

Migration Fix: P3018 - DocumentTemplate Dependency

Date: December 21, 2024

Migration: 20251221011617_add_document_classification_validation

Status: FIXED

Commit: b0a090c

Issue

Error Message

```
Error: P3018
Migration: 20251221011617_add_document_classification_validation
Database error: cannot drop type "DocumentType" because other objects depend on it
DETAIL: column type of table "DocumentTemplate" depends on type "DocumentType"
HINT: Use DROP ... CASCADE to drop the dependent objects too.
```

Impact

- Deployment failing on Render
- Migration cannot complete
- Database stuck in inconsistent state
- New document classification features unavailable

Root Cause

The Problem

The migration was attempting to:

1. Create a new enum type `DocumentType_new`
2. Alter **Document** table to use the new enum
3. DROP the old `DocumentType` enum
4. Rename `DocumentType_new` to `DocumentType`

However: The `DocumentTemplate` table also has a column using the `DocumentType` enum!

Why It Failed

PostgreSQL prevents dropping an enum type when any table columns still reference it. The migration only updated the `Document` table, leaving `DocumentTemplate.type` still using the old enum.

Affected Tables

1. **Document.type** - Uses `DocumentType` enum Was being migrated
2. **DocumentTemplate.type** - Uses `DocumentType` enum Was NOT being migrated

Solution

The Fix

Added a new step (Step 2b) to migrate the `DocumentTemplate` table **before** dropping the old enum:

```
-- Step 2b: Alter DocumentTemplate table to use new enum type
ALTER TABLE "DocumentTemplate" ALTER COLUMN "type" TYPE "DocumentType_new"
USING (
CASE "type"::text
    WHEN 'INSURANCE_CARD' THEN 'INSURANCE'::text
    WHEN 'ID_DOCUMENT' THEN 'IDENTIFICATION'::text
    WHEN 'CONTRACT' THEN 'LEGAL'::text
    WHEN 'CARE_PLAN' THEN 'ASSESSMENT_FORM'::text
    WHEN 'OTHER' THEN 'GENERAL'::text
    ELSE "type"::text
END
)::"DocumentType_new";
```

Migration Flow (Fixed)

1. Create `DocumentType_new` enum
2. Alter **Document** table to use new enum
3. **NEW:** Alter **DocumentTemplate** table to use new enum
4. DROP old `DocumentType` enum (now safe!)
5. Rename `DocumentType_new` to `DocumentType`

Technical Details

Enum Value Mapping

The migration maps old enum values to new ones:

Old Value	New Value
INSURANCE_CARD	INSURANCE
ID_DOCUMENT	IDENTIFICATION
CONTRACT	LEGAL
CARE_PLAN	ASSESSMENT_FORM
OTHER	GENERAL
(unchanged)	MEDICAL_RECORD
(unchanged)	FINANCIAL
(unchanged)	EMERGENCY_CONTACT

Safety Features

- **DO blocks** with exception handling for idempotent enum creation
- **CASE statements** for safe value mapping
- **Type casting** through text to avoid type conflicts
- **IF NOT EXISTS** guards for columns and indexes

Database Schema

```
// DocumentTemplate model
model DocumentTemplate {
    id      String      @id @default(cuid())
    name    String
    description String?   @db.Text
    type    DocumentType // ← Uses DocumentType enum!
    template Json
    fields   Json
    isActive Boolean     @default(true)

    createdAt DateTime   @default(now())
    updatedAt  DateTime  @updatedAt

    @@index([type])
    @@index([isActive])
}
```

Changes Made

Files Modified

1. **prisma/migrations/20251221011617_add_document_classification_validation/migration.sql**
 - Added Step 2b for DocumentTemplate migration
 - 24 lines added, 3 lines modified

Code Diff

```
-- Step 2: Alter Document table to use new enum type (with mapping for renamed values)
ALTER TABLE "Document" ALTER COLUMN "type" DROP DEFAULT;
ALTER TABLE "Document" ALTER COLUMN "type" TYPE "DocumentType_new"
    USING (
        CASE "type"::text
            WHEN 'INSURANCE_CARD' THEN 'INSURANCE'::text
            WHEN 'ID_DOCUMENT' THEN 'IDENTIFICATION'::text
            WHEN 'CONTRACT' THEN 'LEGAL'::text
            WHEN 'CARE_PLAN' THEN 'ASSESSMENT_FORM'::text
            WHEN 'OTHER' THEN 'GENERAL'::text
            ELSE "type"::text
        END
    )::"DocumentType_new";

--- Step 2b: Alter DocumentTemplate table to use new enum type (with mapping for renamed values)
+ALTER TABLE "DocumentTemplate" ALTER COLUMN "type" TYPE "DocumentType_new"
+    USING (
+        CASE "type"::text
+            WHEN 'INSURANCE_CARD' THEN 'INSURANCE'::text
+            WHEN 'ID_DOCUMENT' THEN 'IDENTIFICATION'::text
+            WHEN 'CONTRACT' THEN 'LEGAL'::text
+            WHEN 'CARE_PLAN' THEN 'ASSESSMENT_FORM'::text
+            WHEN 'OTHER' THEN 'GENERAL'::text
+            ELSE "type"::text
+        END
+    )::"DocumentType_new";
+
-- Step 3: Drop old enum and rename new one
DROP TYPE IF EXISTS "DocumentType";
ALTER TYPE "DocumentType_new" RENAME TO "DocumentType";
```

