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ATLANTA MARCH 16 - 20, 2026

Real-Time Reporting with D365 Data Events and Fabric

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Agenda

- Session Goals:
  - Understand how to stream D365 data events into Fabric
  - Learn to build real-time Power BI dashboards
- Explore performance and latency benchmarks

Session Agenda

1. Why Real-Time Reporting Matters

- Business value of live data
- Common use cases: sales, production, warehouse

2. Technical Architecture Deep Dive

- Dynamics 365 → Azure → Fabric → Power BI
- Key components and data flow

3. Pipeline Setup Walkthrough

- Configuring Data Events, Event Hubs, Fabric Event Streams, and Event House
- Best practices and common pitfalls

4. Live Demo: Sales Orders in Action

- Real-time data flow from D365 to Power BI
- Performance and latency metrics

5. Extending to Other Scenarios

- Applying the same approach to production and warehouse data

6. Limitations & Optimization Tips

- Constraints, tuning strategies, and governance

7. Q&A: Open floor for audience questions

Session Objectives

What will you learn today?

1. Understand how to stream D365 FSCM data events into Fabric
2. Learn to build real-time Power BI dashboards
3. Explore performance and latency benchmarks

The Case for Real-Time Data

Faster Decision-Making

- Real-time insights empower teams to act immediately on operational changes.
- Example: Spot and resolve order fulfillment issues before they escalate.

Operational Agility

- React to production delays, inventory shortages, or sales trends as they happen.
- Improve customer satisfaction and reduce downtime.

Data Freshness

- Traditional reporting relies on batch ETL processes—often hours or days old.
- Real-time reporting ensures dashboards reflect the current state of business.

Warehouse Data

Track real-time warehouse performance metrics:

- ✓ Daily Throughput
- ✓ Daily Transactional analysis
- ✓ Order Accuracy
- ✓ Pick & Pack Cycle times
- ✓ Order to ship times
- ✓ Space Utilization
- ✓ Order Lead Time

Sales Data

Track and visualize sales performance metrics including:

- ✓ Attainment to target
- ✓ Sales Volume
- ✓ Revenue
- ✓ Sales Per Rep
- ✓ Discounts Provided

Manufacturing Data

Track and visualize manufacturing data metrics including:

- ✓ Cost per unit
- ✓ Work In Progress
- ✓ Production Throughput
- ✓ Scrap Rates
- ✓ Yield Rate
- ✓ Planned vs. Actual

OMNI ANALYTICS

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Warehouse Floor Updates

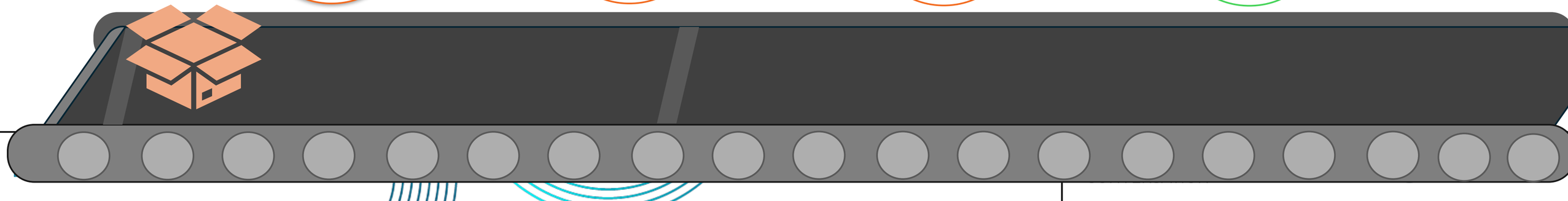
Total Orders Today	Currently in picking	Orders Outstanding	Orders Processed
185	20	35	130
Order Target: 160 Variance to Target: 25	Picking Target: 20 Variance to Target: 0	Remaining to Pick: 19 %	Complete: 70 %

New Orders Received

Orders Picked

Outstanding Orders Updated

Orders Processed



End-to-End Pipeline for Real-Time Reporting

Component Breakdown:

1. Dynamics 365 Data Events

- Emits event messages on Create, Update, Delete operations.
- Configured via Business Events framework.
- Payloads are JSON-formatted and include metadata about the entity and action.

