snowflake®

SNOWPRO™ CORE

STUDY GUIDE

April 10th, 2020

SNOWPRO™ CORE STUDY GUIDE OVERVIEW

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

This guide may not cover every topic tested for your certification exam but does provide information on key topics that may be covered. This 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 SUBJECT AREA BREAKDOWN

Snowflake Overview and Architecture: 28%

Snowflake Virtual Warehouses: 18%

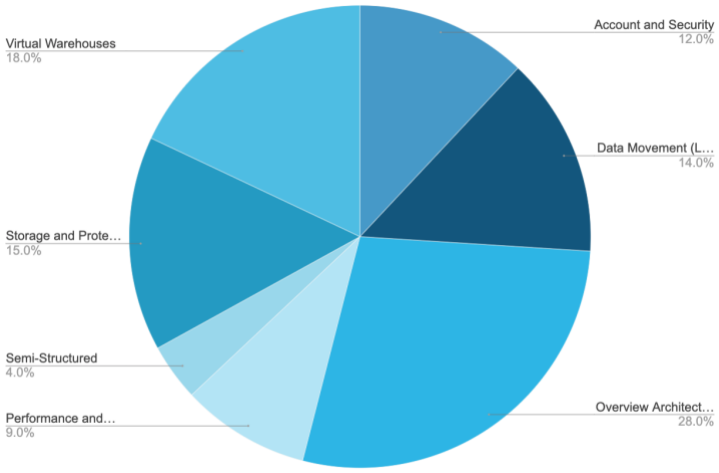
Snowflake Storage and Protection: 15%

Data Movement (Loading and Unloading): 14%

Snowflake Account and Security: 12%

Snowflake Performance and Tuning: 9%

Semi-Structured: 4%



The scope and content of future exams will evolve, and these questions may not reflect updated topics, or the level of detail called upon for future exams and are provided for informational purposes only.

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 to brush up on these concepts, search through some computer science textbooks or do some light internet searching.

Database Basic Concepts

- Basic Terminologies Related to Database and SQL
- Tables & Data Types
- Selecting & Manipulating Data
- Views, Store Procedures, Function Concepts
- Security (Authentication & Authorization)

Basics of Cloud Fundamentals

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

RECOMMENDATIONS AND USING THE 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 fully understand Snowflake.

Estimated length of study guide: 8 – 12 hours

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

> The first section focuses on what Snowflake is (pg. 5): *Recommended starting place for individuals new to Snowflake*.
>
> The middle section focuses on Snowflake functionality (pg. 6 – pg. 8): *Recommended starting place for individuals who understand Snowflake but need to confirm fine grain details*.
>
> The last section focuses on Snowflake features (pg. 9- pg. 17): *Recommended starting place for individuals who understand Snowflake and have hands-on-experience with Snowflake*.

Prior to reviewing the study guide, please make sure you have the following setup and can access the following:

- Snowflake University (using your Community log in)
- Snowflake 30-day free trial Account for Hands-On Lab
- Hands-On Lab Guide for Snowflake Free Trial
    - Download .sql file required for the Hands-On Lab

Throughout the guide, we'll refer to module exercises within the Hands-On Lab guide and link to Snowflake University on-demand videos. If you are new to Snowflake, please go through all the Snowflake Getting Started steps and complete the Hands-On Lab prior to using this exam guide.

SNOWFLAKE OVERVIEW & ARCHITECTURE

Below is a list of various documents, videos and training videos to help guide you on your SnowPro Core Certification journey:

Snowflake Company Overview

- Snowflake Website
- About Snowflake
- Reinventing the Data Warehouse (Video)
- Snowflake University, LevelUp: Snowflake's Key Concepts
- Snowflake University, Snowflake Overview

How Snowflake is Different

- 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)

Snowflake Editions & Deployments

- Snowflake University, LevelUp: Snowflake Account Options & Assurances
- Technology Partners - Amazon Web Services
- Technology Partners - Microsoft Azure
- Technology Partners - Google Cloud Platform
- Snowflake Regions
- Snowflake Editions

Key Features

- Overview of Key Features
- Introduction to Semi-Structured Data
- Bringing Together Structured and Semi-Structured Data (Video)
- Semi-Structured Data Types
- Querying Semi-Structured Data
- Continuous Data Protection
- Snowflake Fast Clone
- A Quick Look at Zero-copy Cloning (Video)
- Cloning in Snowflake (Video)

