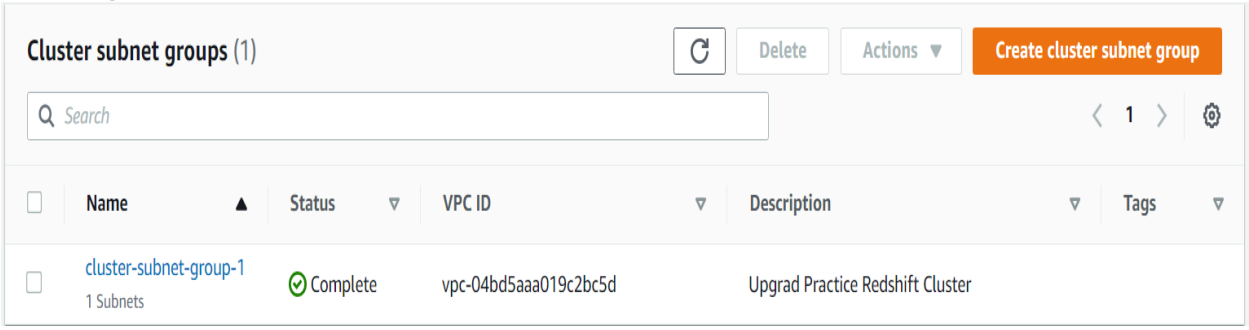
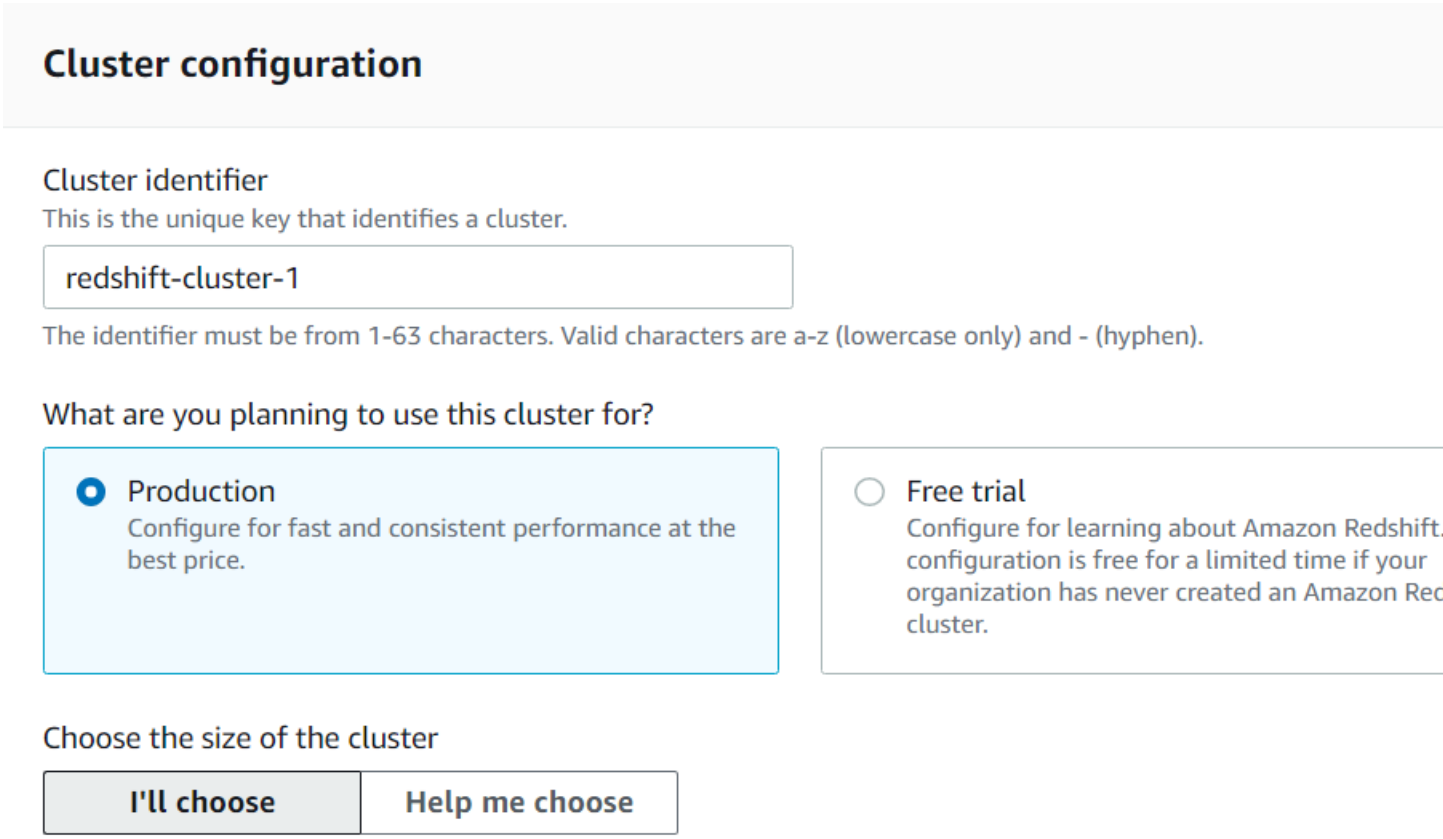
RedShift Setup