2. Azure Event Hubs

- Acts as the ingestion layer for event messages.
- Supports high-throughput, low-latency streaming.
- Enables partitioning and scaling for large volumes of events.

3. Fabric Event Stream

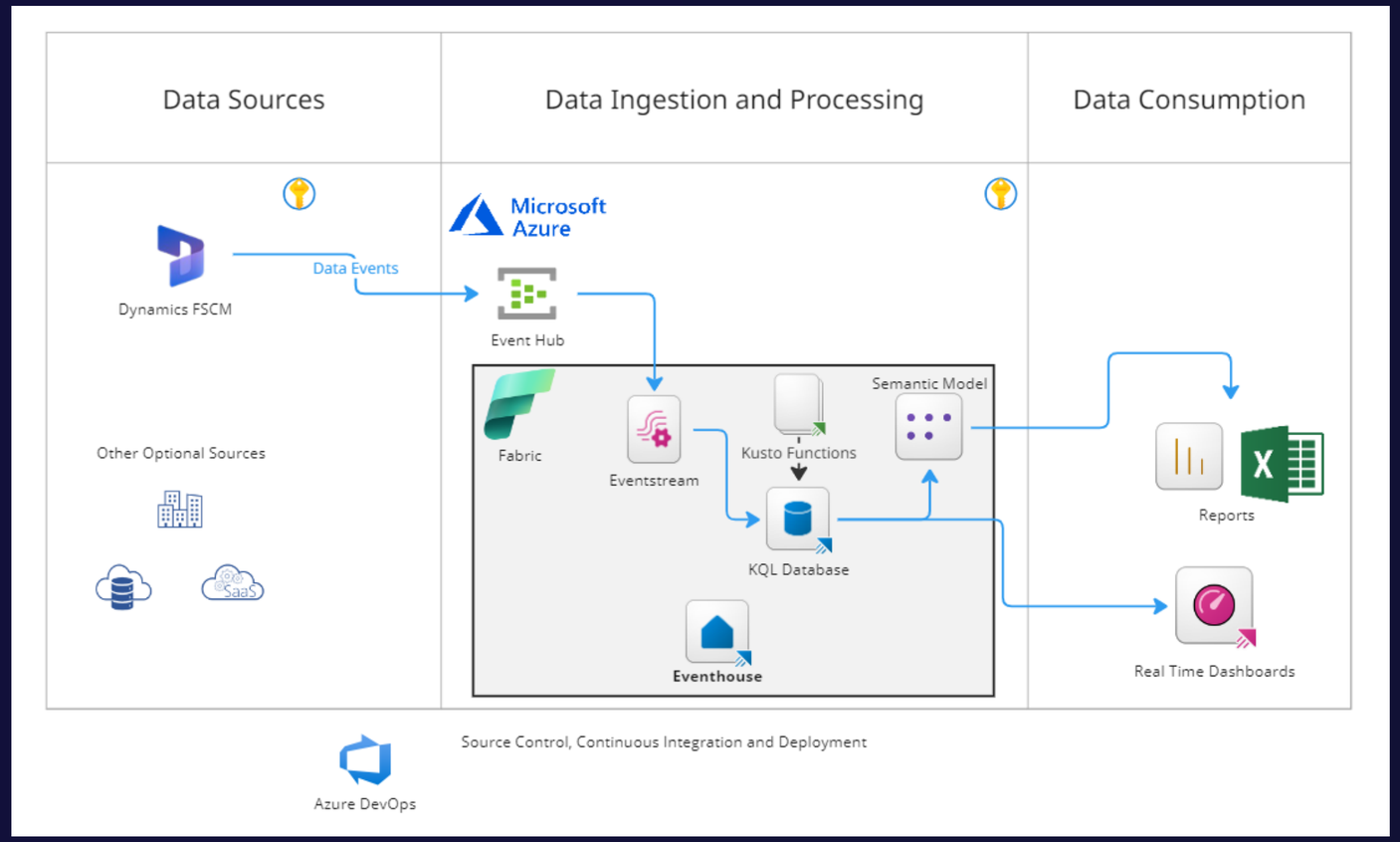
- Real-time data processing engine in Microsoft Fabric.
- Connects directly to Event Hubs.
- Allows transformations, filtering, and routing of data.

