

Workshop 09/24/2021

Creating IAM service account and giving necessary roles in Google Cloud Platform(GCP)

Service account details

2 Grant this service account access to project (optional)

Grant this service account access to My First Project so that it has permission to complete specific actions on the resources in your project. [Learn more](#)

Role	Condition	
BigQuery Admin	Add condition	
Administer all BigQuery resources and data		
Pub/Sub Admin	Add condition	
Full access to topics, subscriptions, and snapshots.		
Dataflow Admin	Add condition	
Minimal role for creating and managing dataflow jobs.		
Bigtable Administrator	Add condition	
Full access to all Bigtable resources and ability to access Bigtable IAM roles		

Successfully updated service accounts

Service accounts for project "My First Project"

A service account represents a Google Cloud service identity, such as code running on Compute Engine VMs, App Engine apps, or systems running outside Google. [Learn more about service accounts.](#)

Organization policies can be used to secure service accounts and block risky service account features, such as automatic IAM Grants, key creation/upload, or the creation of service accounts entirely. [Learn more about service account organization policies.](#)

Filter: Enter property name or value

Email	Status	Name	Description	Key ID	Key creation date	Actions
info7370@psychic-pillar-326819.iam.gserviceaccount.com	Success	info7370	INFO 7370	1ce6c77a05bacf20a5e897cd340adb20e6eb8400	Sep 22, 2021	
paris-service@psychic-pillar-326819.iam.gserviceaccount.com	Success	paris-service	dang7370 workshop 2	No keys		

Adding Big query public datasets to the console

311_service_requests

Table info

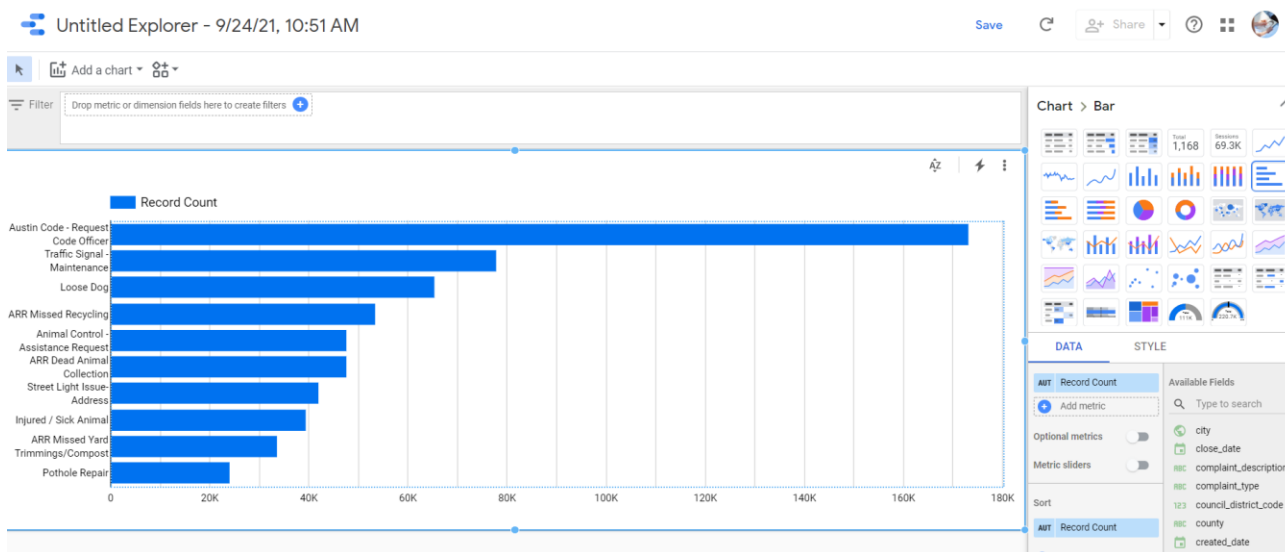
Property	Value
Table ID	bigquery-public-data:austin_311_311_service_requests
Table size	313.14 MB
Long-term storage size	0 B
Number of rows	1,134,506
Created	May 18, 2017, 10:29:56 AM UTC-4
Last modified	Aug 12, 2021, 3:12:33 AM UTC-4
Table expiration	NEVER
Data location	US
Description	

Querying public dataset in GCP

The screenshot shows the Google Cloud Platform interface with the BigQuery Explorer. A query is executed, and the results are displayed in a table. The query is: `SELECT * FROM `bigquery-public-data.austin_311.311_service_requests` LIMIT 1000`. The results table has 10 columns: Row, unique_key, complaint_type, complaint_description, owning_department, source, status, status_change_date, and status. The data shows various complaints such as Coyote Complaints, Street Resurfacing, and Dangerous/Vicious Dog Investigation.

Row	unique_key	complaint_type	complaint_description	owning_department	source	status	status_change_date
1	19-00447848	ACCOYTE	Coyote Complaints	Animal Services Office	Phone	Closed	2019-11-25 12:22
2	20-00501930	ACCOYTE	Coyote Complaints	Animal Services Office	Phone	Closed	2020-12-10 14:09
3	19-00228025	SBSTRES	Street Resurfacing	Public Works	Phone	Closed	2019-06-19 14:15
4	19-00449470	COAACDD	Dangerous/Vicious Dog Investigation	Animal Services Office	Phone	Closed	2020-03-18 17:40
5	20-00033519	COAACDD	Dangerous/Vicious Dog Investigation	Animal Services Office	Phone	Duplicate (closed)	2020-01-30 14:20
6	19-00434796	ACCOYTE	Coyote Complaints	Animal Services Office	Phone	Closed	2019-11-15 09:07

Connecting data studio to public data of big query in GCP and doing simple visualization



Connecting bigquery to dbeaver succesfully

The screenshot shows the DBeaver Google BigQuery Connection Settings dialog box. The 'Main' tab is selected, showing the connection configuration. The 'Project' field is set to 'ps...-pillar-...', and the 'Additional project(s)' field is set to 'bigquery-public-data'. The 'Service account' field is set to 'paris...', and the 'OAuth type' is set to 'Service-based'. The 'Host' field is set to 'https://www.googleapis.com/bigquery/v2', and the 'Port' is set to '443'. A 'Connection test' dialog box is also visible, showing the connection status as 'Connected (11255 ms)'.