- Using Persisted Query Results
- Accelerating BI Queries with Caching in Snowflake (Video)
- Top 10 Cool Snowflake Features, #10: Snowflake Query Result Sets Available to Users via History
- Sharing Data in Snowflake

SNOWFLAKE PRICING & REGIONS

For the exam, you should understand the differences between Snowflake Editions, pricing and regions:

Snowflake Editions & Pricing

Snowflake Regions

SNOWFLAKE ARCHITECTURE

For the exam, you should understand Snowflake's unique multi-cluster, shared data and the three distinct layers:

Database Storage

Query Processing

Cloud Services

Additional Resources:

Snowflake University, LevelUp: Snowflake's Three Layer Design (Document + Quiz)

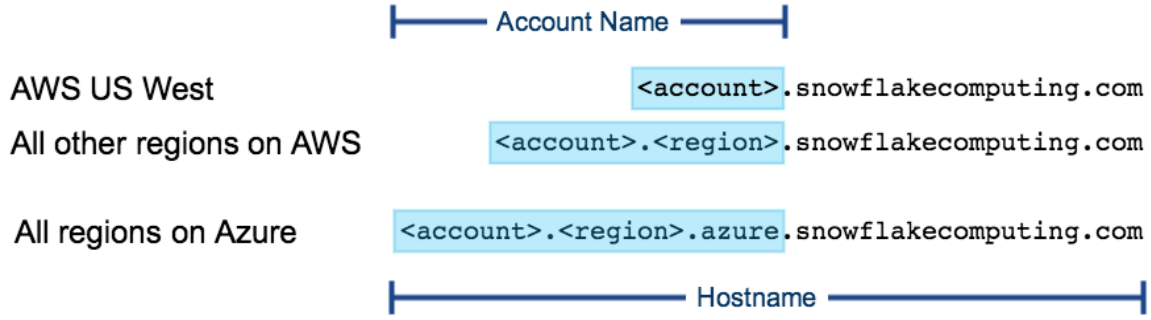
Snowflake Architecture, Cloud Services (Video)

INTERFACES & CONNECTIVITY

For the exam, you should understand a good sense of Snowflake's WebUI and the Connector Ecosystem:

Snowflake WebInterface (UI)

The Snowflake UI is accessed via a URL dedicated to a specific Snowflake Account



Note: If the account uses Private Link, the account name requires an additional Private Link segment.

SnowSQL (CLI)

Connector Ecosystem

Partner Connector Ecosystem

Exercise:

Hands-on Lab Guide for Snowflake

Module 1: Prepare your Lab Environment

Module 2: The Snowflake User Interface & Lab "Story"

Additional Resources:

Quick Tour of the Web Interface (Document + Video)

User Interface Quick Tour (Video)

Snowflake University, Hands on WebUI Essentials (Video, Labs + Project work)

Snowflake University, Level Up: Snowflake Ecosystem (Document + quiz)

Snowflake University, Snowflake User Interface Walkthrough (Video)

Snowflake University, Snowflake Clients and Ecosystem (Video)

Getting Started on Snowflake with Partner Connect (Video)

CATALOG & OBJECTS

For the exam, you should understand and know Snowflake Catalog & Objects

- Database & Schema
- Tables
- Views
- Data Types

DATA SHARING

For the exam, you should understand the following about Snowflake Data Sharing:

- Sharing Configuration & Access Control options
- Secure Data Sharing
- Providers, Consumers & Reader Accounts
- Creating & Managing Shares

Exercise:

Hands-on Lab Guide for Snowflake

- Module 9: Data Sharing

Additional Resources:

- Data Sharing for Dummies (eBook)
- Snowflake University, Data Sharing in Snowflake (Video)

SNOWFLAKE VIRTUAL WAREHOUSES

COMPUTE

For the exam, you should understand the following Snowflake concepts about Compute:

- Warehouses & Types
- Warehouse Sizing & Scaling
- Credit Usage
- Warehouse Management
- Warehouse Caching
- Warehouse Monitoring

Additional Resources:

- Tackling High Concurrency with Multi-Cluster Warehouses (Video)
- Snowflake University, LevelUp: Query & Result (Video + Quiz)

SNOWFLAKE STORAGE AND PROTECTION

STORAGE

For the exam, you should understand the following Snowflake concepts about Storage:

