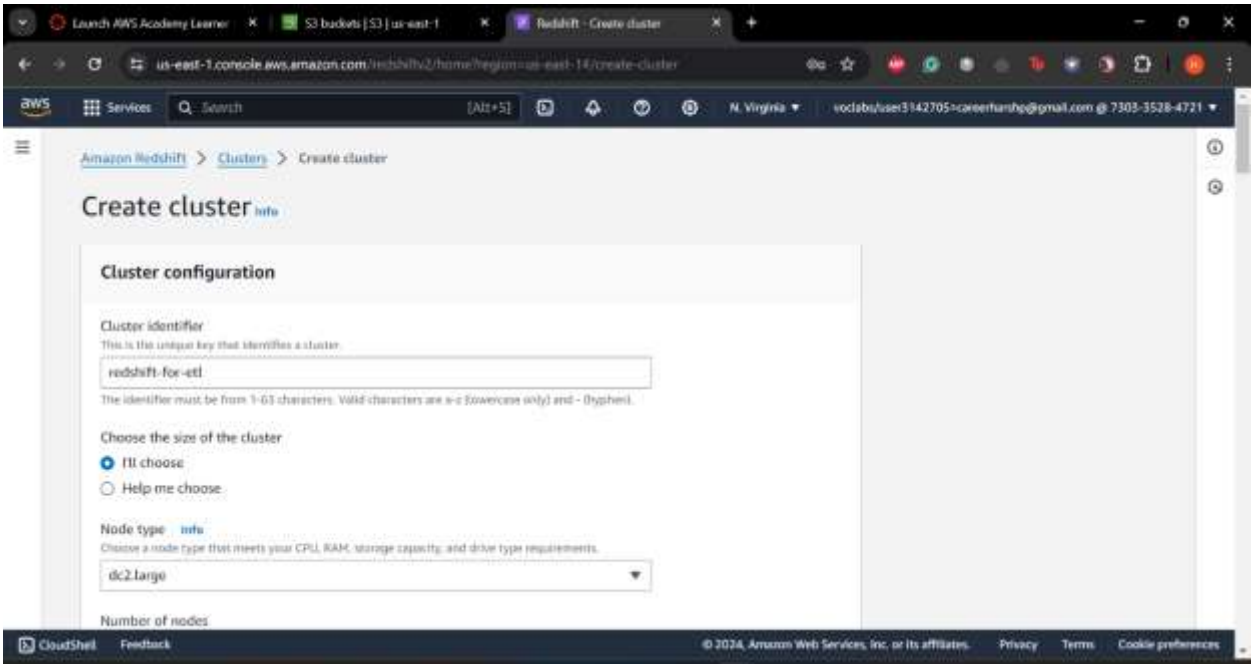
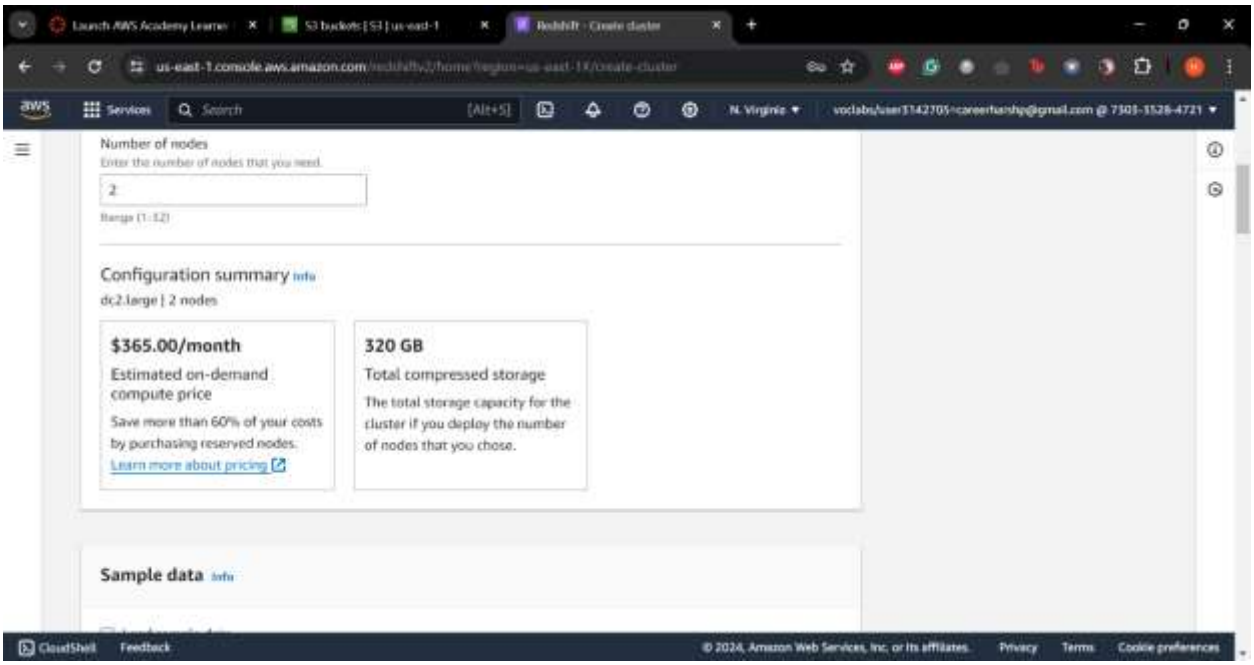
