

Database Microservices





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who are we **Company**

Our Mission:

Disrupt the second hand market.



who are we **Numbers**

80M Total users

16M Messages per day

600K Products posted every day



who are we **Sizes**

- AWS based platform
- 1500 (over) Servers peak hour
- 300 (over) Database Servers
- VLDB some databases are over 3TB
- Tables over 4B rows



Database Infra

- Open Source: Mariadb.
- DaaS DynamoDB, Aurora.
- NoSql ElasticSearch, Solr.



Database topology

- master - multiples slaves.
- not multi master cluster due to the high concurrency.
- not using database constraints.



monolithic **Database**

trying to put all the eggs in the same bucket



monolithic Database

- difficult to scale.
- difficult to maintain across teams.
- downtime affect entire platform.
- **heterogeneous environment.** All teams need to consume data in the same engine, and format.



microservice **Database**

Split problems in smaller problems



microservice Database

- **security** - Every micro-service has its own database.
- **ownership** - Service is responsible only for its own data.
- **projections** - For reading shared data among different services.
- **spread load** - Reduce overhead on a certain system.
- **event** - Used to populate Projections
- **fail fast** - Scrum



the Good

- horizontally scale by splitting *database per service*.
- different databases engines.
- different configurations like, Indexes or table structure, based on the specific requirements.
- fit in the scrum methodology.
- **fallback** - missed data in projection can be retrieved from the owner database.



the Ugly

- database changes. DML.
- data incidents.