- Micro partitions
- Metadata
- Clustering
- Data Storages – Cost & Retention
- Table Types, File Formats

Storage Monitoring

Additional Resources:

Snowflake University, Level Up: Container Hierarchy (Document + quiz)

Top 10 Cool Snowflake Features, #7: Snowflake Fast Clone (Blog + video)

CONTINUOUS DATA PROTECTION

For the exam, you should understand the following about Continuous Data Protection with Snowflake:

Time Travel, Fail Safe

Data Encryption

Security – Network policies

Multi-Factor Authentication (MFA)

Federated Authentication & SSO

Exercise:

Hands-on Lab Guide for Snowflake

Module 7: Using Time Travel

Additional Resources:

Snowflake Continuous Data Protection (White Paper)

Snowflake University, Snowflake Backup & Recover (Video)

SNOWFLAKE DATA MOVEMENT

DATA LOADING

For the exam, you should understand how to load data (COPY vs INSERT) and Snowflake's offerings:

Stages, file format,pipe

Bulk Load using COPY

Loading Consideration & Load Management

Continuous Load Options – Snowpipe

Error handling & Troubleshooting

Exercise:

Hands-on Lab Guide for Snowflake

Module 3: Preparing to Load Data

Module 4: Loading Data

Additional Resources:

Getting Started - Introduction to Databases and Querying (Video)

How to Load Terabytes into Snowflake - Speeds, Feeds and Techniques (Blog)

Snowflake University, Snowflake Data Loading Best Practices (Video)

DATA UNLOADING

For the exam, you should understand data can be unloaded from Snowflake to either local storage or cloud storage locations:

Unloading data from Snowflake to External Cloud Storage (S3,GCS,AZURE BLOB)

Unloading data from Snowflake to Internal Snowflake Storage

Unloading data from Snowflake to Local / Network Drive

Data Unloading Considerations

SEMI-STRUCTURED DATA

For the exam, you should understand best practices to load and store semi-structured data and the types supported with Snowflake:

Different Formats, Variant Table Type

Native Syntax, Flattening DATA

Hands-on Lab Guide for Snowflake

Module 6: Working with Semi-Structured Data

Additional Resources:

Best Practices for Using Tableau with Snowflake (White Paper)

Easily Loading and Analyzing Semi-Structured Data in Snowflake (Video)

SNOWFLAKE PERFORMANCE & TUNING

PERFORMANCE MANAGEMENT

For the exam, you should understand best practices for Snowflake performance management and troubleshooting:

Query Performance & Analysis

SQL optimization

Load Testing

Clustering & Materialized Views

Query Profile

Caching

Additional Resources:

Using **Materialized Views** to Solve Multi-**Clustering** Performance Problems

Snowflake University, Level Up: Caching (Video + Quiz)

Snowflake University, SQL Support and Usage in Snowflake (Video)

SNOWFLAKE ACCOUNT AND SECURITY

ACCOUNT MANAGEMENT

For the exam, you should have an understand the following Snowflake Account Management concepts:

Managing Your Snowflake Account

WAREHOUSE & Storage credit usage

Materialized Views

Auto /Re Clustering

DR & Replication

Information Schema

Differences Between Account Usage and Information Schema

Exercises:

Hands-on Lab Guide for Snowflake

Module 8: Role Based Access Controls and Account Admin

Additional Resources:

Snowflake Community Administering Snowflake Guide

Snowflake University, Snowflake Administration Overview

SECURITY

For the exam, you should understand Snowflake uses role-based security and that roles are the entities to which privileges can be granted and revoked:

Access Control

Role Hierarchy and Privilege Inheritance

Multi-Factor Authentication (MFA)

Data Encryption

Network Security & Policies

Federated Authentication & SSO

Snowflake Editions

Exercises:

Hands-on Lab Guide for Snowflake

Module 8: Role Based Access Controls and Account Admin

Additional Resources:

Snowflake Security Overview (Video)

Data Protection with Time Travel in Snowflake (Video)

Crucial Security Controls for Your Cloud Data Warehouse (Video)

Snowflake University, Snowflake Security Overview (Video)

Ready for the exam? Navigate here to get started.

The information provided in this guide is provided for your internal purposes only and may not be provided to third parties. IN ADDITION, THIS STUDY GUIDE IS PROVIDED "AS IS". NEITHER SNOWFLAKE NOR ITS SUPPLIERS MAKES ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, TITLE, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.