

POC

Data Sharing & Data Mesh in Snowflake.

PibyThree Consulting Services Private Limited

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1. INTRODUCTION

The document briefs out the design of BI architecture and process of implementation of Data sharing and Data Mesh using Replication in between Different regions and different cloud providers.

1.1 DOCUMENT REFERENCES

The following links explain in detail the Important Snowflake Components that will be put to use:

Components	Reference Document
Snowflake	https://www.snowflake.com/en/
Snowflake Documentation	https://docs.snowflake.com/en/
Private Listing	https://docs.snowflake.com/en/user-guide/data-exchange-managing-data-listings.html
Private Sharing	https://docs.snowflake.com/en/user-guide/data-sharing-intro.html
Provider studio	https://other-docs.snowflake.com/en/collaboration/provider-studio-accessing.html
Using Listing as a Provider	https://other-docs.snowflake.com/en/collaboration/provider-listings-using.html
Access Control/Roles	https://docs.snowflake.com/en/user-guide/security-access-control-overview.html
Warehouses	https://docs.snowflake.com/en/user-guide/warehouses-overview.html
User Management	https://docs.snowflake.com/en/user-guide/admin-user-management.html
Managing Provider Profile	https://other-docs.snowflake.com/en/collaboration/provider-profiles-managing.html
Database Replication	https://docs.snowflake.com/en/user-guide/database-replication.html
Database replication considerations	https://docs.snowflake.com/en/user-guide/database-replication-considerations.html

1.2 REQUIREMENT :

The requirement for this use case is to establish a data mesh using various entities and share the data among various geographic locations and cloud service providers.

So, an organisation with three distinct departments—HR (Human Resources), RMG (Resource Management Group) and SALES .Each working independently and in a different zone while using cloud services from Snowflake. As a result, there will be three accounts that are

Account i. AWS South Mumbai region,

Account ii. Azure Central India Pune region and

Account iii. AWS South_East Singapore region.

Each of these three accounts comprises four users (apart from the running user i.e.ACCOUNTADMIN), who are identified as

Account i. AWS South Mumbai region,

- a) Global_HR
- b) Local_HR
- c) Local_RMG
- d) Local_Sales

Account ii. Azure Central India Pune region,

- e) Global_RMG
- f) Local_HR
- g) Local_RMG
- h) Local_Sales

Account iii. AWS South_East Singapore region,

- i) Global_Sales
- j) Local_HR
- k) Local_RMG
- l) Local_Sales

There will be three regions in this place with nine departments, each containing three departments.

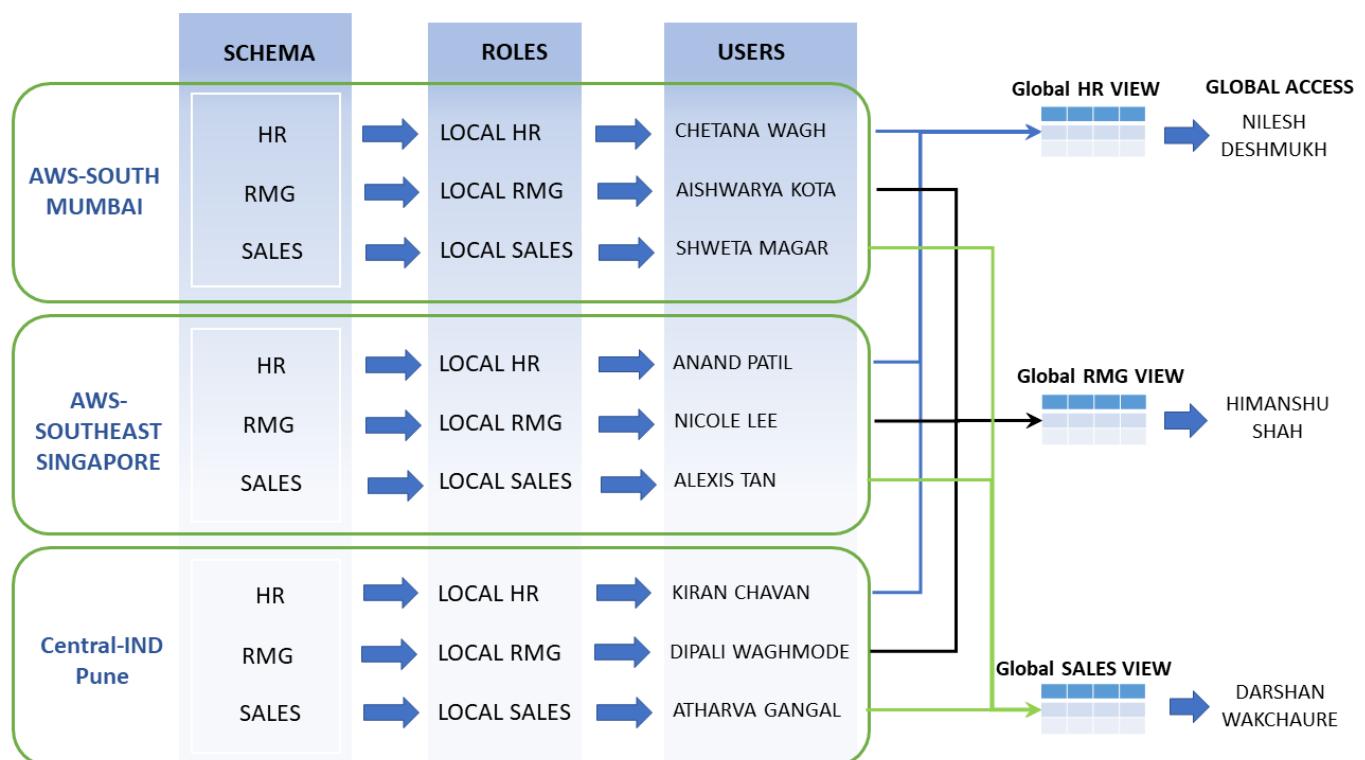
Local HR, Local RMG and Local Sales in each Account/Region will have access to view the data from the main ACCOUNTADMIN/ORGADMIN account. Additionally, Local RMG will have access to READ the data from the Product table, Local HR will have access to READ the

data from the Employees table, while Local Sales will have access to READ the data from the Sales table.

Note: This process will same for all three accounts.

There are three departments in these three accounts/regions. They are each individually led by the global heads, but the necessity is that all global heads be located in various regions, such as

- In AWS, Mumbai Global_HR will be in charge of the HR division across all three departments, allowing the other two Accounts/Regions to view Employee tables jointly.
- In AZURE, PUNE Global_RMG will be in charge of the RMG division across all three departments, allowing the other two Accounts/Regions to view RMG_PRODUCTS tables jointly.
- In AWS, Singapore Global_SALES will be in charge of the SALES division across all three departments, allowing the other two Accounts/Regions to view SALES tables jointly.



Note: The warehouse distribution will be as per need of the users.

SOLUTION OVERVIEW

This document details the design of the Data Mesh and Data Sharing Architecture where the Data is shared between Different regions as well as different cloud providers using replications. In this process the data is replicate between regions like South Mumbai region, Central India Pune region and US West Oregon region with different providers like AWS and Azure.

1.1. SOLUTION DIAGRAM:

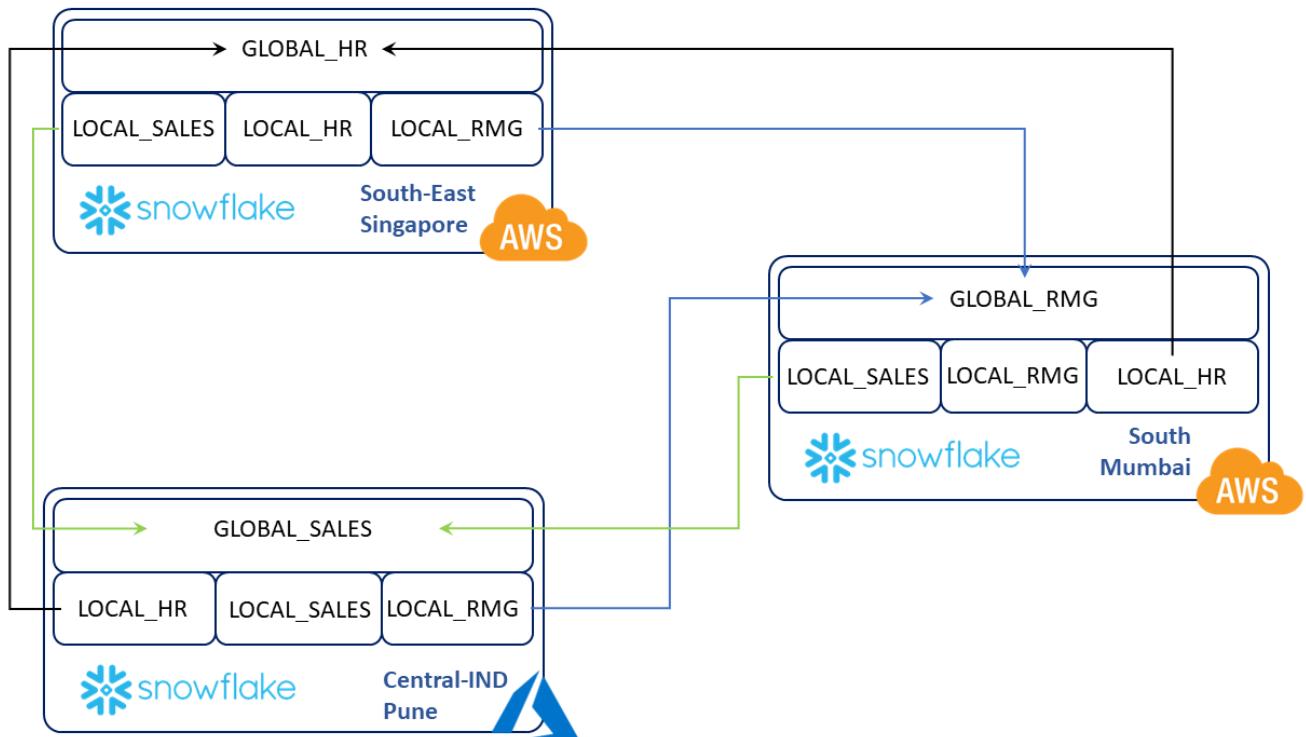


Figure 1 Data-mesh Architecture

SOLUTION DESCRIPTION

Solution to Replicate the data in between different regions and providers can be done in 2

Way:

1. **UI Implementation.**
2. **By Using queries.**

2. INVENTORY OF OBJECTS THAT NEED TO BE CREATED

DATABASE INVENTORY:

REGIONS	DATABASES	Database type	SCHEMA	TABLES
AWS/SOUTH_MUMBAI	PIBYTHREE_AWS_SOUTH	Main Database	HEAD	EMPLOYEES_HR
	South_East_Singapore_2 SOUTH_EMP			RMG_PRODUCT
	AZURE_PUNE_2_SOUTH_EMPLOYEE			SALES
AWS/South_East_Singapore	PIBYTHREE_AWS_SE_Singapore	Main Database	HEAD	EMPLOYEES_HR
	SOUTH_2_South_East_SALES			RMG_PRODUCT
	AZURE_PUNE_2_SouthEast_SALES			SALES
AZURE/CENTRAL_IND_PUNE	PIBYTHREE_AZURE_PUNE	Main Database	HEAD	SALES
	SOUTHEAST_2_PUNE_PRODUCT			EMPLOYEES_HR
	SOUTH_2_PUNE_PRODUCT			RMG_PRODUCT

Warehouses and users with role :

REGIONS	WAREHOUSE	USER	ROLE	NAME	
AWS/SOUTH	COMPUTE_WH	PRAGATIATKALE	ACCOUNTADMIN		
	GLOBAL_HR_WH		ORGADMIN	PRAGATI	ATKALE
	LHR_S_MUMBAI_WH	NileshDeshmukh	GLOBAL_HR	Nilesh	Deshmukh
	LRMG_S_MUMBAI_WH	LHR_S_MUMBAI	LOCAL_HR	CHETANA	WAGH
	LSALES_S_MUMBAI	LRMG_S_MUMBAI	LOCAL_RMG	AISHWARYA	KOTA
AWS/South_East_Singapore	WAREHOUSE01	AKSHAYAHIRE02	ACCOUNTADMIN		
	GLOBAL_SALES_WH		ORGADMIN	AKSHAY	AHIRE
	LHR_SE_SINGAPORE_WH	DarshanWakchaure	GLOBAL_SALES	Darshan	Wakchaure
	LRMG_SE_SINGAPORE_WH	LHR_SE_SINGAPORE	LOCAL_HR	ANAND	PATIL
	LSALES_SE_SINGAPORE_WH	LRMG_SE_SINGAPORE	LOCAL_RMG	Nicole	Lee
AZURE/PUNE	COMPUTE_WH	SAURABHSATPUTE	ACCOUNTADMIN		
	GLOBAL_RMG_WH		ORGADMIN	Saurabh	Satpute
	LHR_CENTRAL_INDIA_PUNE_WH	HIMANSHUSHAH	GLOBAL_RMG	Himashu	Shah
	LRMG_CENTRAL_INDIA_PUNE_WH	LHR_CENTRAL_INDIA_PUNE	LOCAL_HR	Kiran	Chavan
	LSALES_CENTRAL_INDIA_PUNE	LRMG_CENTRAL_INDIA_PUNE	LOCAL_RMG	Dipali	Waghmode
		LSALES_CENTRAL_INDIA_PUNE	LOCAL_SALES	Atharva	Gangal

3. OBJECT DEFINITIONS

3.1. DATABASE OBJECTS DEFINITIONS/PROCESS :

ACCOUNTS: CREATE ENTERPRISE EDITION ACCOUNTS

1. AWS - SOUTH (MUMBAI)
2. AWS - SOUTH_EAST (SINGAPORE)
3. AZURE - CENTRAL INDIA (PUNE)

DATABASE/SCHEMA/TABLES:

