Analysis of Solutions for PostgreSQL v15.6 Upgrade/RHEL Migration

Problem Summary

The following error occurs due to a type mismatch between a PostgreSQL user-defined enum (`eccportal.usertype`) and an incoming value of type `character varying`. This is common when strict type enforcement clashes with Java Hibernate.

Error

ERROR: column 'type' is of type eccportal.usertype but expression is of type character varying

Hint: You will need to rewrite or cast the expression

Evaluating the Proposed Solutions

This section reviews multiple solutions to address the issue.

Stack Overflow Solution

Proposed Fix: spring.datasource.hikari.data-source-properties.stringtype=unspecified

Pros: Quick and simple fix; Allows PostgreSQL to infer types.

Cons: May mask underlying issues; Less explicit.

Verdict: Potentially effective but risky.

Claude Solution

Proposed Fix: Same as Stack Overflow + Update PostgreSQL JDBC driver

Pros: Aligns well with migration scenarios; Works well with Hibernate + PostgreSQL.

Cons: Workaround rather than structured fix; Can cause type inference issues.

Verdict: Good for quick fixes but not for long-term use.

Perplexity Deep Research

Proposed Fix: 1. Custom Hibernate `UserType` (Hypersistence Utils)

2. Explicit Casting via `@ColumnTransformer`

3. JDBC `stringtype=unspecified`

Pros: Best structure (Hypersistence Utils); Safe conversion (`@ColumnTransformer`).

Cons: Requires dependency (`Hypersistence Utils`); Minor entity modifications.

Verdict: Highly recommended for production.

Google AI Studio Solution

Proposed Fix: Investigate `eccportal.usertype` structure; Ensure proper ORM mapping; Consider explicit casting or schema changes.

Pros: Deep investigation before applying a fix; Provides structured ORM-based solutions.

Cons: Less specific on immediate fixes; May require database schema modifications.

Verdict: Good for debugging, not an immediate fix.