

Data Sheet

# An Overview of Data Unloading in Snowflake

Step-By-Step Guide

5201 GREAT AMERICAN PARKWAY, SUITE 320

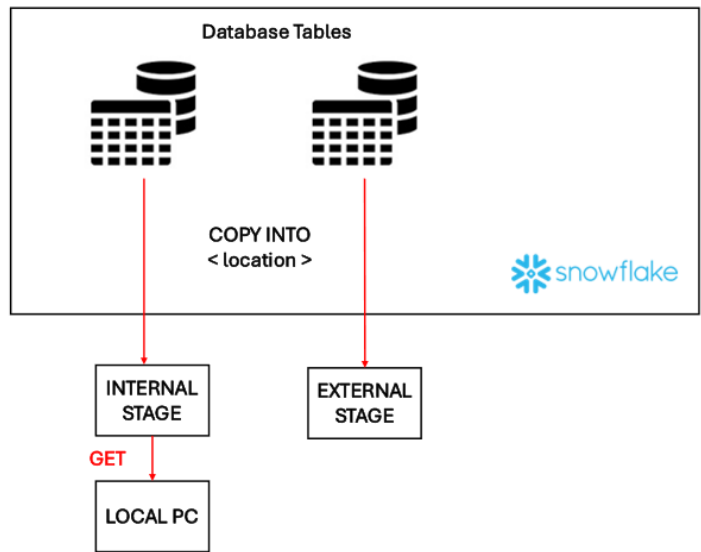
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- Snowflake supports data unloading from a database table to files. It allows us to perform bulk unloading as well as using PARTITION BY.
- Snowflake supports unloading the data into local machines, internal stages, and external stages (AWS, AZURE, and GCP).



It supports downloading the data into a few file formats like CSV, TSV, JSON, and PARQUET with a UTF-8 file encoding mechanism.

**Note:** We need a virtual warehouse to unload the data from Snowflake.

Let's unload the data from the Snowflake table to the local PC by the internal stage and to the external stage.

## Unloading data into local PC by internal stage

- We have data in the Snowflake table named "EMPLOYEE\_PERSONAL\_DETAILS".

The screenshot shows the Snowflake web interface. The query editor contains the following SQL code:

```
19
20 select * from EMPLOYEE_PERSONAL_DETAILS;
21
22 show stages;
23
24
25
26
27
```

The results pane shows a table with the following data:

	EMPLOYEE_ID	EMPLOYEE_NAME	CITY
1	1	abc	Delhi
2	2	def	Kolkata
3	3	ghi	Bangalore
4	4	jkl	Hyderabad

The right sidebar shows query details: Query duration 1.3s, Rows 4, Query ID 01b23ac3-3200-fd84-0...

- Let's unload the data in the table to the internal stage named "SAI\_INTERNAL\_STAGE".

# An Overview of Data Unloading in Snowflake

The screenshot shows the Snowflake web interface. The query editor contains the following SQL code:

```
19  
20 select * from EMPLOYEE_PERSONAL_DETAILS;  
21  
22 show stages;  
23  
24  
25  
26  
27
```

The 'Results' tab displays a table with the following data:

	created_on	name	database_name	schema_name	url	has_credentials	has_encryption_key	owner
1	2024-02-08 22:14:38.745 -0800	SALAWS_STAGE	SAI	PUBLIC	s3://sai-ld	Y	N	ACCOUN
2	2024-02-08 22:22:53.098 -0800	SAI_INTERNAL_STAGE	SAI	PUBLIC		N	N	ACCOUN

The right-hand sidebar shows 'Query Details' for the second query, indicating a duration of 36ms and 2 rows. Below this, several fields are shown as '100% filled', including 'created\_on', 'name', 'database\_name', 'schema\_name', and 'url'.