1. AWS - SOUTH (MUMBAI):

Warehouse-i. WAREHOUSE01
 Database ii. PIBYTHREE_AWS_SOUTH
 Schema-ii. HEAD
 Table-i. EMPLOYEES_HR
 Table-ii. RMG_PRODUCT
 Table-iii. SALES
 View-i. HEAD.ORG_EMPLOYEES_INFO

2. AWS - SOUTH_EAST (SINGAPORE):

Warehouse-i. WAREHOUSE1
 Database ii. PIBYTHREE_AWS_SE_SINGAPORE
 Schema-ii. HEAD
 Table-i. EMPLOYEES_HR
 Table-ii. RMG_PRODUCT
 Table-iii. SALES
 View-i. HEAD.ORG_SALES_INFO

3. AZURE - CENTRAL INDIA (PUNE):

Warehouse-i. COMPUTE-WH
 Database ii. PIBYTHREE_AZURE_PUNE
 Schema-ii. HEAD
 Table-i. EMPLOYEES_HR

Table-ii. RMG_PRODUCT

Table-iii. SALES

View-i. HEAD.ORG_PRODUCT_INFO

NOTE : In this process Databases ,Schema and Tables are created by UI method :

As a example Each of the process is given below :



Create Database :

In Data: Click on +Database

SOURCE	OWNER	CREATED
share	ACCOUNTADMIN	6 days ago
local	ACCOUNTADMIN	3 weeks ago
share	—	3 weeks ago
local	ACCOUNTADMIN	1 week ago
share	ACCOUNTADMIN	6 days ago

Create Schema :

In Data: Click on Database in which we want to create schema

Click on +Schema

Create Tables:

There are many ways to create tables and upload data in tables:

1. Using Queries
2. Using Put and Copy Command via Command Prompt
3. Using Upload CSV option in Snowflake

1. Using Queries:

a. Create or replace table:

Create or replace table PIBYTHREE.HEAD.EMPLOYEES_DETAILS

```
( EMPLOYEE_ID VARCHAR(50),  
FIRST_NAME VARCHAR(50),  
LAST_NAME VARCHAR(50),  
CONTACT_NUMBER VARCHAR(50),  
DOB VARCHAR(50),  
GENDER VARCHAR(30),  
DEPT VARCHAR(30) );
```

- b. INSERT QUERY (for single record):

```
INSERT INTO PIBYTHREE_DB.HEAD.EMPLOYEES_INFO  
(EMPLOYEE_NAME , EMPID , DEPTID , SALARY , POSITIONID , POSITION  
,DEPARTMENT , MANAGERNAME , MANAGERID)  
VALUES('Akshay','1019','02','24168','17','Data.Engg','IT','Darshan  
Wakchaure','1003');
```



Submitted by: Akshay Ahire & Pragati Atkale

1. Using Put and Copy Command via Command Prompt:

```

Administrator: Command Prompt - snowsql
+-----+
1 Row(s) produced. Time Elapsed: 2.214s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>copy into PRODUCT_INFO
    from @internal_stage files=('R3DataMesh_RMG_prod.csv.gz') file_format=(format_name=CSV_FORMAT)
    ON_ERROR =CONTINUE;
+-----+
| file | status | rows_parsed | rows_loaded | error_limit | errors_seen | first_error |
|      | first_error_line | first_error_character | first_error_column_name |
+-----+
| internal_stage/R3DataMesh_RMG_prod.csv.gz | PARTIALLY_LOADED | 49 | 7 | 49 | 42 | User character length limit (50) exceeded by st
x RAM:64GB' | 4 | 21 | "PRODUCT_INFO"[DESCRIPTION:3] |
+-----+
1 Row(s) produced. Time Elapsed: 0.904s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>copy into PRODUCT_INFO
    from @internal_stage files=('R3DataMesh_RMG_prod.csv.gz') file_format=(format_name=CSV_FORMAT)
    ON_ERROR =CONTINUE;
+-----+
| file | status | rows_parsed | rows_loaded | error_limit | errors_seen | first_error | first_error_line | first_error_character |
|      |          |          |          |          |          |          |          |          |
| internal_stage/R3DataMesh_RMG_prod.csv.gz | LOADED | 49 | 49 | 49 | 0 | NULL | NULL | NULL |
+-----+
1 Row(s) produced. Time Elapsed: 0.923s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>copy into SALES_INFO
    from @internal_stage files=('R3DataMesh_sales.csv.gz') file_format=(format_name=CSV_FORMAT)
    ON_ERROR =CONTINUE;
+-----+
| file | status | rows_parsed | rows_loaded | error_limit | errors_seen | first_error | first_error_line | first_error_character | fir
|      |          |          |          |          |          |          |          |          |
| internal_stage/R3DataMesh_sales.csv.gz | LOADED | 9 | 9 | 9 | 0 | NULL | NULL | NULL |
+-----+
1 Row(s) produced. Time Elapsed: 132.825s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>_
<-->
Administrator: Command Prompt - snowsql
+-----+
| R3DataMesh_Emp.csv | R3DataMesh_Emp.csv.gz | 2749 | 1120 | NONE | GZIP | uploaded | |
+-----+
1 Row(s) produced. Time Elapsed: 3.597s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>copy into EMPLOYEES_INFO
    from @internal_stage files=('R3DataMesh_Emp.csv.gz') file_format=(format_name=CSV_FORMAT)
    ON_ERROR =CONTINUE;
+-----+
| file | status | rows_parsed | rows_loaded | error_limit | errors_seen | first_error | first_error_line | first_error_character | first
|      |          |          |          |          |          |          |          |          |
| internal_stage/R3DataMesh_Emp.csv.gz | LOADED | 25 | 25 | 25 | 0 | NULL | NULL | NULL |
+-----+
1 Row(s) produced. Time Elapsed: 2.470s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>put file://G:\Training\snowflake_SS\DataMesh\SouthEast\R3DataMesh_RMG_prod.csv @internal_stage AUTO_COMPRESS= TRUE;
+-----+
| source | target | source_size | target_size | source_compression | target_compression | status | message |
| R3DataMesh_RMG_prod.csv | R3DataMesh_RMG_prod.csv.gz | 4969 | 1552 | NONE | GZIP | uploaded | |
+-----+
1 Row(s) produced. Time Elapsed: 2.390s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>put file://G:\Training\snowflake_SS\DataMesh\SouthEast\R3DataMesh_sales.csv @internal_stage AUTO_COMPRESS= TRUE;
+-----+
| source | target | source_size | target_size | source_compression | target_compression | status | message |
| R3DataMesh_sales.csv | R3DataMesh_sales.csv.gz | 647 | 432 | NONE | GZIP | uploaded | |
+-----+
1 Row(s) produced. Time Elapsed: 3.140s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>list @internal_stage;
+-----+
| name | size | md5 | last_modified |
|-----|
| internal_stage/R3DataMesh_Emp.csv.gz | 1120 | 8f5cf6c86536ffa9a85b0cd25117b5ae | Fri, 9 Dec 2022 11:51:33 GMT |
| internal_stage/R3DataMesh_RMG_prod.csv.gz | 1552 | 8a73de16019cc7dde1fe753877e61d8b | Fri, 9 Dec 2022 11:52:41 GMT |
| internal_stage/R3DataMesh_sales.csv.gz | 432 | 2795318d421a8a443d0f0a039045ac4c | Fri, 9 Dec 2022 11:53:15 GMT |
+-----+
3 Row(s) produced. Time Elapsed: 0.213s
AKSHAYAHIRE02#WAREHOUSE01@PIBYTHREE_DB.HEAD>_

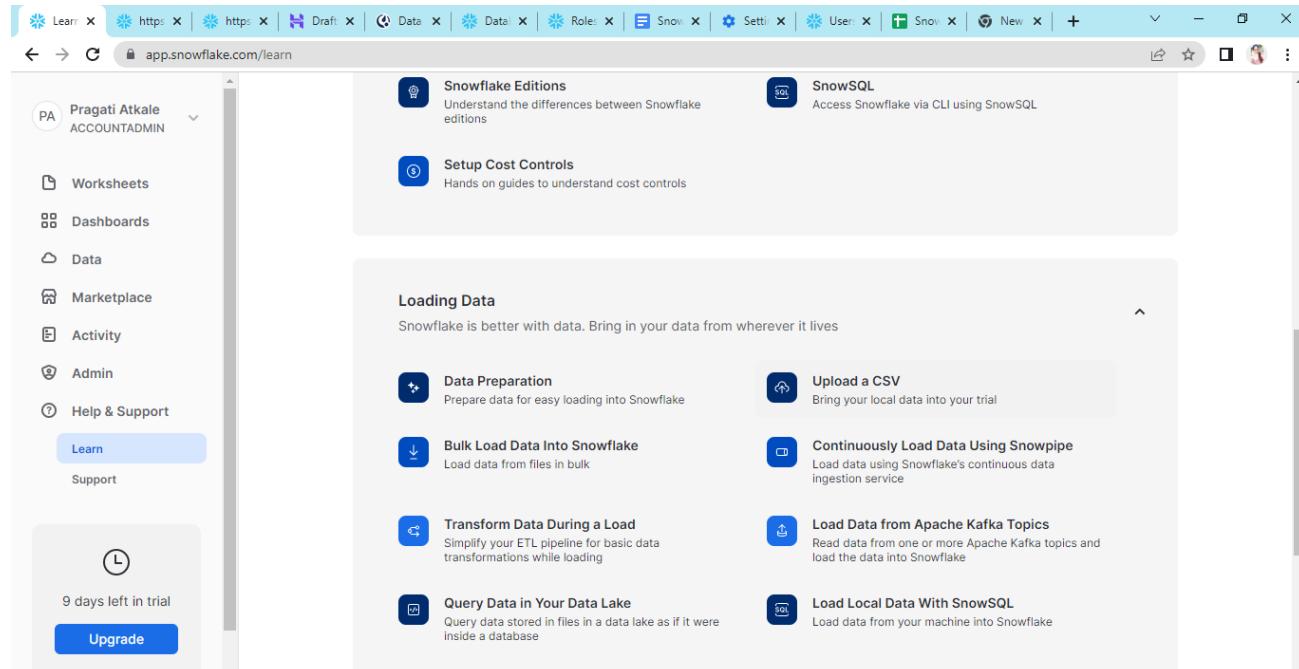
```

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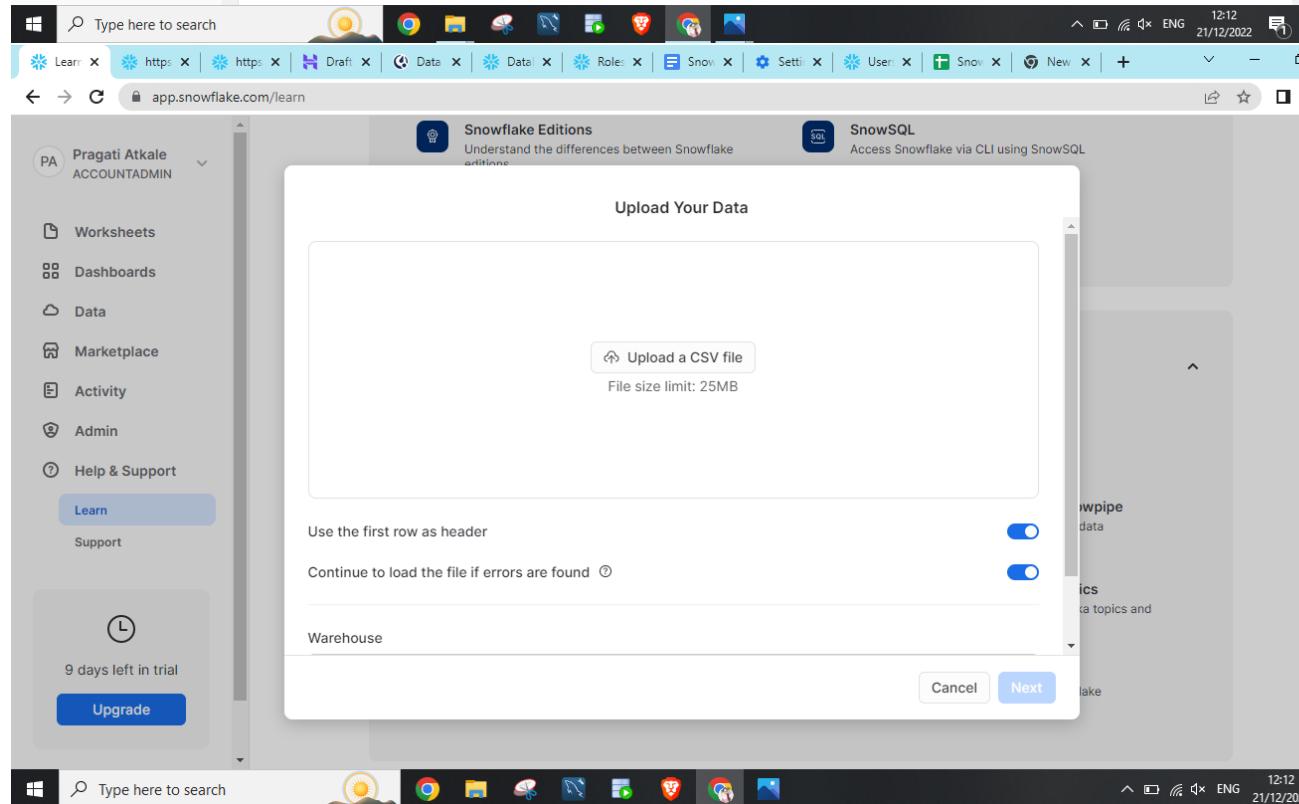
DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

1. Using Upload CSV option in Snowflake:



The screenshot shows the Snowflake Learn interface. On the left, there's a sidebar with navigation links: Worksheets, Dashboards, Data, Marketplace, Activity, Admin, Help & Support, Learn (which is selected), and Support. A message indicates '9 days left in trial' with a 'Upgrade' button. The main content area is titled 'Loading Data' and describes how Snowflake is better with data. It lists several options: Data Preparation, Upload a CSV, Bulk Load Data Into Snowflake, Continuously Load Data Using Snowpipe, Transform Data During a Load, Load Data from Apache Kafka Topics, Query Data in Your Data Lake, and Load Local Data With SnowSQL.