Google BigQuery Connection Settings

Google BigQuery connection settings

Project: ps...-pillar-...

Additional project(s): bigquery-public-data

Service account: paris... OAuth type: Service-based

Key path: ...

Host: https://www.googleapis.com/bigquery/v2 Port: 443

Connection test: Connected (11255 ms)

Server: Google BigQuery 2.0

Driver: Simba/DBCDriverforGoogleBigQuery 01.02.16.1020

Connecting bigquery and reading data from GCP in Dbeaver

The screenshot shows the Dbeaver Database Navigator on the left, listing various databases and tables. The main window displays a SQL query in the 'Script' editor:

```
SELECT unique_key, complaint_type, complaint_description, owning_department, "source", status, status_change_date, created_date, last_update
FROM `bigquery-public-data.austin_311.311_service_requests`;
```

The 'Results' pane shows the first 8 rows of the query results:

unique_key	complaint_type	complaint_description	owning_department	source
20-00447848	ACCOYTE	Coyote Complaints	Animal Services Office	Phone
20-00501930	ACCOYTE	Coyote Complaints	Animal Services Office	Phone
19-00228025	SBSTRES	Street Resurfacing	Public Works	Phone
19-00449470	COACDD	Dangerous/Vicious Dog Investigation	Animal Services Office	Phone
20-00033519	COACDD	Dangerous/Vicious Dog Investigation	Animal Services Office	Phone
19-00434796	ACCOYTE	Coyote Complaints	Animal Services Office	Phone
20-00006957	SWSTSW	ARR Street Sweeping	Austin Resource Recovery	Phone
18-00061591	ACCOYTE	Coyote Complaints	Animal Services Office	Phone

Connecting Big Query to alteryx and running a simple design

The screenshot shows the Alteryx interface with a workflow named 'Google BigQuery Tools.yxw'. The workflow consists of a 'Google BigQuery Input' tool connected to a 'Querying' tool. The 'Results - Browse (2) - Input' pane displays the following data:

Record	date	state_name	state_fips_code	confirmed_cases	deaths
1	2020-03-15	Guam	66	3	0
2	2020-03-16	Guam	66	3	0
3	2020-03-17	Guam	66	3	0
4	2020-03-18	Guam	66	8	0
5	2020-03-19	Guam	66	12	0
6	2020-03-20	Guam	66	14	0
7	2020-03-21	Guam	66	15	0
8	2020-03-22	Guam	66	27	1
9	2020-03-23	Guam	66	29	1
10	2020-03-24	Guam	66	32	1

Design of data profile of nyt_us_states in alteryx

The screenshot shows the Alteryx interface with a workflow named 'nyt_US_state profile.yxw'. The workflow consists of a 'Google BigQuery Input' tool connected to a 'Querying' tool, which is then connected to a 'Report' tool. The 'Results - Browse (4) - Input' pane displays the following data:

Record	Desc	Report
1	Numeric	Table - View Browse Tool Report Tab
2	Date	Table - View Browse Tool Report Tab
3	String	Table - View Browse Tool Report Tab

The 'Record Report' pane shows a 'Numeric Fields' section with a plot for 'confirmed_cases' and a '% Missing' column showing 0.0%.

Created a new table in GCP SQL console

```
1 -- 'bigquery-public-data'.covid19.ny.us_states definition
2
3 -- Drop table
4
5 -- DROP TABLE 'bigquery-public-data'.covid19.ny.us_states;
6 CREATE TABLE 'psychic-pillar-326819.paris_folder.us_states' (
7   recordID INT64,
8   date DATE,
9   state_name STRING(255),
10  state_fips_code STRING(255),
11  confirmed_cases INT64,
12  deaths INT64,
13  DI_CreateDate datetime
14 );
```

Query results

Query complete (0.2 sec elapsed, 0 B processed)

Job information [Results](#)

This statement created a new table named psychic-pillar-326819.paris_folder.us_states. [Go to table](#)

Running a design in alteryx using data preparation tools

Workflow - Configuration

Canvas Options

- Layout Direction: Horizontal
- Annotations: Show
- Connection Progress: Show Only When Running

Start Here.yxmd | nyt_US_state_profile.yxmd | Copy of nyt_US_state_profile.yxmd

Alteryx Designer v64

Finished running in 4:47 minutes

[Learn about AMP Engine](#)

Results - workflow - messages

All 0 Errors 0 Conv Errors 0 Warnings 1 Messages 1 Files

Started running at 09/24/2021 12:03:09

Google BigQuery Input (1) 31254 records were read from a custom BigQuery Query.

