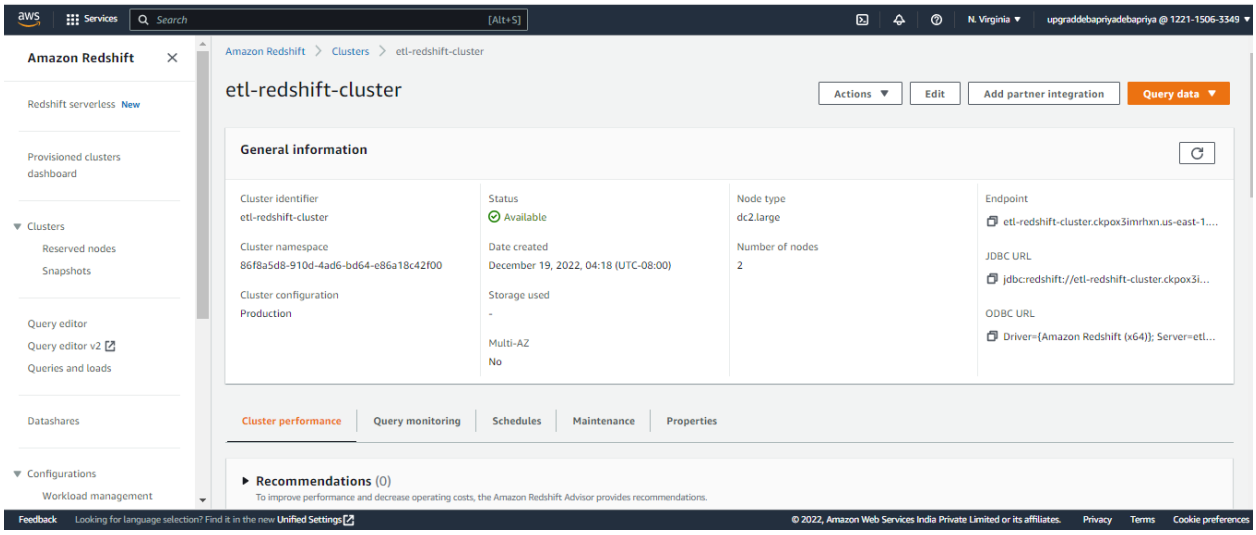
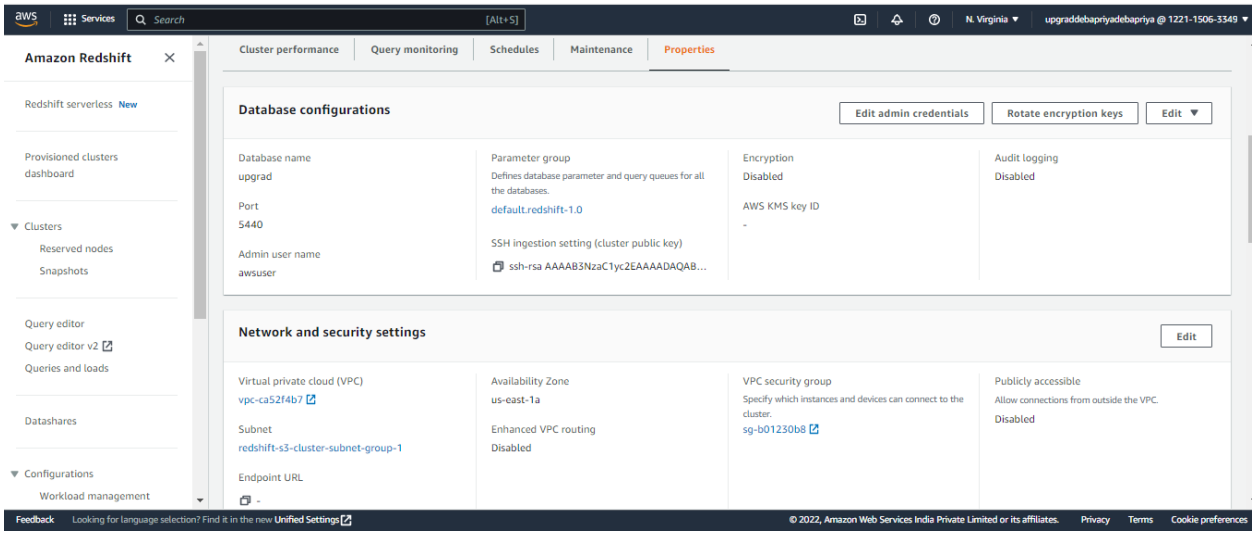
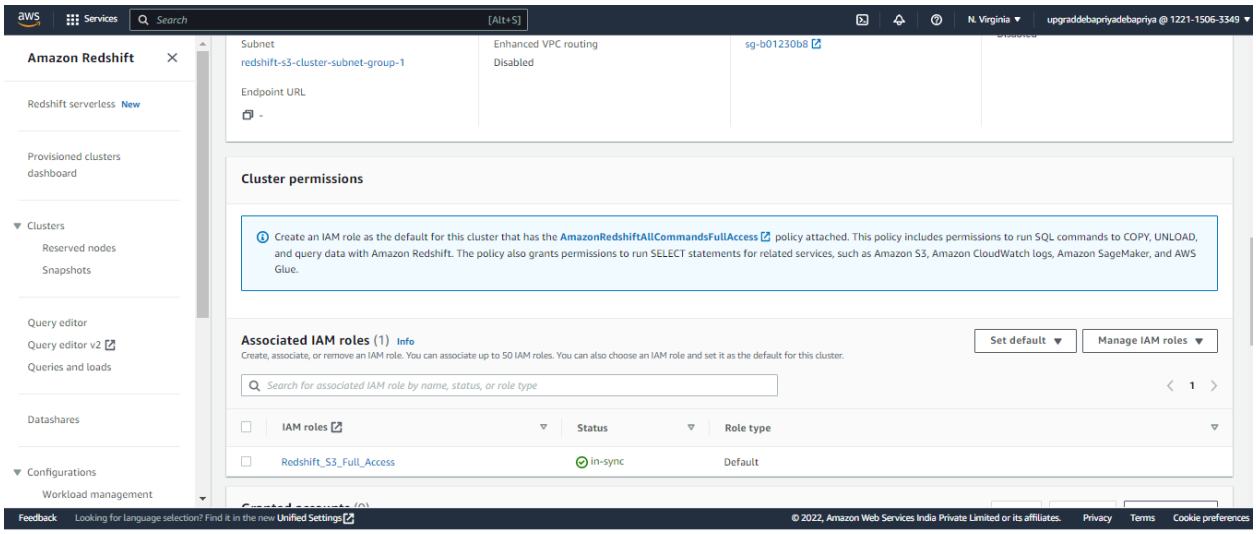
Creation of a Redshift Cluster

