SNOWPRO™ CORE EXAM STUDY GUIDE

COF-C02

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SNOWPRO™ STUDY GUIDE OVERVIEW

This is a self-learning study guide which highlights concepts that may be covered on Snowflake's SnowPro™ Core Certification exams.

This study guide does not guarantee certification success.

For an overview and more information on the SnowPro™ Core Certification exam, please navigate here.

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SNOWPRO™ CORE CERTIFICATION OVERVIEW

This exam will validate knowledge to apply specific core expertise implementing and migrating to Snowflake. A SnowPro Core Certified individual has a thorough understanding of the Snowflake Cloud Data Platform, and has the knowledge necessary to develop, and manage secure, scalable Snowflake solutions to drive business objectives.

The candidate is expected to have knowledge of:

- Data Loading and Transformation in Snowflake
- Virtual Warehouse Performance and Concurrency
- DDL and DML Queries
- Using Semi-Structured and Unstructured Data
- Cloning and Time Travel
- Data Sharing
- Snowflake Account Structure and Management

Target Audience:

We recommend that individuals have at least 6 months of knowledge using the Snowflake Platform prior to attempting this exam. Familiarity with basic ANSI SQL is recommended.

- Solution Architects
- Data Engineers
- Snowflake Account Administrators
- Database Administrators
- Data Scientists
- Data Analysts
- Application Developers

SNOWPRO™ CORE SUBJECT AREA BREAKDOWN

This exam guide includes test domains, weightings, and objectives. It is not a comprehensive listing of all the content that will be presented on this examination. The table below lists the main content domains and their weighting ranges.

Domain	Estimated Percentage Range
1. Snowflake Cloud Data Platform Features and Architecture	20 - 25%
2. Account Access and Security	20 - 25%
3. Performance Concepts	10 - 15%
4. Data Loading and Unloading	5 - 10%
5. Data Transformations	20 - 25%
6. Data Protection and Data Sharing	5 - 10%

CORE PREREQUISITE KNOWLEDGE

The exam does not cover cloud fundamentals or basics of SQL syntax, but some questions on the exam assume knowledge of these concepts. If you need assistance learning these concepts, we recommend you review some additional resources.

Database Basic Concepts

Basic Terminology Related to Databases and SQL
Tables and Data Types
Selecting and Manipulating Data
Views, Store Procedures, Functions
Security (Authentication & Authorization)

Basics of Cloud Fundamentals

Types of Cloud Computing and Benefits
Types of Cloud Services
Cloud Computing Architecture (Storage & Compute)

RECOMMENDATIONS FOR USING THIS GUIDE

This guide will show the Snowflake topics covered on the exam, each topic will be hyperlinked to their location in the Snowflake Documentation where you can review the topic in more depth. Following the topics will be additional resources consisting of videos, documents, blogs or exercises to help you understand Snowflake.

Estimated length of study guide: 8 – 12 hours

Some links may have more value than others, depending on your experience, the same amount of time should not be spent on each link.

Prior to reviewing the study guide, please make sure you complete the following configurations:

- Snowflake University (using your Community log in)
- Snowflake 30-day free trial Account for Hands-On Lab

SNOWFLAKE OVERVIEW

Below is a list of documents, videos, and training modules about Snowflake:

Snowflake Overview

- Data Cloud Overview: Frank Slootman
- Introduction to the Snowflake Data Cloud
- Data Goes Around The World in 80 Seconds With Snowflake
- What is Snowflake? 8 Minute Demo
- Introduction to Snowflake - Key Concepts & Architecture
- Snowflake Getting Started
- Before You Begin

Getting Started with Snowflake is a resource of 12 modules designed to help you get familiar with Snowflake. We recommend you complete all of the modules, but the individual topics are linked to the exam content areas.

SNOWPRO CORE DOMAINS & OBJECTIVES

This exam outline includes test domains, weightings, and objectives. It is not a comprehensive listing of all the content that will be presented on the examination.