Designer (2) 31,254 records

Designer x64 Finished running in 4:47 minutes

Viewing the output in alteryx application

Google BigQuery Output (9) - Configuration

Big Query Table Output Config

psychic-pillar-326819.paris_folder.us_states

Change selected table

Select table output mode

Overwrite Table (Drop)

Insert batch size

500

Previous

Start Here.yxmd | nyt_US_state_profile.yxmd | Copy of nyt_US_state_profile.yxmd

Google BigQuery Input

Google BigQuery Output

DI_CreateDate = DateTimeNow()

Results - Google BigQuery Output (9) - Input

7 of 7 Fields | Cell Viewer | 12,459 of 31,254 records displayed (partial results)

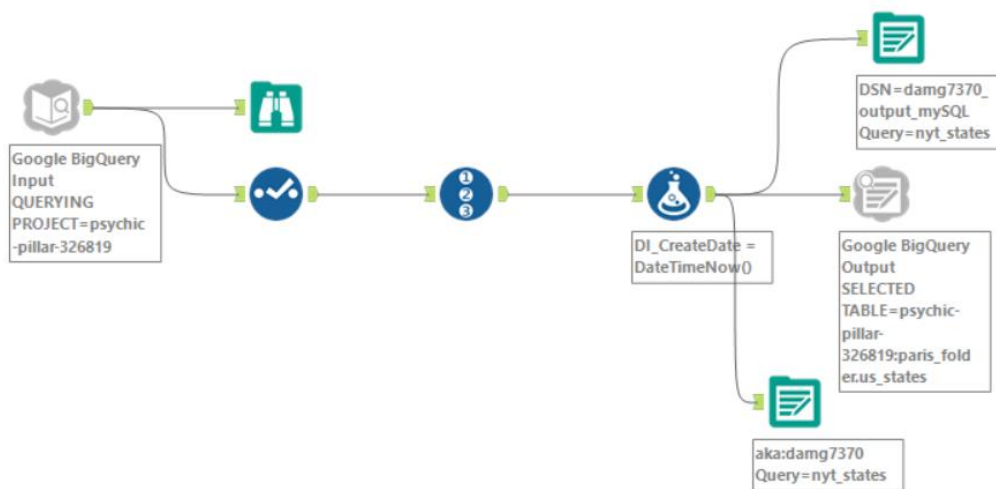
Record	RecordID	date	state_name	state_fips_code	confirmed_cases	deaths	DI_CreateDate
1	1	2020-03-15	Guam	66	3	0	2021-09-24 12:03:13
2	2	2020-03-16	Guam	66	3	0	2021-09-24 12:03:13
3	3	2020-03-17	Guam	66	3	0	2021-09-24 12:03:13
4	4	2020-03-18	Guam	66	8	0	2021-09-24 12:03:13
5	5	2020-03-19	Guam	66	12	0	2021-09-24 12:03:13
6	6	2020-03-20	Guam	66	14	0	2021-09-24 12:03:13
7	7	2020-03-21	Guam	66	15	0	2021-09-24 12:03:13
8	8	2020-03-22	Guam	66	27	1	2021-09-24 12:03:13
9	9	2020-03-23	Guam	66	29	1	2021-09-24 12:03:13

Created a new data base in google cloud and stored the output from alteryx into this new database

The screenshot shows the Google Cloud Platform console. On the left, the 'Explorer' pane shows a project named 'psychic-pillar-326819' with a folder 'infor7370' containing a table 'us_states'. The main pane shows the 'us_states' table details. The 'Table info' section lists the following details:

Property	Value
Table ID	psychic-pillar-326819:paris_folder.us_states
Table size	1.64 MB
Long-term storage size	0 B
Number of rows	31,254
Created	Sep 24, 2021, 12:04:43 PM UTC-4
Last modified	Sep 24, 2021, 12:09:25 PM UTC-4
Table expiration	NEVER
Data location	US
Description	

Design to store output in multiple database including MySQL, SQL server and Big Query



Reading the output of alteryx from MySQL workbench

The screenshot shows the MySQL Workbench interface. The 'SCHEMAS' pane on the left shows the 'dmg7370_output' database with a table 'nyt_states'. The main pane shows the query 'SELECT * FROM dmg7370_output.nyt_states;' and the resulting 'Result Grid'.

RecordID	date	state_name	state_fips_code	confirmed_cases	deaths	DI_CreateDate
1	2020-03-15 00:00:00	Guam	66	3	0	2021-09-24 12:18:30
2	2020-03-16 00:00:00	Guam	66	3	0	2021-09-24 12:18:31
3	2020-03-17 00:00:00	Guam	66	3	0	2021-09-24 12:18:31
4	2020-03-18 00:00:00	Guam	66	8	0	2021-09-24 12:18:31
5	2020-03-19 00:00:00	Guam	66	12	0	2021-09-24 12:18:31
6	2020-03-20 00:00:00	Guam	66	14	0	2021-09-24 12:18:31
7	2020-03-21 00:00:00	Guam	66	15	0	2021-09-24 12:18:31
8	2020-03-22 00:00:00	Guam	66	27	1	2021-09-24 12:18:31
9	2020-03-23 00:00:00	Guam	66	29	1	2021-09-24 12:18:31
10	2020-03-24 00:00:00	Guam	66	32	1	2021-09-24 12:18:31
11	2020-03-25 00:00:00	Guam	66	32	1	2021-09-24 12:18:31
12	2020-03-26 00:00:00	Guam	66	49	1	2021-09-24 12:18:31
13	2020-03-27 00:00:00	Guam	66	53	1	2021-09-24 12:18:31

Reading the output of alteryx from SQL server

Object Explorer

Connect

LAPTOP-ESCTO8T6\UMAIRSQLSERVER (SQL Serve)

Databases

System Databases

Database Snapshots

Chinook

damg7370_output

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

dbo.nyt_states

dbo.sf_air_traffic_landings

Views

External Resources

Synonyms

Programmability

Service Broker

Storage

Security

Security

Server Objects

Replication

PolyBase

Always On High Availability

Management

Integration Services Catalogs

SQL Server Agent (Agent XPs disabled)

