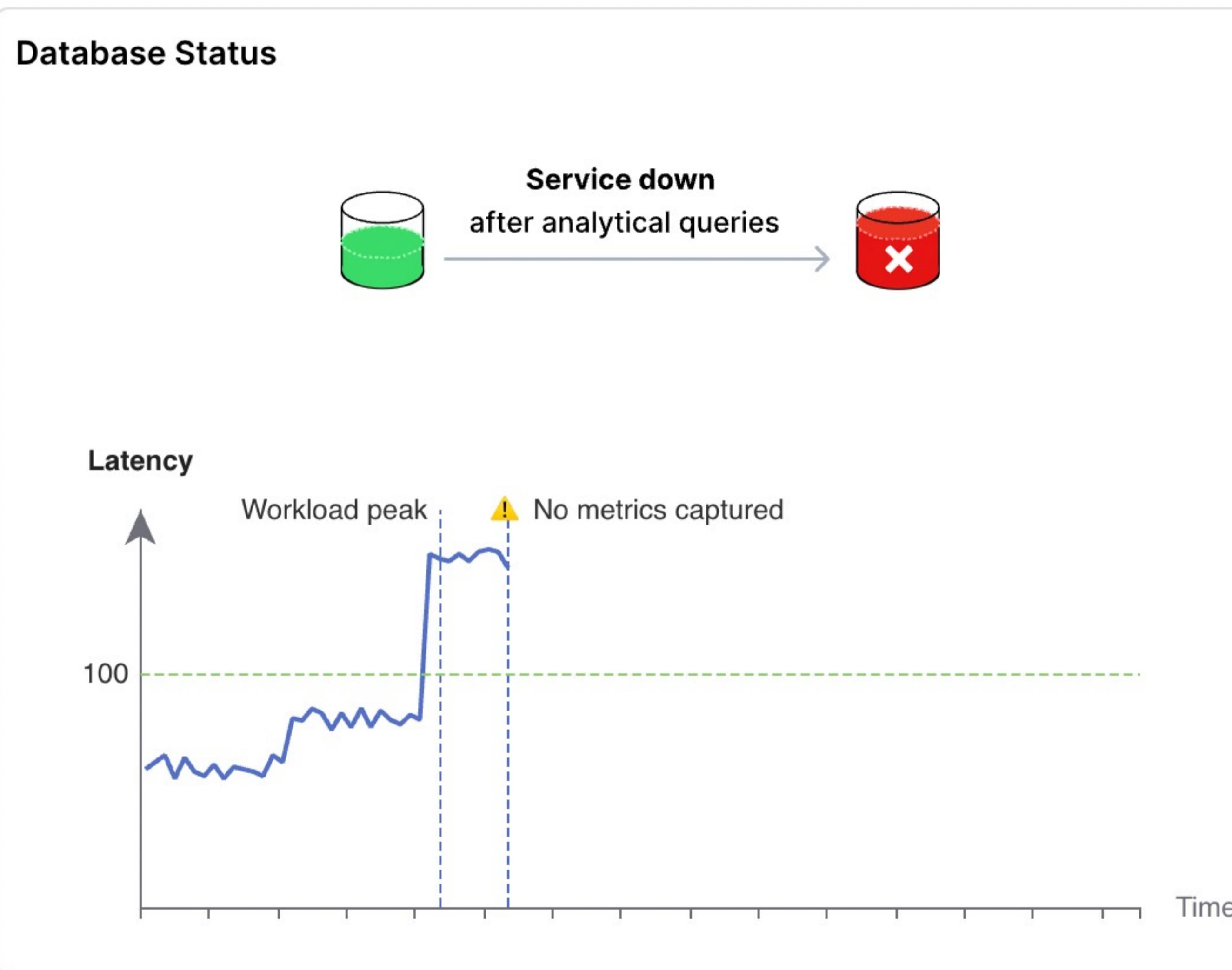
Pay as you go, 不为闲置付费



按需付费

无需为闲置资源
付费

突发流量，无需处理



TiDB Serverless甚至帮你成本减负

免费

2.5亿 RU

205.21_{QPS}

OSM (OpenStreetMap)

