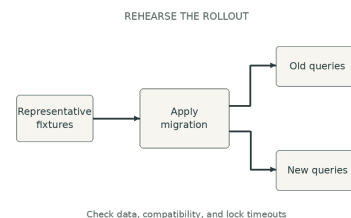


DEVELOPER TOOLING

Database migration rehearsal

Run a schema change against representative data before approving a release.



PROPOSED ARCHITECTURE

Migration brief; query contracts to choose

THE PROBLEM

A migration that passes on an empty database can fail on existing rows or hold a lock longer than expected. This runner applies a proposed PostgreSQL migration to a disposable database and checks both old and new application queries.

SCOPE

- Load synthetic fixtures with nulls, duplicates, large tables, and old record shapes.
- Apply migrations under explicit lock and statement timeouts; record failures and schema differences.
- Run old and new query contracts, including a staged expand-and-contract rollout where needed.

PLANNED DELIVERABLES

- Migration runner, fixture generator, and CI integration
- Schema-diff report, failure logs, and query-contract tests
- Example rollout plan and forward-recovery exercise

CONSTRAINTS

Database

PostgreSQL; migration runner version pinned per test

Data

Synthetic fixtures with documented distributions

Rollback

Test rollback when supported; otherwise document forward recovery

Target

Disposable database only; no production execution

VERIFICATION PLAN

Existing records

Attempt a new constraint against incompatible rows; fail with useful evidence.

Lock contention

Hold a competing transaction and verify the configured timeout.

Compatibility

Require old and new query contracts during the overlap; retire old contracts only after application cutover.

NEXT STEP

Select the supported migration format and define old and new query contracts.

Synthetic fixtures exercise known data shapes. Production sizing, workload, and lock behavior still need a separate rollout review.