4. Event House

- Stores streamed data in a structured format.
- Supports semantic modeling for analytics.
- Serves as the source for Power BI reports.

5. Power BI Dashboards

- Connects to Event House via DirectQuery.
- Visualizes real-time data with auto-refresh.
- Enables live monitoring of business operations.



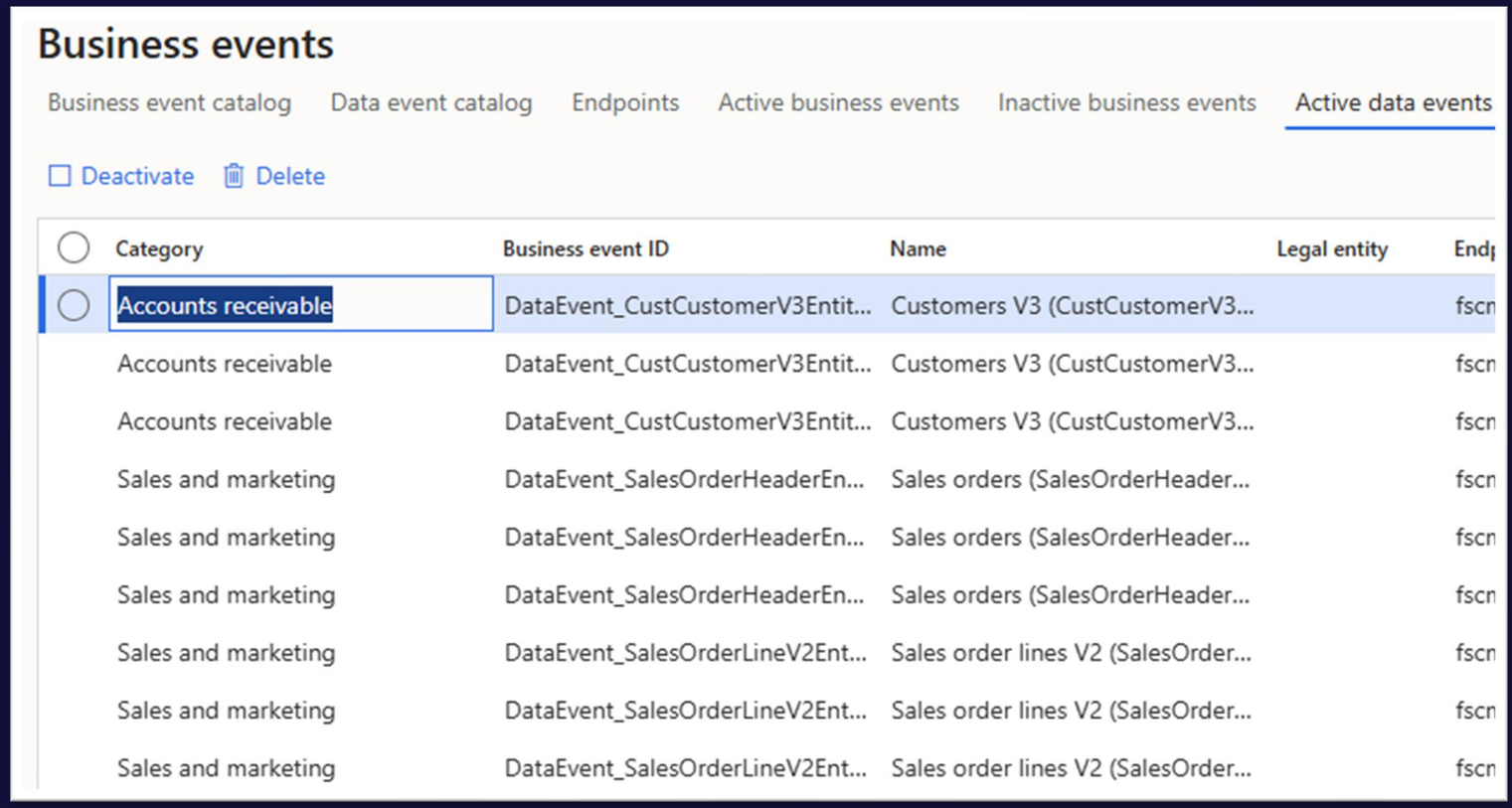
Triggering Real-Time Events

What Are Data Events?