Redshift Setup

- Creating a SUBNET GROUP

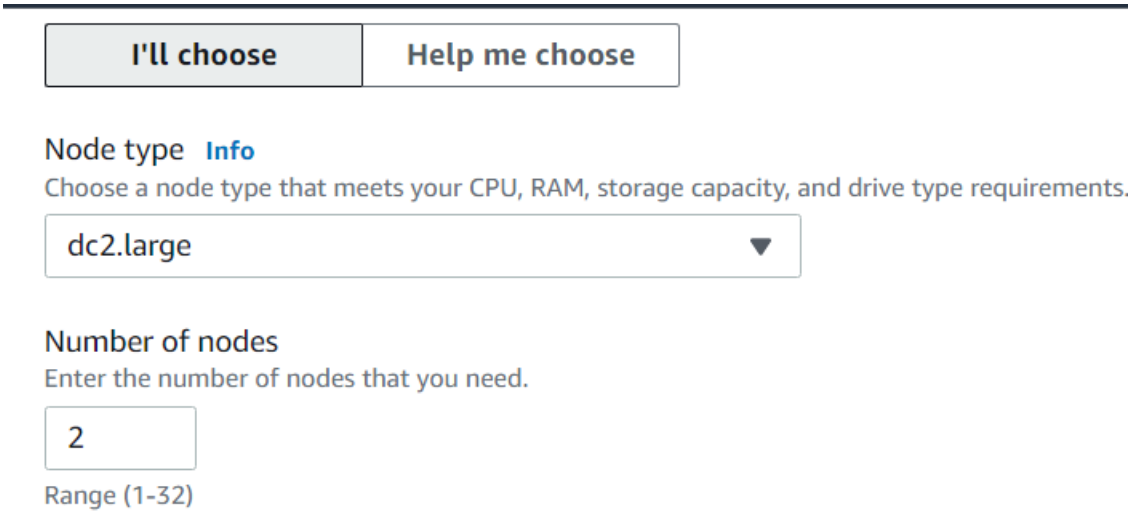


Creating Cluster

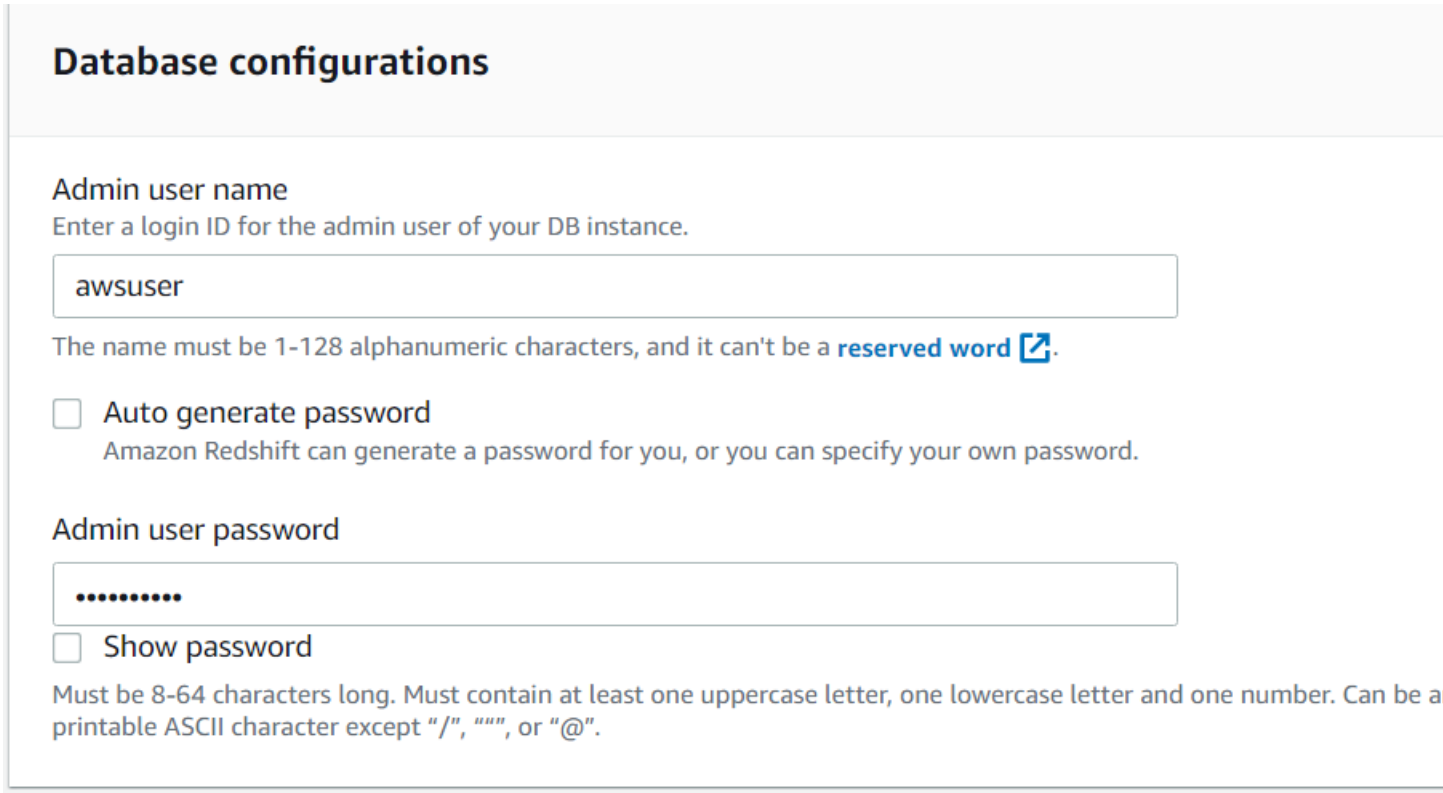


