<https://www.youtube.com/watch?v=p0G-YSAUcZQ>

<https://www.toppertips.com/snowpro-practice-test-part1/>

Snowflake DB Deadlock – link

https://medium.com/hashmapinc/handling-deadlocks-in-snowflake-ca6eaedf40ae

# Using Persisted Query Results

**Typically**, query results are reused if all of the following conditions are met:

1. The new query syntactically matches the previously-executed query.
2. The query does not include functions that must be evaluated at execution time (e.g. CURRENT\_TIMESTAMP() and UUID\_STRING()). Note that the CURRENT\_DATE() function is an exception to this rule; even though CURRENT\_DATE() is evaluated at execution time, queries that use CURRENT\_DATE() can still use the query reuse feature.
3. The query does not include user-defined functions (UDFs) or external functions.
4. The table data contributing to the query result has not changed.
5. The persisted result for the previous query is still available.
6. The role accessing the cached results has the required privileges.
7. If the query was a SELECT query, the role executing the query must have the necessary access privileges for all the tables used in the cached query.
8. If the query was a SHOW query, the role executing the query must match the role that generated the cached results.
9. Any configuration options that affect how the result was produced have not changed.
10. The table’s micro-partitions have not changed (e.g. been reclustered or consolidated) due to changes to other data in the table.

Different ways to get Month from a date

SELECT to\_varchar(current\_date(), 'MMMM') from dual;

SELECT monthname(current\_date()) from dual;

SELECT date\_part(month,current\_date()) from dual;

The Statement object has a method called getSqlText():

<https://docs.snowflake.com/en/sql-reference/stored-procedures-api.html#getSqlText>

CREATE OR REPLACE PROCEDURE my\_proc()

RETURNS STRING

LANGUAGE JAVASCRIPT

EXECUTE AS OWNER

AS

$$

snowflake.execute( {sqlText: "create or replace table test (col string)"} );

var column = 'col';

var stmt = snowflake.createStatement( {sqlText: `SELECT MAX(${column}) FROM test`} );

var ret = stmt.execute();

return stmt.getSqlText();

$$ ;

call my\_proc();

It returns:

SELECT MAX(col) FROM test

Query to get the data size

select to\_char(usage\_date,'YYYYMM') as sort\_month

, to\_char(usage\_date,'Mon-YYYY') as month

, avg(storage\_bytes) as storage

, avg(stage\_bytes) as stage

, avg(failsafe\_bytes) as failsafe

from snowflake.account\_usage.storage\_usage

group by month, sort\_month

order by sort\_month;

Find any warehouse not part of any resource monitor in snowflake

Show warehouses;

Select \* from table(result\_scan(last\_query\_id(5))) where "resource\_monitor" = 'null';

# Flatten

Flattens (explodes) compound values into multiple rows.

FLATTEN is a table function that takes a VARIANT, OBJECT, or ARRAY column and produces a lateral view (i.e. an inline view that contains correlation referring to other tables that precede it in the FROM clause).

FLATTEN can be used to convert semi-structured data to a relational representation.

select \* from table(flatten(input => parse\_json('[1, ,77]'))) f;

# Field enclosed by option in copy into statement

Character used to enclose strings. Value can be NONE, single quote character ('), or double quote character ("). To use the single quote character, use the octal or hex representation (0x27) or the double single-quoted escape ('').

When a field contains this character, escape it using the same character. For example, if the value is the double quote character and a field contains the string A "B" C, escape the double quotes as follows:

A ""B"" C

# **The following statements have to do with the scaling of the warehouses. Check all true statements.**

1) Scaling a warehouse DOWN will decrease the number of servers. (e.g. Medium to Small)

2) Scaling a warehouse OUT will increase the number of clusters. (e.g. Min to Max)

3) Scaling a warehouse OUT will increase the number of servers. (e.g. Min to Max)

4) Scaling a warehouse IN will decrease the number of clusters. (e.g. snapping back)

Virtual warehouses can scale both vertically and horizontally. You can think of scaling vertically as increasing the size of the computer you are using for extra power to run a particular query. Meaning, you are able to run that query faster based on breadth. On the other side, scaling horizontally is like adding new sets of computers to be able to process multiple queries at the same time, adding depth of resources.

# **When configuring a Warehouse using a Snowflake edition that has Elastic Data Warehousing enabled, what facets or components will you need to configure that are not needed in accounts where Elastic Data Warehousing is not enabled.**

Scaling Policy and Minimum and Maximum Clusters are not needed when setting up a Standard WH, They are needed only for EDW.

# **What can be typed in front of a line of text in the SQL pane to make it into a comment or note rather than have it treated as code?(Check all that apply.)**

A double slash: // and A double dash: --

# TO\_DECIMAL,TO\_NUMBER, TO\_NUMERIC

A special version of [TO\_DECIMAL , TO\_NUMBER , TO\_NUMERIC](https://docs.snowflake.com/en/sql-reference/functions/to_decimal.html) that performs the same operation (i.e. converts an input expression to a fixed-point number), but with error-handling support (i.e. if the conversion cannot be performed, it returns a NULL value instead of raising an error).

# QUALIFY

In a SELECT statement, the QUALIFY clause filters the results of window functions.

QUALIFY does with window functions what HAVING does with aggregate functions and GROUP BY clauses.

Example to return 10% rows from a table, i.e the 10th,20th,30th… ross

SELECT \*

FROM tab

QUALIFY ROW\_NUMBER() OVER(ORDER BY some\_column) % 10 = 0;

# We loaded an XML file that included a header entity called. In order to bypass this entity and treat each AUTHOR object as a separate record (loading each into a separate row), what FILE\_FORMAT property did we change?

STRIP OUTER ELEMENT

# What data structure types can be ingested into a VARIANT column in a Snowflake table? (Check all that apply)

(A)ORC

(C) PARQUET

(D) JSON

(E) XML

(F) AVRO

# **External Stages require customers to have an account with a cloud storage service provider. Which of the following are available currently or have been announced by Snowflake as under development?**

AWS S3; GCP Buckets, AzZURE Blob

# To change the warehouse that will be used to run a SQL command within a specific worksheet (for example, changing the worksheet so that it uses SMALL\_WH), what two options are available?

Run a SQL command like USE WAREHOUSE SMALL\_WH;

Update the Warehouse field in the Context Menu located above the worksheet.

# **Which default role has access to the Account and Notifications ribbon options?**

ACCOUNTADMIN

**What Cache type runs on a 24 hour clock**

Results Cache is retained for 24 Hours

The metadata cache keep all the metadata information including the table count.

The WH Cache is used when VWH is running and you access the same underline data from the same WH

# Which Cache type gets purged in a predictable way so that it ends up empty of all cached information

Ware house cache

The following factors affect data load rates

Physical location of the stage

Gzip compression efficiency

# Snowflake caches are automatically invalidated if the underlying data changes.

True ( IF the data is changed then the query gets the fresh data from the DB)

Which are the types of caching use by snowflake

WH Caching, Metadata caching and Query result caching.

# Micro Partitions are

Physical data files that comprise SF logical data

Enable horizontal and vertical query pruning.

# Which transformation are available when using the COPY INTO command to load data files into Snowflake form a stage.

Column data type Conversion

Column Concatenation

Filters and Aggregates are not available

# The WH cache may be reset if a running WH is suspended and then resumed

TRUE as when running WH is suspended and then resumed the underlying machine might be different because of which the data will not be cached.

# What is the maximum of consumer account that can be added to a Share object

UnLimited

# The Query profiler view is only available for completed queries

**FALSE**

# What is fail-safe period in Snowflake?

[[](https://www.google.com/search?output=search&tbm=isch&q=What+is+fail-safe+period+in+Snowflake?&source=iu&ictx=1&fir=EVrpdVXaW4_3eM,J_UZ5zAoEDkfAM,_&vet=1&usg=AI4_-kTCnR34jGzTle5oNZT6lpGkuoBJxg&sa=X&ved=2ahUKEwi56bqj2YbzAhXsGFkFHU14A14Q9QF6BAgMEAE#imgrc=EVrpdVXaW4_3eM)](https://www.google.com/search?output=search&tbm=isch&q=What+is+fail-safe+period+in+Snowflake?&source=iu&ictx=1&fir=EVrpdVXaW4_3eM%252CJ_UZ5zAoEDkfAM%252C_&vet=1&usg=AI4_-kTCnR34jGzTle5oNZT6lpGkuoBJxg&sa=X&ved=2ahUKEwi56bqj2YbzAhXsGFkFHU14A14Q9QF6BAgMEAE" \l "imgrc=EVrpdVXaW4_3eM)

Fail-safe provides a **(non-configurable) 7-day period during which historical data may be recoverable by Snowflake**. This period starts immediately after the Time Travel retention period ends. ... Data recovery through Fail-safe may take from several hours to several days to complete.

# SYSDATE

Returns the current timestamp for the system, but in the UTC time zone

# CURRENT\_DATE

Returns the current date of the system.

