

Creation of a RedShift Cluster

Screenshots of the configuration of the RedShift cluster created:

<Screenshot of the type of machine used along with number of nodes>

DASHBOARD

CLUSTERS

QUERIES

EDITOR

DATASHARES

CONFIG

atm-project-redshift-cluster-24

Actions

Edit

Add partner integration

Query cluster

General information

Cluster identifier	Status	Node type	Endpoint
atm-project-redshift-cluster-24	Available	dc2.large	atm-project-redshift-cluster-24.cino8s...
Cluster namespace	Date created	Number of nodes	JDBC URL
dbc0cbd4-3143-425d-8520-e5e472b430a2	June 04, 2021, 10:27(UTC-07:00)	2	jdbc:redshift://atm-project-redshift-clu...
	Storage used	AQUA	ODBC URL
	0.19% (0.62 of 320 GB used)	Not available	Driver={Amazon Redshift (x64)}; Server...

Database configurations

Change admin user password

Rotate encryption keys

Edit

Database name	Parameter group	Encryption	Audit logging
myredshiftdb	Defines database parameter and query queues for all the databases.	Disabled	Disabled
Port	redshift-param-group-24	AWS KMS key ID	
5439		-	
Admin user name	SSH ingestion setting (cluster public key)		
awsuser	ssh-rsa AAAAB3NzaC1yc2EAAAADA...		

Setting up a database in the RedShift cluster and running queries to create the dimension and fact tables

Queries to create the various dimension and fact tables with appropriate primary and foreign keys:

<Queries>

create schema transactions;

<Creating table DIM_LOCATION>

```
create table transactions.DIM_LOCATION(  
    location_id int NOT NULL,  
    location VARCHAR(50),  
    streetname VARCHAR(255),  
    street_number int,  
    zipcode int,  
    lat DECIMAL(10,  
    3),  
    lon DECIMAL(10,  
    3),  
    PRIMARY KEY (location_id)  
);
```

<Creating table DIM_ATM>

```
create table transactions.DIM_ATM(  
    atm_id int NOT NULL,  
    atm_number VARCHAR(20),  
    atm_manufacturer VARCHAR(50),  
    atm_location_id INT NOT NULL,  
  
    PRIMARY KEY (atm_id),  
    foreign key(atm_location_id) references transactions.DIM_LOCATION (location_id)  
);
```

<Creating table DIM_DATE>

```
create table transactions.DIM_DATE(  
    date_id INT NOT NULL,  
    full_date_time TIMESTAMP,  
    year INT,  
    month VARCHAR(20),
```

```
day INT,  
hour INT,  
weekday VARCHAR(20),  
PRIMARY KEY (date_id)  
);
```

<Creating table DIM_CARD_TYPE>

```
create table transactions.DIM_CARD_TYPE(  
card_type_id INT NOT NULL,  
card_type VARCHAR(50),  
PRIMARY KEY (card_type_id)  
);
```

<Creating table FACT_ATM_TRANS >

```
create table transactions.FACT_ATM_TRANS(  
trans_id BIGINT NOT NULL,  
atm_id INT,  
weather_loc_id INT,  
date_id INT,  
card_type_id INT,  
atm_status VARCHAR(20),  
currency VARCHAR(10),  
service VARCHAR(20),  
transaction_amount INT,  
message_code VARCHAR(255),  
message_text VARCHAR(255),  
rain_3h DECIMAL(10,3),  
clouds_all INT,  
weather_id INT,  
weather_main VARCHAR(50),  
weather_description VARCHAR(255),  
  
PRIMARY KEY (trans_id),  
FOREIGN KEY (weather_loc_id) REFERENCES transactions.DIM_LOCATION (location_id),  
FOREIGN KEY (atm_id) REFERENCES transactions.DIM_ATM (atm_id),  
FOREIGN KEY (date_id) REFERENCES transactions.DIM_DATE (date_id),  
FOREIGN KEY (card_type_id) REFERENCES transactions.DIM_CARD_TYPE (card_type_id)  
);
```

Loading data into a RedShift cluster from Amazon S3 bucket

Queries to copy the data from S3 buckets to the RedShift cluster in the appropriate tables

<Queries>

<Copying dim_card_type data from S3 to RedShift>

```
copy transactions.dim_card_type (card_type, card_type_id)
from 's3://my-redshift-bucket-24/card_type'
iam_role 'arn:aws:iam::164541431167:role/my-redshift-role-permission-24'
csv
```

<Copying dim_location data from S3 to RedShift>

```
copy transactions.dim_location (location, streetname, street_number, zipcode, lat, lon,
location_id)
from 's3://my-redshift-bucket-24/location'
iam_role 'arn:aws:iam::164541431167:role/my-redshift-role-permission-24'
csv
```

<Copying dim_atm data from S3 to RedShift>

```
copy transactions.dim_atm (atm_number, atm_manufacturer, atm_location_id, atm_id)
from 's3://my-redshift-bucket-24/atm'
iam_role 'arn:aws:iam::164541431167:role/my-redshift-role-permission-24'
csv
```

<Copying dim_date data from S3 to RedShift>

```
copy transactions.dim_date (year,month,day,hour,weekday,date_id)
from 's3://my-redshift-bucket-24/date'
iam_role 'arn:aws:iam::164541431167:role/my-redshift-role-permission-24'
csv
```

<Copying fact_atm_trans data from S3 to RedShift>

```
copy transactions.fact_atm_trans (atm_status, currency, service, transaction_amount,
message_code, message_text, rain_3h, clouds_all, weather_id, weather_main,
weather_description, weather_loc_id, date_id, card_type_id, atm_id, trans_id)
from 's3://my-redshift-bucket-24/trans'
iam_role 'arn:aws:iam::164541431167:role/my-redshift-role-permission-24'
emptyasnull
csv
```