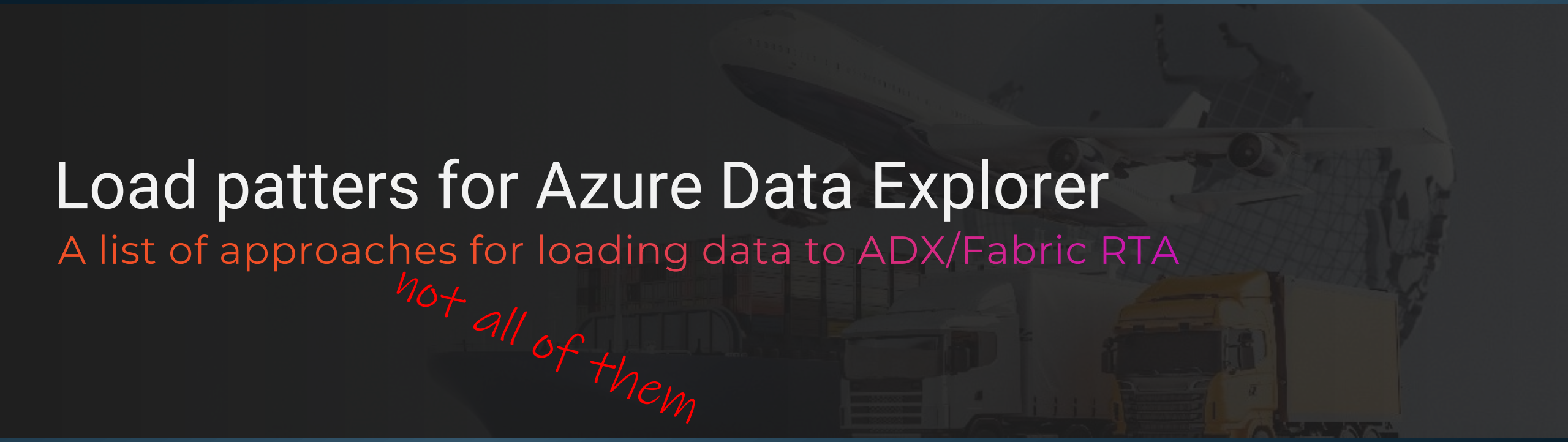
Fellowmind

Load patters for Azure Data Explorer

A list of approaches for loading data to ADX/Fabric RTA

not all of them



Brian Bønk Rueløkke

Principal & Enterprise architect, Data & AI

Fellowmind

https://linkedin.com/in/brianbonk
https://brianbonk.dk
https://github.com/brianbonk

MVP Microsoft Most Valuable Professional

Microsoft
FastTrack Recognized
Solution Architect
Power BI
2022 >>

Microsoft
Certified Trainer
Data Platform
2018 >>

Agenda

- The history of Kusto
- Where to use the Kusto engine
- Loading data to ADX/SDX/RTA
- Offloading data from ADX/SDX/RTA