# TIMESTAMP\_LTZ

TIMESTAMP\_LTZ internally stores UTC time with a specified precision. However, all operations are performed in the current session’s time zone, controlled by the TIMEZONE session parameter.

Aliases for TIMESTAMP\_LTZ:

# TIMESTAMP\_NTZ

TIMESTAMP\_NTZ internally stores “wallclock” time with a specified precision. All operations are performed without taking any time zone into account.

If the output format contains a time zone, the UTC indicator (Z) is displayed.

TIMESTAMP\_NTZ is the default for TIMESTAMP.

Aliases for TIMESTAMP\_NTZ:TIMESTAMPNTZ

TIMESTAMP WITHOUT TIME ZONE

# TIMESTAMP\_TZ

TIMESTAMP\_TZ internally stores UTC time together with an associated time zone offset. When a time zone is not provided, the session time zone offset is used. All operations are performed with the time zone offset specific to each record.

Aliases for TIMESTAMP\_TZ: TIMESTAMPTZ

TIMESTAMP\_TZ values are compared based on their times in UTC. For example, the following comparison between different times in different timezones returns TRUE because the two values have equivalent times in UTC.

select '2021-01-01 00:00:00 +0000'::timestamp\_tz = '2021-01-01 01:00:00 +0100'::timestamp\_tz;

# DIV0

Performs division like the division operator (/), but returns 0 when the divisor is 0 (rather than reporting an error).

# XMLGET

Snowflake logo in black (no text) Preview Feature — Open

Extracts an XML element object (often referred to as simply a “tag”) from a content of outer XML element object by the name of the tag and its instance number (counting from 0):

The result of XMLGET is not the content of the tag, but the tag itself (an object):

To extract attribute values, use GET(tag, '@attrname').

To extract the content, use GET(tag, '$').

To extract the tag name, use GET(tag, '@').

# [**How much data is actually in Time Travel?**](https://stackoverflow.com/questions/69249152/how-much-data-is-actually-in-time-travel)

The view INFORMATION\_SCHEMA.TABLE\_STORAGE\_METRICS has a column (TIME\_TRAVEL\_BYTES) to show how much storage is used for time travel:

# **True or False: A third-party tool that supports standard JDBC or ODBC but has no Snowflake specific driver will be unable to connect to Snowflake.**

Options: A. True B. False

Answer: A

# **As a best practice, clustering keys should only be defined on tables of which minimum size?**

Options:

A. Multi-Kilobyte (KB) Range

B. Multi-Megabyte (MB) Range

C. Multi-Gigabyte (GB) Range

D. Multi-Terabyte (TB) Range

Answer: D

# **Which of the following objects can be cloned? (Choose four.) Options:**

A. Tables

B. Named File

C. Schemas

D. Shares

E. Databases

F. Users

Answer: A, C, E, F

# **Which of the following terms best describes Snowflake's database architecture? Options:**

A. Columnar shared nothing

B. Shared disk

C. Multi-cluster, shared data

D. Cloud-native shared memory

Answer: C

**True or False: Bulk unloading of data from Snowflake supports the use of a SELECT statement. Options:** A. True

B. False

Answer: B

What command is used to load files into an Internal Stage within Snowflake? Select one.

A. PUT

B. COPY INTO

C. TRANSFER

D. INSERT

**Answer: A**

When loading data into Snowflake, the COPY command supports: Choose 2 answers

A. Joins

B. Fitters

C. Data type conversions

D. Column reordering

E. Aggregates

**Answer: C, D**

1. **True or False: Snowpipe via RFST API can only reference External Stages as source.**

**A. True**

**B. False**

**Answer: B**

1. **How would you execute a series of SQL statements using Task?**

**A. include the SQL statements in the body of the task create task mytask.. as insert into target1 select., from stream\_s1 where .. INSERT INTO target2 SELECT .. FROM stream .s1 where ..**

**B. A stored procedure can have only one DML statement per stored procedure invocation and therefore you should sequence stored procedures calls in the task definition CREATE TASK mytask.... AS call stored\_prc1(); call stored\_proc2t);**

**C. A stored procedure executing multiple SQL statements and invoke the stored procedure from the task. CREATE TASK mytask.... AS call stored\_proc\_multiple\_statements\_inside():**

**D. Create a task for each SQL statement (e.g. resulting in task1. task2, etc) and string the series of SQL statements by having a control task calling task 1, task 2 sequentially.**

**Answer: C**

1. **Which function is used to find the MOST RECENT query executed in the current session ?**
2. **SELECT last\_query\_id(-2);**
3. **SELECT min(query\_id)**
4. **SELECT MAX(query\_id)**
5. **SELECT last\_query\_id()**

**Answer D (LAST\_QUERY\_ID(-1) returns the most recently-executed query (equivalent to LAST\_QUERY\_ID() ))**

1. **Find existing warehouse whose name starts with PIPE what is the correct command.**
2. **Show warehouse where name like ‘PIPE%’**
3. **show warehouses like 'PIPE%';**
4. **show warehouse where name = ‘PIPE%’**

**Answer B**

1. **What happens when a table is shared by a snowflake account to another snowflake account Select all that applies**
2. **Data sharing is managed through snowflake meta services layer**
3. **The target snowflake account is charged**
4. **No actual data is copied between accounts**
5. **Data is copied to the target snowflake account**

**Answer A, C**

1. **To Clone a table your current role must have which privilege on the source table?**
2. **Select**
3. **Usage**
4. **Write**
5. **D execute**

**Answer A**

1. **You are creating a fresh Virtual WH and you want this to run all the time, what is the correct syntax.**
2. **Create or replace warehouse TEST\_WH warehouse\_size = large auto\_suspend =0;**
3. **Create or replace warehouse TEST\_WH warehouse\_size = large auto\_suspend = 1;**
4. **Create or replace warehouse TEST\_WH warehouse\_size = large auto\_suspend = null;**
5. **Create or replace warehouse TEST\_WH warehouse\_size = large auto\_suspend = true;**

**Answer C**

1. **For a Snowflake session, more than one Virtual Warehouse can be specified at a time for executing a query.**
2. **True**
3. **False**

**Answer B**

**(Explanation: A Snowflake session can only have one virtual warehouse specified)**

1. **Which minimum License provides 90 days of time travel**
2. **Enterprise**
3. **Business critical**
4. **Standard**
5. **Snowflake Virtual private network**
6. **All of them**

**Answer A.**

1. **The previlages provided by the SYSADMIN and SECURITYADMIN role are automatically contained in the ACCOUNTADMIN role.**
2. **True**
3. **False**

**Answer A**

1. **After a clustering key has been defined on a table, no additional administration is required on the table to maintain clustering.**
2. **True**
3. **False**

**Answer A**

1. **If retrieval of data from fail safe is required, you must**

**A: Use SQL to retrieve the data**

**B: Use Account icon from WebUI to retrieve the data**

**C: Contact Snowflake support to facilitate the retrieval.**

**D: None of the above**

**Answer C;**

1. **Show command required a running virtual warehouse**

**A: True**

**B: False**

**Answer B**

1. **Which of the following are options when creating a new virtual Warehouse**
2. **Auto\_suspend**
3. **Resume on demand**
4. **Suspend\_and\_resume**
5. **Auto\_resume**

**Answer A,D**

1. **A virtual warehouse can resized at any time whether they are serving a query or idle.**
2. **True**
3. **False**

**Answer A**

1. **A database is created from a share by the consuming account, the access to this database is configurable using the role based access control that Snowflake provides?**
2. **True**
3. **False**

**Answer A**

1. **What method dose Snowflake use to limit the number of micro-partitions scanned during a query execution?**
2. **In memory operations**
3. **Indexing**
4. **Table scanning**
5. **Pruning**

**Answer D**

1. **Multi cluster virtual warehouse are designed to handle (Multiple choice)**
2. **Large complex queries**
3. **Queuing issues**
4. **Large number of concurrent queries**
5. **Large number of concurrent users**

**Answer B, C, D**

**(The primary purpose of Multi cluster warehouse is to improve queuing and concurrency issues)**

1. **Each snowflake share can consist of ..**
2. **Privileges that grant access to the objects i.e tables, views etc.**
3. **The virtual warehouse that will be used to execute queries on the shared object**
4. **The consumer account with which the database & the objects are shared**
5. **Privilege that grant access to a database and a schema from which objects will be shared.**

**Answer A, C, D**

**(A share contains USAGE privileges on the database & the schema to be shared, privileges on the tables, views which will be shared and the consumer accounts to which the share will be available. Virtual warehouse is not a part of a share. If a snowflake customer is consuming a share they will use their own virtual warehouse.)**

1. **What are some general indicators that a clustering key is required on a table?**

**A: The query performance has slowed down over time**

**B: The size of the table is multi terabytes**

**C: The table has large number of columns**

**D: Snowflake automatically dose, no clustering is ever needed**

**Answer A,B**

1. **Which one of the following can NOT be cloned**
2. **Internal named stage**
3. **External named stage**
4. **Table stage**

