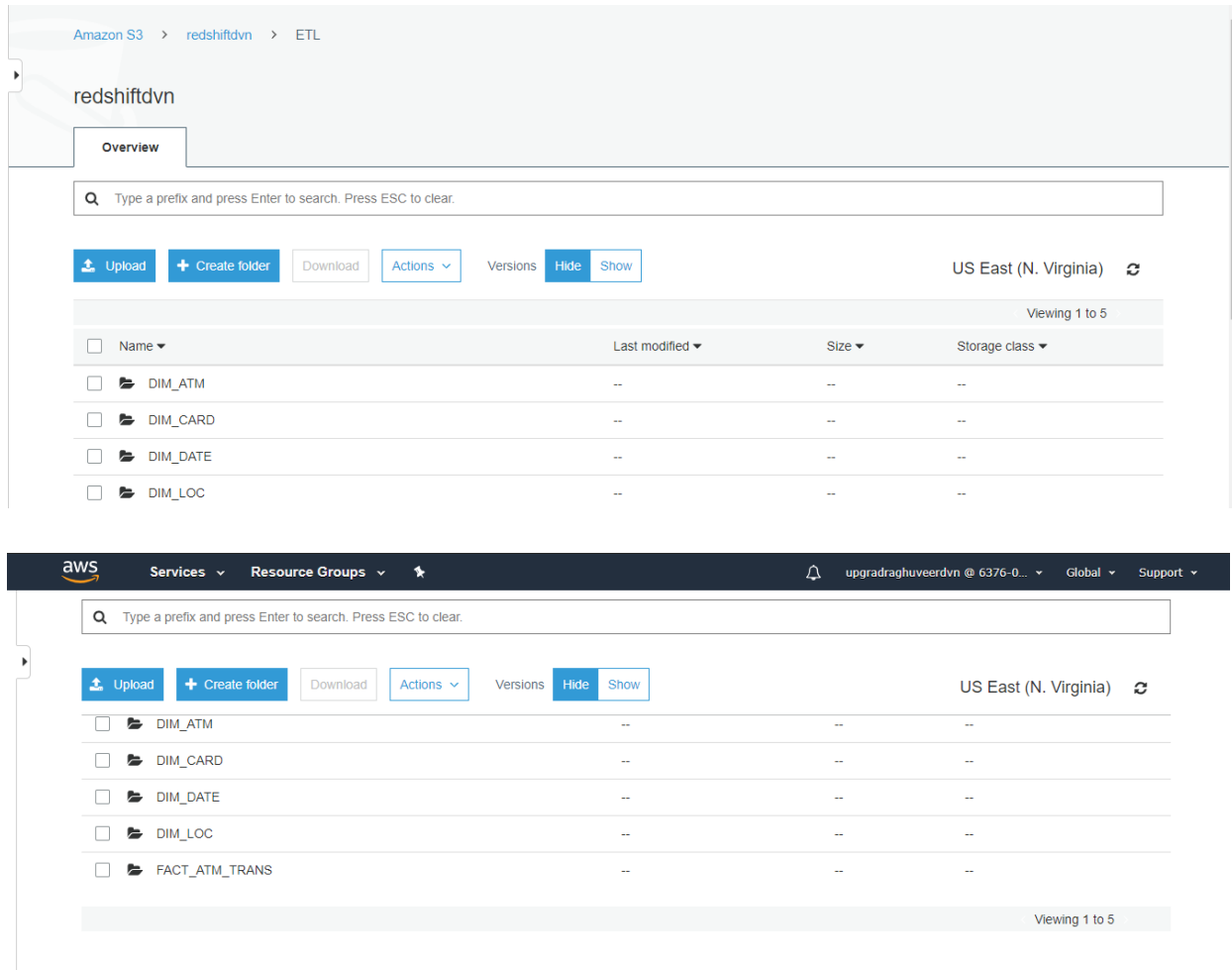


Solving analytical queries on RedShift Cluster

Screenshot of S3:



Amazon S3 > redshiftdvn > ETL

redshiftdvn

Overview

Search: Type a prefix and press Enter to search. Press ESC to clear.

Upload Create folder Download Actions Versions Hide Show US East (N. Virginia)

Name	Last modified	Size	Storage class
DIM_ATM	--	--	--
DIM_CARD	--	--	--
DIM_DATE	--	--	--
DIM_LOC	--	--	--

Viewing 1 to 5

aws Services Resource Groups upgradraghuveerdvn @ 6376-0... Global Support

Search: Type a prefix and press Enter to search. Press ESC to clear.