Screenshots of the configuration of the Redshift cluster that you have created:



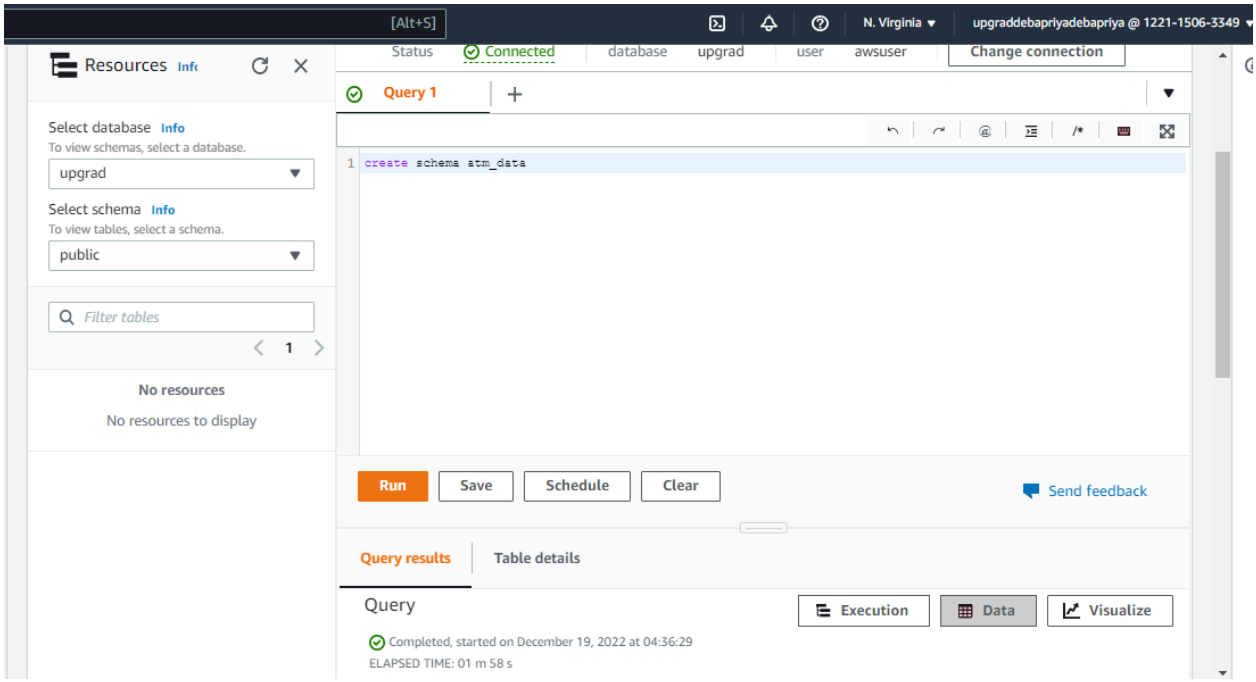




Setting up a database in the Redshift cluster and running queries to create the dimension and fact tables