This screenshot shows the 'Upload Your Data' dialog box overlaid on the Learn interface. The dialog has a title 'Upload Your Data' and a central area for uploading a CSV file, with a note that the file size limit is 25MB. Below this are two toggle switches: 'Use the first row as header' (which is turned on) and 'Continue to load the file if errors are found' (which is also turned on). At the bottom of the dialog are 'Cancel' and 'Next' buttons. The background shows the same 'Loading Data' section as the previous screenshot.



Submitted by: Akshay Ahire & Pragati Atkale

The screenshot shows the Snowflake Learn interface. On the left, a sidebar for user 'Pragati Atkale' (ACCOUNTADMIN) lists 'Worksheets', 'Dashboards', 'Data', 'Marketplace', 'Activity', 'Admin', 'Help & Support', 'Learn' (which is selected), and 'Support'. A trial status message '9 days left in trial' and an 'Upgrade' button are also present. The main content area is titled 'Snowflake Editions' and 'SnowSQL'. A central modal window is titled 'Upload Your Data' and displays a file selection dialog with 'DataMesh_sales.csv (1KB)' selected. It specifies a 'File size limit: 25MB'. Below this, a dropdown menu shows 'GHR_MUMBAI_WH' selected, with other options like 'LHR_S_MUMBAI_WH' and 'LRMG_S_MUMBAI_WH'. A sub-modal window for 'GHR_MUMBAI_WH' indicates it's a 'Warehouses are clusters of compute resources used to process data'. Buttons for 'Cancel' and 'Next' are at the bottom.

The screenshot shows the continuation of the Snowflake Learn interface. The sidebar remains the same. The main content area is titled 'Setup Cost Controls' and 'Hands on guides to understand cost controls'. A large modal window is titled 'Select the Destination for Your Data'. It has three sections: 'Select or create a database' (set to 'PIBYTHREE_AWS_S_MUMBAI'), 'Schema' (set to 'HEAD'), and 'Table' (set to 'SALES'). A note below states 'Note: Data will be appended to the existing table'. Buttons for 'Cancel' and 'Next' are at the bottom. The bottom of the screen shows a Windows taskbar with various icons and the date/time '21/12/2023 12:14'.

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

The screenshot shows two consecutive steps in the Snowflake UI:

Step 1: Confirm Column Names and Types

A modal dialog titled "Confirm Column Names and Types" is displayed. It lists 9 columns with their types, names, and examples:

TYPE	NAME	EXAMPLE
VARCHAR	ORDER_ID	OD1, OD2, OD3, OD4, OD5
VARCHAR	CUSTOMER_NAME	Harish, Sudha, Hussain, Jackson, Ridhesh
VARCHAR	CATEGORY	CPU, Video Card, RAM, Mother Board, CPU
VARCHAR	CITY	Vellore, Krishnagiri, Perambalur, Dharmap...
DATE	ORDER_DATE	11/08/2017, 11/08/2017, 06/12/2017, 10/11...
VARCHAR	REGION	North, South, West, South, South

Buttons at the bottom right of the dialog are "Cancel" and "Import".

Step 2: Data Uploaded Confirmation

A modal dialog titled "Data Uploaded" is displayed, showing a green checkmark icon. It states: "Snowflake is loading data from your local machine. DATAMESH_SALES". Below it, a message says: "19 rows have been successfully inserted into the table." Buttons at the bottom are "Query Data" and "Done".

Below the modal, there are other UI elements including a sidebar with navigation links like Worksheets, Dashboards, Data, Marketplace, Activity, Admin, Help & Support, Learn, and Support. A trial status message "9 days left in trial" and an "Upgrade" button are also visible.

CREATE USERS ,ROLES AND WAREHOUSES :

Here ACCOUNTADMIN create a separate warehouse to the GLOBAL and LOCAL users to check usage of warehouse as per their needs.

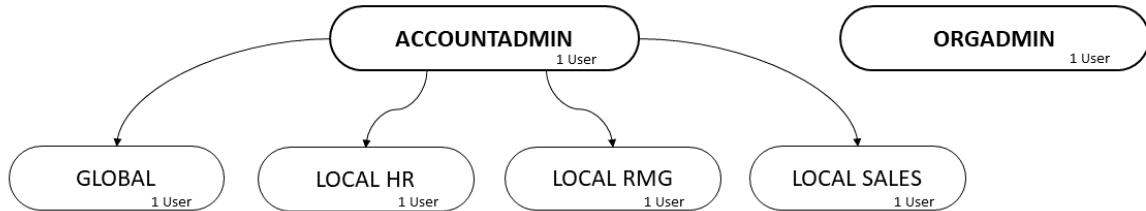


Figure 2 Roles and user for that role

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DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

a. AWS SOUTH MUMBAI Region :

Screenshot of the Snowflake Data Mesh interface showing the Warehouses and Users sections.

Warehouses

5 Warehouses

NAME ↑	STATUS	SIZE	TYPE	CLUSTERS	RUNNING	QUEUED	QAS (SCAL)	OWNER	CREATED
COMPUTE_WH	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	AC...	20 hour...
GLOBAL_HR_WH	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	GLO...	20 hour...
LHR_S_MUMBAI_WH	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	LOC...	2 days ...
LRMG_S_MUMBAI_WH	Started	X-Small	Standard	1 - 1 (1 ...)	0	0	Disabled	LOC...	2 days ...
LSALES_S_MUMBAI	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	LOC...	2 days ...

Users Roles

6 Users

NAME ↑	DISPLAY NAME	STATUS	LAST LOGIN	MFA	OWNER
LHR_S_MUMBAI	—	Enabled	31 minutes ago	No	ACCOUNTAD...
LRMG_S_MUMBAI	—	Enabled	10 minutes ago	No	ACCOUNTAD...
LSALES_S_MUMBAI	—	Enabled	16 minutes ago	No	ACCOUNTAD...
NILESHDESHMUKH	NileshDeshmukh	Enabled	1 hour ago	No	ACCOUNTAD...
PRAGATIATKALE	PRAGATIATKALE	Enabled	just now	No	ACCOUNTAD...
SNOWFLAKE	SNOWFLAKE	Expired	—	No	—

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DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

b. AWS -SOUTH_EAST (SINGAPORE):

Warehouses

5 Warehouses

NAME ↑	STATUS	SIZE	TYPE	CLUSTERS	RUNNING	QUEUED	QAS (SCAL)	OWNER	CREATED	
GLOBAL_RMG_WH	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	GLO...	21 hour...	...
LHR_SE_SINGAPORE_WH	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	PUB...	2 days
LRMG_SE_SINGAPORE...	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	AC...	2 days
LSALES_SE_SINGAPOR...	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	LOC...	2 days
WAREHOUSE01	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	AC...	3 week...	...



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DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

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Screenshot of the Snowflake web interface showing the 'Users & Roles' section.

The left sidebar shows the user profile 'Akshay Ahire ACCOUNTADMIN' and navigation links for Worksheets, Dashboards, Data, Marketplace, Activity, Admin, Usage, Warehouses, Resource Monitors, and Users & Roles (selected).

The main area displays the 'Users & Roles' page with the heading '6 Users'. A table lists the following users:

NAME	DISPLAY NAME	STATUS	LAST LOGIN	MFA	OWNER
AKSHAYAHIRE02	AKSHAYAHIRE02	Enabled	just now	No	ACCOUNTADM...
DARSHANWAKCHAURE	—	Enabled	43 minutes ago	No	ACCOUNTADM...
LHR_SE_SINGAPORE	—	Enabled	24 minutes ago	No	ACCOUNTADM...
LRMG_SE_SINGAPORE	—	Enabled	2 hours ago	No	ACCOUNTADM...
LSALES_SE_SINGAPORE	—	Enabled	2 hours ago	No	ACCOUNTADM...
SNOWFLAKE	SNOWFLAKE	Expired	—	No	—

The 'Graph' tab is selected in the 'Roles' section. The 'Focused Role' is set to 'ORGADMIN'. The diagram shows the organizational structure of roles:

```
graph TD; ORGADMIN[ORGADMIN  
1 user] --> GLOBAL_SALES[GLOBAL_SALES  
1 user]; ORGADMIN --> LOCAL_HR[LOCAL_HR  
1 user]; ORGADMIN --> LOCAL_RMG[LOCAL_RMG  
1 user]; ORGADMIN --> LOCAL_SALES[LOCAL_SALES  
1 user]; ORGADMIN --> SNOWFLAKE$GDS_RL[SNOWFLAKE$GDS_RL  
0 users];  
GLOBAL_SALES --> LOCAL_HR; GLOBAL_SALES --> LOCAL_RMG; GLOBAL_SALES --> LOCAL_SALES;
```

The Windows taskbar at the bottom shows various open browser tabs and system icons.

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DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

c. CENTRAL_INDIA (Pune):

Warehouses

NAME ↑	STATUS	SIZE	TYPE	CLUSTERS	RUNNING	QUEUED	QAS (SCAL)	OWNER	CREATED
COMPUTE_WH	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	ACCOUNTADMIN	2 week...
GLOBAL_RMG_WH	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	ACCOUNTADMIN	21 hour...
LHR_CENTRAL_INDIA_P...	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	ACCOUNTADMIN	2 days ...
LRMG_CENTRAL_INDIA_...	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	ACCOUNTADMIN	2 days ...
LSALES_CENTRAL_INDI...	Suspen...	X-Small	Standard	1 - 1	0	0	Disabled	ACCOUNTADMIN	2 days ...

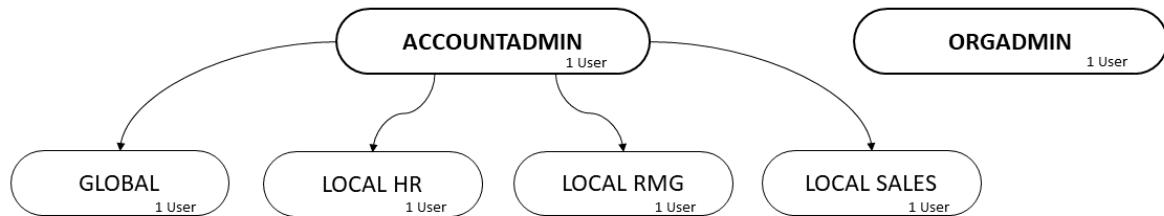
Users Roles

NAME ↑	DISPLAY NAME	STATUS	LAST LOGIN	MFA	OWNER
HIMANSHUSHAH	HimashuShah	Enabled	8 minutes ago	No	ACCOUNTADMIN
LHR_CENTRAL_INDIA_P...	—	Enabled	2 hours ago	No	ACCOUNTADMIN
LRMG_CENTRAL_INDIA_...	—	Enabled	2 hours ago	No	ACCOUNTADMIN
LSALES_CENTRAL_INDI...	—	Enabled	2 hours ago	No	ACCOUNTADMIN
SAURABHSATPUTRE	ACCOUNT2	Enabled	just now	No	ACCOUNTADMIN
SNOWFLAKE	SNOWFLAKE	Expired	—	No	—

4. SHARING DATA :

Steps To Enable Listing option:

- 4.1 Connect ORGADMIN role to the user who have ACCOUNTADMIN role (In initial condition it is not connected to any role)



4.2 Provide grant to the user :

NAME ↑	GRANTED ON	GRANTED BY
PRAGATIATKALE	12/7/22	—

4.3 Click on Admin → Billing & terms

- [Worksheets](#)
- [Dashboards](#)
- [Data](#)
- [Marketplace](#)
- [Activity](#)
- [Admin](#)
 - [Usage](#)
 - [Warehouses](#)
 - [Resource Monitors](#)
 - [Users & Roles](#)
 - [Security](#)
 - [Billing & Terms](#)
 - [Contacts](#)
 - [Accounts](#)
 - [Partner Connect](#)
- [Help & Support](#)

Billing & Terms Payment Methods

Anaconda

Anaconda Python packages

[Enable](#)

Grant access for use of Anaconda-provided OSS Python packages inside Snowflake.

