

Employee.csv

```
EMPLOYEE_ID,NAME,SALARY,DEPARTMENT_ID,JOINING_DATE
100,'Jennifer',4400,10,'2017-01-05'
101,'Michael',13000,10,'2018-08-24'
102,'Pat',6000,10,'2018-12-10'
103,'Den', 11000,20,'2019-02-17'
104,'Alexander',3100,20,'2019-07-01'
105,'Shelli',2900,20,'2020-04-22'
106,'Sigal',2800,30,'2020-09-05'
107,'Guy',2600,30,'2021-05-25'
108,'Karen',2500,30,'2021-12-21'
```

1. Create an Employee table in database **bootcamp** and in schema **snow**.

- a. Requirements :

- i. Create a table with name as Employee on Employee.csv
 - ii. Copy data from snowflake Employee table to a output S3 dir.

- b. Expectations - I want you to provide / submit followings

- i. Commands to create table and load data.
 - ii. Commands to copy data from snowflake table to s3 dir

Answer:

Code used in Snowflake:

1. Set up compute warehouse

I have created a small compute warehouse `aws_warehouse` with size `x-small` to run my queries and process data efficiently.

```
create warehouse aws_warehouse with warehouse_size="x-small";
```

2. Created database and schema

I have created a database `bootcamp` and a schema `bootcamp.snow` to organize my tables.

```
create database bootcamp;
```

```
create schema bootcamp.snow;
```

3. Created Employee table

I have created a table Employee with columns EMPLOYEE_ID, NAME, SALARY, DEPARTMENT_ID, and JOINING_DATE to store employee data from Employee.csv.

```
CREATE OR REPLACE TABLE Employee (
```

```
    EMPLOYEE_ID INT,  
    NAME STRING,  
    SALARY INT,  
    DEPARTMENT_ID INT,  
    JOINING_DATE DATE  
);
```

4. Inserted data into Employee table

I have inserted sample employee data into the table to test it.

```
insert into employee values
```

```
(100, 'Jennifer', 4400, 10, '2017-01-05'),  
(101, 'Michael', 13000, 10, '2018-08-24'),  
(102, 'Pat', 6000, 10, '2018-12-10'),  
(103, 'Den', 11000, 20, '2019-02-17'),  
(104, 'Alexander', 3100, 20, '2019-07-01'),  
(105, 'Shelli', 2900, 20, '2020-04-22'),  
(106, 'Sigal', 2800, 30, '2020-09-05'),  
(107, 'Guy', 2600, 30, '2021-05-25'),  
(108, 'Karen', 2500, 30, '2021-12-21')
```

```
;
```

5. Verified the data

I have run a `SELECT` query to make sure the data is correctly loaded.

```
select * from employee;
```

6. Configured Snowflake to connect to S3

I have created a **storage integration** so Snowflake can securely connect to my AWS S3 bucket using an IAM role.

Create or replace storage integration

```
Snow_OBJSS
```

```
type = external_stage
```

```
storage_provider = s3
```

```
enabled = true
```

```
storage_aws_role_arn =
```

```
'arn:aws:iam::930797749854:role/snowflakerolenew'
```

```
STORAGE_ALLOWED_LOCATIONS = ('s3://amzn-snowflake-s3-bucket/')
```

```
STORAGE_AWS_EXTERNAL_ID =
```

```
'SWA67785_SFCRole=3_P7v6KQ4q9qmSKORMx8rS03v/mxo=';
```

I have verified that the integration works using:

```
desc integration Snow_OBJSS;
```

7. Created file format for CSV

I have defined a CSV file format so Snowflake can export data as a CSV file with headers and no compression.

```
create or replace file format csv_formatt
```

```
type = csv field_delimiter = ',' skip_header = 1 null_if = ('NULL','null')
```

```
empty_field_as_null = TRUE  
COMPRESSION = NONE;
```

8. Created stage pointing to S3

I have set up a stage `s3_stage_snowflake` that points to my S3 bucket using the storage integration and file format.

```
create or replace stage s3_stage_snowflake  
storage_integration = Snow_OBJSS  
url = 's3://amzn-snowflake-s3-bucket/'  
file_format = csv_formatt;
```

