

RAIDERS OF THE LOST ADX

Starring

Koen Verbeek as Indiana Jones

&

Johan Ludvig Brattås as Henry Jones



Thank you, partners



K[◇]HERA

element
experience & expertise 

ilytix

bmatix
Act informed

inetum.¹
realdolmen
Positive digital flow


datasense

MICROPOL
BELUX

LACO/



 AKABI

 Cloubis

 datashift

EpicData.

 Sparkle

 Tabular Editor

solarwinds 

u2u

de
Adapt
and
Enable

 MONIN
Database Managed Services


proximus NXT
tech. bizz. people.

tillit
data
shapers

ORDINA
Ahead of change

Agenda

- What exactly is Azure Data Explorer?
- A brief introduction to KQL
- Data Explorer – the hidden treasure of Azure analytic tools?
- Data Explorer in an IoT scenario
- Data Explorer with Synapse Link



contact



Koen Verbeeck



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SQLkover.com



STAR SCHEMA



ALL THE THINGS

contact



Johan Ludvig Brattås



@intoleranse



@SqlClause.online

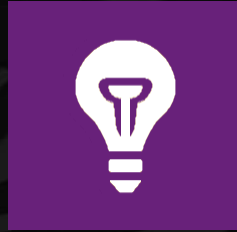
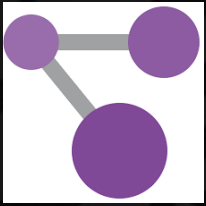


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The background of the slide is a dark, textured pattern of various tropical leaves, including palm fronds and monstera leaves, in shades of dark gray and black.

What exactly is Azure Data Explorer?

Azure Data Explorer



Azure Data Explorer

- Columnar
 - very good compression
- Append-Only
- Elastic scale
- Low latency ingestion (200 Mb/s per node)
- Fully managed
 - indexed by default



Azure Data Explorer

- Developed by Microsoft engineers in Israel to handle Azure's need for fast log and telemetry analytics
- Released as Application Insights in 2016
- Data Explorer went GA 2019



Azure Timeseries Insights facing the new Data Explorer



Azure Data Explorer

- RDBMS-like with databases, schemas & tables
- Powerful time series database
- Zero constraints
- Can be queried with SQL
- Better yet – the native language



No, Kusto – not Cousteau!



The background of the slide is a dark, textured pattern of various tropical leaves, including palm fronds and monstera leaves, rendered in a lighter shade of dark gray.

Intro to KQL

Kusto Query Language

filtering

```
13 // filtering
14 BeerCheckins
15 | where brewery_country == "Norway"
16
```

Table 1

	checkin_id	created_at	beer_name	beer_type
>	919498731	2020-07-18 23:31:19.0000	Nitro Hot Chocolate ...	Stout - Imperial / Double...
>	1088786720	2021-10-16 22:07:42.0000	Møykjeddingi	IPA - Farmhouse
>	1089148830	2021-10-17 15:38:25.0000	Gølse Singelkveik Kve...	Traditional Ale
>	1091170649	2021-10-23 18:27:02.0000	STAFANGR New Engl...	IPA - New England / Hazy
>	1167989760	2022-06-11 18:49:26.0000	Solitude	IPA - New England / Hazy
>	1216484786	2022-10-30 15:47:30.0000	Å VESTLAND, VESTLA...	Pale Ale - American
>	1216489681	2022-10-30 16:06:10.0000	LEFT BEHIND - TRIPL...	IPA - Imperial / Double N...

```
18 BeerCheckins
19 | search todecimal(score) > 4.5
20 | project created_at, beer_name, beer_type, score
21
```

Table 1

	created_at	beer_name	beer_type	score
>	2018-05-20 20:57:02.0000	Duvel	Belgian Strong Golden Ale	5
>	2018-05-20 22:51:54.0000	Duvel	Belgian Strong Golden Ale	5
>	2018-05-23 19:48:47.0000	Tripel Karmeliet	Belgian Tripel	5
>	2018-06-29 12:24:47.0000	Duvel	Belgian Strong Golden Ale	5
>	2018-07-06 20:00:39.0000	Duvel Tripel Hop Citra	Belgian Strong Golden Ale	5
>	2018-07-08 15:44:51.0000	Duvel Tripel Hop Citra (2018)	Belgian Strong Golden Ale	5
>	2018-07-15 20:18:49.0000	Vedett Extra Ordinary IPA	IPA - Belgian	4.75

```
13 // searching
14 BeerCheckins
15 | search "Belgium"
16 | project created_at, beer_name, beer_type, venue_country, brewery_country
17
```

Table 1

	created_at	beer_name	beer_type	venue_country	brewery_country
>	2018-05-19 21:46:34.0000	Watou Tripel	Belgian Tripel		Belgium
>	2018-05-20 20:24:34.0000	Troubadour Magma	IPA - Belgian	Belgium	Belgium
>	2018-05-20 20:57:02.0000	Duvel	Belgian Strong Golden Ale	Belgium	Belgium
>	2018-05-20 22:14:53.0000	Chouffe Soleil	Belgian Blonde	Belgium	Belgium
>	2018-05-20 22:51:54.0000	Duvel	Belgian Strong Golden Ale	Belgium	Belgium
>	2018-05-23 19:11:38.0000	Orval	Pale Ale - Belgian	Belgium	Belgium
>	2018-05-23 19:48:47.0000	Tripel Karmeliet	Belgian Tripel	Belgium	Belgium
>	2018-05-23 21:17:50.0000	Leffe Blonde / Blond	Belgian Blonde	Belgium	Belgium
>	2018-06-02 15:17:25.0000	Maes Pils	Pilsner - Other		Belgium

aggregation, sampling, ordering

```
4 // row count
5 BeerCheckins
6 | count
7
```