XEvent Profiler

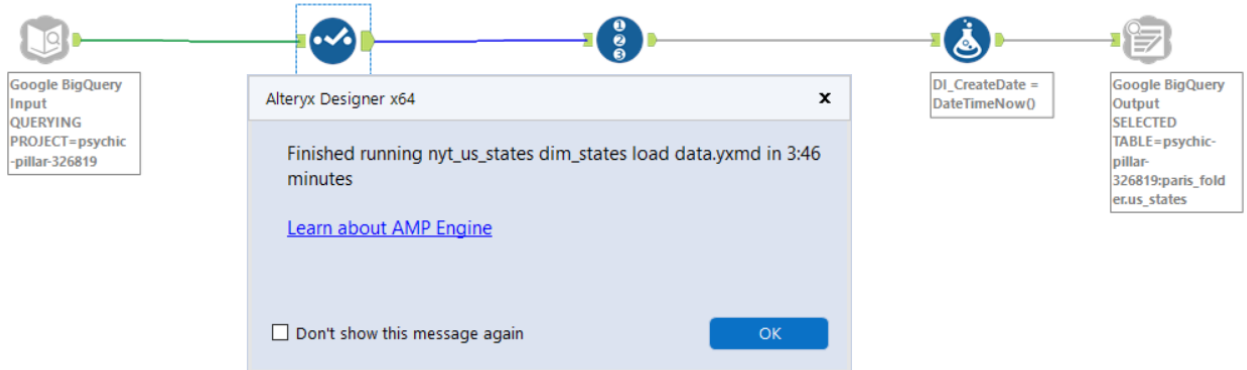
SQLQuery1.sql - LA...CTO8T6(umair (59))

```
/****** Script for SelectTopNRows command from SSMS *****/
SELECT TOP (1000) [RecordID]
, [date]
, [state_name]
, [state_fips_code]
, [confirmed_cases]
, [deaths]
, [DI_CreateDate]
FROM [damg7370_output].[dbo].[nyt_states]
```

110 %

Results Messages

	RecordID	date	state_name	state_fips_code	confirmed_cases	deaths	DI_CreateDate
1	1	2020-03-15	Guam	66	3	0	2021-09-24 12:18:30.000
2	2	2020-03-16	Guam	66	3	0	2021-09-24 12:18:31.000
3	3	2020-03-17	Guam	66	3	0	2021-09-24 12:18:31.000
4	4	2020-03-18	Guam	66	8	0	2021-09-24 12:18:31.000
5	5	2020-03-19	Guam	66	12	0	2021-09-24 12:18:31.000
6	6	2020-03-20	Guam	66	14	0	2021-09-24 12:18:31.000
7	7	2020-03-21	Guam	66	15	0	2021-09-24 12:18:31.000
8	8	2020-03-22	Guam	66	27	1	2021-09-24 12:18:31.000
9	9	2020-03-23	Guam	66	29	1	2021-09-24 12:18:31.000
10	10	2020-03-24	Guam	66	32	1	2021-09-24 12:18:31.000
11	11	2020-03-25	Guam	66	32	1	2021-09-24 12:18:31.000
12	12	2020-03-26	Guam	66	49	1	2021-09-24 12:18:31.000
13	13	2020-03-27	Guam	66	53	1	2021-09-24 12:18:31.000
14	14	2020-03-28	Guam	66	57	1	2021-09-24 12:18:31.000
15	15	2020-03-29	Guam	66	58	1	2021-09-24 12:18:31.000
16	16	2020-03-30	Guam	66	60	1	2021-09-24 12:18:31.000

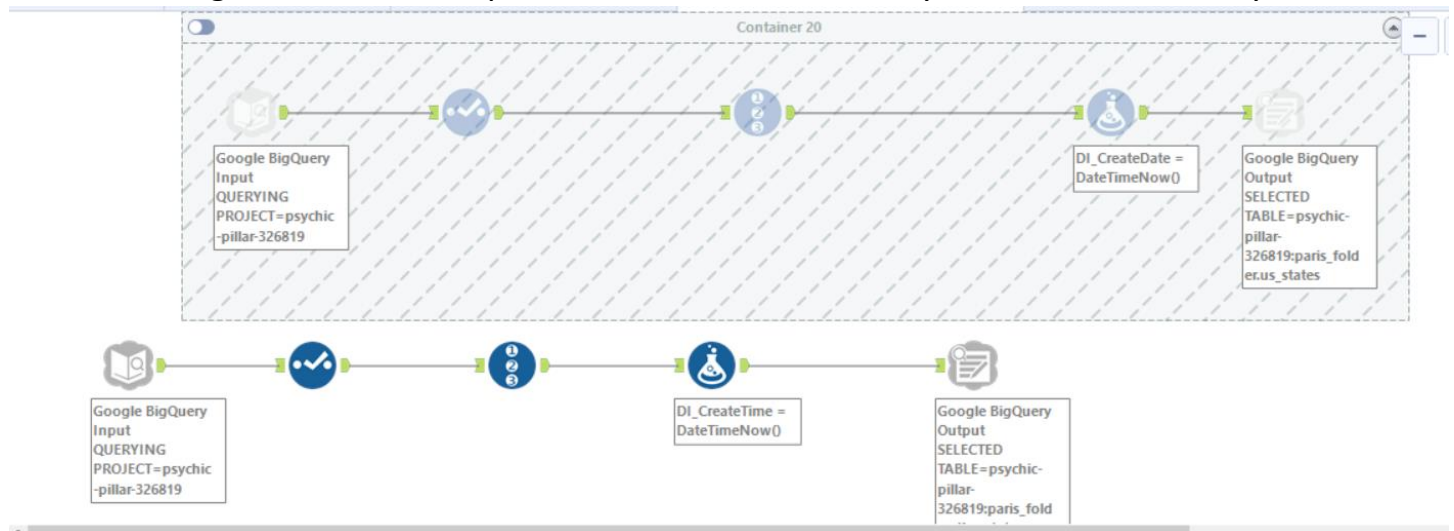


Results - Select (6) - Output

5 of 5 Fields | Cell Viewer | * 17,411 of 31,366 records displayed (partial results) | Search | Data