1200QPS

\$121_{/m}

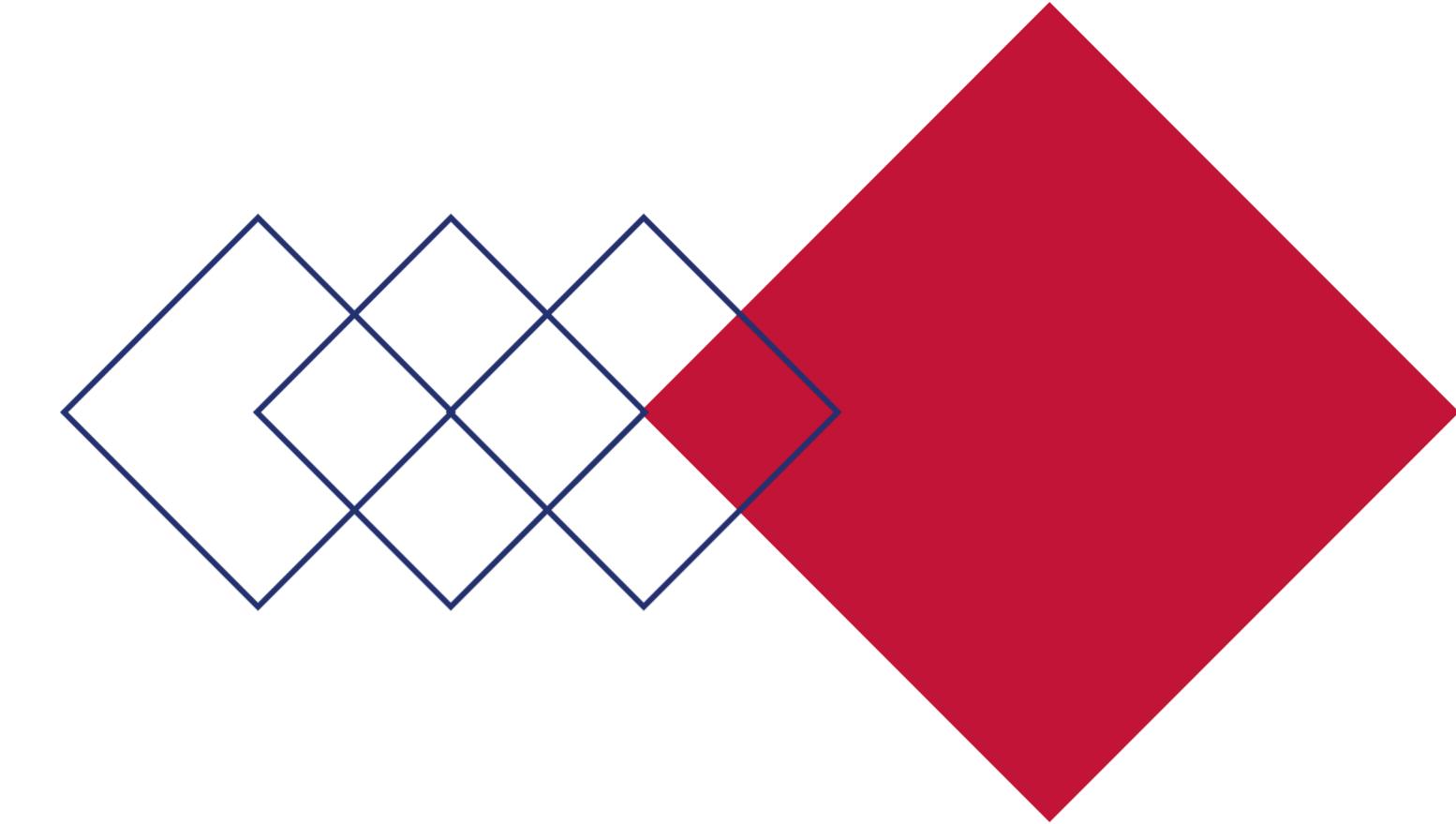
2009 年的 Twitter

2400QPS

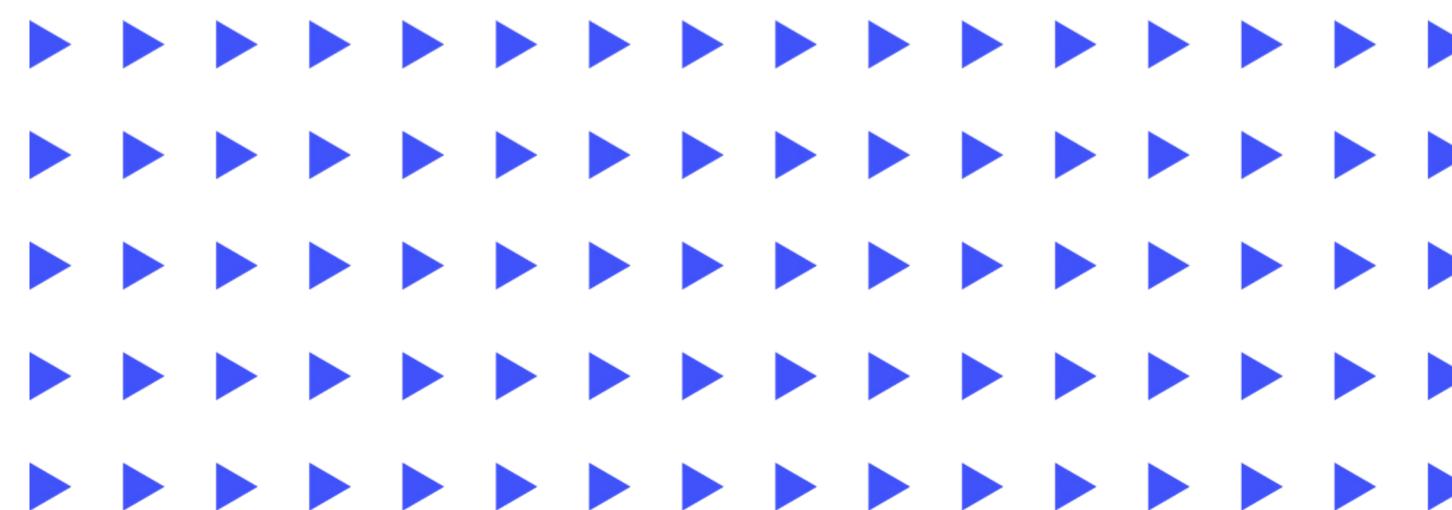
\$267_{/m}

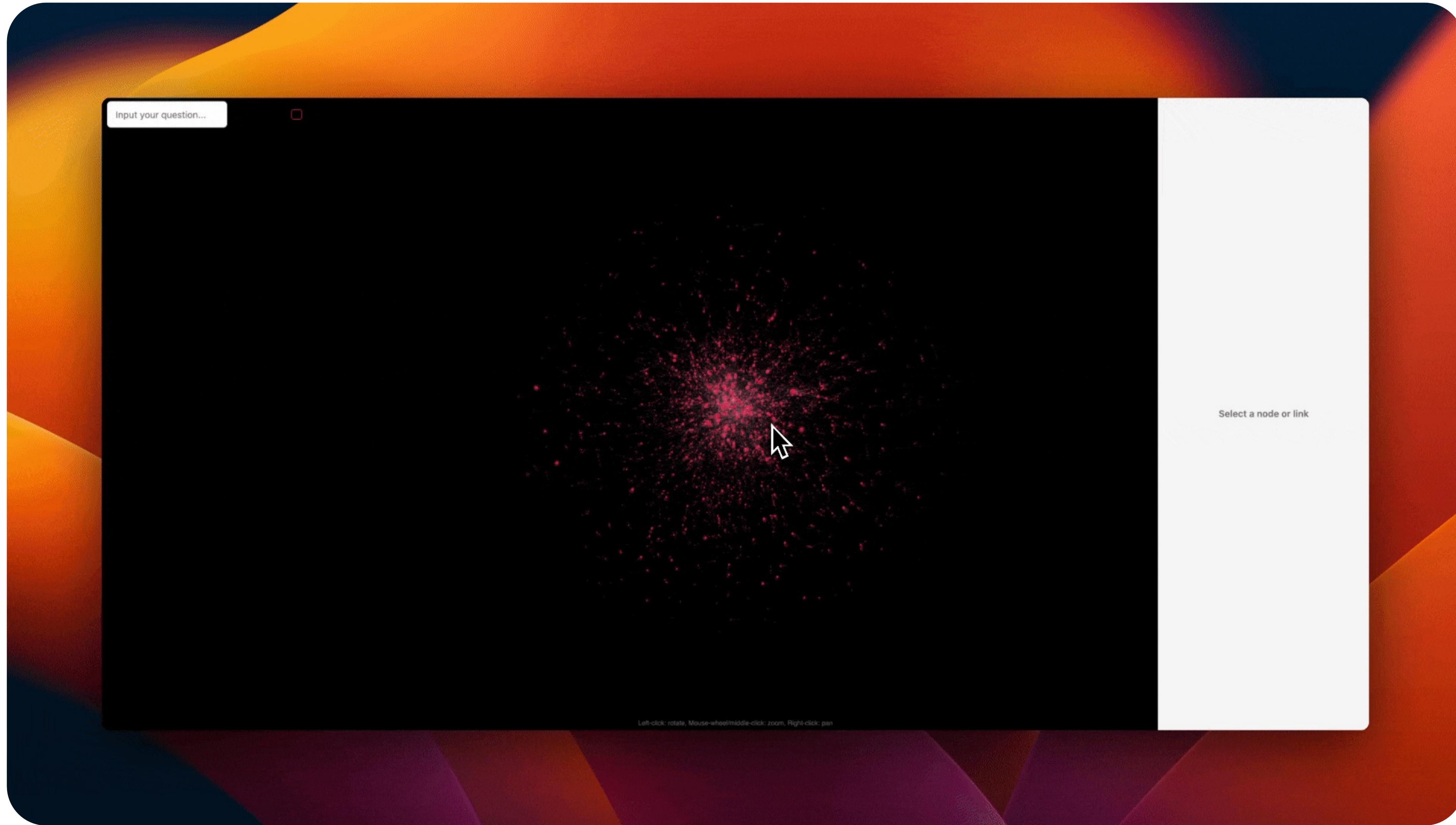
以上计算结果使用读负载场景进行估算，实际支出请以 TiDB Cloud Billing 计算结果为准

_ Part 05



Vector within TiDB >
TiDB + Vector Database





支持向量搜索的 TiDB Serverless

既可以向量搜索
又不限数据量级

这不巧了嘛这不是，欢迎体验 TiDB Serverless，
这边请：



PingCAP Products Solutions Resources Company Docs Book a Demo Start Free

The Most Advanced SQL-compatible Vector Solution Public Beta

TiDB is introducing a built-in vector search to the SQL database family, enabling support for your AI applications without requiring a new database or additional technical stacks. With vectors as a new data type in MySQL, you can now store and search for vectors directly using SQL.

[Start Free](#) [Documentation →](#)

 MySQL & Vector All in One

Eliminate redundancy. Store vector embeddings alongside MySQL data directly. No new DB needed.

 Join Multi-model Data with Ease

