

Conference Partners

Data Point Prague 2025











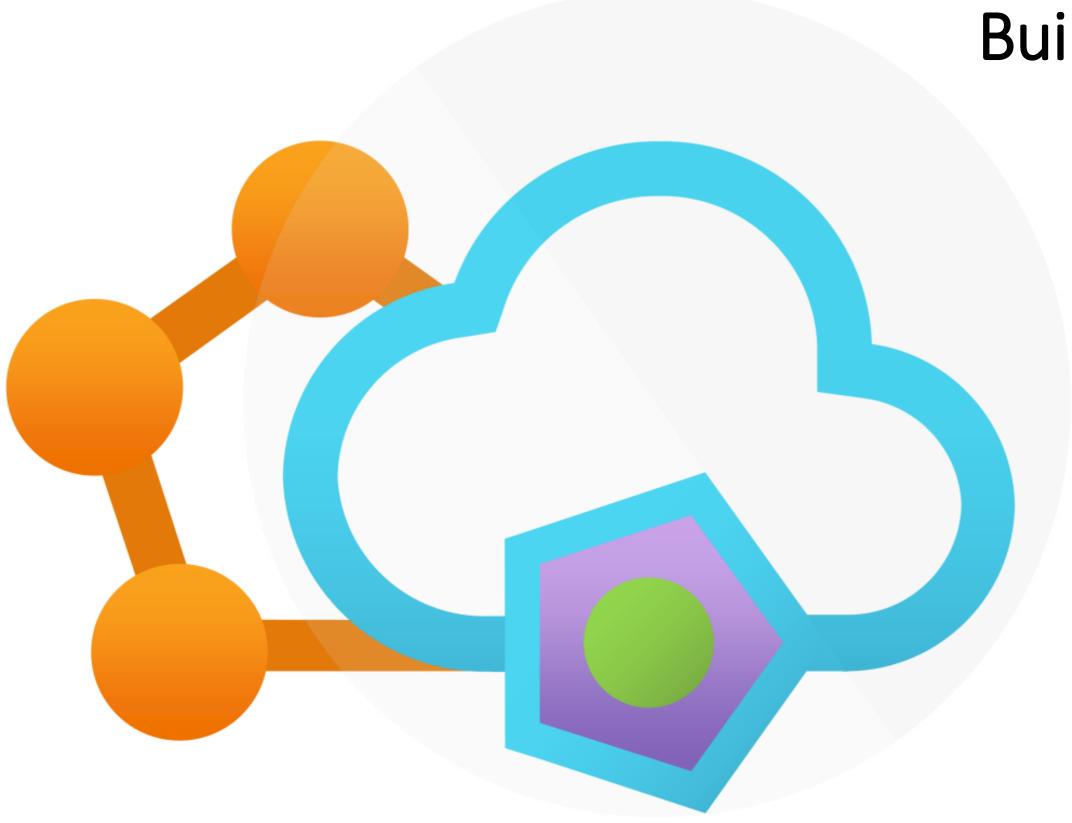
GORDON & WEBSTER

CONSULTING AND INVESTMENT INC.





Komunita datových profesionálů



Building Near Real-time Data Solutions in Microsoft Azure & Fabric

Paul Andrew

@mrpaulandrew





Cloud Formations

Paul Andrew



Co-Founder & Director

Chief Technology Officer









/mrpaulandrew

@mrpaulandrew

In/mrpaulandrew

- Mentor | Author
- Speaker | Podcast Host
- Event Organiser

SQL Server 2000

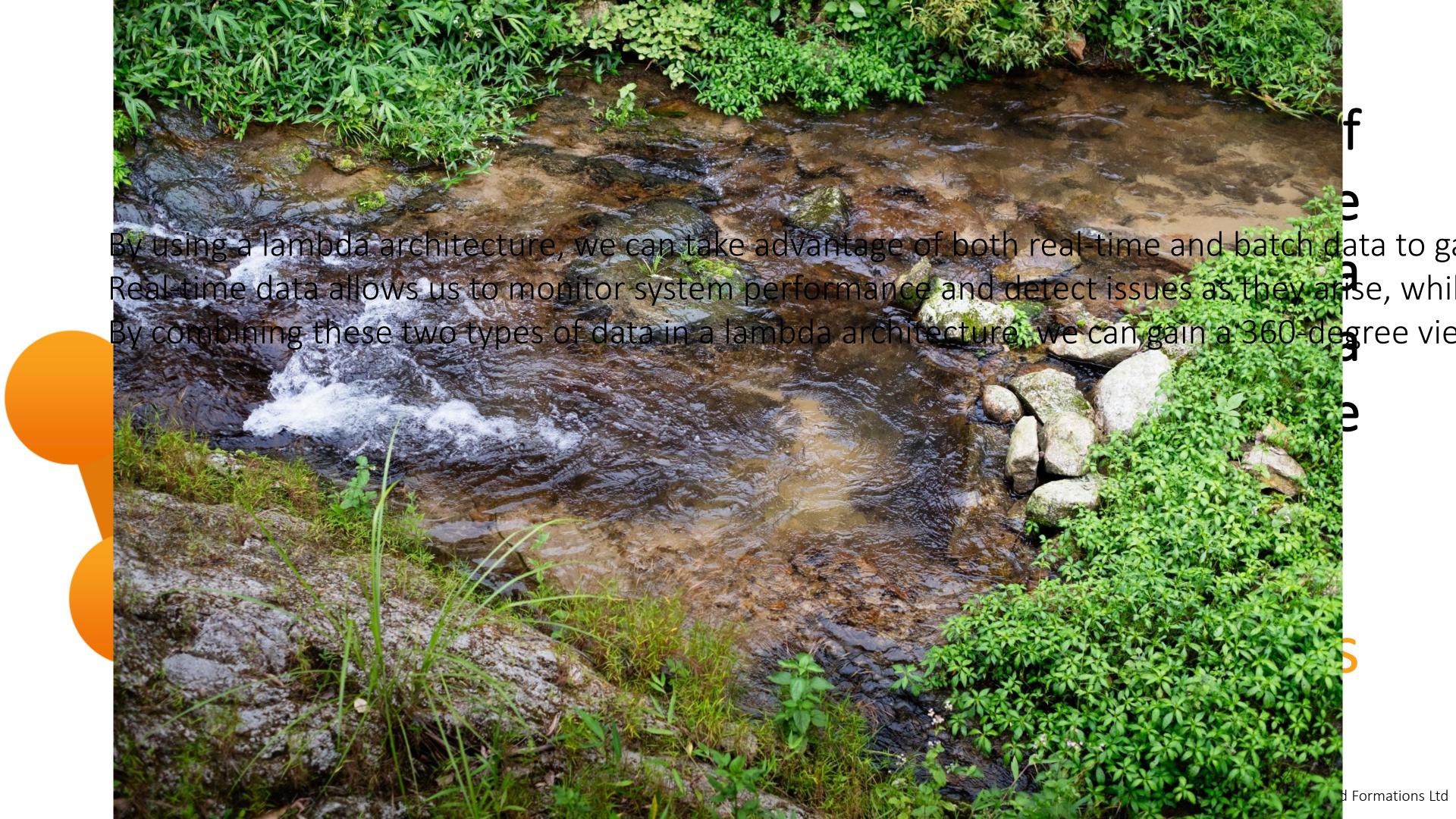


Copilot



Add a slide about the advantages of combining real-time data with batch data in a lambda architecture.

I completed some of your request, but I'll need more practice before I can do everything in it. What else can I help you with?





Agenda:

Theory | Concepts | Tooling

Demo

Conclusions



Building Near Real-time Data Solutions



Cloud Formations

What is big data?



Answer: It depends!

Answer:

"Any data that you cannot process in the time that you have/want using the technology you have."

Buck Woody@BuckWoodyMSFT

Volume Velocity Variety Veracity Value

What is the goal of our data solutions?

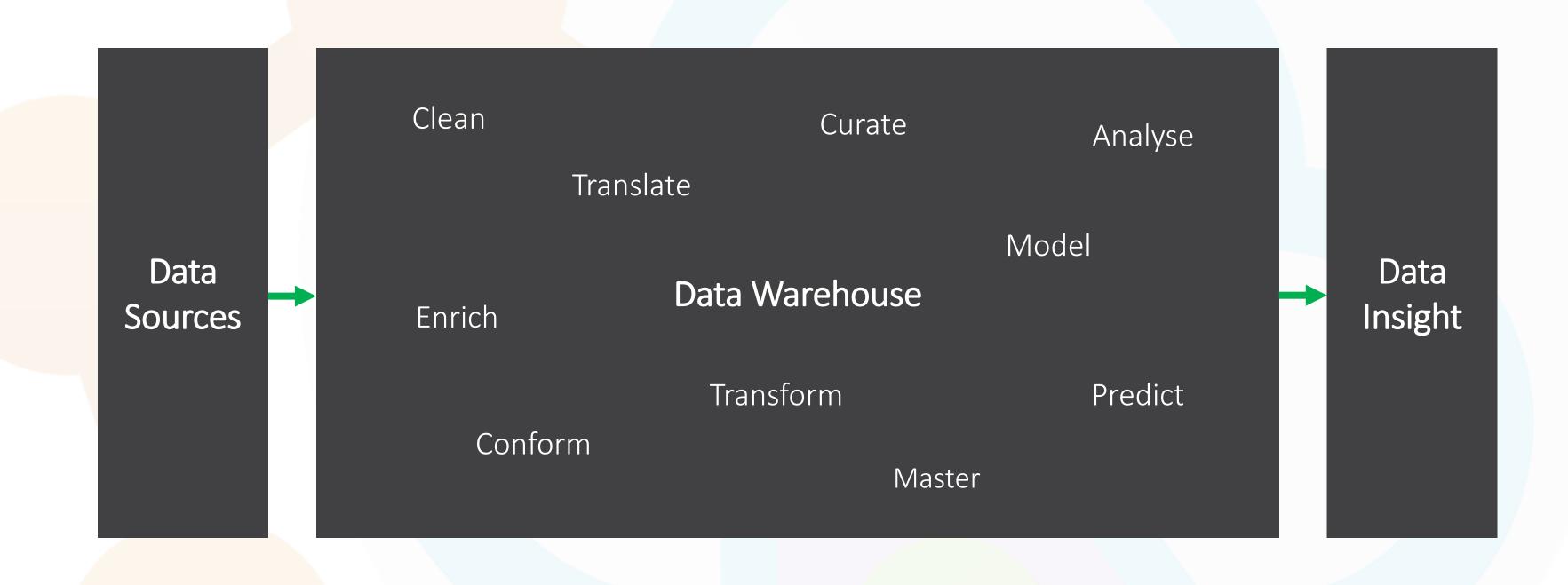




Data Insight

How do we deliver our data insights?