Record	date	state_name	state_fips_code	confirmed_cases	deaths
1	2020-03-15	Guam	66	3	0
2	2020-03-16	Guam	66	3	0
3	2020-03-17	Guam	66	3	0
4	2020-03-18	Guam	66	8	0

Containerizing to work on multiple workflows simultaneously in more efficient way



Running dimension table on Alteryx design

The screenshot shows the Alteryx interface with a workflow running. The workflow is contained within a container labeled 'Container 20' and consists of the following steps:

- Google BigQuery Input: QUERYING PROJECT=psychic-pillar-326819
- DI_CreateDate = DateTimeNow()
- Google BigQuery Output: SELECTED TABLE=psychic-pillar-326819:paris_folder.us_states

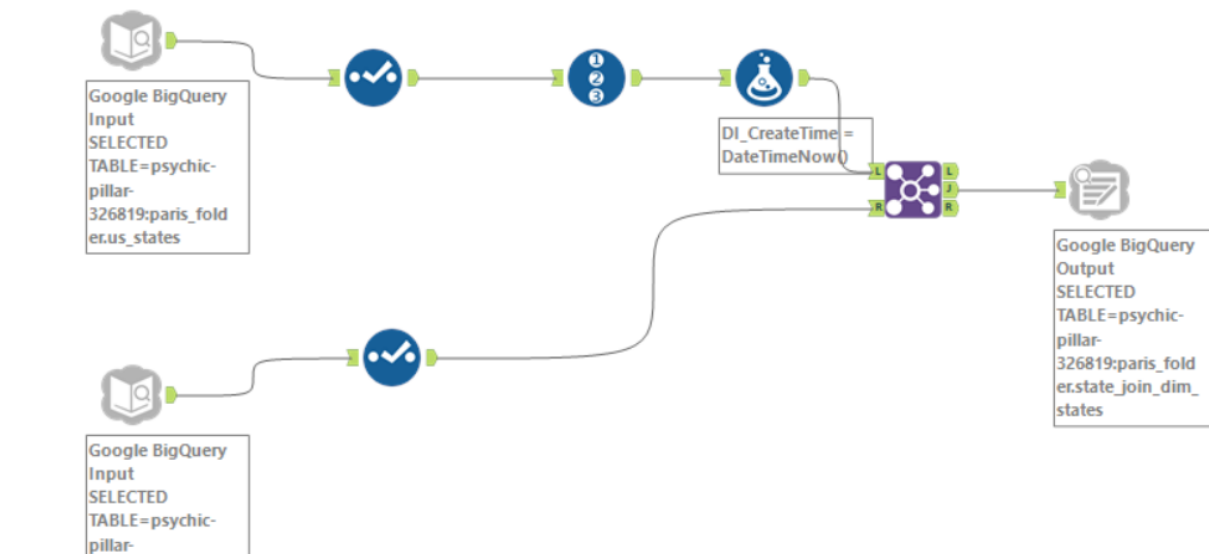
The output of the workflow is displayed in the 'Results - Google BigQuery Input (15) - Output' pane. The results are shown in a table with 5 columns: date, state_name, state_fips_code, confirmed_cases, and deaths. The table shows 5 records of data for the state of Guam.

Record	date	state_name	state_fips_code	confirmed_cases	deaths
1	2020-03-15	Guam	66	3	0
2	2020-03-16	Guam	66	3	0
3	2020-03-17	Guam	66	3	0
4	2020-03-18	Guam	66	8	0
5	2020-03-19	Guam	66	12	0

Dimension table in big query

dim_states	
SCHEMA	DETAILS
PREVIEW	
Table info	
Table ID	psychic-pillar-326819:paris_folder.dim_states
Table size	5.4 KB
Long-term storage size	0 B
Number of rows	56
Created	Sep 24, 2021, 4:09:57 PM UTC-4
Last modified	Sep 24, 2021, 4:09:59 PM UTC-4
Table expiration	NEVER
Data location	US
Description	

Design for joining fact table with dimension table



Out of above design in google bigquery

Google Cloud Platform My First Project Search products and resources

FEATURES & INFO SHORTCUT DISABLE EDITOR TABS

Explorer + ADD DATA

state_join_dim_states

SCHEMA DETAILS PREVIEW

Row	RecordID	RecordID2	date	state_name	state_fips_code	confirmed_cases	deaths	DI_CreateDate	DI_CreateTime	Right_RecordID	geo.
1	6812	6812	2020-03-13	Alabama	01		6	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
2	6813	6813	2020-03-14	Alabama	01		12	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
3	6814	6814	2020-03-15	Alabama	01		23	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
4	6815	6815	2020-03-16	Alabama	01		29	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
5	6816	6816	2020-03-17	Alabama	01		39	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
6	6817	6817	2020-03-18	Alabama	01		51	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
7	6818	6818	2020-03-19	Alabama	01		78	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
8	6819	6819	2020-03-20	Alabama	01		106	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
9	6820	6820	2020-03-21	Alabama	01		131	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
10	6821	6821	2020-03-22	Alabama	01		157	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01
11	6822	6822	2020-03-23	Alabama	01		196	0	2021-09-24T20:15:01	2021-09-24 20:21:48	39 01