Snowflake Marketplace

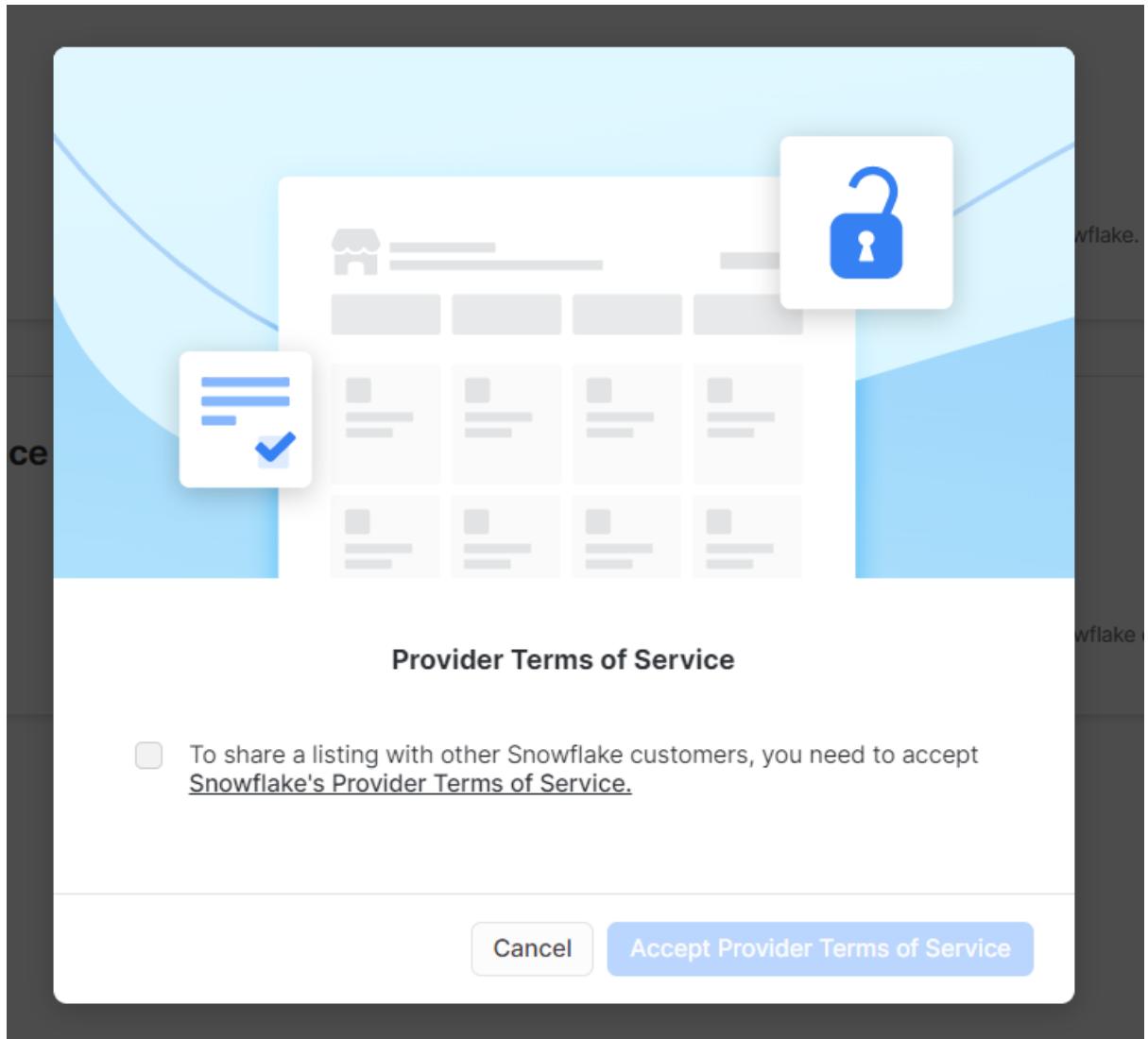
Provider Terms of Service

[Review Provider Terms of Service](#)

Review and accept Provider Terms of Service to share a listing with other Snowflake customers.

4.4 Click on Review Provider Terms of Service in Snowflake Marketplace

4.5 Click on Review Provider Terms of Service Link after that pop up window and then Accept Provider Terms of Services

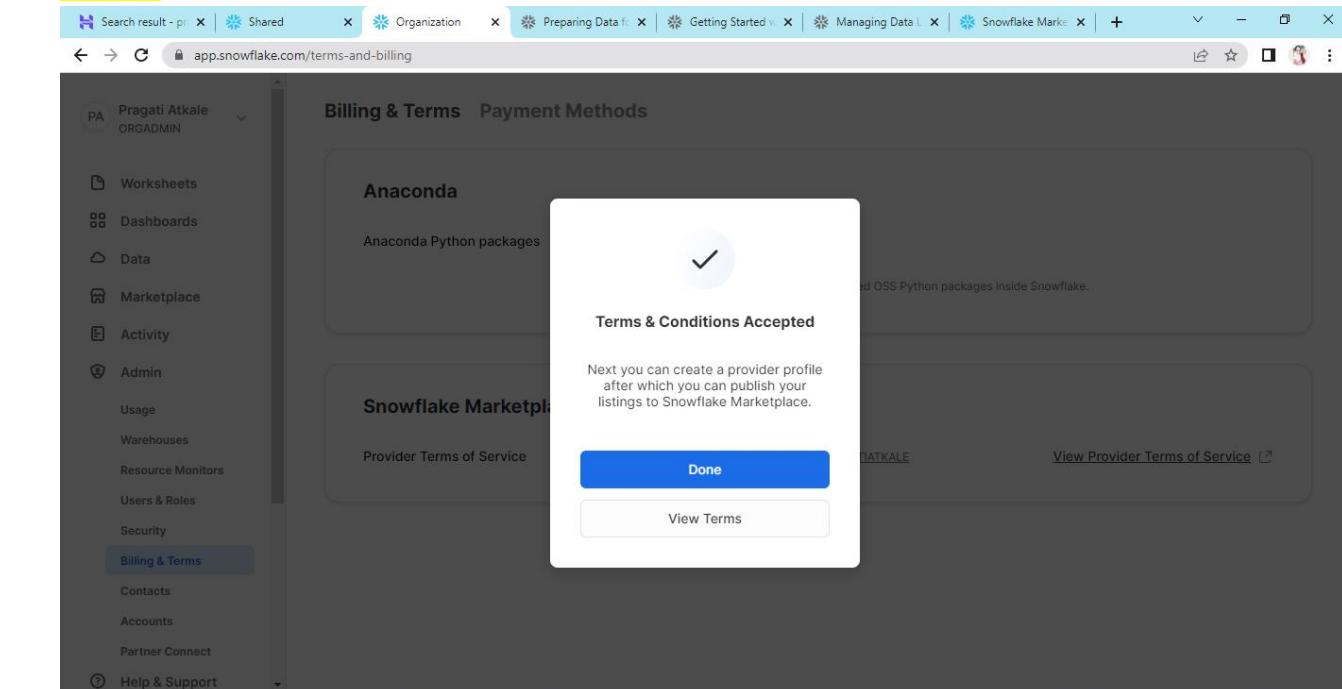


POC

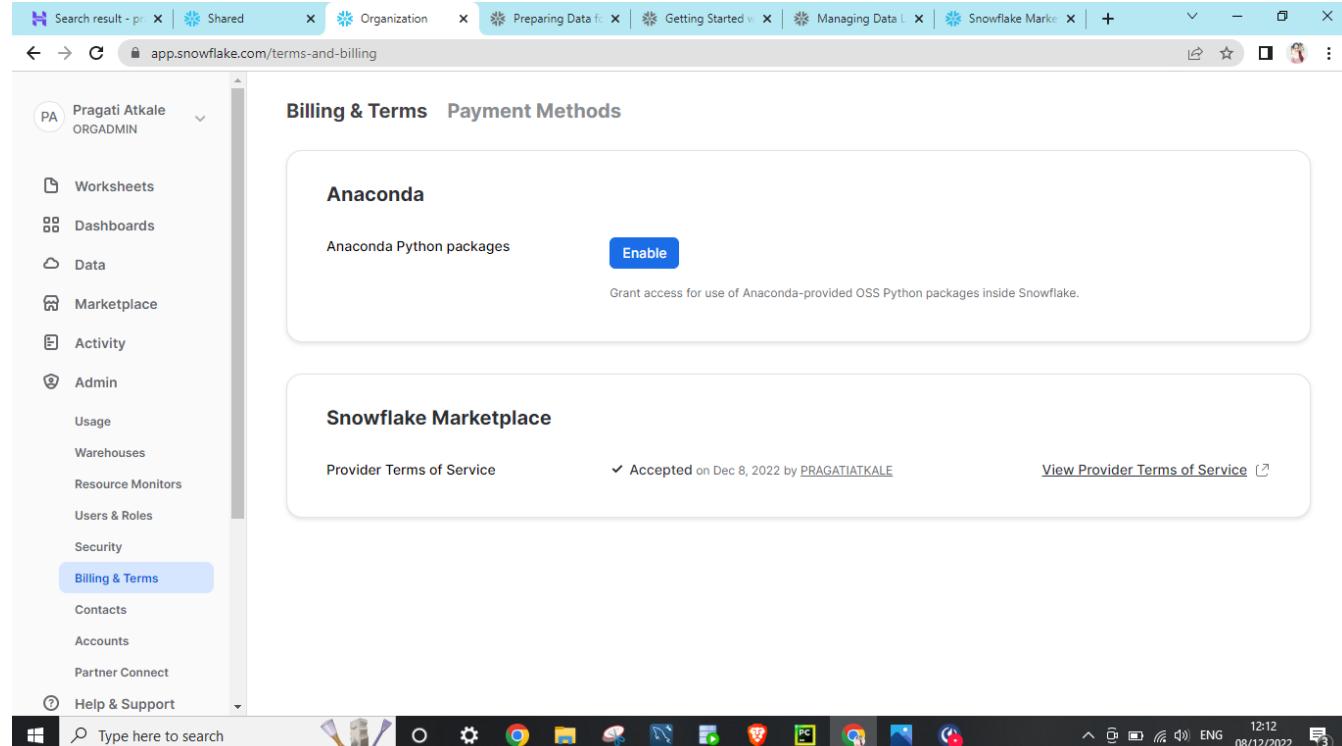
DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

4.6 Click on Done and it could be enable :



The screenshot shows the 'Billing & Terms' section of the Snowflake interface. In the 'Anaconda' section, there is a modal dialog with a checkmark icon and the text 'Terms & Conditions Accepted'. Below the modal, a blue 'Done' button is visible. The status message indicates that access has been granted for use of Anaconda-provided OSS Python packages inside Snowflake.



The screenshot shows the same 'Billing & Terms' section. In the 'Anaconda' section, there is now a blue 'Enable' button next to the 'Anaconda Python packages' link. The status message below the button reads: 'Grant access for use of Anaconda-provided OSS Python packages inside Snowflake.'

After this you can see that listing option is enabled in the Data → Provider Studio

Steps for creating Listing (Replication):

1. Login as ACCOUNT ADMIN (ORGADMIN also can replicate data using listing if have grants)
2. Click on **DATA → Provider Studio → Listing**
3. Click on Listing option at Top-Right corner
4. Provide name to the listing

5. Select only specified consumer

Click on next

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

6. Select Database → Schema → Table which want to share across region**7. And Add the consumer's account identifier number**

Create Listing

What's in the listing? PIBYTHREE 1 Table

Secure Share Identifier
A secure share that packages the data you selected will be created. [Learn More.](#)

PIBYTHREE_SNOWFLAKE_SECURE_SHARE_1670484

Allowed characters: A-Z, 0-9, \$, _

Briefly describe your listing
A short summary of what this shared data product includes and how it can be used

Publishing as
ONRIQYC - LH24132

How to add a consumer

SNOWFLAKE	SNOWFLAKE
Snowglobe	Snowglobe
AWS - US West (Oregon)	Enterprise
+ Sign into another account	Amazon Web Services
Snowglobe	US West (Oregon)
	ABC1234

- Ask your consumer to copy their account identifier from the bottom left of the Snowflake web UI and share with you.
- Paste in the account identifier to add the account.

8. Click on Publish

Create Listing

Secure Share Identifier
A secure share that packages the data you selected will be created. [Learn More.](#)

PIBYTHREE_SNOWFLAKE_SECURE_SHARE_1670484

Allowed characters: A-Z, 0-9, \$, _

Briefly describe your listing
A short summary of what this shared data product includes and how it can be used

Publishing as
ONRIQYC - LH24132

Add consumer accounts [How to add a consumer](#)
Use account identifier to add

How to add a consumer

SNOWFLAKE	SNOWFLAKE
Snowglobe	Snowglobe
AWS - US West (Oregon)	Enterprise
+ Sign into another account	Amazon Web Services
Snowglobe	US West (Oregon)
	ABC1234

- Ask your consumer to copy their account identifier from the bottom left of the Snowflake web UI and share with you.
- Paste in the account identifier to add the account.

9. Now listing is published and available to consumer in different region (Which you mentioned or select while create listing).

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

The screenshot shows the Snowflake Provider Studio interface. On the left sidebar, under 'Provider Studio', 'Listing' is selected. In the main area, a modal window displays a checkmark icon and the message 'Your listing is live'. Below the modal, a section titled 'Data Product' shows a 'Secure Share' entry with the identifier 'PIBYTHREE_SNOWFLAKE_SECURE_SHARE_1670495466230'. A 'Done' button is at the bottom of the modal. The status bar at the bottom indicates '16:11 08/12/2022'.

10. Click on Done.

And here we can see that Listing is live

The screenshot shows the 'Listings' page in the Provider Studio. The sidebar shows 'Provider Studio' is selected. The main area displays a table with one listing. The table columns are 'TITLE', 'STATUS', 'SHARED BY', 'SHARED WITH', 'TYPE', and 'LAST ACTION'. The listing details are: TITLE 'PBT', STATUS 'Live', SHARED BY 'ONRIQYC - LH24132', SHARED WITH 'QZ26423', TYPE 'Free', and LAST ACTION '7 minutes ago'. The status bar at the bottom indicates '16:19 08/12/2022'.

11. To unpublish the listing

[Unpublishing listing is to stop live data sharing across the different region or the different clouds]

9.1. Click on Provider Studio → Listing**9.2. Click on name of the listing which want to unpublish.****9.3. Click on live (There is a drop down Unpublish). Click on Unpublish**

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

The screenshot shows the Snowflake Provider Studio interface. On the left, a sidebar menu includes options like Worksheets, Dashboards, Data, Databases, Private Sharing, **Provider Studio** (which is selected), Marketplace, Activity, Admin, and Help & Support. A trial notice at the bottom says '10 days left in trial' with an 'Upgrade' button. The main content area displays a listing titled 'ForAzurePune Head(Product)'. It shows a world map icon with a checkmark, indicating the listing is live. Below it, a button says 'View Analytics'. To the right, there's a 'Data Product' section with a 'Secure Share' link leading to 'PIBYTHREE_AWS_SOUTH_SNOWFLAKE_SECURE_SHARE_1671020344636'. A green 'Live' button is visible in the top right corner of the main content area.