- To unload the data into internal stage, we need to use `COPY INTO <LOCATION>` command as shown below:

```
COPY INTO @SAI_INTERNAL_STAGE FROM EMPLOYEE_PERSONAL_DETAILS  
FILE_FORMAT=(TYPE=csv);
```

The screenshot shows the Snowflake web interface with the following SQL code in the query editor:

```
19  
20 select * from EMPLOYEE_PERSONAL_DETAILS;  
21  
22 show stages;  
23  
24  
25 | COPY INTO @SAI_INTERNAL_STAGE FROM EMPLOYEE_PERSONAL_DETAILS FILE_FORMAT=(TYPE=csv);  
26  
27
```

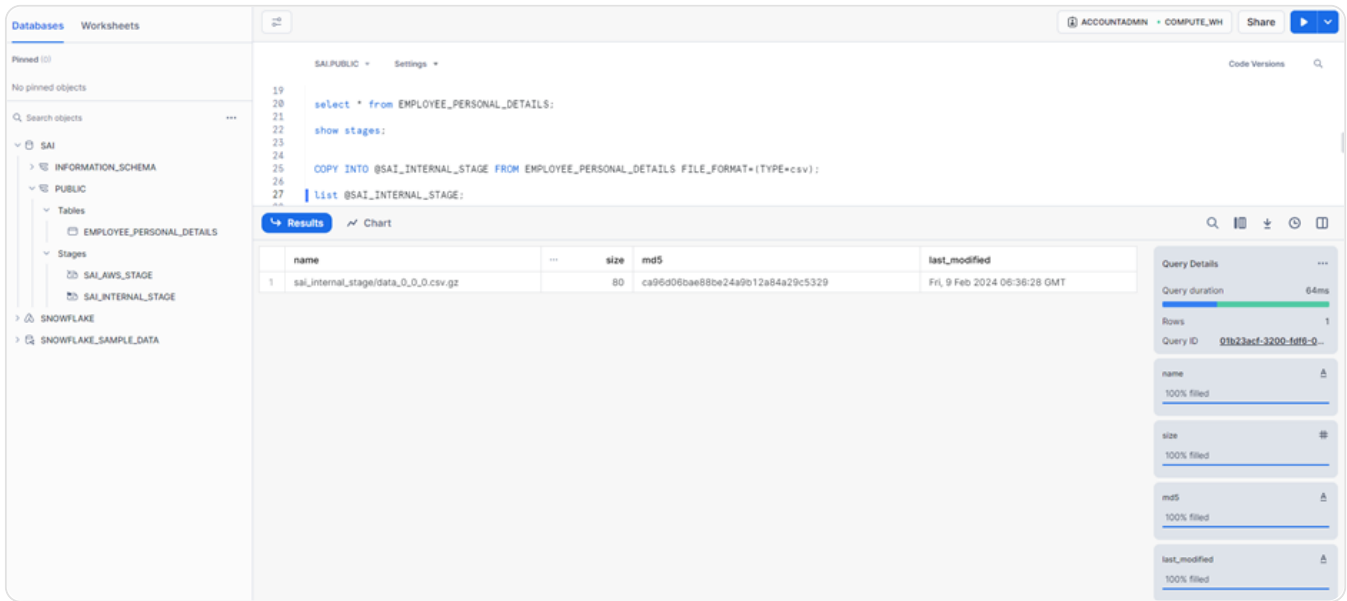
The 'Results' tab displays a table with the following data:

	rows_unloaded	input_bytes	output_bytes
1	4	58	78

The right-hand sidebar shows 'Query Details' for the second query, indicating a duration of 1.2s and 1 row. Below this, several fields are shown as '100% filled', including 'rows\_unloaded', 'input\_bytes', and 'output\_bytes'.