Query for creating schema

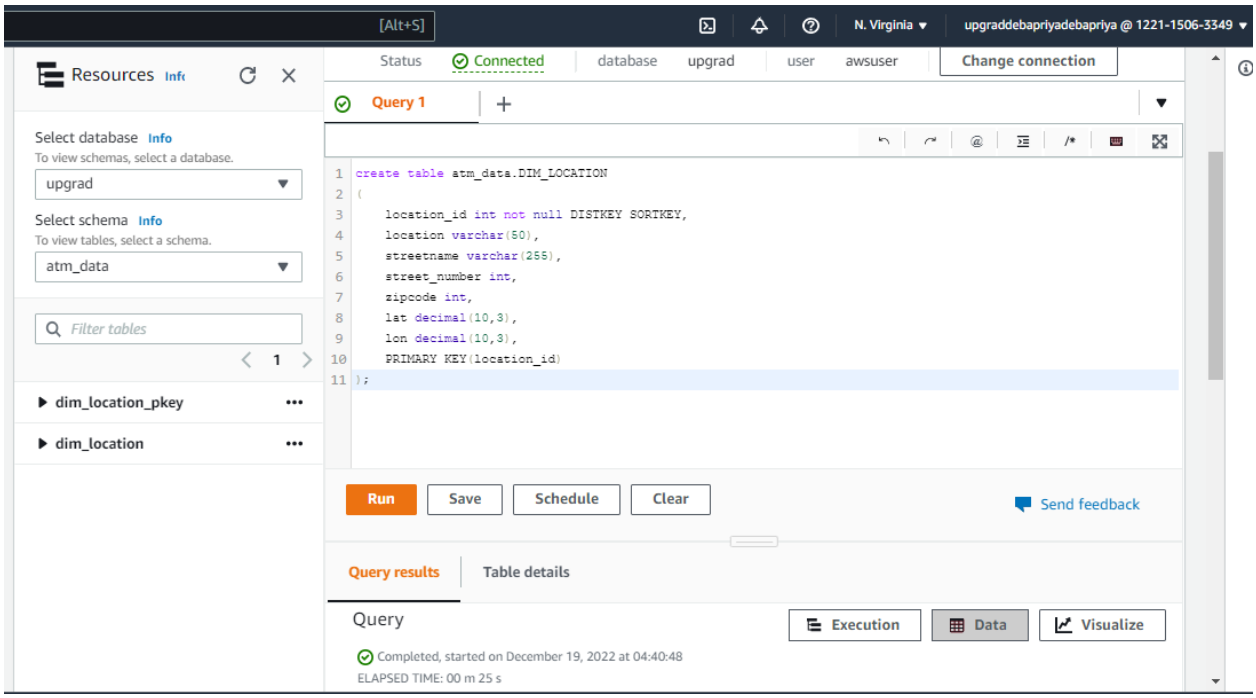
```
create schema atm_data;
```



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

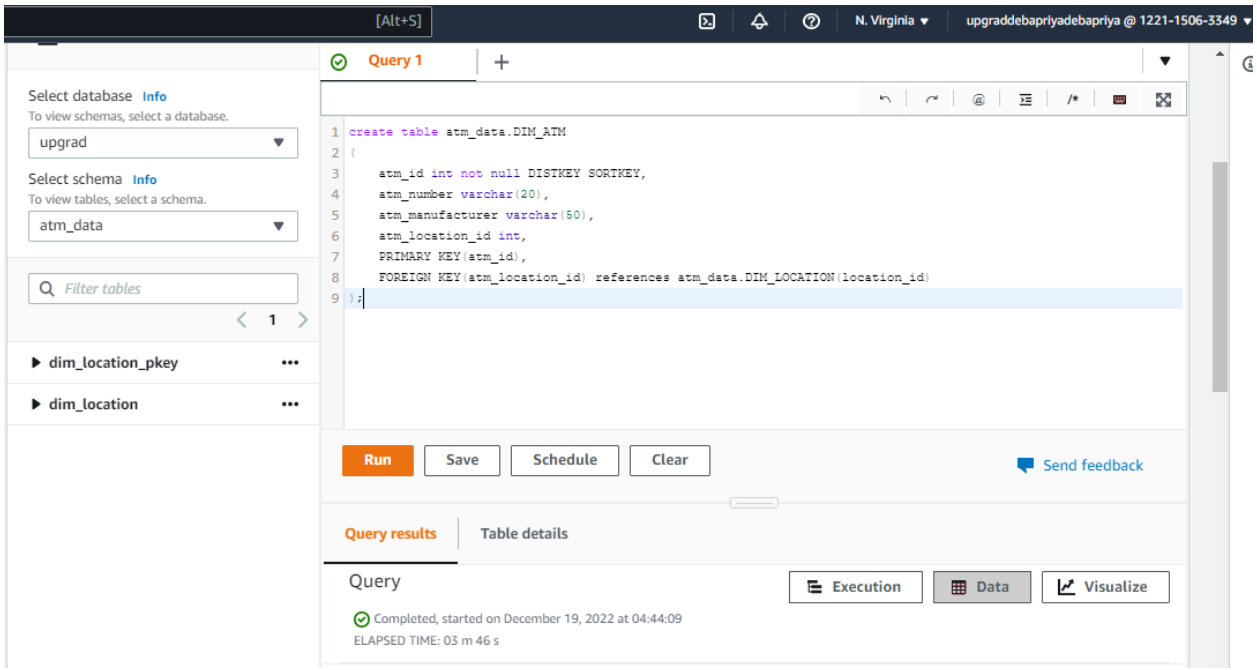
- **Creating location dimension table**

```
create table atm_data.DIM_LOCATION
(
        location_id int not null DISTKEY SORTKEY,
        location varchar(50),
        streetname varchar(255),
        street_number int,
        zipcode int,
        lat decimal(10,3),
        lon decimal(10,3),
        PRIMARY KEY(location_id)
);
```