Click on **Unpublished** to stop sharing of data.

12.

The screenshot shows the 'Listings' page in the Snowflake Provider Studio. The sidebar menu is identical to the previous screen. The main content area shows a table titled '2 Listings' with columns: TITLE, STATUS, SHARED BY, SHARED WITH, TYPE, and LAST ACTION. The first listing is 'ForAzureP...' with a status of 'Unpublished', shared by 'ONRIQYC - LH24132' with user 'LM92399', and is 'Free'. The second listing is 'ForSouthE...' with a status of 'Live', shared by 'ONRIQYC - LH24132' with user 'YA54102', and is also 'Free'. A 'Listing' button is located in the top right corner of the main content area.



If Listing option will not available because of profile, Create profile using following steps

Create Profile

This information will be available to consumers to help them learn more about your company and your data.

Company Icon  Change

Company Name
Pibythree

Company Description
PibyThree is A Cloud Transformation company enabling Enterprises for Future. We are small, nimble, and Highly dynamic focussed team with a passion to serve our clients with utmost trust and ownership. Our expertise in Technology with vast experience over the years helps client get Solutions with optimized cost and reduced risks.

1-2 sentences about your business that will be visible for consumers

Consumer Contact Email
akshay.ahire@pibythree.com

For consumers to contact you with inquiries

Support Link or Email

Save Draft Cancel Next

Create Profile

Consumer Contact Email
akshay.ahire@pibythree.com

For consumers to contact you with inquiries

Support Link or Email
akshay.ahire@pibythree.com

For consumers to contact you for technical support

Privacy Link
<https://www.pibythree.com/company/contactus>

Your company's privacy terms

Emails will be sent in accordance with our [privacy notice](#) to provide you support and update you on your marketplace listings.

Business Contact Email
akshay.ahire@pibythree.com

Technical Contact Email
akshay.ahire@pibythree.com

Save Draft Cancel Next

Preview Profile



Pibythree

PibyThree is A Cloud Transformation company enabling Enterprises for Future. We are small, nimble, and Highly dynamic focussed team with a passion to serve our clients with utmost trust and ownership. Our expertise in Technology with vast experience over the years helps client get Solutions with optimized cost and reduced risks.

Consumer Contact Email
akshay.ahire@pibythree.com

Support
akshay.ahire@pibythree.com

Privacy
<https://www.pibythree.com/company/contactus>

Snowflake Contact Emails

General
akshay.ahire@pibythree.com

Technical
akshay.ahire@pibythree.com

[Back](#) [Submit for Approval](#)



Profile submitted for review

You can now start to create listings with this profile.

[Create Listing](#)

[Done](#)

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Steps to get shared data with listing:

1. Go to **Data → Provider Studio**
2. Click on Database which is shared with you

The screenshot shows the Snowflake Provider Studio interface. On the left, there's a sidebar with options like Worksheets, Dashboards, Data, Databases, Private Sharing (which is selected), Provider Studio, Marketplace, Activity, Admin, and Help & Support. Below the sidebar, it says '10 days left in trial'. In the main area, under 'Shared With You', there's a card for 'ForSouth Head(EmployeesInfo)' with the identifier 'SHBMNMD.YA54102'. It states 'shared to the south region which is having head of Employee Department'. To the right of the card is a large blue button labeled 'Get'. At the bottom of the screen, there's a Windows taskbar with various icons.

Click on Get

3. Data will be replicated after sometime

The screenshot shows the Snowflake Provider Studio interface. The sidebar and main area are similar to the previous screenshot, but the main area now displays a message: 'Data is replicating to your region. An email will be sent to pragati.atkale@pibythree.com when it has completed.' To the right of this message is a blue button labeled 'Data Replicating'. The Windows taskbar at the bottom is visible.

Wait till it shows get data option

- Click on Option to change Database name and also to access that database by using specific role (like ACCOUNTADMIN,ORGADMIN, etc.)

The screenshot shows the Snowflake Shared Data listing page. A database named "SHBMMNMD.YA54102 - ForSouth Head(EmployeesInfo)" is selected. The "Options" section displays the database name as "SOUTHEAST_2_SOUTH_EMP" and the role "ORGADMIN" assigned to it. A blue "Get" button is present at the bottom of the modal.

Click on Get

- Click on open and you can see Database in you Data option

The screenshot shows the Snowflake Shared With Me page. The database "ForSouth Head(EmployeesInfo)" is listed under the "Data" section. A modal window titled "Data is Ready to Query" is overlaid on the database entry, indicating that the database is ready for querying. The database name is shown as "SOUTHEAST_2_SOUTH_EMP".



Submitted by: Akshay Ahire & Pragati Atkale

Steps To Create Warehouse:

```

CREATE OR REPLACE WAREHOUSE LOCAL_USER_WH
--WAREHOUSE_TYPE = STANDARD | SNOWPARK-OPTIMIZED
WAREHOUSE_SIZE = XSMALL --| SMALL | MEDIUM | LARGE | XLARGE | XXLARGE | XXXLARGE | X4LARGE |
X5LARGE | X6LARGE
MAX_CLUSTER_COUNT = 5
MIN_CLUSTER_COUNT = 1
--SCALING_POLICY = STANDARD | ECONOMY
--AUTO_SUSPEND = <num> | NULL --DEFAULT: 600 the warehouse suspends automatically after 10
minutes of inactivity
AUTO_RESUME = TRUE --| FALSE
--INITIALLY_SUSPENDED = TRUE | FALSE
--RESOURCE_MONITOR = <monitor_name>
-- COMMENT = '<string_literal>'
-- ENABLE_QUERY_ACCELERATION = TRUE | FALSE
-- QUERY_ACCELERATION_MAX_SCALE_FACTOR = <num>

```

The screenshot shows the Snowflake web interface. In the top navigation bar, there are several tabs: DailyStat, Drafts, Chetana, Python F, Occupat, Query at, perform, create W, CREATE, and Snowfla. Below the tabs, the URL is app.snowflake.com/central-india.azure/oq39631/woSWxjsnz3#query. The page title is "create Warehouse". On the left sidebar, under "Worksheets", there is a list of worksheets including "Clean Room", "Benchmarking Tutorials", and "create Warehouse" (which is currently selected). Under "Databases", there is a note "No Database selected". The main content area shows the SQL code for creating the warehouse:

```

CREATE OR REPLACE WAREHOUSE LOCAL_USER_WH
--WAREHOUSE_TYPE = STANDARD | SNOWPARK-OPTIMIZED
WAREHOUSE_SIZE = XSMALL --| SMALL | MEDIUM | LARGE | XLARGE | XXLARGE | XXXLARGE | X4LARGE |
X5LARGE | X6LARGE
MAX_CLUSTER_COUNT = 5
MIN_CLUSTER_COUNT = 1
--SCALING_POLICY = STANDARD | ECONOMY
--AUTO_SUSPEND = <num> | NULL --DEFAULT: 600 the warehouse suspends automatically after 10
minutes of inactivity
AUTO_RESUME = TRUE --| FALSE
--INITIALLY_SUSPENDED = TRUE | FALSE
--RESOURCE_MONITOR = <monitor_name>
-- COMMENT = '<string_literal>'
-- ENABLE_QUERY_ACCELERATION = TRUE | FALSE
-- QUERY_ACCELERATION_MAX_SCALE_FACTOR = <num>

```

Below the code, there are tabs for "Objects", "Editor", "Results" (which is selected), and "Chart". The results pane shows the message: "Warehouse LOCAL_USER_WH successfully created." The status bar at the bottom right indicates the query duration is 141ms and the status is 100% filled.

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

The screenshot shows the Snowflake web interface with the following details:

Warehouse Details:

Status	Size	Max Clusters
Started	X-Small	5
Min Clusters	Scaling Policy	Running
1	STANDARD	0
Queued	Auto Suspend	Auto Resume
0	600 seconds	Enabled
Resumed On	Query Acceleration	Scale Factor
5 minutes ago	Disabled	8

Privileges:

- Group by Role
- + Privilege
- ACCOUNTADMIN (Current Role)
- OWNERSHIP

System Information:

- Type here to search
- Windows taskbar icons: File Explorer, Google Chrome, Task View, Microsoft Edge, File Explorer, Microsoft Word, Microsoft Excel.
- System tray: Battery, Network, Volume, ENG, 10:19, 30/12/2022, 8 notifications.

Steps To Create User :

1. Login as ACCOUNTADMIN
2. Click on Admin → Users & Roles

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Users & Roles

5 Users

NAME ↑	DISPLAY NAME	STATUS	LAST LOGIN	MFA	OWNER
LHR_S_MUMBAI	—	● Enabled	2 hours ago	No	ACCOUNTAD...
LRMG_S_MUMBAI	—	● Enabled	—	No	ACCOUNTAD...
LSALES_S_MUMBAI	—	● Enabled	2 hours ago	No	ACCOUNTAD...
PRAGATIATKALE	PRAGATIATKALE	● Enabled	1 hour ago	No	ACCOUNTAD...
SNOWFLAKE	SNOWFLAKE	● Expired	—	No	—

3. Click on + User at Top-Right corner

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

New User

User Name: LHR_S_MUMBAI

Email: pragati.atkale@pibythree.com

Comment (optional):

Force user to change password on first time login

Create User

4. Click on **Edit User** to provide default warehouse and provide other details.

Edit User

LHR_S_MUMBAI as ACCOUNTADMIN

Comment (optional):

Advanced User Options

Login Name: LHR_S_MUMBAI

Display Name: CHETANA WAGH

First Name: CHETANA

Last Name: WAGH

Default Role: LOCAL_HR

Default Warehouse: LHR_S_MUMBAI_WH

Save User

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

5. Here we can provide default warehouse which we created for that particular user and click on **save user**

LHR_S_MUMBAI as ACCOUNTADMIN
pragati.atkale@pibythree.com

Comment (optional)

Advanced User Options

Login Name	Display Name
LHR_S_MUMBAI	
First Name	Last Name
CHETANA	WAGH
Default Role	
LOCAL_HR	Default Warehouse
LHR_S_MUMBAI_WH	

Cancel Save User

Steps To Create Role Under ORGADMIN Role:

1. Login as ACCOUNTADMIN
2. Click on **Admin → Users & Roles**

NAME	DISPLAY NAME	STATUS	LAST LOGIN	MFA	OWNER
LHR_S_MUMBAI	—	Enabled	2 hours ago	No	ACCOUNTADMIN
LRMG_S_MUMBAI	—	Enabled	—	No	ACCOUNTADMIN
LSALES_S_MUMBAI	—	Enabled	2 hours ago	No	ACCOUNTADMIN
PRAGATIATKALE	PRAGATIATKALE	Enabled	1 hour ago	No	ACCOUNTADMIN
SNOWFLAKE	SNOWFLAKE	Expired	—	No	—

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

3. Click on Roles → ORGADMIN

The screenshot shows the Snowflake UI with the 'Roles' tab selected. The left sidebar shows the user 'Pragati Atkale' with the role 'ACCOUNTADMIN'. The main area displays a list of roles: ACCOUNTADMIN, LOCALHR, LOCALRMG, ORGADMIN (selected), PUBLIC, SECURITYADMIN, SNOWFLAKE\$GDS_RL, SYSADMIN, and USERADMIN. A tooltip for the PUBLIC role is shown, stating: 'Role PUBLIC Public role is automatically available to every user in the account. Owned by SNOWFLAKE Created 3 weeks ago Granted 0 roles Granted to 0 roles All users'. Below the tooltip, a note says: 'Based on the currently focused role, this role is not visible in the graph'. The right side of the screen shows the 'Details' panel for the ORGADMIN role, which has 1 user.

4. Click on + Role

Insert the name which you want to provide to the role.

The screenshot shows the 'New Role' dialog box open in the center of the screen. The 'Name' field is empty. The 'Grant to role (optional)' dropdown is set to 'Select a role'. There is a note below it: 'Inherits any privilege granted to the new role'. The 'Comment (optional)' field is empty. At the bottom right of the dialog box are 'Cancel' and 'Create Role' buttons. The background shows the same Snowflake interface as the previous screenshot, with the 'ORGADMIN' role selected in the list.

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

5. Select role from dropdown list in which you're going to create new role And click on Create Role

The screenshot shows the Snowflake web interface. On the left, a sidebar menu is open with 'PA Pragati Atkale ACCOUNTADMIN' at the top. Under 'Users & Roles', 'Users & Roles' is selected. In the main area, a 'New Role' dialog box is open, titled 'New Role'. It says 'Creating as PA ACCOUNTADMIN'. The 'Name' field contains 'LocalSales'. The 'Grant to role (optional)' dropdown is set to 'ORGADMIN'. A note below it says 'Inherits any privilege granted to the new role'. There is a 'Comment (optional)' field with no input. At the bottom right of the dialog are 'Cancel' and 'Create Role' buttons. To the right of the dialog, a card for the 'ORGADMIN' role is visible, showing details like 'ORGADMIN', 'Organization administrator can manage organizations and accounts in organizations', 'Created 3 weeks ago', and 'Granted roles 2'. Below the card is a 'Manage Grants' button. The bottom of the screen shows a Windows taskbar with various icons.

6. Roles are created under ORGADMIN

The screenshot shows the same Snowflake interface. The 'ORGADMIN' role is now selected in the 'Roles' list. A context menu is open over the 'ORGADMIN' role entry. The menu options are: 'Focus on role', 'View detail page', 'Grant', 'Revoke', 'Manage global privileges', 'Edit role', and 'Drop role'. The 'Details' panel on the right shows the same information for the 'ORGADMIN' role as before. The bottom of the screen shows a Windows taskbar with various icons.