Deployment

GitHub Push

- **Branch:** main
- **Commit:** b0a090c
- **Status:** Pushed successfully
- **Auto-Deploy:** Render will trigger automatically

Render Deployment

- **Service:** carelinkai (srv-d3isol3uibrs73d5fm1g)
- **URL:** <https://carelinkai.onrender.com>
- **Dashboard:** <https://dashboard.render.com/web/srv-d3isol3uibrs73d5fm1g>
- **ETA:** 5-10 minutes

Monitoring

Watch for:

1. Build starts automatically
2. prisma migrate deploy runs

3. Migration 20251221011617 applies successfully
 4. All enum dependencies resolved
 5. Service deploys and health checks pass
-

Verification

After Deployment

1. Check Migration Status

```
# Via Render shell
npx prisma migrate status
```

Expected output:

```
 20251221011617_add_document_classification_validation - Applied
```

2. Verify Enum Values

```
SELECT e.enumlabel AS value
FROM pg_type t
JOIN pg_enum e ON t.oid = e.enumtypid
WHERE t.typname = 'DocumentType'
ORDER BY e.enumsortorder;
```

Expected values:

- MEDICAL_RECORD
- INSURANCE
- IDENTIFICATION
- FINANCIAL
- LEGAL
- ASSESSMENT_FORM
- EMERGENCY_CONTACT
- GENERAL

3. Verify Table Schemas

```
-- Check Document table
SELECT column_name, data_type, udt_name
FROM information_schema.columns
WHERE table_name = 'Document' AND column_name = 'type';

-- Check DocumentTemplate table
SELECT column_name, data_type, udt_name
FROM information_schema.columns
WHERE table_name = 'DocumentTemplate' AND column_name = 'type';
```

Both should show: `udt_name = 'DocumentType'`

4. Test Application

- Visit <https://carelinkai.onrender.com>

- Upload a document
 - Verify classification works
 - Check validation features
-

Lessons Learned

1. Check All Dependencies

When modifying enums, always check:

```
-- Find all tables using an enum
SELECT DISTINCT t.table_name, c.column_name
FROM information_schema.columns c
JOIN information_schema.tables t ON c.table_name = t.table_name
WHERE c.udt_name = 'DocumentType';
```

2. Migrate All Tables

If an enum is used by multiple tables, ALL must be migrated before dropping the enum.

3. Test Migrations

Even without database access, you can:

- Review schema for dependencies
- Check Prisma model relationships
- Verify enum usage across models

4. Idempotent Patterns

Always use:

- DO \$\$ BEGIN ... EXCEPTION for enums
- IF NOT EXISTS for columns/indexes
- Safe DROP with IF EXISTS

Prevention

Future Enum Modifications

Step 1: Identify Dependencies

```
// Check schema.prisma for ALL models using the enum
enum DocumentType { ... }

model Document {
    type DocumentType // ← Found one!
}

model DocumentTemplate {
    type DocumentType // ← Found another!
}
```

Step 2: Update ALL Tables

```
-- Migrate EVERY table that uses the enum
ALTER TABLE "Document" ALTER COLUMN "type" TYPE "EnumType_new" ...;
ALTER TABLE "DocumentTemplate" ALTER COLUMN "type" TYPE "EnumType_new" ...;
-- Add more as needed
```

Step 3: Then Drop

```
-- Only drop after ALL tables migrated
DROP TYPE IF EXISTS "DocumentType";
```

Rollback Plan

If migration fails:

1. Mark as Rolled Back

```
npx prisma migrate resolve --rolled-back
20251221011617_add_document_classification_validation
```

2. Revert Schema

```
git revert b0a090c
git push origin main
```

3. Create New Migration

- Fix issues in schema.prisma
- Generate new migration
- Test thoroughly before deploying

Status Summary

Item	Status
Root cause identified	✓ Complete
Migration fixed	✓ Complete
Code committed	✓ Complete
Pushed to GitHub	✓ Complete
Documentation created	✓ Complete
Render deployment	⌚ In Progress
Verification	⌛ Pending

Next Steps

- ⌚ **Monitor Render deployment** (~5-10 minutes)
- ⌚ **Verify migration applied** successfully
- ⌚ **Test document classification** features
- ⌚ **Confirm no errors** in logs

References

- **Migration File:** `prisma/migrations/20251221011617_add_document_classification_validation/migration.sql`
- **Commit:** b0a090c
- **GitHub Repo:** <https://github.com/profyt7/carelinkai>
- **Render Service:** `srv-d3isol3uibrs73d5fm1g`
- **PostgreSQL Docs:** [ALTER TYPE](https://www.postgresql.org/docs/current/sql-altertype.html) (<https://www.postgresql.org/docs/current/sql-altertype.html>)

Status: ✓ FIX COMPLETE - Awaiting Deployment

Updated: December 21, 2024