Leverage familiar SQL to join, index, and query operational and vector data together, enabling

 Vast Array of Use Cases

Powering RAG, semantic searches and more, with integrations like OpenAI, Hugging Face, LangChain

```
mysql> CREATE TABLE vector_table(embedding VECTOR);
Query OK, 0 rows affected (0.05 sec)

mysql> INSERT INTO vector_table VALUES
    -> '[5.3, 6.2, 4.7, 9.4, 3.2]',
    -> '[7.4, 8.3, 3.6, 9.5, 1.5]',
    -> '[1.6, 5.3, 3.9, 4.9, 3.4]',
    -> '[4.6, 6.2, 2.9, 5.5, 2.4]',
    -> '[8.2, 2.7, 5.9, 4.5, 1.1]';
Query OK, 5 rows affected (0.02 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> SELECT
    -> embedding,
    -> VEC_Cosine_Distance(embedding, '[1,2,3,4,5]') AS d
    -> FROM vector_table
    -> ORDER BY d;
+-----+-----+
| embedding | d      |
+-----+-----+
| [1.6,5.3,3.9,4.9,3.4] | 0.09597214606787163 |
| [5.3,6.2,4.7,9.4,3.2] | 0.15841034048519986 |
| [4.6,6.2,2.9,5.5,2.4] | 0.21071371150541895 |
| [7.4,8.3,3.6,9.5,1.5] | 0.28466052143741205 |
| [8.2,2.7,5.9,4.5,1.1] | 0.35390651635892556 |
+-----+-----+
5 rows in set (0.02 sec)
```