Jaques Cousteau
1910-1997

Jaques Cousteau
1910-1997

Image is AI generated

The history of Kusto

Azure Sentinel

Log Analytics

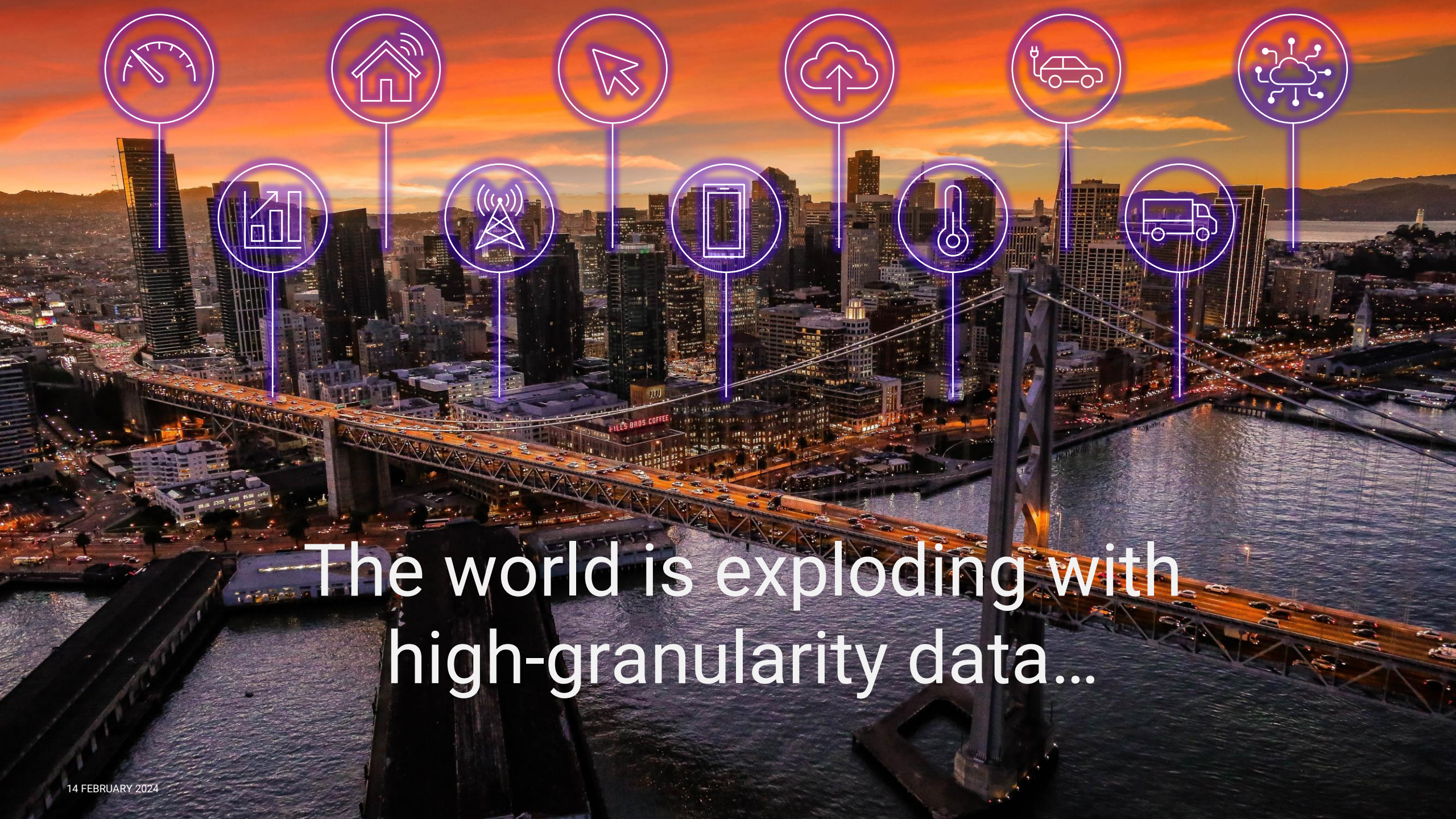
Real-Time Analytics

Azure resource graph

Microsoft 365 Defender

CMPivot

CMPivot



The world is exploding with high-granularity data...