Domain 1.0: Snowflake Cloud Data Platform Features and Architecture

1.1 Outline key features of the Snowflake Cloud Data Platform.

- Elastic Storage
- Elastic Compute
- Snowflake's three distinct layers
- Data Cloud/ Data Exchange/ Partner Network
- Cloud partner categories

1.2 Outline key Snowflake tools and user interfaces.

- Snowflake User Interfaces (UI)
- Snowsight
- Snowflake connectors
- Snowflake drivers
- SQL scripting
- Snowpark

1.3 Outline Snowflake's catalog and objects.

- Databases
- Schemas
- Tables Types
- View Types
- Data types
- User-Defined Functions (UDFs) and User Defined Table Functions (UDTFs)
- Stored Procedures
- Streams
- Tasks
- Pipes
- Shares
- Sequences

1.4 Outline Snowflake storage concepts.

- Micro partitions
- Types of column metadata clustering
- Data Storage Monitoring
- Search Optimization Service

Domain 1.0: Snowflake Cloud Data Platform Features and Architecture Study Resources

Snowflake University On Demand Trainings
Snowflake University, LevelUp: Snowflake's Key Concepts
Snowflake University, Level Up: Snowflake Ecosystem

Getting Started With Snowflake
Module 2: Prepare your Lab Environment
Module 3: The Snowflake User Interface & Lab Story

Additional Assets
Quick Tour of the Web Interface (Document + Video)

Snowflake Documentation Links
Caching in Snowflake Data Warehouse
Classic Web Interface
Constraints
CREATE SEQUENCE
CREATE STAGE
CREATE STREAM
CURRENT_CLIENT
Data Storage Considerations
Data Types
Database, Schema, & Share DDL
Databases, Tables & Views
DROP STAGE
Installing SnowSQL
Introduction to Snowflake
Introduction to Snowpipe
Introduction to Tasks
LIST
Overview of Access Control
Overview of Views
Semi-structured Data
SnowCD (Connectivity Diagnostic Tool)
Snowflake High Availability for Data Applications
Snowflake Information Schema
Snowflake Scripting
Snowsight: The Snowflake Web Interface
SQL Variables
Tabular SQL UDFs (UDTFs)
UDFs (User-Defined Functions)
Understanding Snowflake Table Structures
Using Persisted Query Results
Virtual Warehouses

Domain 2.0: Account Access and Security

2.1 Outline security principles.

- Network security and policies
- Multi-Factor Authentication (MFA)
- Federated authentication
- Single Sign-On (SSO)

2.2 Define the entities and roles that are used in Snowflake.

- Outline how privileges can be granted and revoked
- Explain role hierarchy and privilege inheritance

2.3 Outline data governance capabilities in Snowflake.

- Accounts
- Organizations
- Databases
- Secure views
- Information schemas
- Access history and read support

Domain 2.0: Account Access and Security Study Resources

Snowflake University On Demand Trainings
Snowflake University, LevelUp: Accounts & Assurances
Snowflake University, Level Up: Container Hierarchy

Getting Started With Snowflake
Module 9: Working with Roles, Account Admin & Account Usage

Additional Assets
Crucial Security Controls for Your Cloud Data Warehouse (Video)
Quickly Visualize Snowflake's Roles, Grants and Privileges (Article)
Snowflake Security Overview (Video)

Snowflake Documentation Links
Access Control in Snowflake
Account Usage
Authentication
CREATE TASK
Database Replication Considerations
GRANTS_TO_USERS View
GRANT OWNERSHIP
GRANT <privileges> … TO ROLE

Introduction to Organizations
LOGIN_HISTORY View
Network Policies
Overview of Views
SHOW GRANTS
Snowflake Information Schema
Summary of Governance Features
Summary of Security Features
USE SECONDARY ROLES
User Management
Using the Search Optimization Service
Working with Secure Views

Domain 3.0: Performance Concepts

3.1 Explain the use of the Query Profile.

- Explain plans
- Data spilling
- Use of the data cache
- Micro-partition pruning
- Query history

3.2 Explain virtual warehouse configurations.

- Multi-clustering
- Warehouse sizing
- Warehouse settings and access

3.3 Outline virtual warehouse performance tools.

- Monitoring warehouse loads
- Query performance
- Scaling up compared to scaling out
- Resource monitors