Upload Create folder Download Actions Versions Hide Show US East (N. Virginia)

Name	Last modified	Size	Storage class
DIM_ATM	--	--	--
DIM_CARD	--	--	--
DIM_DATE	--	--	--
DIM_LOC	--	--	--
FACT_ATM_TRANS	--	--	--

Viewing 1 to 5

1. Top 10 ATMs where most transactions are in the 'inactive' state

```
SELECT a.atm_id, a.atm_manufacturer, b.atm_location, count(d.trans_id) as transaction_count,
count(d.atm_status)
from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d
where d.atm_status = 'Inactive'
and d.atm_prim_id = a.atm_prim_id
and b.location_id = d.location_id
group by a.atm_id, a.atm_manufacturer, b.atm_location
order by transaction_count desc
limit 10
```

```

1 SELECT a.atm_id, a.atm_manufacturer, b.atm_location, count(d.trans_id) as transaction_count,
2        count(d.atm_status),
3        from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d
4        where d.atm_status = 'Inactive'
5        and d.atm_prim_id = a.atm_prim_id
6        and b.location_id = d.location_id
7        group by a.atm_id, a.atm_manufacturer, b.atm_location
8        order by transaction_count desc
9        limit 10

```

aws					
Services ▾ Resource Groups ▾ upgradraghuveerdvn @ 6376-0... ▾ N. Virginia ▾ Support ▾					
Q Search rows < 1 > ⚙					
atm_id ▾	atm_manufacturer ▾	atm_location ▾	transaction_count ▾	count ▾	
16	NCR	Skive	44043	44043	
12	NCR	ÅfEøesterÅfÅ¥ Duus	33982	33982	
2	NCR	Vejgaard	33725	33725	
88	NCR	Storcenter indg. A	32183	32183	
30	NCR	NykÅfÅ,bing Mors	30883	30883	
52	NCR	FarsÅfÅ,	27361	27361	
50	NCR	Aarhus	23416	23416	
29	NCR	Skelagervej 15	20773	20773	
81	NCR	Spar KÅfÅ,bmand TornhÅfÅ,j	20148	20148	
102	NCR	Aalborg Storcenter Afd	18297	18297	

atm_id ▾	atm_manufacturer ▾	atm_location ▾	transaction_count ▾	count ▾
16	NCR	Skive	44043	44043
12	NCR	ÅfEøesterÅfÅ¥ Duus	33982	33982
2	NCR	Vejgaard	33725	33725
88	NCR	Storcenter indg. A	32183	32183
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29	NCR	Skelagervej 15	20773	20773
81	NCR	Spar KÅfÅ,bmand TornhÅfÅ,j	20148	20148
102	NCR	Aalborg Storcenter Afd	18297	18297

2. Number of ATM failures corresponding to the different weather conditions recorded at the time of the transactions

```
select c.weather_main, c.total_transaction_count,
NVL(d.inactive_count::int,0) as total_inactive_count,
round(100.0000*total_inactive_count/c.total_transaction_count,4) as inactive_count_percent
from
(select a.weather_main, count(a.trans_id) as total_transaction_count from
assign_etl.FACT_ATM_TRANS a where a.weather_main != ' ' group by a.weather_main)
c left outer join
(select b.weather_main, count(b.atm_status) as inactive_count from
assign_etl.FACT_ATM_TRANS b where b.atm_status='Inactive' and b.weather_main != ' ' group
by b.weather_main) d
on c.weather_main=d.weather_main
group by c.weather_main,c.total_transaction_count, total_inactive_count
order by inactive_count_percent desc;
```

weather_main	total_transaction_count	total_inactive_count	inactive_count_percent
Snow	23405	4813	20.5640
Fog	18174	3729	20.5183
Clouds	1181901	194027	16.4165
Rain	545135	86017	15.7790
Clear	543949	85531	15.7241
Mist	82801	12864	15.5360
Thunderstorm	2549	361	14.1624
Drizzle	62530	8670	13.8653
TORNADO	38	1	2.6316
Haze	3	0	0.0000