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

7. Next, Provide Grants to the role

7.1. Right click on **role_name** → Grant→ Grant to user

The screenshot shows the Snowflake web interface with the URL <https://app.snowflake.com/ap-south-1.aws/em34827/#account/roles/graph>. On the left sidebar, 'Users & Roles' is selected. In the main area, the 'Graph' tab is active, showing a list of roles: ACCOUNTADMIN, LOCALHR, LOCALRMG, LOCALSALES, PUBLIC, SECURITYADMIN, SNOWFLAKE\$GDS_RL, and SYSADMIN. The 'ORGADMIN' role is currently selected. A context menu is open over the 'ORGADMIN' role, with the 'Grant' option highlighted. The 'Grant to user' option is also highlighted within the 'Grant' submenu. To the right, there is a 'Details' panel for the 'ORGADMIN' role, which includes information about its permissions and a 'Granted roles' section.

7.2. Select the user which was created for the role respectively.

And click on **grant**.

The screenshot shows the 'Grant Role to User' dialog box. The 'Role to grant' field is set to 'LOCALHR' and the 'User to receive grant' field is set to 'LHR_S_MUMBAI'. The 'Grant' button is visible at the bottom right of the dialog. The background shows the same Snowflake interface as the previous screenshot, with the 'ORGADMIN' role selected and the 'Details' panel visible.

7.3. All the users are grant to the roles

The screenshot shows the Snowflake Roles Graph interface. On the left, a sidebar menu for user 'Pragati Atkale' (ACCOUNTADMIN) includes options like Worksheets, Dashboards, Data, Marketplace, Activity, Admin, Usage, Warehouses, Resource Monitors, and 'Users & Roles' (which is selected). Below this are Security, Billing & Terms, Contacts, Accounts, and Partner Connect. A 'Help & Support' section is at the bottom.

The main area displays a graph titled 'Users & Roles'. It has two tabs: 'Graph' (selected) and 'Table'. A search bar for 'Search roles' is present. A 'Focused Role' dropdown is set to 'ORGADMIN'. The graph shows the following hierarchy:

```

graph TD
    ACCOUNTADMIN[ACCOUNTADMIN] --> GLOBAL[GLOBAL]
    ACCOUNTADMIN --> LOCALHR[LOCAL HR]
    ACCOUNTADMIN --> LOCALRMG[LOCAL RMG]
    ACCOUNTADMIN --> LOCALSALES[LOCAL SALES]
    GLOBAL --> ORGADMIN[ORGADMIN]
    LOCALHR --> ORGADMIN
    LOCALRMG --> ORGADMIN
    LOCALSALES --> ORGADMIN
  
```

The 'Details' panel for 'ORGADMIN' shows it was created 3 weeks ago by SNOWFLAKE. It lists 'Granted roles' (2), 'Granted to roles' (1), and 'Granted to users' (1). A 'Manage Grants' button is available.

8. To Provide Privileges to the Database → Schema → Table for the new created role

8.1. Go to Data → Databases → DatabaseName → Schema → Table

And click on + privileges Select Role which is created for that database object

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

The screenshot shows the Snowflake web interface. On the left, there's a sidebar with navigation links such as Worksheets, Dashboards, Data, Databases (which is currently selected), Activity, Admin, Help & Support, and an Upgrade button. The main area displays a database named 'PIBYTHREE_AWS_S_MUMBAI / HEAD / EMPLOYEES_HR'. A modal window titled 'Grant new privileges on' is open, showing the table 'EMPLOYEES_HR' and the role 'LOCALHR' selected. A dropdown menu lists other roles. At the bottom of the modal, there's a 'Grant Privileges' button.

8.2. Select privileges as per requirement and click on grant privileges

This screenshot is similar to the previous one but focuses on selecting privileges. The 'Select privileges' dropdown is open, showing options like 'SELECT', 'INSERT', 'UPDATE', etc. Each privilege has a checkbox next to it and a 'Remove' button. The 'Grant Privileges' button at the bottom of the modal is highlighted.

8.3. All Grants to the table

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

PIBYTHREE_AWS_S_MUMBAI / HEAD / SALES

Privileges granted

Table Details Columns Data Preview Copy History

Privileges

Role	Privileges
ACCOUNTADMIN (Current Role)	OWNER OWNERSHIP DELETE INSERT REBUILD REFERENCES SELECT TRUNCATE UPDATE
LOCALSALES	INSERT SELECT UPDATE
ORGADMIN	DELETE INSERT REBUILD REFERENCES SELECT TRUNCATE UPDATE

9.To access that table with logging as that created user with role

9.1. Log In with Username and Password of the new created user

9.2. Click on **Data→Databases→Schema→Tables→Data Preview**

PIBYTHREE_AWS_S_MUMBAI / HEAD / SALES

Data Preview

LHR_S_MUMBAI_WH | 19 Rows • Updated just now

ORDERID	CUSTOMERNAME	CATEGORY	CITY	ORDERDATE
1	OD1	Harish	CPU	Vellore
2	OD2	Sudha	Video Card	Krishnagiri
3	OD3	Hussain	RAM	Perambalur
4	OD4	Jackson	Mother Board	Dharmapuri
5	OD5	Ridhesh	CPU	Ooty
6	OD6	Adavan	CPU	Dharmapuri
7	OD7	Jonas	Video Card	Trichy
8	OD8	Hafiz	Storage	Ramanadhapuram
9	OD9	Hafiz	Mother Board	Tirunelveli
10	OD10	Krithika	Storage	Chennai
11	OD11	Ganesh	CPU	Karur
12	OD12	Yadav	Video Card	Namakkal



There is another way to create user and role using script:

1. To Create User:

```
use role ACCOUNTADMIN;

CREATE OR REPLACE USER TuhsarKale
PASSWORD = 'Pass@123'
LOGIN_NAME = TusharKale12 --Login names for users must be unique across your entire account.
DISPLAY_NAME = TuhsarKale
FIRST_NAME = Tushar
LAST_NAME = Kale
EMAIL = 'atkalepragati@gmail.com'
--MUST_CHANGE_PASSWORD = TRUE | FALSE
--DISABLED = TRUE | FALSE
DAYS_TO_EXPIRY = 10
--MINS_TO_UNLOCK = <integer>
DEFAULT_WAREHOUSE = COMPUTE_WH
--DEFAULT_NAMESPACE = <string>
--DEFAULT_ROLE =
--DEFAULT_SECONDARY_ROLES = ( 'ALL' )
--MINS_TO_BYPASS_MFA = <integer>
--RSA_PUBLIC_KEY = <string>
--RSA_PUBLIC_KEY_2 = <string>;
```

[“--” shows the comments]

Here in the query

1. Objective properties are mentioned we also can provide
2. Objective parameter as NETWORK_POLICY=<string> for Specifies an existing network policy is active for the user
3. Session parameters: to change behaviour of the current session.



POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

45

The screenshot shows a Snowflake Worksheet interface. The left sidebar lists various objects and their creation times, with 'create user' highlighted. The main area displays a log of user creation commands and their results. A status message indicates success: 'User TUHSARKALE successfully created.' The right panel shows 'Query Details' with a duration of 225ms and 1 row processed.

```

1 CREATE OR REPLACE USER Tuhsarkale
2   PASSWORD = 'Pass@123'
3   LOGIN_NAME = Tusharkale12 --Login names for users must be unique across your entire account.
4   DISPLAY_NAME = Tuhsarkale
5   FIRST_NAME = Tushar
6   LAST_NAME = KALE

```

status	
1	User TUHSARKALE successfully created.

Query Details

- Query duration: 225ms
- Rows: 1
- status: 100% filled

The screenshot shows the 'Users' page in the Snowflake account interface. The left sidebar has 'Users & Roles' selected. The main area displays a table of users with columns: NAME, DISPLAY NAME, STATUS, LAST LOGIN, MFA, and OWNER. The table includes rows for ABC, HIMANSHU SHAH, LHR_CENTRAL_INDIA_P..., LRMG_CENTRAL_INDIA_P..., LSALES_CENTRAL_INDIA..., SAURABH SATPUTE, SNOWFLAKE, and TUHSARKALE.

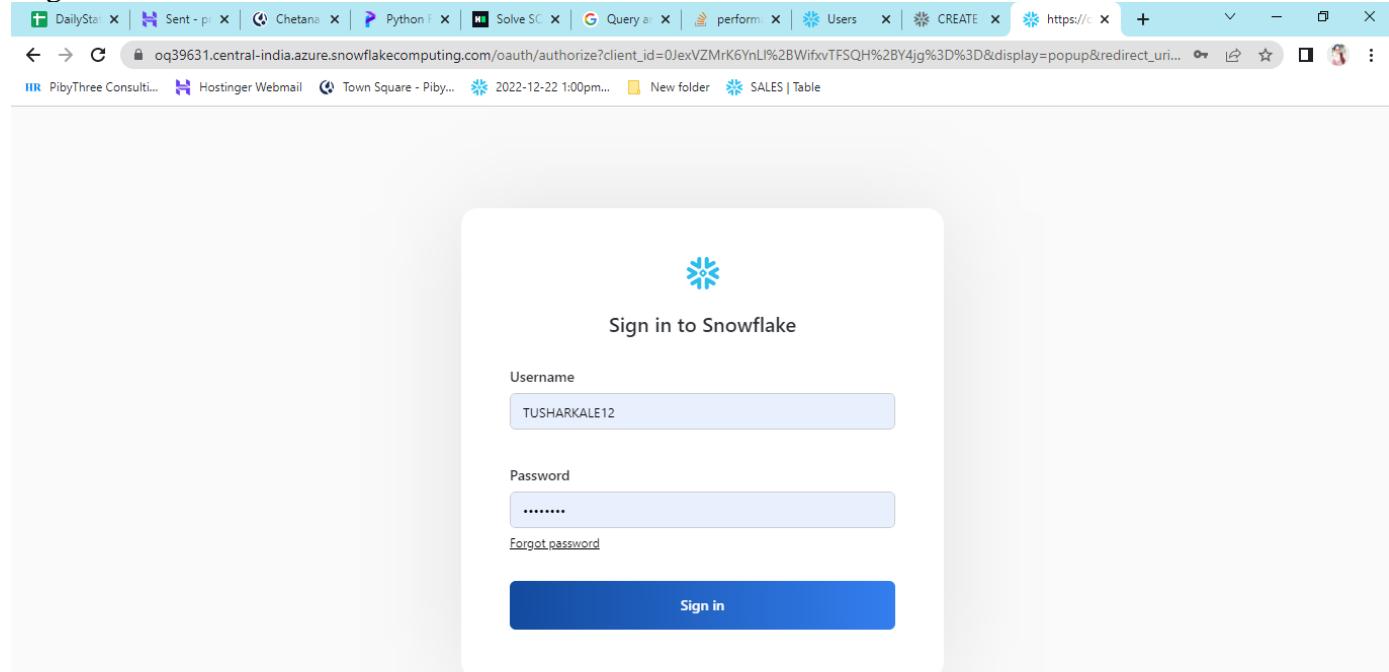
NAME	DISPLAY NAME	STATUS	LAST LOGIN	MFA	OWNER
ABC	ABC	Enabled	—	No	ACCOUNTADMIN
HIMANSHU SHAH	HimashuShah	Enabled	1 day ago	No	ACCOUNTADMIN
LHR_CENTRAL_INDIA_P...	—	Enabled	1 day ago	No	ACCOUNTADMIN
LRMG_CENTRAL_INDIA_P...	—	Enabled	1 day ago	No	ACCOUNTADMIN
LSALES_CENTRAL_INDIA...	—	Enabled	36 minutes ago	No	ACCOUNTADMIN
SAURABH SATPUTE	ACCOUNT2	Enabled	4 minutes ago	No	ACCOUNTADMIN
SNOWFLAKE	SNOWFLAKE	Expired	—	No	—
TUHSARKALE	TUHSARKALE	Temporary	—	No	ACCOUNTADMIN

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Log in with that user



TK TUSHAR KALE PUBLIC

Worksheets

Profile

⚠ Please check your inbox to verify your email. [Resend verification email](#)

Profile photo	TK	Upload
Username	TUHSARKALE	
First Name	TUSHAR	
Last Name	KALE	
Password	*****	
Email	atkalepragati@gmail.com	

Close **Save**

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

2. To Create Role:

```
CREATE OR REPLACE ROLE LOCAL_USER;
```

Note: Here LOCAL_USER is the role name.

The screenshot shows the Snowflake UI interface. In the top navigation bar, there are several tabs like DailyS, Drafts, Chetan, Python, Occup, Query, perform, create, GRAN, Works, Snowf, and a plus sign. Below the tabs, it shows the URL app.snowflake.com/central-india.azure/oq39631/w4rfCqZX8ZJQ#query, the date 2022-12-22 1:00pm..., and a New folder button. On the right, there's an ACCOUNTADMIN user icon, a 'No Warehouse selected' message, a Share button, and a timestamp 'Updated 4 seconds ago'.

In the main workspace, there's a sidebar on the left with 'Worksheets' selected. It lists 'Clean Room' (containing Java Store Procedure and 2022-11-30 10:03pm), 'Benchmarking Tutorials', and a 'create role' entry which is currently selected. Other entries include 'create user', 'validation', 'status', '2022-12-26 5:08pm', '2022-12-24 10:54pm', '2022-12-16 11:57am', '2022-12-15 11:54am', '2022-12-14 4:34pm', and 'MGR HEAD worksheet'.

The central area has tabs for Objects, Editor, Results, and Chart. The Results tab is active, showing a status message: 'Role LOCAL_USER successfully created.' Below this, there's a chart section and a 'Query Details' panel on the right showing a duration of 66ms and 1 row processed.

The bottom of the screen shows a Windows taskbar with various icons and a search bar.

This screenshot shows the 'Roles' page in the Snowflake UI. The top navigation bar and sidebar are identical to the previous screenshot. The main area displays a 'Users Roles' section with a 'Graph' tab selected. It shows a list of roles: LOCAL_SALES, LOCAL_USER (which is highlighted with a blue box), ORGADMIN, PUBLIC, SECURITYADMIN, SNOWFLAKE\$GDS_RL, SYSADMIN, and USERADMIN. To the right, there's a 'Details' panel for the LOCAL_USER role, showing it's assigned to the ACCOUNTADMIN user and was created just now. It also shows 'Granted roles' and 'Granted to users' counts of 0. A 'Manage Grants' button is available.