Count
> 1,078

```
13 // group by
14 BeerCheckins
15 | summarize count() by bin(todatetime(created_at),30d)
16
```

created_at	count_
> 2018-05-17 00:00:00.0000	14
> 2018-06-16 00:00:00.0000	14
> 2018-07-16 00:00:00.0000	22
> 2018-08-15 00:00:00.0000	16
> 2018-09-14 00:00:00.0000	19
> 2018-10-14 00:00:00.0000	18

```
8 // sampling
9 BeerCheckins
10 | order by created_at desc
11 | take 10
12
```

checkin_id	created_at	beer_name	beer_type	beer_ibu
> 1218337235	2022-11-05 22:09:59.0000	India Pale Ale Mosa...	IPA - American	0
> 1218240683	2022-11-05 20:33:14.0000	Zinne des Flandres	Pale Ale - Belgian	0
> 1218186931	2022-11-05 19:34:50.0000	Noire du Midi	Porter - Other	0
> 1217651189	2022-11-04 19:11:24.0000	Hercule Stout	Stout - Imperial / Double	44
> 1217577843	2022-11-04 15:38:45.0000	Monasterium Kloos...	Spiced / Herbed Beer	0
> 1217165844	2022-11-02 19:23:04.0000	Victoria	Belgian Strong Golden Ale	33
> 1216549442	2022-10-30 18:42:35.0000	HertenHaas	Belgian Tripel	35
> 1216503709	2022-10-30 16:52:17.0000	Trappist Westvleter...	Belgian Quadrupel	38
> 1216489681	2022-10-30 16:06:10.0000	LEFT BEHIND - TRIP...	IPA - Imperial / Double N...	0
> 1216484786	2022-10-30 15:47:30.0000	Å VESTLAND, VEST...	Pale Ale - American	28

joins

The screenshot shows a data tool interface with a left sidebar, a top toolbar, and a main workspace. The sidebar contains a tree view of data sources: `dropen_puma (string)`, `Storm_Events` (expanded), `PopulationData` (expanded), and `StormEvents` (expanded). The `PopulationData` table has columns `State (string)` and `Population (long)`. The `StormEvents` table has columns `StartTime (datetime)`, `EndTime (datetime)`, `EpisodeId (int)`, `EventId (int)`, `State (string)`, `EventType (string)`, `InjuriesDirect (int)`, `InjuriesIndirect (int)`, `DeathsDirect (int)`, `DeathsIndirect (int)`, `DamageProperty (int)`, `DamageCrops (int)`, and `Source (string)`.

The top toolbar includes buttons for `Add connection`, `Run`, `Recall`, `KQL tools`, and `help/Samples`.

The main workspace displays a SQL query in a text editor:

```
1 StormEvents
2 | join PopulationData on $left.State == $right.State
3 | project StartTime, EndTime, State, EventType, Population
4 | limit 15
```

Below the query editor, the results are displayed in a table view labeled `Table 1`. The table has columns `StartTime`, `EndTime`, `State`, `EventType`, and `Population`. The results are sorted by `StartTime` in ascending order.

StartTime	EndTime	State	EventType	Population
> 2007-01-01 08:13:00.0000	2007-01-01 14:00:00.0000	DELAWARE	Flash Flood	982,049
> 2007-02-01 00:00:00.0000	2007-02-02 13:00:00.0000	ALASKA	Flood	727,951
> 2007-07-10 12:31:00.0000	2007-07-10 12:32:00.0000	DISTRICT OF COLUMBIA	Thunderstorm Wind	709,951
> 2007-08-05 17:05:00.0000	2007-08-05 17:20:00.0000	IDAHO	Hail	1,823,590
> 2007-08-17 22:00:00.0000	2007-08-17 22:00:00.0000	CONNECTICUT	Thunderstorm Wind	3,559,050
> 2007-08-21 17:11:00.0000	2007-08-21 17:11:00.0000	COLORADO	Hail	5,826,180
> 2007-08-24 17:28:00.0000	2007-08-24 17:28:00.0000	INDIANA	Thunderstorm Wind	6,768,940
> 2007-09-18 20:00:00.0000	2007-09-19 18:00:00.0000	FLORIDA	Heavy Rain	21,711,200
> 2007-12-01 00:00:00.0000	2007-12-01 01:00:00.0000	CALIFORNIA	Flash Flood	39,562,900
> 2007-12-01 10:40:00.0000	2007-12-01 16:00:00.0000	ARIZONA	Flash Flood	7,399,410
> 2007-12-08 06:40:00.0000	2007-12-08 13:01:00.0000	HAWAII	Flash Flood	1,411,150
> 2007-12-09 16:00:00.0000	2007-12-09 16:00:00.0000	ARKANSAS	Lightning	3,025,880
> 2007-12-15 18:00:00.0000	2007-12-15 19:00:00.0000	ALABAMA	Heavy Rain	4,918,690
> 2007-12-23 02:15:00.0000	2007-12-23 02:15:00.0000	ILLINOIS	Thunderstorm Wind	12,620,600
> 2007-12-30 16:00:00.0000	2007-12-30 16:05:00.0000	GEORGIA	Thunderstorm Wind	10,723,700

joins

- different join types
 - innerunique (default) → only first match is included (like the SSIS lookup component)
 - inner
 - leftouter, rightouter
 - fullouter
 - leftanti, rightanti
 - leftsemi, rightsemi

plotting

```
22 // line chart
23 BeerCheckins
24 | summarize count() by bin(todatetime(created_at),30d)
25 | render timechart
26
```



time series

```
37 BeerCheckins
38 | make-series events=count() default=0 on created_at step 1d
```

