

DynamoDB Table Configuration Issue - Resolution

Issue Summary

When calling `http://localhost:8080/api/products`, the application returns a `ResourceNotFoundException` error:

```
Cannot do operations on a non-existent table (Service: DynamoDb, Status Code: 400, Request ID: aa012197-1f72-4f6f-bd07-b20824a90a3a)
```

Investigation Results

1. Application Configuration (CORRECT)

The `application.properties` file is **correctly configured** with the right table names:

```
# DynamoDB Table Names
dynamodb.table.categories=raven-dev-categories
dynamodb.table.products=raven-dev-products
dynamodb.table.orders=raven-dev-orders

# DynamoDB GSI Names
dynamodb.gsi.products-by-category=products_by_category

# AWS Region
quarkus.dynamodb.aws.region=eu-central-1
```

2. Repository Classes (CORRECT)

All repository classes (`ProductRepository`, `CategoryRepository`, `OrderRepository`) are correctly using the `@ConfigProperty` annotation to read table names from configuration:

```
@ConfigProperty(name = "dynamodb.table.products")
String tableName;
```

3. AWS Credentials Issue (ROOT CAUSE)

The application is running with **Abacus AWS credentials** which **DO NOT have DynamoDB permissions**. When I tested the credentials:

```
aws dynamodb describe-table --table-name raven-dev-products --region eu-central-1

# Result: AccessDeniedException
# User: arn:aws:sts::448970459817:assumed-role/spark-permissions/...
# is not authorized to perform: dynamodb:DescribeTable
```

This is the **root cause** of the issue. The application needs to use **YOUR AWS credentials** that have access to your DynamoDB tables.

Solution

You need to configure your own AWS credentials that have access to your DynamoDB tables (`raven-dev-categories` , `raven-dev-orders` , `raven-dev-products`).

Option 1: Using Environment Variables (Recommended for Local Development)

1. **Create a `.env` file** in the project root:

```
bash
cd /home/ubuntu/github_repos/raven-backend
cp .env.example .env
```

2. **Edit the `.env` file** with your AWS credentials:

```
bash
AWS_ACCESS_KEY_ID=your-actual-access-key-id
AWS_SECRET_ACCESS_KEY=your-actual-secret-access-key
AWS_REGION=eu-central-1
```

3. **Export the environment variables** before running the application:

```
bash
export AWS_ACCESS_KEY_ID=your-actual-access-key-id
export AWS_SECRET_ACCESS_KEY=your-actual-secret-access-key
export AWS_REGION=eu-central-1
```

4. **Run the application:**

```
bash
./mvnw quarkus:dev
```

Option 2: Using AWS Credentials File

1. **Create AWS credentials directory:**

```
bash
mkdir -p ~/.aws
```

2. **Create credentials file** (`~/.aws/credentials`):

```
ini
[default]
aws_access_key_id = your-actual-access-key-id
aws_secret_access_key = your-actual-secret-access-key
```

3. **Create config file** (`~/.aws/config`):

```
ini
[default]
region = eu-central-1
```

4. **Run the application:**


```
bash
./mvnw quarkus:dev
```

Option 3: Using Static Credentials in `application.properties` (Not Recommended for Production)

1. **Edit `src/main/resources/application.properties` :**

```
properties
```

```
# Uncomment and configure with your credentials
quarkus.dynamodb.aws.credentials.type=static
quarkus.dynamodb.aws.credentials.static-provider.access-key-id=your-actual-access-key-id
quarkus.dynamodb.aws.credentials.static-provider.secret-access-key=your-actual-secret-access-key
```

 **Warning:** Never commit credentials to version control!

Required IAM Permissions

Your AWS user/role must have the following DynamoDB permissions:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "dynamodb:PutItem",
        "dynamodb:GetItem",
        "dynamodb:UpdateItem",
        "dynamodb>DeleteItem",
        "dynamodb:Scan",
        "dynamodb:Query"
      ],
      "Resource": [
        "arn:aws:dynamodb:eu-central-1:YOUR-ACCOUNT-ID:table/raven-dev-categories",
        "arn:aws:dynamodb:eu-central-1:YOUR-ACCOUNT-ID:table/raven-dev-products",
        "arn:aws:dynamodb:eu-central-1:YOUR-ACCOUNT-ID:table/raven-dev-orders",
        "arn:aws:dynamodb:eu-central-1:YOUR-ACCOUNT-ID:table/raven-dev-products/index/products_by_category"
      ]
    }
  ]
}
```

Verification Steps

After configuring your credentials, verify the setup:

1. Test AWS credentials:

```
bash
aws sts get-caller-identity
```

This should show your AWS account information.

2. Test DynamoDB access:

```
bash
aws dynamodb describe-table --table-name raven-dev-products --region eu-central-1
```

This should return the table description without errors.

3. Test the application:

```
```bash
Start the application
./mvnw quarkus:dev
```

```
In another terminal, test the endpoint
curl http://localhost:8080/api/products
...
```

## Summary of Findings

Component	Status	Details
<b>application.properties</b>	✓ CORRECT	Table names match: <code>raven-dev-categories</code> , <code>raven-dev-products</code> , <code>raven-dev-orders</code>
<b>Repository Classes</b>	✓ CORRECT	Using <code>@ConfigProperty</code> to read table names from configuration
<b>AWS Region</b>	✓ CORRECT	Configured as <code>eu-central-1</code>
<b>AWS Credentials</b>	✗ ISSUE	Using Abacus credentials without DynamoDB permissions
<b>DynamoDB Tables</b>	⚠ UNKNOWN	Need to verify existence with your credentials

## Action Items for You

1. **Get your AWS credentials** that have access to DynamoDB tables
2. **Configure credentials** using one of the options above (Option 1 recommended)
3. **Verify** your credentials have the required IAM permissions
4. **Restart** the application with your credentials
5. **Test** the API endpoints

## Additional Resources

- [AWS Credentials Configuration](https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-files.html) (https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-files.html)
- [DynamoDB IAM Policies](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/security-iam.html) (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/security-iam.html)
- [Quarkus DynamoDB Extension](https://quarkus.io/guides/dynamodb) (https://quarkus.io/guides/dynamodb)

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**Status:** Awaiting user to configure their AWS credentials