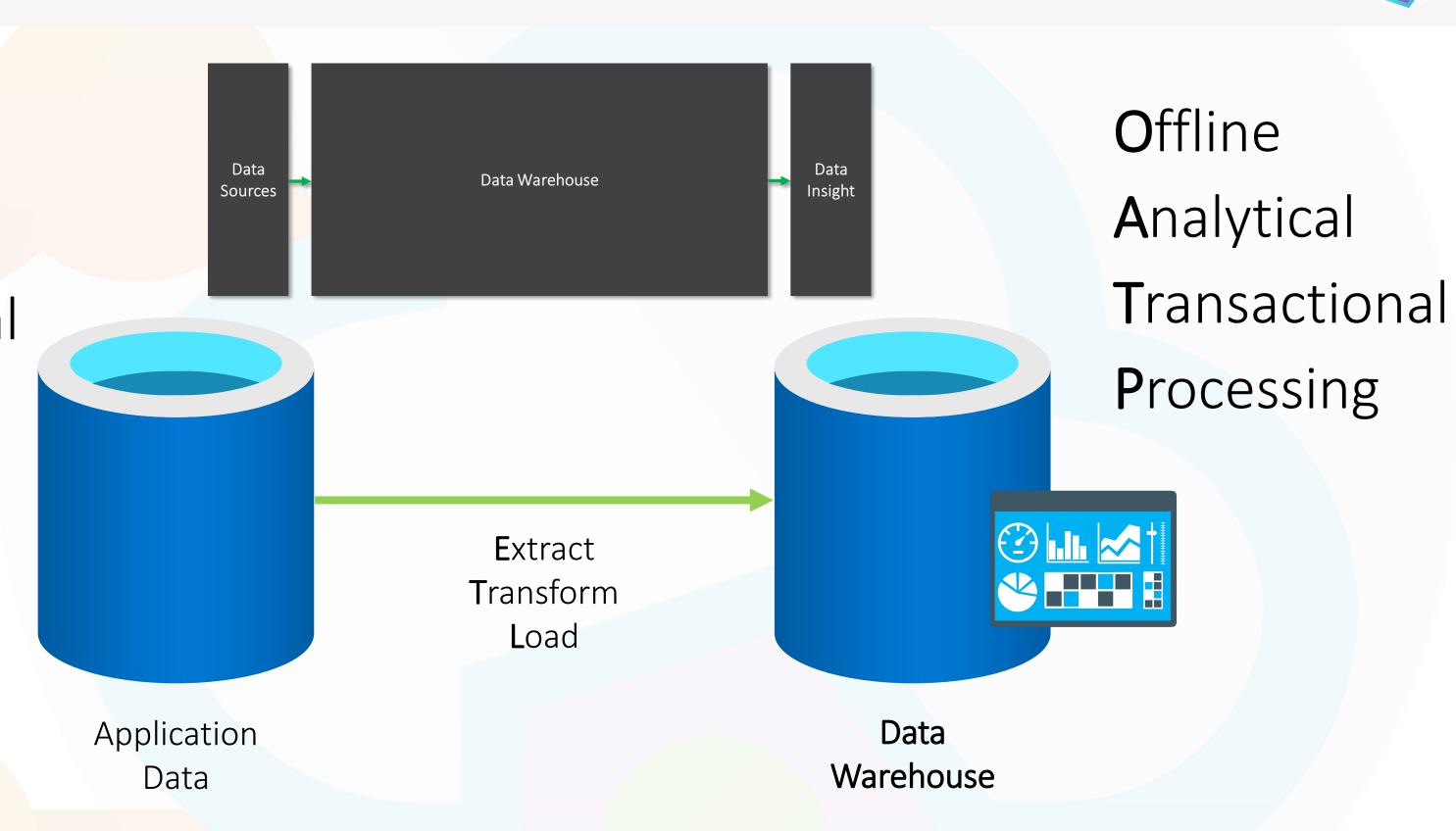




Data Warehouse

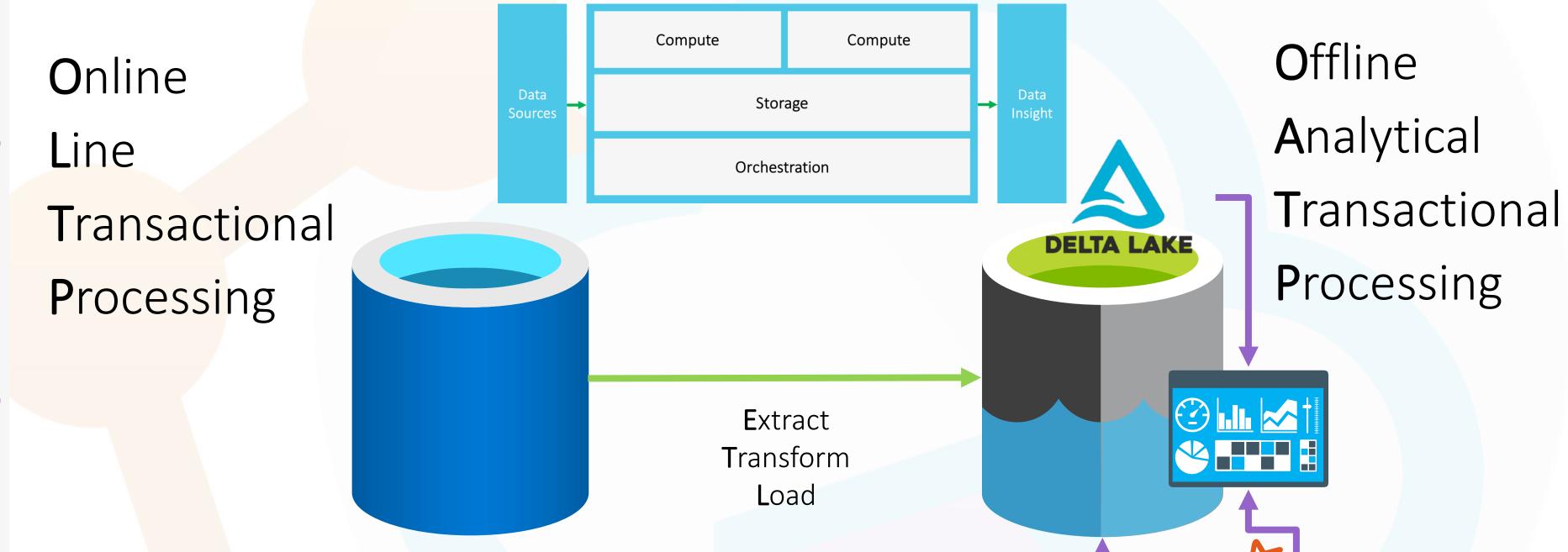


Online
Line
Transactional
Processing



Lake House





Lake

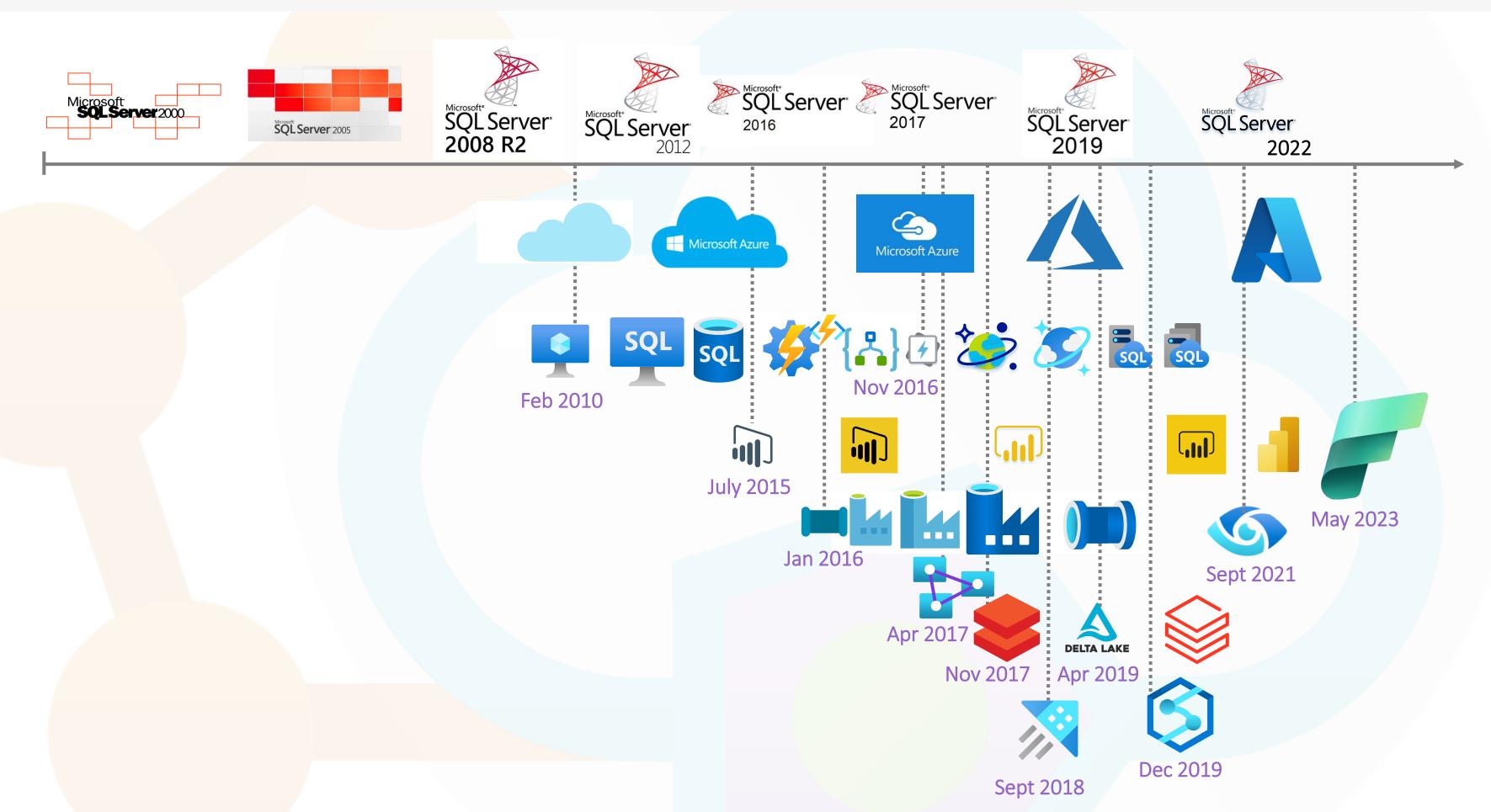
House

Application

Data

A Timeline of Microsoft Data Technology

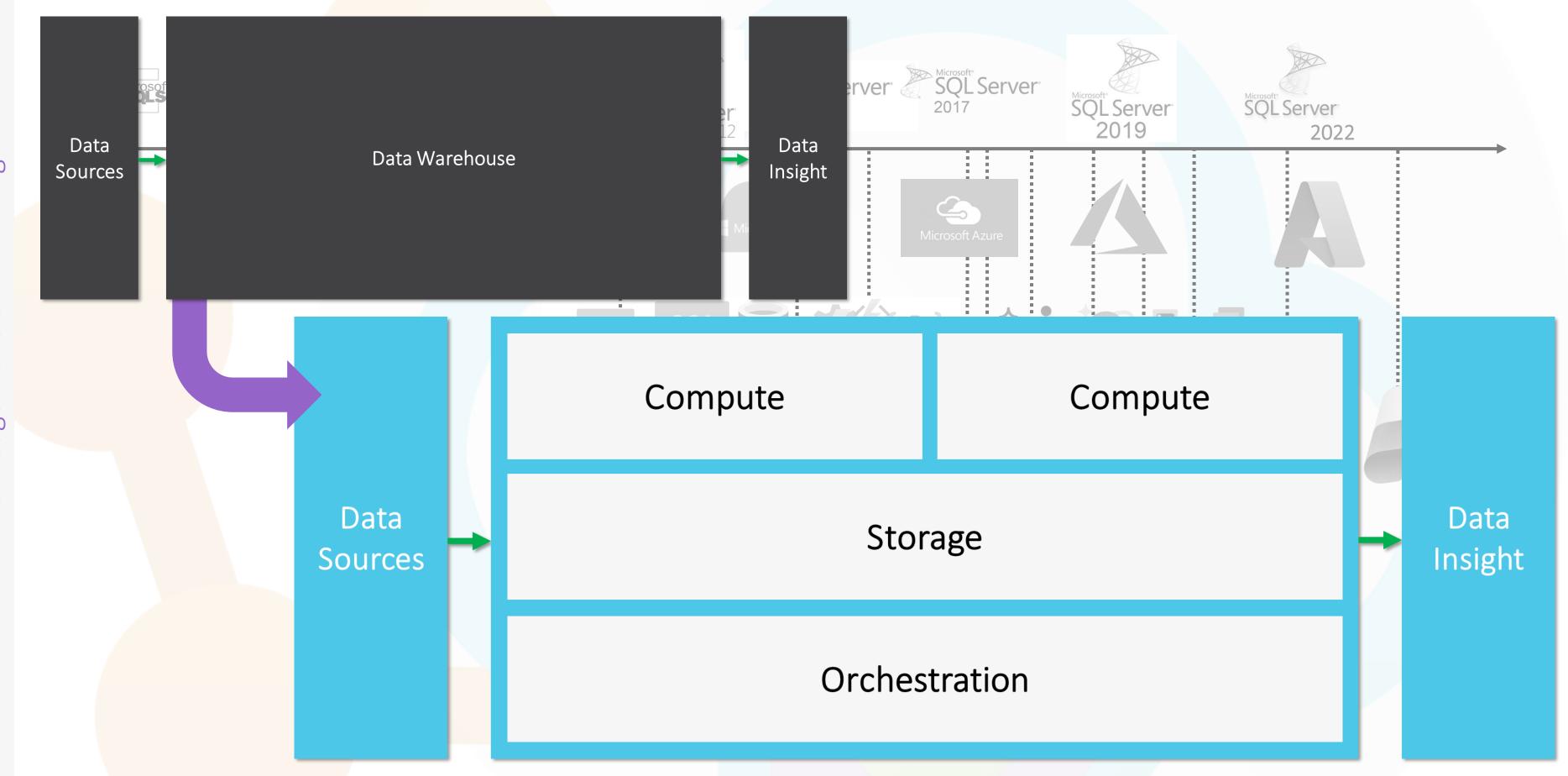




Knowledge **Cloud Formations**

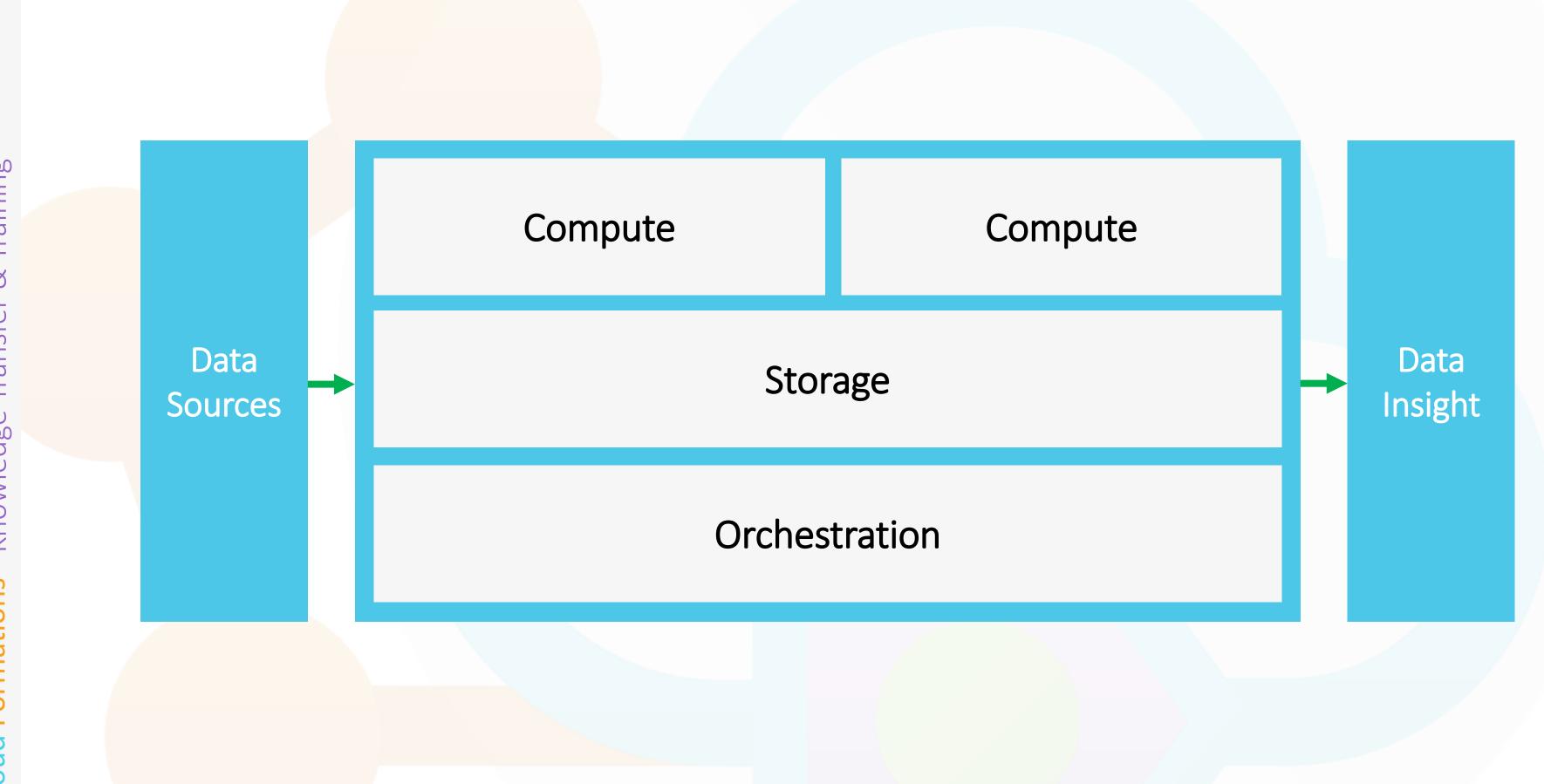
A Timeline of Microsoft Data Technology





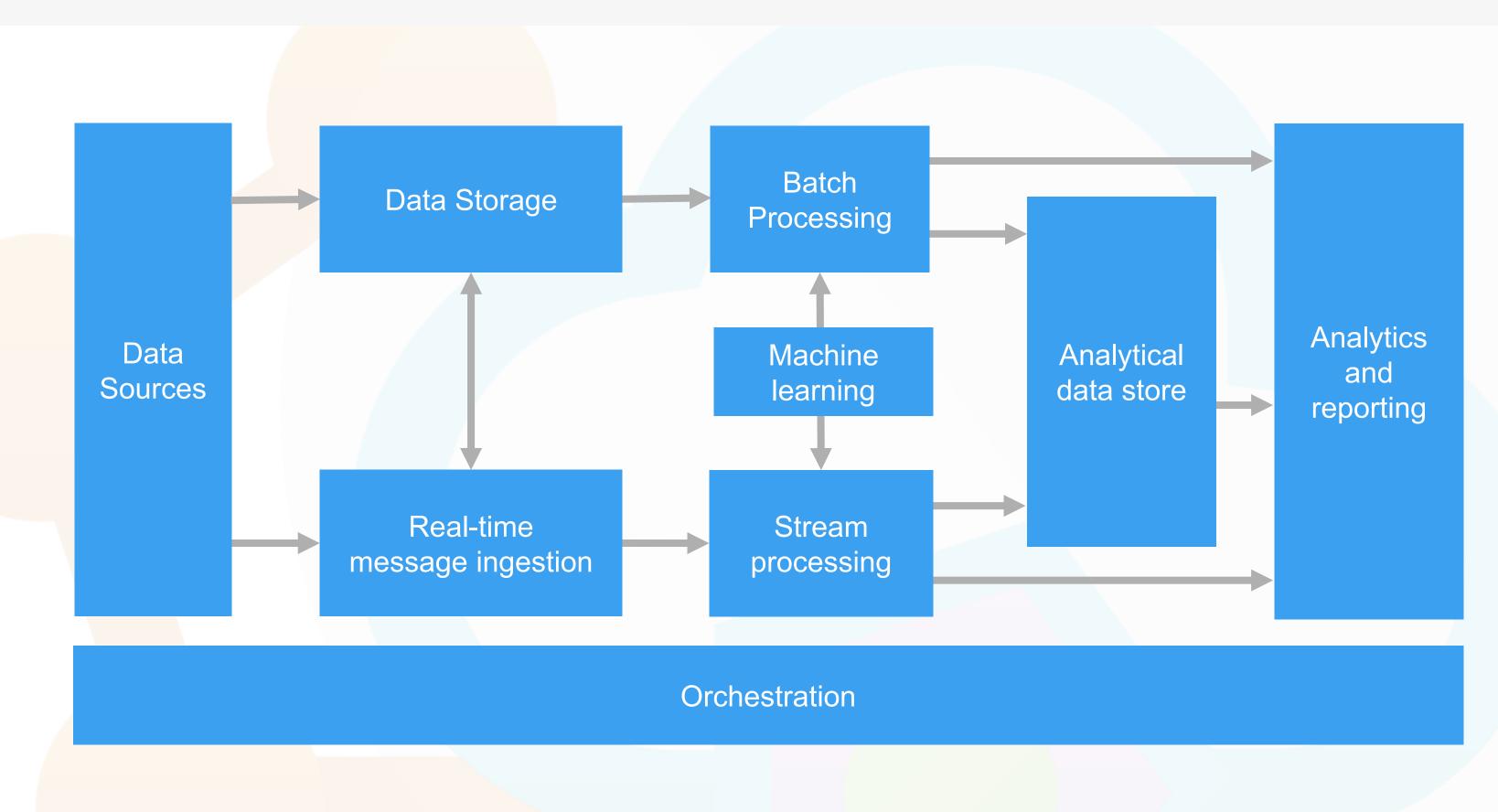
My First Reference Architecture





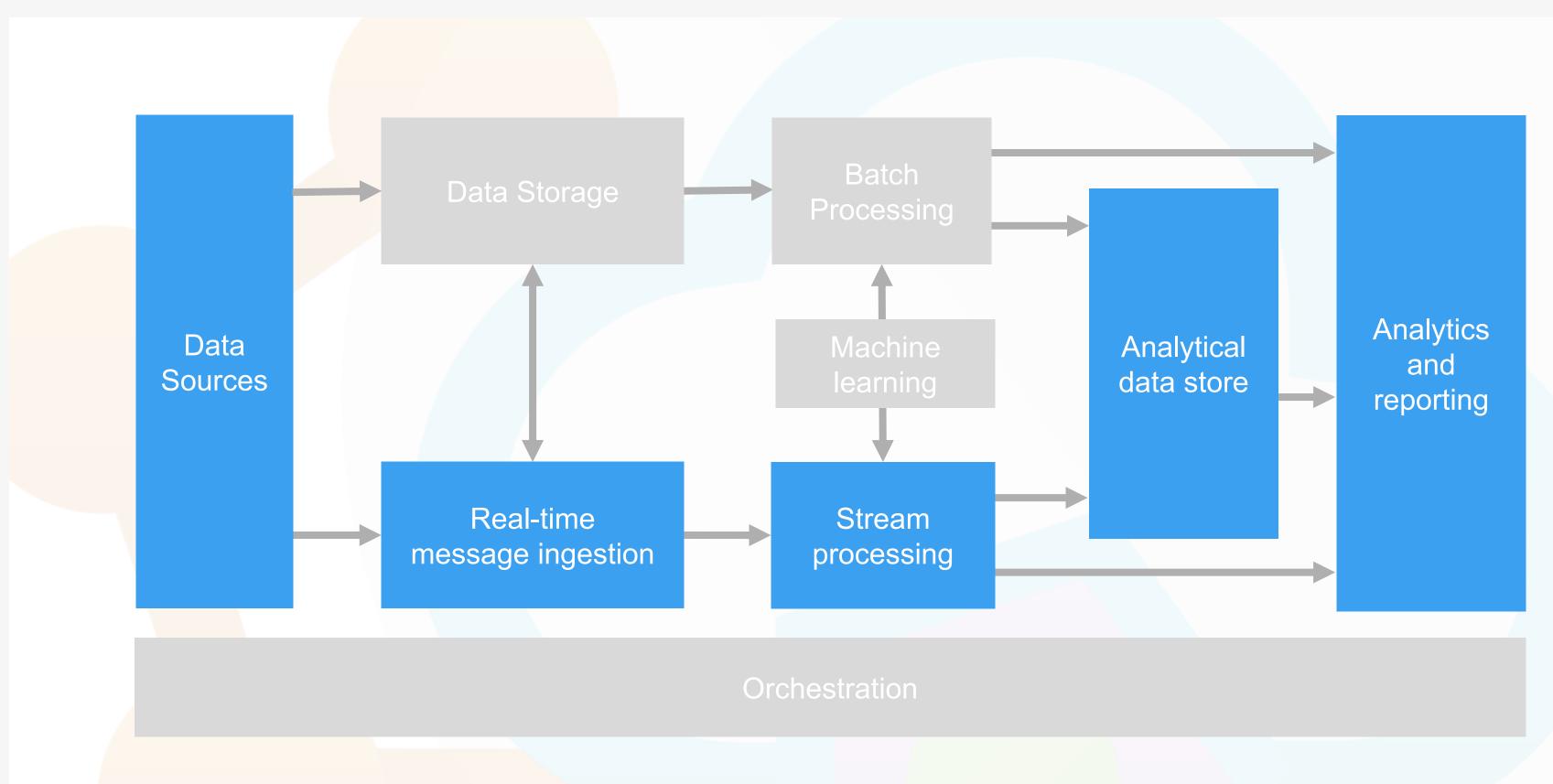
Components of a Big Data Architecture





Components of a Big Data Architecture





Building Near Real-time Data Solutions



Cloud Formations

What do we mean by real-time data?

Answer (big data):

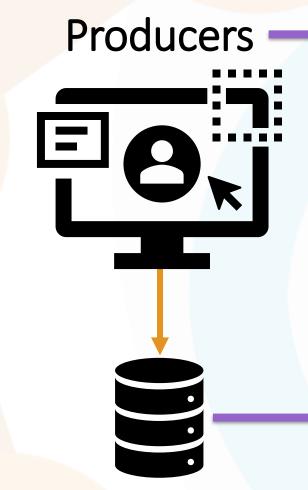
"Any data that you cannot process in the time that you have/want using the technology you have."

Data ingestion and

transformation.

User form submit.

Database transaction commit.



The point the data is born.



Data insights displayed.

Decisions

made.

used.

Consumers



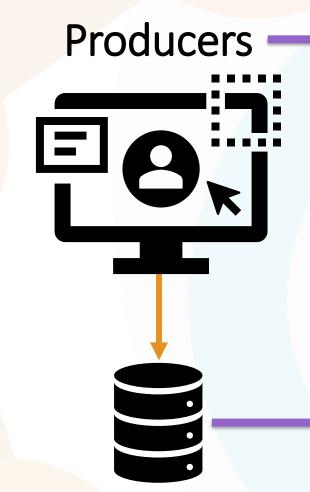