**Answer A**

1. **What is the correct way to find out virtual warehouse credits usage information in Snowflake**
2. **Go to Account->Billing & Usage in the WebUI**
3. **Query WAREHOUSE\_METERING\_HISTORY in the Account usage schema**
4. **Query WAREHOUSE\_METERING\_HISTORY in the information schema**
5. **Query WAREHOUSE\_Credist\_USED in the Account usage schema**
6. **Query WAREHOUSE\_Credist\_USED in the information schema**

**Answer A, B , C**

1. **What are the resources that a virtual warehouse provides?**
2. **CPU**
3. **Temporary storage**
4. **Memory**
5. **User management**

**Answer A,B,C (the virtual warehouse is a cluster of compute resources. It provides resources — including memory, temporary storage and CPU — to perform tasks such as DML operation and SQL execution.)**

1. **Is it possible to share data with any other Snowflake customer regardless of what edition of Snowflake they are running?**
2. **True**
3. **False**

**Answer B**

**(Sharing to/from a Virtual private snowflake is not supported)**

1. **Snowflake can load from data staged in which of the following?**
2. **Oracle Cloud**
3. **Azure blob storage**
4. **Internal stage**
5. **AWS S3**
6. **Google cloud Storave**
7. **VM wre storage**

**Answer B,C,D,E**

1. **Snowflake dose not start executing any queries on a new virtual warehouse until all of the servers are provisioned (compute resources are provisioned)**
2. **True**
3. **False**

**Answer A**

**(The SQL execution starts only once all the servers are provisioned, if provisioning fails for any reason, Snowflake will attempt to fix the failed servers and SQL will start executing once 50% or more virtual servers are provisioned.)**

1. **The “load metadata” (which maintains which files have already been loaded) for a table expires after how many days.**
2. **30**
3. **1**
4. **64**
5. **365**

**Answer C**

1. **Which of the following are options when created a new multi-cluster virtual warehouse,**
2. **Max\_cluster\_count**
3. **Suspend\_and\_resume**
4. **MIN\_Cluster\_Count**
5. **Scaling\_Policy**

**Answer A,C,D**

1. **What is correct about multi cluster virtual warehouse?**
2. **Only one mulit cluster virtual warehouse can be created per snowflake customer**
3. **Multi cluster virtual warehouse can not be suspended or resumed**
4. **They will remove the additional clusters as query demand decreases**
5. **They will add additional clusters automatically when under high query workload which is beyond the current capacity.**

**Answer C,D**

1. **When a file has been loaded into a table, Snowflake marks that file as loaded in metadata so that the file doesn’t get processed again.**
2. **True**
3. **False**

**Answer A ( Snowflake maintains file loaded metadata, through which it tracks which files had already been processed )**

1. **A consumer of a shared database can add new tables or views in the shared database**

**A: True**

**B: False**

**Answer B (Shared objects are read-only and cannot be modified)**

1. **Which of the following will contribute to your account level storage.**
   1. **User Defined functions**
   2. **Snowflake internal stage**
   3. **Views**
   4. **Snowflake external stages**
   5. **Database and the tables in it**

**Answer B, E**

1. **As a consumer you can create only one database per share?**
2. **True**
3. **False**

**Answer A (Snowflake does not place any hard limits on the number of shares you can consume from data providers; however, you can only create one database per share)**

1. **Virtual Warehouse credits are charged on what basis?**
2. **Per mili second of use**
3. **Per second of use**
4. **Per hour of use**
5. **Per minute of use**

**Answer B (Snowflake credits are billed on per second basis of virtual warehouse use, when it is started it will consume minimum 1 minutes of snowflake credits)**

1. **What are the virtual warehouse sizing approach recommended by snowflake?**
2. **Experiment with different types of query and virtual Warehouse to determine the virtual Warehouse size that best meets your requirements**
3. **Execute your queries on the smallest available virtual Warehouse and keep scaling up the size of the virtual Warehouse, until the query performance no longer shows improvements**
4. **Execute your queries on the largest available virtual Warehouse and keep scaling down the size of the virtual Warehouse, until your start seeing degradation in query response.**

**Answer A.**

1. **Which of the following snowflake editions allow only a maximum of 1 day of time travel ?**
2. **Standard**
3. **Business critical**
4. **Enterprise**
5. **VPS**

**Answer A.**

1. **Files that have already been processes into the source table can be loaded again into a cloned table?**
2. **True**
3. **False**

**Answer A (The cloning copy structure, data and certain other attributes but doesn’t copy the load metadata, therefore files that have already been processed for the source table can be re-processed into a cloned table).**

1. **When a table is cloned, a snapshot of the data is taken at the time of the cloning and represents the state of the source data at the time of cloning.**
2. **Independently – each column stored on its own**
3. **Combined – columns for a given row are stored together**

**Answer A (columns are stored independently so that they can be scanned more efficiently)**

1. **What happens when different value is specified for the minimum & maximum cluster?**
2. **Snowflake starts all the clusters**
3. **If the demand is decreased the number of clusters are shutdown, up to the defined minimum cluster value**
4. **If the number of concurrent users and queries increase on the virtual Warehouse, additional clusters are started up to the defined maximum cluster value**
5. **The mode is called auto scale**
6. **Snowflake starts minimum required clusters in the multi-cluster virtual Warehouse that can accommodate the number of users & number of queries.**

**Answer B.C.D.E**

1. **Which of the following are valid scaling type for a multi cluster virtual Warehouse**
2. **Performance**
3. **Standard**
4. **Speed**
5. **Economy**

**Answer B,D**

1. **Under what circumstances results for a query will be fulfilled by the query result cache?**
2. **The query is being executed from the same virtual Warehouse as the previously executed query**
3. **The query results cache was generated or last used less than 24 hours ago**
4. **The underlying data for the tables in the query has not changed**
5. **The query being run is syntactically identical to a pervious executed query**
6. **The query being run returns result set of less than 100 thousand rows.**

**Answer B, C, D (When a query is executed, the result is persisted (i.e. cached) for a period of time. At the end of the time period, the result is purged from the system.The security token used to access large persisted query results expires on a shorter interval. A new token can be retrieved to access results while they are still in cache. The cache expires after 24 hours.)**

1. **What is the snowflake recommended approach to identify the minimum and maximum values for a multi-cluster virtual warehouse?**
2. **Start with a minimum of 1 & maximum cluster value of 2 or 3**
3. **Track the virtual warehouse usage over time and adjust the minimum and maximum valued that provide the best configuration for your workload**
4. **Start with the multi cluster virtual warehouse into an auto scale mode.**
5. **Start with a minimum of 5 & maximum cluster value of 10**
6. **Start with the minimum and maximum value set to the same number**

**Answer A,BC ( Snowflake recommended approach is to start small, set to auto scale and monitor and adjust according to your work load**

1. **Which of the following statement is true when sharing data with an organization which doesn’t have a Snowflake account?**
2. **Snowflake allows sharing of data to/from Snowflake accounts only(so the consumer must have a snowflake account or a reader account)**
3. **A consumer account must be created for a non-snowflake customer to allow sharing**
4. **A reader account must be created for a now snowflake customer to allow sharing**
5. **No extra configuration is required to share data with a non-snowflake user / organization**

**Answer A, C ( Sharing with a non snowflake user requires creations of a reader account as sharing is only between snowflake accounts)**

1. **IF no parameters are provided to the last\_query\_id function it defaults to which value?**

**A: -1**

**B 0**

**C 1**

**Answer A,( The default value is -1 which will give you the most recent query id.)**

1. **The FLATTEN command will parse nested objects into separate rows. One version of the FLATTEN command uses a join and the other uses an object keyword. Select the 2 words that represent the options used with the FLATTEN command**
2. **LATERAL**
3. **SIDEWAYS**
4. **TABLE**
5. **SCHEMATA**

**Answer A,C**

**(Flattens explodes compound values into multiple rows. FLATTEN is a table function that takes a VARIANT, OBJECT, OR ARRAY column and produces a lateral view.)**

1. **Snowflake does not allow for custom field enclosures like tildes or dollar sign, what 3 options are offered for field enclosures.**
2. **Single Quotes**
3. **Double Quotes**
4. **Tildas**
5. **Commas**
6. **None**
7. **Other**

**Answer A, B E**

1. **When configuring a Warehouse using a Snowflake edition that has Elastic Data Warehousing enabled, what facets or components will you need to configure that are not needed in accounts where Elastic Data Warehousing is not enabled (chose 2)**
2. **Scaling policy**
3. **Minimum and Maximum servers**
4. **Minimum and Maximum clusters**
5. **Auto resume**
6. **Auto suspend**

**Aswer A,C ( B is wrong)**

1. **How a comment in SQL in Snowflake written**
2. **A double dash --**
3. **/-/**
4. **//**
5. **-/-**

**Answer A and C**

1. **You create a sequence in snowflake with initial value 1 and increment by 5, what numbers do you expect to see**
2. **5,10,15,20,25**
3. **1,5,10,15,20**
4. **1,6,11,16,21**
5. **1,6,10,15,20**