FEATURES & INFO SHORTCUT DISABLE EDITOR TABS

Explorer + ADD DATA

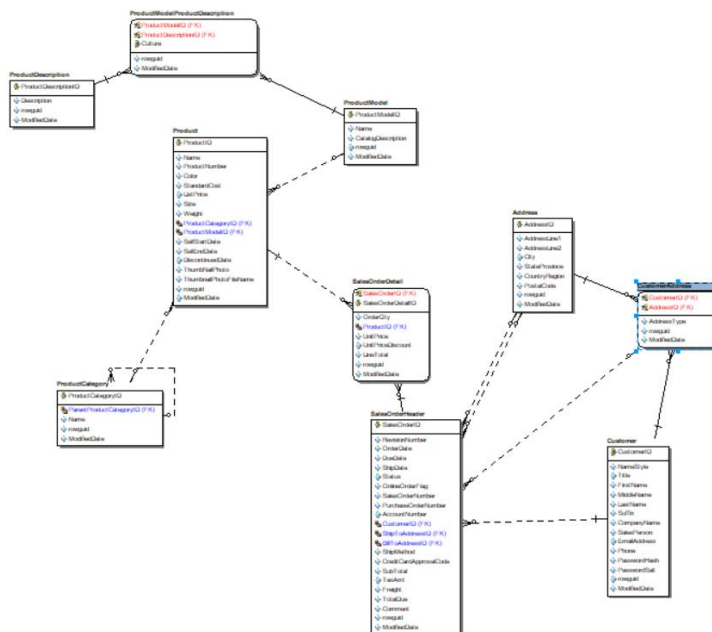
state_join_dim_states

SCHEMA DETAILS PREVIEW

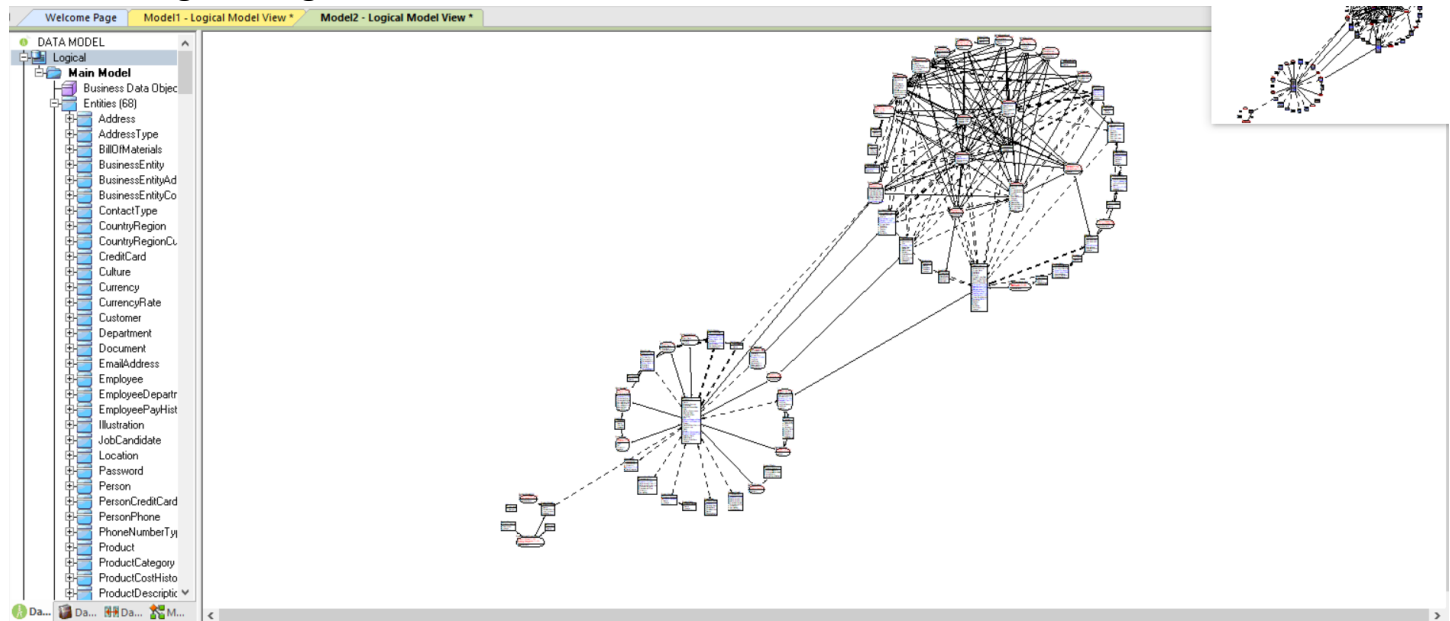
Table info

Table ID	psychic-pillar-326819:paris_folder.state_join_dim_states
Table size	5.22 MB
Long-term storage size	0 B
Number of rows	31,366
Created	Sep 24, 2021, 8:24:04 PM UTC-4
Last modified	Sep 24, 2021, 8:27:51 PM UTC-4
Table expiration	NEVER
Data location	US
Description	