It all starts with data

Telemetry – a key data for digital transformation

Telemetry – a key data for digital transformation

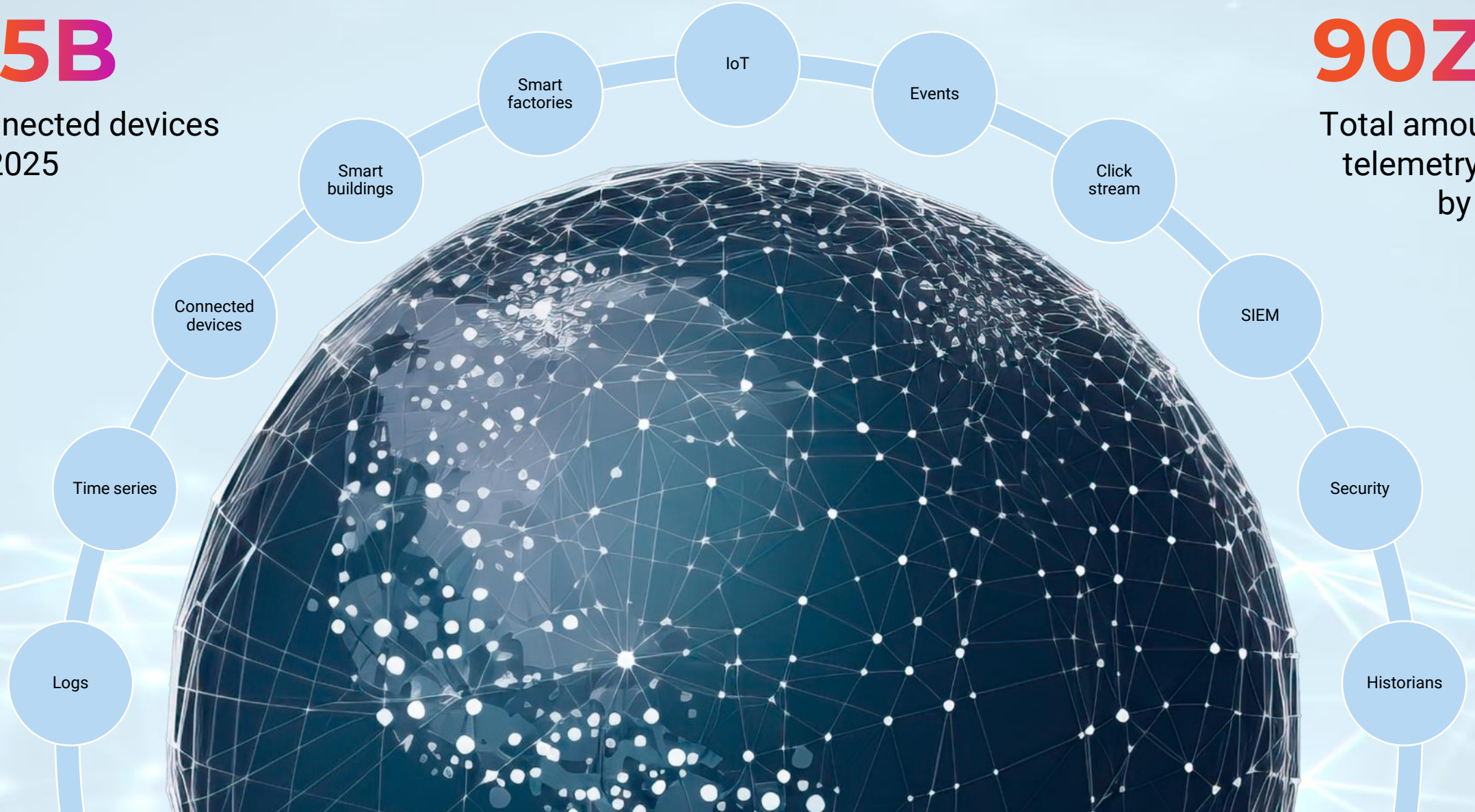
Telemetry – a key data for digital transformation

