



Last updated  
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# MongoDB + Ditto

## Reference architecture guide



*Peer-to-peer mesh networking for resilient sync at the edge and back to MongoDB*

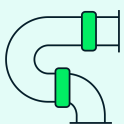
Ditto is mobile peer-to-peer mesh networking for your enterprise apps. Enable automatic, direct sync between your edge devices without reliance on WiFi or network hardware. Sell a product, deliver a service, and conduct operations anywhere without connectivity worries. Data opportunistically syncs back to MongoDB whenever internet is available.



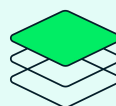
Ditto ensures data remains available at the edge, offering low networking costs, multi-platform SDKs and offline capabilities with no vendor lock-in



Ditto enables peer-to-peer sync over BLE, LAN, or WiFi, allowing seamless communication without internet, while Big Peers improve data partitioning and sharding



All data is aggregated into MongoDB Atlas, providing an ACID-compliant database for advanced queries and complex aggregations

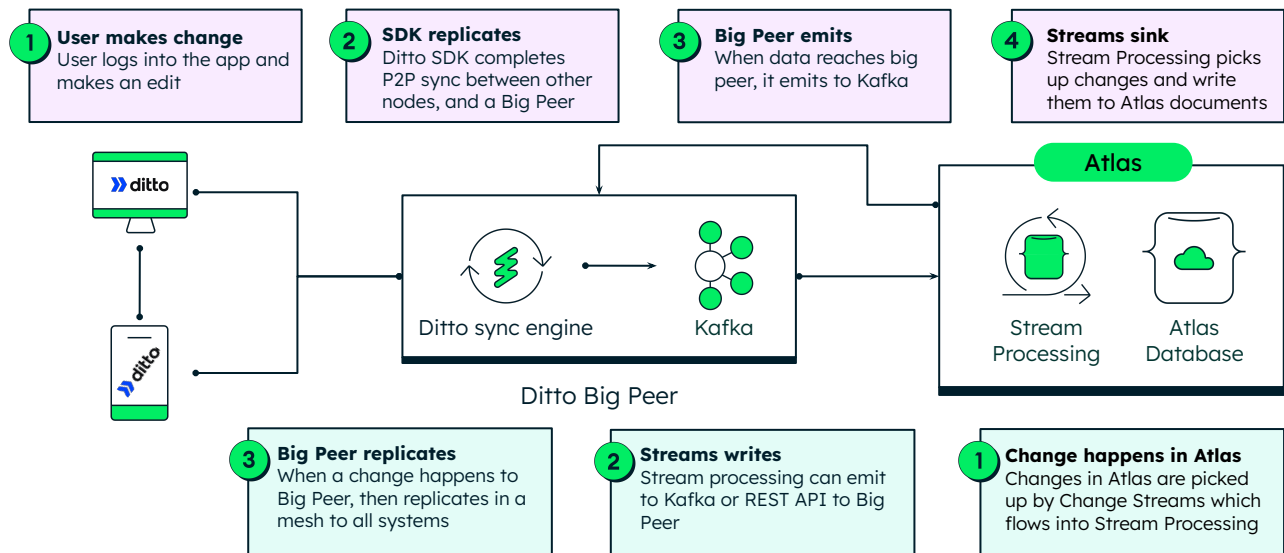


MongoDB's developer data platform includes services like Time Series, Search, and Atlas SQL, enabling advanced analytics and real-time insights for your application

# MongoDB + Ditto Integration



Ditto empowers businesses to maintain consistent operations at the edge without reliance local networks or the cloud. Ad-hoc mesh networks for peer-to-peer syncing ensure real-time data flow even when offline. Ditto also automates replication and conflict resolution across platforms to eliminate single points of failure.



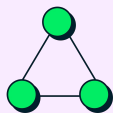
## Offline-first Apps

Ditto supports for offline-first architectures, ensuring applications continue functioning without internet access. Automatic data syncing when connectivity is restored, Ditto ensures that critical updates and transactions are not lost.



## Real-time Collaboration

Ditto enables real-time collaboration by syncing updates across devices using peer-to-peer networks and the cloud. It uses conflict-free replicated data types (CRDTs) to resolve conflicts and maintain data consistency, ideal for collaborative applications.