What do we mean by real-time data?

Answer:

"Delivering data from the producer to consumer as fast as possible using the technology you have."

User form submit.

Database transaction commit.



The point the data is born.



Decisions made.

Data insights displayed.

Data ingestion and transformation.

The point the data can be used.

Consumers



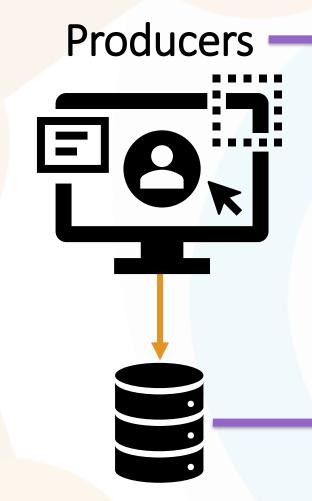
What do we mean by near real-time data?

Answer:

"Delivering data from the producer to consumer within 1 minute of it being created (born)."

User form submit.

Database transaction commit.



The point the data is born.



Data ingestion and transformation.



Consumers

Data insights displayed.

The point the data can be used.



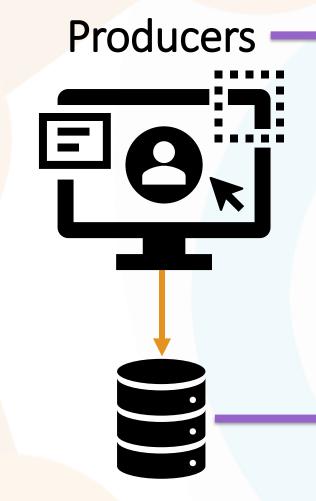
What do we mean by a data stream?

Answer:

"Data that is constantly flowing from producer to consumer in near real-time."

User form submit.

Database transaction commit.



The point the data is born.



Decisions made.

Data insights displayed.

Data ingestion and transformation.

The point the data can be used.