75B

Connected devices by 2025

90ZB

Total amount of telemetry data by 2025



Digital transformation

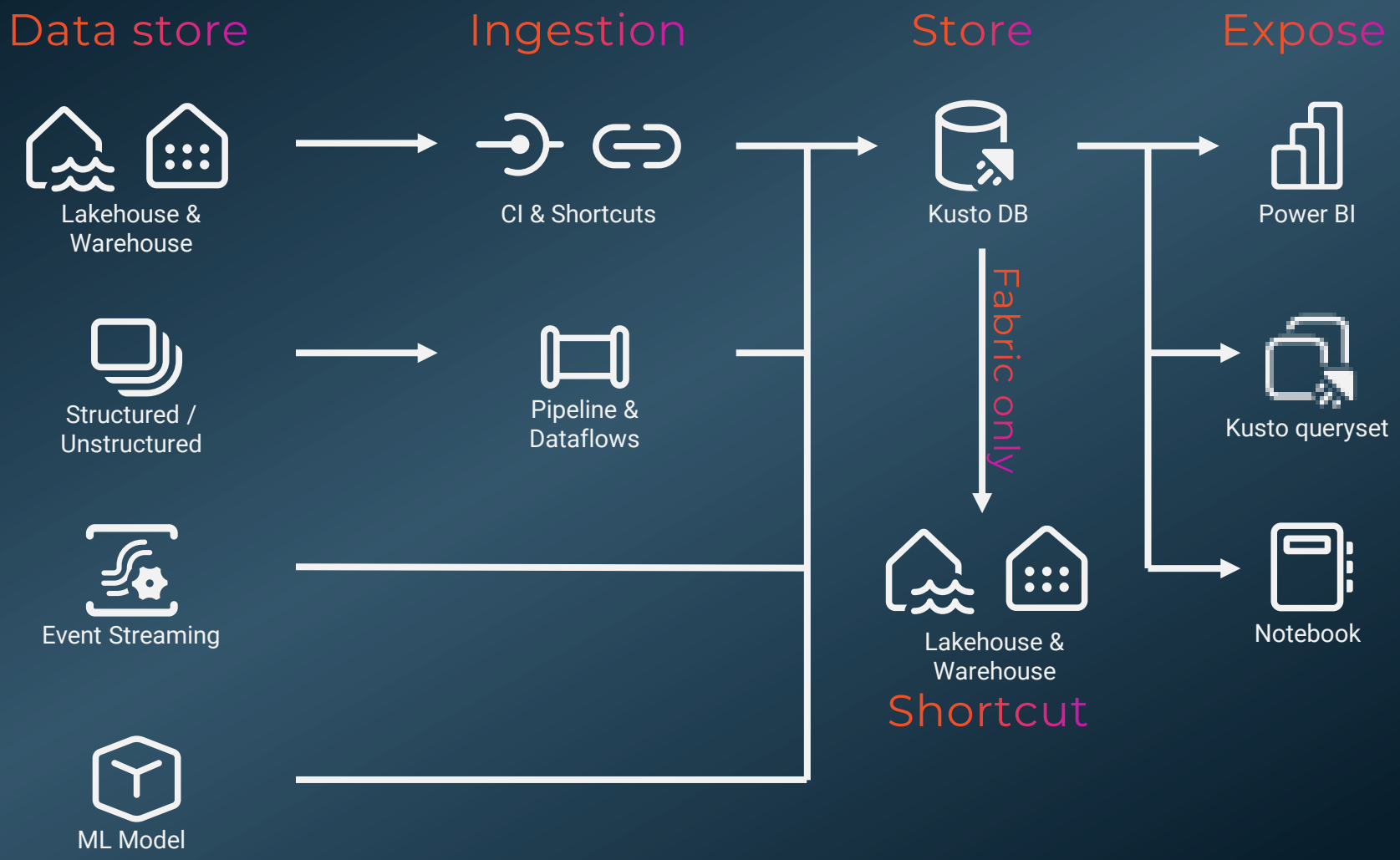
Cybersecurity
Asset tracking and management
Predictive maintenance
Supply chain optimization
Customer experience
Energy management
Inventory management
Quality control
Environmental monitoring
Fleet management
Health and safety