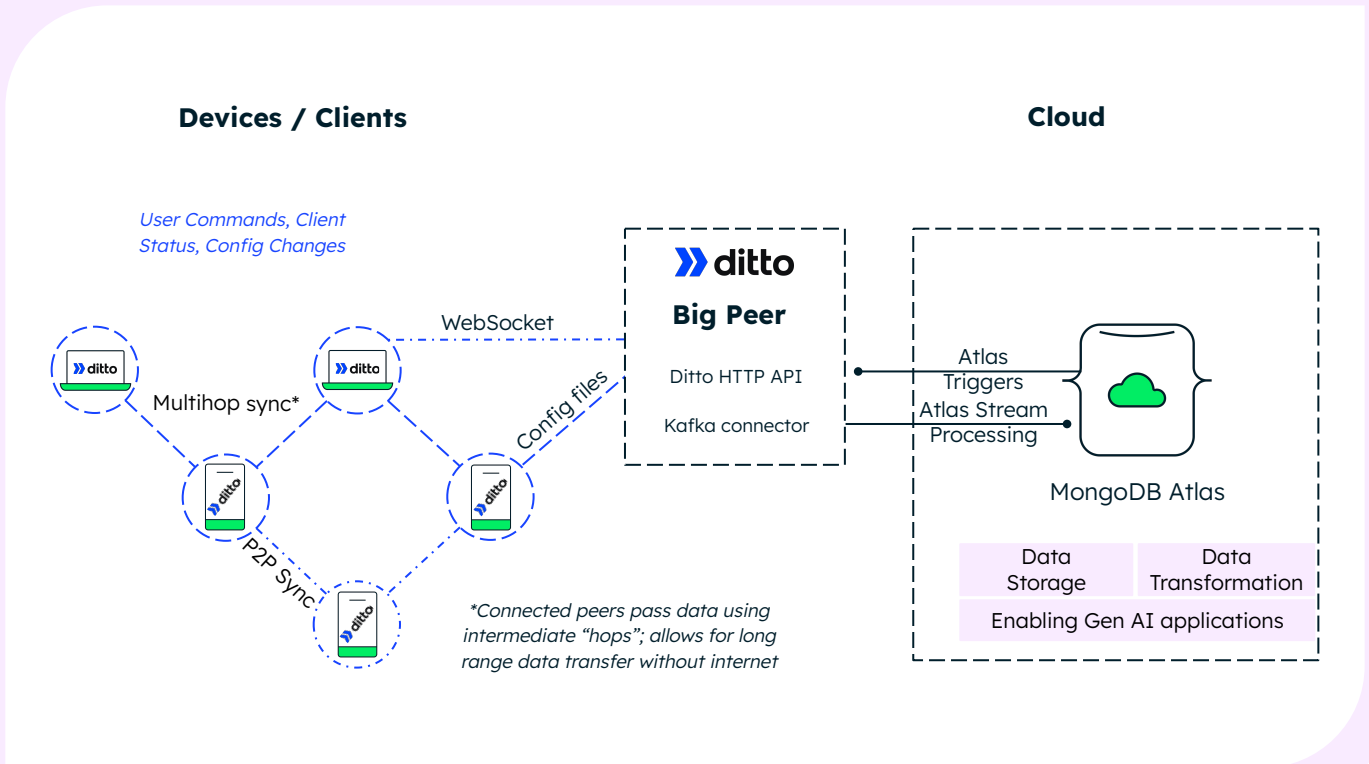


## Decentralized Data

Ditto employs CRDTs to maintain data consistency across multiple devices without relying on a central server. This allows for decentralized data storage and distribution, improving resilience and reducing reliance on network infrastructure.

# Reference Architecture

## P2P to Cloud with Ditto SDKs and MongoDB



## Use Cases

### Retail Operations

Ensure uninterrupted sales, POS transactions, and inventory management in stores by syncing data between devices, even without internet access, preventing downtime and lost revenue

### Manufacturing and IIoT

Keep production lines running smoothly by syncing critical machine data between devices on the factory floor and your staff, ensuring real-time operational insights without cloud dependence

### Aviation

Empower flight crews with synchronized schedules, passenger details, and updates in real-time, ensuring seamless coordination even offline or in-flight for smoother operations

“

“With Ditto our flight attendant app was not only able to synchronize data between each other but also with multiple other apps. Devices being able to communicate directly, and even through other devices, gave us full coverage on both narrow and wide-body airplanes.”

”

— Jim Littlefield,  
In Flight Project Manager, Delta