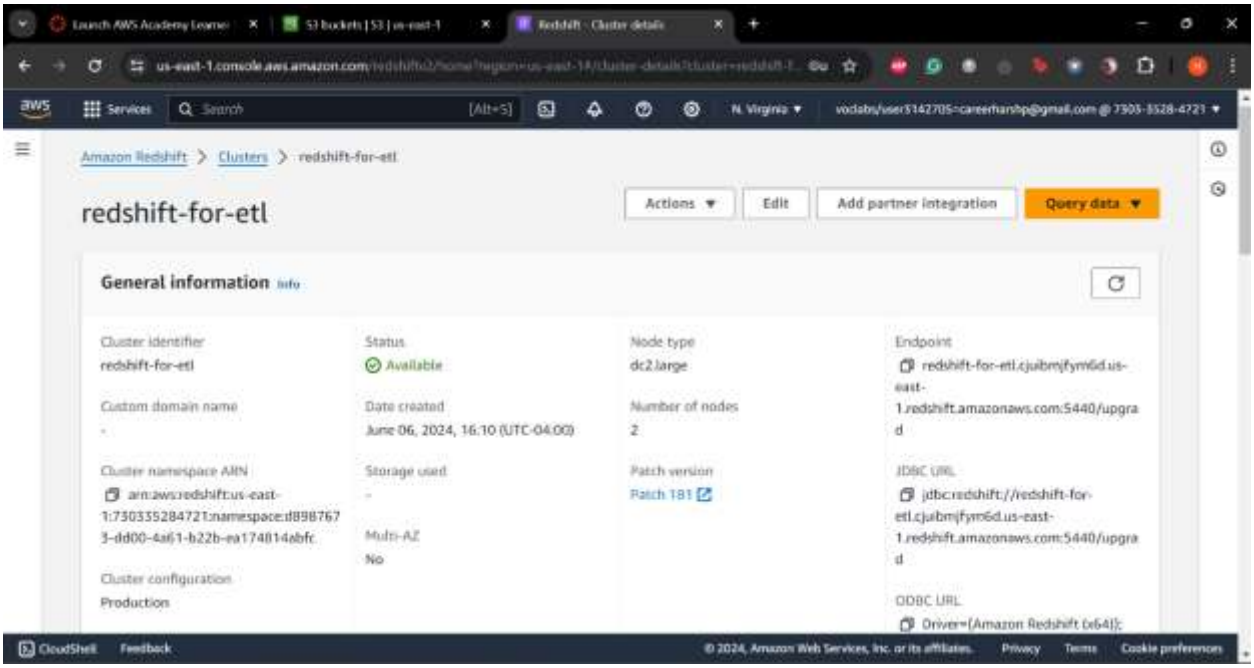
# Creation of a Redshift Cluster