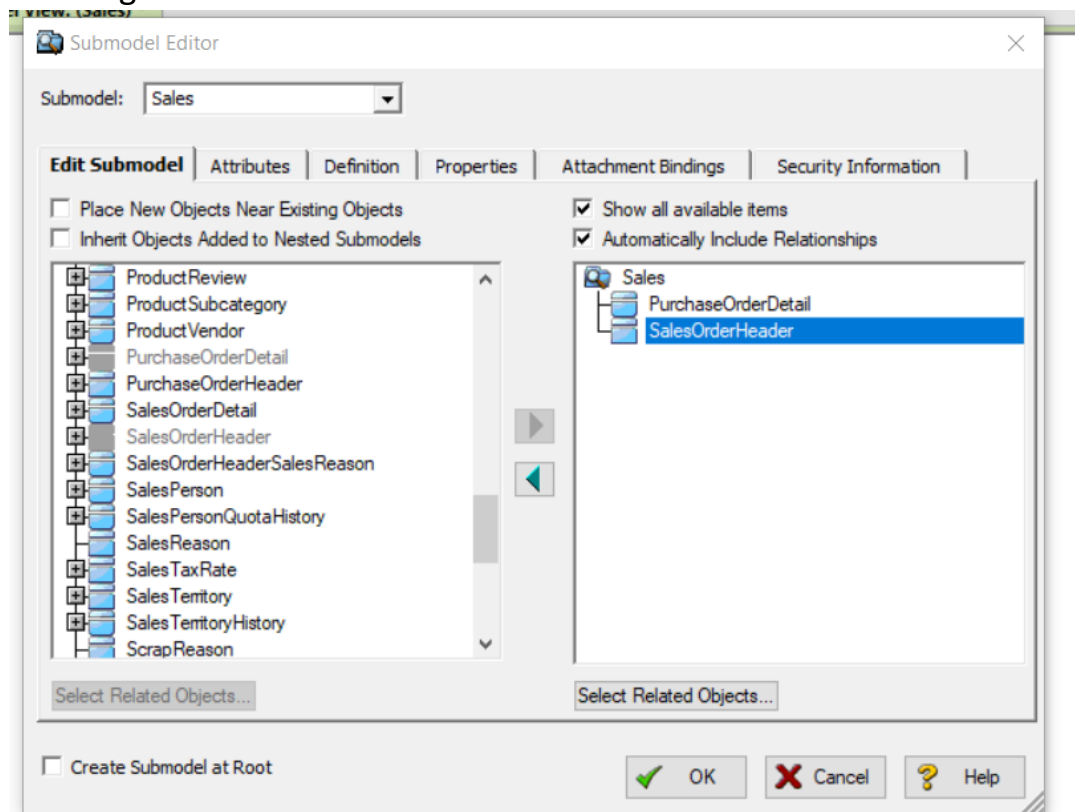
Reverse engineering model for adventureworksLT



Reverse engineering adventureworks2019 in ER Studio

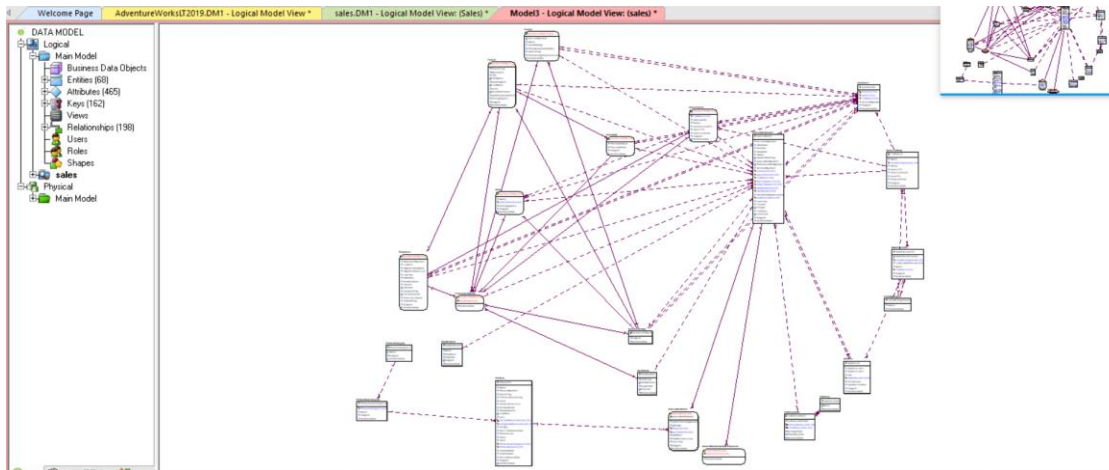


Creating sub model of sales

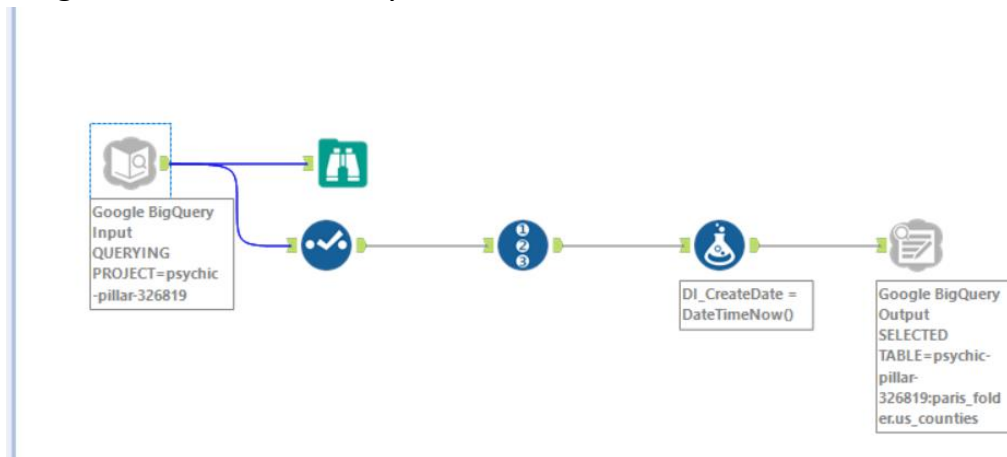


The screenshot shows the 'Main Model' tree on the left, listing various entities and their relationships. The main workspace displays a complex logical model diagram with numerous nodes (tables, views, etc.) and their interconnections. An 'Overview' window in the top right corner provides a smaller, zoomed-out view of the entire model structure.

