snowflake®

SNOWPRO™ CORE EXAM STUDY GUIDE

COF-C01

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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. This certification validates a candidate's understanding of Snowflake as a Data Cloud and how Snowflake can be used to drive business objectives.

This certification will test the ability to:

- Load and transform Data in Snowflake
- Scale Virtual Warehouses for Performance and Concurrency
- Utilize Data Sharing
- Query Constructs and DDL & DML Operations
- Manage and Monitor Snowflake Accounts
- Work with Semi-Structured Data
- Utilize Snowflake's method for Continuous Data Protection

Target Audience:

Individuals have at least 6 months of knowledge using Snowflake prior to attempting this exam.

- Solution Architects
- Data Engineers
- Database Administrators
- Data Scientists
- Data Analysts

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
Domain 1: Account and Security	10 - 15%
Domain 2: Virtual Warehouses	15 - 20%
Domain 3: Data Movement	11 - 20%
Domain 4: Performance Management	5 - 10%
Domain 5: Snowflake Overview and Architecture	25 - 30%

Domain 6: Storage and Protection	10 - 15%

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 computer science textbooks or internet searches.

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
- Getting Started with Snowflake - Zero to Snowflake

SNOWFLAKE OVERVIEW

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

Snowflake Company Overview

- Snowflake Website
- About Snowflake
- Data Cloud Overview: Frank Slootman (Video)
- What is Snowflake? 8 Minute Demo (Video)
- Getting Started with Snowflake – Key Concepts (Video)
- Introduction to Snowflake - Key Concepts & Architecture
- Snowflake Getting Started Documentation
- Getting Started with Snowflake – Key Concepts (Video)
- Before You Begin
- See Snowflake in 8 Minutes (Video)
- The Little Book Of Big Success with Snowflake (eBook)

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.

1.0 Domain: Account and Security

1.1. Explain how to manage Snowflake accounts.
- Account usage
- Account access
- Account views
- Information schema

1.2. Outline security principles.
- Multi-factor Authentication (MFA)
- Data Encryption
- Network Security and Policies
- Access Control
- Federated Authentication
- Single Sign-On (SSO)

1.3. Define the entities and roles that are used in Snowflake.
- Outline how privileges can be granted and revoked
- Explain Role Hierarchy and Privilege Inheritance

1.4. Explain the security capabilities associated with each Snowflake edition.
- Column-level security

1.5. Outline data governance capabilities in Snowflake
- Data masking
- Account usage views
- External tokenization
- Secure views

Account and Security Study Resources:

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

Reading/Video Assets
Quickly Visualize Snowflake's Roles, Grants and Privileges (blog)
Snowflake Security Overview (Video)

Data Protection with Time Travel in Snowflake (Video)
Crucial Security Controls for Your Cloud Data Warehouse (Video)

Snowflake Documentation
Account Usage (documentation)
Overview of Access Control (documentation)
Information Schema (documentation)
SHOW GRANTS (documentation)
SQL Function Reference (documentation)
Managing your Snowflake Account (documentation)
Managing Security in Snowflake (documentation)
GRANT ROLE (documentation)
GRANT <privileges> … TO ROLE (documentation)
Role Hierarchy and Privilege Inheritance (documentation)
SQL Command Reference (documentation)
Understanding Caller's Rights and Owner's Rights Stored Procedures (documentation)
Understanding Dynamic Data Masking (documentation)
Understanding Column-level security (documentation)
Snowflake Editions (documentation)
Cloning Considerations (documentation)
Understanding Row Access Policies (documentation)
Using the Search Optimization Service (documentation)
Access History (documentation)
External Tokenization (documentation)
Working with Secure Views (documentation)

2.0 Domain: Virtual Warehouses

2.1. Outline compute principles.

- Credit usage and billing
- Concurrency
- Caching
- Virtual warehouse characteristics and parameters
- Query profiler

2.2. Explain Virtual Warehouse best practices.

- Scale up compared to scale out
- Types of virtual warehouses
- Management/monitoring

Virtual Warehouse Study Resources:

Snowflake University On Demand
Snowflake University, LevelUp: Query & Result (OnDemand Training)
Snowflake University, LevelUp: Context (OnDemand Training)
Snowflake University: LevelUp: Resource Monitoring (OnDemand Training)
Snowflake University, Essentials - Data Warehousing Workshop