Table 1 Stats

Search Done (0.349 s) 123 1 records

events	created_at
[1,4,0,0,3,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,1,2,1,0,0,0,0,0,1,0,0,0,0,0,0,1,0,0,0,0,2,0,2,0,0,1,0,1,0,3,0,0,0,0,0,1,2,0,0,0,0,1,1,...]	["2018-05-19T00:00:00.0000000Z","2018-05-20T00:00:00.0000000Z","2018-05-21T00:00:00.0000000Z","2018-05-22T00:00:00.0000000Z",...]

```
37 BeerCheckins
38 | make-series events=count() default=0 on created_at step 7d
39 | project series_stats(events)
```

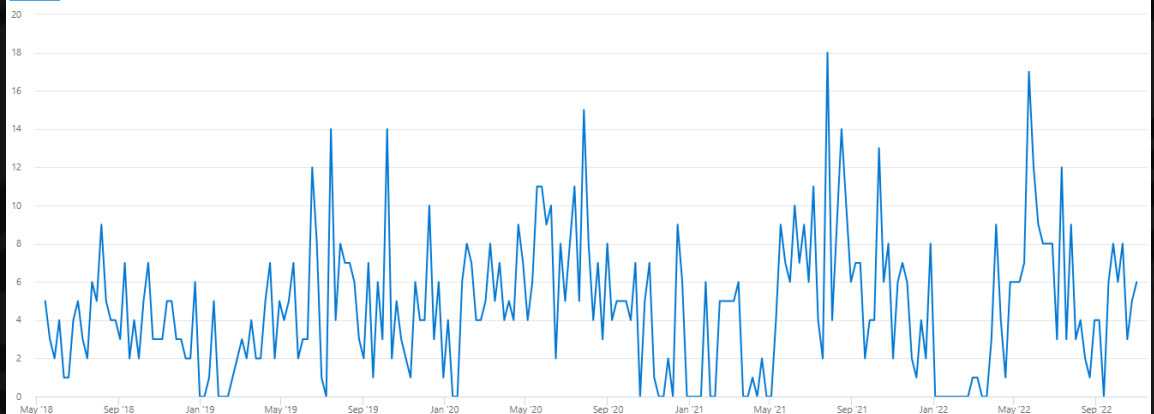
Table 1 Stats

Search Done (0.604 s) 123 1 records

series_stats_events_min	series_stats_events_min_idx	series_stats_events_max	series_stats_events_max_idx	series_stats_events_avg	series_stats_events_stddev	series_stats_events_variance
0	33	18	167	4.6068376068376065	3.5205278207401527	12.39411613660541

```
37 BeerCheckins
38 | make-series events=count() default=0 on created_at step 7d
39 | render timechart
```

Graph Table 1 Stats Done (0.227 s) 123 1 records



time series

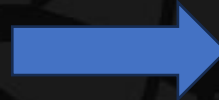
- you can also
 - calculate moving averages
 - apply linear regression
 - detect patterns
 - forecast
 - ...

expand JSON

```
34 BeerCheckins
35 | project checkin_id, flavors
```

Table 1 Stats

checkin_id	flavors
> 1216549442	[{"flavor":"belgiany"}, {"flavor":"sweet"}, {"flavor":"hoppy"}]
> 1214306625	[{"flavor":"floral"}, {"flavor":"strong"}, {"flavor":"spiced"}]
> 1210260383	[{"flavor":"dry"}, {"flavor":"sour"}, {"flavor":"tart"}]
> 1210205708	[{"flavor":"sweet"}, {"flavor":"strong"}, {"flavor":"smooth"}]
> 1209867243	[{"flavor":"soft"}, {"flavor":"light"}, {"flavor":"dry"}]
> 1206767994	[{"flavor":"herbal"}, {"flavor":"strong"}]
> 1205300638	[{"flavor":"fruity"}, {"flavor":"dry"}, {"flavor":"sour"}]
> 1203891699	[{"flavor":"sweet"}, {"flavor":"strong"}]
> 1198657148	[{"flavor":"clean"}, {"flavor":"light"}, {"flavor":"smooth"}]
> 1193418465	[{"flavor":"malty"}, {"flavor":"ginger"}, {"flavor":"spiced"}]
> 1190374989	



```
27 // expand
28 BeerCheckins
29 | project checkin_id, flavors
30 | mv-expand flavors
31 | extend flavor = tostring(flavors.flavor)
32 | project-away flavors
```

Table 1 Stats

checkin_id	flavor
> 1216549442	belgiany
> 1216549442	sweet
> 1216549442	hoppy
> 1214306625	floral
> 1214306625	strong
> 1214306625	spiced
> 1210260383	dry
> 1210260383	sour
> 1210260383	tart

Kusto is too hard?

```
1 EXPLAIN
2 SELECT
3     beer_type
4     ,count(checkin_id) AS nbrBeers
5 FROM BeerCheckins
6 WHERE brewery_country like 'bel%'
7 GROUP BY beer_type
```

