

Comment apprendre & tester Azure Cosmos DB?

Christopher MANEU
Data Cloud Advocate @ Microsoft
[@cmaneu](#)

Cosmos DB, *your way*



Cosmos DB Emulator



TryCosmosDB

<http://aka.ms/trycosmosdb>

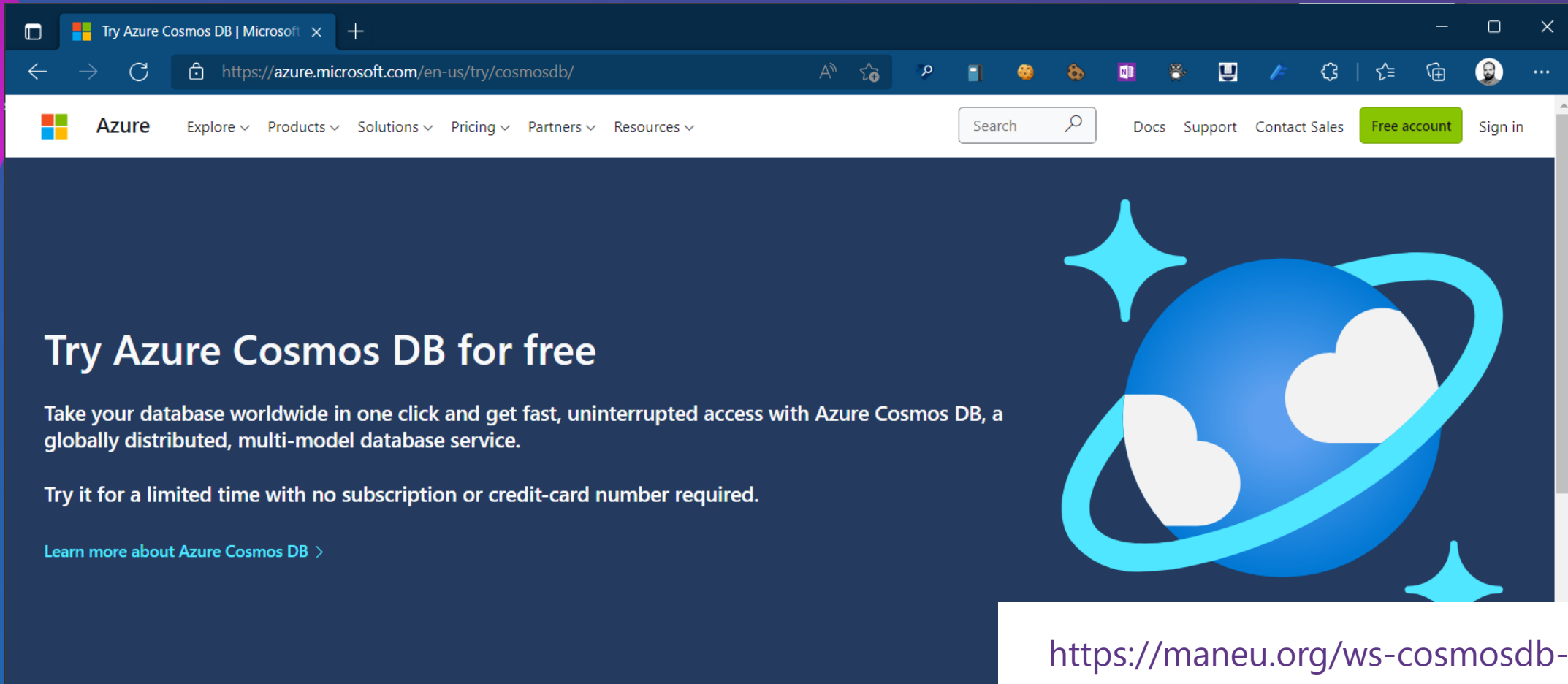


Free Tier

CI/CI pipeline

TryCosmosDB

Pendant 30 jours, 5000 RU/s et 10 Gb.



Try Azure Cosmos DB for free

Take your database worldwide in one click and get fast, uninterrupted access with Azure Cosmos DB, a globally distributed, multi-model database service.

Try it for a limited time with no subscription or credit-card number required.