3. Top 10 ATMs with the most number of transactions throughout the year

```
SELECT a.atm_id, a.atm_manufacturer, b.atm_location, count(d.trans_id) as transaction_count
from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d
where d.atm_prim_id = a.atm_prim_id
and b.location_id = d.location_id
group by a.atm_id, a.atm_manufacturer, b.atm_location
order by transaction_count desc
limit 10
```

```
Query3:
SELECT a.atm_id, a.atm_manufacturer, b.atm_location, count(d.trans_id) as transaction_count
from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d
where d.atm_prim_id = a.atm_prim_id
and b.location_id = d.location_id
group by a.atm_id, a.atm_manufacturer, b.atm_location
order by transaction_count desc
limit 10
```

aws Services Resource Groups upgradraghuveerdyn @ 6376-0... N. Virginia Support

Query 9669 [🔗](#) Execution Data Visualize

Completed, started on August 27, 2020 at 23:41:02
ELAPSED TIME: 00 m 09 s

Rows returned (10) [Export](#)

atm_id	atm_manufacturer	atm_location	transaction_count
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
10	NCR	NÃfÃ_rresundby	53794
24	NCR	Hobro	53378
45	NCR	Abildgaard	53198
16	NCR	Skive	44043
40	Diebold Nixdorf	Frederikshavn	43767
1	NCR	NÃfÃstved	42787

atm_id	atm_manufacturer	atm_location	transaction_count
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
10	NCR	NÃfÃ, rresundby	53794
24	NCR	Hobro	53378
45	NCR	Abildgaard	53198
16	NCR	Skive	44043
40	Diebold Nixdorf	Frederikshavn	43767
1	NCR	NÃfÃstved	42787
41	Diebold Nixdorf	Skagen	42732
48	Diebold Nixdorf	BrÃfÃ, nderslev	42493

4. Number of overall ATM transactions going inactive per month for each month

```
select c.year, c.month, c.transaction_count, d.inactive_count,
CAST(trunc(100.0*d.inactive_count/c.transaction_count,2) AS NUMERIC(10,4)) as
inactive_count_percent from
(select a.year, a.month, count(b.trans_id) as transaction_count from etl.date
a,etl.FACT_ATM_TRANS b where a.date_id = b.date_id group by a.month, a.year) c left join
(select a.year, a.month, count(b.atm_status) as inactive_count from assign_etl.date
a,assign_etl.FACT_ATM_TRANS b where a.date_id = b.date_id and b.atm_status='Inactive'
group by a.month, a.year) d
on c.year=d.year and c.month=d.month
order by c.year, c.month;
```

year_ ▾	month ▾	trans_count ▾	inactive_count ▾	inactive_count_percent ▾
2017	April	218865	41830	19.1100
2017	August	217218	36713	16.9000
2017	December	197048	20476	10.3900
2017	February	182659	36656	20.0600
2017	January	180195	35953	19.9500
2017	July	227682	38139	16.7500
2017	June	225166	36789	16.3300
2017	March	209586	41046	19.5800
2017	May	222418	37679	16.9400
2017	November	193967	21684	11.1700
2017	October	191667	21780	11.3600
2017	September	202101	28913	14.3000

5. Top 10 ATMs with the highest total withdrawn amount throughout the year

```
SELECT a.atm_id, a.atm_manufacturer, b.atm_location, sum(d.transaction_amount) as
total_transaction_amount
  from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d
  where d.atm_prim_id = a.atm_prim_id
  and b.location_id = d.location_id
 group by a.atm_id, a.atm_manufacturer, b.atm_location
 order by total_transaction_amount desc
 limit 10
```

```
Query 5:
SELECT a.atm_id, a.atm_manufacturer, b.atm_location, sum(d.transaction_amount) as total_transaction_amount
  from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d
  where d.atm_prim_id = a.atm_prim_id
  and b.location_id = d.location_id
 group by a.atm_id, a.atm_manufacturer, b.atm_location
 order by total_transaction_amount desc
 limit 10
```

aws				Services	Resource Groups			upgradraghuveerdyn @ 6376-0...	N. Virginia	Support
				Rows returned (10)						Export
				Search rows						
atm_id	atm_manufacturer	atm_location	total_transaction_amount							
39	NCR	Svenstrup	277097637							
20	NCR	Bispensgade	271008803							
24	NCR	Hobro	268289882							
10	NCR	NÅfÅ, resundby	267379103							
45	NCR	Abildgaard	265639616							
16	NCR	Skive	220677013							
40	Diebold Nixdorf	Frederikshavn	219812287							
41	Diebold Nixdorf	Skagen	214127315							
1	NCR	NÅfÅ, stved	213721117							
48	Diebold Nixdorf	BrÅfÅ, nderslev	212883099							

Result:

<div> <div> <div></div> <div>Search rows</div> </div> <div> <div><</div> <div>1</div> <div>></div> <div></div> </div> </div>			
atm_id	atm_manufacturer	atm_location	total_transaction_amount
39	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
24	NCR	Hobro	268289882
10	NCR	NÃfÃ , rresundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÃfÃstved	213721117
48	Diebold Nixdorf	BrÃfÃ , nderslev	212883099

