

One platform, four surfaces: how Kestrel Dispatch, the driver app, the CRM and the assistant fit together

The system is a single Postgres-backed API with four clients. Nothing writes to the database except the API; the AI assistant reads through the same API with a scoped token and never holds credentials of its own. This document records the shape, the data model and the decisions we expect to be questioned later.

Status: approved for build

Region: eu-central (Frankfurt)

Stack: Next.js 16 • Node 22 • Postgres 17 • Flutter 3.32

Assistant: Claude via Techsy agent runtime

SAMPLE DOCUMENT • KESTREL FREIGHT IS A FICTIONAL CLIENT

FIG 1 System map

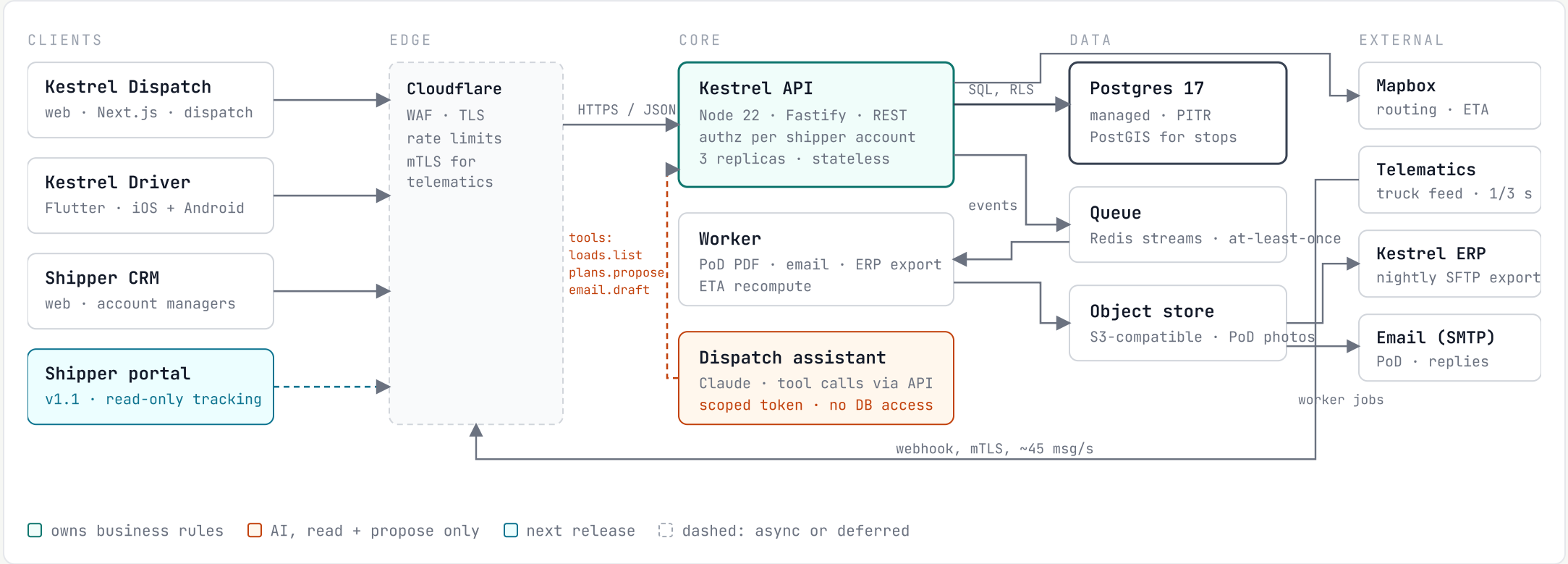


FIG 2 Data model (core entities)