[Learn more about Azure Cosmos DB >](#)

<https://maneu.org/ws-cosmosdb-proxyvote>

Free tier Cosmos DB

1000 premiers RU/s et 25 Go de gratuit

Pour la durée de vie du compte (doit être sélectionné à la creation du compte)

Les outils

- Cosmos DB Explorer
- Visual Studio Code extensions
 - [Cosmos DB SQL Studio - Visual Studio Marketplace](#)
 - [Azure Databases - Visual Studio Marketplace](#)

Azure Storage Explorer n'est plus un explorateur pour Cosmos DB

Cosmos DB Explorer

The screenshot shows the Azure Cosmos DB Explorer interface. The browser tab is titled "Azure Cosmos DB Emulator" and the address bar shows "https://localhost:808...". The page header includes the "Azure Cosmos DB Emulator" logo and a link to "CREATE AN AZURE COSMOS DB ACCOUNT".

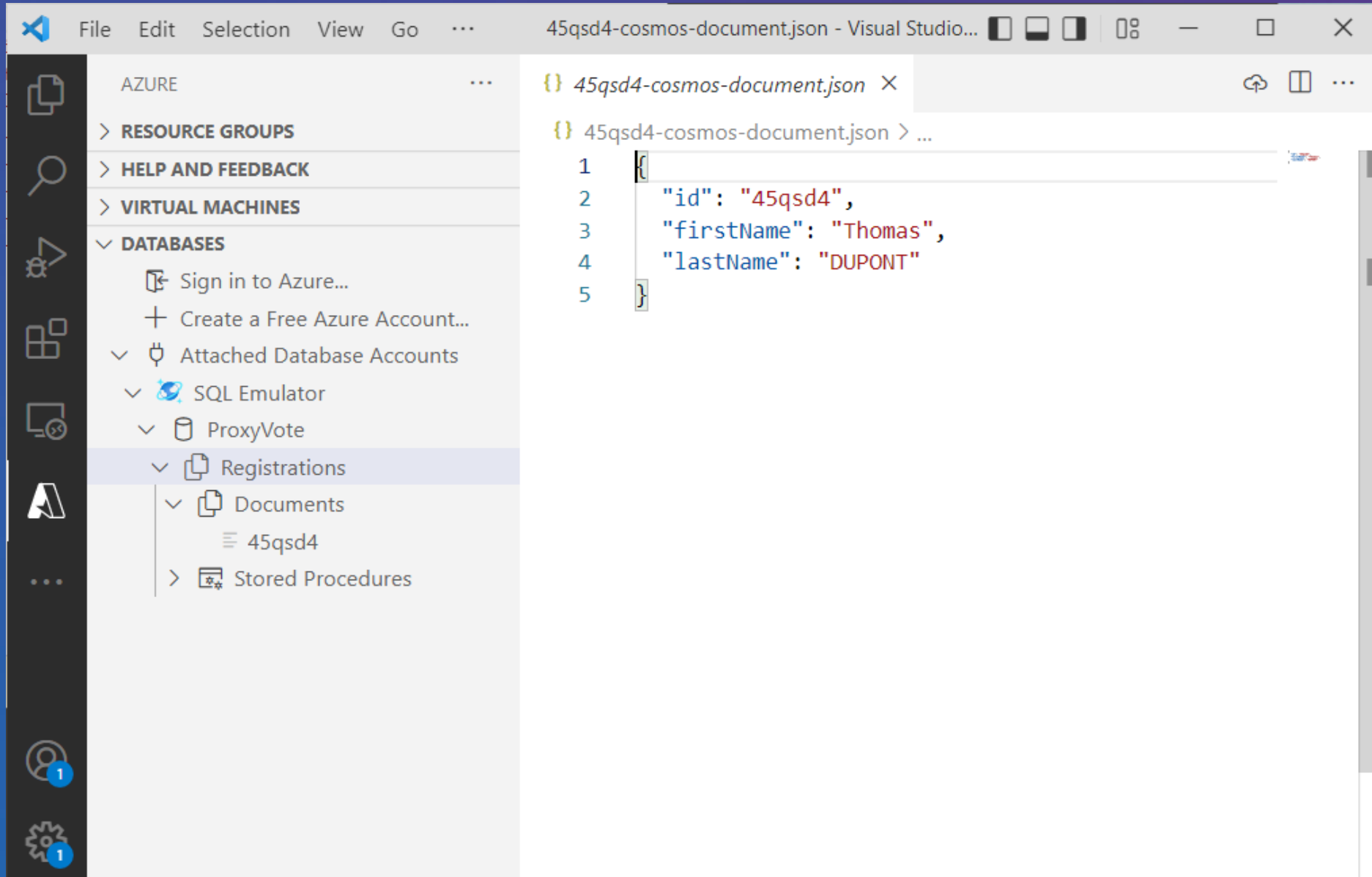
The left sidebar contains navigation options: "Quickstart", "Explorer", and "Report Issue". The "Explorer" view is active, showing a tree structure of the database "ProxyVote". Under "Registrations", the "Items" view is selected.

