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Sign Up

SAS Viya Programming Associate Certification Training

3 days (21 hours)

Overview

The SAS Viya Programming Associate Certification Training prepares you for the official SAS Certified Associate: Programming Fundamentals Using SAS Viya certification and helps you build the essential skills needed to program effectively in the SAS Viya environment.

This course helps you prepare for the SAS Viya Fundamentals of Programming exam. You will learn how to work with in-memory tables, manage CAS data sources, and identify the mechanisms that affect the execution of your programs.

You will master the use of caslibs, as well as loading, saving, and promoting tables, and CAS-server-specific data types. The exercises will allow you to apply the concepts expected on the official exam.

The training covers adapting DATA step and SQL programs for distributed execution, using CAS-compatible procedures, user formats, and the fundamentals of the CASL language.

Upon completion of the training, you will be able to tackle the certification practice problems, interpret execution logs, and demonstrate the skills validated by the SAS Certified Associate: Programming Fundamentals Using SAS Viya certification.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Understand the SAS Viya architecture and the principles of execution on CAS.
- Manage caslibs and in-memory tables.
- Adapt DATA step and SQL programs for CAS.
- Use CAS-compatible procedures and user formats.
- Implement CASL actions and action sets.
- Effectively prepare for the SAS Viya Fundamentals of Programming exam.

Target Audience

- Data Scientist
- Data Analyst
- SAS Developer
- Data Engineer
- Business Intelligence Consultant

Prerequisites

- Proficiency in the fundamentals of the SAS language.
- Experience creating programs using DATA step and SAS procedures.
- Knowledge of SQL queries.
- Basic understanding of data preparation and manipulation.

Technical Requirements

- Workstation running Windows 10, Windows 11, macOS, or Linux.
- A recent web browser compatible with Google Chrome, Microsoft Edge, or Mozilla Firefox.
- Access to a SAS Viya environment including SAS Studio and a CAS server.
- A stable internet connection without any filtering that prevents access to the training environment.

Curriculum for our SAS Viya Programming Associate Training

[Day 1 - Morning]

SAS Viya Architecture and Certification Objectives

- Overview of the SAS Certified Associate: Programming Fundamentals Using SAS Viya certification and the structure of the assessed domains.
- SAS Viya architecture, roles of the Compute Server and the CAS server.
- Principles of in-memory, distributed, serial, and parallel processing.
- Criteria for choosing between processing on the CAS and processing on the Compute Server.
- Reading a SAS program in a SAS Viya context and identifying its execution context.
- Hands-on workshop: Analyzing a SAS Viya architecture and classifying scenarios based on their execution mode.

[Day 1 - Afternoon]

Managing caslibs and in-memory tables

- Concept of a caslib; session, local, active, and personal scopes.
- Connecting to a CAS session using the CAS statement.
- Assigning libraries using CASLIB, LIBNAME, and the CAS engine.
- Loading client and server data with PROC CASUTIL.
- Session tables, global tables, promotion, deletion, and saving in SASHDAT format.
- Hands-on workshop: Create a CASLIB, load a file, promote a table, and save it.

[Day 2 - Morning]

Data preparation and the DATA step in CAS

- Column types: CHAR, VARCHAR, DOUBLE, INT32, and INT64.
- Rules determining whether a DATA step runs on CAS or on the compute server.
- Using SESSREF=, MSGLEVEL=, and reading execution logs.
- Distributed processing, threads, and the automatic variables _THREADID_ and _NTHREADS_.
- Adapting instructions, options, and functions not supported by CAS.
- Hands-on workshop: Modifying a DATA step to ensure it runs on CAS and verifying the result in the log.

[Day 2 - Afternoon]

SQL Programming and CAS-Compatible Procedures

- Differences between PROC SQL and PROC FEDSQL in a CAS environment.
- Data types, operators, joins, subqueries, and the LIMIT clause in FedSQL.
- Handling SESSREF=, views, set operations, and remerge limits.
- Procedures that can be executed on CAS, on the compute server, or in both contexts.
- Using PROC MEANS, PROC SUMMARY, PROC TRANSPOSE, PROC FREQTAB, and PROC MDSUMMARY.
- Hands-on workshop: converting a PROC SQL query and a summary process for optimized execution in CAS.

[Day 3 - Morning]

User formats and the CASL language

- Role of user formats in in-memory tables.
- Storing formats in caslibs using the CASFMTLIB= option.
- Backing up, restoring, and assigning formats to CAS tables.
- CASL language fundamentals, action sets, actions, and parameters.

- Exploring data with the TABLE and SIMPLE action sets.
- Hands-on workshop: Create a user-defined format and develop a CASL script to explore and summarize a table.

[Day 3 - Afternoon]

Targeted review and exam preparation

- Structured review of the A00-415 exam topics.
- Analysis of certification-style questions on CASLIBs, tables, and distributed execution.
- Identification of common pitfalls related to the DATA step, FedSQL, and procedures.
- Methods for reading logs and justifying technical choices.
- Time-management strategy, answer validation, and exam preparation.
- Hands-on workshop: Simulate a certification exam with a timed quiz and detailed feedback on answers.

Target Audience

This training is intended for both individuals and companies—large or small—that wish to train their teams in new, advanced IT technologies or to acquire specific industry knowledge or modern methodologies.

Entry-Level Assessment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency level across various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

Teaching Methods

Hands-On Training: 60% Practical, 40% Theoretical. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the instructor—supported by examples and reflection sessions—and group work.

Assessment

At the end of the session, a multiple-choice quiz is administered to verify that participants have successfully acquired the skills.

Certification

A certificate will be issued to each trainee who has completed the entire training program.