Table 1

Stats

Search

Query

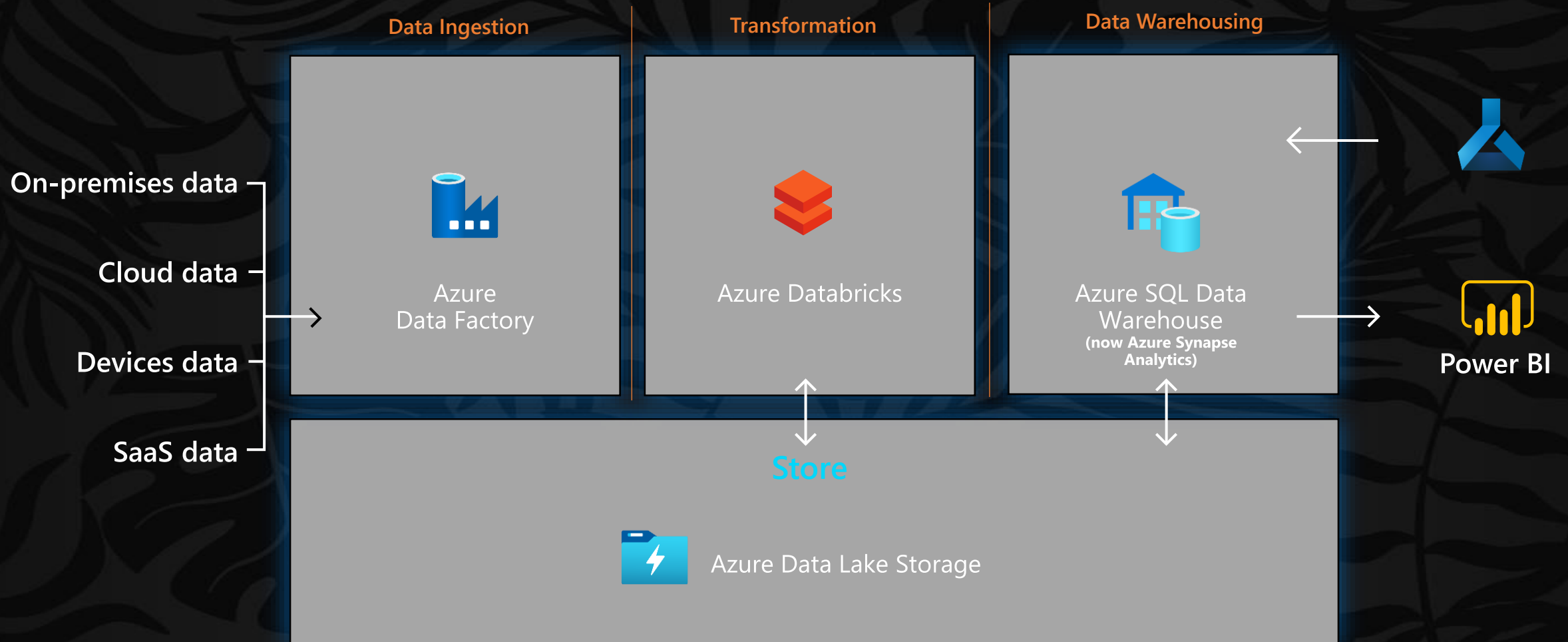
> BeerCheckins | where (brewery_country startswith "bel") | summarize nbrBeers=toint(countif(notnull(checkin_id))) by beer_type



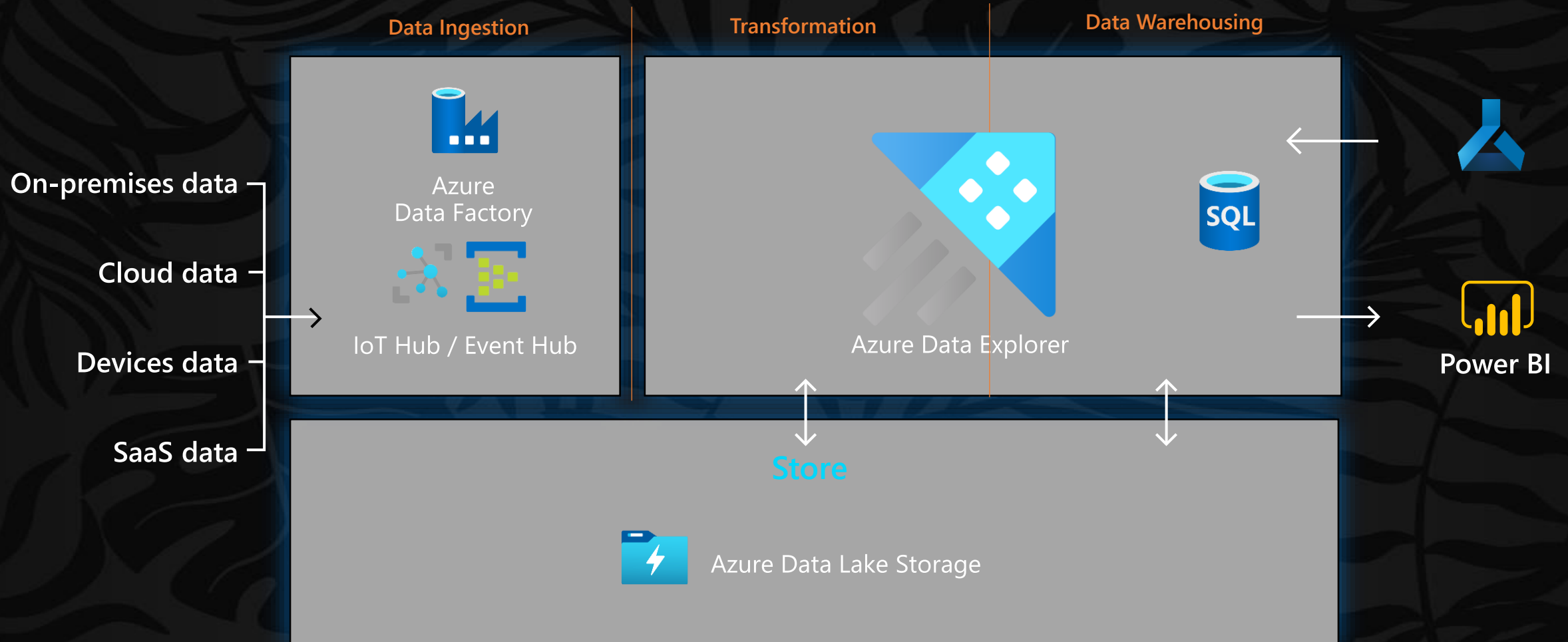
Data Explorer – the hidden treasure of Azure analytic tools?