RedShift Setup

Choosing Node type – dc2.large



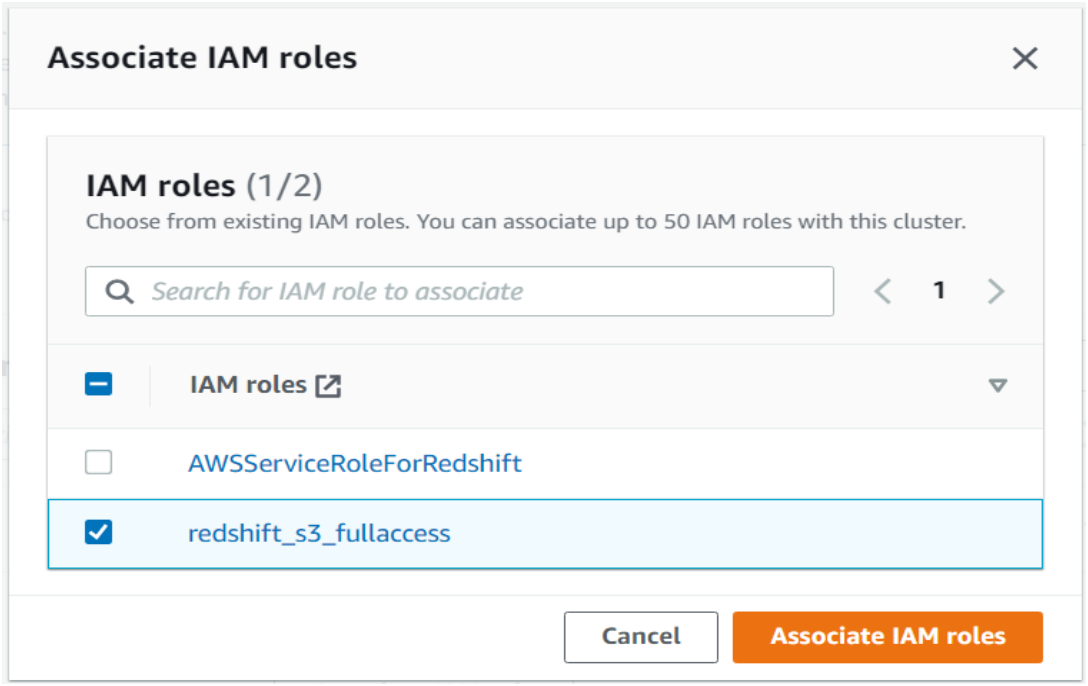
Database configuration – username and password



