

# Snowflake SnowPro Core Certification Guide COF-C02

---

*Hands-on exam preparation with practice questions*

---

**Balamurugan Kannaiyan**



[www.bpbonline.com](http://www.bpbonline.com)

First Edition 2025

Copyright © BPB Publications, India

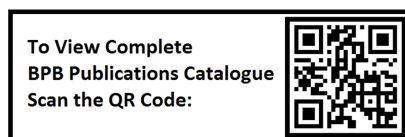
ISBN: 978-93-55518-880

*All Rights Reserved.* No part of this publication may be reproduced, distributed or transmitted in any form or by any means or stored in a database or retrieval system, without the prior written permission of the publisher with the exception to the program listings which may be entered, stored and executed in a computer system, but they can not be reproduced by the means of publication, photocopy, recording, or by any electronic and mechanical means.

### **LIMITS OF LIABILITY AND DISCLAIMER OF WARRANTY**

The information contained in this book is true to correct and the best of author's and publisher's knowledge. The author has made every effort to ensure the accuracy of these publications, but publisher cannot be held responsible for any loss or damage arising from any information in this book.

All trademarks referred to in the book are acknowledged as properties of their respective owners but BPB Publications cannot guarantee the accuracy of this information.



## Dedicated to

*My beloved parents,  
Mr. Kannaiyan and Mrs. Amsavalli, and my  
loving family. I extend my sincere gratitude to my life  
partner **Jayashree**, adorable kids **Arnav** and **Aadith**,  
my dear sisters, and all my friends for their unwavering  
support throughout this incredible journey!*

## About the Author

**Balamurugan Kannaiyan** is a highly accomplished Data Management and Cloud expert with over 18+ years of industry experience. With a distinguished track record, he leads the Data Engineering team, leveraging Snowflake's cutting-edge capabilities to build high-performance data applications. Bala brings extensive experience from prior roles within the Public Sector and Fortune 500 companies, where he excelled in designing scalable, cloud-distributed systems.

A graduate of the prestigious ANNA University, Bala holds a Bachelor of Engineering degree and numerous certifications and accreditations in cloud technologies and data management. As a Snowflake Squad Member, he actively participates in user group forums across the globe, sharing his expertise and insights with the community. He is passionate about travel, visiting new places, and gardening.

---

## About the Reviewer

**Pooja Kelgaonkar** is a seasoned professional in the realm of data and a Snowflake data superhero for the years 2023 and 2024. With an impressive 18 years of industry experience exclusively dedicated to the data domain, Pooja has honed her expertise to become a trusted authority in Snowflake and data platform designs.

Currently serving as a Data Architect at Rackspace Technology, Pooja is stationed in the vibrant city of Toronto, Canada. Her role entails crafting intricate data architectures that drive innovation and efficiency for her clients. Pooja's profound understanding of Snowflake empowers her to architect robust solutions tailored to meet the diverse needs of businesses in the digital age.

Beyond her technical prowess, Pooja is recognized for her strategic mindset and ability to translate complex data challenges into actionable insights. Her dedication to staying at the forefront of emerging technologies ensures that she remains a trailblazer in the ever-evolving landscape of data management.

As a Snowflake data superhero, Pooja continues to inspire her peers and make significant contributions to the advancement of data-driven initiatives, cementing her legacy as a leader in the field.

# Acknowledgement

First and foremost, I want to thank my parents and family from the bottom of my heart for their unwavering support and encouragement throughout the whole process of writing this book. I am so lucky to have you in my life.

To my mentors, I cannot thank you enough for all your guidance. I am grateful for everything you have taught me on this professional journey.

I would like to extend my sincere appreciation to the incredible team at BPB. Your support throughout the process of writing this book has been nothing short of amazing. Your dedication and commitment to excellence have been truly inspiring, and I am grateful for the opportunity to collaborate with such a talented group of individuals.

A special thanks to the technical reviewers Pooja Kelgaonkar and Sanjay Kattimani for the helpful suggestions that made this guide even better.

