

# Efficiency Tips for Database Programming in SAS®

Course code: ETDPIF

This class teaches you how to tune your SAS programs for faster execution, especially those that access relational database tables using SAS/ACCESS interfaces or SAS Viya data connectors.

## Who is the course for

Data scientists, data analysts, and SAS programmers

## What we teach you

- Use SAS options to evaluate efficiency when accessing database data
- Tune SAS programs for faster processing
- Understand how relational database tables are accessed on the SAS Compute Server and in SAS Cloud Analytic Services (CAS)
- Understand conditions that can prevent SQL pass-through for execution in the database
- Modify SAS programs to maximize pass-through to the database and minimize execution time

## Required skills

Before attending this course, you should either have at least six months of experience writing SAS programs that include PROC SQL code or have completed the SAS(R) SQL 1: Essentials course and used PROC SQL in SAS for at least one month. The course builds on concepts presented in both the SAS(R) Programming I: Essentials and SAS(R) SQL 1: Essentials courses, and it is not recommended for beginning SAS software users. Specifically, you should be able to:

- Access existing SAS data libraries using a LIBNAME statement.
- Write and submit SAS programs to access and manipulate data using the DATA step and PROC SQL.
- Read and interpret the SAS log.
- Diagnose and correct syntax errors in SAS.

## Course outline

### Foundational Concepts

- Introduction

### LIBNAME Access to DBMS Tables

- The SAS/ACCESS LIBNAME Engine
- Implicit Pass-Through Basics
- Tuning SAS Programs
- Mitigating Common Problems
- Rules of Thumb for LIBNAME Access

### Working with Multiple Data Sources

- Cross-Library Operations
- Accelerating Cross-Library Operations

### The SQL Pass-Through Facility

- Implicit versus Explicit Pass-Through
- Explicit Pass-Through with PROC SQL
- Explicit Pass-Through with PROC FEDSQL

### Accessing Database Tables in CAS

- Introduction to CAS
- SQL Pass-Through in CAS
- Working with CAS Tables

#### GOPAS Praha

Kodaňská 1441/46  
101 00 Praha 10  
Tel.: +420 234 064 900-3  
[info@gopas.cz](mailto:info@gopas.cz)

#### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 542 422 111  
[info@gopas.cz](mailto:info@gopas.cz)

#### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 248 282 701-2  
[info@gopas.sk](mailto:info@gopas.sk)



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