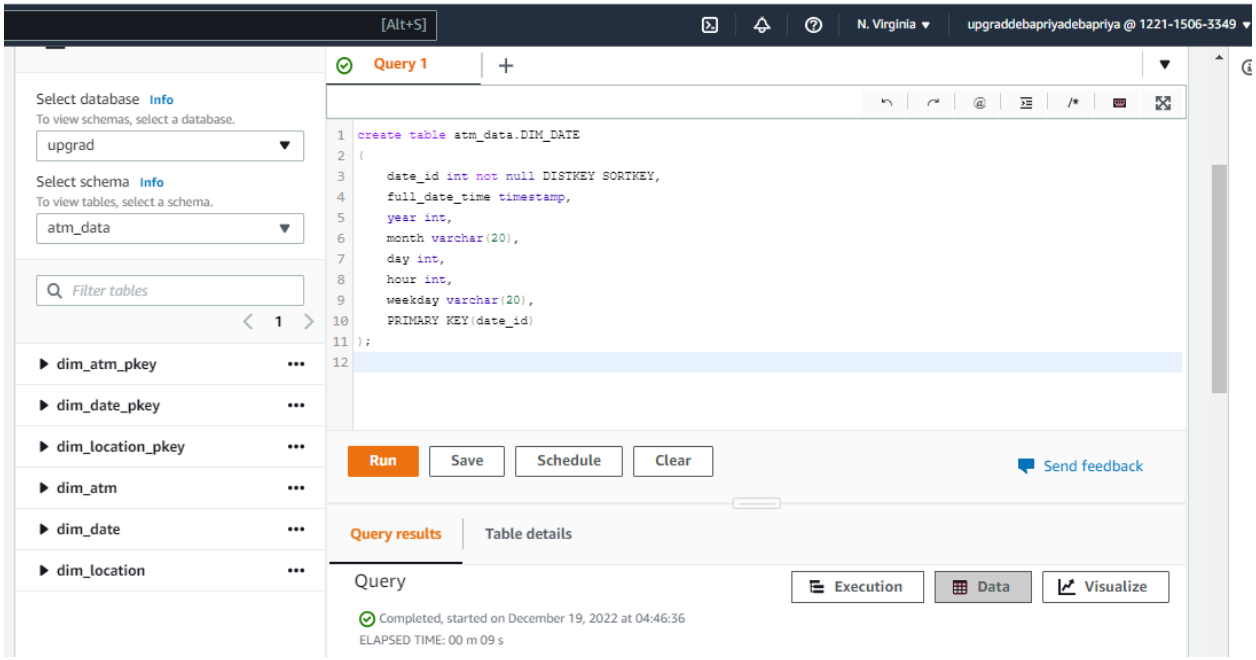
- **Creating atm dimension table**

```
create table atm_data.DIM_ATM
(
        atm_id int not null DISTKEY SORTKEY,
        atm_number varchar(20),
        atm_manufacturer varchar(50),
        atm_location_id int,
        PRIMARY KEY(atm_id),
        FOREIGN KEY(atm_location_id) references atm_data.DIM_LOCATION(location_id)
);
```



