

☰ PROTOCOL GUIDE

EMS Protocol Search & RAG System Architecture

49,201

PROTOCOL
CHUNKS

2,713

EMS
AGENCIES

51

STATES
COVERED

1,536

EMBEDDING
DIMS

☰ QUERY FLOW

>User Query
"814 policy"

Voyage AI
Generate Embedding

pgvector
Semantic Search

Claude
RAG Response

Answer
With Protocol Refs

☰ FRONTEND

React Native /
Expo

Cross-platform
mobile app
iOS + Android +
Web

Features

- Voice input
(transcription)
- Offline cache

☰ BACKEND

Node.js + tRPC

Type-safe API layer
`server/router.ts`

Endpoints

- `search.semantic`
- `query.submit`
- `user.selectCounty`
- `voice.transcribe`

☰ DATABASES

TiDB Cloud (MySQL)

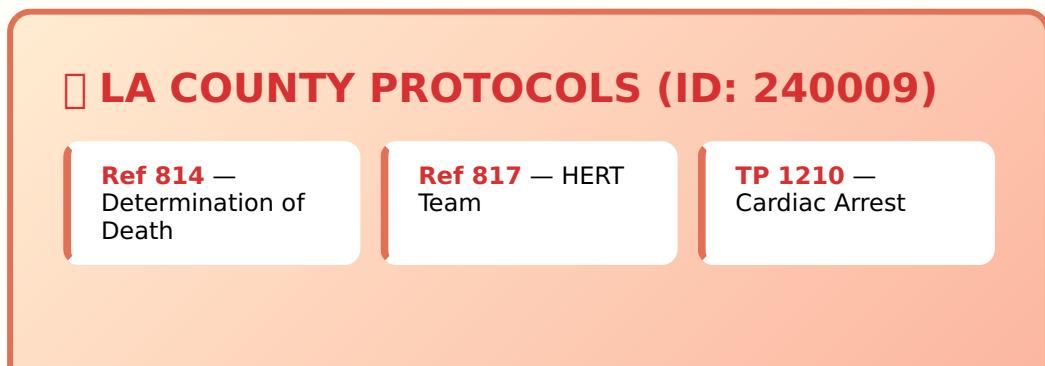
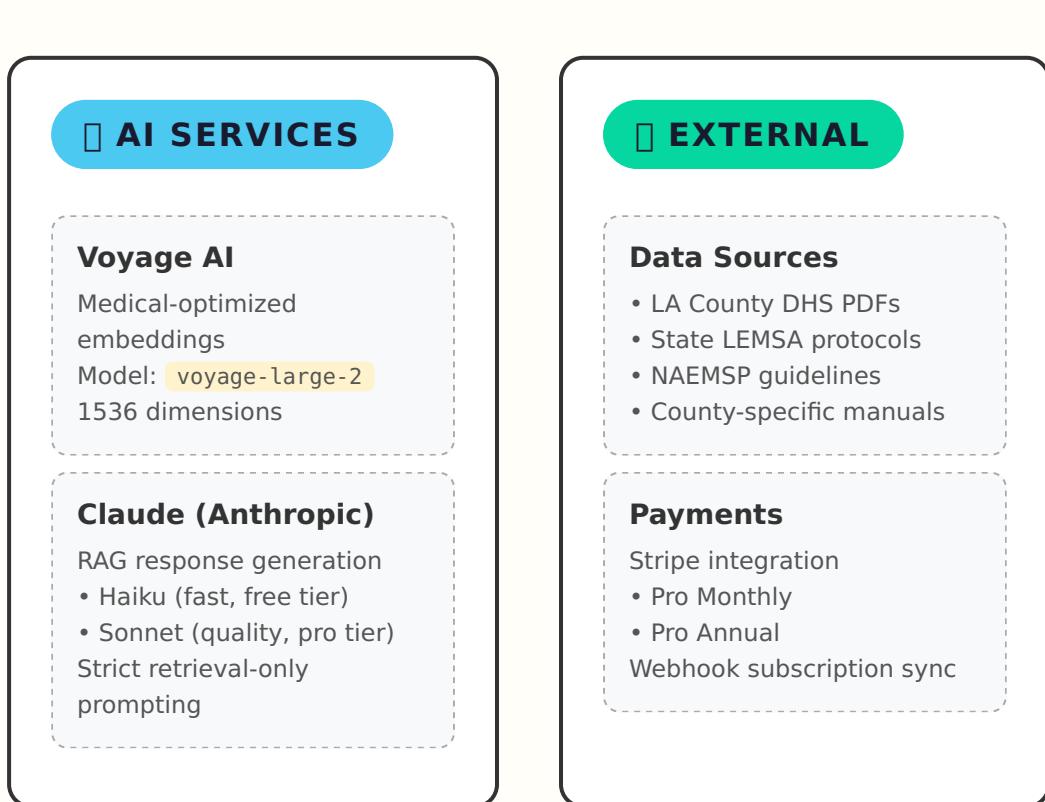
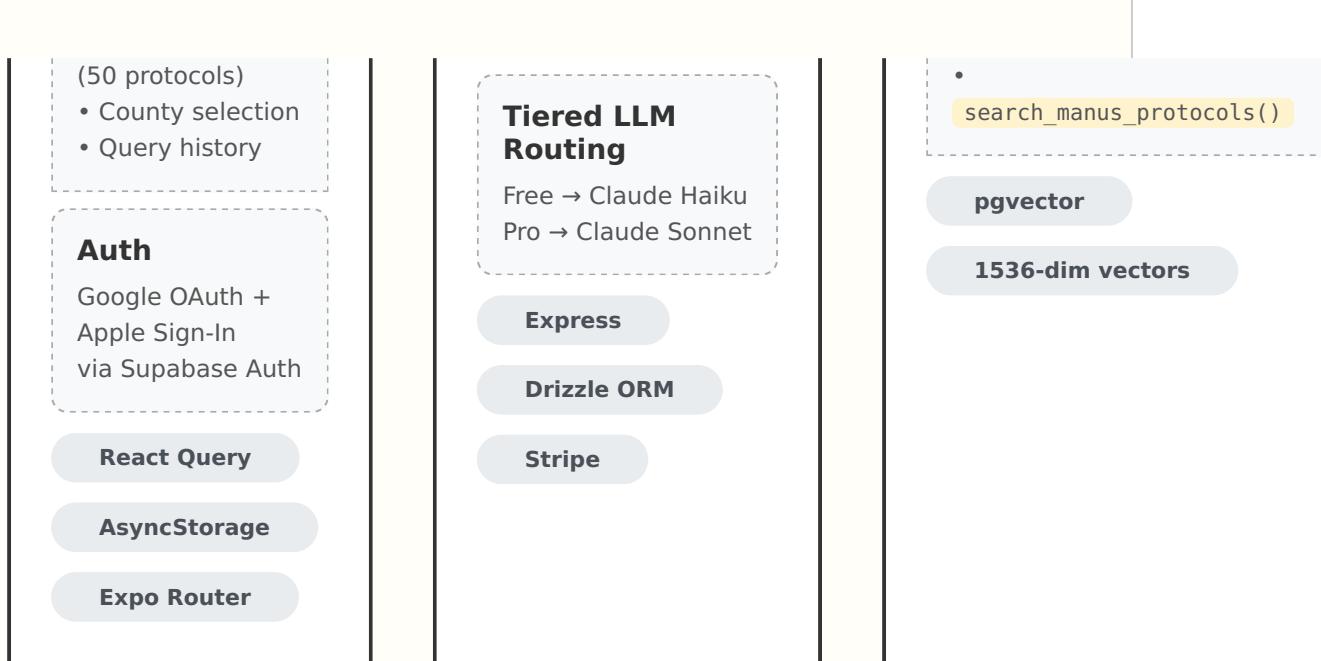
Primary data store

- protocolChunks
- counties
- users, queries, feedback

Supabase
(PostgreSQL)

Vector search + Auth

- manus_protocol_chunks
- pgvector extension



TP 1242 — Crush Injury

TP 1335 —
Needle Decompression

TP 1200.3 —
Provider Impressions



Frontend



Backend



Database



AI
Services



External

↳ *Hybrid Search: Keyword matching (protocol #) + Semantic search (pgvector) → Merged results → Claude RAG*