

Target:





1. Define “stage” or “staging area” in a way that covers both real-world warehouses and data warehouses.
2. Name the two types of Snowflake Stages and identify which type requires a cloud services account.
3. Name the three cloud services providers supported by Snowflake.
4. Identify the three components needed to configure an External Stage in Snowflake.
5. Create an External Stage.
6. Query data in an External Stage.
7. Name the three objects listed in a COPY INTO command.
8. Load data from an External Stage to a table.

BUCKET URL: s3://on-demand-files

Access Key ID: AKIAUVWFWKATBLPPCLG7

Secret Access Key: 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

Databases






 Create...  Clone...  Drop...  Transfer Ownership

1/4 databases

Database	Origin	↓ Creation Time	Owner	Com
USDA_NUTRIENT_STDREF		10:08 PM	SYSADMIN	
SNOWFLAKE_SAMPLE_DATA	SFC_SAMPLES.SA...	10/14/2020, 4:39 PM	ACCOUNTADMIN	TPC
DEMO_DB		10/14/2020, 4:39 PM	SYSADMIN	dem
UTIL_DB		10/14/2020, 4:39 PM	SYSADMIN	utilit

Databases > USDA_NUTRIENT_STDREF


Tables Views Schemas **Stages** File Formats Sequences Pipes

 Create...  Clone...  Edit...  Drop...  Transfer Ownership

Stage	Schema	Location	Creatio
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Create Stage

Choose a location for files to be staged




Snowflake Managed

☒




Existing Amazon S3 Location

☐



Existing Microsoft Azure Location

☐



Existing Google Cloud Platform Location

☐

Cancel

Next

Create Stage

Staged files will be stored in the specified S3 location

Name *

Schema Name

URL *

AWS Key ID

AWS Secret Key

Encryption Master Key

Comment

Show SQL

Cancel

Back

Finish

▶ Run

☐ All Queries | Saved 6 seconds ago

Context ▾ ...

```
1 list @my_s3_bucket;
```

Results Data Preview

↔ Open History

✓ Query ID SQL 100ms 15 rows

Filter result...

Columns ▾

Row	name	size	md5	last_modified
1	s3://on-demand-files/load/DAT...	80487	ae17eb2f07bed7dd95c9be8f17f...	Thu, 25 Apr 2019 16:33:52 GMT
2	s3://on-demand-files/load/DAT...	5167764	987616fd79c3e8b5020d7ba96...	Thu, 25 Apr 2019 16:35:26 GMT
3	s3://on-demand-files/load/DERI...	5756	5046fbcd46b3dc5ac2690413b...	Thu, 25 Apr 2019 16:33:50 GMT
4	s3://on-demand-files/load/FD...	761	8190d11dae1c6d8630214db49...	Thu, 25 Apr 2019 16:33:50 GMT
5	s3://on-demand-files/load/FOO...	1188113	0e7271300b9b38d673bd303c...	Thu, 25 Apr 2019 16:34:05 GMT
6	s3://on-demand-files/load/FOO...	63450	88c1e1c7c56108dba1cc50b621...	Thu, 25 Apr 2019 16:33:53 GMT
7	s3://on-demand-files/load/LAN...	21984	3455a352586e0433d3435641...	Thu, 25 Apr 2019 16:33:54 GMT
8	s3://on-demand-files/load/LAN...	644470	14a7d42b0cb39a453f4f4f05e3...	Thu, 25 Apr 2019 16:34:50 GMT

Note: list is not a SQL command, its more like the linux ls command. It lists the s3 bucket the stage is configured to at this point.

