

04 JULY 2025

Swiss PostgreSQL Day 2025

On Thursday, 26 June and Friday, 27 June 2025, my colleague Patrick Lauer and I had the amazing opportunity to attend [Swiss PGDay 2025](#) [↗], held at the OST Eastern Switzerland University of Applied Sciences in Rapperswil. This two-day PostgreSQL conference featured two parallel tracks of presentations in English and German, bringing together users and experts primarily from across Switzerland. Our company, credativ, was among the supporters of this year's conference.

During the event, Patrick delivered an engaging session titled “**Postgres with many data: To MAXINT and beyond,**” which built on past discussions about massive-scale Postgres usage. He highlighted the practical issues that arise when handling extremely large datasets in PostgreSQL – for instance, how even a simple `SELECT COUNT(*)` can become painfully slow, and how backups and restores can take days on very large datasets. He also shared strategies to manage performance effectively at these scales.

I presented a significantly updated version of my talk, “**Building a Data Lakehouse with PostgreSQL: Dive into Formats, Tools, Techniques, and Strategies.**” It covered modern data formats and frameworks such as Apache Iceberg, addressing key challenges in lakehouse architectures – from governance, privacy, and compliance, to data quality checks and AI/ML use cases. The talk emphasized PostgreSQL's capability to play a central role in today's data lakehouse and AI landscape. At the close of the conference, I delivered a brief lightning talk showcasing our new open-source migration tool, “credativ-pg-migrator.”



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The [conference schedule](#) [↗] was packed with many high-quality, insightful talks. We would particularly like to highlight:

* **Bruce Momjian – “How Open Source and Democracy Drive Postgres”:** In his keynote, Bruce Momjian outlined how PostgreSQL's open-source development model and democratic governance have powered its success. He explained the differences between open-source and proprietary models, reviewed PostgreSQL's governance history, and illustrated how democratic, open processes result in robust software and a promising future for Postgres.

- * **Gülçin Yıldırım Jelinek – “Anatomy of Table-Level Locks in PostgreSQL”**: session covered the fundamentals of PostgreSQL’s table-level locking mechanisms. Explained how different lock modes are acquired and queued during schema changes, helping attendees understand how to manage lock conflicts, minimize downtime, and avoid deadlocks during high-concurrency DDL operations.

- * **Aarno Aukia – “Operating PostgreSQL at Scale: Lessons from Hundreds of Instances in Regulated Private Clouds”**: the speaker shared lessons from running extensive Postgres environments in highly regulated industries. He discussed architectural patterns, automation strategies, and “day-2 operations” practices that VSHN uses to meet stringent availability, compliance, and audit requirements, including secure multi-tenancy, declarative deployments, backups, monitoring, and lifecycle management in mission-critical cloud-native setups.

- * **Bertrand Hartwig-Peillon – “pgAssistant”**: Author introduced pgAssistant, an open-source tool designed to help developers optimize PostgreSQL schemas and queries before production deployment. He demonstrated how pgAssistant combines deterministic analysis with an AI-driven approach to detect schema inconsistencies and suggest optimizations, effectively automating best practices and performance tuning within development workflows.

- * **Gianni Ciolli – “The Why and What of WAL”**: Gianni Ciolli provided in a great Italian style concise history and overview of PostgreSQL’s Write-Ahead Log (WAL). He explained WAL’s central role in PostgreSQL for crash safety, backups, and replication, showcasing examples of WAL-enabled features like fast crash recovery, efficient hot backups, physical replication, and logical decoding.

- * **Daniel Krefl – “Hacking pgvector for performance”**: The speaker presented an enhanced version of the pgvector extension for massive data processing, optimized by maintaining the vector index outside PostgreSQL memory and offloading computations, including GPU integration. He detailed the process of moving pgvector’s core logic externally for improved speed, demonstrating notable performance gains in the EU AERO project context. He also talked about distributed PostgreSQL XC, XL and TBase, which are unfortunately stuck on the old version 10 and how he ported changes from these projects into the version 16.

- * **Luigi Nardi – “A benchmark study on the impact of PostgreSQL server parameter tuning”**: Luigi Nardi presented comprehensive benchmark results on tuning PostgreSQL configuration parameters. Highlighting that many users default settings, he demonstrated how significant performance improvements can be achieved through proper tuning across various workloads (OLTP, OLAP, etc.), providing actionable insights tailored to specific environments.

- * **Renzo Dani – “From Oracle to PostgreSQL: A HARD Journey and an Open-Source Awakening”**: Author recounted his experiences migrating a complex enterprise application from Oracle to PostgreSQL, addressing significant challenges such as implicit type casting, function overloading differences, JDBC driver issues, and SQL validation problems. He also highlighted the benefits, including faster CI pipelines, more flexible deployments, and innovation opportunities provided by open-source Postgres, along with practical advice on migration tools, testing strategies, and managing trade-offs.

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At the end of the first day, all participants enjoyed a networking dinner. We both want to sincerely thank the Swiss PGDay organizers (Swiss PostgreSQL User Group) for an amazing event. Swiss PGDay 2025 was a memorable and valuable experience, offering great learning and networking opportunities. We are also very grateful to credativ for enabling our participation, and we look forward to future editions of this excellent conference.

JM

ABOUT THE AUTHOR

Josef Machytka

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