Consumers







Theory | Concepts | Tooling

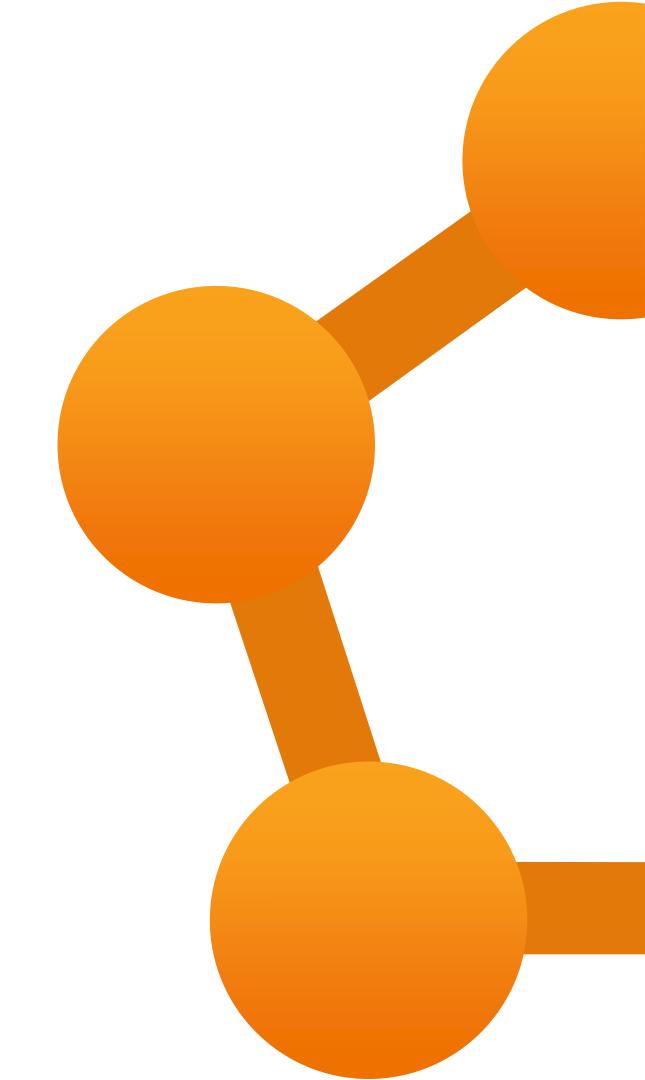
Demo

Conclusions





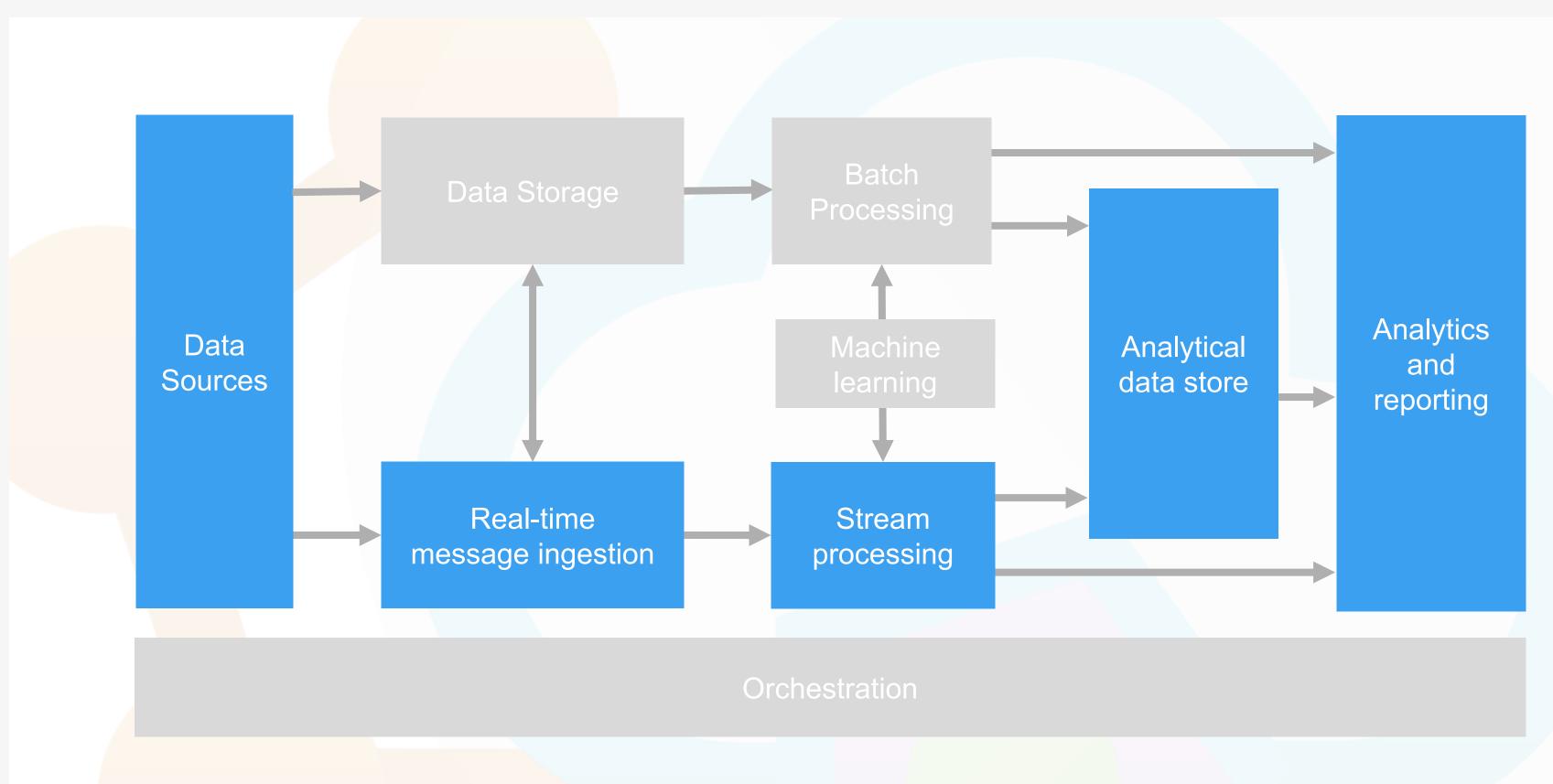
Tooling



Cloud Formations

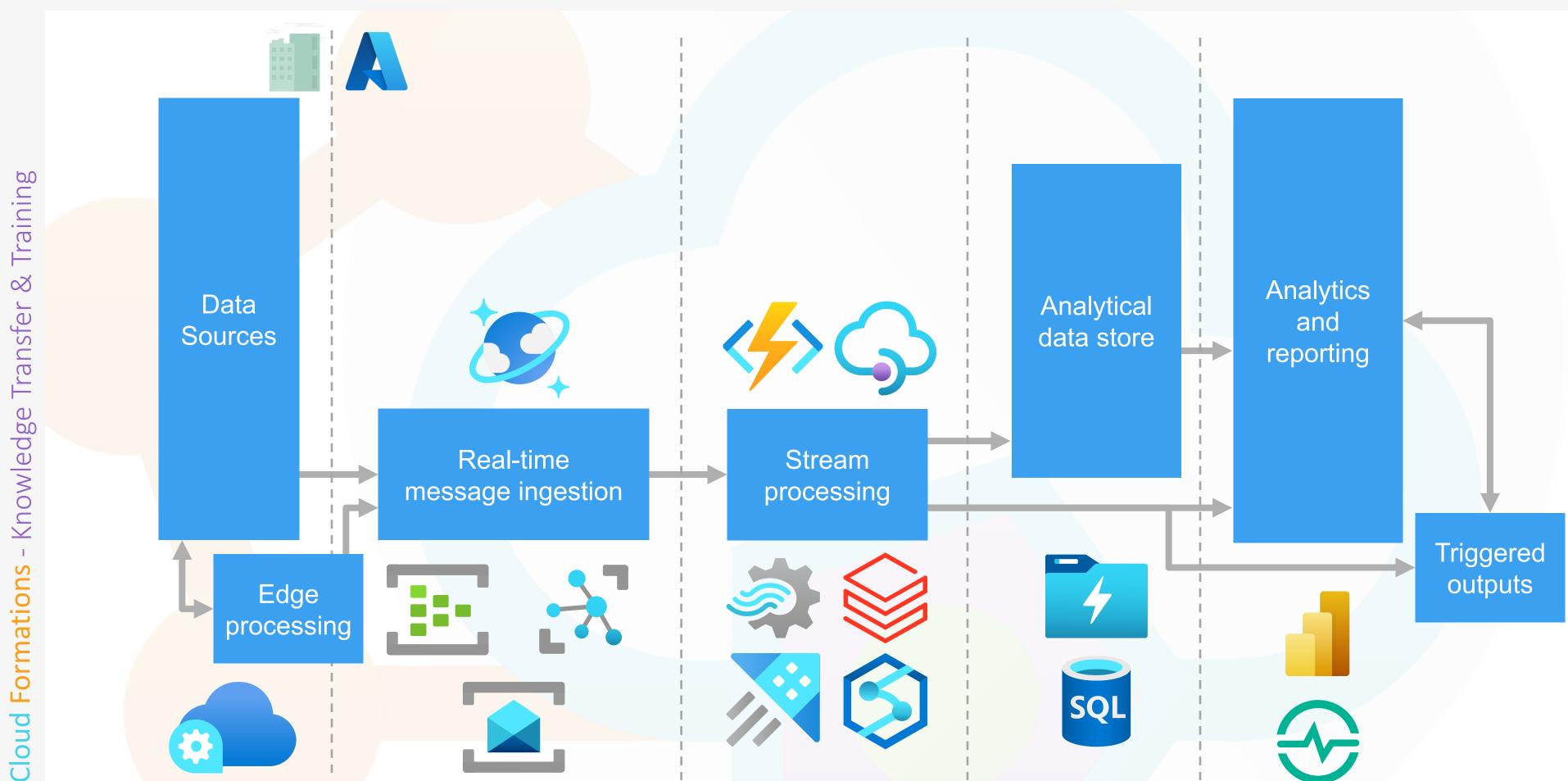
Components of a Big Data Architecture





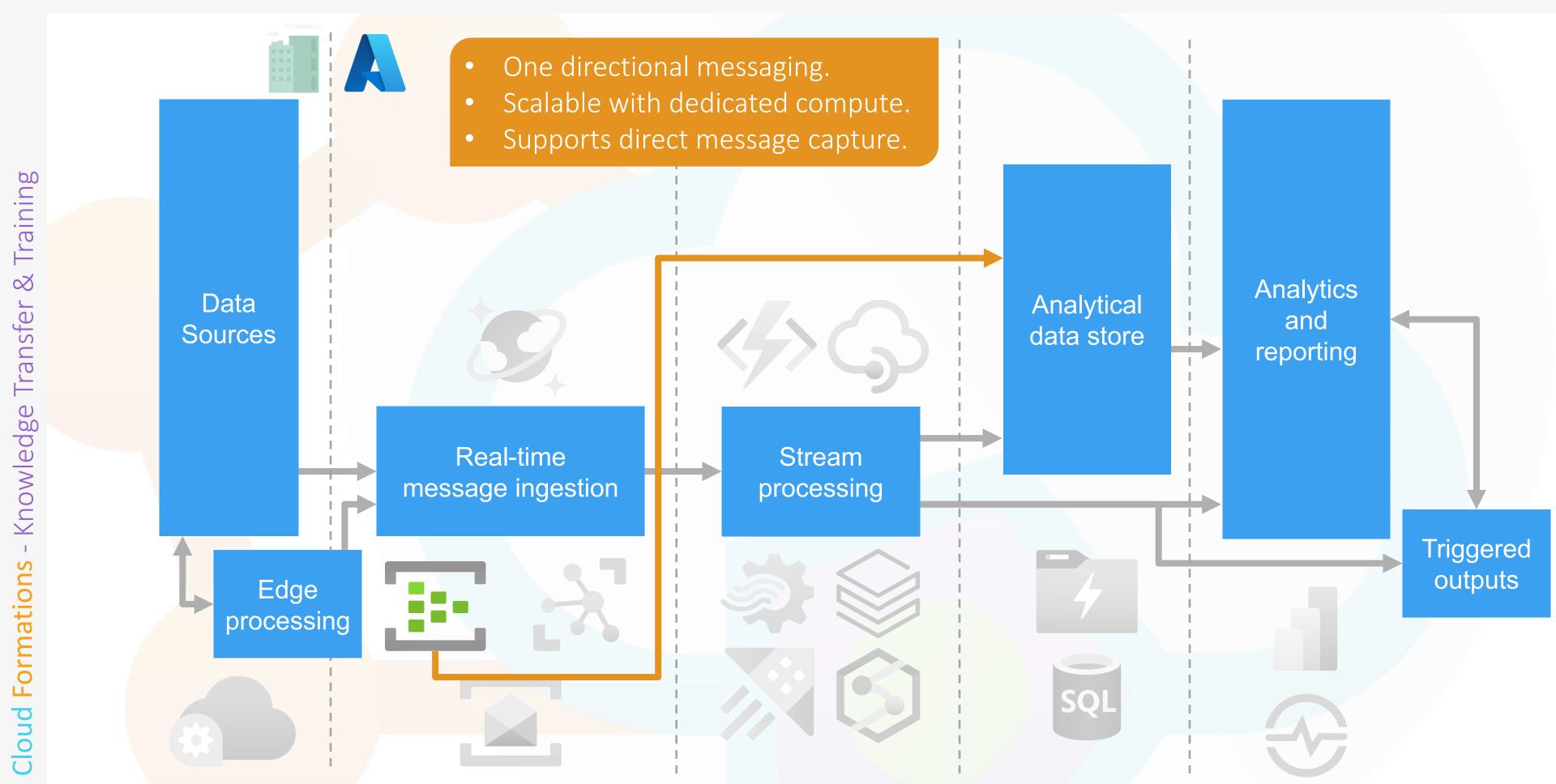
Azure Tooling





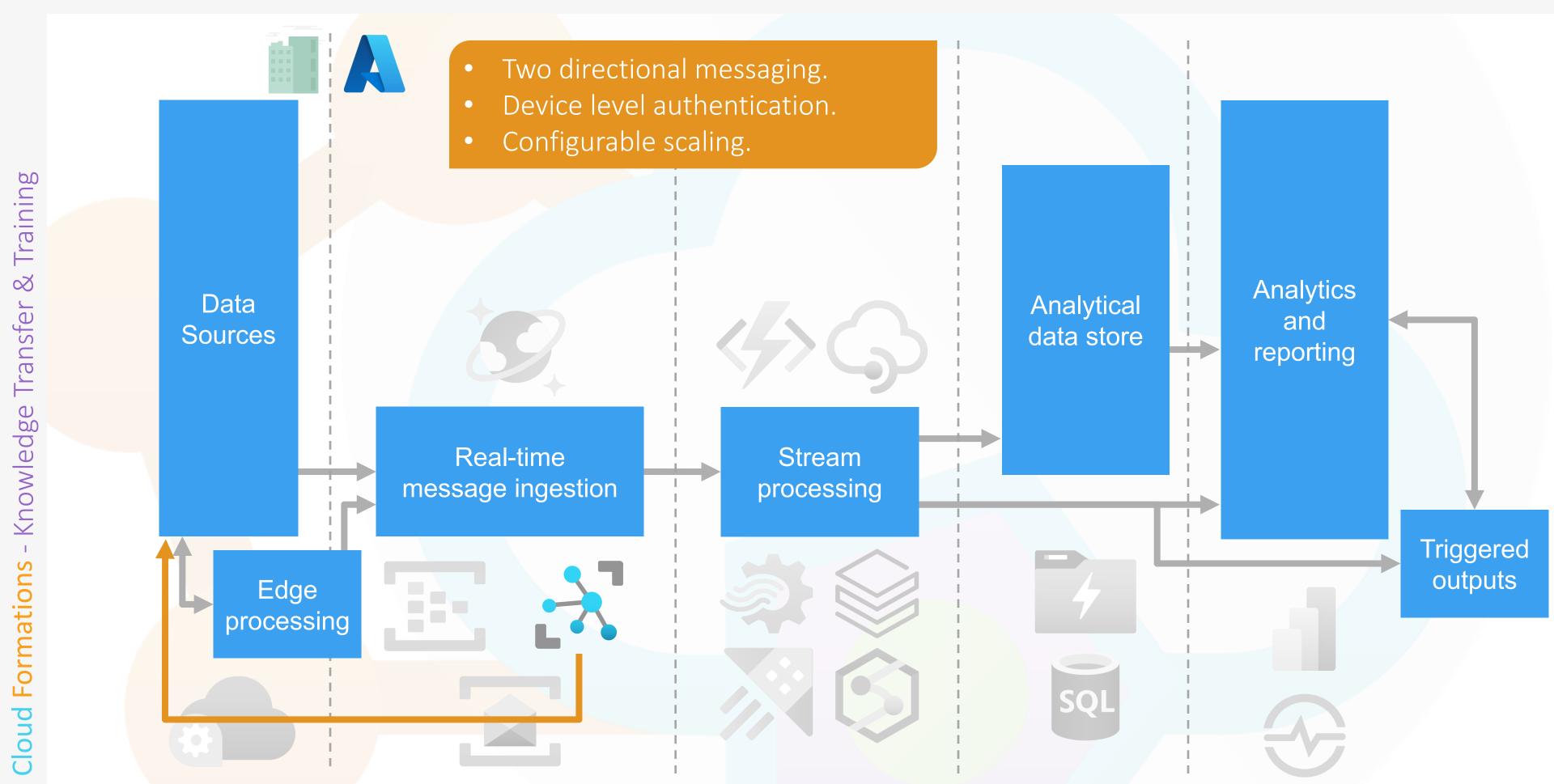
Azure Tooling – Event Hub