I am so grateful for my amazing colleagues in the Snowflake Data Superheroes and Squad. Their inspiration and support have been instrumental in my decision to share my knowledge and expertise with the broader community. I am honored to be part of this amazing group of experts who love what they do to help other data professionals.

Finally, I extend my sincere appreciation to the readers who have shown interest in this book. Your enthusiasm and support have been a driving force behind this project.

---

# Preface

Snowflake is a cutting-edge, modern cloud data platform that is rapidly reshaping the landscape of data management and analytics. Organizations across industries increasingly adopt Snowflake to leverage its features to unlock the full potential of their data. This created a huge demand for skilled Snowflake professionals in the tech industry mastering Snowflake and SnowPro Certified. This book will be a comprehensive guide to help achieve the goal of everyone's SnowPro dream.

This book is for current and aspiring emerging Data professionals, Data/Solution Architects, Data Engineers, Database administrators, Data Analysts, Data scientists, and anyone who wants to explore and learn about the modern data cloud platform. This is an essential resource for any data professional seeking to master Snowflake and SnowPro Certified.

This book is divided into **15 chapters**. In this book, the reader will learn various topics, from Snowflake's fundamentals to advanced key concepts outlined in the SnowPro Certification. This comprehensive guide offers a detailed exploration of the Snowflake platform, empowering readers with the knowledge and skills required to design, implement, and manage robust cloud data solutions. Whether you are seeking to pass the SnowPro certification exam or enhance your expertise in a rewarding career, this book serves as an indispensable asset for your professional development.

Empower your career with this definitive guide to mastering Snowflake and become a SnowPro Certified to take advantage of the platform's fast-paced opportunities. In this book, you will learn the following:

**Chapter 1: SnowPro Core Certification** - In this chapter, we will provide an overview of SnowPro Core Certification, its prerequisites, and the target audience who will be the direct beneficiaries after completing this certification. We also learn about the list of overall domains, and particular domain topics to prepare and study for the SnowPro certification exam. In addition, we also learn how to register for exams, tips, and recommended resources to prepare and pass the exam.

**Chapter 2: The Cloud Data Platform** - In this chapter, we will learn about the Snowflake cloud data platform, Architecture, and technical details of the individual architecture components of the Service, Compute, and Storage layers. We also learn about the cloud providers, various editions, pricing details, Snowflake releases, and how Snowflake is different from legacy data warehousing solutions.

**Chapter 3: Snowflake Cloud Data Platform Features** - In this chapter, we will learn about the unique key features specific to Snowflake such as elastic storage, computing, and additional components within the data cloud ecosystems. We also learn about the impact and benefit of each Snowflake's key features.

**Chapter 4: Snowflake Tools and User Interfaces** - In this chapter, we will learn about how to get started with Snowflake, and step-by-step instructions to sign up Snowflake free trial account sign-up process. We also learned about the Snowflake user interfaces, Snowsight, Snowpark, and other technical details about various drivers and connectors available to connect Snowflake.

**Chapter 5: Snowflake Catalogs and Objects** - In this chapter, we will learn about the Snowflake Catalogs and objects such as databases, schemas, tables, views, and various data types available within Snowflake. In addition, we will learn more details about various other objects in Snowflake like Stored Procedures, User Defined Functions, Snowpipe, Streams, Tasks, Shares, Sequences, etc., to simplify and automate the data ingestion process.

**Chapter 6: Snowflake Account Access** - In this chapter, we will learn about the Snowflake Security principles, how to set up the Snowflake account access, and various network security policies to secure the account from unauthorized access. In addition, we will learn the details about the single sign-on (SSO), Multi-factor Authentication (MFA), and Federated authentication of Snowflake.

**Chapter 7: Snowflake Security** - In this chapter, we will learn about various Snowflake access control techniques like roles, and their hierarchy, privilege management, data governance tools, and so on. In addition, we will also learn the power of Snowflake's various data governance capabilities and how to secure the data.

**Chapter 8: Snowflake Virtual Warehouse and Warehouse Management** - This chapter aims to provide comprehensive information about Snowflake virtual warehouses, various characteristics, and configurations around the warehouse, scaling policy, data cache, how to manage and monitor the warehouses, and the credit usage and billing, etc. that helps to manage and work with the warehouse.