The main area displays a SQL query: "SELECT * FROM c". Below the query, a table shows the results. The table has two columns: "id" and "/Partiti...". The first row shows the value "45qsd4". A "Load more" link is visible below the table.

On the right side, a JSON view of the selected item is displayed, showing the following structure:

```
1 {
2   "id": "45qsd4",
3   "firstName": "Thomas",
4   "lastName": "DUPONT",
5   "_rid": "wZwVAMV6nC8JAAAAAAAAA==",
6   "_self": "dbs/wZwVAA==/colls/wZwVAMV6nC8=/docs/wZwVA
7   "_etag": "\"00000000-0000-0000-4eb8-a7b2a62c01d8\"",
8   "_attachments": "attachments/",
9   "_ts": 1649800800
10 }
```

Visual Studio Code Extensions



Migration tools

- Bulk executor library
- Data Migration Tool
- Azure Data Factory
- Cosmos DB Spark connector

Apprendre CosmosDB

- Microsoft Learn
- Cheat Sheets
- Cosmic Notes
- 1-day OpenHack Azure CosmosDB

Azure Cosmos DB Query Cheat Sheets

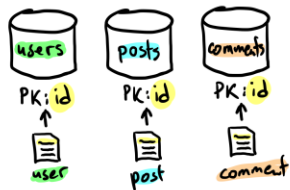


<https://maneu.org/ws-cosmosdb-proxyvote>

Cosmic Notes

How to improve your design in Cosmos DB

"Relational Way"

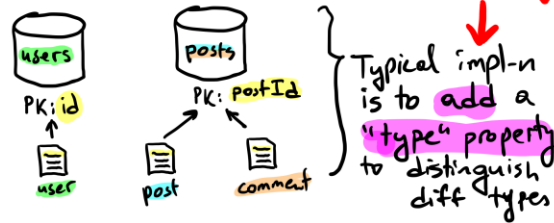


1 entity = 1 table = 1 container

If you're doing it this way, you can do much better?

"Cosmic Way"

← Really Cool!



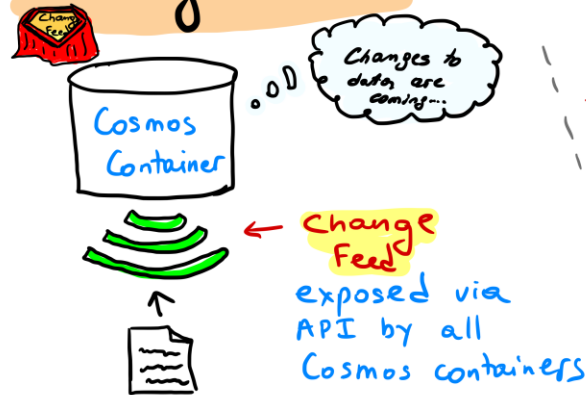
Typical impl-n is to add a "type" property to distinguish diff types

Here, we group posts & comments in the same container & partition by postId.

Main Takeaway ⇒ **Mixing entity types in a container is GOOD**

- ① Leverage the schema-agnostic nature of Cosmos DB
- ② Suitable when different entity types
 - share similar access patterns
 - are queried by the same partition key
 - are queried together (for JOIN-like capabilities)

Change Feed - Unsung Hero of Cosmos DB



Change Feed can be consumed by



OR



Azure Functions
(aka Cosmic BFF)

Any custom code
using one of the
Cosmos DB SDKs

*** LEARN MORE ***

Change Feed Use Cases:

- ① Replicating containers for different / multiple partition keys

```
graph LR
    C1[C1 PK: foo] --> C2[C2 PK: bar]
```
- ② Denormalizing data across containers

```
graph LR
    C1[C1] --> C2[C2]
    C1 --> C3[C3]
```
- ③ Triggering API calls for event-driven architecture

```
graph LR
    C1[C1] --> API[API]
```
- ④ Real-time stream processing + materialized view patterns

```
graph LR
    C1[C1] --> S[Stream Processing]
    S --> M[Materialized View]
```
- ⑤ Moving or archiving data to secondary data stores

```
graph LR
    C1[C1] --> S[Secondary Store]
```