**Answer C ( as the initial value is 1 and increment is 5)**

1. **What default roles have access to the ACCOUNT option in the ribbion (WebUI)**
2. **SYSADM**
3. **PUBLIC**
4. **USERADMIN**
5. **SECURITY ADMIN**
6. **AccountAdmin**
7. **Administrator**

**Answer D E**

1. **WE loaded an XML file that included a header entity called<dataset>, in order to bypass this entity and treat each element under the root object as a separate record(loading each into a separate row), what FILE\_FORMAT property did we change ?**
2. **Preserver space**
3. **Disable Auto commit**
4. **Disable snowflake data**
5. **Strip outer element**

**Answer D.(Strip outer element allows to ignore the root elements and allow the 1st level elements treated as records and load them as separate rows for JSON & XML files)**

1. **What cache type runs on a 24 hour clock?**

**A. Metadata cache**

**B. Result cache**

**C. Warehouse cache**

**D. Global service cache**

**Answer. B Results cache (Metadata cache keeps all the metadata information including the table count, The Warehouse cache is used when VWH is running and you access the same data from the same WH)**

1. **Which cache type gets purged in a predictable way so that it ends up empty of all cached information?**

**A. Metadata Cache**

**B. Result Cache**

**C. Warehouse cache**

**D. None**

**Answer C (Virtual Warehouse or compute can be suspended when not in use and when it is suspended the available data which is loaded into warehouse is purged)**

1. **When data is staged to a Snowflake internal staging area using the PUT command, the data is encrypted on the client’s machine.**
2. **True**
3. **False**

**Answer True (The data is encrypted and then moved to internal stage. Since PUT does not use any warehouse and to encrypt data after movement needs a WH or some kind of compute, the snowflake connector will encrypt it and then move it to internal stage)**

1. **Select all of the answers that describes Snowflake micro-partitions.**
2. **Are the physical data files that comprises Snowflakes logical tables.**
3. **Are written to customers configured cloud**
4. **Will be updated as their row & column values**
5. **Enable horizontal and vertical query pruning**

**Answer A, D**

1. **Snowflake only works with cloud-based tools.**
2. **True**
3. **False**

**Answer B (Snowflake can work with cloud as well as non-cloud tools using connectors (python snowsql or drivers JDBC or ODBC)**

1. **A table in snowflake can only be queried using the Virtual warehouse used to load the data**
2. **True**
3. **False**

**Answer B ( A new warehouse can be assigned to query the data)**

1. **Which transformation are available when using the COPY INTO command to load data files into Snowflake from a stage.**
2. **Filters**
3. **Aggregates**
4. **Column data type conversion**
5. **Column concatenation**

**Answer C,D( Not all transformations are available only conversion and concatenation)**

1. **Which of the following terms best describes Snowflakes database architecture?**
2. **Columnar shared nothing**
3. **Shared disk**
4. **Multi-cluster shared data**
5. **Cloud-native shared memory**

**Answer C (Snowflake is a multi-cluster and shared data architecture, it decouples the storage and computes and you can have many cluster accessing the same data set for different workloads)**

1. **The warehouse cache may be reset if a running warehouse is suspended and then resumed**
2. **True**
3. **False**

**Answer A (When a running warehouse is suspended, the data it is holding is not reused because when it resumes the underlying machine might be different so the data is not available in the cache)**

1. **The Snowflake metadata repository contains which of the following**
2. **Table definitions**
3. **References to all of the micro partition files for that table**
4. **Tracking of all versions of the table data within the data retention window**
5. **Aggregated data from the table**

**Answer A,B,C**

1. **Which of the following statements are true about Snowflake data sharing?**
2. **Consumers can query shared data in the same query as their own tables.**
3. **Producers can share data to other database like Postgres and MySQL**
4. **You don’t need a Snowflake virtual warehouse to query shared data**
5. **Data sharing is integrated with role-based access controls.**

**Answer A,D (When a table is shared the consume has to add that tables under a shared DB/Schema and then it can be queried like any other table.**

1. **Which of the following best describes Snowflakes processing engine?**
2. **Leverages Apache Spark**
3. **Based on Map reduce**
4. **A derivate of Presto**
5. **Native SQL**

**Answer D (Snowflake uses its proprietary native SQL engine, it is not Spark nor any other open source technology)**

1. **Snowflake offers tools to extract data from source systems**
2. **True**
3. **False**

**Answer B (Snowflake does not have any such tool to extract data from source and it leverages partner ecosystem to do that.)**

1. **The query profiler view is only available for completed queries.**
2. **True**
3. **False**

**Answer B (Snowflake WEB UI provide screen shows all query which have started)**

1. **Which of the following 2 options are available when creating a Virtual warehouse?**
2. **Auto- suspend**
3. **Storage size**
4. **Auto-resume**
5. **Server count**

**Answer A,C**

1. **Which of the following are true about the variant data type in Snowflake? Select all that apply.**
2. **Optimized storage based on repeated elements**
3. **Stored in a separate file format from structured data**
4. **Can be queried using JSON path notation**
5. **Requires a custom mapping for each record type**

**Answer A,C (Snowflake uses optimizes the storage by looking at the repeating elements as well extract fields which can be stored in column style(though not visible to us by any way) )**

1. **Streams can be created on a temporary table?**
2. **True**
3. **False**

**Answer A (Streams can be created on temporary, permanent, transient and external tables.**

1. **A task can have a maximum of 100 child tasks?**
2. **True**
3. **False**

**Answer A**

1. **Query statement encryption is supported on ---- account ?**
2. **Standard**
3. **Enterprise**
4. **Business critical edition**
5. **Virtual Private Snowflake (VPS)**

**Answer C**

1. **Snowflake supports multi-factor authentication (MFA) to provide increased login security for users connecting to snowflake. Which statements are true about MFA security?**
2. **MFA is automatically enabled for your account and available for all users to self-enroll**
3. **MFA is an integrated feature powered by the Dus Security service**
4. **MFA can be used for connecting to Snowflake via the Snowflake JDBC driver**
5. **MFA login is designed only for connecting to Snowflake through the web interface**

**Answer A,B,C**

1. **Tri-Secret secure encryption is enabled for all edition of snowflake?**
2. **True**
3. **False**

**Answer B, Tri secret encryption is enable only for business critical and VPS.**

1. **Which role/s can create network policies, select all applicable?**
2. **User Admin**
3. **Account admin**
4. **Security admin**
5. **System admin**
6. **Public**

**Answer: B, C (Users with Account admin and Security admin can create/update/drop network policy)**

1. **Which of the following have drivers/connectors available via Help->Downloads in the Snowflake WebUI ?**
2. **Go**
3. **R**
4. **Node.js**
5. **JDBC**
6. **Hive**
7. **Spark**

**Answer A,C,D,F**

1. **Snowflake does not move data between accounts?**
2. **True**
3. **False**

**Answer A (Snowflake does not move data between account, Any data moving via Data sharing or data replication is done based on user activity)**

1. **ACCOUNTADMIN role and SECURITYADMIN role can see all queries and query result no matter who has executed the query?**
2. **True**
3. **False**

**Answer B (There is no concept of a “super user” or “super-role” in Snowflake that can bypass authorization checks. All access requires appropriate access privileges. Query can be seen from query history but query result is restricted to the roles who has access to data)**

1. **A stream advances the offset only when it is used in a DML transaction**
2. **True**
3. **False**

**Answer A ( The stream object stores only the offset and when a DML operation is performed with in a transaction like insert or merge, the offset advances)**

1. **What kind of stream can be created on external table?**
2. **Standard**
3. **Append only**
4. **Insert only**
5. **None of them**

**Ans C (External tables support only “Insert only stream”)**

1. **A task does not need a warehouse and snowflake provide compute for task?**
2. **True**
3. **False**

**Answer B (Task construct need a warehouse and task must have usage access to it)**

1. **A task tree can have task spanning multiple schemas?**
2. **True**
3. **False**

**Answer B( When a task tree is created, it cannot span multiple schema and all the task in the task tree must be in the same schema All tasks in a simple tree must have the same task owner (i.e. a single role must have the**OWNERSHIP privilege**on all of the tasks in the tree )**

1. **When a task is created for the first time, its default state is suspended**
2. **True**
3. **False**

**Answer A (When a task is created it is suspended state and it has to be resume using alter command)**

1. **Two of these terms refer to the same layer (2 correct answers)**
2. **Catalog Layer**
3. **Cloud services layer**
4. **Compute service layer**
5. **Virtual warehouse layer**
6. **Services Layer**
7. **Storage Layer**

**Answer B, E (Cloud services layer or Services layer is the same term. Data Catalog exist in this layer but this is not called catalog layer as services layer does many thing beyond cataloging)**

1. **Which of the following terms or phrases can also be used to describe Snowflake?**
2. **Native SQL**
3. **Hybrid Columnar**
4. **Build from the ground up for the cloud**
5. **Hadoop-Compliant**
6. **Multi-cluster**