RedShift Setup

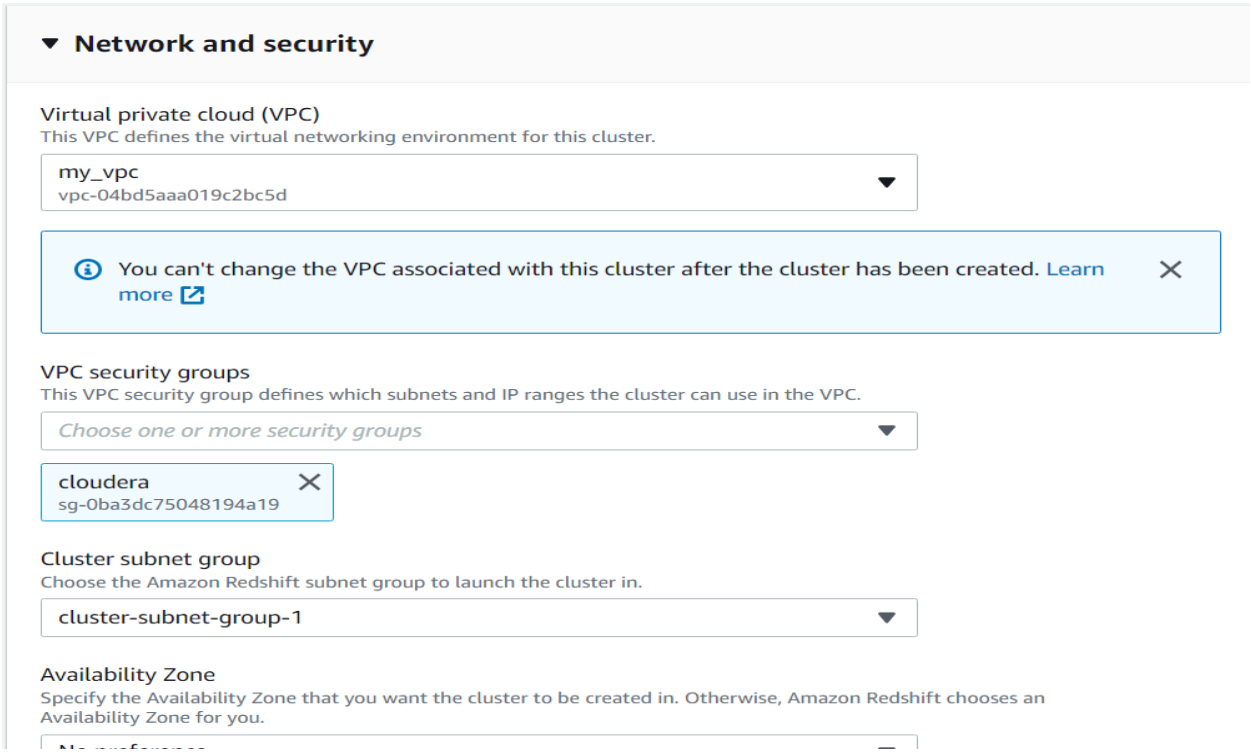
Attaching 'IAM' Role(redshift_s3_fullaccess)

For s3 access to cluster.



