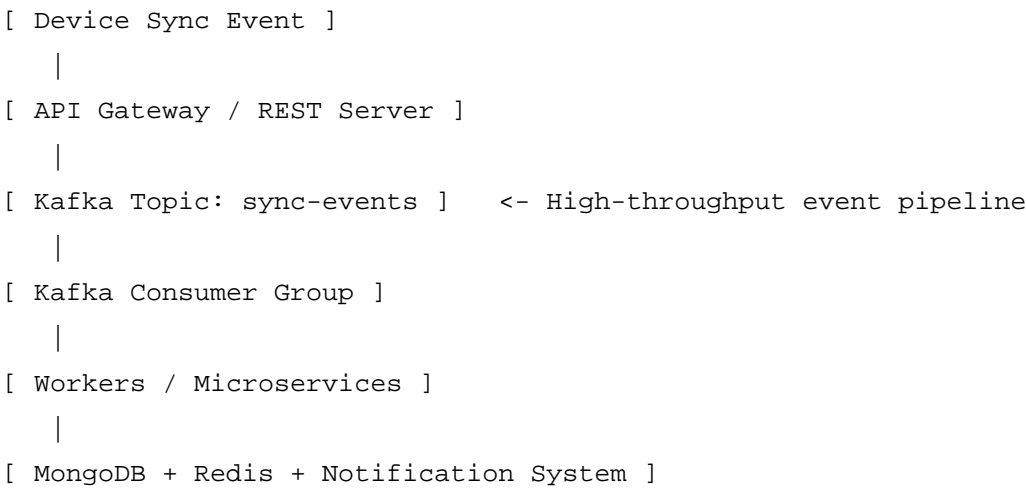


Updated Scaling Plan (with Kafka)

Kafka in the PiSync Architecture



Kafka Benefits for PiSync

Feature	Why It Helps PiSync
High Throughput	Handles 10k+ events/sec easily
Partitioning by device_id	Ensures ordered processing per device (if needed)
Durable & Replayable	Events aren't lost - can reprocess from any point
Decoupled Architecture	Producers (API) and consumers (DB insert, alerting) are isolated

Kafka Consumers (Examples)

- DB Writer Service -> Writes events to MongoDB
- Failure Monitor -> Tracks device sync patterns for alerting
- Metrics Exporter -> Aggregates Kafka data into Prometheus

Bonus: Kafka + Redis Combo

- Use Kafka for ingesting and durable buffering
- Use Redis to cache the latest sync per device
- Use MongoDB as the long-term event store