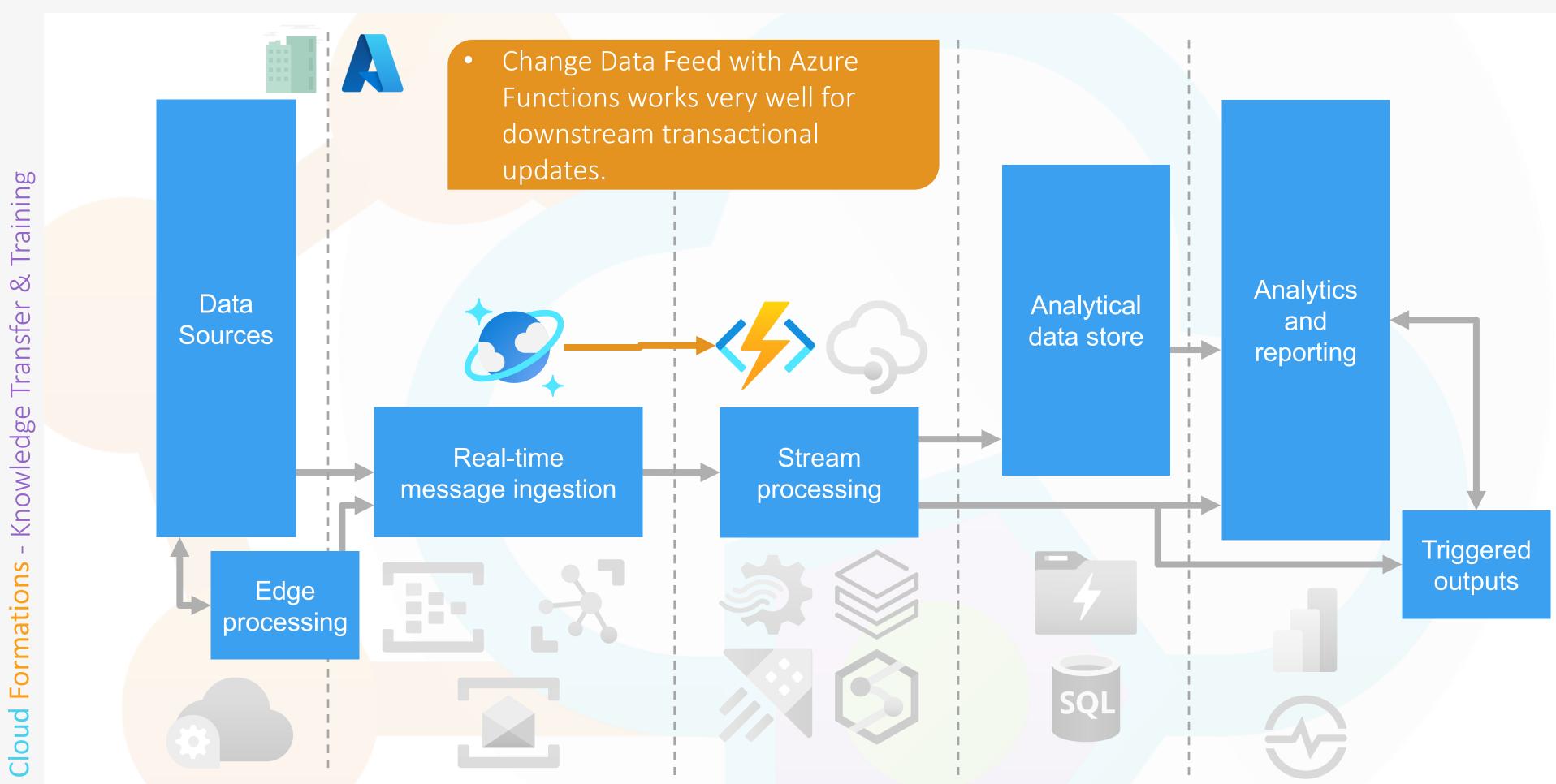
Azure Tooling – IoT Hub





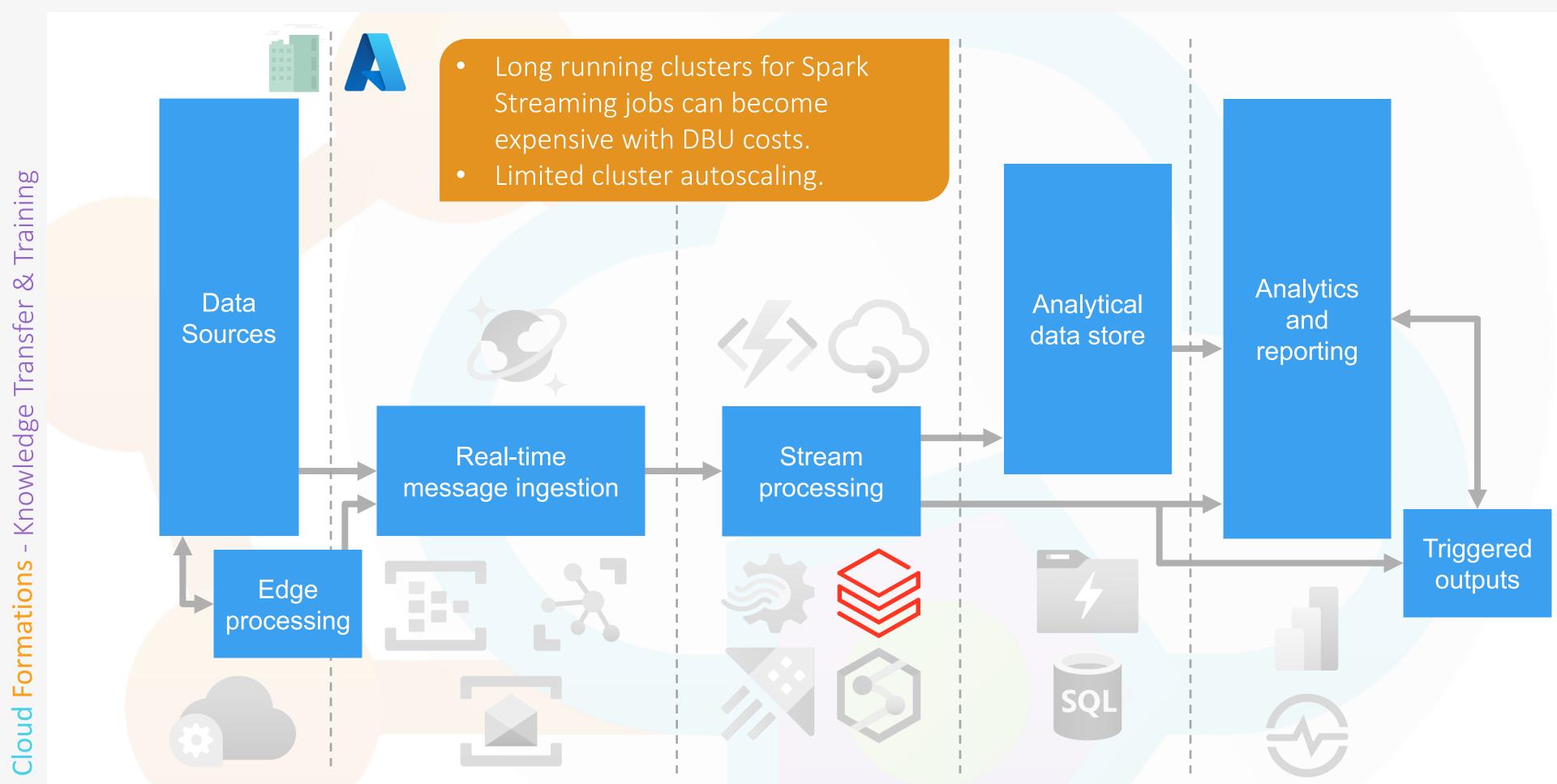
Azure Tooling – Cosmos DB





Azure Tooling – Databricks

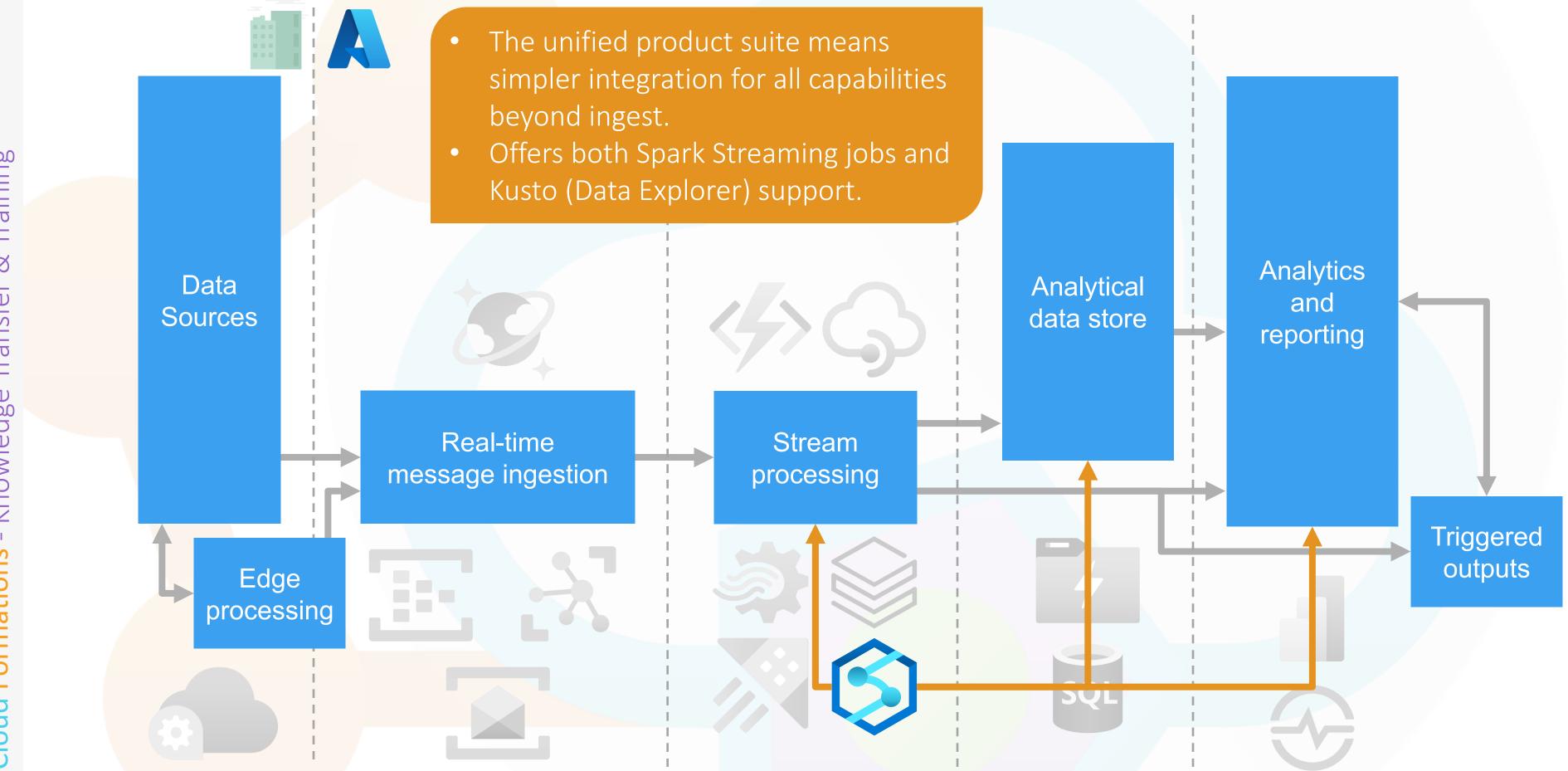




Knowledge **Cloud Formations**

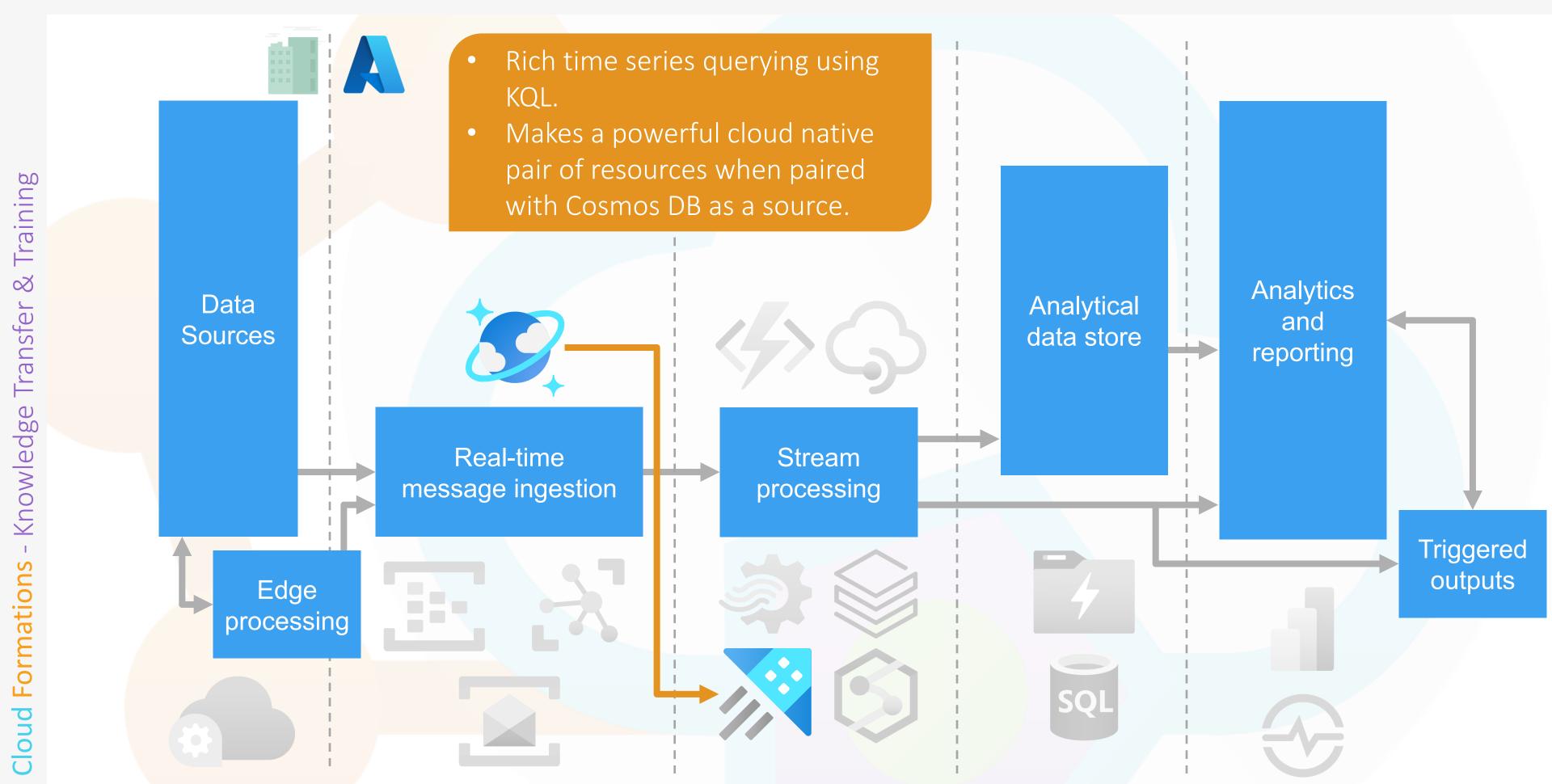
Azure Tooling – Synapse Analytics





Azure Tooling – Data Explorer

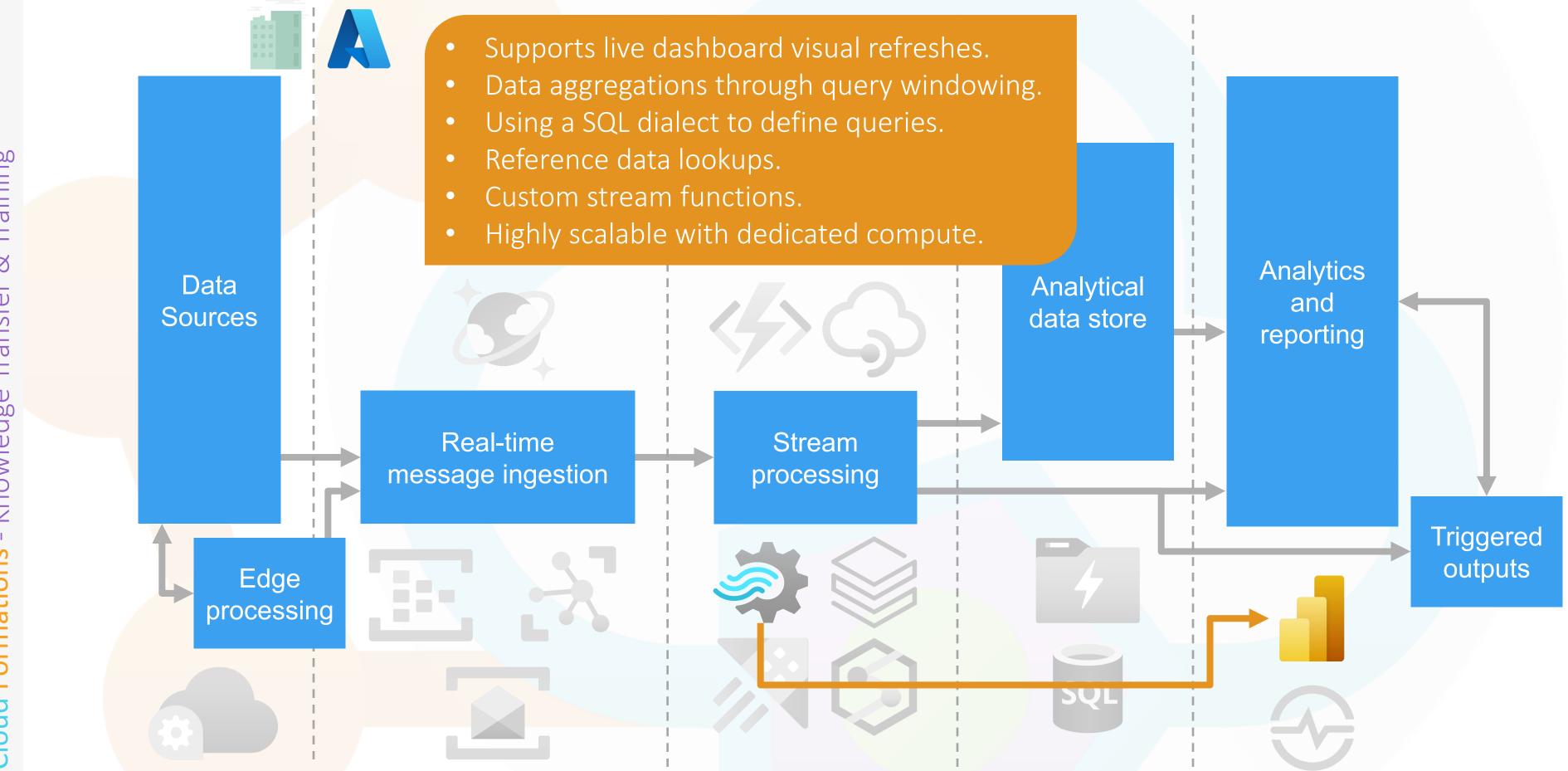