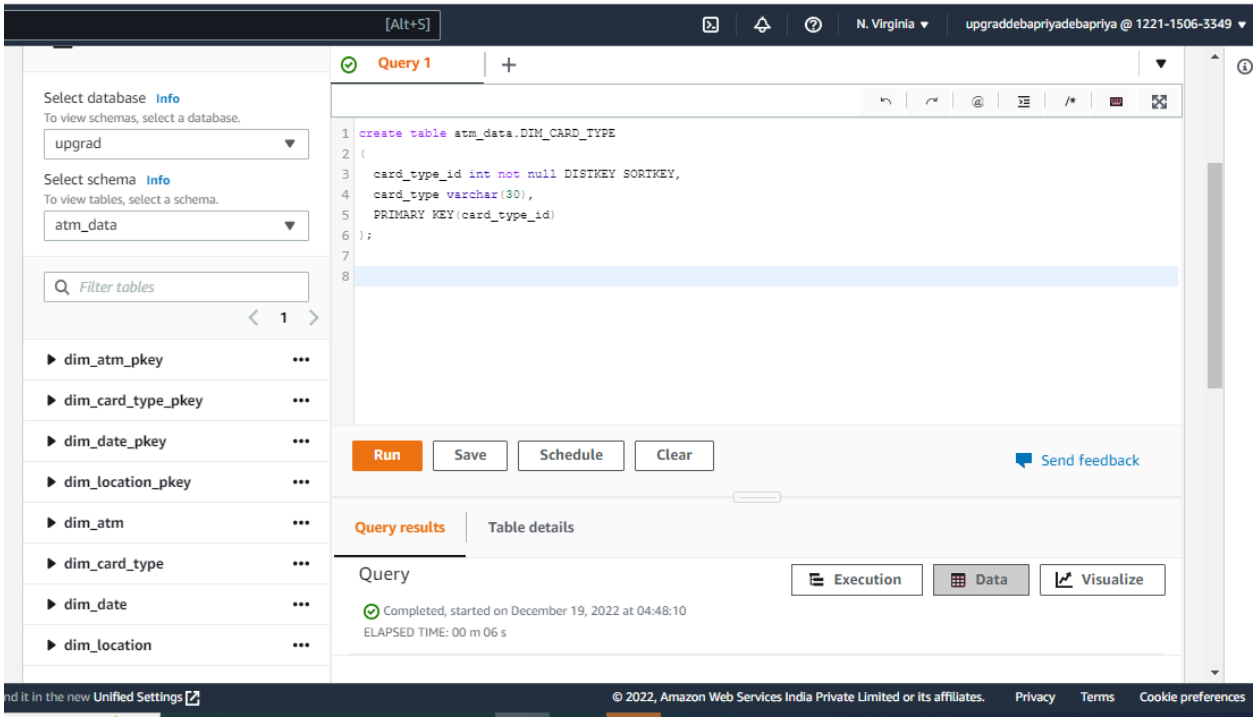
- **Creating date dimension table**

```
create table atm_data.DIM_DATE
(
        date_id int not null DISTKEY SORTKEY,
        full_date_time timestamp,
        year int,
        month varchar(20),
        day int,
        hour int,
        weekday varchar(20),
        PRIMARY KEY(date_id)
);
```



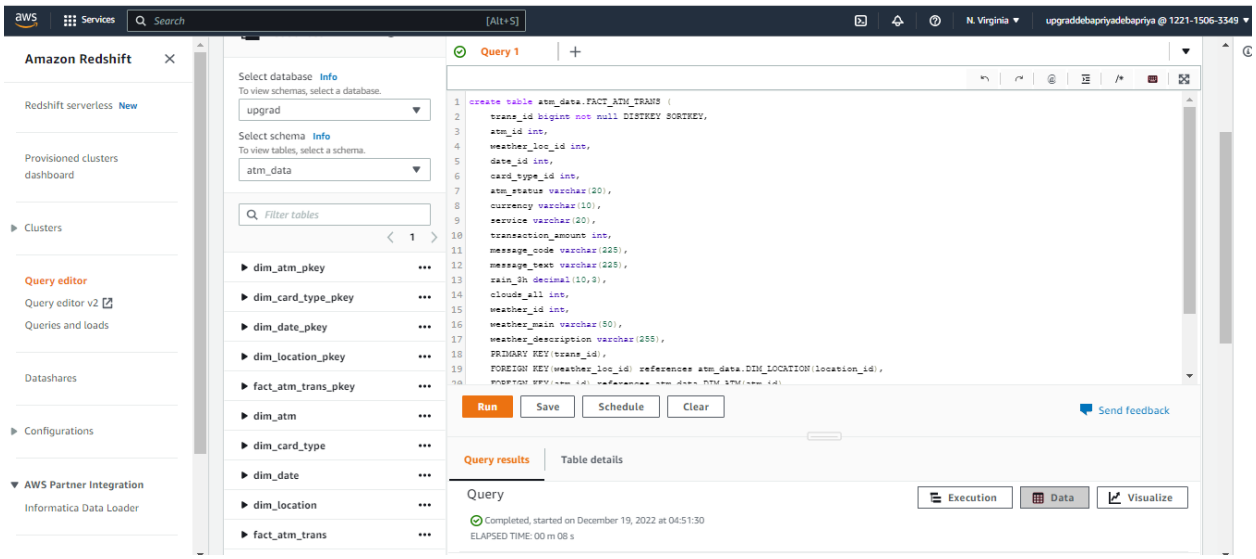
- **Creating card type dimension table**

```
create table atm_data.DIM_CARD_TYPE
(
        card_type_id int not null DISTKEY SORTKEY,
        card_type varchar(30),
        PRIMARY KEY(card_type_id)
);
```