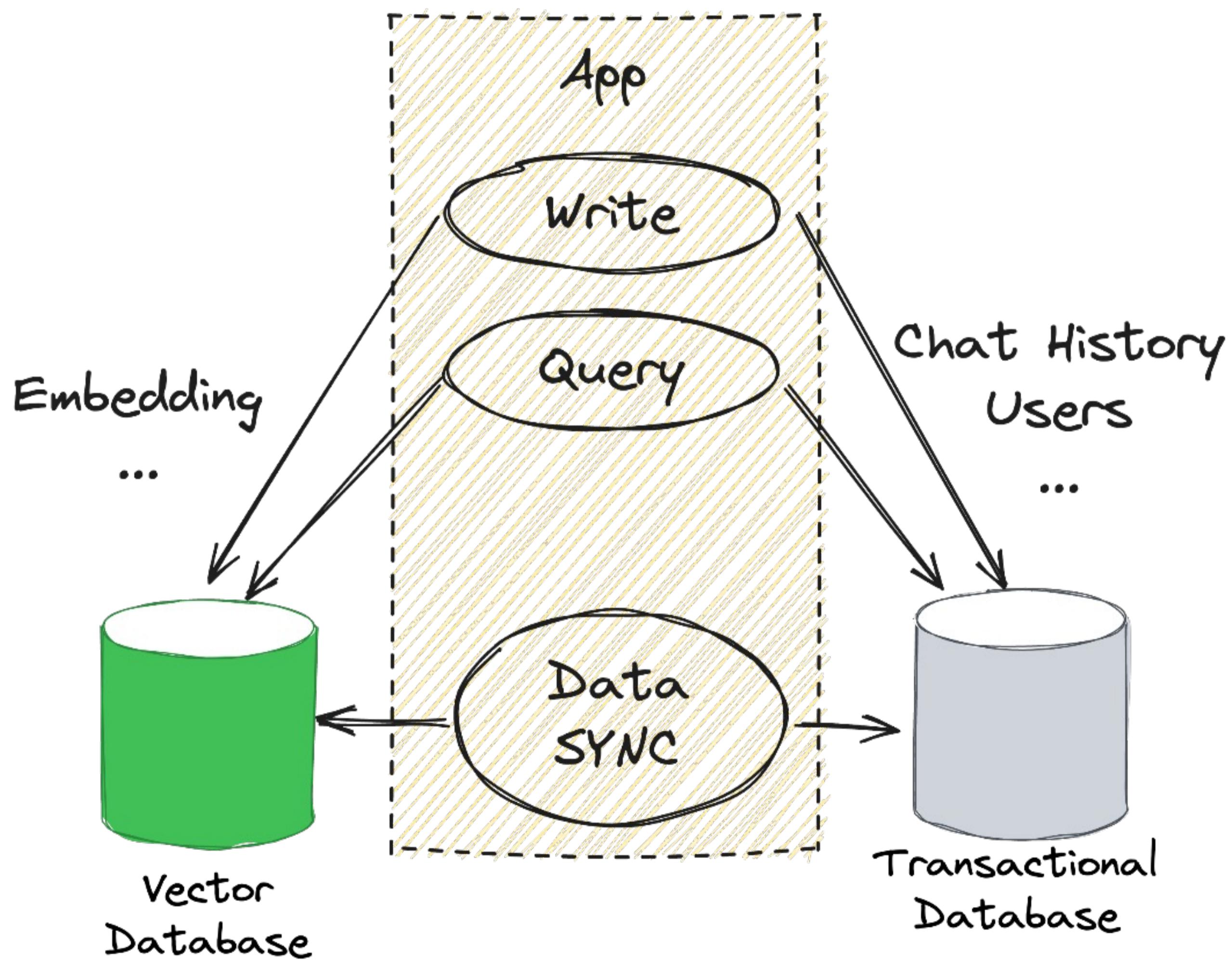
MySQL 生态自己的 pg_vector

Even Better

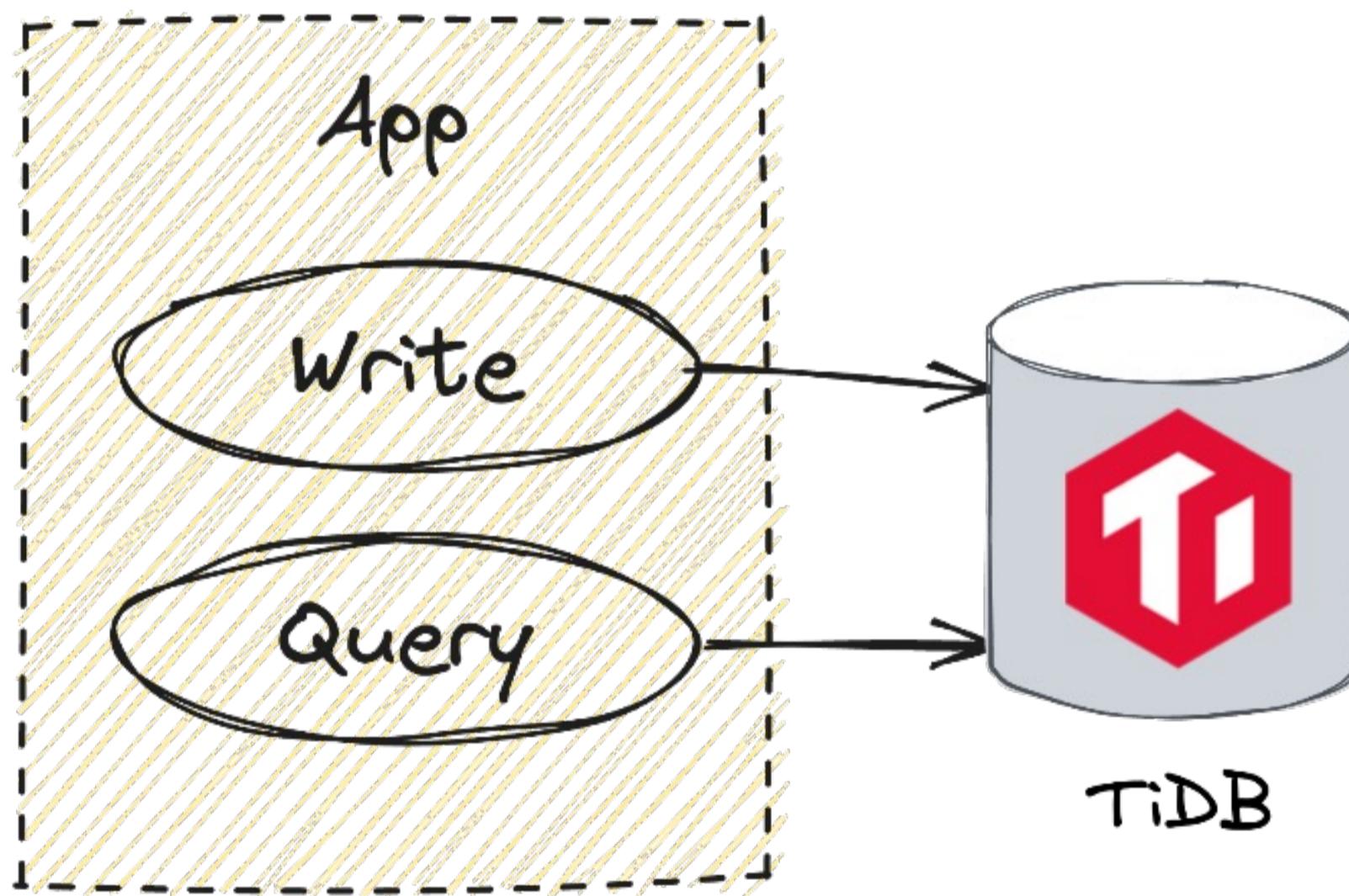