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

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




Launch AWS Academy Learner
S3 buckets | S3 | us-east-1
Redshift - Cluster details
us-east-1.console.aws.amazon.com
Services
Search
[Alt+S]
N. Virginia
Amazon Redshift > Clusters > redshift-for-etl
redshift-for-etl
Actions
Edit
Add partner integration
Query data
General information Info
Cluster identifier
redshift-for-etl
Status
Available
Node type
dc2.large
Endpoint
redshift-for-etl.cjuibmjfym6d.us-east-1.redshift.amazonaws.com:5440/upgrad
Custom domain name
-
Date created
June 06, 2024, 16:10 (UTC-04:00)
Number of nodes
2
Cluster namespace ARN
arn:aws:redshift:us-east-1:730335284721:namespace:d898767 3-dd00-4a61-b22b-ea174814abfc
Storage used
-
Patch version
Patch 181
JDBC URL
jdbc:redshift://redshift-for-etl.cjuibmjfym6d.us-east-1.redshift.amazonaws.com:5440/upgrad
Multi-AZ
No
Cluster configuration
Production
ODBC URL
Driver={Amazon Redshift (x64)};
CloudShell
Feedback
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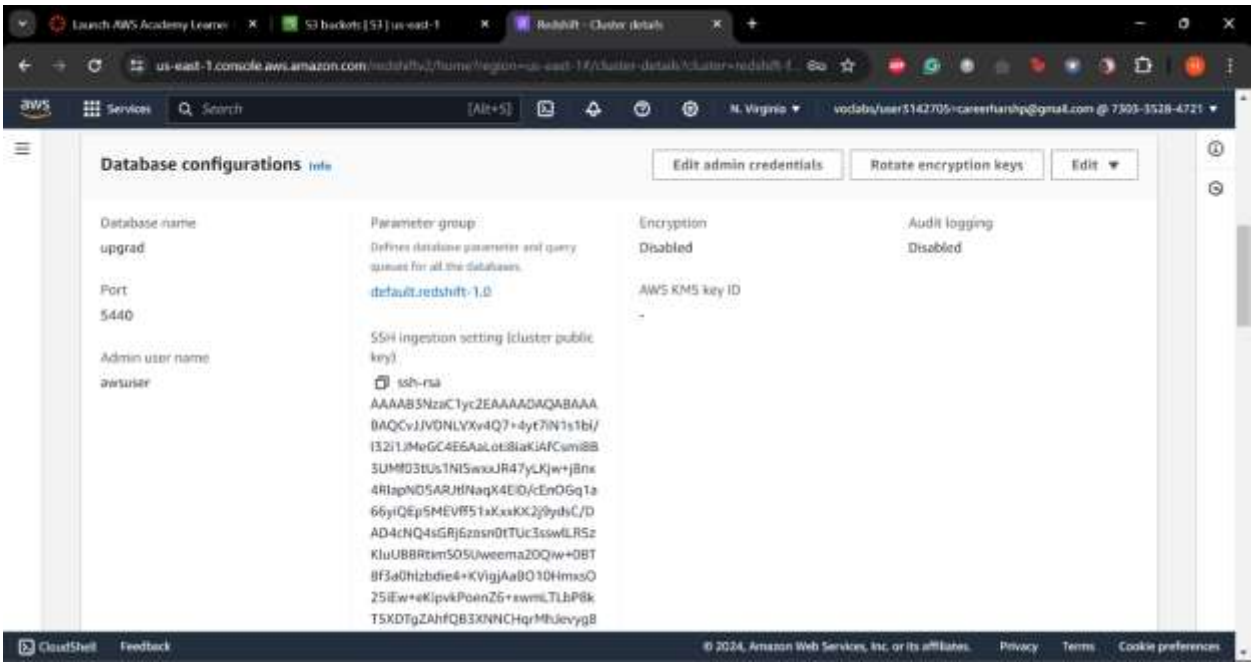
Launch AWS Academy Learner
S3 buckets | S3 | us-east-1
Redshift - Cluster details
us-east-1.console.aws.amazon.com
Services
Search
[Alt+S]
N. Virginia
Database configurations Info
Edit admin credentials
Rotate encryption keys
Edit
Database name
upgrad
Parameter group
Defines database parameter and query queues for all the databases.
default.redshift-1.0
Encryption
Disabled
Audit logging
Disabled
Port
5440
AWS KMS key ID
-
Admin user name
awsuser
SSH ingestion setting (cluster public key)
ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQCvJJV0NLVXv4Q7+4yt7iN1s1bi/I32i1JMeGC4E6AaLotBiaKiAFCsmi8B3UMf03tUs1NtSwxxJR47yLKJw+jBnx4RIapNO5ARJtlNaqX4EIO/cEnOGq1a66yiQEp5MEVff51aXxxKX2j9ydsC/DAD4cNQ4sGRj6zosn0tTUc3sswLRSzKluUBBRtkmSO5Uweema2OQw+OBT8f3a0hlzbdie4+KVigjAaBO10HmxsO25iEw+eKlpvkPoenZ6+swmLTLbP8kT5XDTgZAhfQB3XNNCHqrMhJevyg8
CloudShell
Feedback
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## 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 etl_atm_data;