- Data Events are part of the **Business Events framework** in Dynamics 365.
- They emit structured messages when **Create**, **Update**, or **Delete** operations occur on supported entities.
- These messages are sent in **JSON format**, containing metadata like:
  - Entity name
  - Operation type
  - Timestamp
  - Record ID and field values

Supported Entities:

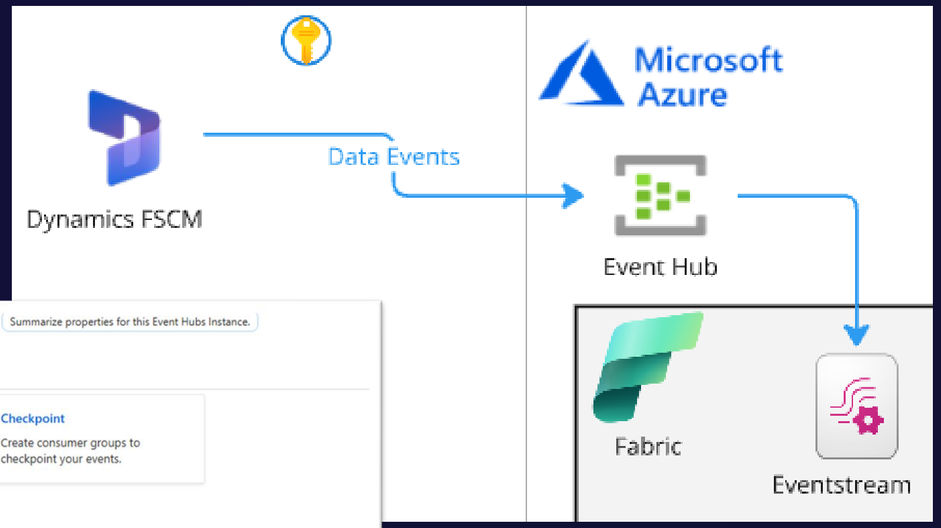
- Built-in entities such as: SalesOrderHeader, CustCustomerv3, ProductionOrder
- Custom Data Entities