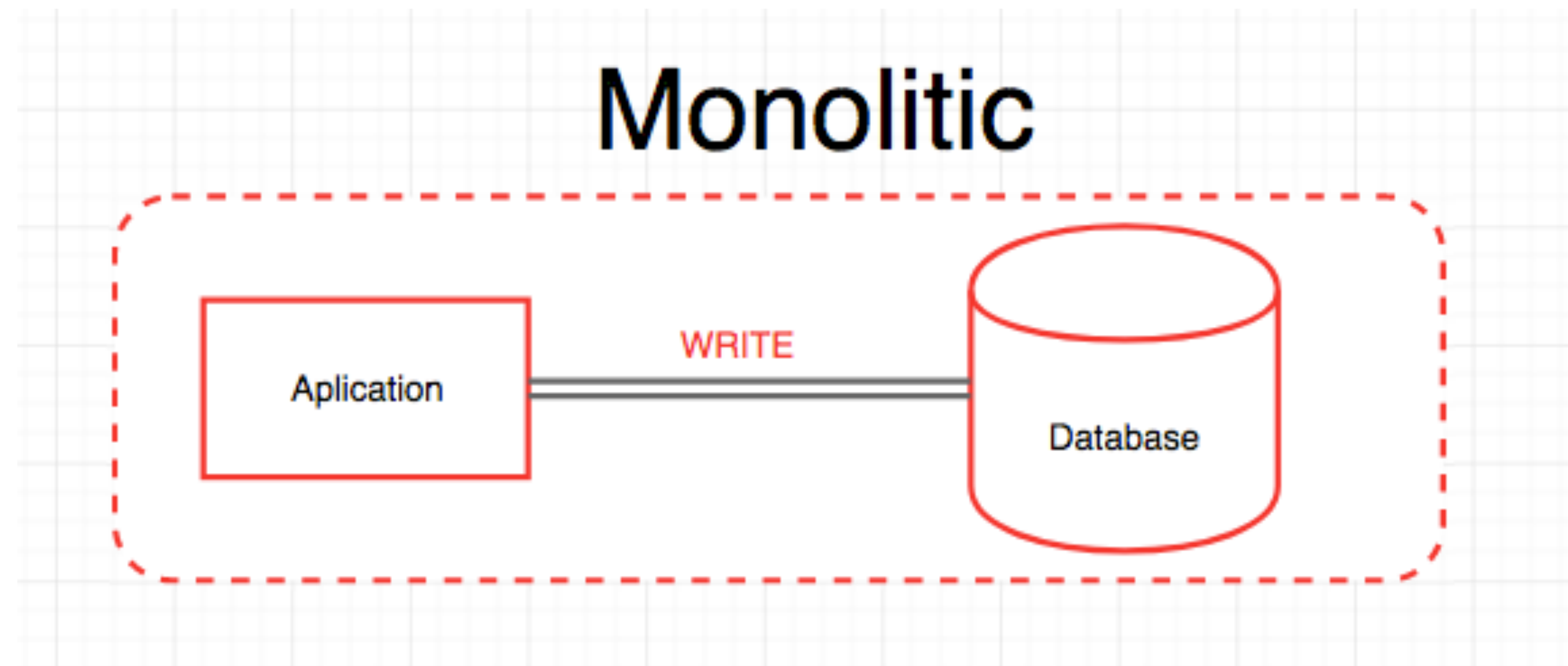


the **Bad**

- clean data, *in-consistent*.
- cost increase.
- Manageability



old School



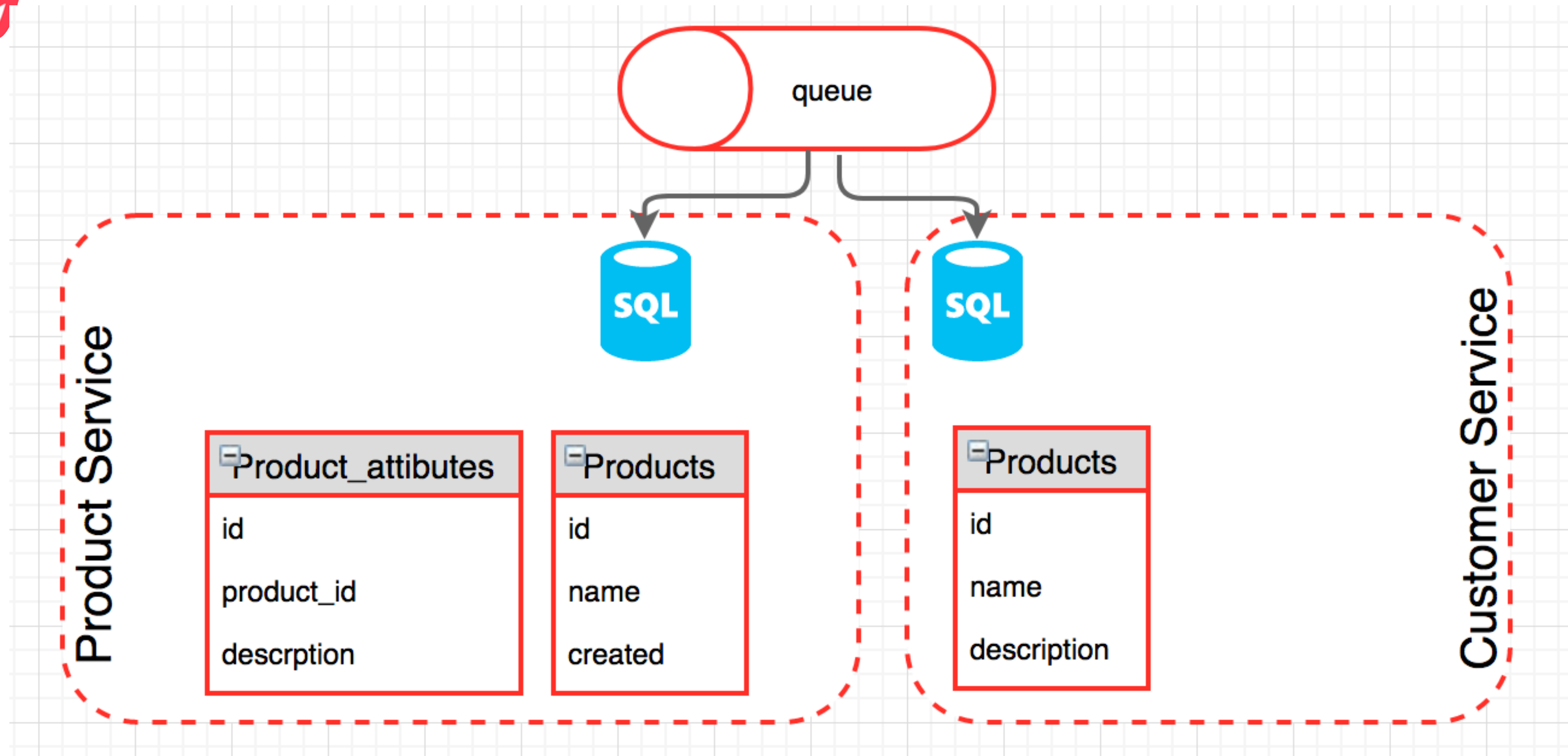


to do the **Move**

- Use events.
- Use queues, subscribers.
- Training.