KQL database
Key capabilities

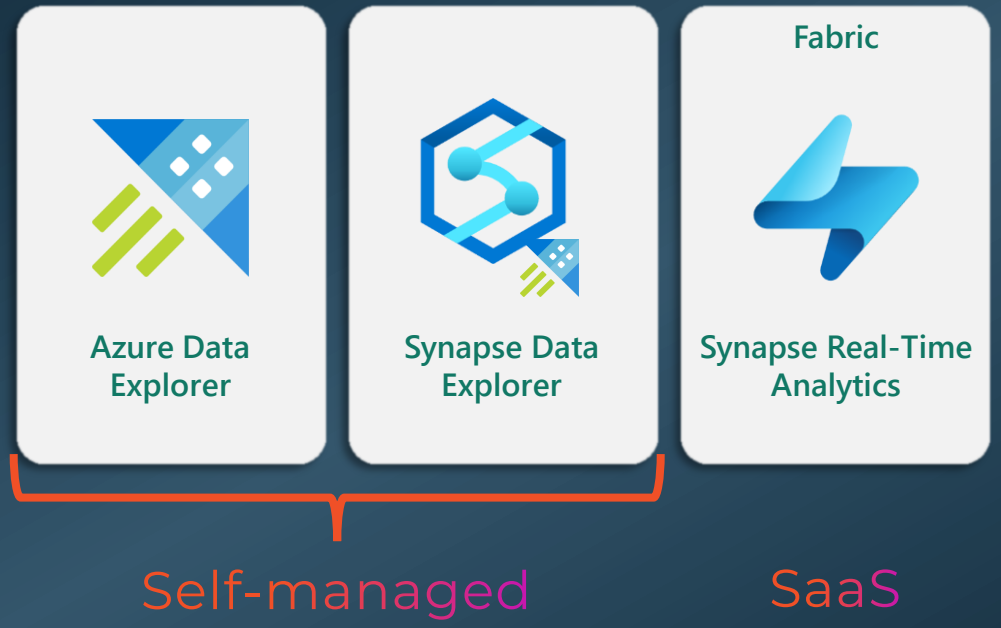
Unlimited Scale (query, ingestion and storage)	Any data source	Any data format
Structured Semi-structured Free-text	Real-time transformation og complicated data strcutures	Streaming analytics in Near-Real-Time
High performance Low latency High freshness	Timeseries database	Everything is indexed and partitioned

KQL database
as data warehouse

Real-Time Analytics



Azure Data Explorer options



Loading data to the database

KQL script

Eventstream

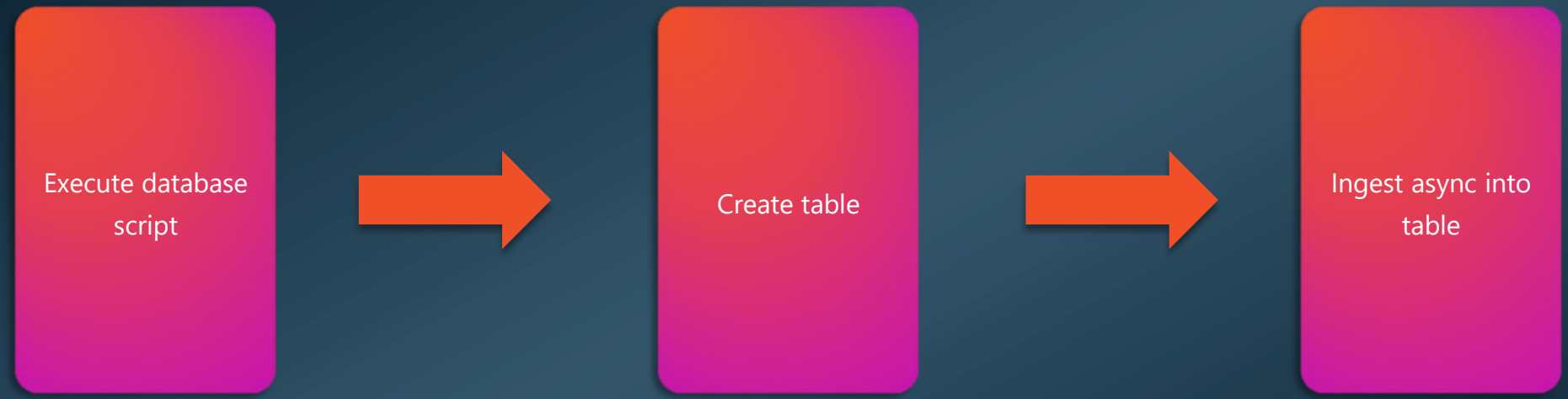
Python

API

Pipelines

...and more...