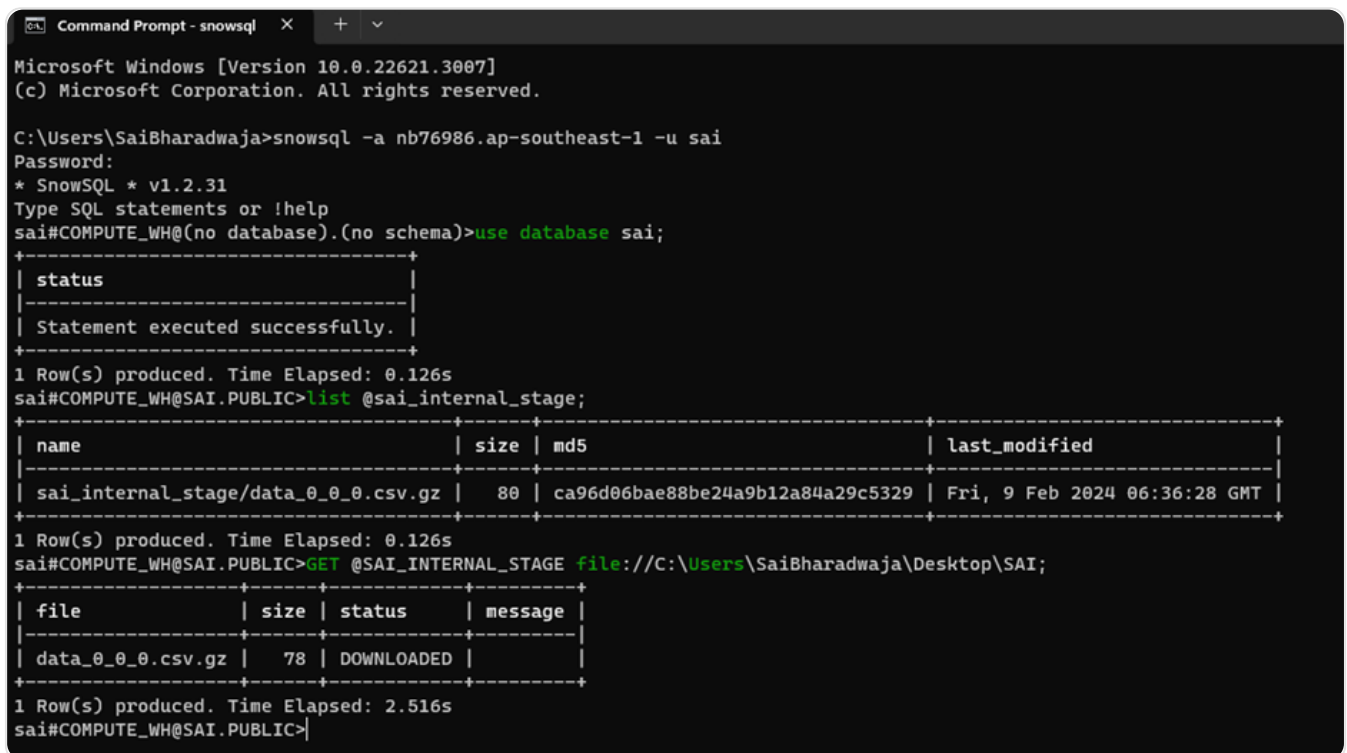
- `list @SAI_INTERNAL_STAGE;`

# An Overview of Data Unloading in Snowflake

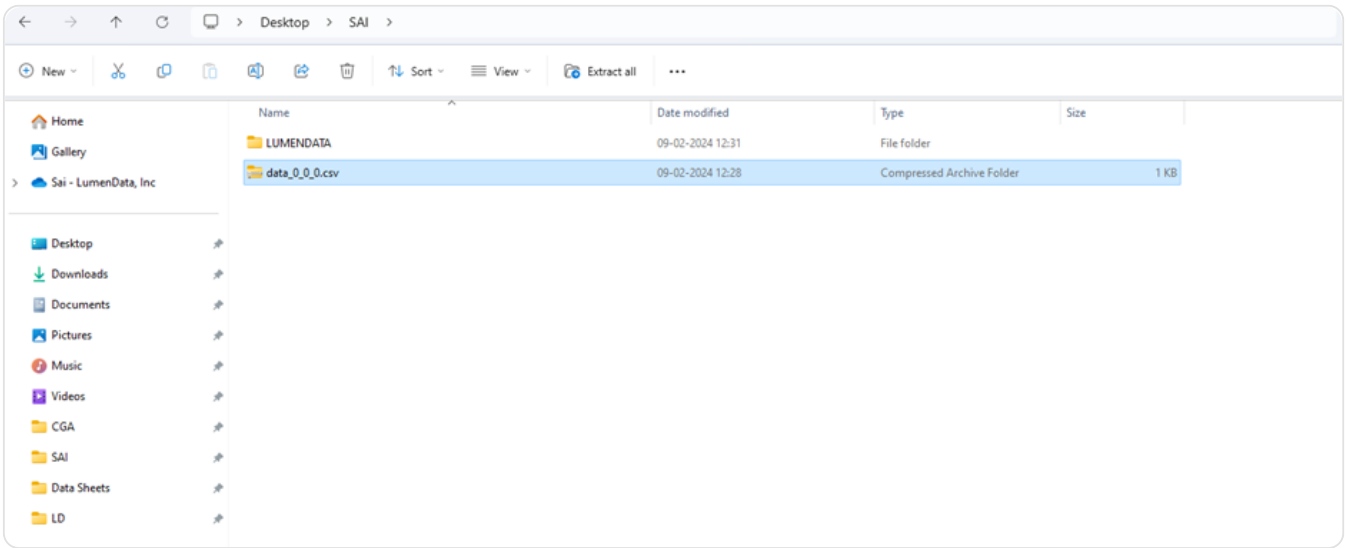


- Now the file is available in internal stage. To download the file from the internal stage to the local PC, we need to