3.4 Optimize query performance.

- Describe the use of materialized views
- Use of specific SELECT commands

Domain 3.0: Performance Concepts Study Resources

Snowflake University On Demand Trainings
Snowflake University, Level Up: Query History & Caching
Snowflake University, LevelUp: Query & Result
Snowflake University, LevelUp: Context
Snowflake University: LevelUp: Resource Monitoring
Snowflake University, Essentials - Data Warehousing Workshop

Getting Started With Snowflake
Module 6: Working with Queries, The Results Cache & Cloning

Additional Assets
Accelerating BI Queries with Caching in Snowflake (Video)
Caching in Snowflake Data Warehouse (Article)
How to: Understand Result Caching (Article)
Managing Snowflake's Compute Resources (Blog)
Performance Impact from Local and Remote Disk Spilling (Article)
Search Optimization: When & How to Use (Article)
Snowflake Materialized Views: A Fast, Zero-Maintenance Accurate Solution (Blog)
Snowflake Workloads Explained: Data Warehouse (Video)
Tackling High Concurrency with Multi-Cluster Warehouses (Video)
Tuning Snowflake (Article)
Using Materialized Views to Solve Multi-Clustering Performance Problems (Article)

Snowflake Documentation Links
Access Control Privileges
ALTER FILE FORMAT
ALTER WAREHOUSE
Analyzing Queries Using Query Profile
Clustering Keys & Clustered Tables
CREATE WAREHOUSE
LOGIN_HISTORY , LOGIN_HISTORY_BY_USER
Managing Cost in Snowflake
METERING_HISTORY View
Multi-cluster Warehouses
Queries
QUERY_HISTORY View
QUERY_HISTORY , QUERY_HISTORY_BY_*
Querying Semi-structured Data
RESOURCE_MONITORS View
Parameters
Understanding Snowflake Table Structures
Understanding Your Cost
Using Persisted Query Results
Using the Search Optimization Service
Virtual Warehouses

Warehouse Considerations
Working with Materialized Views
Working with Resource Monitors
Working with Warehouses

Domain 4.0: Data Loading and Unloading

4.1 Define concepts and best practices that should be considered when loading data.

- Stages and stage types
- File size
- File formats
- Folder structures
- Adhoc/bulk loading using the Snowflake UI

4.2 Outline different commands used to load data and when they should be used.

- CREATE PIPE
- COPY INTO
- GET
- INSERT/INSERT OVERWRITE
- PUT
- STREAM
- TASK
- VALIDATE

4.3 Define concepts and best practices that should be considered when unloading data.

- File formats
- Empty strings and NULL values
- Unloading to a single file
- Unloading relational tables

4.4 Outline the different commands used to unload data and when they should be used.

- LIST
- COPY INTO
- CREATE FILE FORMAT
- CREATE FILE FORMAT … CLONE
- ALTER FILE FORMAT
- DROP FILE FORMAT
- DESCRIBE FILE FORMAT
- SHOW FILE FORMAT

Domain 4.0: Data Loading and Unloading Study Resources

Snowflake University On Demand Trainings
Snowflake University, Level Up: Data Loading
Badge 1: Data Warehousing Workshop

Getting Started With Snowflake
Module 4: Preparing to Load Data
Module 5: Loading Data

Additional Assets
Best Practices for Data Unloading (Article)
Best Practices for Using Tableau with Snowflake (White Paper, requires email for access)
Building and Deploying Continuous Data Pipelines (Video)
Easily Loading and Analyzing Semi-Structured Data in Snowflake (Video)
How to Load Terabytes into Snowflake - Speeds, Feeds and Techniques (Blog)

Snowflake Documentation Links
Continuous Data Pipelines
COPY INTO <location>
COPY INTO <table>
CREATE PIPE
GET
LIST
Loading Data into Snowflake
Managing Snowpipe
OBJECT_CONSTRUCT
PUT
REMOVE
Unloading Data from Snowflake
VALIDATE