- **Creating atm transactions fact table**

```
create table atm_data.FACT_ATM_TRANS
(
        trans_id bigint not null DISTKEY SORTKEY,
        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(225),
        message_text varchar(225),
        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 atm_data.DIM_LOCATION(location_id),
        FOREIGN KEY(atm_id) references atm_data.DIM_ATM(atm_id),
        FOREIGN KEY(date_id) references atm_data.DIM_DATE(date_id),
        FOREIGN KEY(card_type_id) references atm_data.DIM_CARD_TYPE(card_type_id)
);
```

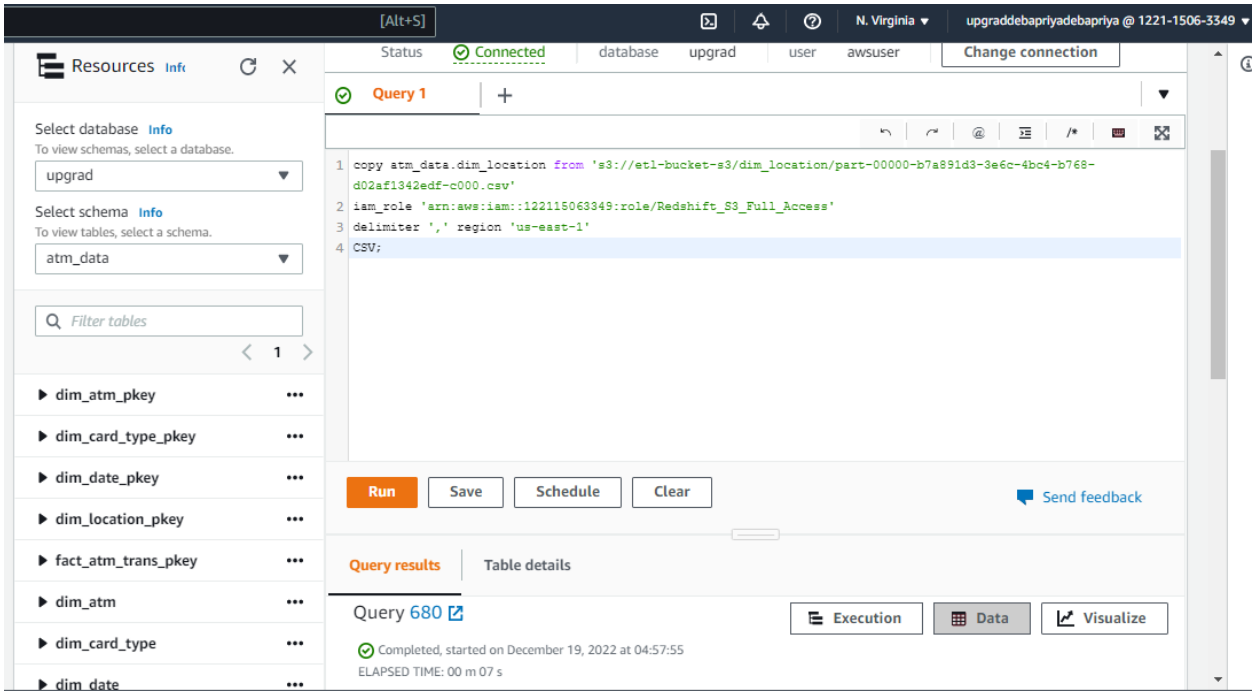


Loading data into a Redshift cluster from Amazon S3 bucket

