Engineer Data

Built first-party analytics inside PostgreSQL

Built first-party product analytics in PostgreSQL — 47 functions over partitioned event tables that prune themselves — pseudonymised behind a rotating salt and gated on the visitor's consent.

2025

47

analytics functions, pseudonymised and consented to

Situation. Product decisions need numbers, and the ordinary way to get them is to put a third-party tag on every page and let somebody else's servers watch the users. That is fast, it is free at small volume, and it means visitor behaviour on a professional networking platform — who looked at which company, who searched for what — becomes an asset held by an advertising business. For a platform whose users are identifiable maritime professionals, that is a poor trade.

Task. The product team needed funnels, retention and event data, collected in a way the platform could stand over and a user could refuse.

Action. Analytics went into PostgreSQL, in a schema of 7 tables and 47 functions. Event tables are partitioned — 22 partition definitions — and prune themselves on a schedule, because the cost of first-party analytics is not collecting the events, it is holding them forever. Identity is pseudonymised behind a salt that rotates, so a visitor cannot be followed across the rotation boundary even from inside the database; that is a deliberate ceiling on what the data can answer. The client is consent-aware and sends nothing before consent is given, rather than sending and filtering afterwards. Conversion funnels are computed in the database, next to the data, instead of exported to somewhere else to be joined back.

Result. Questions about how the product is used are answered from the platform's own tables, with nothing leaving and no tag in the page. The limits are the honest part: rotating the salt costs long-horizon cohort analysis, and none of this arrives with the dashboards a hosted tool gives you free. Both were accepted knowingly.

Bring this experience to your project

Use "Built first-party analytics inside PostgreSQL" as a starting point for a similar challenge in your organisation. The services behind this work are available for your project. A structure that matches how the business actually works, so the questions you need answered later are still possible to ask.

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Look behind the result

Read the situation, decisions and result in this example. We can discuss which parts transfer to your constraints and which need another approach. Built first-party analytics inside PostgreSQL — 47 analytics functions, pseudonymised and consented to

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Want analytics without handing over your data?

Talk through your project with the engineer responsible for delivery. We agree the scope, price basis and handover in writing before work begins.

Role context: Data Engineer. It draws on Databases, PostgreSQL, SQL, Data Engineering, Data Analytics, Data Governance and Performance Tuning. And while you are here, we are rather good at Database Design & Modeling, Data Pipeline Development (ETL/ELT), Data Analytics & BI Dashboards and Data Governance & Quality.

Get in touch Explore our services

One piece of **a longer record** — and it is all on this site.

Every entry is written the same way: the situation, the task, what we did and what changed.

See the whole record

Define the improvement you need

Bring a representative dataset, the questions it must answer and the current bottleneck. We can agree how to measure quality, throughput and recovery.

See what it costs Get in touch →

Want analytics without handing over your data?

Ask about the decisions behind “Built first-party analytics inside PostgreSQL”. You will speak with the people who can explain the work and assess your own project.

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