The bottom of the screen shows a Windows taskbar.

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

6. RESULT :

South Mumbai Region (Local Users):

The screenshot shows the Snowflake Data Preview interface. The left sidebar shows the user profile (CHETANA WAGH, LOCAL_HR) and navigation links for Worksheets, Dashboards, Data, Databases (selected), Marketplace, Activity, Admin, Help & Support. A trial reminder says "7 days left in trial". The main area displays the PIBYTHREE_AWS_S_MUMBAI database structure under HEAD, specifically the EMPLOYEES_HR table. The table has 4 rows updated just now. The columns are EMPLOYEE_NAME, EMPID, DEPTID, SALARY, POSITIONID, and POSITION. The data is as follows:

	EMPLOYEE_NAME	EMPID	DEPTID	SALARY	POSITIONID	POSITION
1	Pragati Atkale	1012	2	20000	6	Data Engineer
2	AISHWARYA KOTA	1007	2	15000	6	Data Engineer
3	Shweta Magar	1011	2	15000	6	Data Engineer
4	Nilesh Deshmukh	1002	2	35000	6	Data Engineer

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Screenshot of the Snowflake Data Mesh interface showing two databases: RMG_PRODUCT and SALES.

RMG_PRODUCT Table Data Preview:

PRODUCT_ID	PRODUCT_NAME	DESCRIPTION
1	4	AMD 100-505989 Chipset:FirePro W9100 Memory:32GBCore Clock:930MHz
2	48	AMD FirePro S7000 Chipset:FirePro S7000 Memory:4GBCore Clock:950MHz
3	142	AMD FirePro W9100 Chipset:FirePro W9100 Memory:16GBCore Clock:930MHz
4	136	AMD Opteron 6378 Speed:2.4GHz Cores:16 TDP:115W
5	134	Asus Sabertooth 990FX CPU:AM3+ Form Factor:ATX RAM Slots:4 Max RAM:32GB
6	181	ATI FirePro R5000 Chipset:FirePro R5000 Memory:2GBCore Clock:825MHz
7	245	ATI FirePro S9050 Chipset:FirePro S9050 Memory:12GBCore Clock:900MHz
8	123	ATI FirePro S9150 Chipset:FirePro S9150 Memory:16GBCore Clock:900MHz
9	110	ATI FirePro W9000 Chipset:FirePro W9000 Memory:6GBCore Clock:975MHz
10	001	MOBILE RAM:4GB Color:Black
11	002	AMD Opteron 6000 Speed:2.4GHz Cores:16 TDP:115W

SALES Table Data Preview:

ORDERID	CUSTOMERNAME	CATEGORY	CITY	ORDERDATE
OD1	Harish	CPU	Vellore	11/08/2017
OD2	Sudha	Video Card	Krishnagiri	11/08/2017
OD3	Hussain	RAM	Perambalur	06/12/2017
OD4	Jackson	Mother Board	Dharmapuri	10/11/2016
OD5	Ridhesh	CPU	Ooty	10/11/2016
OD6	Adavan	CPU	Dharmapuri	06/09/2015
OD7	Jonas	Video Card	Trichy	06/09/2015
OD8	Hafiz	Storage	Ramanadhapuram	06/09/2015
OD9	Hafiz	Mother Board	Tirunelveli	06/09/2015
OD10	Krithika	Storage	Chennai	06/09/2015
OD11	Ganesh	CPU	Karur	06/09/2015



Submitted by: Akshay Ahire & Pragati Atkale

No privileges to other users :

The screenshot shows a Snowflake session window with multiple tabs open. The active tab is titled 'SALES | Table'. A query is being run:

```
1  SELECT * FROM PIBYTHREE_AWS_S_MUMBAI.HEAD.RMG_PRODUCT;
```

The results pane shows a table named 'EMPLOYEES_HR' with 4 rows. The schema for the table is:

EMPLOYEE_NAME	VARCHAR(50)
Aa EMPID	VARCHAR(50)
Aa DEPTID	VARCHAR(50)
Aa SALARY	VARCHAR(50)
Aa POSITIONID	VARCHAR(50)
Aa POSITION	VARCHAR(30)
Aa DOB	VARCHAR(30)
Aa DATEOFSHIRE	VARCHAR(30)
Aa DEPARTMENT	VARCHAR(30)
Aa MANAGERNAME	VARCHAR(30)

An error message is displayed in the results pane:

⚠️ Unable to use database "PIBYTHREE_AWS_SOUTH": 002043 (02000): SQL compilation error:
Object does not exist, or operation cannot be performed.

The system status bar at the bottom indicates the following information:

- 22°C Haze
- Search icon
- File icon
- Folder icon
- Power icon
- Network icon
- Battery icon
- ENG IN
- 10:14 AM
- 26-12-2022

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

The screenshot shows the Snowflake web interface with multiple tabs open. The active tab is titled '2022-12-22 1:00pm - Snowflake'. In the sidebar, under the 'Databases' tab, there is a pinned object named 'PIBYTHREE_AWS_S_MUMBAI'. A dropdown menu for this database is open, showing options like 'HEAD', 'SNOWFLAKE', 'SNOWFLAKE\$GDS', and 'SNOWFLAKE_SAMPLE_DATA'. The main area displays a SQL query:

```
1 | SELECT * FROM PIBYTHREE_AWS_S_MUMBAI.HEAD.Sales
```

The results pane shows a single row with a warning icon and the message '002003 (42S02): SQL compilation error: Object 'PIBYTHREE_AWS_S_MUMBAI.HEAD.SALES' does not exist or not authorized.' The 'Query Details' panel indicates a duration of 29ms and 0 rows.

This screenshot shows the same setup as the previous one, but with a different database selected. The active tab is now '2022-12-23 12:42pm - Snowflake'. The sidebar shows a pinned object 'SALES'. A dropdown menu for this database is open, showing 'HEAD' and 'SALES'. Under 'SALES', the 'Tables' section is expanded, and 'SALES' is selected. The main area displays a SQL query:

```
1 | SELECT * from PIBYTHREE_AWS_S_MUMBAI.HEAD.SRMG_PRODUCT;
```

The results pane shows a single row with a warning icon and the message '002003 (42S02): SQL compilation error: Object 'PIBYTHREE_AWS_S_MUMBAI.HEAD.SRMG_PRODUCT' does not exist or not authorized.' The 'Query Details' panel indicates a duration of 23ms and 0 rows.

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

SouthEast Singapore Region (Local Users):

The screenshot shows the Snowflake web interface. On the left, a sidebar for user 'Alexis Tan' (LOCAL_SALES) lists options like Worksheets, Dashboards, Data, Databases (selected), Private Sharing, Provider Studio, Marketplace, Activity, Admin, Help & Support, and a trial reminder. The main area shows the database structure under 'PIBYTHREE_AWS_SE_SINGAPORE / HEAD / SALES'. The 'Tables' section is expanded, showing the 'SALES' table selected. Below it are other table types: Views, Stages, Pipes, Streams, Tasks, Functions, Procedures, INFORMATION_SCHEMA, SNOWFLAKE, and SNOWFLAKE\$GDS. A preview of the 'SALES' table is displayed, showing 9 rows updated just now. The table has columns: ORDERID, CUSTOMERNAME, CATEGORY, CITY, and ORDERDATE. The data is as follows:

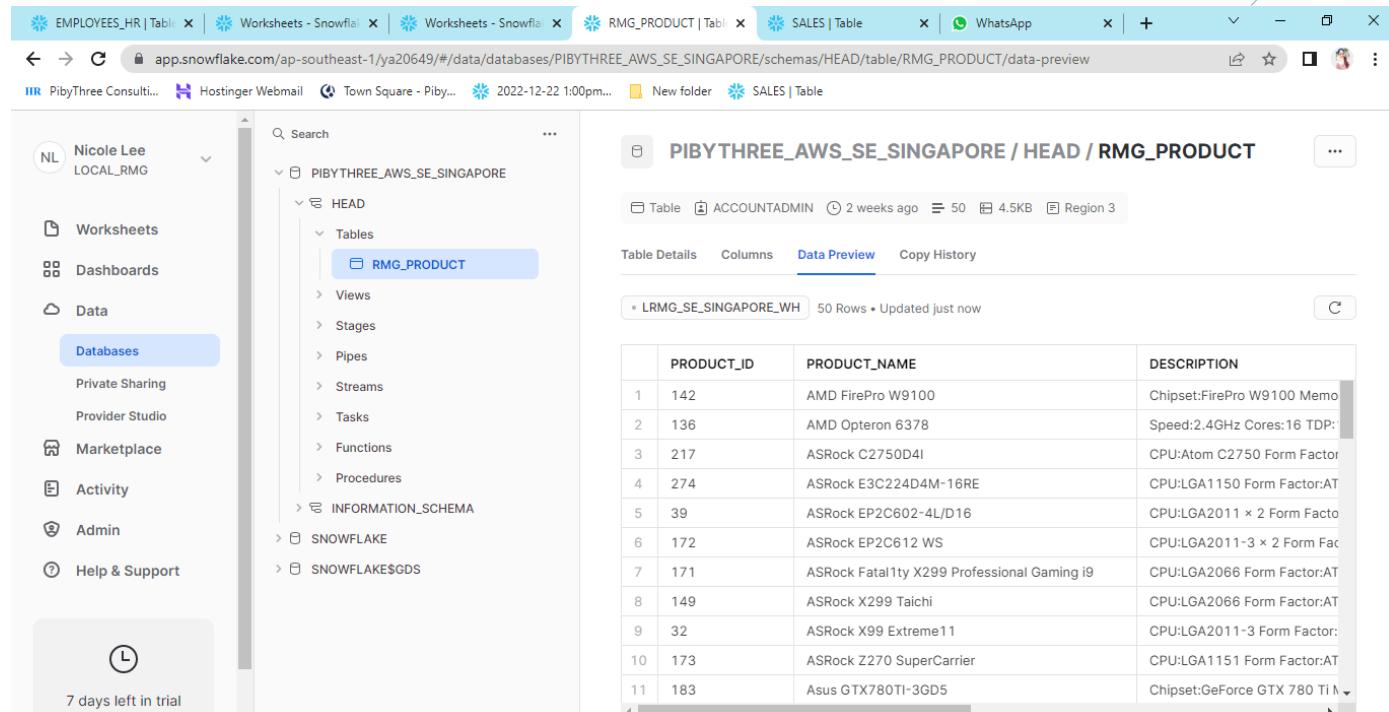
ORDERID	CUSTOMERNAME	CATEGORY	CITY	ORDERDATE
OD1	Harish	CPU	Vellore	11/08/2017
OD2	Hafiz	Storage	Ramanadhapuram	06/09/2015
OD3	Hafiz	Mother Board	Tirunelveli	06/09/2015
OD4	Krithika	Storage	Chennai	06/09/2015
OD5	Ganesh	CPU	Karur	06/09/2015
OD6	Ramesh	CPU	Krishnagiri	11/22/2016
OD7	Alan	Video Card	Dharmapuri	11/11/2015
OD8	Arutra	RAM	Bodi	5/13/2015
OD9	Haseena	Mother Board	Tenkasi	8/27/2015

The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray.

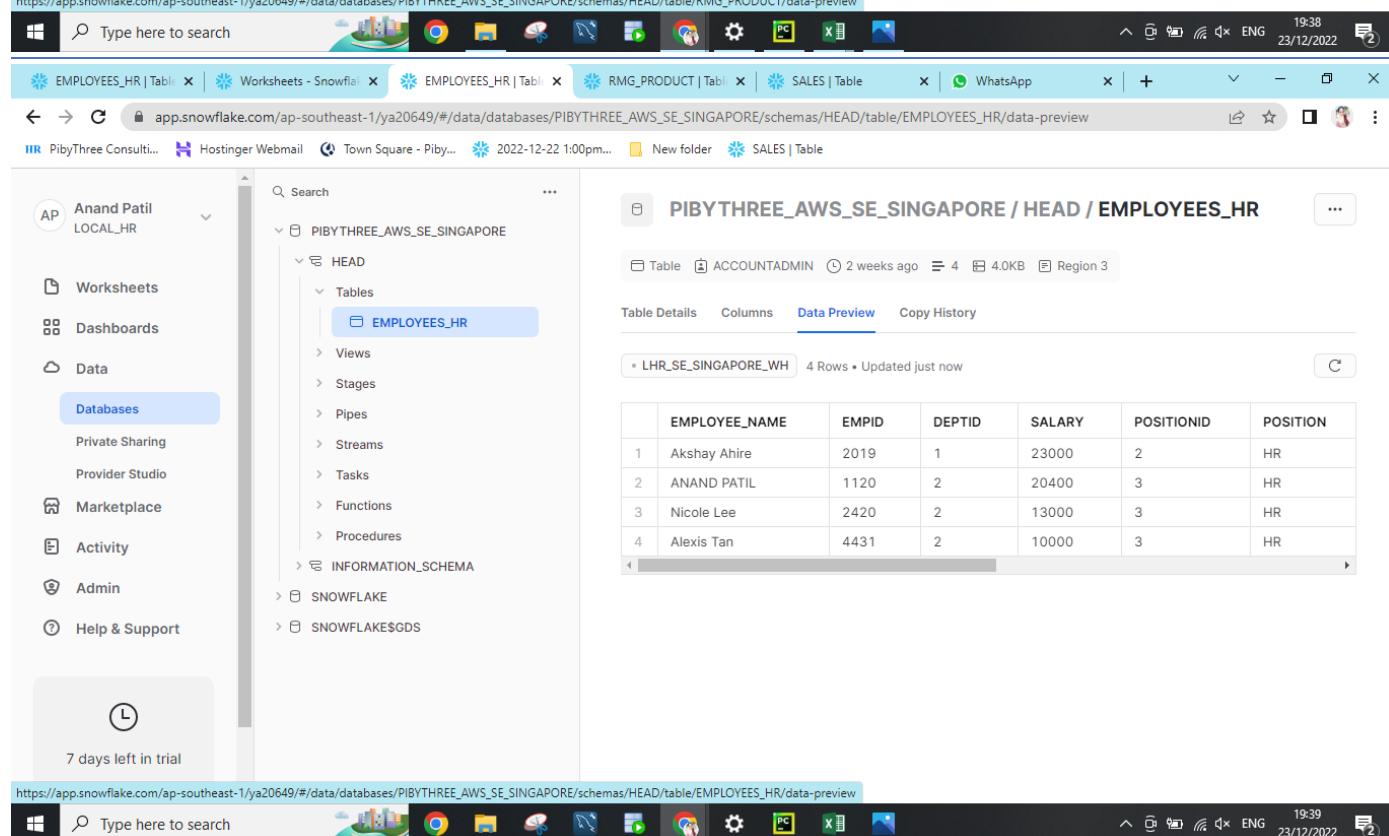
POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale



The screenshot shows the Snowflake Data Mesh interface. On the left, the navigation sidebar is open for user Nicole Lee (LOCAL_RMG), showing options like Worksheets, Dashboards, Data, Databases (selected), Private Sharing, Provider Studio, Marketplace, Activity, Admin, and Help & Support. A trial reminder "7 days left in trial" is visible. The main content area displays the "PIBYTHREE_AWS_SE_SINGAPORE / HEAD / RMG_PRODUCT" table. The table has 50 rows and was updated just now. The columns are PRODUCT_ID, PRODUCT_NAME, and DESCRIPTION. The data includes various computer components like AMD FirePro W9100, ASRock C2750D4I, and Asus GTX780TI-3GD5.