Azure Cosmos DB Conf

April 19-20, 2022

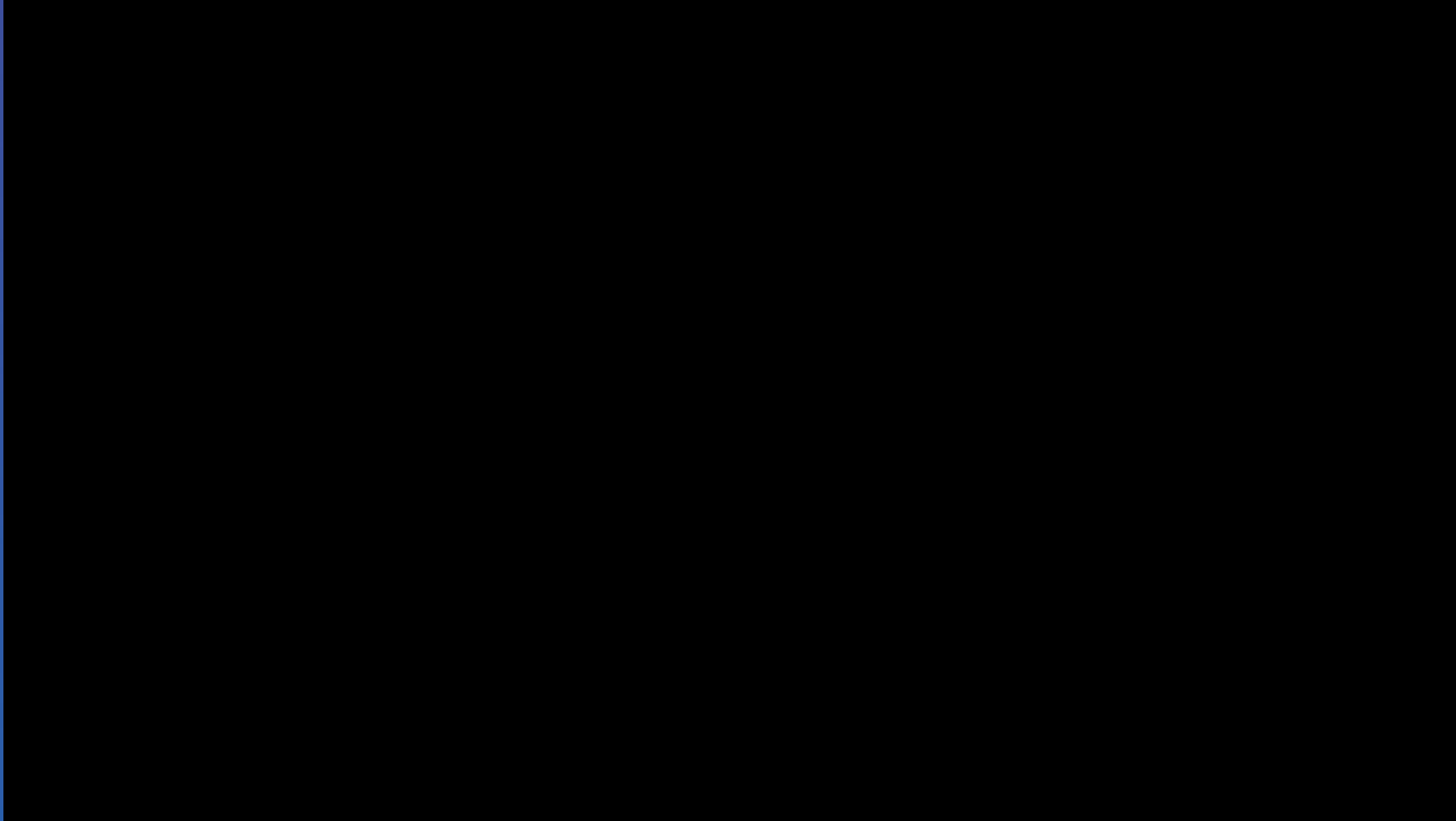


<https://maneu.org/ws-cosmosdb-proxyvote>

Slide Open Hack – 14 juin 2022

- Format Prez + Labs + échanges
- Morning:
 - Introduction, overview , use case & Value Proposition
 - Price Resource Model Request Units & Billing Lab
 - Data Modeling, indexing, Partitionning and performance optimisation
- Afternoon:
 - Querying and indexing in Azure Cosmos DB
 - SQL API, CosmosDB Programming and SDKs, Change Feed
 - Synapse Link
 - Roadmap

Microsoft //Build





Thanks !

<https://maneu.fr>

Christopher MANEU
Data Engineering & Analytics Lead Cloud Advocate @ Microsoft
@cmaneu