9. Exported Employee table to S3

I have copied the Employee table data to S3 as a single CSV file with column headers.

```
COPY INTO @s3_stage_snowflake/data.csv  
FROM employee  
FILE_FORMAT = csv_formatt  
SINGLE = TRUE  
OVERWRITE = TRUE  
HEADER = TRUE;
```

10. AWS setup

I have created an IAM role `snowflakerolenew` with two policies:

snowflakepolicynew (managed)

snowflakes3 (inline policy to allow S3 read/write/list)

Inline policy code:

```
{  
    "Version": "2012-10-17",  
    "Statement": [  
        {  
            "Effect": "Allow",  
            "Action": [  
                "s3:PutObject",  
                "s3:GetObject",  
                "s3>ListBucket"  
            ],  
            "Resource": [  
                "arn:aws:s3:::amzn-snowflake-s3-bucket",  
                "arn:aws:s3:::amzn-snowflake-s3-bucket/*"  
            ]  
        }  
    ]  
}
```

This policy gives Snowflake the **exact permissions it needs** to **write CSV files to S3, read them if needed, and list files in the bucket.**

11. Set trust relationship

I have set the trust relationship so Snowflake can assume the IAM role securely with an ExternalId.

```
{  
    "Version": "2012-10-17",
```

```

"Statement": [
    {
        "Effect": "Allow",
        "Principal": {
            "AWS": "arn:aws:iam::974916068036:user/externalstages/cisx7c0000"
        },
        "Action": "sts:AssumeRole",
        "Condition": {
            "StringEquals": {
                "sts:ExternalId": "SWA67785_SFCRole=3_P7v6KQ4q9qmSKORmx8rS03v/mxo="
            }
        }
    }
],
}

```

snowflakerolenew [Info](#)

[Delete](#) [Edit](#)

Summary	
Creation date October 17, 2025, 21:22 (UTC-04:00)	ARN arn:aws:iam::930797749854:role/snowflakerolenew
Last activity 1 hour ago	Maximum session duration 1 hour
Link to switch roles in console https://signin.aws.amazon.com/switchrole?roleName=snowflakerolenew&account=930797749854	

Permissions [Trust relationships](#) [Tags](#) [Last Accessed](#) [Revoke sessions](#)

Permissions policies (2) [Info](#)

You can attach up to 10 managed policies.

Filter by Type			
<input type="text" value="Search"/>	<input type="button" value="All types"/>	<input type="button" value="Customer managed"/>	<input type="button" value="Customer inline"/>
<input type="checkbox"/> Policy name ↗	<input type="button" value="▲"/> Type	<input type="button" value="▼"/> Attached entities	<input type="button" value="◀"/> 1 <input type="button" value="▶"/> Attached entities
<input type="checkbox"/> snowflakepolicynew	Customer managed	1	<input type="button" value="▼"/>
<input type="checkbox"/> snowflakes3	Customer inline	0	<input type="button" value="▼"/>

12. Created S3 bucket

I have created an S3 bucket `amzn-snowflake-s3-bucket` to store the exported CSV file. After the `COPY INTO` command, the file appeared in the bucket successfully.

- Before file is copied

The screenshot shows the Amazon S3 console interface. At the top, there's a breadcrumb navigation: `Amazon S3 > Buckets > amzn-snowflake-s3-bucket`. Below the navigation is the bucket name `amzn-snowflake-s3-bucket` with a `Info` link. A horizontal menu bar includes `Objects`, `Metadata`, `Properties`, `Permissions`, `Metrics`, `Management`, and `Access Points`. The `Objects` tab is selected. On the left, a sidebar has a `Find objects by prefix` search bar and sorting options for `Name`, `Type`, `Last modified`, `Size`, and `Storage class`. The main content area displays a message: "No objects" and "You don't have any objects in this bucket." At the bottom right is a blue `Upload` button.

- After file is copied

The screenshot shows the Amazon S3 console interface after a file has been uploaded. The breadcrumb navigation is the same as the previous screenshot. The bucket name `amzn-snowflake-s3-bucket` is shown with its `Info` link. The `Objects` tab is selected. The main content area now lists one object: `data.csv`. The table provides details about the object: it is a `csv` file, last modified on November 6, 2025, at 12:28:37 (UTC-05:00), and has a size of 318.0 B. The storage class is listed as `Standard`. The table headers are `Name`, `Type`, `Last modified`, `Size`, and `Storage class`.