Typical data platform in Azure

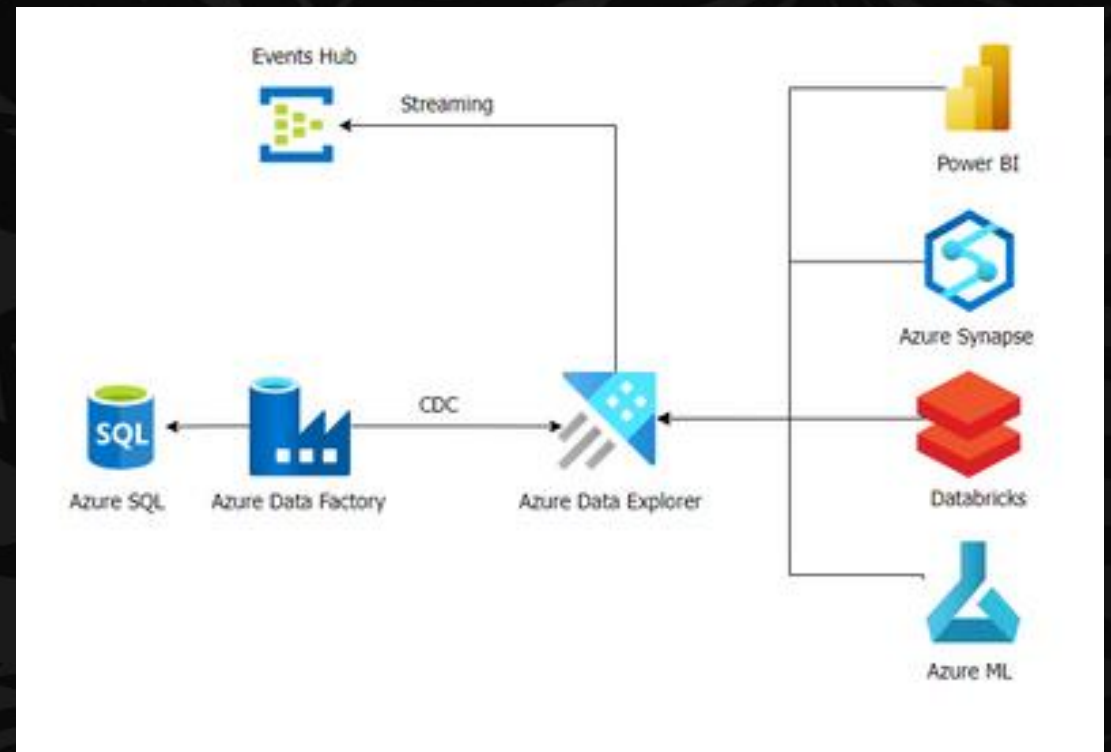


Azure Data Explorer



The benefits of Data Explorer

- Auto-ingest from event hubs
- Receive CDC & batch from Data Factory
- Continuous Export
- External Tables
- Materialized views
- Policies and retention to mimic SQL DB



DEMO



See, Indy – this is why...



The background of the slide is a dark, textured pattern of various tropical leaves, including palm fronds and monstera leaves, rendered in a lighter shade of dark gray.

Azure Data Explorer in an IoT scenario

Overall Equipment Efficiency

OEE identifies the percentage of manufacturing time that is truly productive.