create table if not exists etl_atm_data.DIM_LOCATION(
        location_id int not null sortkey distkey,
        location varchar(50),
        streetname varchar(255),
        street_number int,
        zipcode int,
        lat decimal(10,3),
        lon decimal(10,3),
        PRIMARY KEY(location_id)
);

create table if not exists etl_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
etl_atm_data.DIM_LOCATION(location_id)
);

create table if not exists etl_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)
);
```

```
create table if not exists etl_atm_data.DIM_CARD_TYPE(
	card_type_id int not null distkey sortkey,
	card_type varchar(30),
	PRIMARY KEY(card_type_id)
);

create table if not exists etl_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(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
		etl_atm_data.DIM_LOCATION(location_id),
	FOREIGN KEY(atm_id) REFERENCES etl_atm_data.DIM_ATM(atm_id),
	FOREIGN KEY(date_id) REFERENCES etl_atm_data.DIM_DATE(date_id),
	FOREIGN KEY(card_type_id) REFERENCES
		etl_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**

<Queries>

```
copy etl_atm_data.DIM_LOCATION from 's3://etl-project-upgrad/dim_location/part-00000-
4497a930-8930-45db-93a5-705c7d58d299-c000.csv' iam_role
'arn:aws:iam::730335284721:role/myRedshiftRole' delimiter ',' region 'us-east-1' CSV;
```

```
copy etl_atm_data.DIM_ATM from 's3://etl-project-upgrad/dim_atm/part-00000-dc0c784f-40a6-4330-a08d-553d23e030a5-c000.csv' iam_role 'arn:aws:iam::730335284721:role/myRedshiftRole' delimiter ',' region 'us-east-1' CSV;

copy etl_atm_data.DIM_DATE from 's3://etl-project-upgrad/dim_date/part-00000-339f7738-7b0f-47ba-8fed-c81f7c1579e2-c000.csv' iam_role 'arn:aws:iam::730335284721:role/myRedshiftRole' delimiter ',' region 'us-east-1' CSV timeformat 'auto';

copy etl_atm_data.DIM_CARD_TYPE from 's3://etl-project-upgrad/dim_card_type/part-00000-666ce7dc-4bc4-4312-99db-c75d5c570b8f-c000.csv' iam_role 'arn:aws:iam::730335284721:role/myRedshiftRole' delimiter ',' region 'us-east-1' CSV;

copy etl_atm_data.FACT_ATM_TRANS from 's3://etl-project-upgrad/fact_atm_trans/part-00000-f625ca03-24bb-4275-9a39-fb54a1eeb281-c000.csv' iam_role 'arn:aws:iam::730335284721:role/myRedshiftRole' delimiter ',' region 'us-east-1' CSV;
```