**Chapter 9: Snowflake Performance Management** - In this chapter, we will learn about various performance characteristics of Snowflake including the Query profile, Query history, characteristics of Query history, how to analyze and improve the query performance using various commands and techniques, etc.



**Chapter 10: Snowflake Data Loading and Unloading** - In this chapter, we will learn about essential aspects of Snowflake data movement, other technical components, and fundamental concepts like stages, file formats, file size considerations, and various methods and commands involved in this data movement process.

**Chapter 11: Snowflake Data Transformations** - In this chapter, readers will gain knowledge on various available data types in Snowflake, how to work with structured, semi-structured, and unstructured data, and other technical functionalities using UDF and stored procedures.

**Chapter 12: Snowflake Data Protection** - In this chapter, we will learn about how the data is secured and protected in Snowflake using various data protection features available in Snowflake such as Time Travel, Fail-safe, data encryption, cloning, replications, and further technical details.

**Chapter 13: Snowflake Data Sharing** - In this chapter, we will learn about the Snowflake Data Marketplace, Account Types, different data-sharing technologies, features, benefits, and how it works in real-time implementations.

**Chapter 14: Snowflake Latest Additions** - Snowflake keeps introducing new features to meet the industry demands. In this chapter, we will learn about the latest additions, such as Snowpark, Dynamic, Iceberg tables, and the Snowflake Cortex. We will explore how these innovations are continuously evolving to empower the Snowflake community and unlock the full potential of the platform for data management and analytics.

**Chapter 15: Snowflake Knowledge Test** - In this chapter, we have four sets of model questions to help the readers practice what they expect in the SnowPro Exam. Each model test consists of 25 questions to evaluate learner knowledge across different domains.

# Code Bundle and Coloured Images

Please follow the link to download the *Code Bundle* and the *Coloured Images* of the book:

**<https://rebrand.ly/ac420e>**

The code bundle for the book is also hosted on GitHub at

**<https://github.com/bpbpublications/Snowflake-SnowPro-Core-Certification-Guide-COF-C02>**.

In case there's an update to the code, it will be updated on the existing GitHub repository.

We have code bundles from our rich catalogue of books and videos available at **<https://github.com/bpbpublications>**. Check them out!

## Errata

We take immense pride in our work at BPB Publications and follow best practices to ensure the accuracy of our content to provide with an indulging reading experience to our subscribers. Our readers are our mirrors, and we use their inputs to reflect and improve upon human errors, if any, that may have occurred during the publishing processes involved. To let us maintain the quality and help us reach out to any readers who might be having difficulties due to any unforeseen errors, please write to us at :

**[errata@bpbonline.com](mailto:errata@bpbonline.com)**

Your support, suggestions and feedbacks are highly appreciated by the BPB Publications' Family.

Did you know that BPB offers eBook versions of every book published, with PDF and ePub files available? You can upgrade to the eBook version at [www.bpbonline.com](http://www.bpbonline.com) and as a print book customer, you are entitled to a discount on the eBook copy. Get in touch with us at :

**[business@bpbonline.com](mailto:business@bpbonline.com)** for more details.

At **[www.bpbonline.com](http://www.bpbonline.com)**, you can also read a collection of free technical articles, sign up for a range of free newsletters, and receive exclusive discounts and offers on BPB books and eBooks.

## Piracy

If you come across any illegal copies of our works in any form on the internet, we would be grateful if you would provide us with the location address or website name. Please contact us at **business@bpbonline.com** with a link to the material.

## If you are interested in becoming an author

If there is a topic that you have expertise in, and you are interested in either writing or contributing to a book, please visit **www.bpbonline.com**. We have worked with thousands of developers and tech professionals, just like you, to help them share their insights with the global tech community. You can make a general application, apply for a specific hot topic that we are recruiting an author for, or submit your own idea.