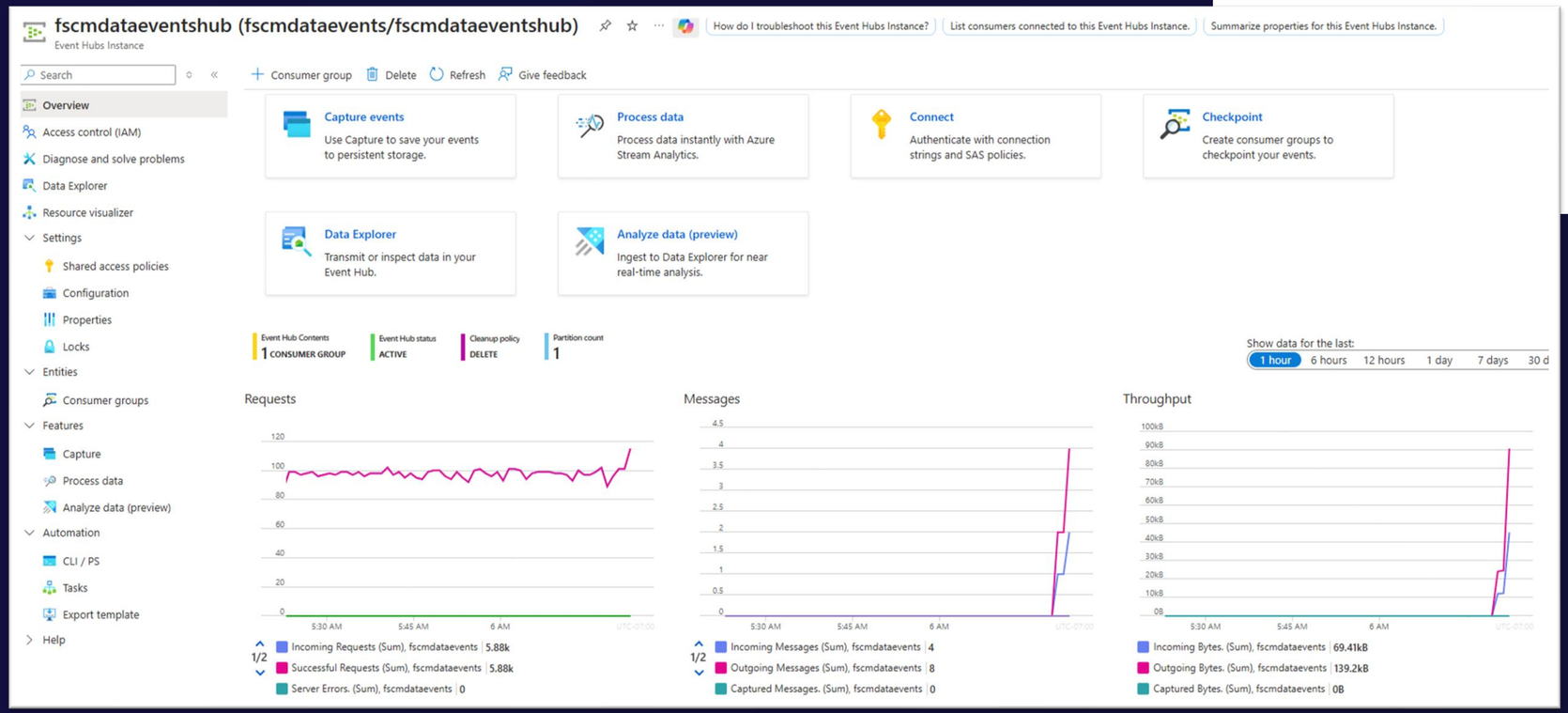


Ingesting Events with Azure Event Hubs

What is Azure Event Hubs?

- A **high-throughput, real-time data ingestion service**.
- Designed to handle millions of events per second.
- Acts as the bridge between Dynamics 365 and downstream consumers like Fabric.