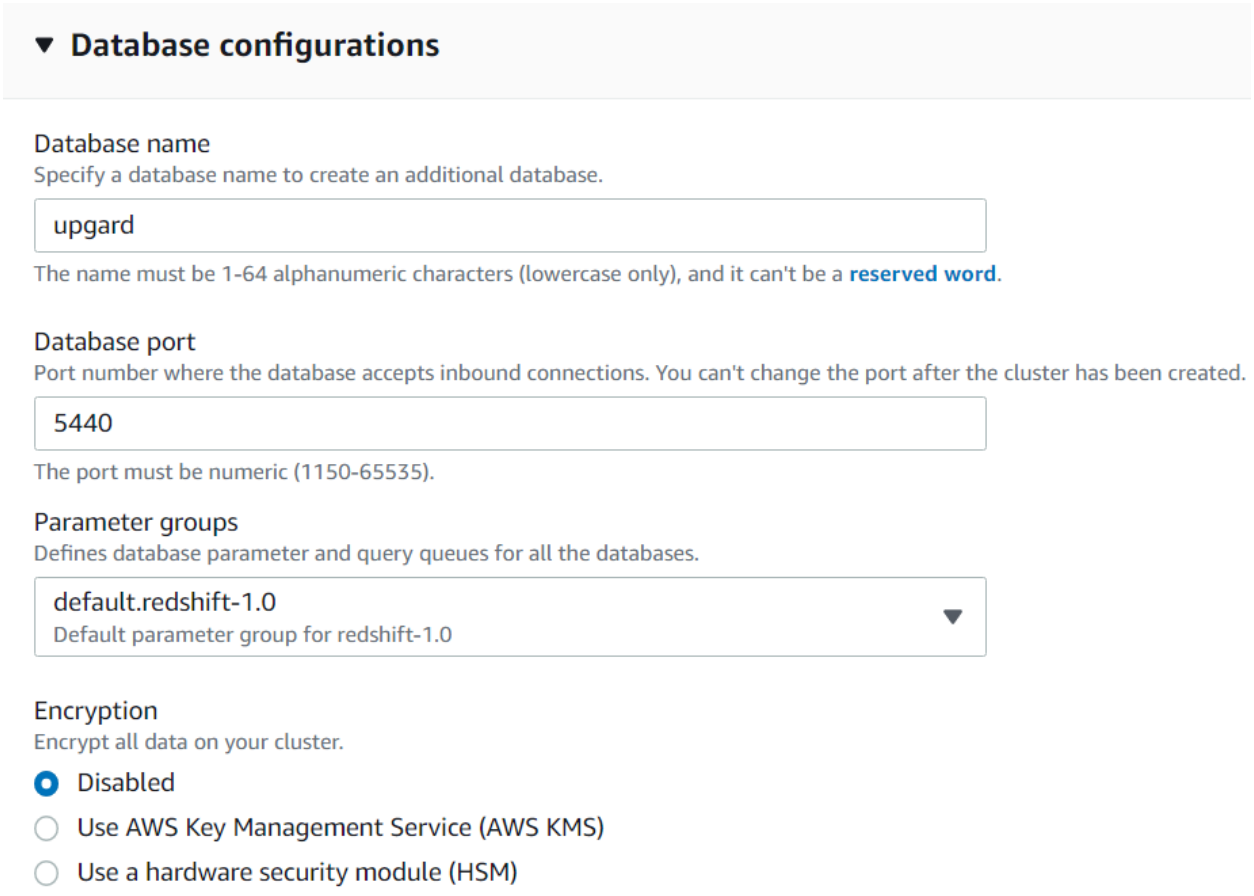
RedShift Setup

Network and Security Configuration



RedShift Setup

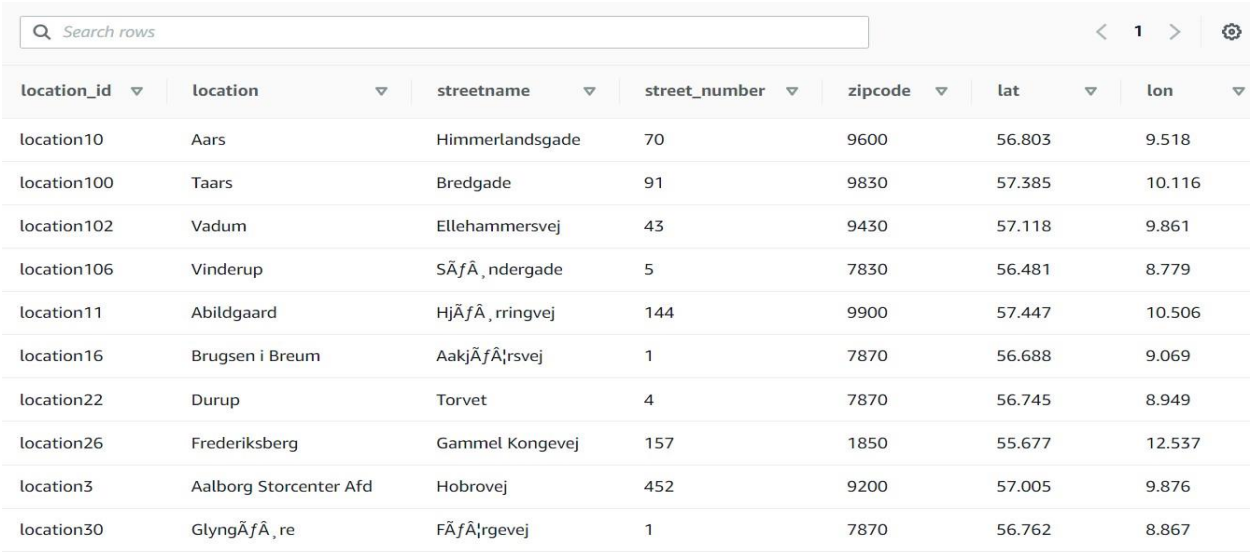
Database configurations – under additional configurations and here, set a database name. The default port is 5439, which is known globally. So, the best practiceis to change the port number and set it to any one between 1150 and 65535. After this you can click on the Create Cluster button



RedShift Setup

Schema and Tables Creation on RedShift

```
create schema ATM;
-- Creating table Location DImension table
create table ATM.DIM_LOCATION(
location_id VARCHAR(20) distkey sortkey primary key,
location VARCHAR(50),
streetname VARCHAR(255),
street_number INT,
zipcode INT,
lat DECIMAL(10,3),
lon DECIMAL(10,3)
);
-- Loading data from S3 bucket
copy ATM.DIM_LOCATION from
's3://etl-upgrad/DIM_LOCATION/'
iam_role 'arn:aws:iam::730892717471:role/redshift_s3_fullaccess'
delimiter ',' region 'us-east-1' IGNOREHEADER 1 removequotes;
```



Search rows

1

location_id	location	streetname	street_number	zipcode	lat	lon
location10	Aars	Himmerlandsgade	70	9600	56.803	9.518
location100	Taars	Bredgade	91	9830	57.385	10.116
location102	Vadum	Ellehammersvej	43	9430	57.118	9.861
location106	Vinderup	SÃƒÂ¸ndergade	5	7830	56.481	8.779
location11	Abildgaard	HjÃƒÂ¸rringvej	144	9900	57.447	10.506
location16	Brugsen i Breum	AakjÃƒÂ¦rsvej	1	7870	56.688	9.069
location22	Durup	Torvet	4	7870	56.745	8.949
location26	Frederiksberg	Gammel Kongevej	157	1850	55.677	12.537
location3	Aalborg Storcenter Afd	Hobrovej	452	9200	57.005	9.876
location30	GlyngÃƒÂ¸re	FÃƒÂ¦rgevej	1	7870	56.762	8.867