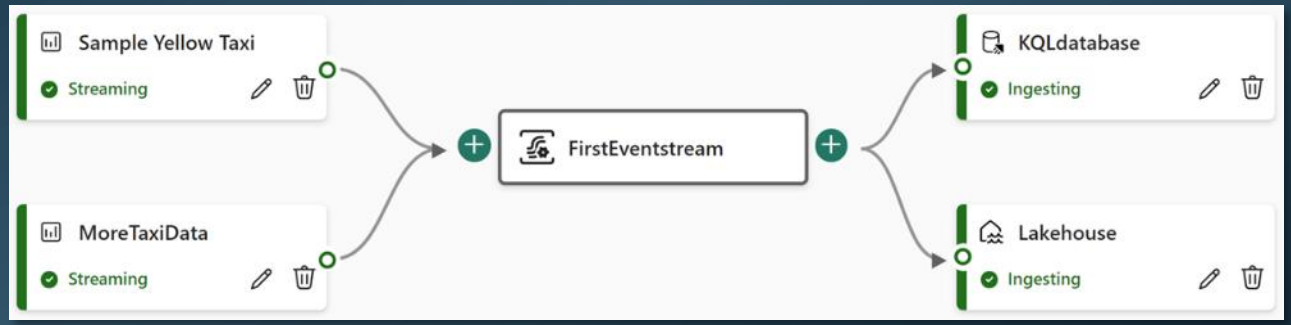
KQL Script


Execute database script
Create table
Ingest async into table

Streaming data to RTA

EVENTSTREAM

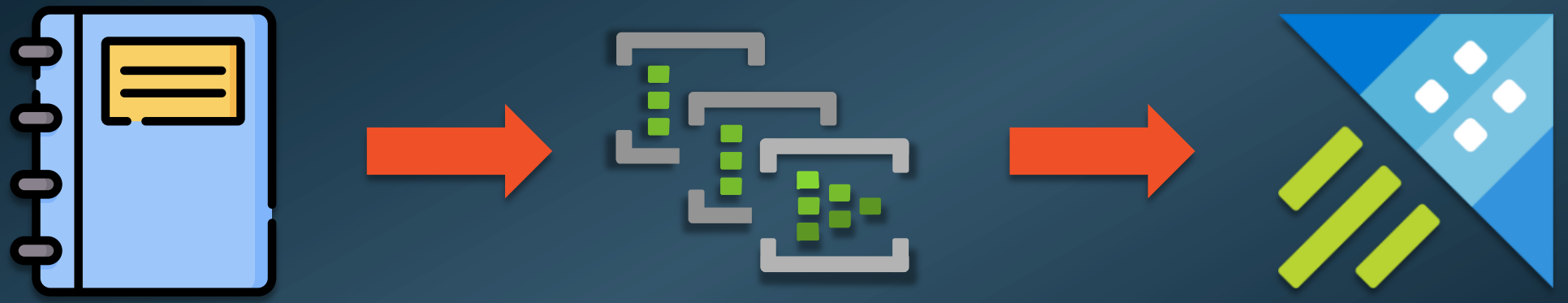
The brand-new event stream service, leverages the ability to get data from several sources of streaming data and save it to a wide variety of destinations, including OneLake, KQL databases and Azure services.



The service computes the data once and can pipe it out to several destinations at once. All configured and maintained from within the Microsoft Fabric portal and "coded" with your mouse.

Imagine scenarios of IoT devices loading data to both the data warehouse and other 3-rd party destinations – this can now be done using the low-code approach from Event Stream.