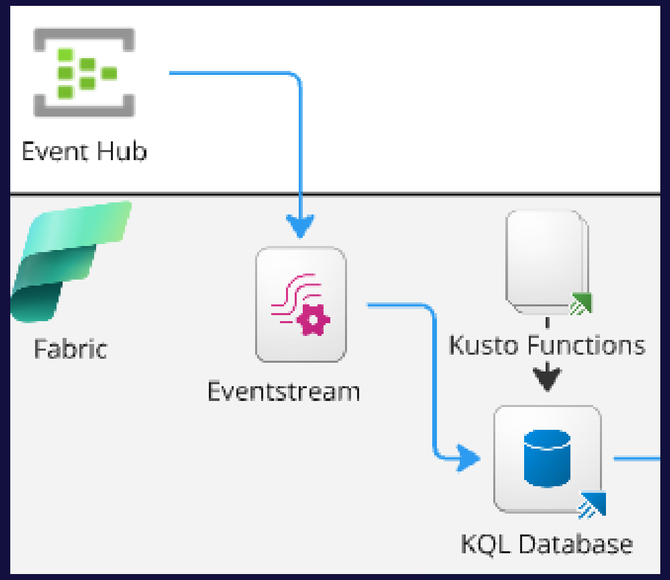


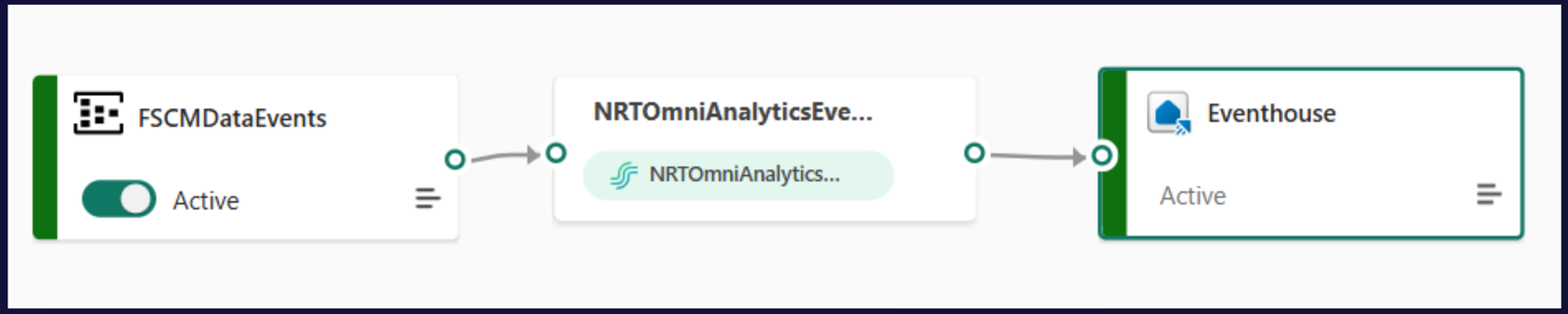


Processing Events in Real Time with Fabric

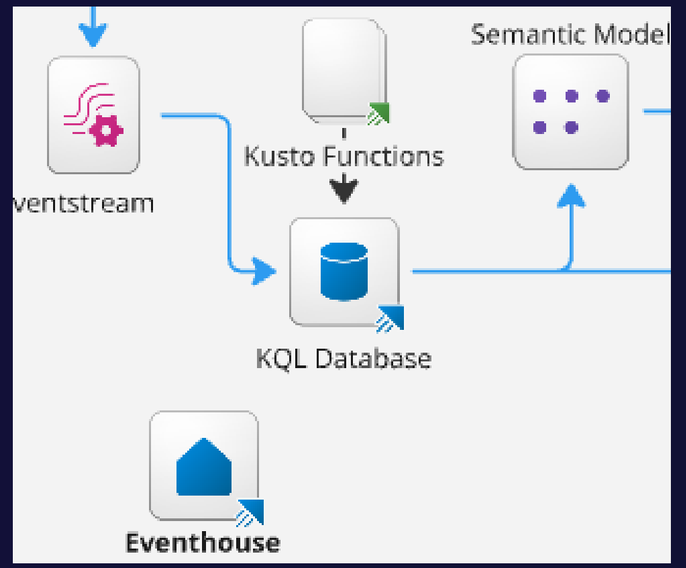
What is a Fabric Event Stream?

- A **real-time data ingestion and transformation pipeline** within Microsoft Fabric.
- Connects directly to Azure Event Hubs to consume event data.
- Enables **low-latency processing**, filtering, and routing to destinations like Event House.





Event House & Semantic Model



What is Event House?

- A **real-time data warehouse** in Microsoft Fabric.
- Designed to store and query high-velocity event data.
- Supports **Direct Lake mode** for ultra-fast Power BI connectivity.

Key Capabilities:

- **Schema-on-read**: Flexible ingestion of semi-structured data.
- **Partitioning**: Efficient storage and querying of time-series data.
- **Integration with Power BI**: Enables live dashboards with minimal latency.

Using KQL Update Policies with Kusto Functions

- **Purpose: automatically transform and ingest data** into one or more target tables as new data arrives in a source table—perfect for real-time scenarios like D365 event streams.

How It Works:

- **Source Table**: Your Event House table receives raw event data from the Fabric Event Stream.
- **Kusto Function**: You define a KQL function that transforms or filters the incoming data.
- **Update Policy**: You attach the function to a target table via an update policy, which runs automatically when new data lands in the source.

Live Demo – Sales Orders in Action

- **End-to-End Real-Time Reporting in Action**

Performance Benchmarks

End-to-End Delay: ~7–20 seconds from D365 Save to Power BI visualization.