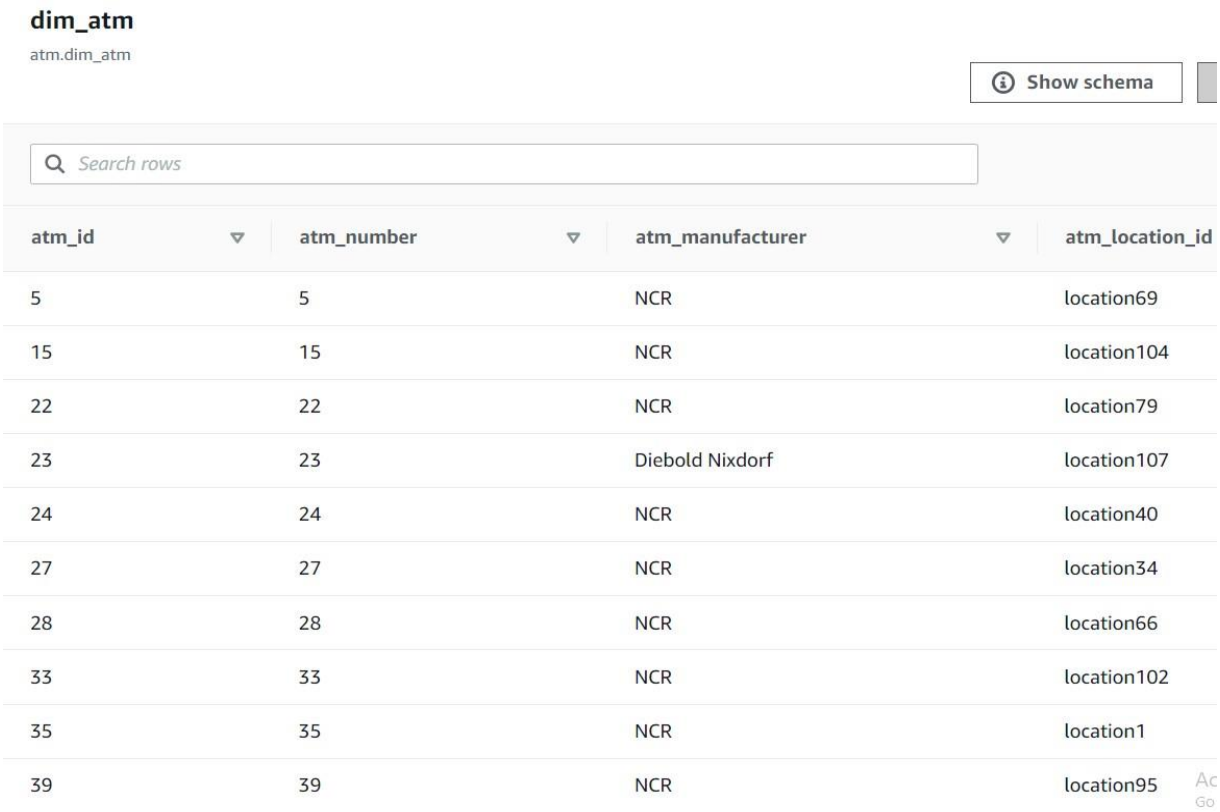
RedShift Setup

– Creating Atm dimension table

```
create table ATM.DIM_ATM(
atm_id INT distkey sortkey primary key,
atm_number varchar(20),
atm_manufacturer VARCHAR(50),
atm_location_id VARCHAR(50),
foreign key(atm_location_id) references ATM.DIM_LOCATION(location_id)
);
```

– Loading data from S3 bucket

```
copy ATM.DIM_ATM from
's3://etl-upgrad/DIM_ATM/'
iam_role 'arn:aws:iam::730892717471:role/redshift_s3_fullaccess'
delimiter ',' region 'us-east-1' IGNOREHEADER 1 removequotes;
```



atm_id	atm_number	atm_manufacturer	atm_location_id
5	5	NCR	location69
15	15	NCR	location104
22	22	NCR	location79
23	23	Diebold Nixdorf	location107
24	24	NCR	location40
27	27	NCR	location34
28	28	NCR	location66
33	33	NCR	location102
35	35	NCR	location1
39	39	NCR	location95

RedShift Setup

– Creating Card type Dimension table

```
create table ATM.DIM_CARD_TYPE(
card_type_id VARCHAR(20) distkey sortkey primary key,
card_type VARCHAR(30)
);
```