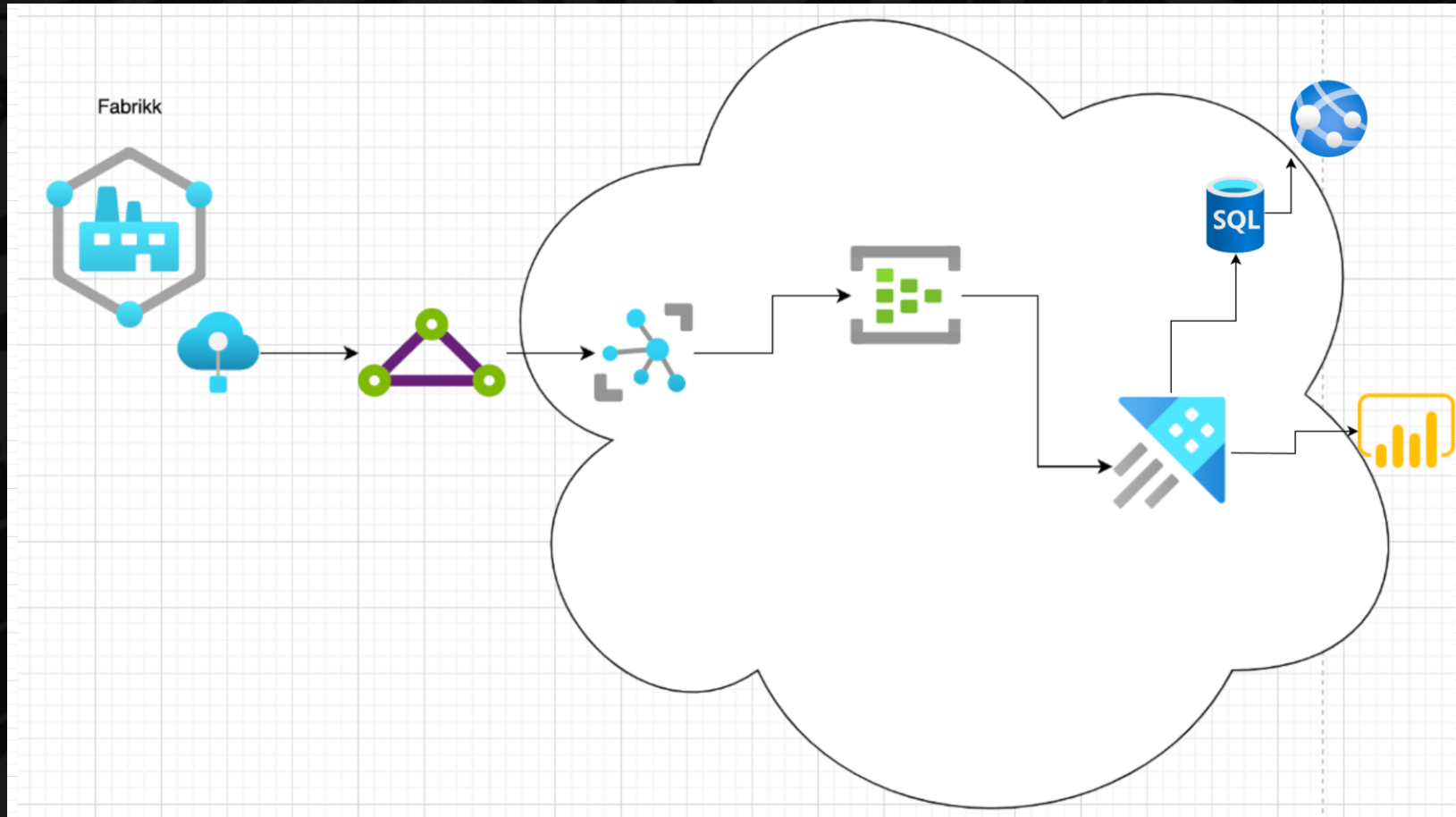
100% is theoretical potential – if no failures, no breaks, no downtime



Solution

- Counter connected
- Simple counter – 1,2,3,4...
- Stop if same number repeated
- > 1 minute defined as stop
- Query collating timeseries, identifying stops – however...
- Customer demand for export every 2 minutes to webapp
- What if stop lasts longer?

Overall Equipment Efficiency



Azure Synapse Link from Azure Cosmos DB to ADX

(spoiler: it has nothing to do with Synapse)

Synapse Link

Create a cluster & database

[Home](#) > [Create a resource](#) > [Marketplace](#) > [Azure Data Explorer](#) >

Create an Azure Data Explorer Cluster ...

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group * ⓘ [Create new](#)

CLUSTER DETAILS

Cluster name * ⓘ ✓

Region * ⓘ

COMPUTE SPECIFICATION

Select a VM size to support the workload you want to run. The VM size determines factors such as processing power, memory, and storage capacity. Azure charges an hourly price based on the VM's size and operating system. [Learn more about Compute specifications](#) ↗

Workload * ⓘ

Size

Compute specifications [Select other](#)

Availability zones ⓘ ☒ No zones

[Review + create](#)

[Next : Scale >](#)

[Download a template for automation](#)

Waiting for the ADX
cluster to start...



Synapse Link

Azure Data Explorer Database

Create new database

Admin ⓘ

Default Directory

Database name *

adxbeers ✓

Retention period (in days) ⓘ

365

☒ Unlimited days for retention period

Cache period (in days) * ⓘ

1

☐ Unlimited days for cache period

adxcosmostest.ea... ✎ ✕ +

Open in Web UI 📄 ⏪ ▶ Run ⏩ Recall 🛠 KQL tools ▾

Filter... ☆

▼ 📁 adxcosmostest.eastus

📁 adxbeers

```
1 .create table BeerCheckins(  
2     checkin_id:string  
3     ,created_date:string  
4     ,created_time:string  
5     ,beer_name:string  
6     ,beer_type:string  
7     ,beer_ibu:string  
8     ,beer_abv:string  
9     ,flavors:string  
10    ,venue_name:string  
11    ,venue_city:string  
12    ,venue_state:string  
13    ,venue_country:string  
14    ,venue_lat:string  
15    ,venue_lng:string  
16    ,brewery_name:string  
17    ,brewery_city:string  
18    ,brewery_state:string  
19    ,brewery_country:string  
20    ,purchase_venue:string  
21    ,score:string  
22    ,global_score:string  
23    ,global_weighted_score:string  
24    ,serving_type:string  
25    ,total_toasts:string  
26    ,total_comments:string  
27    ,comment:string  
28 )
```

Synapse Link

Run

Recall

KQL tools

adxcosmostest.eastus/adxbeers

Open

Copy

Export

```
1 .create table BeerCheckins ingestion json mapping "DocumentMapping"
2 ---
3 [
4     {"column": "checkin_id", "path": "$.checkin_id",
5     {"column": "created_at", "path": "$.created_at",
6     {"column": "beer_name", "path": "$.beer.beer_name",
7     {"column": "beer_type", "path": "$.beer.beer_type",
8     {"column": "beer_ibu", "path": "$.beer.beer_ibu",
9     {"column": "beer_abv", "path": "$.beer.beer_abv",
10    {"column": "flavors", "path": "$.flavor_profiles",
11    {"column": "venue_name", "path": "$.venue.venue_name",
12    {"column": "venue_city", "path": "$.venue.venue_city",
13    {"column": "venue_state", "path": "$.venue.venue_state",
14    {"column": "venue_country", "path": "$.venue.venue_country",
15    {"column": "venue_lat", "path": "$.venue.venue_lat",
16    {"column": "venue_lng", "path": "$.venue.venue_lng",
```