简化架构

Complex Architecture

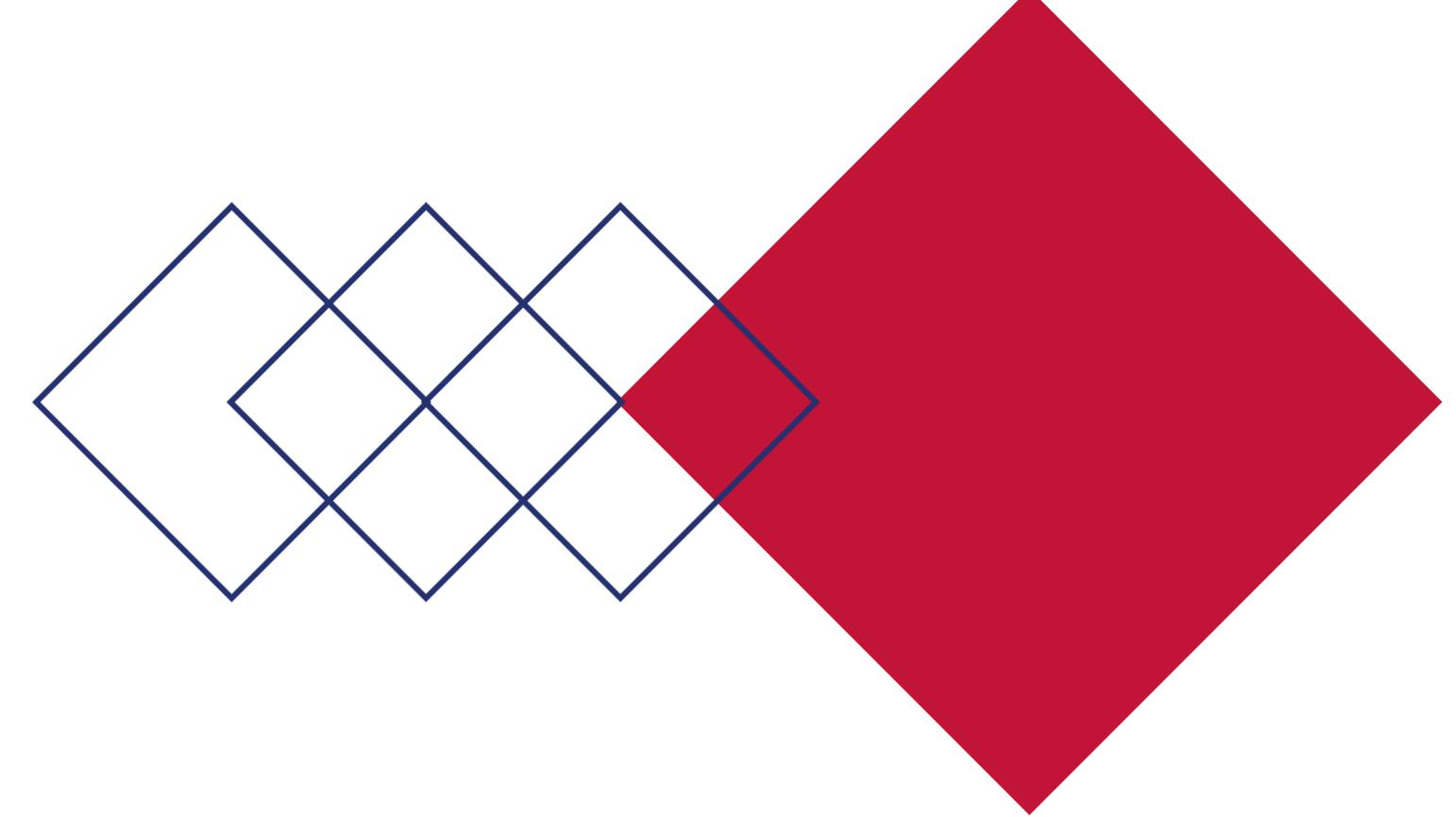
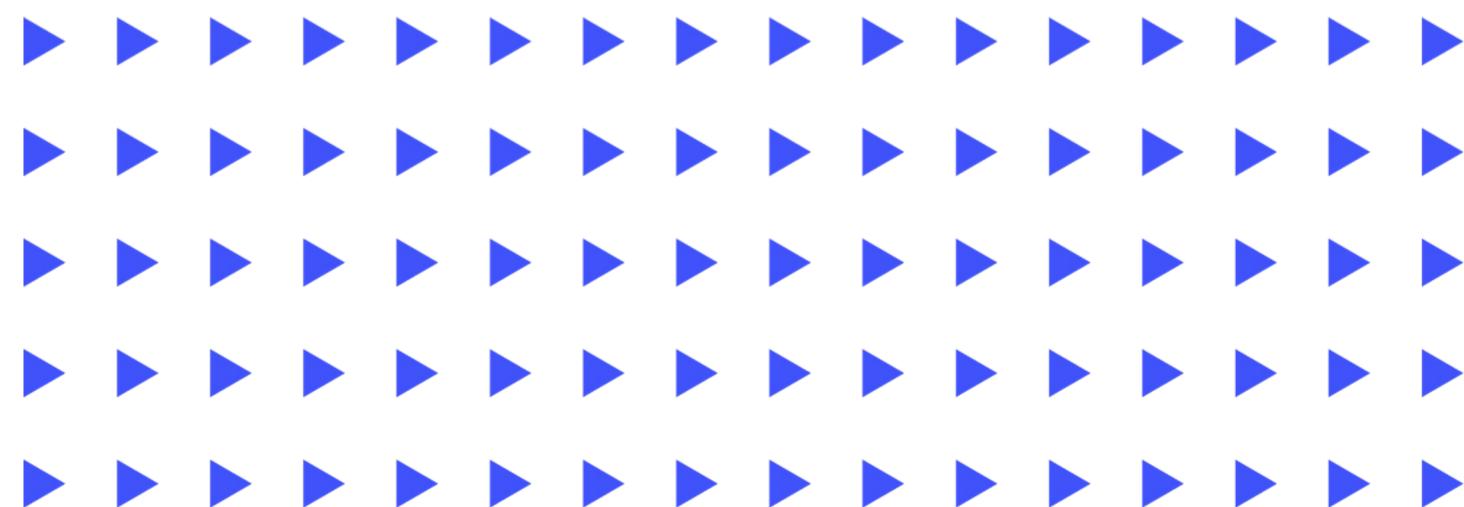