– Loading data from S3 bucket

```
copy ATM.DIM_CARD_TYPE from
's3://etl-upgrad/DIM_CARD_TYPE/'
iam_role 'arn:aws:iam::730892717471:role/redshift_s3_fullaccess'
delimiter ',' region 'us-east-1' IGNOREHEADER 1 removequotes;
```

dim_card_type

atm.dim_card_type

Search rows

card_type_id	card_type
card1	CIRRUS
card10	Visa Dankort
card6	Maestro
card7	MasterCard
card11	Visa Dankort - on-us
card4	HÃƒÂ¦vekort
card5	HÃƒÂ¦vekort - on-us
card8	Mastercard - on-us
card9	VISA
card12	VisaPlus

RedShift Setup

– Creating Date dimension table

```
create table ATM.DIM_DATE(
date_id VARCHAR(20) distkey sortkey primary key,
full_date_time TIMESTAMP,
year INT,
month VARCHAR(20),
day INT,
hour INT,
weekday VARCHAR(20)
);
```

– Loading data from S3 Bucket

```
copy ATM.DIM_DATE from
's3://etl-upgrad/DIM_DATE/'
iam_role 'arn:aws:iam::730892717471:role/redshift_s3_fullaccess'
timeformat 'YYYY-MM-DDTHH:MI:SS'
delimiter ',' region 'us-east-1' IGNOREHEADER 1 removequotes;
```

date_id	full_date_time	year	month	day	hour	weekday
date1009	2017-08-13 05:00:00	2017	August	13	5	Sunday
date1010	2017-08-13 06:00:00	2017	August	13	6	Sunday
date1013	2017-08-13 09:00:00	2017	August	13	9	Sunday
date1018	2017-08-13 14:00:00	2017	August	13	14	Sunday
date1021	2017-08-13 17:00:00	2017	August	13	17	Sunday
date1028	2017-08-14 00:00:00	2017	August	14	0	Monday
date1029	2017-08-14 01:00:00	2017	August	14	1	Monday
date1031	2017-08-14 03:00:00	2017	August	14	3	Monday
date104	2017-04-05 08:00:00	2017	April	5	8	Wednesday
date1045	2017-08-14 17:00:00	2017	August	14	17	Monday

RedShift Setup

-- Creating Transaction Fact table

```
create table ATM.FACT_ATM_TRANS(
trans_id VARCHAR(20) distkey sortkey primary key,
atm_id INT ,
weather_loc_id VARCHAR(20) ,
date_id VARCHAR(20) ,
card_type_id VARCHAR(20) ,
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) ,
foreign key(weather_loc_id) references ATM.DIM_LOCATION(location_id),
foreign key(atm_id) references ATM.DIM_ATM(atm_id),
foreign key(date_id) references ATM.DIM_DATE(date_id),
foreign key(card_type_id) references ATM.DIM_CARD_TYPE(card_type_id)
);
```

-- Loading data from S3 Bucket

```
copy ATM.FACT_ATM_TRANS from
's3://etl-upgrad/FACT_ATM_TRANS/'
iam_role 'arn:aws:iam::730892717471:role/redshift_s3_fullaccess'
delimiter ',' region 'us-east-1' IGNOREHEADER 1 removequotes;
```

RedShift Setup

trans_id	atm_id	weather_loc_id	date_id	card_type_id	atm_status	currency	service
transaction100	35	location1		card10	Active	DKK	Withdrav
transaction10000	35	location1	date2447	card11	Active	DKK	Withdrav
transaction1000004	60	location37	date4361	card11	Active	DKK	Withdrav
transaction1000005	60	location37	date4361	card11	Active	DKK	Withdrav
transaction1000006	60	location37	date4361	card11	Active	DKK	Withdrav
transaction1000010	60	location37	date4361	card11	Active	DKK	Withdrav
transaction1000012	60	location37	date4361	card11	Active	DKK	Withdrav
transaction1000015	60	location37	date4361	card11	Active	DKK	Withdrav
transaction1000016	60	location37	date4361	card11	Active	DKK	Withdrav
transaction1000018	60	location37	date4386	card11	Active	DKK	Withdrav