use the "GET" Command that needs to be run in CLI using snowsql as shown below:

GET @SAI\_INTERNAL\_STAGE file:///C:\Users\SaiBharadwaja\Desktop\SAI;

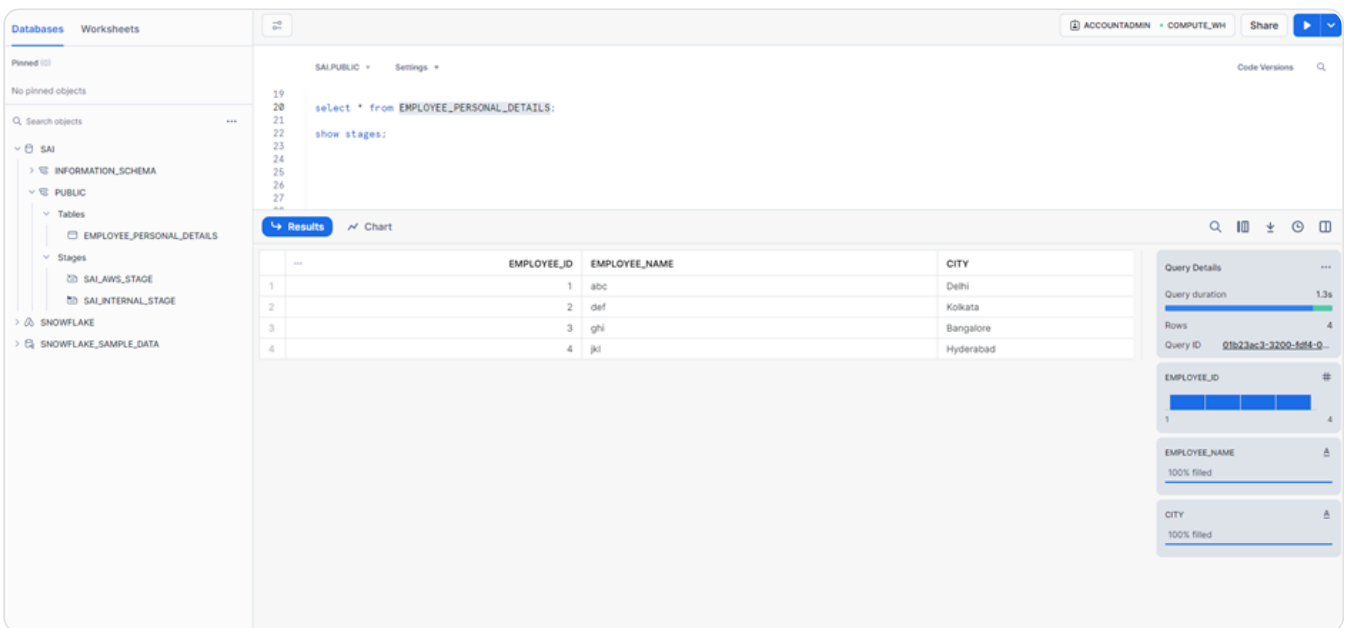


- The file will get downloaded in the mentioned location as shown in the next figure.