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

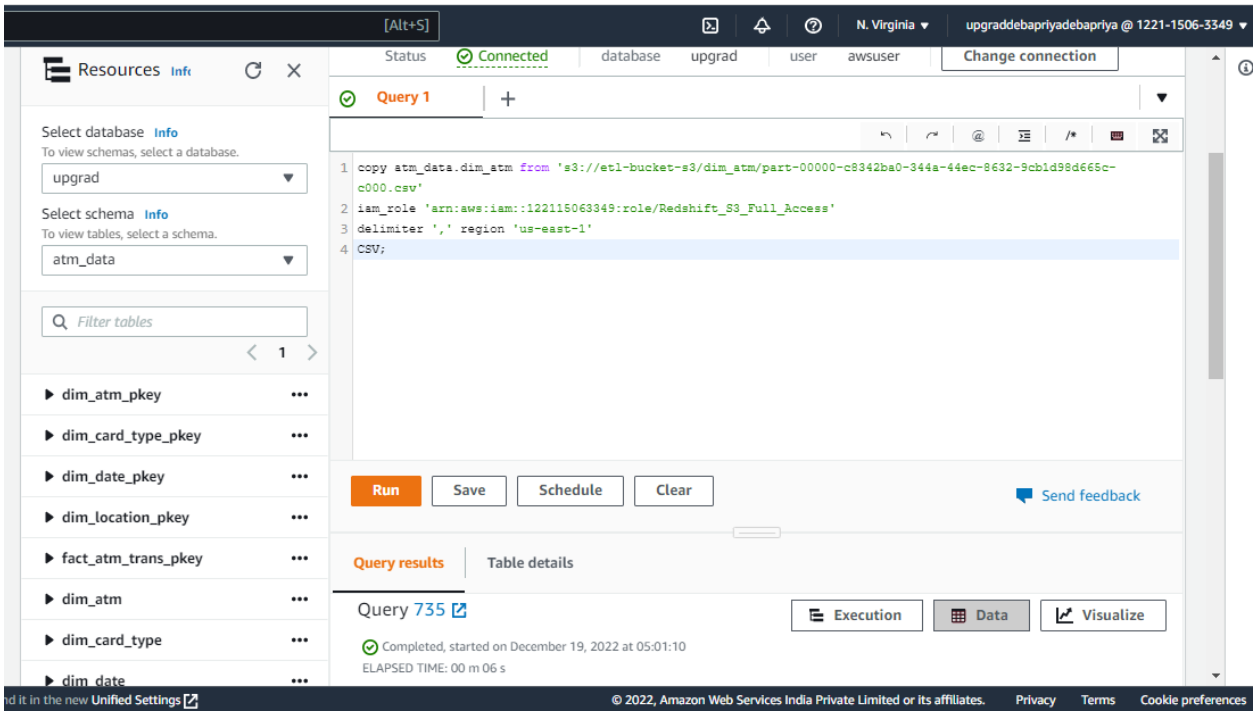
- **Copying the data to dim_location table**

```
copy atm_data.dim_location from
's3://etl-bucket-s3/dim_location/part-00000-b7a891d3-3e6c-4bc4-b768-d02af1342edf-c000.csv'
iam_role 'arn:aws:iam::122115063349:role/Redshift_S3_Full_Access'
delimiter ',' region 'us-east-1'
CSV;
```



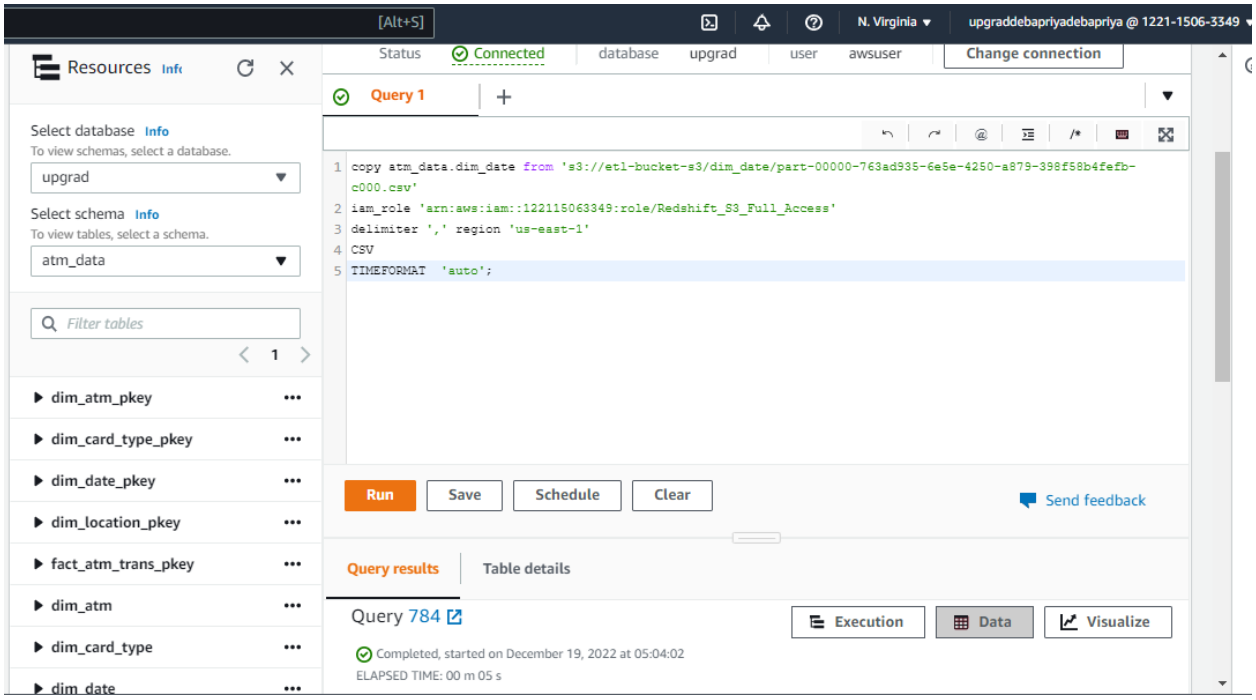
- **Copying the data to dim_atm table**

```
copy atm_data.dim_atm from
's3://etl-bucket-s3/dim_atm/part-00000-c8342ba0-344a-44ec-8632-9cb1d98d665c-c000.csv'
iam_role 'arn:aws:iam::122115063349:role/Redshift_S3_Full_Access'
delimiter ',' region 'us-east-1'
CSV;
```