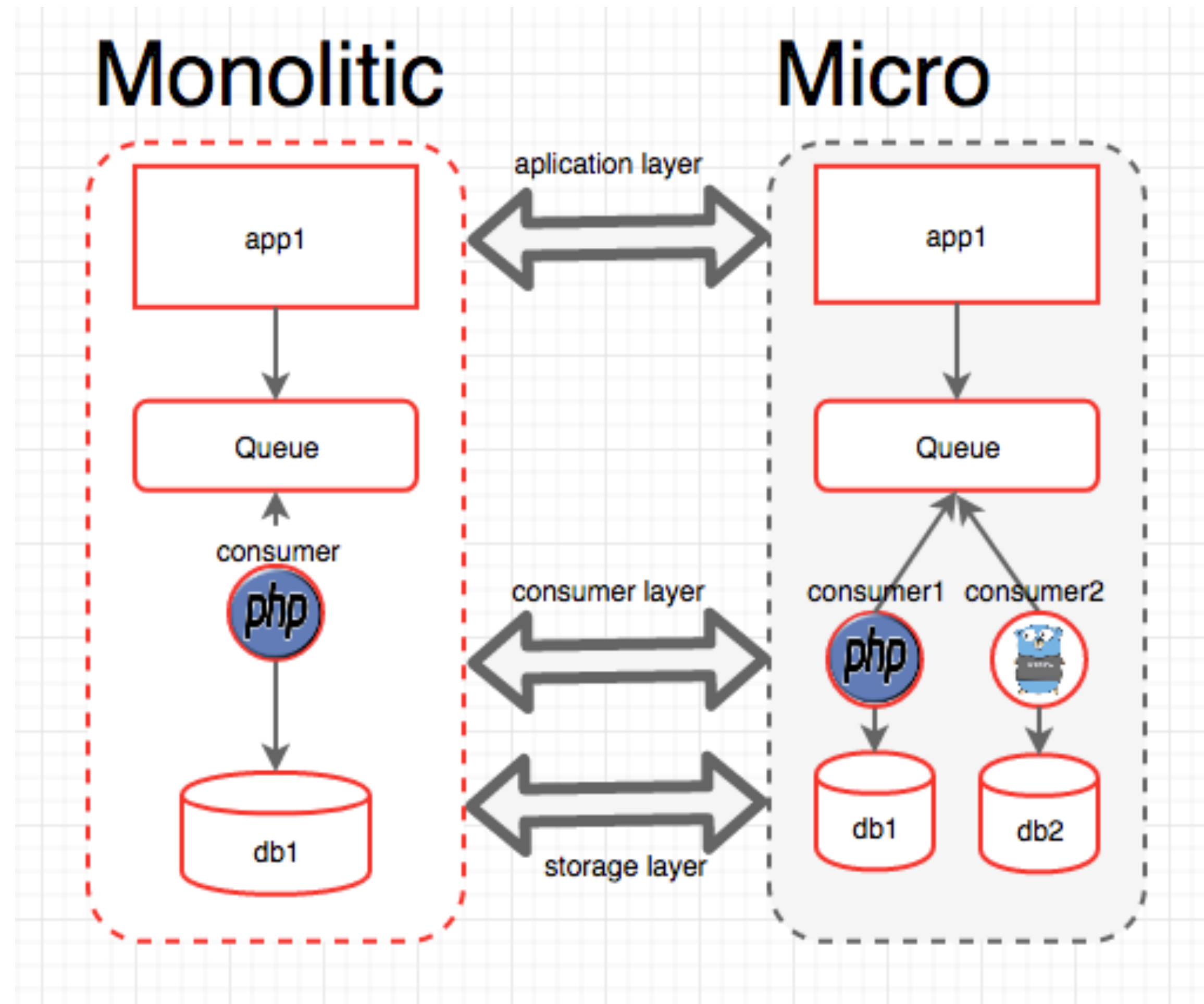


using Projections