6. Number of failed ATM transactions across various card types

```
select a.card_type, a.transaction_count, b.inactive_count,
round(100.0000*b.inactive_count/a.transaction_count,4) as inactive_count_percent from
(select c.card_type, count(d.trans_id) as transaction_count from etl.card c,
etl.FACT_ATM_TRANS d
where c.card_type_id = d.card_type_id group by c.card_type)a
left join
(select c.card_type, count(d.atm_status) as inactive_count from etl.card c,
etl.FACT_ATM_TRANS d
where c.card_type_id = d.card_type_id and d.atm_status='Inactive' group by
c.card_type)b
on a.card_type = b.card_type
order by inactive_count_percent desc;
```

card_type	transaction_count	inactive_count	inactive_count_percent
Mastercard - on-us	458226	86000	18.7680
VISA	170828	30713	17.9789
Dankort - on-us	143813	24680	17.1612
CIRRUS	17362	2953	17.0084
HÃfÃ\vekort - on-us	62487	10331	16.5330
Dankort	28581	4557	15.9442
MasterCard	400507	63482	15.8504
Visa Dankort - on-us	748805	112972	15.0870
HÃfÃ\vekort	8459	1208	14.2806
Visa Dankort	427840	60547	14.1518

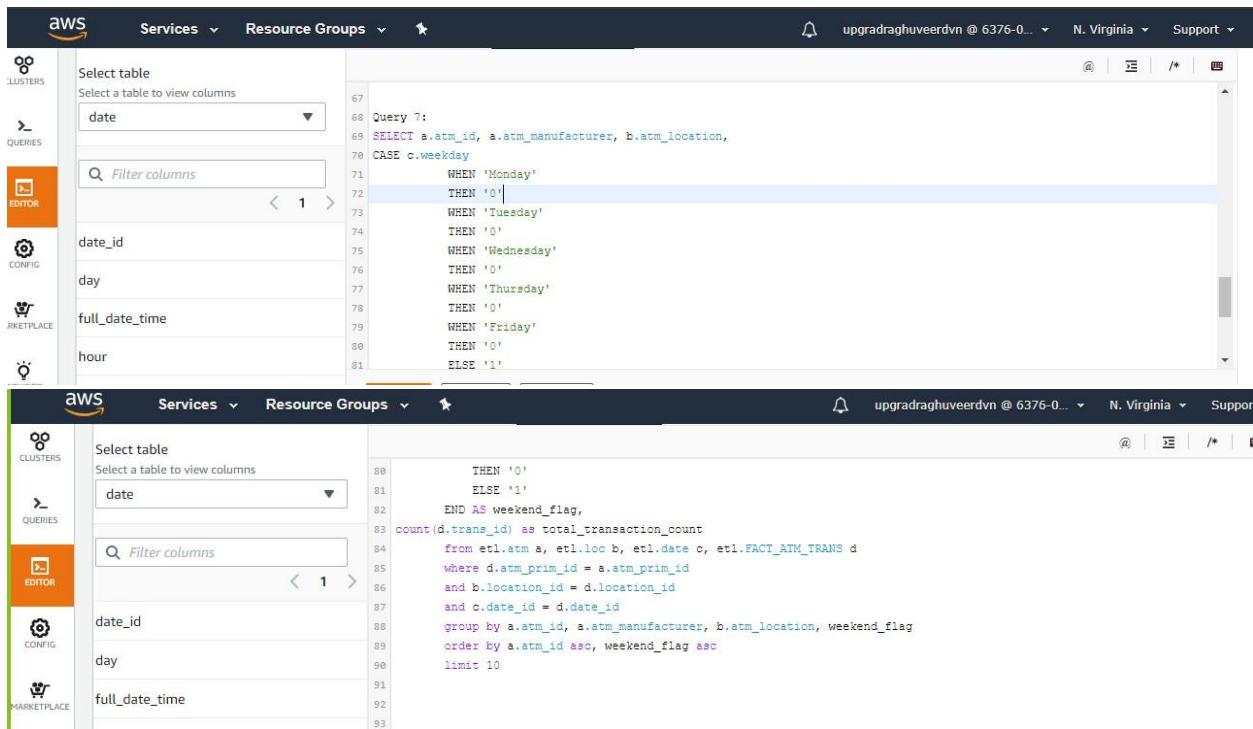
7. Number of transactions happening on an ATM on weekdays and on weekends throughout the year. Order this by the ATM_number, ATM_manufacturer, location, weekend_flag and then total_transaction_count

```
SELECT a.atm_id, a.atm_manufacturer, b.atm_location,
CASE c.weekday
WHEN 'Monday'
THEN '0'
WHEN 'Tuesday'
```

```

THEN '0'
WHEN 'Wednesday'
THEN '0'
WHEN 'Thursday'
THEN '0'
WHEN 'Friday'
THEN '0'
ELSE '1'
END AS weekend_flag,
count(d.trans_id) as total_transaction_count
from etl.atm a, etl.loc b, etl.date c, etl.FACT_ATM_TRANS d
where d.atm_prim_id = a.atm_prim_id
and b.location_id = d.location_id
and c.date_id = d.date_id
group by a.atm_id, a.atm_manufacturer, b.atm_location, weekend_flag
order by a.atm_id asc, weekend_flag asc
limit 10