## Reviews

Please leave a review. Once you have read and used this book, why not leave a review on the site that you purchased it from? Potential readers can then see and use your unbiased opinion to make purchase decisions. We at BPB can understand what you think about our products, and our authors can see your feedback on their book. Thank you!

For more information about BPB, please visit **www.bpbonline.com**.

## Join our book's Discord space

Join the book's Discord Workspace for Latest updates, Offers, Tech happenings around the world, New Release and Sessions with the Authors:

<https://discord.bpbonline.com>



# Table of Contents

<b>1. SnowPro Core Certification.....</b>	<b>1</b>
Introduction.....	1
Structure.....	1
Objectives .....	2
Certification overview .....	2
Target audience.....	2
Subject area breakdown.....	3
SnowProcore domains and objectives.....	4
Tips to prepare and pass the SnowProcore exam.....	8
<i>Exam registration instructions .....</i>	<i>9</i>
Conclusion.....	11
<b>2. The Cloud Data Platform.....</b>	<b>13</b>
Introduction.....	13
Structure.....	13
Objectives .....	14
Platform overview.....	14
Snowflake data cloud key capabilities .....	15
Cloud offering.....	16
Non-cloud and cloud offering: High-level overview.....	17
Architecture components .....	17
Snowflake three layers.....	18
Cloud providers.....	19
Snowflake editions .....	19
<i>Snowflake editions and features for quick reference .....</i>	<i>20</i>
<i>Snowflake editions/features matrix .....</i>	<i>21</i>
Snowflake releases .....	24
Snowflake pricing.....	24
<i>Storage pricing plans .....</i>	<i>24</i>

---

<i>Understanding the Snowflake cost model</i> .....	25
Snowflake vs. traditional architecture .....	26
Conclusion .....	27
Points to remember .....	27
<b>3. Snowflake Cloud Data Platform Features</b> .....	<b>31</b>
Introduction .....	31
Structure .....	31
Objectives .....	32
Key features overview .....	32
Elastic storage .....	34
Elastic compute .....	35
Data cloud and data exchange .....	37
<i>Snowflake marketplace: Domain-specific listings</i> .....	39
Partner ecosystem .....	42
Cloud partner categories .....	43
Conclusion .....	44
Points to remember .....	45
<b>4. Snowflake Tools and User Interfaces</b> .....	<b>47</b>
Introduction .....	47
Structure .....	47
Objectives .....	48
Getting started with Snowflake .....	48
<i>How-to sign-up Snowflake</i> .....	48
Snowflake user interfaces .....	52
Snowsight .....	53
<i>Getting started with Snowsight</i> .....	53
<i>How to sign in to Snowsight</i> .....	53
<i>Sign into a different Snowflake account</i> .....	54
<i>Using Snowsight: Various sections inside Snowsight</i> .....	54
<i>Additional user preferences</i> .....	57
Snowflake connectors and drivers .....	59

---

<i>How to get the latest snowflake connectors and drivers</i> .....	60
Snowpark.....	61
<i>How Snowpark works</i> .....	62
Conclusion.....	62
Points to remember .....	63
<b>5. Snowflake Catalogs and Objects.....</b>	<b>65</b>
Introduction.....	65
Structure.....	65
Objectives .....	66
Snowflake DB objects.....	66
Snowflake data types .....	67
<i>Numeric data types</i> .....	67
<i>String data types</i> .....	67
<i>Binary data types</i> .....	68
<i>Logical data types</i> .....	68
<i>Date and time data types</i> .....	68
<i>Semi-structured data types</i> .....	68
<i>Geospatial data types</i> .....	69
<i>VECTOR data types</i> .....	69
Understanding Snowflake table structures .....	69
<i>Permanent tables</i> .....	70
<i>Transient tables</i> .....	71
<i>Temporary tables</i> .....	71
<i>Snowflake external tables</i> .....	72
Snowflake views.....	74
<i>Types of Snowflake Views</i> .....	75
Stored procedures.....	76
User-Defined Functions.....	77
SnowPipe .....	79
<i>Automating Snowpipe using cloud messaging</i> .....	79
<i>Advantages of Snowpipe</i> .....	80
<i>Limitations of SnowPipe</i> .....	80