Sales sub model from AdventureWorks2019 in ER studio



Design of counties in alteryx



Counties in GCP

Google Cloud Platform

My First Project

Search products and resources

FEATURES & INFO

SHORTCUT

DISABLE EDITOR TABS

Explorer

+ ADD DATA

Type to search

Viewing pinned projects.

psychic-pillar-326819

- infor7370
- paris_folder
 - dim_states
 - state_join_dim_states
 - us_counties
 - us_states
- bigquery-public-data

Query results

SAVE RESULTS

EXPLORE DATA

Query complete (0.4 sec elapsed, 679.5 KB processed)

Job information

Results

JSON

Execution details

Row	RecordID	date	county	state_name	county_fips_code	confirmed_cases	deaths	DI_CreateDate
1	2001	2020-12-24	Pinal	Arizona	04021	25317	345	2021-09-24T21:29:28
2	2002	2020-12-25	Pinal	Arizona	04021	25489	346	2021-09-24T21:29:28
3	2003	2020-12-26	Pinal	Arizona	04021	25847	346	2021-09-24T21:29:28
4	2004	2020-12-27	Pinal	Arizona	04021	26242	346	2021-09-24T21:29:28

Dimension county in GCP

Explorer + ADD DATA

Q *UNSAVE... X Q *UNSAVE... 2 X Q *UNSAVE... 3 X

RUN SAVE SCHEDULE MORE

1 SELECT * FROM `psychic-pillar-326819.paris_folder.us_counties` LIMIT 1000

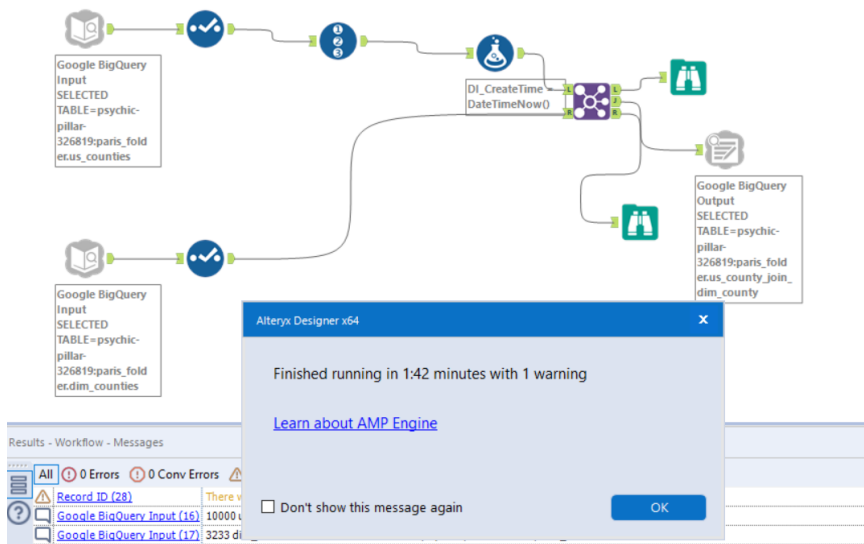
Query results SAVE RESULTS EXPLORE DATA

Query complete (0.3 sec elapsed, 1.3 MB processed)

Job information Results JSON Execution details

Row	RecordID	geo_id	state_fips_code	county_fips_code	county_gnia_code	county_name	lsad_name	lsad_code	fips_class_code	ntfcs_feature_class
1	1501	29123	29	29123	00758515	Madison	Madison County	06	H1	G4020
2	1502	29041	29	29041	00758475	Charlton	Charlton County	06	H1	G4020
3	1503	29115	29	29115	00758512	Linn	Linn County	06	H1	G4020
4	1504	29035	29	29035	00758472	Carter	Carter County	06	H1	G4020
5	1505	29109	29	29109	00758509	Lawrence	Lawrence County	06	H1	G4020

County fact joining county dimension



County fact join county dim table in gcp

Google Cloud Platform My First Project

Search products and resources

FEATURES & INFO SHORTCUT DISABLE EDITOR TABS

Explorer + ADD DATA

Q *UNSAVE... X Q *UNSAVE... 2 X Q *UNSAVE... 3 X Q *UNSAVE... 4 X

RUN SAVE SCHEDULE MORE

1 SELECT * FROM `psychic-pillar-326819.paris_folder.us_counties_join_dim_county` LIMIT 1000

Query results SAVE RESULTS EXPLORE DATA

Query complete (1.1 sec elapsed, 5.1 MB processed)

Job information Results JSON Execution details

Row	RecordID	RecordID2	date	county	state_name	county_fips_code	confirmed_cases	deaths	DLCreateDate	DLCreateTime	Right
1	1542	1542	2021-01-07	Navajo	Arizona	04017	12086	368	2021-09-24T21:29:23	2021-09-24 21:56:42	
2	1543	1543	2021-01-08	Navajo	Arizona	04017	12242	372	2021-09-24T21:29:23	2021-09-24 21:56:42	
3	1544	1544	2021-01-09	Navajo	Arizona	04017	12370	372	2021-09-24T21:29:23	2021-09-24 21:56:42	
4	1545	1545	2021-01-10	Navajo	Arizona	04017	12572	372	2021-09-24T21:29:23	2021-09-24 21:56:42	
5	1546	1546	2021-01-11	Navajo	Arizona	04017	12675	372	2021-09-24T21:29:23	2021-09-24 21:56:42	
6	1547	1547	2021-01-12	Navajo	Arizona	04017	12854	377	2021-09-24T21:29:23	2021-09-24 21:56:42	
7	1548	1548	2021-01-13	Navajo	Arizona	04017	13006	378	2021-09-24T21:29:23	2021-09-24 21:56:42	

END