Python notebook



https://github.com/microsoft/Fabric-RTA-FlightStream

API

Streaming ingestion HTTP request - Azure Data Explorer & Real-Time Analytics | Microsoft Learn

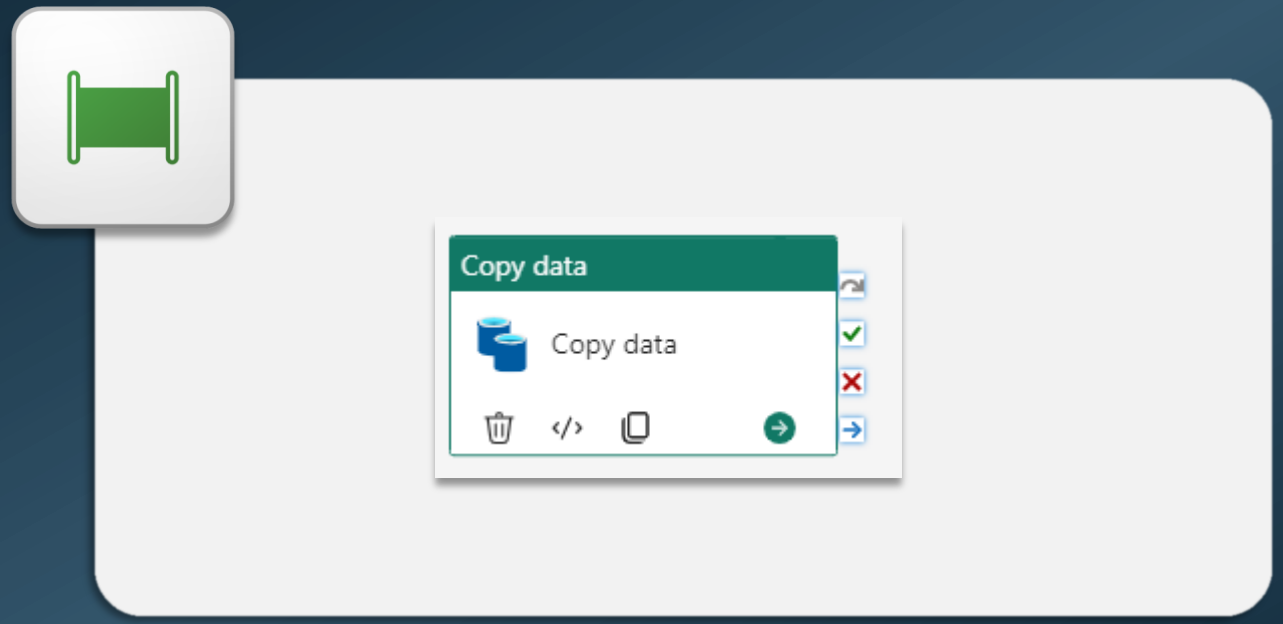
Action	HTTP verb	HTTP resource
Ingest	POST	`/v1/rest/ingest/{database}/{table}?{additional parameters}`

Body

Headers

Standard header	Description	Required/Optional
`Accept`	Set this value to `application/json`.	Optional
`Accept-Encoding`	Supported encodings are `gzip` and `deflate`.	Optional
`Authorization`	See authentication.	Required
`Connection`	Enable `Keep-Alive`.	Optional
`Content-Length`	Specify the request body length, when known.	Optional
`Content-Encoding`	Set to `gzip` but the body must be gzip-compressed	Optional
`Expect`	Set to `100-Continue`.	Optional
`Host`	Set to the domain name to which you sent the request (such as, `help.kusto.windows.net`).	Required

Pipelines



DEMO

Live coding
(hopefully no demo-ghost 👻)

Analysis and reporting

Dashboards in RTA - planned - to come...