<i>Snowpipe vs. bulk data loading</i> .....	81
Streams and tasks .....	82
Shares .....	83
Sequences.....	84
Data storage monitoring.....	84
Points to remember .....	86
Conclusion.....	88
<b>6. Snowflake Account Access .....</b>	<b>89</b>
Introduction.....	89
Structure.....	89
Objectives .....	90
Outline security principles.....	90
Account access setup .....	91
<i>How to set up Snowflake account access</i> .....	91
<i>Creating an account</i> .....	91
<i>Creating users</i> .....	91
<i>Granting roles to users</i> .....	91
<i>Configuring access control</i> .....	91
<i>Tips for setting up Snowflake account access</i> .....	92
Snowflake access control framework .....	92
<i>Benefits of Snowflake's access control framework</i> .....	93
Network security and policies.....	93
<i>Network security features</i> .....	94
<i>Security policies</i> .....	94
<i>Best practices</i> .....	94
Single sign-on.....	95
Multi-Factor Authentication .....	95
<i>Using MFA with Snowsight</i> .....	96
<i>Benefits of using SSO and MFA</i> .....	97
<i>Configuring SSO and MFA</i> .....	98
Federated authentication in Snowflake.....	98
<i>Supported identity providers</i> .....	98

---

<i>Benefits of federated authentication</i> .....	98
<i>Configuring federated authentication</i> .....	99
Conclusion.....	99
Points to remember .....	99
Additional references.....	102
<b>7. Snowflake Security</b> .....	<b>103</b>
Introduction.....	103
Structure.....	103
Objectives .....	104
Overview of Snowflake access control.....	104
Snowflake entities and roles .....	105
Roles hierarchy .....	107
Roles and privilege management.....	108
Data governance capabilities .....	110
<i>Snowflake row level and column level security</i> .....	112
<i>Object tagging</i> .....	112
<i>Access history</i> .....	113
<i>Benefits of Snowflake data governance capabilities</i> .....	114
Secure views.....	114
<i>How secure views works?</i> .....	115
Conclusion.....	116
Points to remember .....	116
Additional references.....	118
<b>8. Snowflake Virtual Warehouse and Warehouse Management</b> .....	<b>119</b>
Introduction.....	119
Structure.....	119
Objectives .....	120
Virtual Warehouse overview .....	120
Warehouse characteristics and configurations.....	120
Scaling policy .....	126
<i>Snowflake virtual warehouse: horizontal and vertical scaling</i> .....	127



<i>Vertical scaling: scale up or down</i> .....	128
<i>Horizontal scaling (auto-scaling) – scale out</i> .....	128
Using the data cache .....	129
Management/monitoring .....	130
Credit usage and billing .....	131
Conclusion.....	132
Points to remember .....	132
<b>9. Snowflake Performance Management .....</b>	<b>135</b>
Introduction.....	135
Structure.....	135
Objectives .....	136
Performance overview.....	136
Query profile.....	136
Query performance analysis.....	138
Query history and characteristics .....	139
<i>Snowflake query history example</i> .....	141
Optimizing Query performance .....	142
Materialized views.....	143
<i>Deciding when to use materialized view or regular view</i> .....	144
Conclusion.....	145
Points to remember .....	145
<b>10. Snowflake Data Loading and Unloading .....</b>	<b>149</b>
Introduction.....	149
Structure.....	149
Objectives .....	150
Snowflake stages .....	150
<i>External stages</i> .....	150
<i>Internal stages</i> .....	152
Snowflake file format.....	154
Snowflake file size .....	157
Data loading methods.....	158