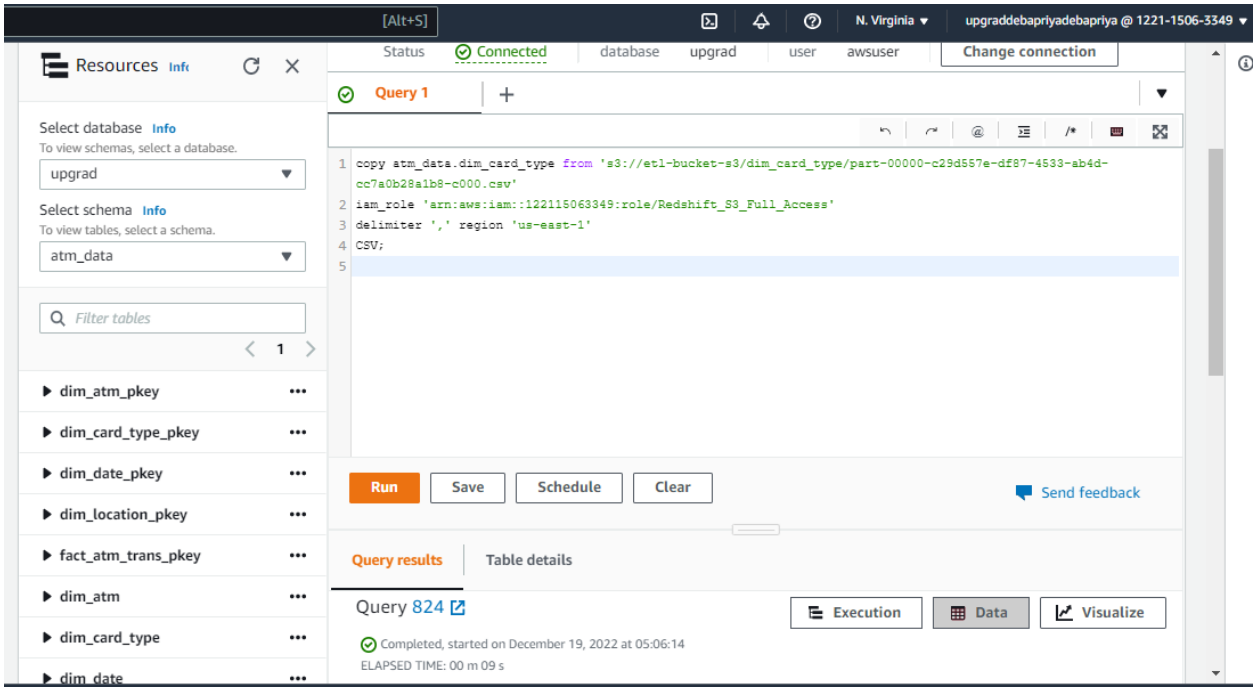
- **Copying the data to dim_date table**

```
copy atm_data.dim_date from
's3://etl-bucket-s3/dim_date/part-00000-763ad935-6e5e-4250-a879-398f58b4fefb-c000.csv'
iam_role 'arn:aws:iam::122115063349:role/Redshift_S3_Full_Access'
delimiter ',' region 'us-east-1'
CSV
TIMEFORMAT  'auto';
```



- **Copying the data to dim_card_type table**

```
copy atm_data.dim_card_type from
's3://etl-bucket-s3/dim_card_type/part-00000-c29d557e-df87-4533-ab4d-cc7a0b28a1b8-c000.csv'
iam_role 'arn:aws:iam::122115063349:role/Redshift_S3_Full_Access'
delimiter ',' region 'us-east-1'
CSV;
```



- **Copying the data to fact_atm_trans table**

```
copy atm_data.fact_atm_trans from
's3://etl-bucket-s3/fact_atm_trans/part-00000-96ad2175-f599-4228-b7b2-30b36064b6fb-c000.csv'
iam_role 'arn:aws:iam::122115063349:role/Redshift_S3_Full_Access'
delimiter ',' region 'us-east-1'
CSV;
```