Real-Time Analytics

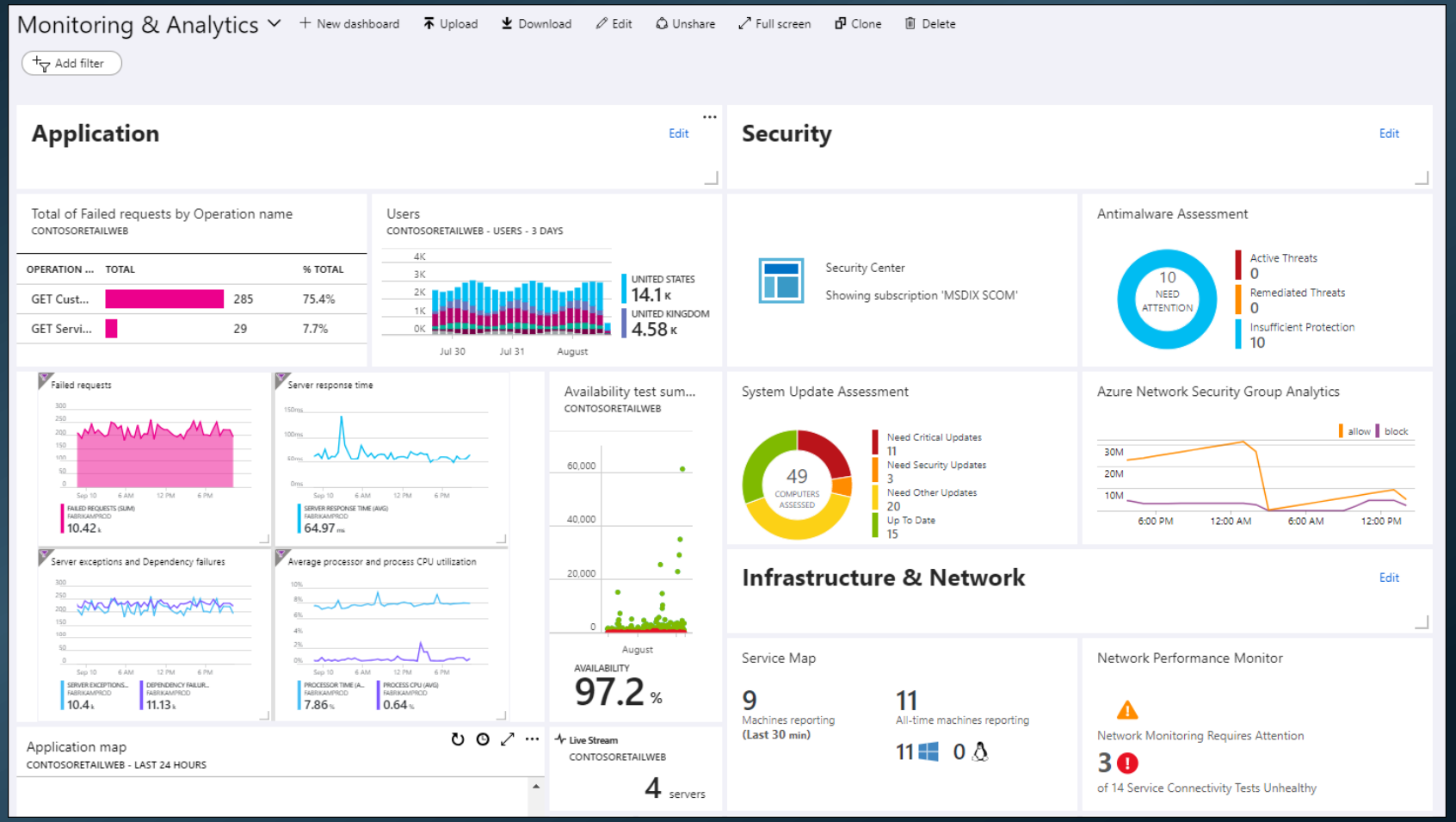


Image from James Westall

Fellowwind

Thank you

Connect with me at:

https://linkedin.com/in/brianbonk
https://brianbonk.dk
https://github.com/brianbonk

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