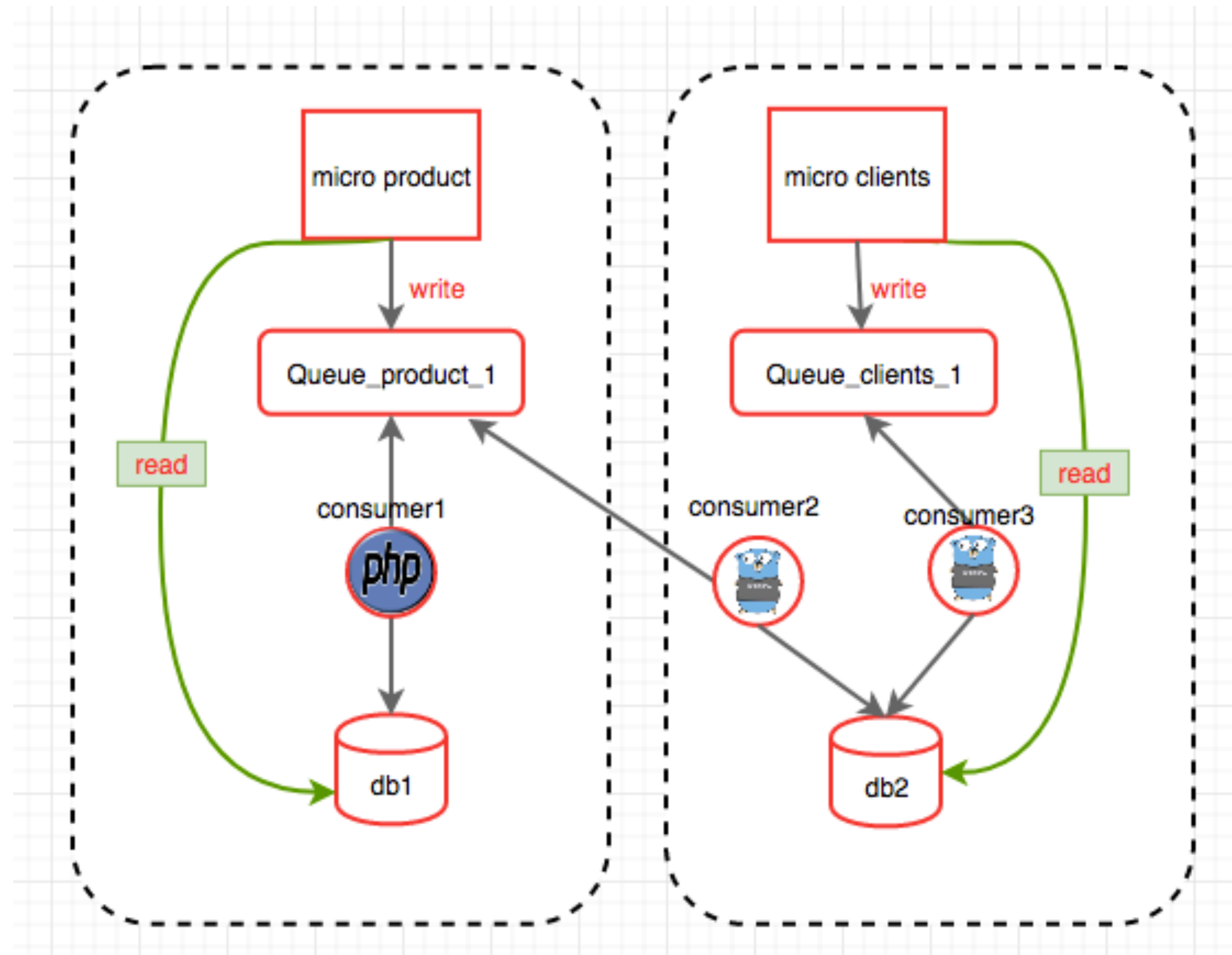


doing the **Move**



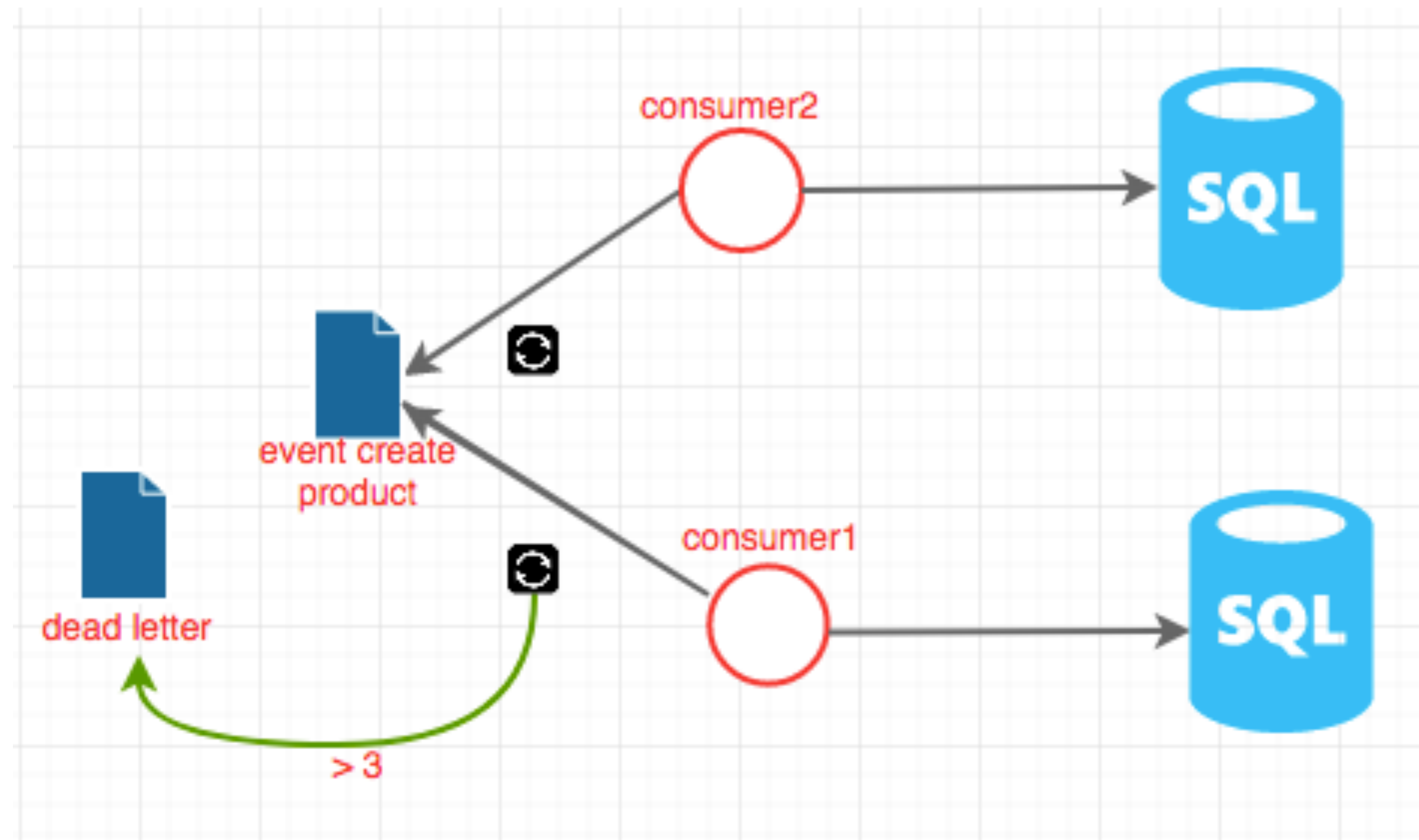