**Answer A,BC,E**

1. **When running a SELECT COUNT(\*) on a table, which of the following statement is true ?**
2. **Only an XS Warehouse will be needed because count statistics are stored in the result cache**
3. **No Warehouse will me needed because count stats are stored in Metadata cache**
4. **No Warehouse will be needed because all users share count statists**
5. **Only an XS Warehouse will be needed because all roles share count statistics**

**Answer B ( Table count is stored as part of metadata with in cloud service layer)**

1. **Which of the following Snowflake Editions encrypt all data transmitted over the network within a VPC.**
2. **Standard**
3. **Ultra**
4. **Enterprise**
5. **Business critical**

**Answer D**

1. **Using the history area of the WebUI, how far back in time is query history available?**
2. **Infinite**
3. **A calendar month**
4. **14 days**
5. **7 days**
6. **24 hours**

**Answer C**

1. **Which features automatically protect your Snowflake data WITHOUT user or SA intervention? (2 Answers)**
2. **Availability zones**
3. **Cloning**
4. **Database replication**
5. **Triple redundancy for critical services**

**Answer A, D**

1. **Which 3 of these scenarios can Snowflake resource monitors be configured to support?**
2. **Send a notification when a warehouse reached a credit consumption threshold**
3. **Suspend a warehouse at a specific date & time, regardless of whether a credit quota threshold has been reached.**
4. **Monitor Snowflake-provided warehouse such as those used for Snow pipe and automatic re clustering)**
5. **Monitor credit usage of warehouses with no interval end date and do a different suspend action at 80% and 90% thresholds.**

**Answer A,B,D**

1. Which of the following industry compliance standards has Snowflake been audited and certified for?
2. SOC 1
3. SOC Type 2
4. PCI DSS
5. FedRAMP
6. Cloud GBDQ
7. HIPAA

Answer A,B,C,D,F

1. When a resource monitor is set to “Suspend” and its credit quota threshold is reached, additional credits may be consumed while its assigned warehouse are being suspended.
2. True
3. False

Answer A (If queries are running then they will consume credits, the warehouse will be suspended after all queries have completed running)

1. **Snowflake data storage costs are calculated based on: (Multiple choice 2)**
2. Uncompressed size
3. Compressed size
4. Amount stored on last day of month
5. Amount stored on first day of month
6. Amount stored Daily Average

Answer B,E (Snowflake compress/encrypt data before persisting it and the cost is calculated on this compressed data set. When cost is calculated, it also consider the daily average and then the calculation is applied)

1. **Each** Snowflake account comes with 2 shared Database, One is a set of sample data and the other contains Account usage information. Check all true statements about these shared database (3 answers)
2. Snowflake\_sample \_data contains a schema called ACCOUNT\_USAGE
3. Snowflake contains a table called ACCOUNT\_USAGE
4. Snowflake contains a schema called ACCOUNT\_USAGE
5. SNOWFLAKE\_SMAPLE\_DATE contains a schema called WEATHER
6. ACCOUNT usage is a schema filled with secure views.

Answer C,D,E

1. **Check all true statements about Fail Safe:**
2. **Only a** Snowflake employee can recover data from fail- safe storage
3. **Fail-safe is a reliable way to create Dev/Test/QA and other environments**
4. **The data stored as part of fail-safe is part of storage cost charged to customers**
5. **Fail save is not available for table that have time travel**

**Answer A,C**

1. **Time travel is available for which table types (3 answer)**
2. **Permanent**
3. **Temporary**
4. **Transient**
5. **External**

**Answer A,B,C ( Time travel is not applicable for external table)**

1. Snowflake compute costs depend on which of the following?
2. **The number of rows returned in queries**
3. **The amount of time warehouse have run**
4. **The total number of warehouse in the account**
5. **The sizes of running warehouses.**

**Answer B,D (Even if the Warehouse is active and not running any query, it will cost. The cost also depends on size of the warehouse)**

1. **When deciding whether to use bulk loading or Snowpipe which factors should you consider? 3 choice**
2. **How often you will load the data.**
3. **Location of data(local system or cloud)**
4. **Data format (structured or semi-structured)**
5. **Number of files you will load at one time**

**Answer A,B,D ( The data format does not matter, though CSV file is process fast over any other format but that is not the deciding factor for data loading bulk VS Snowpipe)**

1. **Snowflake supports landing data into:**
2. **Internal stage on cloud storage platform**
3. **External stage on cloud storage platform**
4. **Internal stage on your local system**
5. **Direct loading to the table**

**Answer A,B (Data loading is done via stage process and snowflake supports AWS/GCP/Azure external stages and internal stage too. There is no direct loading and there is no local internal stage concept in Snowflake)**

[**https://medium.com/snowflake/snowflake-pro-tips-5f5bb6554fee**](https://medium.com/snowflake/snowflake-pro-tips-5f5bb6554fee)

1. **Which table type disappears after the close of the session and therefore has no fail-safe and no time travel options after the close of the session?**
2. **Permanent**
3. **Temporary**
4. **Transient**
5. **External**

**Answer B (Temporary tables disappear when the session is closed. So if you are connected via WebUI and you close the session, any temporary table created via that session is lost. Temporary and Transient table does not have any fail safe property)**

1. **How often does Snowflake release new features?**
2. **Bi Annually**
3. **Yearly**
4. **Weekly**
5. **None**

**Answer C**

1. **You set up a Snowflake account, choosing AWS as your cloud platform provider. What stages can you use to load data files?**
2. **Named External – using S3 buckets**
3. **Named External – Hadoop cloudera file system**
4. **Named External – using Azure BLOB storage**
5. **Named External – using GCS/GCP Buckets**
6. **Named External – AWS redSHift tables**

**Answer A,C,D ( Named stages can be created to any 3 cloud provider)**

1. **The compute resource used by Snowflake for data loading jobs can be provided by:**
2. **User managed virtual warehouse**
3. **Hardware provisioned by user directly from cloud providers**
4. **Snowflake – managed serverless compute**
5. **Cloud provider Runtime Enviroment**

**Answer A,C (Snowflake allows only two ways to use the compute, either a user define a virtual warehouse and another way to have Snowflake provide a compute for Snowpipe object.)**

1. **Which of the following data types are treated as Varchar “under the cover” by Snowflake. (4 answers)**
2. **NVarchar**
3. **Text**
4. **String**
5. **Char**
6. **Varchar**

**Answer B,C,D,E (There is no datatype NVARCHAR rest all are Varchar 16Mb if no size is specified)**

1. **Snowpipe Is designed to load?**
2. **Small volume of frequent data**
3. **Large volume of data on a batch schedule**
4. **Any kind of volume small or batch or continuous**
5. **None of them**

**Answer A (Snowflake snow pipe is recommended for small volume of frequent data.)**

1. **Which of the following can NOT be migrated in Snowflake?**
2. **Index**
3. **Foreign Key constraints**
4. **Not null constraints**
5. **Primary and Unique key constraints**

**Answer A (Snowflake does not have the concept of Index)**

1. **Which of the following are supported date types in Snowflake, for storing date or time information?**
2. **Date**
3. **Timestamp**
4. **Time**
5. **Timezone**

**Answer A,B,C (There is no data type as TImezone)**

1. **IF issues are observed while moving snowflake accounts to a new release or patch release, the release may be halted or in rare instance, rolled back by Snowflake team?**
2. **True**
3. **False**

**Answer A.**

1. **Multi-factor Authentication can be enabled for which of the following? Select all that apply?**
2. **ODBC Driver**
3. **Python Connector**
4. **Snowflake WebUI**
5. **Snow pipe**

**Answer A,B,C ( Since Snow pipe runs automatically based on notification, MFA is not applicable for it)**

1. **Assuming you are a Snowflake account with Enterprise edition license, which other editions can you share your data with within same region/cloud provider?**
2. **Standard**
3. **Enterprise**
4. **Business Critical**
5. **Virtual Private Snowflake**

**Answer A,B,C ( Except VPS editions data cannot be shared by other edition in this case)**

1. **Which of the following can NOT be administered using the User interface in Snowflake?**
2. **Stored Procedures**
3. **SQL Scripts and commands**
4. **Security/user roles settings**
5. **Resource or credit usage limits**

**Answer A (Stored procedures are the object which cannot be administered using WebUI and you need to use SQL commands to list them)**

1. **A string constant in Snowflake can be enclosed by ?**
2. **Single quotes**
3. **Double quotes**
4. **$ symbol**
5. **Double Dollar $$**

**Answer A, D**

1. **IF your Snowflake account is designated for early release access, you can take advantage of 24hr period between early access and final stage for new release. Statement is ?**
2. **True**
3. **False**

**Answer A.**

1. **Under the Download section in Snowflake Web UI, which are the connectors & programs that can be downloaded? (3 select)**
2. **SnowSQL**
3. **ODBC Driver**
4. **JDBC Driver**
5. **Snowpipe Connector**