The screenshot shows the Snowflake Data Mesh interface. On the left, the navigation sidebar is open for user Anand Patil (LOCAL_HR), showing the same set of options as the previous screenshot. The main content area displays the "PIBYTHREE_AWS_SE_SINGAPORE / HEAD / EMPLOYEES_HR" table. The table has 4 rows and was updated just now. The columns are EMPLOYEE_NAME, EMPID, DEPTID, SALARY, POSITIONID, and POSITION. The data includes employees like Akshay Ahire, ANAND PATIL, Nicole Lee, and Alexis Tan.

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

No privileges to other users :

The screenshot shows a browser window with multiple tabs open, including WhatsApp, HR - Snowflake, and several Snowflake-related pages. The main focus is on the 'HR - Snowflake' tab, which displays a query editor.

Query Editor Content:

```

1   INSERT INTO PIBYTHREE_AWS_SE_SINGAPORE.HEAD.EMPLOYEES_HR
2   (EMPLOYEE_NAME,EMPID,DEPTID,SALARY,POSITIONID,POSITION,DOB,DATEOFSHIRE,DEPARTMENT,MANAGERNAME,MANAGERID)
3   VALUES('XYZ','2028','2','21000','2','Data Engineer','1/6/2002','15/12/2022','Database','ANAND PATIL','2019');
4
5   select * from PIBYTHREE_AWS_SE_SINGAPORE.HEAD.RMG_PRODUCT;
  
```

Results Panel:

Object 'PIBYTHREE_AWS_SE_SINGAPORE.HEAD.RMG_PRODUCT' does not exist or not authorized.

Query Details:

- Query duration: 28ms
- Rows: 0

System Status Bar:

22°C Haze ENG IN 10:23 AM 26-12-2022

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Screenshot of a Snowflake browser interface showing a query error.

The screenshot shows a browser window with multiple tabs open. The active tab is a Snowflake session titled "HR - Snowflake". The URL is <https://app.snowflake.com/ap-southeast-1/ya20649/w4xTVE0cIDz6#query>. The session was last updated "2022-12-26 10:23am".

The query entered is:

```
1 | select * from PIBYTHREE_AWS_SE_SINGAPORE.HEAD.RMG_PRODUCT;
```

An error message is displayed:

⚠️

Unable to use database "PIBYTHREE_AWS_SOUTHEAST": 002043 (02000): SQL compilation error:
Object does not exist, or operation cannot be performed.

Databases tab selected in the sidebar.

Screenshot of a Snowflake browser interface showing a query error.

The screenshot shows a browser window with multiple tabs open. The active tab is a Snowflake session titled "HR - Snowflake". The URL is <https://app.snowflake.com/ap-southeast-1/ya20649/w3CIMxlsOTH1#query>. The session was last updated "2022-12-26 10:23am".

The query entered is:

```
1 | select * from PIBYTHREE_AWS_SE_SINGAPORE.HEAD.SALES;
```

An error message is displayed:

⚠️

002003 (42S02): SQL compilation error:
Object 'PIBYTHREE_AWS_SE_SINGAPORE.HEAD.SALES' does not exist or not authorized.

Databases tab selected in the sidebar.

Query Details panel on the right shows:

- Query duration: 34ms
- Rows: 0

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Azure Pune Region (Local Users):

Screenshot of the Snowflake Data Preview interface for the RMG_PRODUCT table in the PIBYTHREE_AZURE_PUNE database.

Table Details: RMG_PRODUCT | Table | 35 Rows | Updated just now

Columns:

	PRODUCT_ID	PRODUCT_NAME	DESCRIPTION
1	161	AMD 100-5056062	Chipset:Vega Frontier Edition Liquid Memory:16GBCore Clock:930MHz
2	4	AMD 100-505989	Chipset:FirePro W9100 Memory:32GBCore Clock:930MHz
3	184	AMD 100-506061	Chipset:Vega Frontier Edition Memory:16GBCore Clock:930MHz
4	48	AMD FirePro S7000	Chipset:FirePro S7000 Memory:4GBCore Clock:950MHz
5	142	AMD FirePro W9100	Chipset:FirePro W9100 Memory:16GBCore Clock:930MHz
6	136	AMD Opteron 6378	Speed:2.4GHz Cores:16 TDP:115W
7	145	Asus VANGUARD B85	CPU:LGA1150 Form Factor:Micro ATX RAM Slots:4 Max R
8	170	Asus X99-DELUXE II	CPU:LGA2011-3 Form Factor:ATX RAM Slots:8 Max R
9	84	Asus X99-DELUXE/U3.1	CPU:LGA2011-3 Form Factor:ATX RAM Slots:8 Max R
10	143	Asus Z10PE-D16	CPU:LGA2011-3 Narrow x 2 Form Factor:SSI EEB RAM
11	137	Asus Z10PE-D16 WS	CPU:LGA2011-3 x 2 Form Factor:SSI EEB RAM Slots:8 Max R

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Screenshot of the Snowflake Data Mesh interface showing two databases: LOCAL_SALES and LOCAL_HR.

LOCAL_SALES Database:

- PIBYTHREE_AZURE_PUNE Schema:**
 - HEAD Table:** SALES (selected)
 - Views, Stages, Pipes, Streams, Tasks, Functions, Procedures
 - INFORMATION_SCHEMA
 - SNOWFLAKE, SNOWFLAKE\$GDS, SNOWFLAKE_SAMPLE_DATA

Data Preview for SALES Table:

ORDERID	CUSTOMERNAME	CATEGORY	CITY	ORDERDATE	REGION
1	OD1	Harish	CPU	Vellore	11/08/2017
2	OD2	Sudha	Video Card	Krishnagiri	11/08/2017
3	OD3	Hussain	RAM	Perambalur	06/12/2017
4	OD4	Jackson	Mother Board	Dharmapuri	10/11/2016
5	OD5	Yadav	Video Card	Namakkal	06/09/2015
6	OD6	Sharon	RAM	Dindigul	4/15/2018
7	OD7	Peer	CPU	Kanyakumari	12/05/2017
8	OD8	Sundar	Video Card	Kanyakumari	11/22/2016
9	OD9	Ramesh	CPU	Krishnagiri	11/22/2016
10	OD10	Alan	Video Card	Dharmapuri	11/11/2015
11	OD11	Arutra	RAM	Bodi	5/13/2015

LOCAL_HR Database:

- PIBYTHREE_AZURE_PUNE Schema:**
 - HEAD Table:** EMPLOYEES_HR (selected)
 - Views, Stages, Pipes, Streams, Tasks, Functions, Procedures
 - INFORMATION_SCHEMA
 - SNOWFLAKE, SNOWFLAKE\$GDS, SNOWFLAKE_SAMPLE_DATA

Data Preview for EMPLOYEES_HR Table:

EMPLOYEE_NAME	EMPID	DEPTID	SALARY	POSITIONID	POSITION
Kiran Chavan	1111	3	110000	8	Data Engineer
Dipali Waghmode	2222	2	47211	19	Data Engineer
Atharva Gangal	1122	3	47211	27	Data Engineer
saurabh satpute	2211	6	76000	2	Data Engineer
Tushar kale	2028	2	10000	3	HR

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

No privileges to other users :

Screenshot of the Snowflake interface showing a query error due to lack of privileges.

HR - Snowflake tab is active.

Query:

```
1 | SELECT * FROM PIBYTHREE_AZURE_PUNE.HEAD.RMG_PRODUCT;
```

Results pane shows a warning icon and the error message:

002003 (42S02): SQL compilation error:
Object 'PIBYTHREE_AZURE_PUNE.HEAD.RMG_PRODUCT' does not exist or not authorized.

Query Details:

- Query duration: 28ms
- Rows: 0

SALES | Table tab is also visible in the background.

Bottom status bar shows: 10:08 26/12/2022

Second screenshot shows a similar setup but for the SALES table.

HR - Snowflake tab is active.

Query:

```
1 | SELECT * FROM PIBYTHREE_AZURE_PUNE.HEAD.SALES;
```

Results pane shows a warning icon and the error message:

002003 (42S02): SQL compilation error:
Object 'PIBYTHREE_AZURE_PUNE.HEAD.SALES' does not exist or not authorized.

Query Details:

- Query duration: 29ms
- Rows: 0

SALES | Table tab is also visible in the background.

Bottom status bar shows: 09:54 26/12/2022



POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

59

Global HR South Region:

PIBYTHREE_AWS_S_MUMBAI.HEAD

```

1 //view of HR Department
2 | SELECT * FROM PIBYTHREE_AWS_S_MUMBAI.HEAD.EMPLOYEES_INFO;

```

	EMPLOYEE_NAME	EMPID	DEPTID	SALARY	POSITIONID	POSITION
1	Pragati Atkale	1012	2	20000	6	Data Engineer
2	AISHWARYA KOTA	1007	2	15000	6	Data Engineer
3	Shweta Magar	1011	2	15000	6	Data Engineer
4	Nilesh Deshmukh	1002	2	35000	6	Data Engineer
5	Kiran Chavan	1111	3	110000	8	Data Engineer
6	Dipali Waghmode	2222	2	47211	19	Data Engineer
7	Atharva Gangal	1122	3	47211	27	Data Engineer
8	saurabh satpute	2211	6	76000	2	Data Engineer
9	Tushar kale	2028	2	10000	3	HR

EMPLOYEE_NAME 100% filled
EMPID 100% filled

Global Sales South-east Singapore Region :

PIBYTHREE_AWS_SE_SINGAPORE

```

1 //View
2 | SELECT * FROM PIBYTHREE_AWS_SE_SINGAPORE.HEAD.SALES_INFO;

```

	ORDERID	CUSTOMERNAME	CATEGORY	CITY	ORDERDATE	REQ
1	OD1	Harish	CPU	Vellore	11/08/2017	AW
2	OD2	Hafiz	Storage	Ramanadhapuram	06/09/2015	AW
3	OD3	Hafiz	Mother Board	Tirunelveli	06/09/2015	AW
4	OD7	Alan	Video Card	Dharmapuri	11/11/2015	AW
5	OD8	Arutra	RAM	Bodi	5/13/2015	AW
6	OD5	Ganesh	CPU	Karur	06/09/2015	AW
7	OD6	Ramesh	CPU	Krishnagiri	11/22/2016	AW
8	OD9	Haseena	Mother Board	Tenkasi	8/27/2015	AW
9	OD1	Harish	CPU	Vellore	11/08/2017	AZI

CUSTOMERNAME 100% filled
ORDERID 100% filled

Global RMG Azure Pune Region :Script to create view in product department: G:\Training\snowflake_SS\DataMesh\AzurePuneView.txt

POC

DATA SHARING & DATA MESH IN SNOWFLAKE

Submitted by: Akshay Ahire & Pragati Atkale

Screenshot of the Snowflake Data Mesh interface showing a query results page.

Query:

```
//view of Product Department
select * from PIBYTHREE_AZURE_PUNE.HEAD.PRODUCT_INFO;
```

Results:

	PRODUCT_ID	PRODUCT_NAME	DESCRIPTION
1	161	AMD 100-5056062	Chipset:Vega Frontier Edition Liqui
2	4	AMD 100-505989	Chipset:FirePro W9100 Memory:3
3	184	AMD 100-506061	Chipset:Vega Frontier Edition Mem
4	48	AMD FirePro S7000	Chipset:FirePro S7000 Memory:4C
5	136	AMD Opteron 6378	Speed:2.4GHz Cores:16 TDP:115W
6	145	Asus VANGUARD B85	CPU:LGA1150 Form Factor:Micro ,
7	170	Asus X99-DELUXE II	CPU:LGA2011-3 Form Factor:ATX
8	84	Asus X99-DELUXE/U3.1	CPU:LGA2011-3 Form Factor:ATX
9	143	Asus Z10PE-D16	CPU:LGA2011-3 Narrow x 2 Form

Query Details:

- Query duration: 357ms
- Rows: 96

Product ID Distribution:

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