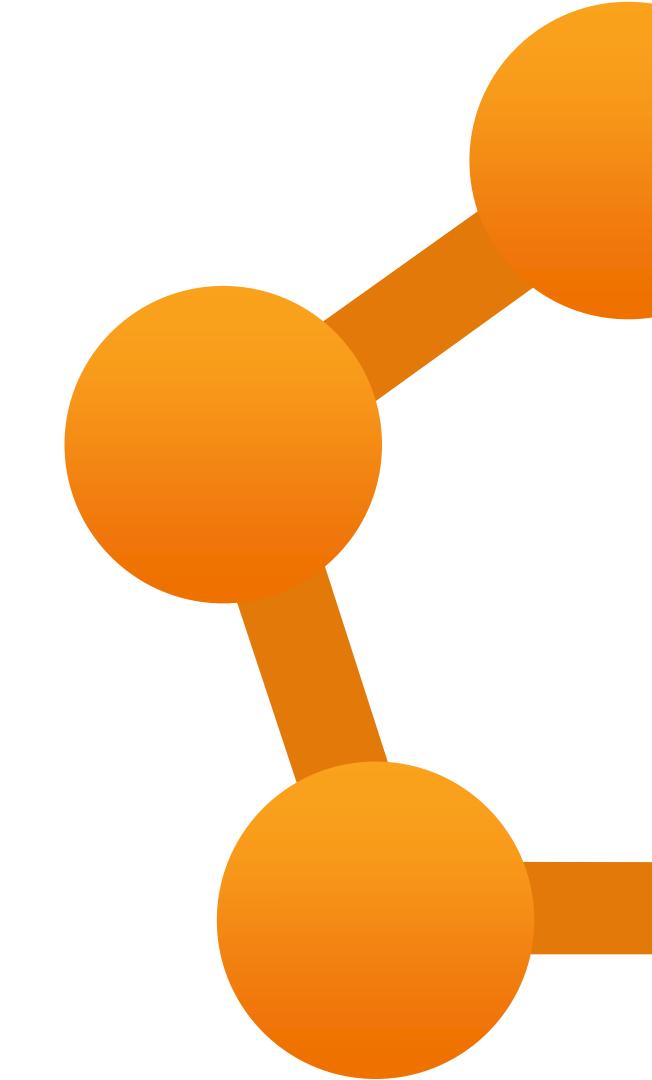
Knowledge **Cloud Formations**

Azure Tooling – Stream Analytics





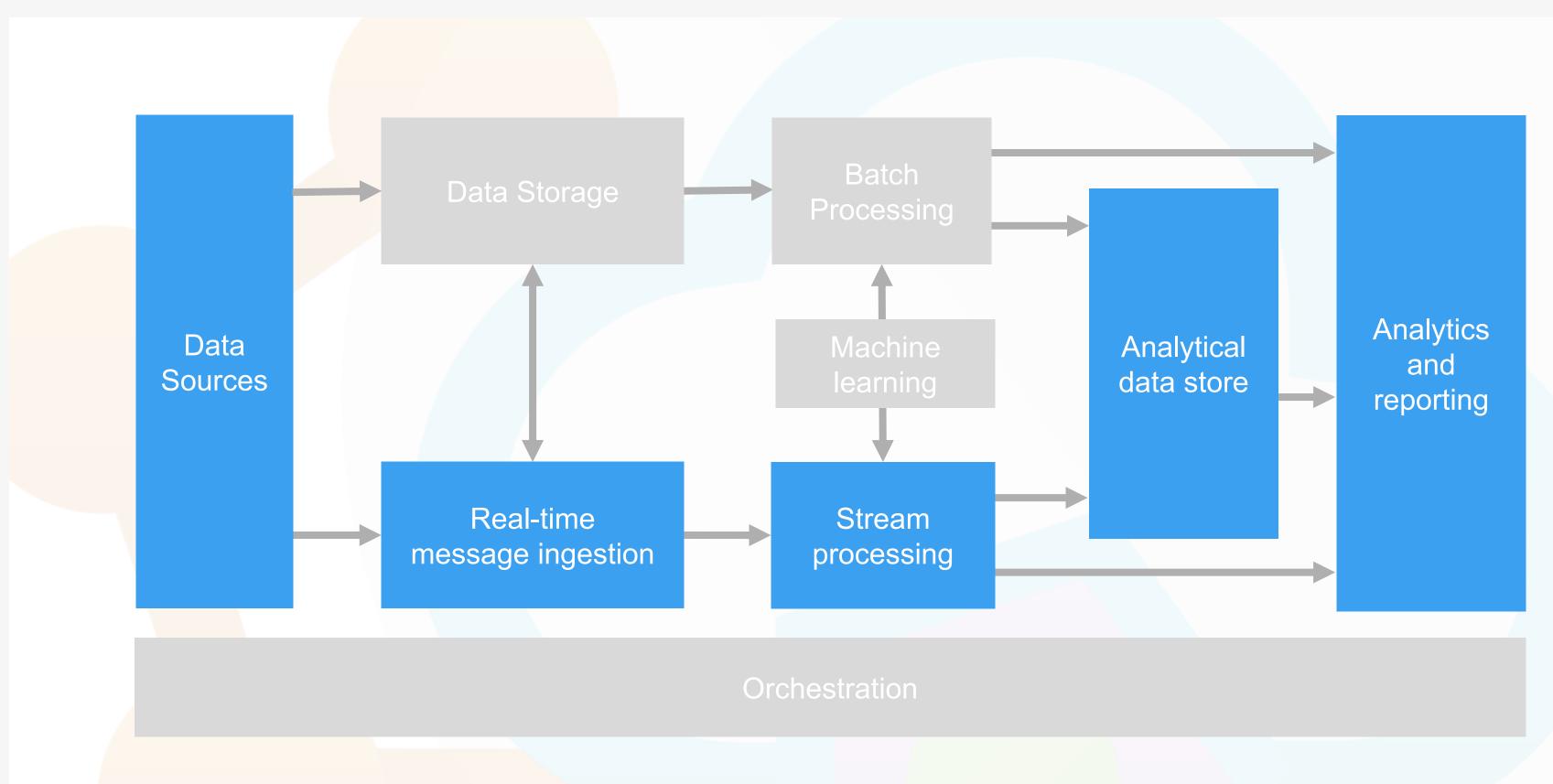




Cloud Formations

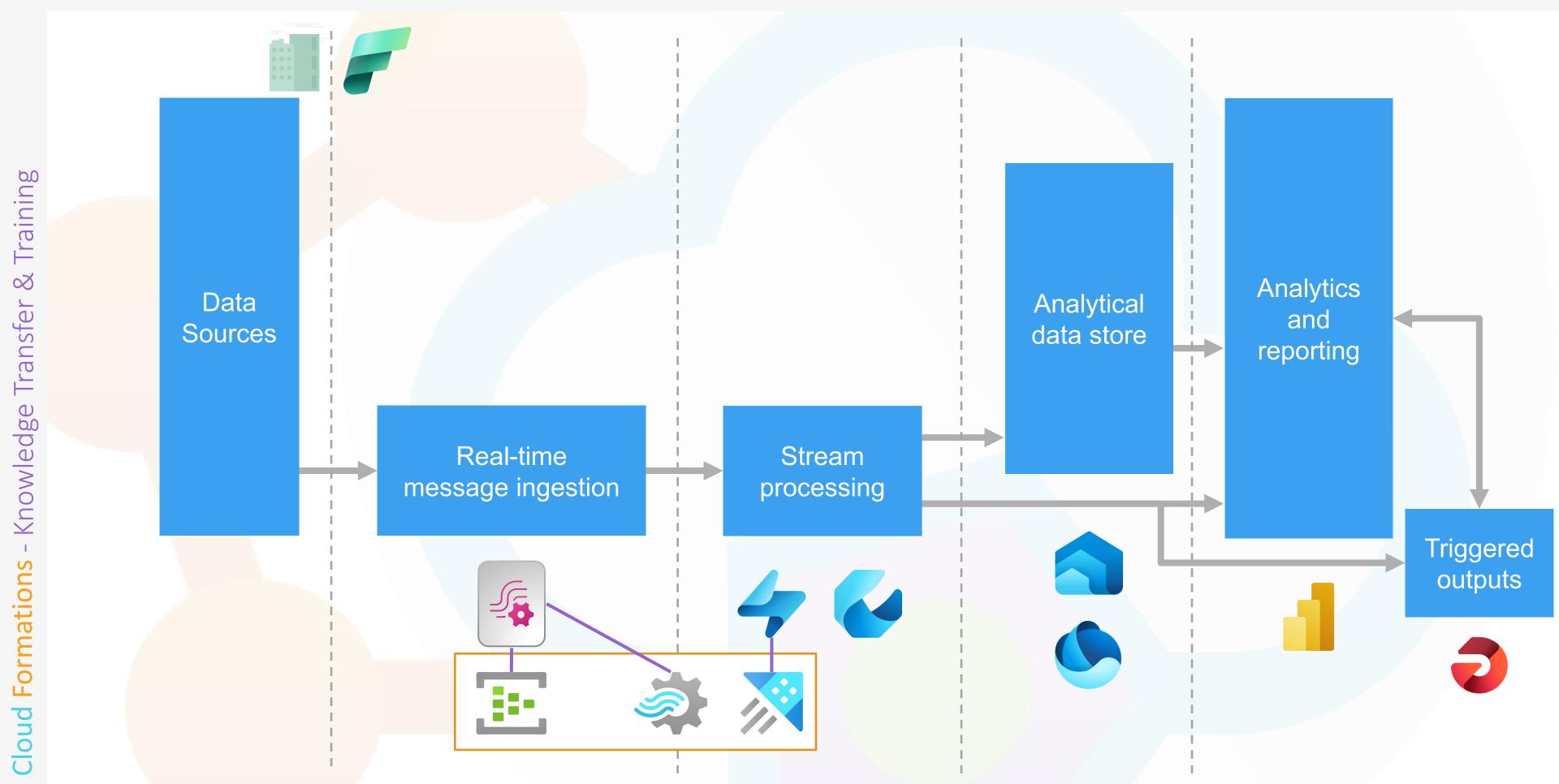
Components of a Big Data Architecture





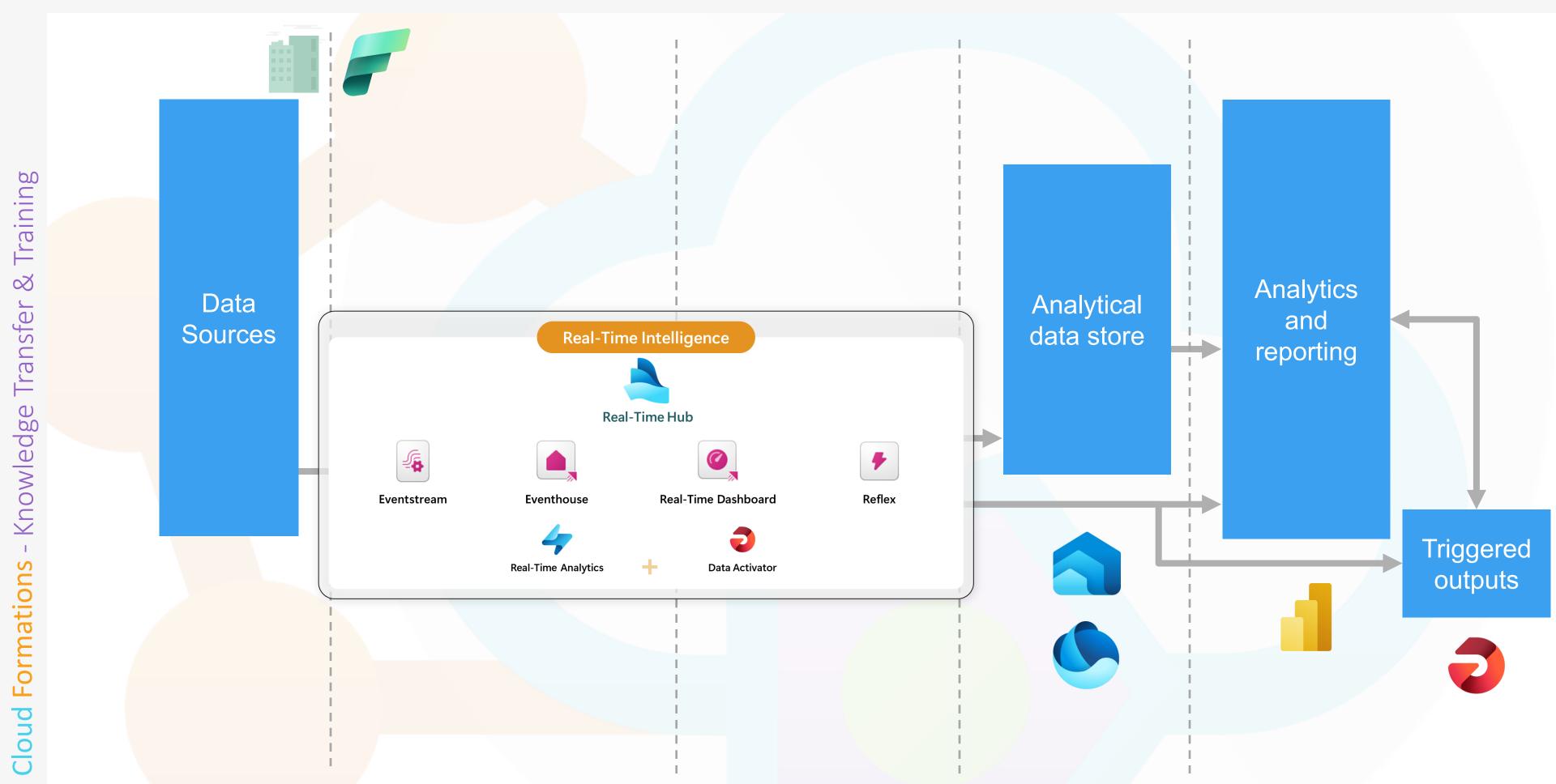
Fabric Tooling





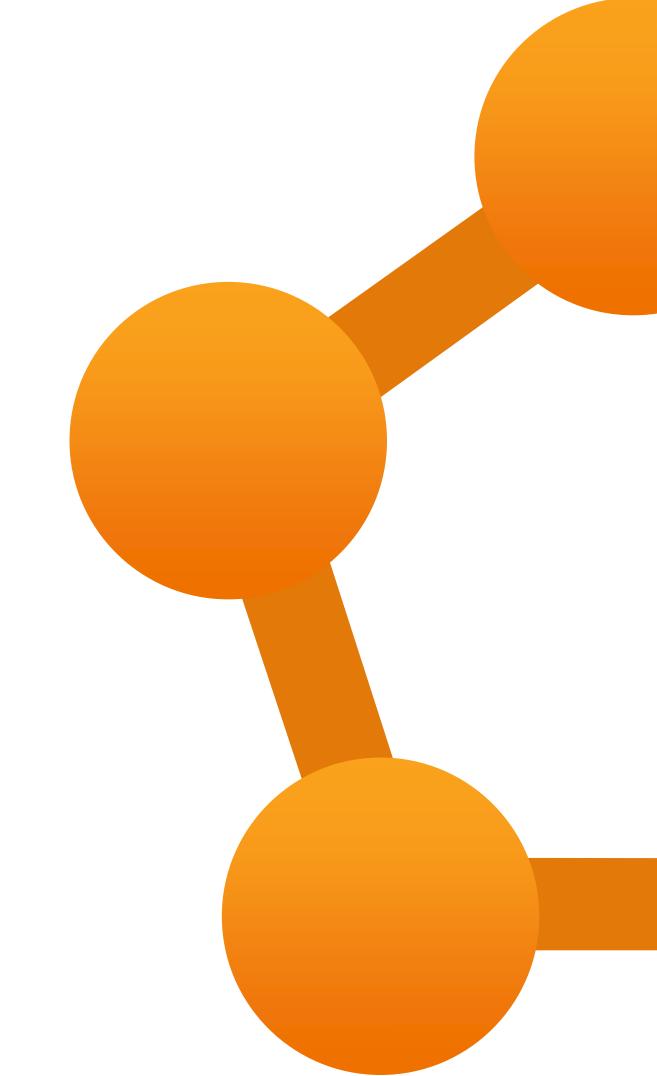
The Microsoft Fabric Real-Time Hub





An Evolution Of...