**Answer A,B,C (Snowpipe is a service by Snowflake)**

1. **When converting a numeric value to Boolean, which of the following values will result in TRUE?**
2. **0**
3. **1**
4. **-1**
5. **2**
6. **Answer B,C,D (Any non zero value will be converted to True and 0 will be False and NULL will be NULL.)**
7. **The COPY command in a SnowPipe definition supports the same transformation as provided by the usual COPY command?**
8. **True**
9. **False**

**Answer A ( Snowpipe in turn uses Copy command to move data from query to table.)**

1. **The BINARY data type can store what amount of data?**
2. **32 Mb**
3. **16 Mb**
4. **8 Mb**
5. **Unlimited**
6. **Configurable at account level**

**Answer C**

1. **When a DB or a schema is cloned, which of the following statements are true for the Snowpipe in that DB?**
2. **Any SnowPipes that referenced an external stage are cloned.**
3. **Any SnowPipes that reference an external stage are not cloned.**
4. **Any SnowPipes that reference an internal stage are not cloned**
5. **Any SnowPipes that reference an an internal stage are cloned**

**Answer: A C**

1. **Each Snowflake share can consists of**
2. **Privilege that grant access to the objects i.e. tables, secure views etc which will be shared**
3. **The virtual warehouse that will be used to execute queries on the shared objects**
4. **The consumer account with which the DB and the objects are shared**
5. **Privilege that grant access to a DB & a schema from which objects will be shared**

**Answer A,C,D (The option B is incorrect, Consume can use any virtual warehouse to access the shared data and shared object dose not consist any warehouse detail)**

1. **If length Is not specified when defined a VARCHAR column the default length is ?**
2. **256 characters**
3. **1 character**
4. **0 Character**
5. **Maximum length possible**

**Answer D ( If the length is not specified, the VARCHAR column assumes maximum length max length is 16MB).**

1. **In The Snowflake stage release process for new release, which account types are applied updates ahead of everyone else?**
2. **Standard Account**
3. **Designated accounts opting for early access**
4. **Enterprise & Higher Account**
5. **Trial account**

**Answer B (Enterprise & Higher Account can opt for early access and only those designated accounts)**

1. **What is the correct command to see all pipes defined under a database called my\_database?**
2. **Use my\_database; display pipe;**
3. **Use my\_database; list pipes;**
4. **Use my\_database; show snowpipe;**
5. **Use my\_database; show pipes**

**Answer D (Show is the command to display objects in Sowflake)**

1. **Users created in a reader account cannot do which of the following?**
2. **Insert**
3. **Select**
4. **Load Data**
5. **Update**

**Answer A,C,D (The shared object only allows Select operation)**

1. **When data is shared between Snowflake accounts, a database is created on the consumer side for sharing purpose. The type of this database is ?**
2. **Temporary**
3. **Read only**
4. **Permanent**
5. **External**

**Answer B (All the shared object are read only at the consumer side)**

1. **Choose all the valid literals? (3 correct answers)**
2. **1.234E+2**
3. **14e-03**
4. **-18x-05**
5. **1.234E2**
6. **394e**

**Answer A,B,D (e/E indicated exponent. At least one digit must follow the exponent marker)**

1. **Snowflake uses a staged release process for new releases in which different account types are upgraded gradually?**
2. **True**
3. **False**

**Answer A (Once a new release has been deployed, Snowflake dose not move all accounts to the release at the same time, Accounts are moved to the release using a 3 stage approach over 2 days. Day1 – Stage 1 (early access) for designated Enterprises accounts and above.**

**Day1or2 – Stage 2 regular access for all Standard edition accounts**

**Day2 – Stage 3 (final) for all Enterprise Edition and VPS accounts.**

1. **The load history for Snowpipe is stored in the metadata for how many days?**
2. **64 days**
3. **28 days**
4. **14 days**
5. **None of these**

**Answer C**

1. **A consumer of a shared database can add new tables or views in the shared DB?**
2. **True**
3. **False**

**Answer B (When you add a shared DB using a shared object, you cannot add any new tables or view in this DB)**

1. **When converting a character a character value to Boolean, which of the following values will result in “FALSE”**
2. **‘false’**
3. **‘off’**
4. **‘0’**
5. **‘f’**
6. **‘no’**
7. **‘N’**

**Answer A,B,C,D,E,F**

1. **As a consumer you can create only one database per share?**

**A. True**

1. **False**

**Answer A (You cannot create multiple database per shared object, once a database is created from the shared object)**

1. **Fail-Safe is a 7 day history of data is automatically available on which table type?**
2. **Permanent**
3. **Temporary**
4. **Transient**
5. **External**

**Answer A**

1. **Snowflake displays FLOAT, REAL, DOUBLE and DOUBLE PRECISION as FLOAT?**
2. **TRUE**
3. **FALSE**

**Answer A**

1. **Snowflake patch releases are applied to all type of edition/accounts at the same time**
2. **True**
3. **False**

**Answer B A (Accounts are moved to the new release in the following order, based on their Editions. Accounts are moved to the release using a 3 stage approach over 2 days. Day1 – Stage 1 (early access) for designated Enterprises accounts and above.**

**Day1or2 – Stage 2 regular access for all Standard edition accounts**

**Day2 – Stage 3 (final) for all Enterprise Edition and VPS accounts.**

1. **Which of the below statements about Snowpipes are correct? (2)**
2. **SnowPipes are billed independent of the virtual warehouse usage.**
3. **For procession, SnowPipes Share virtual warehouse compute resources.**
4. **SnowPipes use server-less architecture and as such don’t use virtual warehouse resources.**
5. **Costs associated with Snowflake usage are billed as virtual warehouse compute.**

**Answer A,C (SnowPipe follows server less architectures and does not need any virtual warehouse, the compute for Snowpipe is provided by snowflake itself)**

1. **Which of the following mechanism allows a Snowflake customer to query data without loading?**
2. **COPY**
3. **External table**
4. **Virtual Table**
5. **SNowpipe**

**Answer A (External table can be queried using $ notation along with file format)**

1. **There are 2 ways to access elements in a JSON object.**
2. **Colon Notation**
3. **Dot notation**
4. **Arrow notation**
5. **Bracket notation**

**Answer B,D**

1. **Special values for float, choose all valid ones? (3 answers)**
2. **‘NA’**
3. **‘NaN’**
4. **‘inf’**
5. **‘-inf’**
6. **‘None’**

**Answer B,C,D**

1. **Each snowflake account is limited to a maximum of 10 shares**
2. **True**
3. **False**

**Answer B (There is no limit on the number of share in SNowlake)**

1. **Snowpipe prevents loading a single file multiple times by?**
2. **Snowpipe cannot prevent loading a single file multiple times, you must delete the files after it has been loaded by snowpipe**
3. **Maintaining metadata for each file loaded and ignoring files that were previously loaded**
4. **Deleting the files in the internal or external stage after it has bucessfully loaded the file.**

**Answer B ( Snow pipe maintains the meta data for the files which are loaded and the history is for 14 days)**

1. **Maximum length of a varchar ?**
2. **8 mb**
3. **16 mb**
4. **32 mb**
5. **64 mb**

**Answer B (16 mb un-compressed)**

1. **Which one of the following loading method will use Virtual Warehouse resources? (3 answers)**
2. **SNowpipe**
3. **Insert**
4. **Copy into**
5. **Select**

**ANswer B,C,D**

1. **To create a SHARE what is the minimum required role?**
2. **SYSADM**
3. **SECURITYADMIN**
4. **ACCOUNTADMIN**
5. **USERADMIN**

**Answer C**

1. **Which of the following objects can be shared? Select all that apply**
2. **Secured views**
3. **Views**
4. **Schemas**
5. **Tables**
6. **Database**
7. **Secure UDF**

**Answer A,C,D,E,F ( Standard views can NOT be shared)**

1. **INTERVAL in not a data type can be used only with date data type?**
2. **True**
3. **False**

**Answer A (Interval is used with date data type to perform arithmetic operation on date object and it is applicable only for date data type)**

1. **What is the max limit on child task?**
2. **50**
3. **100**
4. **500**
5. **1000**

**Answer B (100 is the maximum children which can be associated with a parent/root task)**

1. **The reader account belongs to?**
2. **The producer**
3. **Shared ownership**
4. **The consumer**
5. **Neither**

**Answer A (A reader account is created by the producer and is owned by the producer itself. A reader account also uses the compute resource of the producer.)**

1. **What best describes Snowflake architecture?**
2. **Single Cluster Shared Data**
3. **Multiple Clusters Distributed Data**
4. **Multiple Clusters Shared data**
5. **None of the above**

**Answer C (Snowflake architecture makes use of shared data and one or more than one cluster executing on that shared data)**

1. **Snowflake database is based on the traditional shared disk architecture used by RDBMS like MySQL, Postgres.**
2. **True**
3. **False**

**Answer B (Snowflake architecture is a hybrid architecture, in which it uses a single shared storage but unlike traditional database it uses multiple compute engines operating on the same storage.**

1. **Snowflake copy command provides the capability to validate the data inside a file, without actually loading it.**
2. **True**
3. **False**