how it works **Micro**



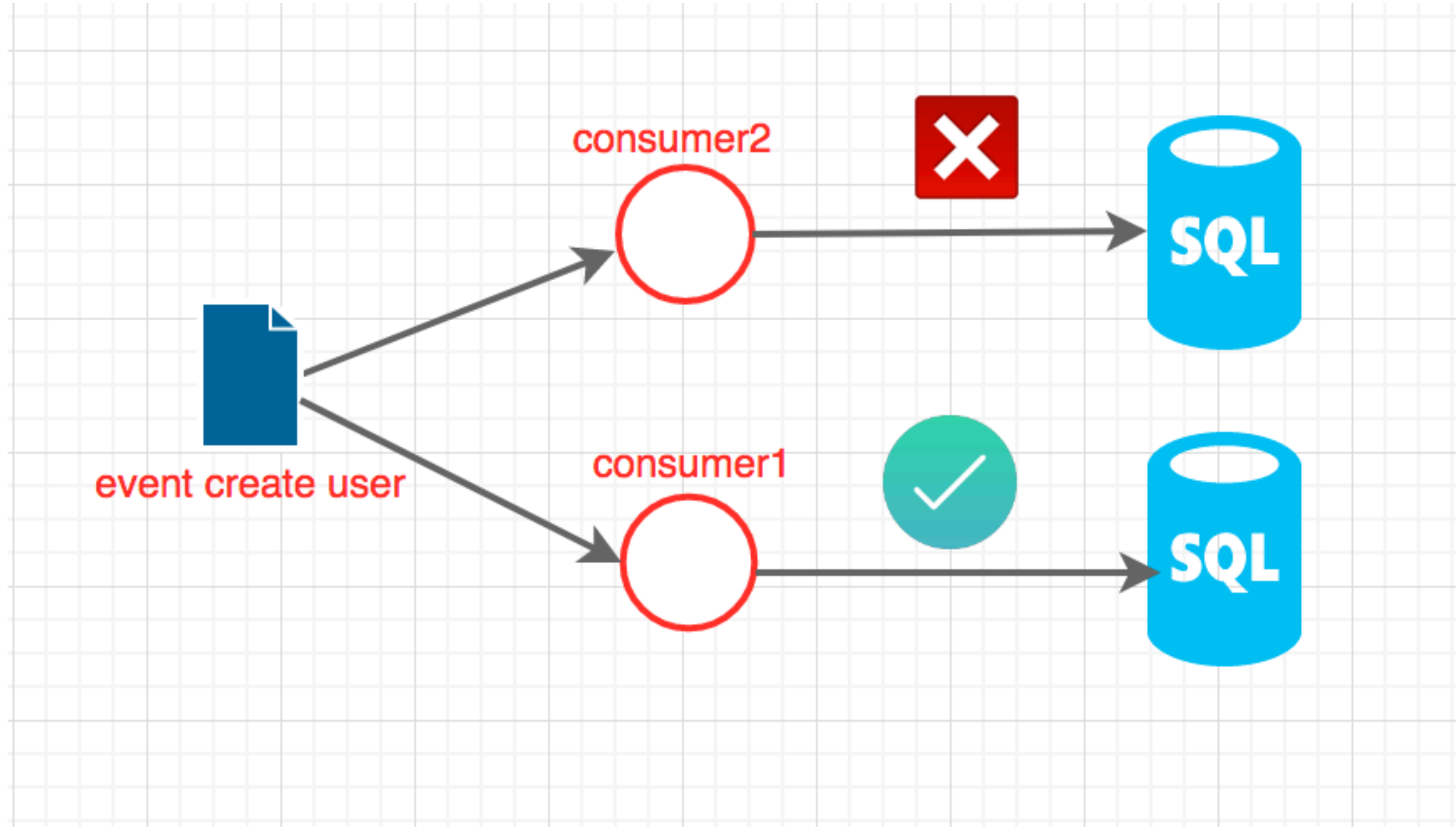


using dead-letter





yes it is eventually **in-consistent**





Thanks!



Questions