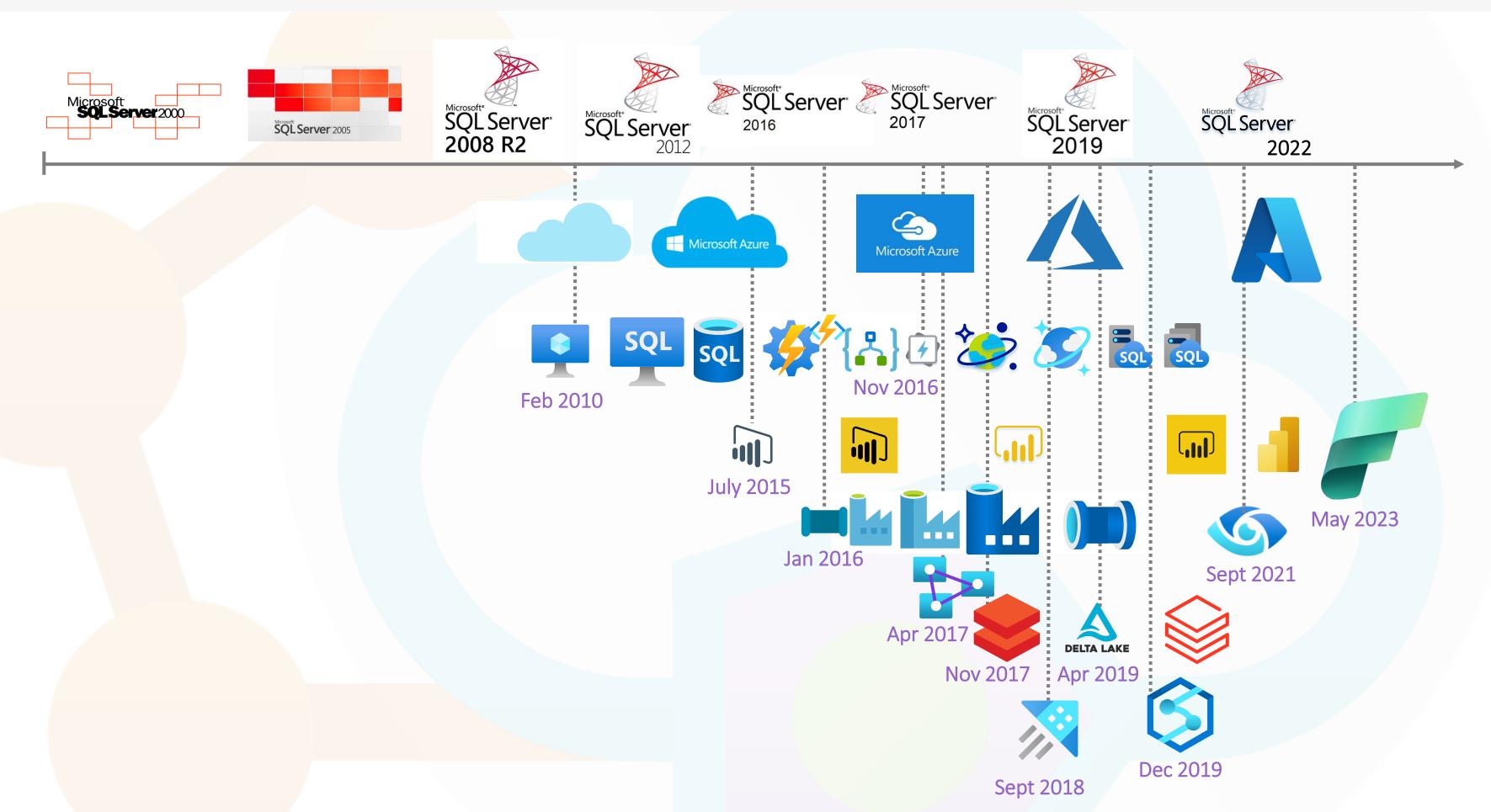
Tooling in Azure and Fabric



Cloud Formations

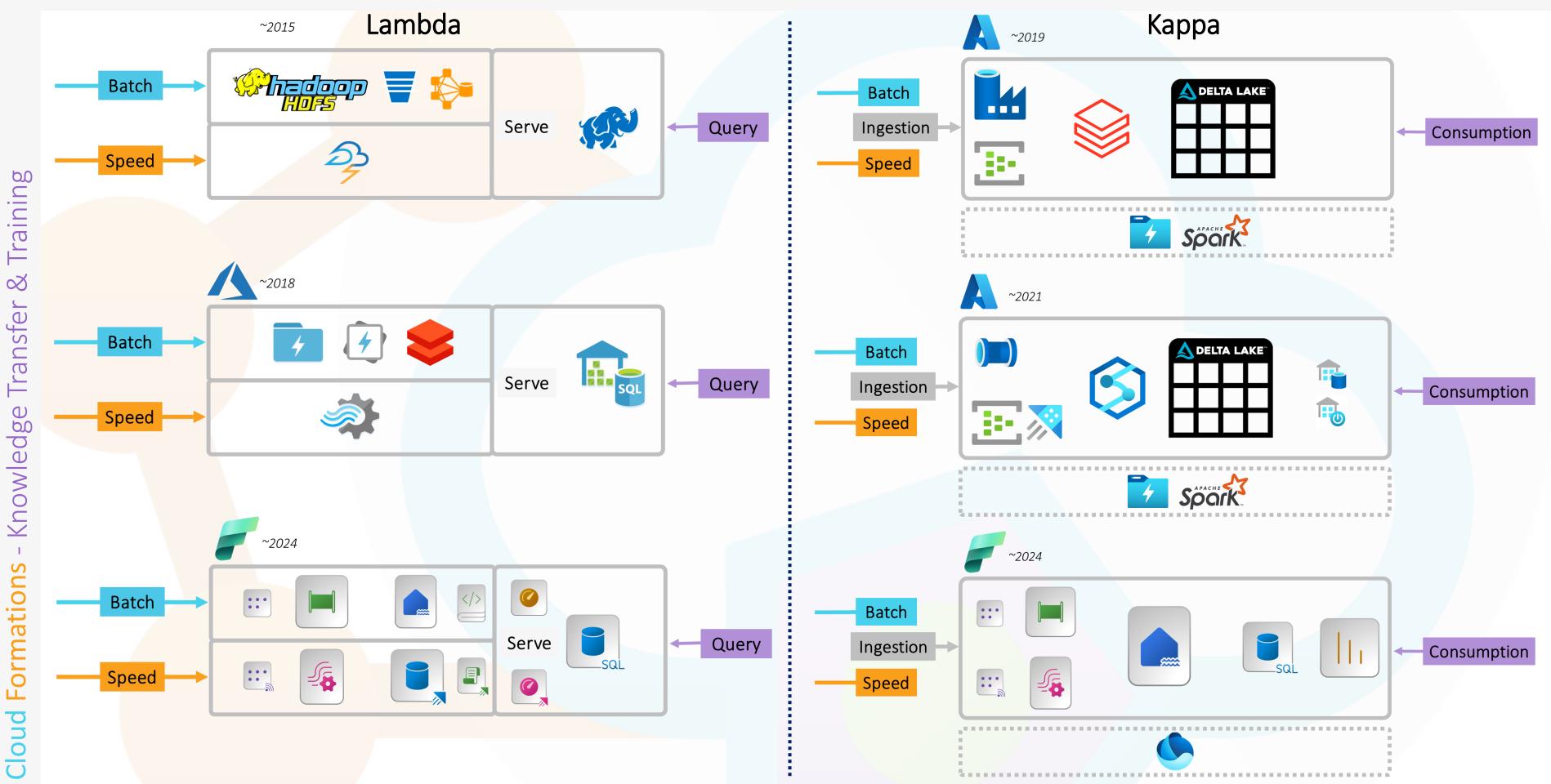
A Timeline of Microsoft Data Technology





Lambda & Kappa Architectures vs Technology









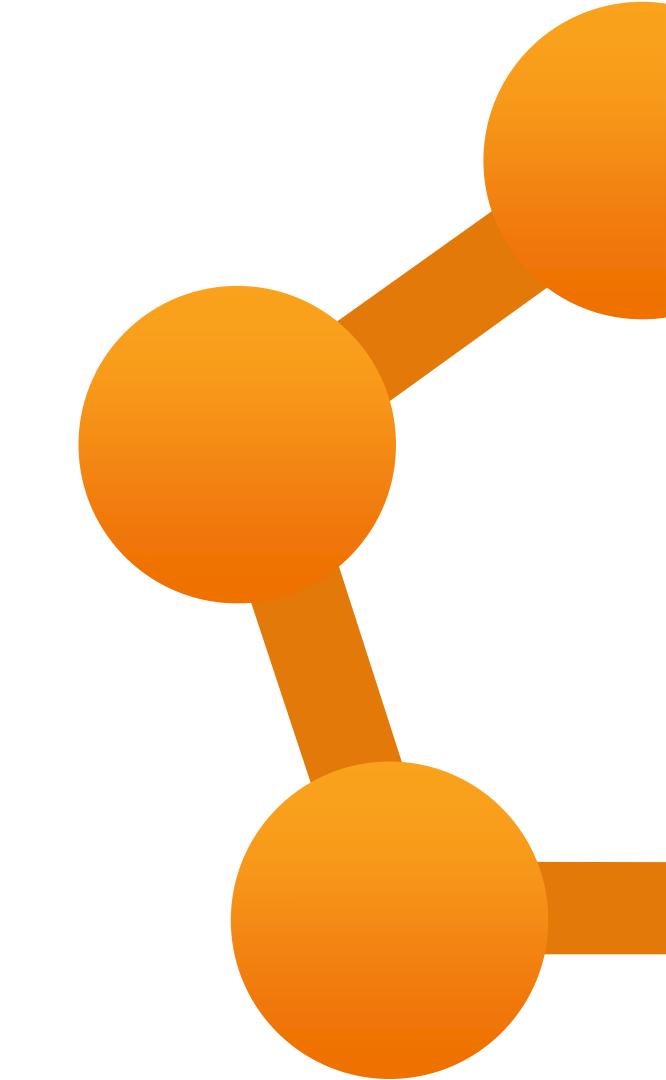
Theory | Concepts | Tooling

Demo

Conclusions



Demo

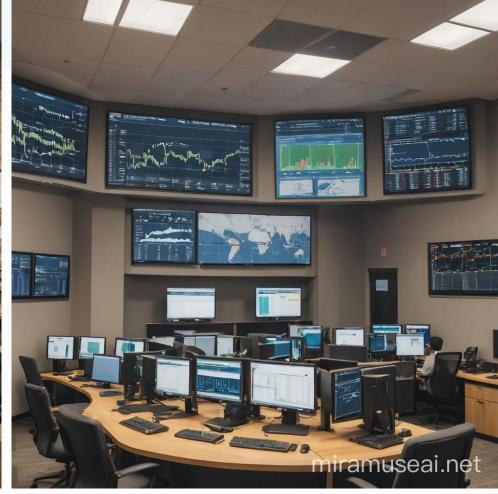


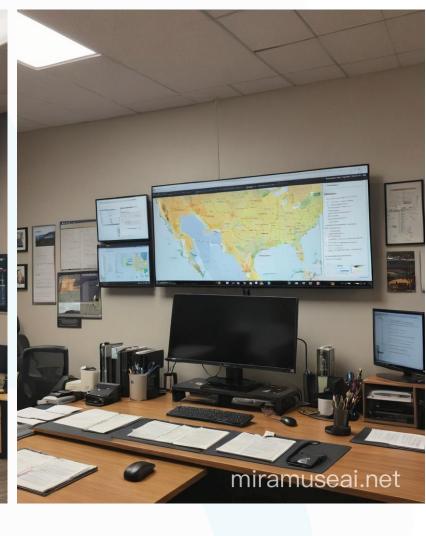
Cloud Formations

Our Use Case









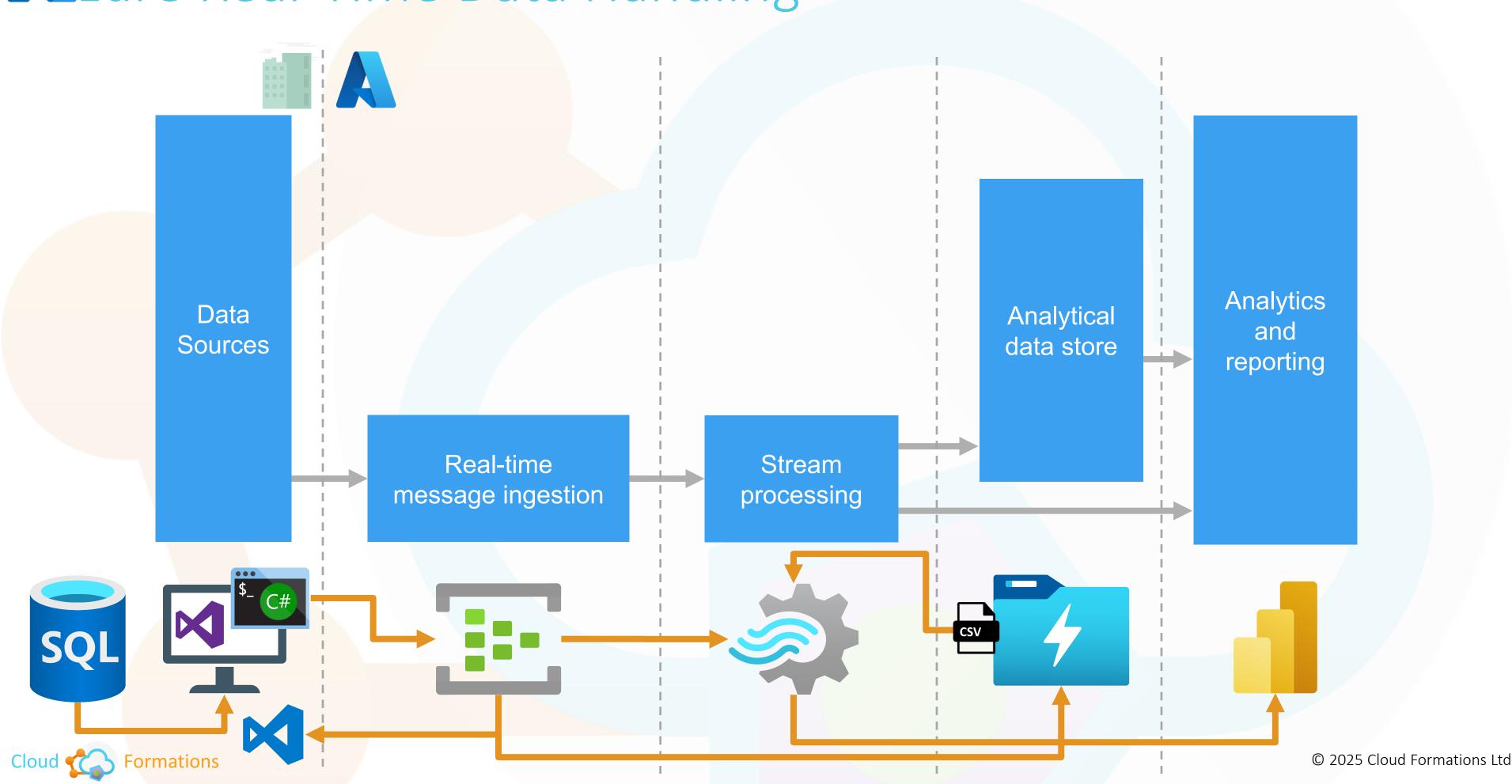
A bike shop front with large glass windows showing bike related products on the shelves inside. The shop front has a sign with the name Adventure Works.

A bike shop called Adventure Works, standing inside looking at the cashier which includes a modern point of sale till system. On the wall behind the cashier are bike related products.

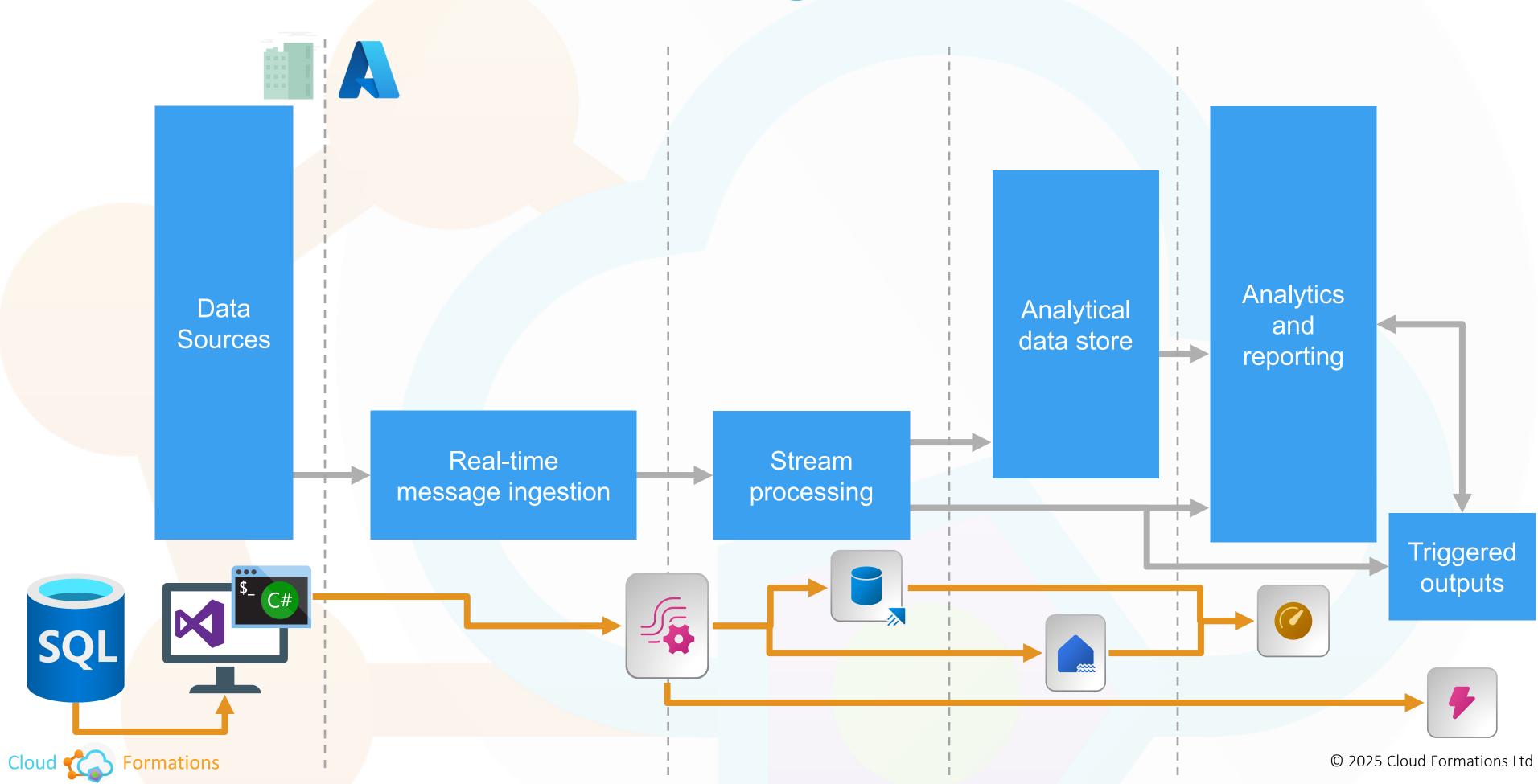
At the corporate head offices of Adventure Works standing in the main operations room. On the wall are large televisions showing a range of data analytics dashboards with charts and technical information.

Inside the office of the CEO at the company Adventure Works, on the desk is a business plan to role out more retail stores across the country based on targeted growth on an analytics dashboard visible on a large TV.

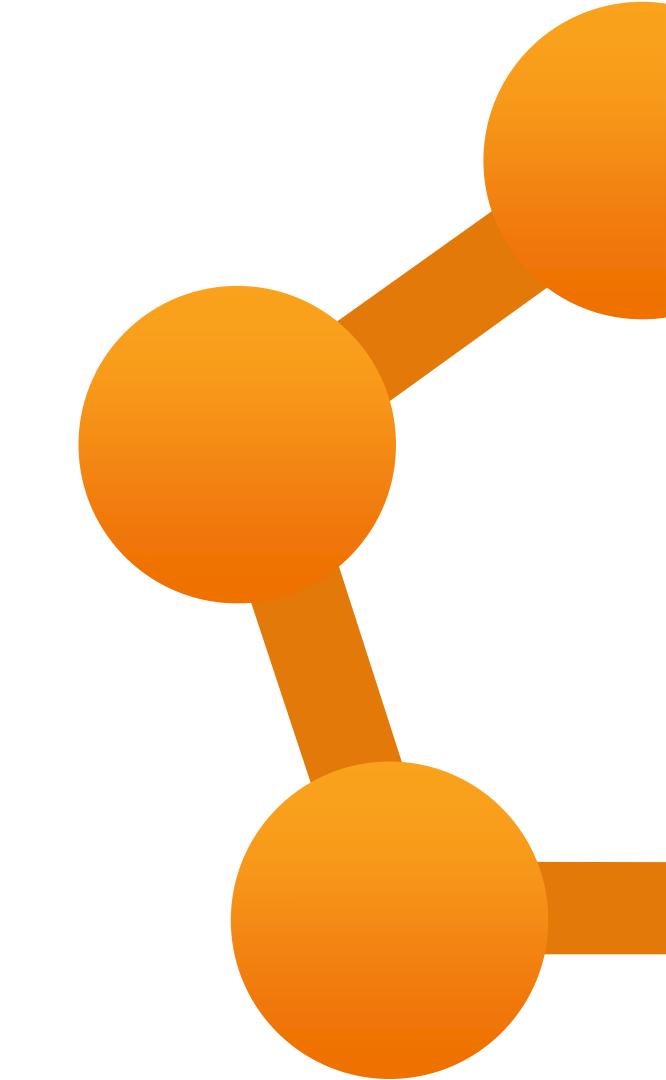
Zure Real-Time Data Handling



Fabric Real-Time Data Handling



Conclusions



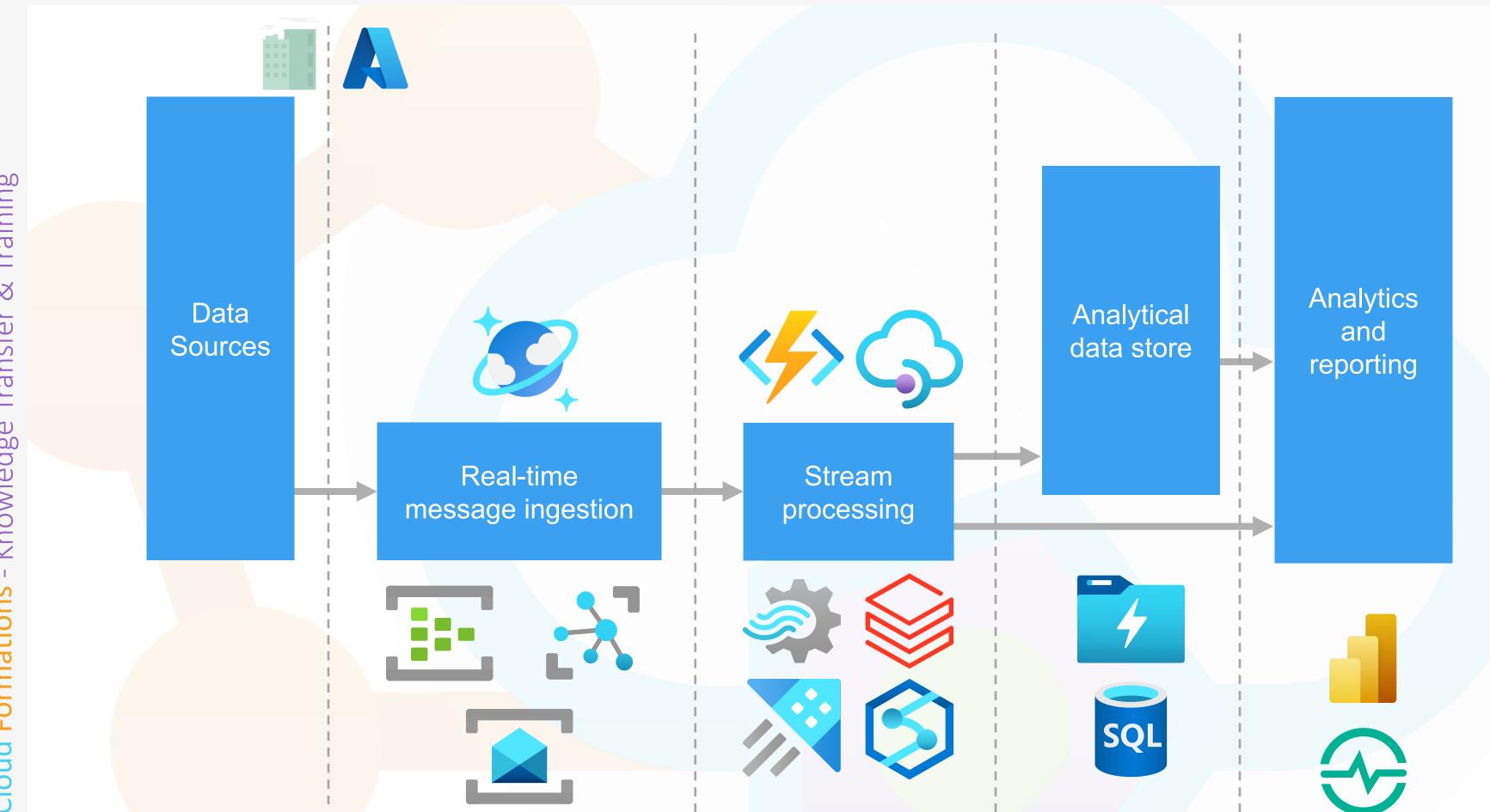
Cloud Formations

Glossary

Term	Definition
Big Data	Any data that you cannot process in the time that you have/want using the technology you have.
Real-time Data	Delivering data from the producer to consumer as fast as possible using the technology you have.
Near Real-time Data	Delivering data from the producer to consumer within 1 minute of it being created.
Data Stream	Data that is constantly flowing from producer to consumer in near real-time.