**Answer A ( The copy command provides the VALIDATION\_MODE parameter, which can be configured to validate files without actually loading.)**

1. **What is the minimum Snowflake edition in which Federated Authentication & MFA are available?**
2. **Standard**
3. **Enterprise**
4. **Business Critical**
5. **VPS**

**Answer A**

1. **A cloned object doesn’t contribute to the overall storage unless..**
2. **The configuration CREATE\_COPY is set to true while cloning data**
3. **Operations that modify date are performed on the cloned table eg update**
4. **New populated tables are created in one of the cloned schemas**
5. **The cloning is performed by a role which doesn’t have privilege on the source objects**

**Answer B,C (Extra storage is used when the data in the cloned tables are modified or a new table with data is introduced, there is no setting called CREATE\_COPY and if you don’t have privileges you cannot clone)**

1. **Snowflake UDFs can be written in which of the following langauages?**
2. **SQL**
3. **Python**
4. **Java**
5. **Javascript**

**Answer A,D**

1. **When loading a file through the COPY command, there is no way to partially load a file if errors are encountered. Either the whole file is loaded or nothing is loaded if errors are encountered.**
2. **True**
3. **False**

**Answer B ( The COPY command can be configured to ignore errors using the ON\_ERROR parameter. When ON\_ERROR is set to CONTINUE the load process will ignore any errors.**

1. **Select all that is true about Snowflake Failsafe**
2. **Failsafe is the same as time travel**
3. **Failsafe ensures historical data is protected in the event of a catastrophic failure**
4. **Failsafe provides up to 90 days of historical data protection for permanent tables**
5. **Failsafe is distinct & separate from the time travel feature.**
6. **Failsafe provides up to 7 days of historical data protection for permanent tables.**

**Answer B,D,E**

1. **A share must have at least one consumer added to it.**
2. **True**
3. **False**

**Answer B (A snowflake share can be defined without a consumer added to it)**

1. **Select the correct options that can be used to bring semi structured data into Snowflake.**
2. **Transform the data while using the COPY command.**
3. **Load the data as you would load a CSV file, Snowflake will make sense of the unstructured data itself.**
4. **Load Semi structured data into a variant column.**

**Answer A,C**

1. **When loading data through COPY command it is a requirement that your table and the file from which the data is being loaded should have same number of columns.**
2. **True**
3. **False**

**Answer B (The order & the number of columns in the file and the table can be different)**

1. **Which of the following simple transformations can be used while loading through the COPY command?**
2. **Cast**
3. **Transpose**
4. **Pivot**
5. **Truncate**
6. **RE- order columns**
7. **Omit columns**

**Answer A,D,E,F (We can perform basic transformations such as column re-ordering, column omission cast data types & truncating text data while load it through the COPY command)**

1. **Which of the following scaling type would result in Snowflake preserving credits over performance?**
2. **Economy**
3. **Performance**
4. **Cost**
5. **Standard**

**Answer A (Economy scaling type would let queries queue and if the demand persists and Snowflake determines that there is enough demand to keep a new cluster busy for 6 minutes then it scale up the cluster)**

1. **A new custom role will automatically be assigned to all existing users.**
2. **True**
3. **False**

**Answer B (Roles need to be explicitly assigned)**

1. **Which of the following are valid Casting function in Snowflake? (4 correct)**
2. **To\_VARIANT**
3. **TO\_BLOB**
4. **TO\_TIMESTAMP**
5. **TO\_NUMERIC**
6. **TO\_NUMBER**

**Answer A,C,D,E**

1. **What is the maximum time travel allowed for transient & temporary tables?**
2. **7**
3. **90**
4. **0**
5. **1**

**Answer D (Transient and temporary tables can have a maximum of 1 days of time travel regardless of which Snowflake editions)**

1. **RST API calls can be used to trigger a SNowpipe regardless of whether it is defined over an Internal or External stage.**
2. **True**
3. **False**

**Answer A (Snowpipe can be used to load data from external as well as internal stages. The REST API which is used to trigger a Snowpipe applies to Snowpipes created over external stages as well as internal stages)**

1. **When a database or a schema is cloned, which of the following statements are true for the stages in that database?**
2. **Table internal stages are cloned**
3. **External named stages are cloned**
4. **Named internal stages are NOT cloned**
5. **Named internal stages are cloned**
6. **External named stages are NOT cloned**

**Answer A,BC**

1. **You increased the size of a virtual warehouse to improve performance of a query? What is this an example of?**
2. **Scale out**
3. **Scale up**

**Answer B (Increase the size of a virtual warehouse will enable faster procession for queries will not necessarily accommodate more queries and more users, therefore this is an example of scaling up)**

1. **To create a new Task a user should be using a role which**
2. **Has the CREATE TASK privilege on the schema where the Task is being created**
3. **Has the SYSADMIN privileges**
4. **Has the ACCOUNTADMIN privileges**

**Answer A (TO create a task, the role being used by the creating user must have the CREATE TASK privilege on the schema in which the Task is being created)**

1. **Compared to a single cluster virtual warehouse, a multi-cluster virtual warehouse supports which of the following? Select all that apply**
2. **Auto suspend**
3. **Auto resume**
4. **Stop**
5. **Resize**

**Answer A,B,C,D (A multi cluster virtual warehouse allows all operations that a single cluster warehouse allows)**

1. **A cloned database doesn’t inhert the source permissions, but schemas, tables & views contained inside the cloned database will inherit the source permissions.**
2. **True**
3. **False**

**Answer A**

1. **Which of the following is not a layer in Snowflake?**
2. **Cloud Services**
3. **Virtual Warehouse**
4. **Database storage**
5. **Virtual Machine**

**Answer D**

1. **Clustering key help query performance by?**
2. **Distributing the data over multiple clusters**
3. **Pre-calculating query results**
4. **Improving column compression**
5. **Pruning un-necessary partitions**

**Answer D**

1. **Except VPS, any Snowflake account regardless of the edition, can produce & consume shared data.**
2. **True**
3. **False**

**Answer A (All Snowflake editions can produce and consume shared data, except the Virtual Private Snowflake, which by nature is designed to be secure & cannot Share Data)**

1. **A reader account can consume data from sources other than the producer that created the reader account.**
2. **True**
3. **False**

**Answer B ( A reader account can only consume data from the producer account that created it)**

1. **Cloning a schema will clone which of the following**
2. **All roles within the schema**
3. **All other clone-able object in the shcmea**
4. **All tables in the schema**
5. **The schema itself**

**Answer B,C,D (**When you clone a database, the roles are not retained to the cloned database)

1. **When setting up replication for cross cloud or cross region data sharing, the data provider must replicate data once for each data consumer.**
2. **True**
3. **False**

**Answer B (Only one instance of data per cloud or region has to be replicated)**

1. **Which of the following statements are true when data is UNLOADED into a Snowflake stage(internal or external)**
2. **When UNLOADING the data is never automatically encrypted, regardless if it is an internal or external stage**
3. **If the data is unloaded into an EXTERNAL stage the data is NOT automatically encrypted however the customer can choose to encrypted as an option**
4. **The customer downloads data (files) from the INTERNAL stage and decrypts the data on their machines.**
5. **If the data is unloaded into an INTERNAL stage the data IS automatically encrypted.**

**Answer B,C,D (When UNLOADING, snowflake will auto encrypt if the stage is INTERNAL, if the stage is EXTERNAL then the customer can optionally choose to encrypt. The files downloaded from an internal stage must be decrypted on the client side).**

1. **What happens when a table is shared by a Snowflake account to another Snowflake account? Select all that applies?**
2. **Sharing is managed through Snowflake metadata services layer**
3. **The target Snowflake account is chared for the shared data storage.**
4. **No actual data is copied or transferred between accounts**
5. **Data is copied to the target Snowflake account.**

**Answer A,C**

1. **Which of the following objects can be shared? Select all that apply.**
2. **Secure views**
3. **Views**
4. **Schemas**
5. **Table**
6. **Database**
7. **Secure UDFs**

**Answer A,C,D,E,F**

1. **Each Snowflake share can consist of ..**
2. **Privileges that grant access to the objects i.e tables, secure views etc. which will be shared**
3. **The virtual warehouse that will be sued to execute queries on the shared objects.**
4. **The consumer account with which the database & the object are to be shared**
5. **Privileges that grant access to a database & a schema from which objects will be shared.**

**Answer A,C,D**

1. **Snowsight app is a replacement of snowflake legacy WebUI SQL worksheet?**
2. **True**
3. **False**

**Answer A.**

1. **187)**

**Stages**

**User Stage** Each user in Snowflake has a stage allocated to them by default for storing files. The files could be load or unload files

List @~ - List the files in user stage

**Table Stage** Each table in Snowflake has a stage allocated to it by default for storing files. The table stage is a convenient option if your files need to be accessible to multiple users and only need to be copied into a single table. Table stage name is same as your table name.

List @%table\_name

**Internal stages** are named database objects that you can use in-place of user and table stage. Internal named stages are recommended stage to load the tables.

