

# Grid Data Platform Manager

*The platform the family runs on — shared infrastructure, one sign-on, registry, notifications, and housekeeping.*

The Grid Data Platform Manager (GDPM) is the foundation every family application stands on. It hosts the shared infrastructure — one PostgreSQL per environment with a database per application, one Keycloak realm with a client per application, and the Kafka backbone — so a sign-in to one application is honored by the rest. Every application registers with it on startup and serves nothing until an operator approves it; GDPM then tracks it, holds its configuration, delivers its notifications, and runs the housekeeping that keeps databases fast.

## KEY FEATURES

### Shared infrastructure

Postgres, Keycloak, and Kafka per environment, provisioned for each application by its own install hooks — one credential surface instead of one per product.

### Single sign-on

One realm with a client per application: sign in once and move across the family without signing in again.

### Registration gate

Applications register on startup and refuse requests until approved; approval opens them at once, rejection closes them again.

### Notification Hub

Applications publish events to one Kafka topic or over HTTP; GDPM delivers them by email, SMS, or webhook — Slack and Teams included — with severity thresholds, templates, and an audit of every attempt.

### Registry & dashboard

Every deployed application with its status, health, database, metadata, and configuration at a glance.

### Retention & partitions

Per-table retention rules and cron-scheduled partition maintenance for every application, with last-run status — protected by point-in-time backups.

## USE CASES

- **Estate visibility** — one screen: what is deployed, where, and whether it is healthy.
- **Alerting without plumbing** — a product raises an event; the right people hear about it on the right channel.
- **Database housekeeping** — retention and partitions, scheduled instead of remembered.

### TECHNOLOGY

Angular client · FastAPI / Python · PostgreSQL · Keycloak · Apache Kafka · APScheduler · Jinja templates · Flyway · pgBackRest · Helm / Docker Compose