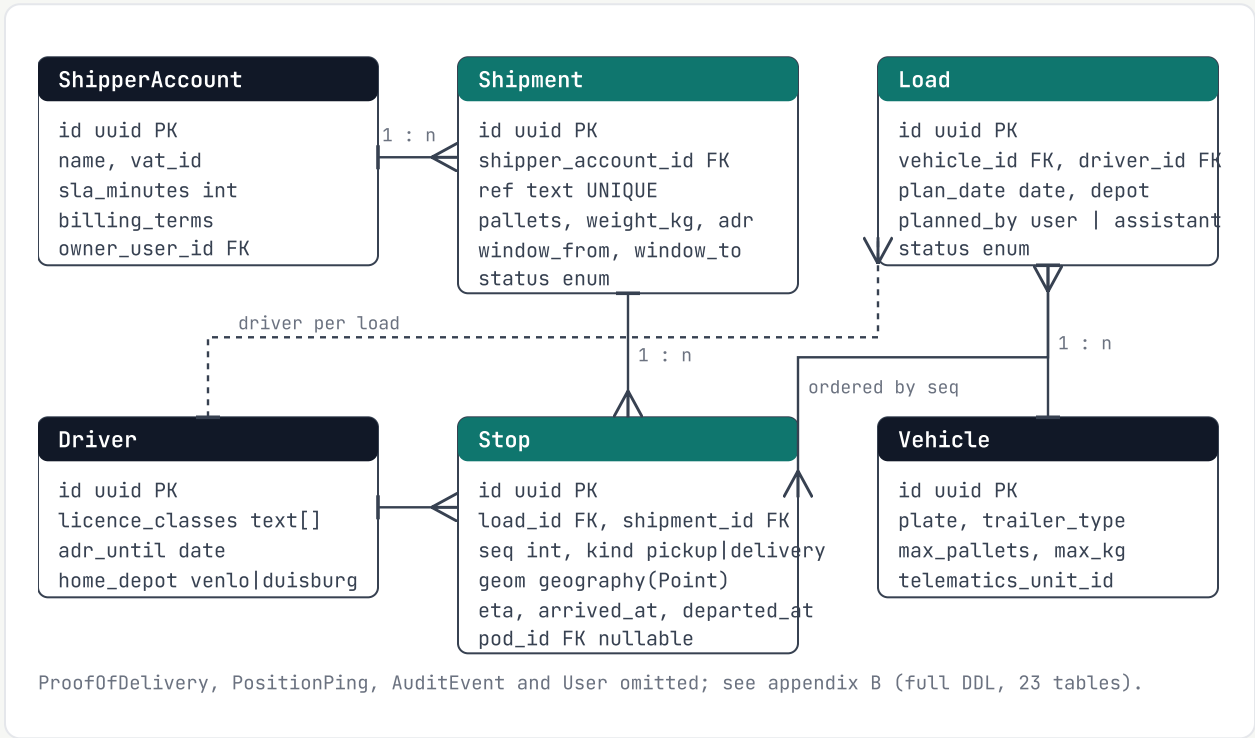


TABLE 1 Access and ownership

ENTITY	WRITES	ROW RULE
ShipperAccount	CRM users	account manager or depot manager
Shipment	Dispatch, CRM	shipper_account_id in user's book
Load	Dispatch only	depot = user's depot
Stop	Dispatch, Driver app	driver may update own load's stops
Driver, Vehicle	Depot manager	depot scoped
PositionPing	Telematics webhook	append-only, 90-day partition
AuditEvent	API (automatic)	insert only, no update or delete

ASSISTANT BOUNDARY

The assistant calls six API tools (`loads.list`, `shipments.open`, `drivers.available`, `plans.propose`, `email.draft`, `email.lookup`). It cannot publish a plan or send an email; a dispatcher does both. Every proposal is stored with the prompt hash and model version so a plan can be replayed during an audit.

KEEP

One Postgres, no microservice split

Volume is around 45 writes per second at peak and 1.2 GB of growth per month. A single primary with two read replicas covers that with headroom until roughly 600 trucks. A split would add network failure modes we do not need yet.

Revisit at 400 trucks or 3 depots

RISK

Telematics feed has no replay

The truck vendor's webhook delivers each ping once. If the API is down for more than 10 minutes, positions for that window are lost. We buffer at the edge with a Cloudflare queue (24 h retention) and reconcile on recovery.

Accepted by Kestrel IT owner, 2026-03-27

KEEP

Assistant proposes, people publish

Plans drafted by Claude carry a planned_by = assistant flag and sit in a review state. Dispatchers accepted 83% of drafts unchanged in the pilot week; the other 17% is where the audit trail matters.

Required by Kestrel works council agreement