```



The screenshot shows the AWS Glue console interface. On the left, there is a sidebar with icons for Clusters, Queries, Editor, Config, and Marketplace. The main area is divided into two panes. The left pane shows a 'Select table' dropdown set to 'date' and a list of columns: date_id, day, full_date_time, and hour. The right pane shows a SQL query editor with the following code:

```

67
68 Query 7:
69 SELECT a.atm_id, a.atm_manufacturer, b.atm_location,
70 CASE c.weekday
71     WHEN 'Monday'
72     THEN '0'
73     WHEN 'Tuesday'
74     THEN '0'
75     WHEN 'Wednesday'
76     THEN '0'
77     WHEN 'Thursday'
78     THEN '0'
79     WHEN 'Friday'
80     THEN '0'
81     ELSE '1'

```

The bottom pane shows the continuation of the query:

```

80     THEN '0'
81     ELSE '1'
82 END AS weekend_flag,
83 count(d.trans_id) as total_transaction_count
84 from etl.atm a, etl.loc b, etl.date c, etl.FACT_ATM_TRANS d
85 where d.atm_prim_id = a.atm_prim_id
86 and b.location_id = d.location_id
87 and c.date_id = d.date_id
88 group by a.atm_id, a.atm_manufacturer, b.atm_location, weekend_flag
89 order by a.atm_id asc, weekend_flag asc
90 limit 10
91
92
93

```

console.aws.amazon.com/redshiftv2/home?region=us-east-1#query-editor: ☆ Incognito (3)

★ Bookmarks Welcome to Online... CTS IE IMPORT INFY IMPORTED IE ICICI Netbanking Infosys Smart Card UPG Learn WhatsApp NEW DS Learnings

aws Services Resource Groups upgradraghuveerdvn @ 6376-0... N. Virginia Support

atm_id	atm_manufacturer	atm_location	weekend_flag	total_transaction_count
1	NCR	NÃfÃstved	0	32711
1	NCR	NÃfÃstved	1	10076
10	NCR	NÃfÃ, rresundby	0	41667
10	NCR	NÃfÃ, rresundby	1	12127
100	NCR	Intern Skive	0	17812
100	NCR	Intern Skive	1	1
101	NCR	Bryggen Vejle	0	11693
101	NCR	Bryggen Vejle	1	3247
102	NCR	Aalborg Storcenter Afd	0	14556
102	NCR	Aalborg Storcenter Afd	1	3741

8. Most active day in each ATMs from location "Vejgaard"

```

SELECT atm_id,
       atm_manufacturer,
       atm_location,
       weekday,
       total_transaction_count
FROM (
  select atm_id,
         atm_manufacturer,
         atm_location,
         weekday,
         total_transaction_count,
         max(total_transaction_count) over (partition by atm_id) as max_version
  from (SELECT a.atm_id, a.atm_manufacturer, b.atm_location, c.weekday,
        count(d.trans_id) as total_transaction_count
        from etl.atm a, etl.loc b, etl.date c, etl.FACT_ATM_TRANS d
        where d.atm_prim_id = a.atm_prim_id
        and b.location_id = d.location_id
        and b.atm_location = 'Vejgaard'
        and c.date_id = d.date_id
        group by a.atm_id, a.atm_manufacturer, b.atm_location, c.weekday) c
) t
where total_transaction_count = max_version;

```

atm_id	atm_manufacturer	atm_location	weekday	total_transaction_count
2	NCR	Vejgaard	Friday	6290
103	Diebold Nixdorf	Vejgaard	Friday	4757