Key-Value Store Logical Architecture

DISCLAIMER: *Please do not try to infer system properties from this diagram.* For that information, please see the Key-Value Store Features and Known Limitations, or ask us a question.

App servers use traditional load balancing for client requests.

Application Code

Layer

Layer

FDB Client

FDB Client

Applications can use multiple data models by speaking to co-located layers.

Layers store data side-by-side in the cluster, usually in their own keyspace.

5a The client's commit succeeds once the transaction is logged to multiple disks in the transactional authority.

1 When starting a transaction, the client requests a consistent read version from the transactional authority.

2 The client reads directly from the storage nodes, which use MVCC to provide a consistent snapshot.

Writes are sent to the transactional authority at commit time. **3** A=6

The transactional authority enforces ACID guarantees. **4**

A=6 A=6 A=6 A=6

A:6 A:6 A:6 A:6

6 Storage nodes lazily update data on disk based on transactional writes.

5b Successful transactions are sent to memory on the appropriate storage nodes.

transactional authority

storage nodes

7 The transactional authority can remove transactions from disk once they are safely durable on the storage nodes.

coordinators

A set of coordinators running PAXOS elects leaders and avoids "split brain" problems. They are not involved in individual transactions.

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