Breakdown:

- D365 to Azure Event Hub: ~3–10 seconds
- Event Hub to Fabric Event Stream: ~1 second
- Event Stream to Event House: <1 second
- Event House to Power BI (DirectQuery): ~1–2 seconds

Throughput

- D365 FSCM:
  - **Supports 5,000 events per 5 minutes** (burst rate)
- Azure Event Hub:
  - Supports **millions of events per second**
- Fabric Event Stream:
  - Handles **high-frequency ingestion** with low overhead.

Refresh Behavior

- Power BI with DirectQuery:
  - Near real-time updates without manual refresh.
  - Auto-refresh intervals configurable (e.g., every 10–30 seconds).
- Power BI Real Time Dashboards
  - Fastest way to report real-time data
  - Ideal for Eventhouse
  - More user training – less flexible

Extending to Other Scenarios

Production Jobs

- Track job creation, status changes, and completions.
- Monitor delays or bottlenecks in manufacturing workflows.
- Trigger alerts for jobs stuck in specific stages.

Warehouse Transactions

- Visualize picking, packing, and shipping activities.
- Detect inventory movement in real time.
- Improve fulfillment accuracy and reduce cycle time.

Considerations for Scaling:

- **Entity-Specific Schemas**: Each use case may require tailored transformations.
- **Volume & Frequency**: Warehouse events may be high-frequency; optimize partitions and stream logic.

Limitations & Optimization

- Cost
- Different technologies (KQL, Kusto, Eventhubs)
- Data events are based on table updates – views, virtual fields
- Customizations must be matched by customer data entities
- 5,000 event per five minutes – officially

Key take-aways

💡 Key Insights

- Real-time reporting is achievable with native Microsoft tools
- The architecture is modular and scalable across multiple business scenarios.
- Performance and governance are manageable with the right setup and monitoring.
- KQL update policies and semantic modeling are essential for clean, consumable data.

🔄 Next Steps

- Identify key entities in your D365 environment for real-time reporting.
- Set up a pilot pipeline for a single use case (e.g., sales orders).
- Explore Fabric’s Real-Time Analytics workspace and Event House capabilities.
- Collaborate with your BI and IT teams to align on governance and performance goals.

Suggested Resources

Business events overview

https://learn.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/business-events/home-page

Azure Event Hubs documentation

https://learn.microsoft.com/en-us/azure/event-hubs/

Microsoft Fabric documentation

https://learn.microsoft.com/en-us/fabric/

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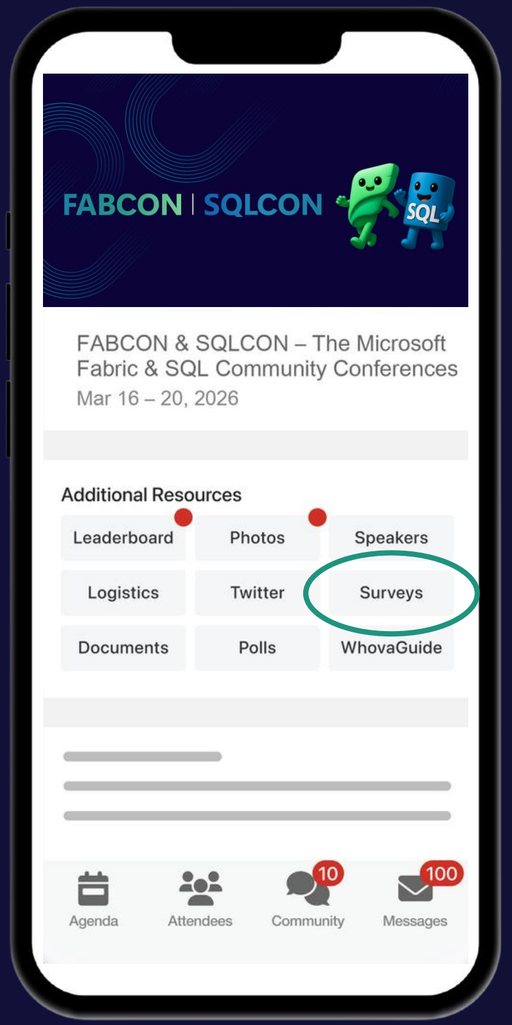

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