---

<i>Bulk loading</i> .....	159
<i>Continuous loading using Snowpipe</i> .....	159
<i>Continuous loading using Snowpipe streaming</i> .....	161
<i>Snowpipe streaming vs. Snowpipe</i> .....	161
Concepts and best practices to load data .....	162
Data unloading methods .....	163
Concepts and best practices to unload data .....	164
Conclusion .....	165
Points to remember .....	165
<b>11. Snowflake Data Transformations</b> .....	<b>169</b>
Introduction .....	169
Structure .....	169
Objectives .....	170
Snowflake: Various types of data .....	170
<i>Numeric data types</i> .....	170
<i>String and binary data types</i> .....	170
<i>Logical data types</i> .....	170
<i>Date and time data types</i> .....	171
<i>Semi-structured data types</i> .....	171
<i>Structured data types</i> .....	171
<i>Geospatial data types</i> .....	172
<i>Vector data types</i> .....	172
<i>Unsupported data types</i> .....	172
Supported file formats, and file sizes .....	173
Working with semi-structured data .....	173
<i>Loading semi-structured data into Snowflake</i> .....	174
<i>Data size limitations</i> .....	174
<i>Querying semi-structured data in Snowflake</i> .....	174
Working with unstructured data .....	175
<i>Processing unstructured data</i> .....	176
User-defined functions .....	177
Stored procedure .....	180

---

Conclusion.....	183
Points to remember .....	184
<b>12. Snowflake Data Protection .....</b>	<b>187</b>
Introduction.....	187
Structure.....	187
Objectives .....	188
Data protection overview .....	188
<i>Key features of Snowflake data protection.....</i>	<i>188</i>
<i>Benefits of Snowflake data protection.....</i>	<i>189</i>
<i>Snowflake data protection: Organizational impact.....</i>	<i>189</i>
Snowflake Time Travel .....	190
<i>Key features and benefits of Snowflake Time Travel.....</i>	<i>190</i>
<i>Real-time example of Snowflake Time Travel.....</i>	<i>191</i>
Snowflake Fail-safe .....	191
<i>Real-time example of Snowflake Fail-safe .....</i>	<i>192</i>
<i>Snowflake Time Travel Vs Fail-Safe.....</i>	<i>193</i>
Data encryption .....	194
<i>Encryption at rest and in transit .....</i>	<i>194</i>
<i>Encryption at rest.....</i>	<i>194</i>
<i>Encryption in transit.....</i>	<i>195</i>
<i>Understanding encryption key management.....</i>	<i>195</i>
<i>Tri-Secret Secure in Snowflake.....</i>	<i>196</i>
Cloning.....	196
<i>Working of Snowflake clone .....</i>	<i>196</i>
<i>Benefits of Snowflake cloning.....</i>	<i>197</i>
<i>Considerations when using Snowflake cloning .....</i>	<i>197</i>
Replication.....	198
<i>Replication and failover/failback .....</i>	<i>199</i>
<i>Client redirect.....</i>	<i>199</i>
<i>Business continuity and disaster recovery.....</i>	<i>200</i>
Conclusion.....	201
Points to remember .....	201

---

<b>13. Snowflake Data Sharing .....</b>	<b>205</b>
Introduction.....	205
Structure.....	205
Objectives .....	206
Account types .....	206
Data Marketplace and data exchange .....	207
Direct data sharing.....	207
<i>Additional benefits of using Snowflake Data Sharing .....</i>	<i>208</i>
Private data exchanges .....	209
Data Marketplace .....	211
<i>Uses of Snowflake Marketplace .....</i>	<i>212</i>
<i>Data available on Snowflake Marketplace.....</i>	<i>212</i>
<i>Data provider vs data consumers.....</i>	<i>214</i>
<i>Key benefits of Snowflake Marketplace .....</i>	<i>216</i>
Access control options .....	217
Conclusion.....	219
Points to remember .....	219
<b>14. Snowflake Latest Additions .....</b>	<b>221</b>
Introduction.....	221
Structure.....	221
Objectives .....	222
Snowflake Snowpark .....	222
<i>Key features of Snowpark.....</i>	<i>222</i>
<i>Examples of Snowpark in action .....</i>	<i>223</i>
<i>Key benefits of Snowpark .....</i>	<i>223</i>
Snowflake Dynamic Tables .....	223
<i>Key features of dynamic tables .....</i>	<i>224</i>
<i>Examples of dynamic tables .....</i>	<i>225</i>
<i>Benefits of Dynamic Tables .....</i>	<i>225</i>
<i>Snowflake dynamic tables vs. materialized views .....</i>	<i>226</i>
Snowflake Iceberg Table .....	227
<i>Key features of Iceberg table .....</i>	<i>227</i>