What is a Share? (**Sharing is done in the Same Cloud and Region)**

Shares are named Snowflake objects that encapsulate all of the information required to share a database. Each share consists of:

* The privileges that grant access to the database(s) and the schema containing the objects to share.
* The privileges that grant access to the specific objects in the database.
* The consumer accounts with which the database and its objects are shared.

Once a database is created (in a consumer account) from a share, all the shared objects are accessible to users in the consumer account:

Shares are secure, configurable, and controlled 100% by the provider account:

* New objects added to a share become immediately available to all consumers, providing real-time access to shared data.
* Access to a share (or any of the objects in a share) can be revoked at any time.
* Sharing data from multiple table via secured view.
* VPS (Virtual Private Snowflake) **does not support Secure Data Sharing due** to the current limitations against sharing data across regions. Standard and Enterprise Editions support Secure Data Sharing with the usual caveats.
* The webUI does not currently support add/removing secure UDFs from shares. TO be done via SQL
* When creating a shared object we share the DB,Schema, and the objects. Secure UDF’s and External tables can be shared.
* Shared object cannot span multiple database, data provider must create separate share for each database (Share and DB is 1-O-1 relation).
* Only Securable views and UDF’s can be shared.
* For securable objects, Snowflake by-pass the optimization, so have the cluster key for large tables.
* Grants need to be explicitly given in share, if DB and schema are granted share and new tables are created in the schema then the grants need to be explicitly granted to the object.

## **Overview of Data Providers and Consumers**

### **Providers**

A data provider is any Snowflake account that creates shares and makes them available to other Snowflake accounts to consume. As a data provider, you share a database with one or more Snowflake accounts. For each database you share, Snowflake supports using grants to provide granular access control to selected objects in the database (i.e., you grant access privileges for one or more specific objects in the database).

Snowflake does not place any hard limits on the number of shares you can create or the number of accounts you can add to a share.

For a quick guide to sharing data as a provider, see [Getting Started with Secure Data Sharing](https://docs.snowflake.com/en/user-guide/data-sharing-gs.html). For more detailed information, see [Working with Shares](https://docs.snowflake.com/en/user-guide/data-sharing-provider.html).

### **Consumers**

A data consumer is any account that chooses to create a database from a share made available by a data provider. As a data consumer, once you add a shared database to your account, you can access and query the objects in the database just as you would with any other database in your account.

Consumer cannot do DML on the objects or create a clone, time travel or editing the comments for a shared database. The shared DB’s cannot be shared.

Snowflake does not place any hard limits on the number of shares you can consume from data providers; however, you can only create one database per share.

Data consumer can create one DB per share.

### **Cache**

Cache can be leveraged to save money and speed result. 3 types of cache exists

Metadata cache – hold object information+ Statistics ( **it is also called Metadata layer or Service layer or cloud service layer**)

Result cache – last 24hrs of your result, the query result cache is retained for a maximum of 31 days after being generated. (**it is also called Result set cache or 24 hrs. result cache or query result cache**)

Warehouse cache – hold data locally as long as warehouse is **running**. (When Warehouse is suspended the cache is purged and cache is not purged when **resumed**)

(**It is also called local cache or SSD cache or raw data cache or data cache**)

(Users cannot see each other’s result but the result cache can re-use one users result cache and present it to other user)

1. Remote storage = Cloud storage = Centralized Storage = Long Term storage(This is not a cache and read from the disk and hence I/O operation)

### **MFA in Snowflake**

Each user must install MFA by themselves.

MFA can be disabled temporarily/permanently by the Account admin/Security admin (DISAMBE\_MFA=true,MINS\_TO\_BYPASS\_MFA=5

Connectors also need MFA if enabled for the user.

1. SMS service
2. DUO app

### **Data security**

* 1. **All data is encrypted use AES-256 strong Encryption**
  2. All files stored in stage area is automatically Encryption using AES-128 or AES-256
  3. Special edition of SF allows periodic re-key and customer manage encryption
  4. Account and table master keys are automatically rotated by Snowflake when they are more than 30 days old.
  5. Tri-Secret secure for Business critical accounts (**it requires customers manage their keys**)
  6. User level network policy management can be performed using SQL.
  7. Compliance Security for the following

1. HIPPA for Business critical and high
2. PCI for Business critical and high
3. NIST 800-53
4. SOC
5. SOC-2 type 2
6. SIG Lite

**Query History only for 14 days.**

### **Choosing Between Owner’s Rights and Caller’s Rights**

Create a stored procedure as an owner’s rights stored procedure if ***all*** of the following are true:

* You want to delegate a task(s) to another user(s) who will run with the owner’s privileges, not the caller’s own privileges. For example, if you want a user without DELETE privilege on a table to be able to call a stored procedure that deletes old data, but not current data, then you probably want to use an owner’s rights stored procedure. That procedure will contain a DELETE statement that includes a filter (a WHERE clause) to control which data can be deleted through the filter.
* The restrictions in owner’s rights stored procedures will not prevent the stored procedure from working properly.

Create a stored procedure as a caller’s rights stored procedure if the following are true:

* The stored procedure operates only on objects that the caller owns or has the required privileges on.
* The restrictions in owner’s rights stored procedures would prevent the stored procedure from working. For example, use a caller’s rights procedure if the caller of the stored procedure needs to use that caller’s environment (e.g. session variables or account parameters).

If a particular procedure can work correctly with either caller’s rights or owner’s rights, then the following rule might help you choose which rights to use:

* If a procedure is an owner’s rights procedure, the caller does not have the privilege to view the code in the stored procedure (unless the caller is also the owner). If you want to prevent callers from viewing the source code of the procedure, then create the procedure as an owner’s rights procedure. Conversely, if you want callers to be able to read the source code, then create the procedure as a caller’s rights procedure.

### **What is Horizontal or Vertical scaling in Snowflake?**

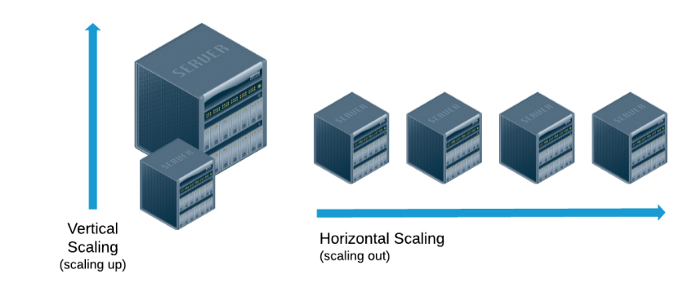
If you see the below chart, it gives you No. of servers per cluster for each Warehouse size.

X-Small- We have 1 server /cluster.

Similarly, for 3-X Large, we have 64 servers per cluster.

**When you talk about Scale Up/Scale Down or Re-sizing warehouse**, you actually mean to increase or decrease the no. of servers per cluster or in other words Vertical Scaling. It always happens per cluster. Re-sizing a warehouse generally improves query performance, particularly for larger, more complex queries. It can also help reduce the queuing that occurs if a warehouse does not have enough servers to process all the queries that are submitted concurrently. See diagram below:

https://miro.medium.com/max/60/1*ATaDSPn7IIwXmVRTbHRomQ.png?q=20



When you talk about Multi-Cluster(Enterprise Edition and above), you provide the Min & Max cluster as part of the scaling policy(Maximized or Auto-Scale mode). In that case, you have to choose the warehouse the same way you did above, and on top of that, you provide other criteria(see below diagram) that are known as scaling policy. In multi-cluster, you are adding clusters based on workload.

Say for X-Large Warehouse with 2 Max clusters, assuming both are running will run 16 \*2=32 server. Whereas in the case of a Single cluster/Non-Multi-cluster environment you only charged for 16 servers. This is also known as Scale-out or horizontal Scaling (See above diagram). On the other hand, using a multi-cluster configuration will help resolve concurrency issues. Say you have multiple users accessing your application at the same time, and you don’t have resources, then auto-scaling will help resolve that issue.

### [Snowflake System Roles - USERADMIN vs SECURITYADMIN](https://stackoverflow.com/questions/64637313/snowflake-system-roles-useradmin-vs-securityadmin)

https://stackoverflow.com/questions/64637313/snowflake-system-roles-useradmin-vs-securityadmin

The USERADMIN role didn't exist before April 2020, as this new role was introduced as an improvement to enable accounts to separate the management of users and roles from the SECURITYADMIN role - if desired.

* <https://docs.snowflake.com/en/release-notes/2020-04.html#new-useradmin-system-role>

You can use either system role to GRANT ROLE. The best practice should be determined by your own security policy.

Because the USERADMIN role is assigned to the SECURITYADMIN role, users with the SECURITYADMIN role can still administer users and roles. However, companies can now assign the USERADMIN role to separate the management of users and roles from the management of all grants.

Use of the USERADMIN role to separate these duties is optional. The decision to use the USERADMIN role is driven entirely by the security model implemented for your account.

My own recommendation: Since USERADMIN can GRANT ROLE, and USERADMIN is the more restricted role — then choose to use USERADMIN when granting roles.