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SnowPro Advanced Certification Training: Architect

5 days (35 hours)

Overview

Snowflake is a cloud data platform designed to build scalable, secure, and production-ready architectures. With the separation of storage and compute, secure sharing, dynamic tables, and advanced governance mechanisms, Snowflake enables you to design robust and high-performance solutions.

Our SnowPro Advanced Certification: Architect training course enables you to go beyond the fundamentals and master the critical challenges of a Snowflake architecture in a real-world environment.

You'll learn how to design end-to-end workflows, select the right objects and services for each use case, scale performance, and structure an architecture that complies with security and governance requirements.

By the end of the course, you'll be able to optimize costs and performance, implement data-sharing strategies, manage data processing using tasks and dynamic tables, and secure multi-team or multi-organization use cases.

This course also covers best practices in advanced architecture, exam preparation, design choices, leveraging Snowflake features, and the mindset expected of a certifiable architect.

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

Objectives

- Design an end-to-end Snowflake architecture, from data sourcing to consumption.
- Select the appropriate Snowflake services based on performance, security, and cost constraints.
- Master data sharing, governance, and compliance mechanisms.
- Structure pipelines using streams, tasks, and dynamic tables.
- Optimize architectures for analytical, collaborative, and cross-organizational use cases.
- Effectively prepare for the SnowPro Advanced: Architect certification.

Target Audience

- Data Architect
- Data Engineer
- Data Architect
- BI Consultant
- Data Platform Manager

Requirements

- Proficiency in Snowflake and cloud data platform concepts.
- Proven experience with SQL and data modeling.
- Knowledge of data architecture, security, and governance principles.
- Professional experience with cloud environments and data pipelines.
- Previous experience with data industrialization or operations projects.

Technical Requirements

- A recent computer with sufficient resources to complete hands-on exercises and navigate the Snowflake interface.
- Stable Wi-Fi or Ethernet connection for remote sessions.
- An up-to-date web browser compatible with the Snowflake environment.
- Access to a work environment with an SQL editor or equivalent tool for the exercises.
- Microphone and headset recommended for virtual sessions and collaborative workshops.

SnowPro Advanced Certification: Architect Training Program

[Day 1 - Morning]

Fundamentals of Snowflake Architecture

- Snowflake’s role in a modern data cloud architecture.
- Review of the principles of separating storage and compute and their impact on design.
- Understanding the service model, logical layers, and the architect’s responsibilities.
- Review of the major use cases supported by the platform, from analytics to collaboration.
- Identifying decision criteria for a robust, scalable, and operationally viable architecture.

- Hands-on workshop: mapping out a target Snowflake architecture based on a given business requirement.

[Day 1 - Afternoon] Data Flow Modeling

- Designing an end-to-end data flow, from sources to consumers.
- Choosing between batch ingestion, continuous loading, and platform-driven transformations.
- Managing logical zones, intermediate objects, and technical dependencies.
- Anticipating constraints related to volume, data freshness, and disaster recovery.
- Aligning data flows with governance and security requirements.
- Hands-on workshop: Design a source-to-consumption data flow by selecting the right Snowflake objects.

[Day 2 - Morning] Storage, Computation, and Performance

- Understanding storage mechanisms, micro-partitioning, and metadata.
- Examining the effects of virtual warehouse sizing on performance.
- Analyzing strategies for workload isolation and access contention.
- Identifying optimization levers for analytical queries and recurring processes.
- Taking into account cost, latency, and usage variability.
- Hands-on workshop: Proposing a computing architecture suited to multiple workload profiles.

[Day 2 - Afternoon] Governance and Security

- Defining roles, privileges, and responsibilities in Snowflake.
- Implementing an access model consistent with the principle of least privilege.
- Managing sensitive objects, compartmentalization, and compliance requirements.
- Overview of security controls applicable to shared data and internal use.
- Integration of technical security, functional governance, and auditability.
- Hands-on workshop: Building a secure access matrix for a multi-role data team.

[Day 3 - Morning] Data Sharing and Collaboration

- Understanding the principles of Secure Data Sharing and controlled distribution of objects.
- Differences between internal sharing, cross-account sharing, and distribution via the marketplace.
- Managing shared objects, restrictions, and impacts on consumers.
- Designing collaboration solutions without unnecessary data duplication.

- Addressing the challenges of traceability, data freshness, and reversibility.
- Hands-on workshop: defining a secure sharing scenario for an external partner.

[Day 3 - Afternoon] Process

Automation

- Understanding the role of streams in capturing changes.
- Orchestrating processing using tasks and dependencies between steps.
- Reviewing event-driven and scheduled models for transformation pipelines.
- Managing refreshes, data freshness, and recovery points.
- Choosing between declarative and imperative logic depending on the use case.
- Hands-on workshop: Designing an incremental processing chain using streams and tasks.

[Day 4 - Morning]

Dynamic Tables and Modern Pipelines

- Understanding the dynamic tables model and its architectural benefits.
- Comparison between traditional pipelines and declarative pipelines.
- Managing data freshness via target lag and selecting upstream dependencies.
- Identifying scenarios where dynamic tables simplify operations.
- Analysis of limitations, compatibility, and migration patterns.
- Hands-on workshop: transforming a traditional pipeline into a dynamic-table-based architecture.

[Day 4 - Afternoon]

Multi-purpose architecture and costs

- Designing architectures tailored for analytics, data sharing, and operational use.
- Selecting services and balancing simplicity, performance, and cost.
- Optimizing usage to limit unnecessary processing and excessive resource consumption.
- Managing multiple environments, functional separations, and lifecycles.
- Preparing architecture recommendations for complex business contexts.
- Hands-on workshop: auditing a Snowflake architecture and proposing cost optimizations.

[Day 5 - Morning]

Advanced Design and Use Cases

- Analysis of complex scenarios combining ingestion, transformation, sharing, and governance.
- Building a target architecture aligned with real-world production constraints.
- Managing dependencies between teams, data domains, and consumers.
- Taking a step back to evaluate which architectural choices to prioritize based on business objectives.

- Methodical preparation for advanced-level certification questions.
- Hands-on workshop: solving a complete architectural case study based on a detailed business requirement.

[Day 5 - Afternoon]

Review and exam preparation

- Structured review of key concepts covered during the training.
- Reinforcement of key considerations regarding architecture, security, and performance.
- Review of common exam pitfalls and the expected line of reasoning.
- Strategies for answering questions on design, trade-offs, and scenario-based problems.
- Individual action plan to continue developing skills after the session.
- Hands-on workshop: complete a mini practice exam and collectively review and correct architectural choices.

Target Companies

This training is intended for both individuals and companies—large or small—seeking 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.