---

<i>Iceberg table billing model</i> .....	228
<i>Example of Iceberg table</i> .....	228
<i>Key benefits of Iceberg Table</i> .....	229
<i>Iceberg table limitations</i> .....	230
Snowflake Cortex .....	230
<i>Key features of Snowflake Cortex</i> .....	231
<i>Benefits of using Snowflake Cortex</i> .....	231
Conclusion.....	232
Points to remember .....	232
<b>15. Snowflake Knowledge Test</b> .....	<b>235</b>
Introduction.....	235
Structure.....	235
Objectives .....	235
SnowPro: Model test 1 .....	236
SnowPro: Model test 2 .....	240
SnowPro: Model test 3 .....	244
SnowPro: Model test 4 .....	249
Answer keys.....	255
<i>Model test 1</i> .....	255
<i>Model test 2</i> .....	256
<i>Model test 3</i> .....	256
<i>Model test 4</i> .....	257
Conclusion.....	258
<b>Index</b> .....	<b>259-264</b>



# CHAPTER 1

# SnowPro Core Certification

## Introduction

In this chapter, we will learn about the overview of SnowPro Core Certification, its prerequisites, and the target audience who will be the direct beneficiary after completing this certification. We also learn about the list of overall domains, and particular domain topics to prepare and study for the SnowPro certification exam. In addition, we will learn tips and recommended training to prepare and pass the exam.

## Structure

The following are the topics to be covered:

- Certification overview
- Target audience
- Subject area breakdown
- SnowPro core domains and objectives
- Tips to prepare and pass the exam

# Objectives

This chapter aims to provide overall information about the Snowflake SnowPro Core Certification and all the necessary technical details to prepare and pass the exam.

## Certification overview

The SnowPro Core Certification became the most demanded certification across industries based on the latest trend. This certification demonstrates a person's knowledge and core knowledge to implement and migrate 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. The SnowPro Core certification is a mandatory prerequisite for all advanced SnowPro Certifications and SnowPro Recertification.

This certification will test the ability to:

- Load and transform data in Snowflake
- Scale virtual warehouses for performance and concurrency
- Query concepts, DDL, and DML operations
- Work with semi-structured and unstructured data
- Utilize Snowflake's continuous data protection (cloning/time travel)
- Utilize data sharing
- Manage and monitor Snowflake accounts

## Target audience

Anyone who wants to explore, learn about the modern data cloud and take advantage of the platform and fast-paced opportunities. We recommend that individuals with a minimum of six months of Snowflake experience and familiarity with basic SQL knowledge before attempting this exam:

- Solution architects
- Data engineers
- Data scientists
- Data analysts
- Snowflake account administrators
- Database administrators
- Application developers



## Subject area breakdown

Snowflake continuously evolves as new features and functionalities are routinely developed to meet industry demands. The SnowPro Core exam (COF-C01) became available to the Snowflake community users in September 2019. A new version (COF-C02) of the exam was released in September 2022 with revisions made to the exam contents for modernization purposes.

If you are already SnowPro Core certified, please note that you will not be required to take the new version of the exam to maintain your badge or certification status. However, you will follow the new version of the exam for recertification two years after you originally passed the exam. The exam formats for both first and recertification remain the same. Refer to the following details for additional reference:

	SnowPro Core	Recertification - SnowPro Core
<b>Prerequisites</b>	None	SnowPro Core Certification
<b>Exam Fees</b>	USD 175	USD 88
<b>Number of Questions</b>	100	60
<b>Question Types</b>	Multiple Select/Choice True or False	Multiple Select/Choice True or False
<b>Time Limit</b>	115 Minutes	85 Minutes
<b>Passing Score (Scaled Scoring from 0-1000)</b>	750	750
<b>Exam Delivery Options</b>	Online Proctoring & Onsite Testing Centers	Online Proctoring & Onsite Testing Centers
<b>Languages</b>	English Japanese	English Japanese (Release date to be announced)

*Figure 1.1: SnowPro Core - Certification Vs Recertification*

Overall, the initial and newer versions (revised in September 2022) of the SnowPro exam domains remain the same, and revisions are made to exam contents for modernization purposes. A few of the task objectives have been eliminated from the updated content outline as they covered topics that were either already sufficiently covered in other areas of the blueprint or are no longer relevant.