Simple Architecture



_ Part 06

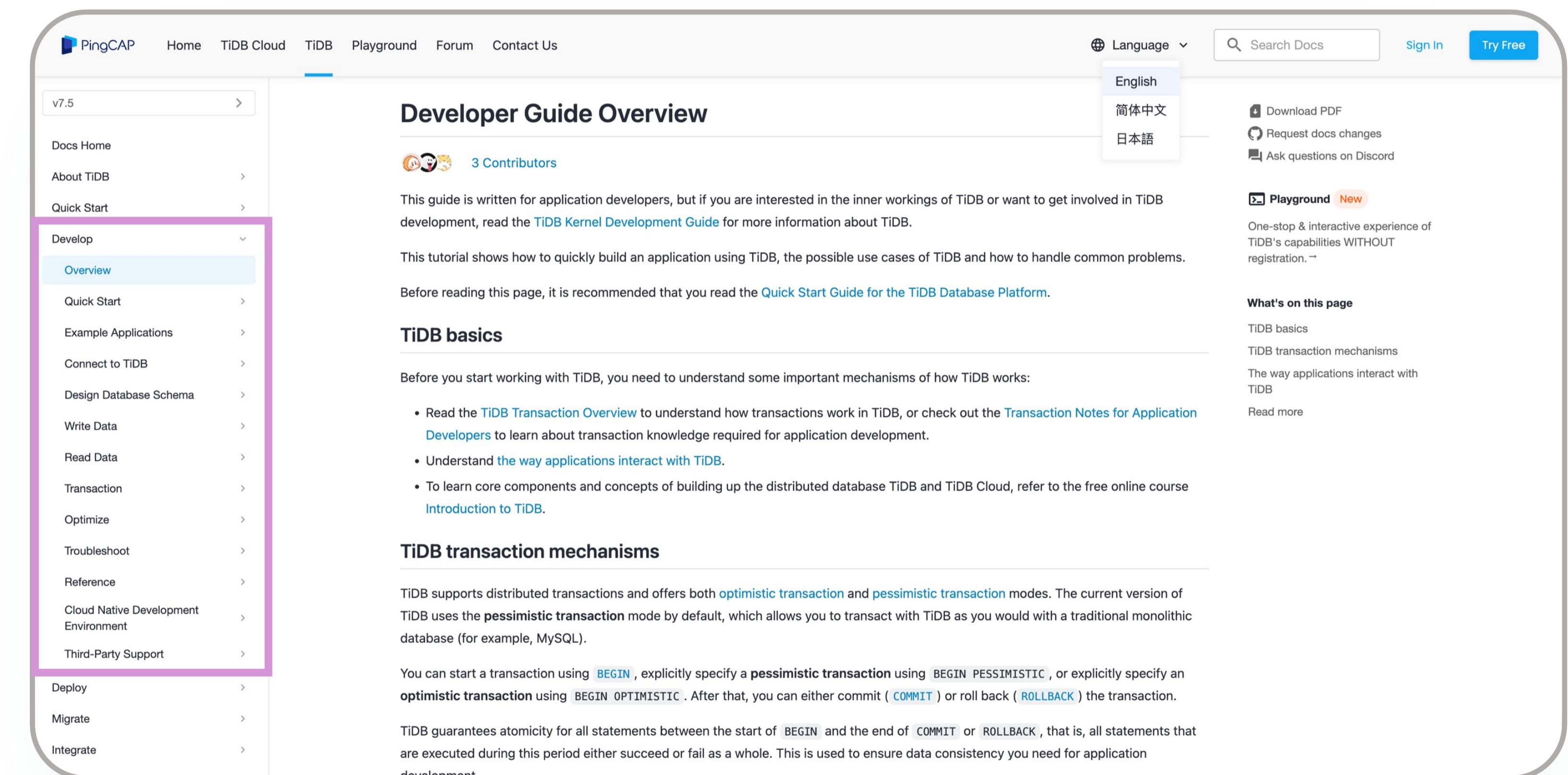
TiDB 的支持



TiDB 丰富的文档

丰富到什么程度

- 英文 Markdown 文档 : **1276** 篇
- 中文 Markdown 文档 : **1098** 篇
- 而且这些文档不是 AI 翻译的，是我们的文档团队进行维护的。日文文档是机翻的，因此不算在这里
- 更进一步的是，我们的文档的跟随版本的，也就是说，你总是能找到最新 Feature 的文档



The screenshot shows the TiDB Developer Guide Overview page. The sidebar on the left is a navigation menu for version v7.5, with the 'Develop' section expanded and 'Overview' highlighted. The main content area displays the 'Developer Guide Overview' page, which includes sections like 'TiDB basics' and 'TiDB transaction mechanisms', and links to 'Playground' and 'What's on this page'.

TiDB 成熟的社区



Hi, 欢迎来到 TiDB 社区!