Domain 5.0: Data Transformations

5.1 Explain how to work with standard data.
- Estimating functions
- Sampling
- Supported function types
- User-Defined Functions (UDFs) and stored procedures

5.2 Explain how to work with semi-structured data.
- Supported file formats, data types, and sizes
- VARIANT column
- Flattening the nested structure

5.3 Explain how to work with unstructured data.

- Define and use directory tables
- SQL file functions
- Outline the purpose of User-Defined Functions (UDFs) for data analysis

Domain 5.0: Data Transformations Study Resources

Snowflake University On Demand Training
Badge 2: Data Application Builders Workshop

Getting Started With Snowflake
Module 7: Working with Semi-Structured Data, Views & Joins

Additional Assets
Best Practices for Managing Unstructured Data (E-book)
Easily Loading and Analyzing Semi-Structured Data in Snowflake (Video)
Structured vs Unstructured vs Semi-Structured Data (Blog)
Understanding Unstructured Data With Language Models (Blog)

Snowflake Documentation Links
Constraints
CREATE <object> … CLONE
External Functions
FLATTEN
LAST_QUERY_ID
PARSE_JSON
SAMPLE / TABLESAMPLE
Semi-structured Data
Semi-structured Data Types
Stored Procedures
Tutorial: JSON Basics
Unstructured Data

Domain 6.0: Data Protection and Data Sharing

6.1 Outline Continuous Data Protection with Snowflake.

- Time Travel
- Fail-safe
- Data Encryption
- Cloning
- Replication

6.2 Outline Snowflake data sharing capabilities.

- Account types
- Data Marketplace and Data Exchange
- Private data exchange
- Access control options
- Shares

Domain 6.0: Data Protection and Data Sharing Study Resources

Snowflake University On Demand Trainings
Snowflake University, Level Up: Container Hierarchy
Snowflake University, Level Up: Backup and Recovery
Snowflake University, Essentials - Sharing, Marketplace & Exchanges Workshop
Badge 3: Sharing, Marketplace, & Exchanges Workshop

Getting Started With Snowflake
Module 8: Using Time Travel
Module 10: Data Sharing

Additional Assets
Data Protection with Time Travel in Snowflake (Video)
Getting Started on Snowflake with Partner Connect (Video)
Meta Data Archiving with Snowflake (Article)
Snowflake Continuous Data Protection (White Paper)
Top 10 Cool Snowflake Features, #7: Snowflake Fast Clone (Blog + Video)

Snowflake Documentation Links
Cloning Considerations
Continuous Data Protection
CREATE <object> … CLONE
Data Encryption
Data Storage Considerations
Database Replication Considerations
Key Pair Authentication & Key Pair Rotation
Parameters

Sharing Data Securely in Snowflake
Snowflake Time Travel & Fail-safe
Snowflake Marketplace
Understanding Data Transfer Billing
UNDROP SCHEMA

SNOWFLAKE PRODUCT RELEASES

Make sure to stay up-to-date on current product releases:

2022 Releases

SNOWPRO CORE CERTIFICATION SAMPLE QUESTIONS

1. Which type of data integration tools leverage Snowflake's scalable compute for data transformation?

   A. Database replication
   B. ELT
   C. ETL
   D. Streaming

2. What is the maximum number of consumer accounts that can be added to a share object?

   A. 1
   B. 10
   C. 100
   D. Unlimited

3. What technique does Snowflake use to limit the number of micro-partitions scanned by each query?

   A. Pruning
   B. Indexing
   C. Map Reduce
   D. B-Tree

4. Which of the following are options when creating a virtual warehouse? (Select TWO).

   A. Auto-suspend
   B. Storage size
   C. Auto-resume
   D. Cache size
   E. Default role

5. Which role in Snowflake allows a user to administer users and manage all database objects?

   A. `SYSADMIN`
   B. `SECURITYADMIN`
   C. `ACCOUNTADMIN`
   D. `ROOT`

Key to sample questions:
1: b, 2: d, 3: a, 4: a & c, 5: c

Ready to sign up for an exam? Navigate here to get started.

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