Azure Tooling – My Favourites





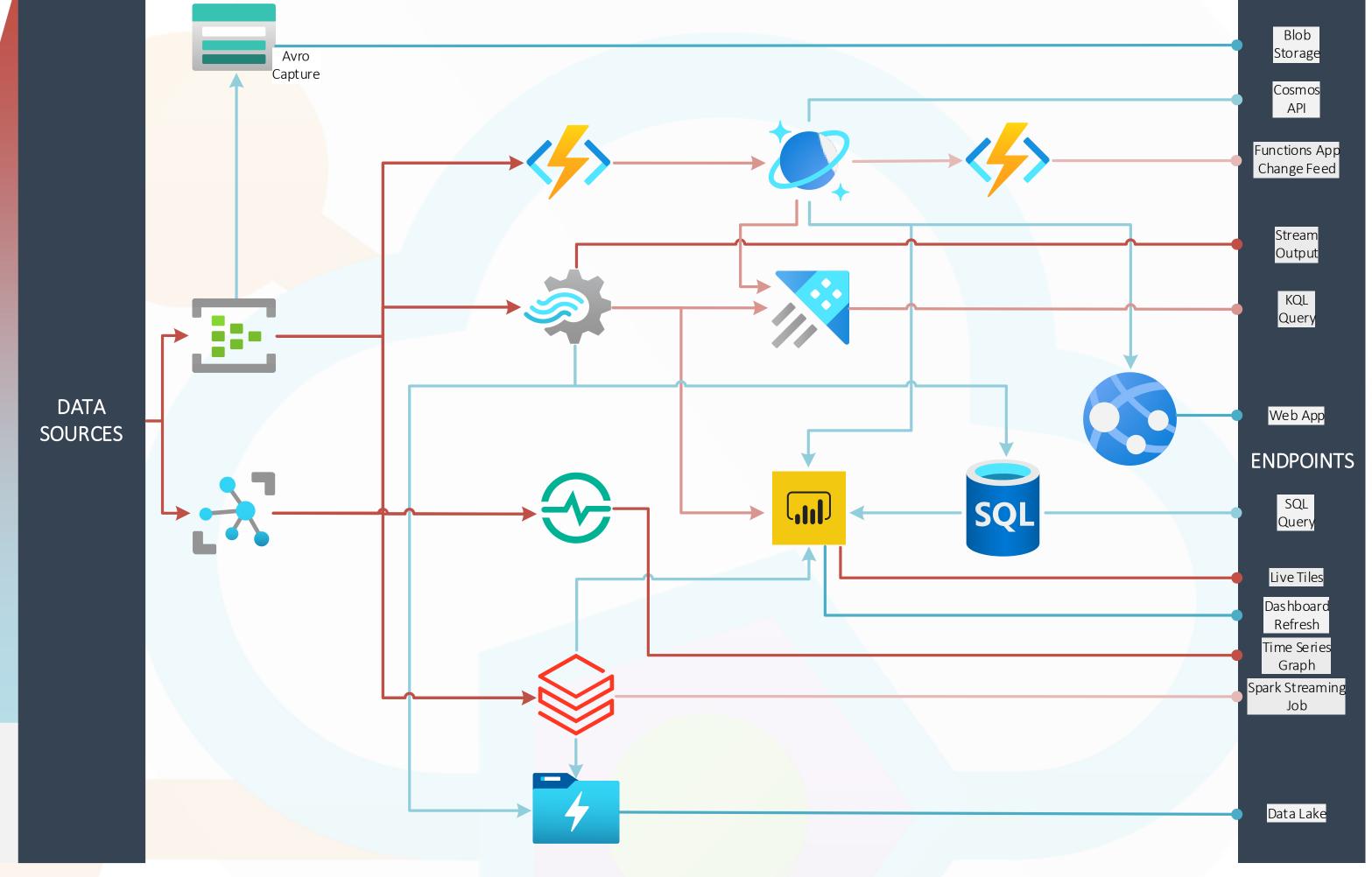
All The Options

Data Cool Down

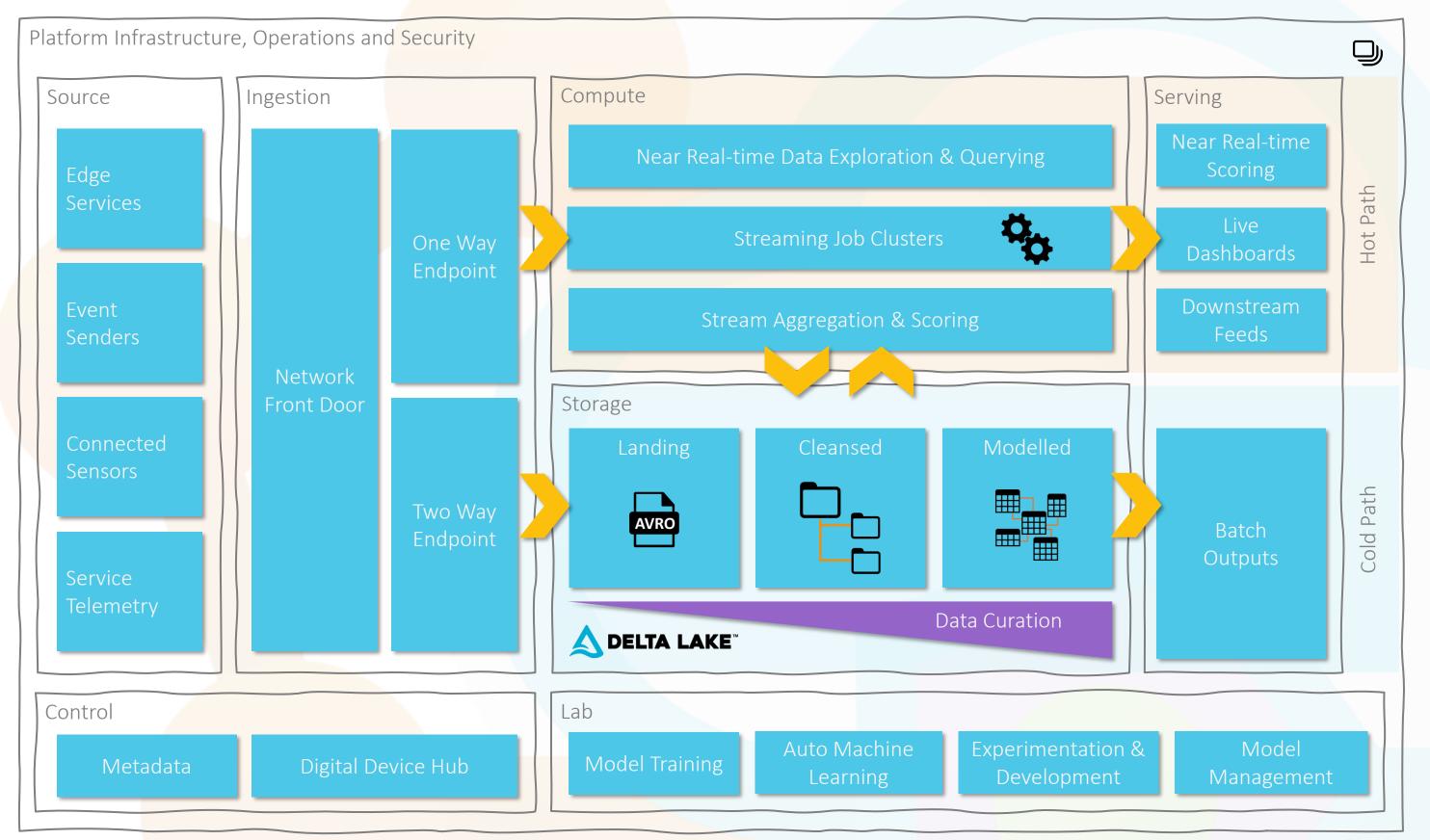
(Process Latency)

→ Hot Path

Cold Path



Our Reference Architecture for Stream Data Handling



Overview

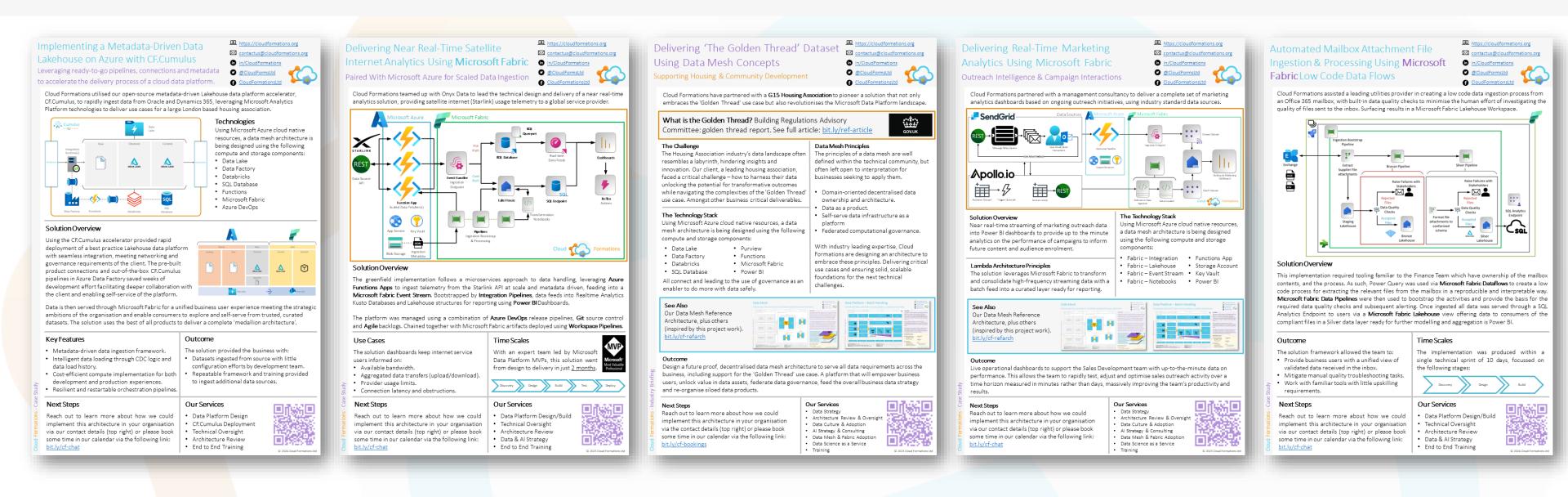
A versatile platform for near real-time data handling, through a series of 'hot path' compute options depending on requirements. In parallel, ingested data can be written to cold storage for transformation as part of wider platform batch (lambda) workloads.

Streaming jobs, offer the ability to score and aggregate in transit data querying the feed as part of timebound windows up to 7 days in size.

Live dashboards offer the latest information to decision makers with minimal platform latency.

Support for 'Digital Twin' services is also available as an option to improve resilience and control with two-way messaging - device to cloud and cloud to device.

Case Studies



"Cloud Formations provide insight and pragmatic advice based on deep understanding and experience across a range of technical domains. I value their sleeves rolled up approach and willingness to flex across a range of requirements."

"Cloud Formations recently facilitated a value discovery session with us using their engagement framework. The insights and outputs from this session have proven incredibly valuable and we are excited to collaborate with them on the next steps in our journey."

"We have partnered with Cloud Formations and its team of SMEs for several years on many different projects. Having them as a trusted advisor to inform data and technical strategy has been incredibly valuable. They have and continue to support to us in the design and delivery of a data mesh platform allowing us to scale our data products for affective business user consumption."



Conference Partners

Data Point Prague 2025











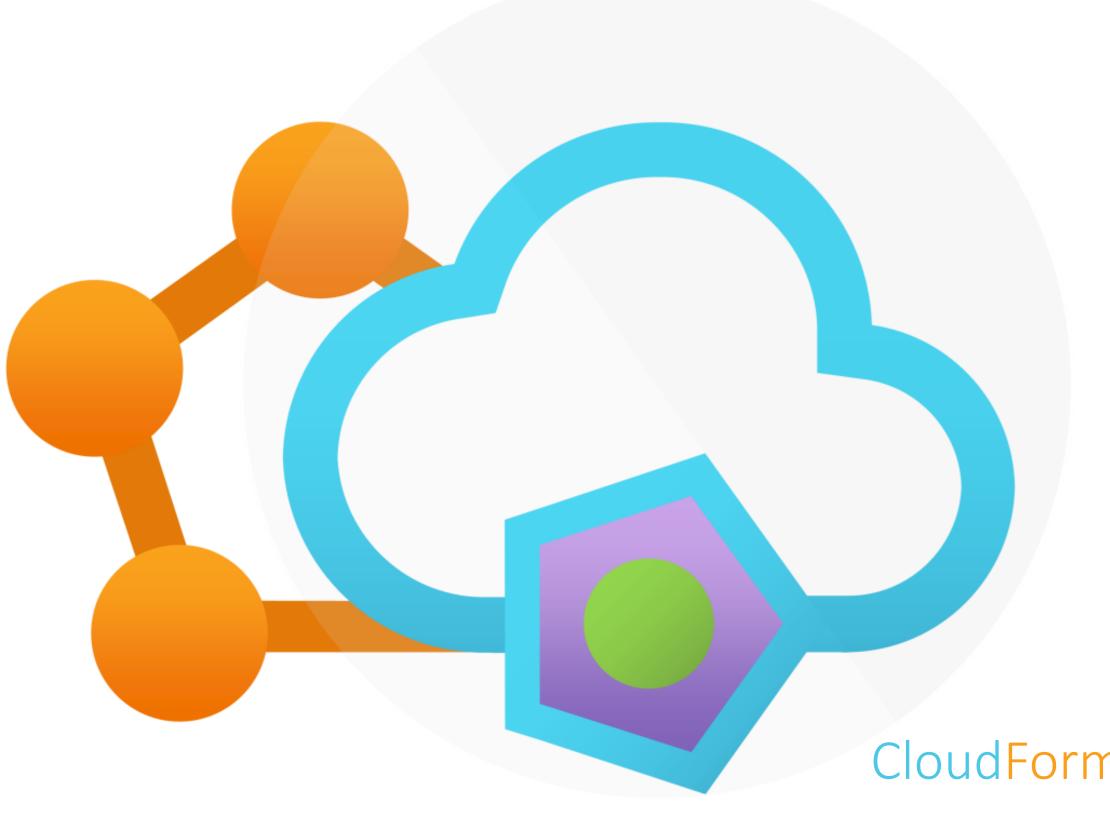
GORDON & WEBSTER

CONSULTING AND INVESTMENT INC.





Komunita datových profesionálů



Thank You

paul.andrew@cloudformations.org

Let's have a chat...



CloudFormations.org/Community-Content