The bucket has two folder load, unload:

10	s3://on-demand-files/load/NUT...	6529	d3fc34832e09f6e70dc13196ee...	Thu, 25 Apr 2019 16:34:05 GMT
11	s3://on-demand-files/load/NUT...	37074356	2d4e9662718007ee142f405159...	Thu, 25 Apr 2019 16:33:57 GMT
12	s3://on-demand-files/load/SRC...	532	929ac133171bb44f6261769d52...	Thu, 25 Apr 2019 16:34:11 GMT
13	s3://on-demand-files/load/WEI...	509814	6e66e0c954a0dfe2c5d963800...	Thu, 25 Apr 2019 16:34:37 GMT
14	s3://on-demand-files/unload/E...	443	754bb3fd966be7b5057457a16...	Thu, 27 Jun 2019 00:24:16 GMT
15	s3://on-demand-files/unload/cr...	119	bf54de74dcb0f6092a1d3da9b...	Thu, 27 Jun 2019 00:24:16 GMT

1

list @my_s3_bucket/load;

Results

Data Preview

Open History

Query ID

SQL

193ms

13 rows

Filter result...

Download

Copy

Columns

Row	name	size	md5	last_modified
1	s3://on-demand-files/load/DAT...	80487	ae17eb2f07bed7dd95c9be8f17f...	Thu, 25 Apr 2019 16:33:52 GMT
2	s3://on-demand-files/load/DAT...	5167764	987616fd79c3e8b5020d7ba96...	Thu, 25 Apr 2019 16:35:26 GMT
3	s3://on-demand-files/load/DERI...	5756	5046fbcd46b3dc5ac2690413b...	Thu, 25 Apr 2019 16:33:50 GMT
4	s3://on-demand-files/load/FD...	761	8190d11dae1c6d8630214db49...	Thu, 25 Apr 2019 16:33:50 GMT

1

list @my_s3_bucket/unload;

Results

Data Preview

Open History

Query ID

SQL

89ms

2 rows

Filter result...

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Columns

Row	name	size	md5	last_modified
1	s3://on-demand-files/unload/ET...	443	754bb3fd966be7b5057457a16a...	Thu, 27 Jun 2019 00:24:16 GMT
2	s3://on-demand-files/unload/cr...	119	bf54de74dcb0f6092a1d3da9b8...	Thu, 27 Jun 2019 00:24:16 GMT

Run

All Queries

Saved 0 seconds ago

Context

2

3

list @my_s3_bucket/load/D;

Results

Data Preview

Open History

Query ID

SQL

146ms

3 rows

Filter result...

Download

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Columns

Row	name	size	md5	last_modified
1	s3://on-demand-files/load/DATA_SRC.txt	80487	ae17eb2f07bed7dd95c9be...	Thu, 25 Apr 2019 16:33:52 ...
2	s3://on-demand-files/load/DATSRCLN.txt	5167764	987616fd79c3e8b5020d7b...	Thu, 25 Apr 2019 16:35:26 ...
3	s3://on-demand-files/load/DERIV_CD.txt	5756	5046fbcd46b3dc5ac2690...	Thu, 25 Apr 2019 16:33:50 ...

```

1 COPY INTO WEIGHT_INGEST
2 FROM @my_s3_bucket/load/
3 FILES = ('WEIGHT.txt')
4 FILE_FORMAT = (FORMAT_NAME = USDA_FILE_FORMAT );

```

Row	file	status	rows_parsed	rows_loaded	error_limit	errors_seen	first_error	first_error_line
1	s3://on-dem...	LOADED	14449	14449	1	0	NULL	NULL

Running the same query second time:

Row	file	status	rows_parsed	rows_loaded	error_limit	errors_seen	first_error
1	s3://on-dem...	LOAD_SKIPPED	0	0	NULL	1	File was loaded before.