Please refer to the following information for what changes to expect in the revised version of the SnowPro Exam. The alignment and weightings for the main content domains from both exam blueprints are listed for comparison purposes below:

COF-CO1 Domain (SnowPro Prior Exam)	Estimated % Range	COF-CO2 Domains (SnowPro Revised Exam)	Estimated % Range
Snowflake Overview & Architecture	25 – 30 %	Snowflake Cloud Data Platform Features and Architecture	20 – 25 %
Account and Security	10 – 15 %	Account Access and Security	20 – 25 %
Performance Management	05 – 10 %	Performance Concepts	10 – 15 %
Data Movement	11 – 20 %	Data Loading and Unloading	5 – 10 %
Virtual Warehouses	15 – 20 %	Data Transformations	20 – 25 %
Storage and Protection	10 – 15 %	Data Protection and Data Sharing	5 – 10 %

Figure 1.2: SnowPro Core – prior vs latest version: list of domains and estimated questions range

## SnowProcore domains and objectives

This exam outline includes test domains, weightings, and objectives. Please refer to the contents below for the topics required to study for the individual domains:

- **Domain: Snowflake cloud data platform features and architecture**
  - Outline key features of the Snowflake Cloud Data Platform
    - Snowflake’s key architecture layers
    - Elastic Compute
    - Elastic Storage
    - Cloud partner categories
    - The Data Cloud/ Data Exchange/ Partner Network
  - Outline key Snowflake tools and user interfaces
    - Snowflake user interfaces (Web UI)
    - Classic vs. Snowsight
    - Snowflake drivers
    - Snowflake connectors
    - Snowpark
    - SQL scripting
  - Outline Snowflake’s catalogs and objects
    - Snowflake databases
    - Snowflake schemas
    - Data types

- Tables and table types
- Views and view types
- **User defined functions (UDFs)**
- **User defined table functions (UDTFs)**
- **Stored procedures (SPs)**
- Pipes
- Streams and tasks
- Shares
- Sequences
- Outline Snowflake Storage Structure
  - Column metadata clustering
  - Micro partition
  - Storage monitoring
  - Search optimization
- **Domain: Account access & security**
  - Outline Security Concepts
    - **Single Sign-On (SSO)**
    - **Multi-Factor Authentication (MFA)**
    - Network policies and security
    - Federated authentication
  - Define the roles and entities used in Snowflake
    - Explain roles hierarchy and privilege offerings
    - Define how privileges are granted and revoked
  - Snowflake - Data governance capabilities
    - Snowflake account
    - Organization and hierarchy
    - Snowflake database
    - Information schemas
    - Snowflake Secure views
    - Access history and read support
- **Domain: Snowflake performance concepts**
  - Describe the use of the query profile

- Use of the data cache
  - Query plans
  - Data spilling
  - Micro-partition and pruning
  - Query history
- Describe Virtual Warehouses (WH) and configurations
  - Single vs. multi cluster
  - Warehouse size
  - Warehouse setting
  - Warehouse access
- Virtual warehouse performance tools
  - Monitor warehouse loads
  - Scale up vs. scaling out
  - Query performance
  - Resource monitoring
- Optimize query performance
  - Use of specific **SELECT** commands
  - Materialized views
- **Domain: Data loading and unloading**
  - Define best practices and concepts that should be considered when loading data
    - Stage and stage types
    - File formats
    - File size
    - Folder structures
    - Ad hoc/bulk loading using the Snowflake UI
  - Outline different commands used to load data and when they should be used
    - Copy into
    - Create pipe
    - Get
    - Put
    - Insert/Insert overwrite