## Unload the data into external stage (AWS)

- We have data in the Snowflake table named "EMPLOYEE\_PERSONAL\_DETAILS".



- Let's unload the data in the table to the external stage named "SAI\_AWS\_STAGE".

# An Overview of Data Unloading in Snowflake

The screenshot shows the Snowflake interface with a query executed: `show stages;`. The results table is as follows:

	created_on	name	database_name	schema_name	url	has_credentials	has_encryption_key	owner
1	2024-02-08 22:14:38.745 -0800	SAI_AWS_STAGE	SAI	PUBLIC	s3://sai-ld	Y	N	ACCOUN
2	2024-02-08 22:22:53.098 -0800	SAI_INTERNAL_STAGE	SAI	PUBLIC		N	N	ACCOUN

- To unload the data into internal stage, we need to use `COPY INTO <LOCATION>` command as shown below.

```
COPY INTO @SAI_AWS_STAGE FROM EMPLOYEE_PERSONAL_DETAILS  
FILE_FORMAT=(TYPE=csv);
```

The screenshot shows the Snowflake interface with a query executed: `COPY INTO @SAI_AWS_STAGE FROM EMPLOYEE_PERSONAL_DETAILS FILE_FORMAT=(TYPE=csv);`. The results table is as follows:

	rows_unloaded	input_bytes	output_bytes
1	4	58	78

- `LIST @SAI_AWS_STAGE;`

# An Overview of Data Unloading in Snowflake

The screenshot shows the Snowflake web interface. On the left, a navigation pane displays a tree structure of databases and schemas, including 'SAI', 'INFORMATION\_SCHEMA', 'PUBLIC', 'EMPLOYEE\_PERSONAL\_DETAILS', 'SAI\_AWS\_STAGE', 'SAI\_INTERNAL\_STAGE', 'SNOWFLAKE', and 'SNOWFLAKE\_SAMPLE\_DATA'. The main area shows a SQL query: `COPY INTO @SAI_AWS_STAGE FROM EMPLOYEE_PERSONAL_DETAILS FILE_FORMAT=(TYPE=csv);` followed by `LIST @SAI_AWS_STAGE;`. Below the query, a 'Results' tab is active, displaying a table with the following data:

	name	size	md5	last_modified
1	s3://sai-ld/data_0_0_0.csv.gz	78	172992d152f1afa8668ddc3a595b0d5d	Fri, 9 Feb 2024 07:04:20 GMT

On the right side, a 'Query Details' panel shows 'Query duration' as 2.7s, 'Rows' as 1, and 'Query ID' as 01b23ae9-3200-f6f4-0-... Below this, there are three progress indicators for 'name', 'size', and 'md5', each showing '100% filled'.

- Now, let's check whether the file was available in AWS S3 or not.

The screenshot shows the Amazon S3 console interface. The breadcrumb navigation is 'Amazon S3 > Buckets > sai-ld'. The page title is 'sai-ld info'. There are tabs for 'Objects', 'Properties', 'Permissions', 'Metrics', 'Management', and 'Access Points'. The 'Objects' tab is selected, showing a list of objects. The list contains one object:

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	data_0_0_0.csv.gz	gz	February 9, 2024, 12:34:20 (UTC+05:30)	78.0 B	Standard

At the bottom of the console, there is a footer with '© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

## Authors



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### About LumenData

LumenData is a leading provider of **Enterprise Data Management, Cloud & Analytics** solutions. We help businesses navigate their data visualization and analytics anxieties and enable them to accelerate their innovation journeys.

**Founded in 2008**, with locations in multiple countries, LumenData is privileged to serve over 100 leading companies. LumenData is **SOC2 certified** and has instituted extensive controls to protect client data, including adherence to GDPR and CCPA regulations.



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