Table 1

Search Done (0.315 s) 1 records

Name	Kind	Mapping	LastUpdatedOn	Database	Table
DocumentMapping	Json	[{"column": "checkin_id", "path": "\$.checkin_id", "datatype": "", "transform": null}, {"column": "created_at", "path": "\$.created_at", "datatype": "", "transform": null}, {"column": "beer_name", "path": "\$.beer.beer_name", "datatype": "", "transform": null}, {"column": "beer_type", "path": "\$.beer.beer_type", "datatype": "", "transform": null}, {"column": "beer_ibu", "path": "\$.beer.beer_ibu", "datatype": "", "transform": null}, {"column": "beer_abv", "path": "\$.beer.beer_abv", "datatype": "", "transform": null}, {"column": "flavors", "path": "\$.flavor_profiles", "datatype": "", "transform": null}, {"column": "venue_name", "path": "\$.venue.venue_name", "datatype": "", "transform": null}, {"column": "venue_city", "path": "\$.venue.venue_city", "datatype": "", "transform": null}, {"column": "venue_state", "path": "\$.venue.venue_state", "datatype": "", "transform": null}, {"column": "venue_country", "path": "\$.venue.venue_country", "datatype": "", "transform": null}, {"column": "venue_lat", "path": "\$.venue.venue_lat", "datatype": "", "transform": null}, {"column": "venue_lng", "path": "\$.venue.venue_lng", "datatype": "", "transform": null}, {"column": "brewery_name", "path": "\$.brewery.brewery_name", "datatype": "", "transform": null}, {"column": "brewery_city", "path": "\$.brewery.brewery_city", "datatype": "", "transform": null}, {"column": "brewery_state", "path": "\$.brewery.brewery_state", "datatype": "", "transform": null}, {"column": "brewery_country", "path": "\$.brewery.brewery_country", "datatype": "", "transform": null}, {"column": "purchase_venue", "path": "\$.purchase_venue", "datatype": "", "transform": null}, {"column": "score", "path": "\$.rating_score", "datatype": "", "transform": null}, {"column": "global_score", "path": "\$.global_rating_score", "datatype": "", "transform": null}, {"column": "global_weighted_score", "path": "\$.global_weighted_rating_score", "datatype": "", "transform": null}, {"column": "serving_type", "path": "\$.serving_type", "datatype": "", "transform": null}, {"column": "total_toasts", "path": "\$.total_toasts", "datatype": "", "transform": null}, {"column": "total_comments", "path": "\$.total_comments", "datatype": "", "transform": null}, {"column": "comment", "path": "\$.comment", "datatype": "", "transform": null}],	2023-04-14 18:46:44.0190	adxbeers	BeerCheckins


JPath: /Name

```
1 "Name": DocumentMapping,
2 "Kind": Json,
3 "Mapping": [{"column": "checkin_id", "path": "$.checkin_id", "datatype": "", "transform": null}, {"column": "created_at", "path": "$.created_at", "datatype": "", "transform": null}, {"column": "beer_name", "path": "$.beer.beer_name", "datatype": "", "transform": null}, {"column": "beer_type", "path": "$.beer.beer_type", "datatype": "", "transform": null}, {"column": "beer_ibu", "path": "$.beer.beer_ibu", "datatype": "", "transform": null}, {"column": "beer_abv", "path": "$.beer.beer_abv", "datatype": "", "transform": null}, {"column": "flavors", "path": "$.flavor_profiles", "datatype": "", "transform": null}, {"column": "venue_name", "path": "$.venue.venue_name", "datatype": "", "transform": null}, {"column": "venue_city", "path": "$.venue.venue_city", "datatype": "", "transform": null}, {"column": "venue_state", "path": "$.venue.venue_state", "datatype": "", "transform": null}, {"column": "venue_country", "path": "$.venue.venue_country", "datatype": "", "transform": null}, {"column": "venue_lat", "path": "$.venue.venue_lat", "datatype": "", "transform": null}, {"column": "venue_lng", "path": "$.venue.venue_lng", "datatype": "", "transform": null}, {"column": "brewery_name", "path": "$.brewery.brewery_name", "datatype": "", "transform": null}, {"column": "brewery_city", "path": "$.brewery.brewery_city", "datatype": "", "transform": null}, {"column": "brewery_state", "path": "$.brewery.brewery_state", "datatype": "", "transform": null}, {"column": "brewery_country", "path": "$.brewery.brewery_country", "datatype": "", "transform": null}, {"column": "purchase_venue", "path": "$.purchase_venue", "datatype": "", "transform": null}, {"column": "score", "path": "$.rating_score", "datatype": "", "transform": null}, {"column": "global_score", "path": "$.global_rating_score", "datatype": "", "transform": null}, {"column": "global_weighted_score", "path": "$.global_weighted_rating_score", "datatype": "", "transform": null}, {"column": "serving_type", "path": "$.serving_type", "datatype": "", "transform": null}, {"column": "total_toasts", "path": "$.total_toasts", "datatype": "", "transform": null}, {"column": "total_comments", "path": "$.total_comments", "datatype": "", "transform": null}, {"column": "comment", "path": "$.comment", "datatype": "", "transform": null}],
4 "LastUpdatedOn": 2023-04-14T18:46:44.0191498Z,
5 "Database": adxbeers,
6 "Table": BeerCheckins
```

Synapse Link

Get started with Azure Data Explorer


Use the Azure Data Explorer web app to manage your data easily. [Learn more](#)



Database creation

Create a database

Create




Data ingestion

Ingest new data or go to the Azure Data Explorer web app to manage your data.

