MongoDB + PowerSync

## Reference architecture guide

PowerSync

Reliable data synchronization for offline-first applications in distributed environments

PowerSync is a sync engine that enables offline-first and local-first apps. It consists of a managed or self-hosted service and set of client SDKs that keep backend MongoDB databases in sync with on-device embedded SQLite databases. Using PowerSync ensures that apps have instantly-responsive UIs that keep working even with poor or non-existent network connectivity

The PowerSync Service connects to MongoDB in a plug-and-play way, utilizing MongoDB change streams for low-latency syncing
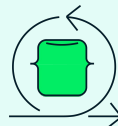
PowerSync enables real-time data synchronization, optimizing network usage and performance while guaranteeing causal data consistency
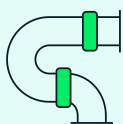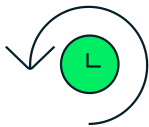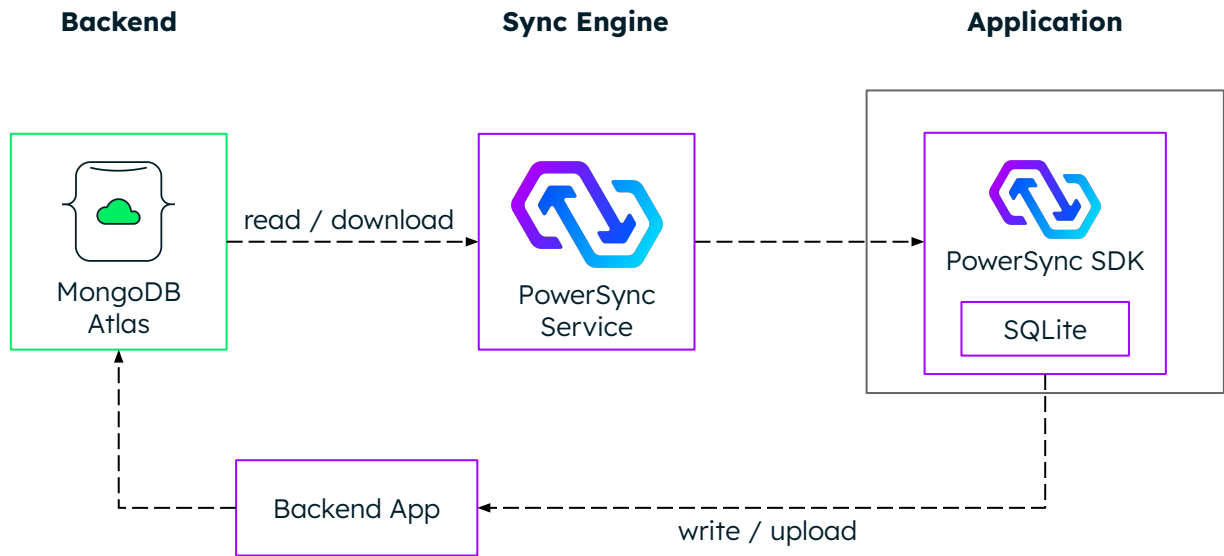
Sync Rules control which MongoDB data is synced with which users, providing a way to dynamically partition the replicated data.
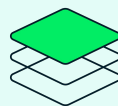
Apps read from & write to a local SQLite database, allowing near-zero latency queries. Local data changes are queued and sent to MongoDB whenever connectivity is available.

Industrial-Grade Offline-First with PowerSync and MongoDB

Backend　　　　　**Sync Engine**　　　　　**Application**

read / download

PowerSync Service

MongoDB Atlas

PowerSync SDK

SQLite

Backend App

write / upload

Low-Effort, Reliable Data Synchronization

PowerSync aims to solve the hard problems of keeping data in sync between the backend MongoDB database and on-device SQLite databases, without getting in the way of the developer or requiring a heavy engineering effort.

Available Cloud Managed Or Self-Hosted

PowerSync is available as a fully managed offering or can be self-hosted. The PowerSync Service source code is freely available under a source-available license, ensuring business continuity for years to come.

Proven In Heavy Industrial Environments

PowerSync has been used in demanding industrial environments for over a decade for high-scale software applications. The reliability and relative simplicity of PowerSync make it a good fit for apps in manufacturing, energy, utilities, mining, retail, and many other industries.

MongoDB