Force Load:

```

1 COPY INTO WEIGHT_INGEST
2 FROM @my_s3_bucket/load/
3 FILES = ('WEIGHT.txt')
4 FILE_FORMAT = (FORMAT_NAME = USDA_FILE_FORMAT )
5 FORCE = TRUE;

```

Row	file	status	rows_parsed	rows_loaded	error_limit	errors_seen	first_error	first_error_line	first_er
1	s3://on-dem...	LOADED	14449	14449	1	0	NULL	NULL	

After FORCE-LOAD, the table size is doubled

```

7 select count(*) from "USDA_NUTRIENT_STDREF"."PUBLIC"."WEIGHT_INGEST";

```

Row	COUNT(*)
1	28898

Truncating and reloading the table FORCE = FALSE

1 COPY INTO WEIGHT_INGEST

2 FROM @my_s3_bucket/load/

3 FILES = ('WEIGHT.txt')

4 FILE_FORMAT = (FORMAT_NAME = USDA_FILE_FORMAT)

5 FORCE = FALSE;

6

Results

Data Preview

Open History

Query ID

SQL

982ms

1 rows

Filter result...

Download

Copy

Columns

Row	file	status	rows_parsed	rows_loaded	error_limit	errors_seen	first_error	first_error_line	first_er
1	s3://on-dem...	LOADED	14449	14449	1	0	NULL	NULL	

7

select count(*) from "USDA_NUTRIENT_STDREF"."PUBLIC"."WEIGHT_INGEST";

Results

Data Preview

Open History

Query ID

SQL

152ms

1 rows

Filter result...

Download

Copy

Columns

Row	COUNT(*)
1	14449

11

select * from "USDA_NUTRIENT_STDREF"."PUBLIC"."WEIGHT_INGEST";

Results

Data Preview

Open History

Query ID

SQL

1.03s

14,449 rows

Filter result...

Download

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Columns

Row	NDB_NO	SEQ	AMOUNT	MSRE_DESC	GM_WGT	NUM_DATA_PTS	STD_DEV
1	~01001~	~1~	1.000	~pat (1" sq, 1/3"...	5.0	NULL	NULL
2	~01001~	~2~	1.000	~tbsp~	14.2	NULL	NULL
3	~01001~	~3~	1.000	~cup~	227.0	NULL	NULL
4	~01001~	~4~	1.000	~stick~	113.0	NULL	NULL
5	~01002~	~1~	1.000	~pat (1" sq, 1/3"...	3.8	NULL	NULL
6	~01002~	~2~	1.000	~tbsp~	9.4	NULL	NULL
7	~01002~	~3~	1.000	~cup~	151.0	NULL	NULL

```

4
5 USE DATABASE "USDA_NUTRIENT_STDREF";
6
7 SELECT $1,$2
8 FROM @MY_S3_BUCKET/load/LANGDESC.txt
9 (FILE_FORMAT => USDA_FILE_FORMAT);
10

```

Results Data Preview

✓ Query ID SQL 743ms 773 rows

Filter result...



Copy

Row	\$1	\$2
1	~A0107~	~BAKERY PRODUCT, UNSWEETENED (US CFR)~
2	~A0113~	~SPICE OR HERB (US CFR)~
3	~A0125~	~GRAIN OR STARCH PRODUCT (US CFR)~
4	~A0127~	~FRUIT JUICE (US CFR)~

```

4
5 USE DATABASE "USDA_NUTRIENT_STDREF";
6
7 SELECT $1 as first_column
8 FROM @MY_S3_BUCKET/load/LANGDESC.txt
9 (FILE_FORMAT => USDA_FILE_FORMAT);
10

```

Results Data Preview

✓ Query ID SQL 2.48s 773 rows

Filter result...



Copy

Row	FIRST_COLUMN
1	~A0107~
2	~A0113~
3	~A0125~
4	~A0127~
5	~A0129~

```
19 select * from "USDA_NUTRIENT_STDREF"."PUBLIC"."LANGDESC";|
```

Results

Data Preview

✓ [Query ID](#) [SQL](#) 624ms  773 rows



Copy

Row	FACTOR_CODE	DESCRIPTION
1	A0107	BAKERY PRODUCT, UNSWEETENED (US CFR)
2	A0113	SPICE OR HERB (US CFR)
3	A0125	GRAIN OR STARCH PRODUCT (US CFR)
4	A0127	FRUIT JUICE (US CFR)