Ingest Create data connection


- Cosmos DB (preview)
- Event Grid (Blob storage)
- Event Hub
- IoT Hub



Query

Write, run, and share Kusto Query Language commands and queries.

Explore



Dashboards

Use Azure Data Explorer to create and share dashboards and visualize data

Visualize

Cosmos DB (preview)

Create data connection

Database Name * (View resource)

adxbeers

Data connection name * (i)

cosmosbeers

Subscription

Visual Studio Premium with MSDN

Cosmos DB account * (i)

mssqltips-cosmoslink (View resource)

SQL database * (i) Beers (View resource)

SQL container * (i) Checkins (View resource)

Table name *

BeerCheckins

Mapping name (i) DocumentMapping

Advanced settings


Event retrieval start date (i)

Sat Jan 01 2022 12:00


(i) If you change the date, this might cause ingestion latency while older records are ingested.

Managed identity type

Select which identity type to use for this data connection. [Learn more about identity types](#)

☒  **System-assigned**

Use an identity created in Azure AD that's tied to the cluster's lifecycle.

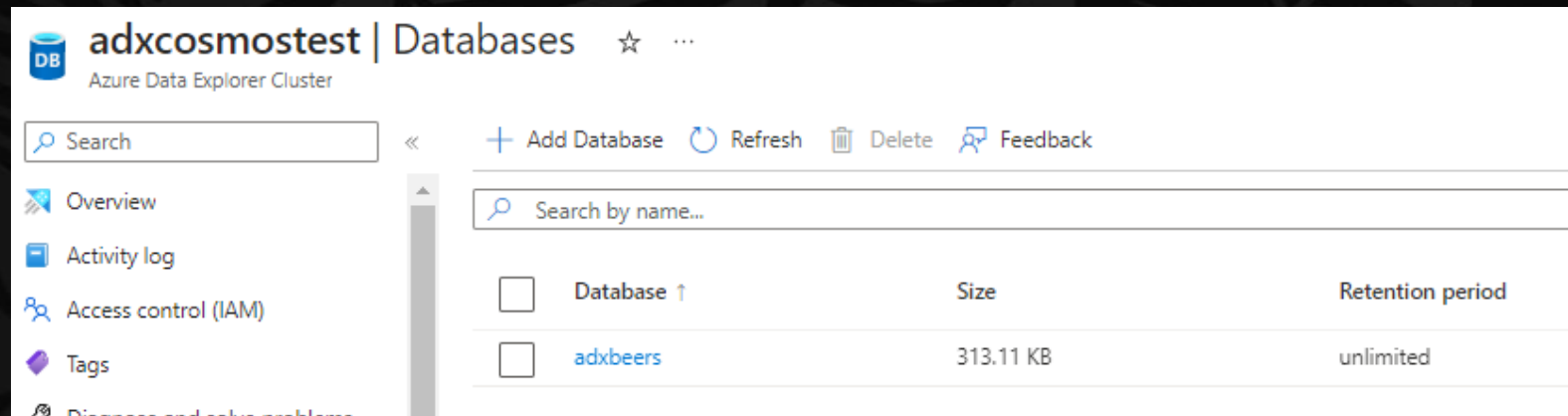
☐  **User-assigned**

Use an identity that's a standalone Azure resource with a separate lifecycle.

(i) System-assigned identity is not authorized to access mssqltips-cosmoslink/Beers/Checkins as "Azure Cosmos DB Reader". Azure "Azure Cosmos DB Reader" role will be added

Synapse Link

data will be imported from the specified start date
using Azure Cosmos DB change feed



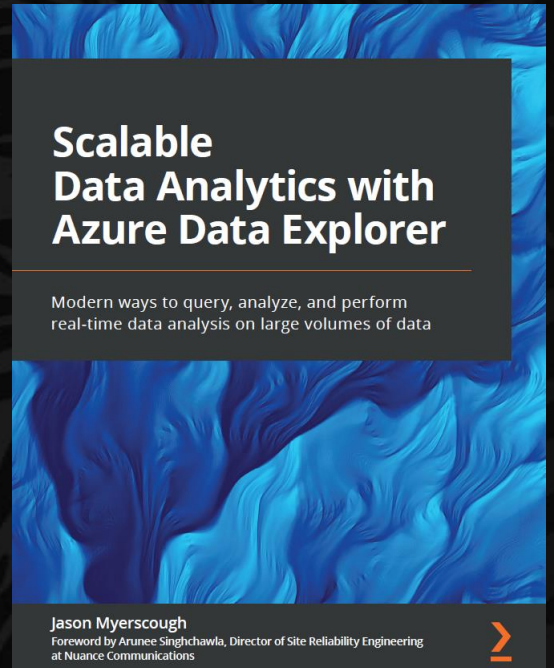
when it's imported, you can query it with KQL

SUCCESS!



Resources

- [ADX in a day – GitHub](#)
- [Kusto Detective Agency](#)
- [The Most Powerful Azure Service You've Never Heard Of – SQLBits](#)
- [Get started with Real-Time Analytics in Microsoft Fabric – Microsoft Learn](#)
- [Start for free with ADX](#)
- [Building a Data Lakehouse using Azure Data Explorer](#)



Thank you for coming!



https://bit.ly/dMC2023_SessionFeedback