Reading/Video Assets
Tackling High Concurrency with Multi-Cluster Warehouses (Video)
Snowflake Workloads Explained: Data Warehouse (Video)
Accelerating BI Queries with Caching in Snowflake (Video)
Managing Snowflake's Compute Resources (Blog)
Caching in Snowflake Data Warehouse (blog)
Performance Impact from Local and Remote Disk Spilling (blog)

Snowflake Documentation
Understanding Billing for Severless Features (documentation)
Virtual Warehouses (documentation)
Analyzing Queries Using Query Profile (documentation)
Understanding Snowflake Virtual Warehouses, Storage, and Cloud Services Usage (documentation)
Parameters (documentation)

3.0 Domain: Data Movement

3.1. Outline different commands used to load data and when they should be used.
- COPY
- INSERT
- PUT
- GET
- VALIDATE
- SNOWPIPE
- COPY INTO

3.2. Define bulk as compared to continuous data loading methods.
- COPY
- Snowpipe
- Parameters types

3.3. Define best practices that should be considered when loading data.
- File size
- File Formats
- Folders

3.4. Outline how data can be unloaded from Snowflake to either local storage or cloud storage locations.
- Define formats supported for unloading data from Snowflake
- Define commands that help when unloading data
- Define best practices that should be considered when unloading data

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

Data Movement Study Resources:

Snowflake University On Demand
Snowflake University, Level Up: Data Loading (OnDemand Training)

Getting Started With Snowflake
Module 4: Preparing to Load Data
Module 5: Loading Data
Module 7: Working with Semi-Structured Data, Views & Joins

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

Snowflake Documentation
Loading Data into Snowflake(documentation)
COPY INTO <table> (documentation)
PUT (documentation)
GET (documentation)
SNOWPIPE (documentation)
Introduction to Data Pipelines (documentation)
Create Pipe (documentation)
Introduction to Snowpipe (documentation)
Introduction to Tasks (documentation)
Preparing Your Data Files (documentation)
Unloading Data from Snowflake (documentation)
Summary of Data Unloading Features (documentation)
Semi-structured Data (documentation)

4.0 Domain: Performance Management

4.1. Outline best practices for Snowflake performance management on storage.

- Clustering
- Materialized views
- Search Optimization Service

4.2. Outline best practices for Snowflake performance management on virtual warehouses.

- Query performance and analysis
- Query profiles
- Query history and activity
- SQL optimization
- Caching

Performance Management Study Resources:

Snowflake University On Demand
Snowflake University, Level Up: Query History & Caching (OnDemand Training)

Reading/Video Assets
Tuning Snowflake (blog)
Using Materialized Views to Solve Multi-Clustering Performance Problems (blog)
Snowflake Materialized Views: A Fast, Zero-Maintenance Accurate Solution (blog)

Snowflake Documentation
Overview of Views (documentation)
Benefits of Defining Clustering Keys (documentation)
Using the Search Optimization Service (documentation)
Clustering Keys & Clustered Tables (documentation)
Working with Materialized Views (documentation)
Resuming Automatic Clustering for a Table (documentation)
Using Persisted Query Results (documentation)
Queries Too Large to Fit in Memory (documentation)
QUERY_HISTORY (documentation)
QUERY_HISTORY View (documentation)
Using Persisted Query Results (documentation)
Inefficient Pruning (documentation)
CREATE MATERIALIZED VIEW (documentation)

5.0 Domain: Snowflake Overview & Architecture

5.1. Outline key components of Snowflake's Cloud data platform.

- Data types
- Optimizer
- Continuous data protection
- Cloning
- Types of Caching
- User-defined Functions (UDFs)
- Web Interface (UI)
- Data Cloud/Data Sharing/ Data Marketplace/ Data Exchange

5.2. Outline Snowflake data sharing capabilities.

- Account types
- Data Marketplace and Exchange
- Access control options
- Shares