TiDB 社区是由 TiDB 生态中的开发者、用户、Contributor、合作伙伴一起建立的分享、学习平台。在这里，我们可以自由发声，互相协助解决问题。

96,000+

Pull Requests

24,000+

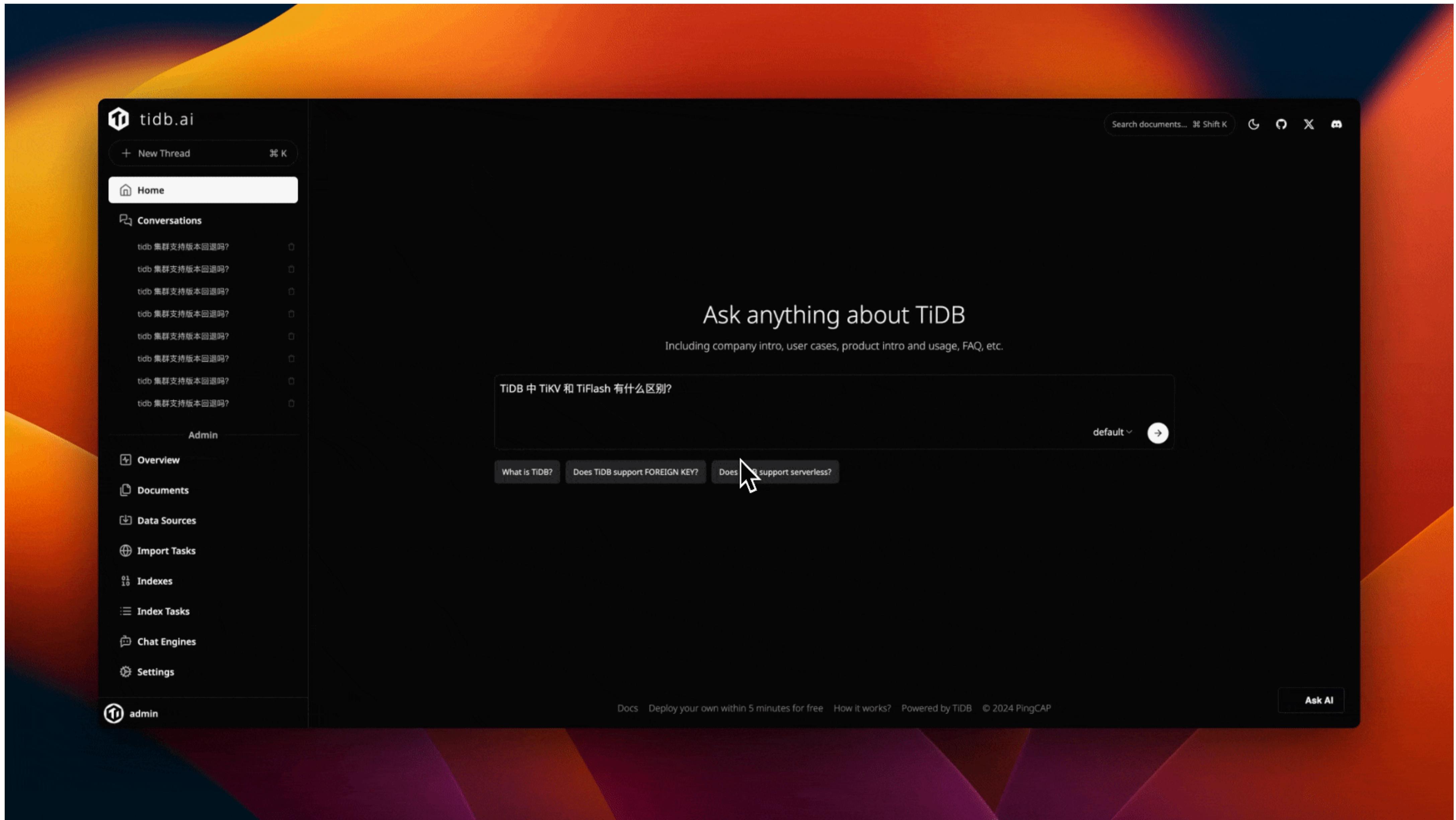
主题

285,000+

帖子

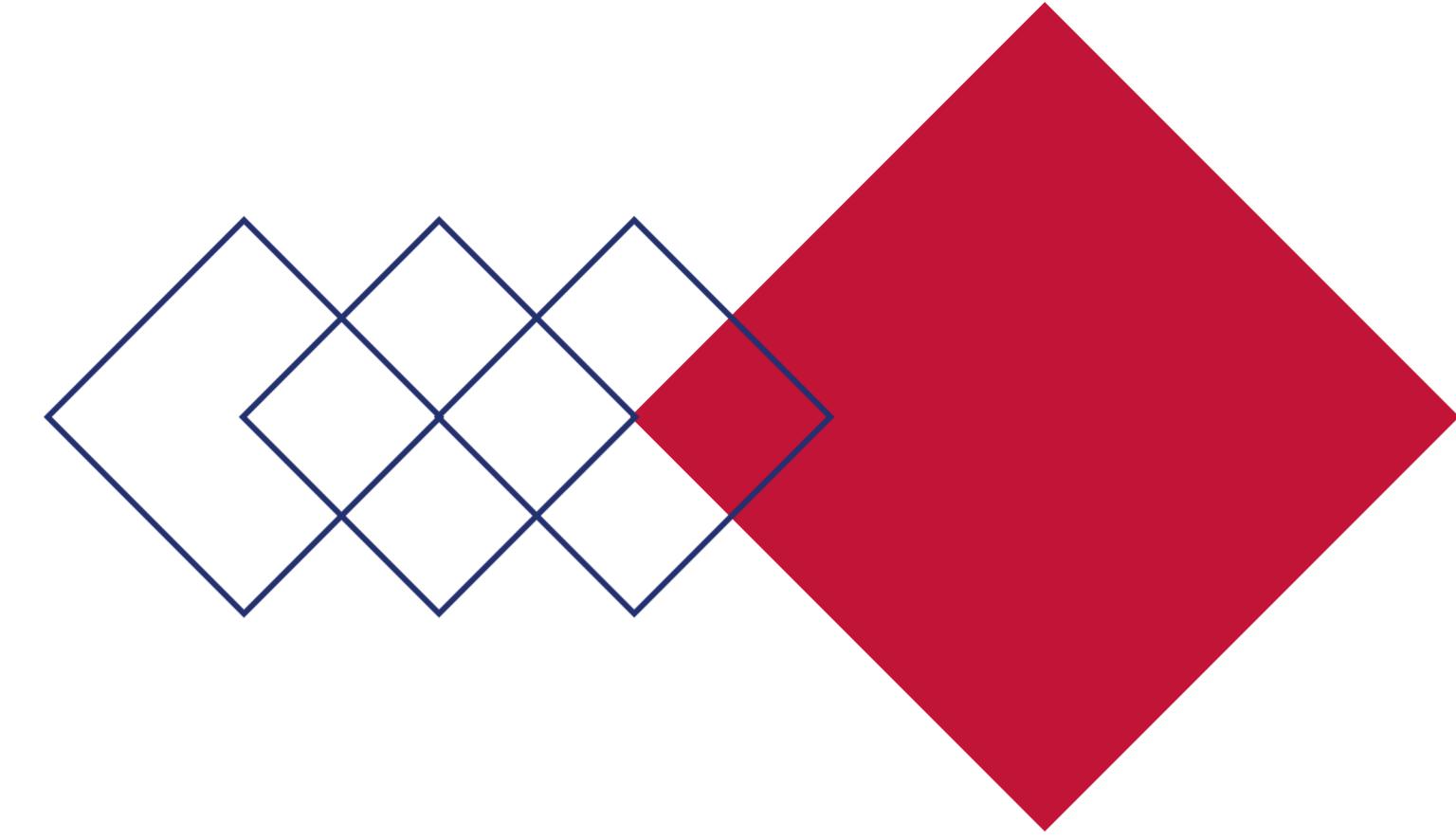
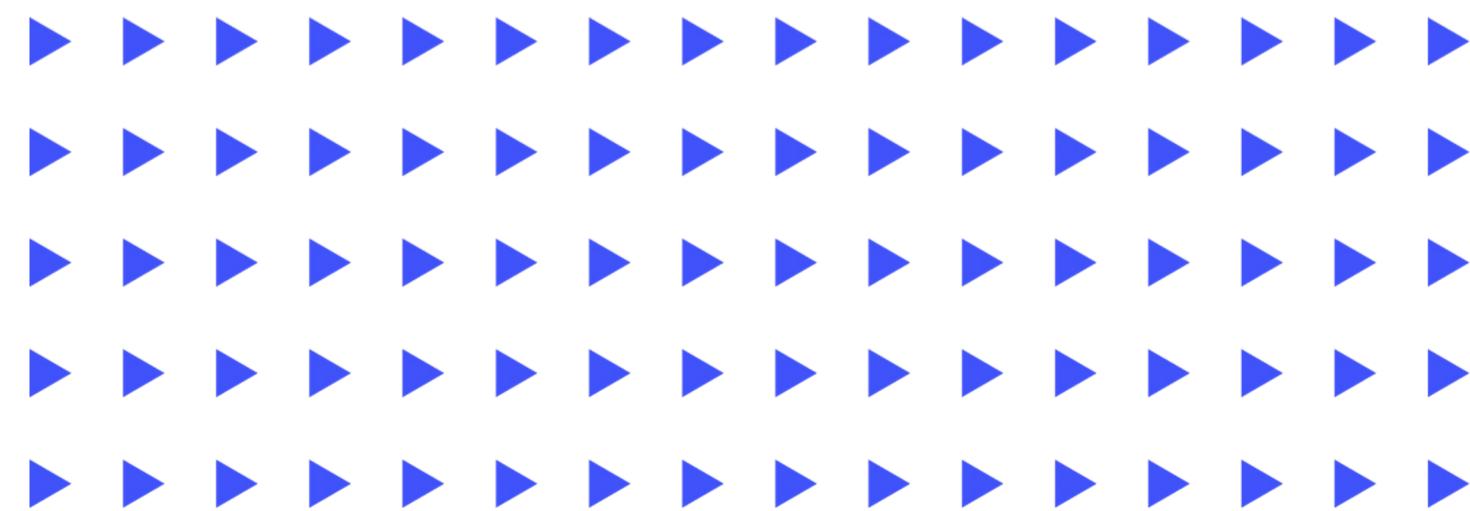
2,300+

贡献者



_ Part 07

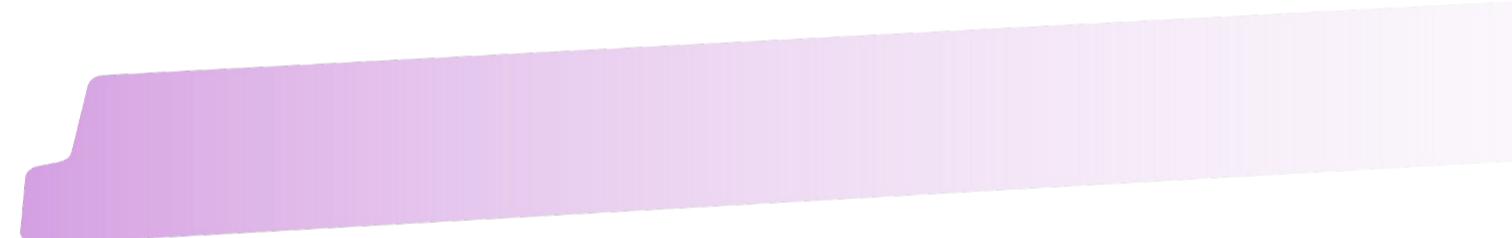
Ending



Take away

数据库技术栈	优点	缺点
RDB	简单可用	数据量限制，可用性较低，无 Vector 能力，无分析能力
RDB + Vector DB	在 Vector DB 内的向量计算性能更高	需数据同步，数据一致性问题，架构复杂，不同的语法
RDB + 图数据库	在图数据库内，图的操作更直观	需数据同步，数据一致性问题，架构复杂，不同的语法
自部署 TiDB	数据量无限制，可用性高，有分析能力	无 Vector 能力，运维复杂，大量虚拟实例
TiDB Serverless	数据量无限制，可用性高，有分析能力，有 Vector 能力，价格便宜	持续高负载时，价格比自部署 TiDB 贵

Simplicity is everything!



THANKS



Cheese王琦智

Guangdong Guangzhou



Scan the QR code to add me as friend