5.3. Explain how Snowflake is different compared to legacy warehouse solutions.

- Elastic Storage
- Elastic Compute
- Account Management

5.4. Outline the different editions that are available, and the functionality associated with each edition.

- Pricing
- Features

5.5. Identify Snowflake's Partner Ecosystem

- Cloud Partners
- Connectors

5.6. Outline and define the purpose of Snowflake's three distinct layers.

- Storage Layer
- Compute Layer
- Cloud Services Layer

5.7. Outline Snowflake's catalog and objects.

- Accounts

- Database
- Schema
- Tables Types
- View Types
- Data Types
- External Functions
- Stored Procedures

Snowflake Overview & Architecture Study Resources:

Snowflake University On Demand
Snowflake University, LevelUp: Snowflake's Key Concepts (OnDemand Training)
Snowflake University, LevelUp: Accounts & Assurances (OnDemand Training)
Snowflake University, Level Up: Snowflake Ecosystem (OnDemand Training)
Snowflake University, Essentials - Sharing, Marketplace & Exchanged Workshop (OnDemand Training)
Snowflake University, Essentials - Data Applications Builders Workshop (OnDemand Training)

Getting Started With Snowflake
Module 2: Prepare your Lab Environment
Module 3: The Snowflake User Interface & Lab Story
Module 10: Data Sharing

Reading/Video Assets
Quick Tour of the Web Interface (Document + Video)
User Interface Quick Tour (Video)
Getting Started on Snowflake with Partner Connect (Video)
Data Sharing for Dummies (eBook)
Stephanie Stillman Data Sharing (Video)
New and Improved Snowflake Data Sharing (Video)
Snowflake for Data Lakes (Video)
Search Optimization: When & How to Use (blog)
How to: Understand Result Caching (blog)

Snowflake Documentation
Key Concepts & Architecture (documentation)
Sharing Data Securely in Snowflake (documentation)
Temporary and Transient Tables (documentation)
Data Types for Text Strings (documentation)
Third-Party Accounts (documentation)
Sharing Data with Data Consumers in a Different Region and Cloud Platform (documentation)
How do I access the Snowflake Data Marketplace to Browse Listings? (documentation)

Data Transfer Billing Use Cases (documentation)
CREATE SHARE (documentation)
Benefits of Automatic Clustering (documentation)
Reclustering (documentation)
Setting the Scaling Policy for a Multi-cluster Warehouse (documentation)
Snowflake Partner Connect (documentation)
Supported Cloud Platforms (documentation)
SnowCD (documentation)
Snowflake Ecosystem (documentation)
Cloud Services (documentation)
Query Processing (documentation)
Database Replication Considerations (documentation)

6.0 Domain: Storage and Protection

6.1. Outline Snowflake Storage concepts.

- Micro partitions
- Metadata Types
- Clustering
- Data Storage
- Stage Types
- File Formats
- Storage Monitoring

6.2. Outline Continuous Data Protection with Snowflake.

- Time Travel
- Fail Safe
- Data Encryption
- Cloning
- Replication
- Master keys

Storage and Protection Study Resources:

Snowflake University On Demand
Snowflake University, Level Up: Container Hierarchy (OnDemand Training)
Snowflake University, Level Up: Backup and Recovery (OnDemand Training)

Getting Started With Snowflake
Module 8: Using Time Travel

Reading/Video Assets

Meta Data Archiving with Snowflake (Blog)
Top 10 Cool Snowflake Features, #7: Snowflake Fast Clone (Blog + video)
Snowflake Continuous Data Protection (White Paper)
How to Make Data Protection and High Availability for Analytics Fast and Easy (Blog)

Snowflake Documentation

DROP STAGE (documentation)
CREATE STAGE (documentation)
CREATE TABLE (documentation)
Data Encryption (documentation)
Automatic Clustering (documentation)
Clustering Keys & Clustered Tables (documentation)
Overview of Constraints (documentation)
Choosing a stage for Local Files (documentation)
Data Loading/Unloading DDL (documentation)
Continuous Data Protection (documentation)
Storage Costs for Time Travel and Fail-Safe (documentation)
CREATE <object> … CLONE (documentation)
Cloning of Historical Objects (documentation)
Understanding & Using Time Travel (documentation)

Make sure you stay up-to-date on product 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. One

B. Unlimited
C. 10
D. 100

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?

Choose 2 correct answers:

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: b, 3: a, 4: a & c, 5: c

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

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