



**Welcome to
Perth Microsoft Data,
Analytics, AI and Power
Platform**

Thanks to our Sponsor



Acknowledgment of Country

We wish to acknowledge the traditional custodians of the land we are meeting on, the Whadjuk (Perth region) people. We wish to acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.



Building Microsoft Fabric Data Agents for the Next Wave of Enterprise AI



Sergio Zenatti Filho
Chief Cloud Solution Architect





Microsoft Fabric

The unified data platform for AI transformation



AI-powered
data platform



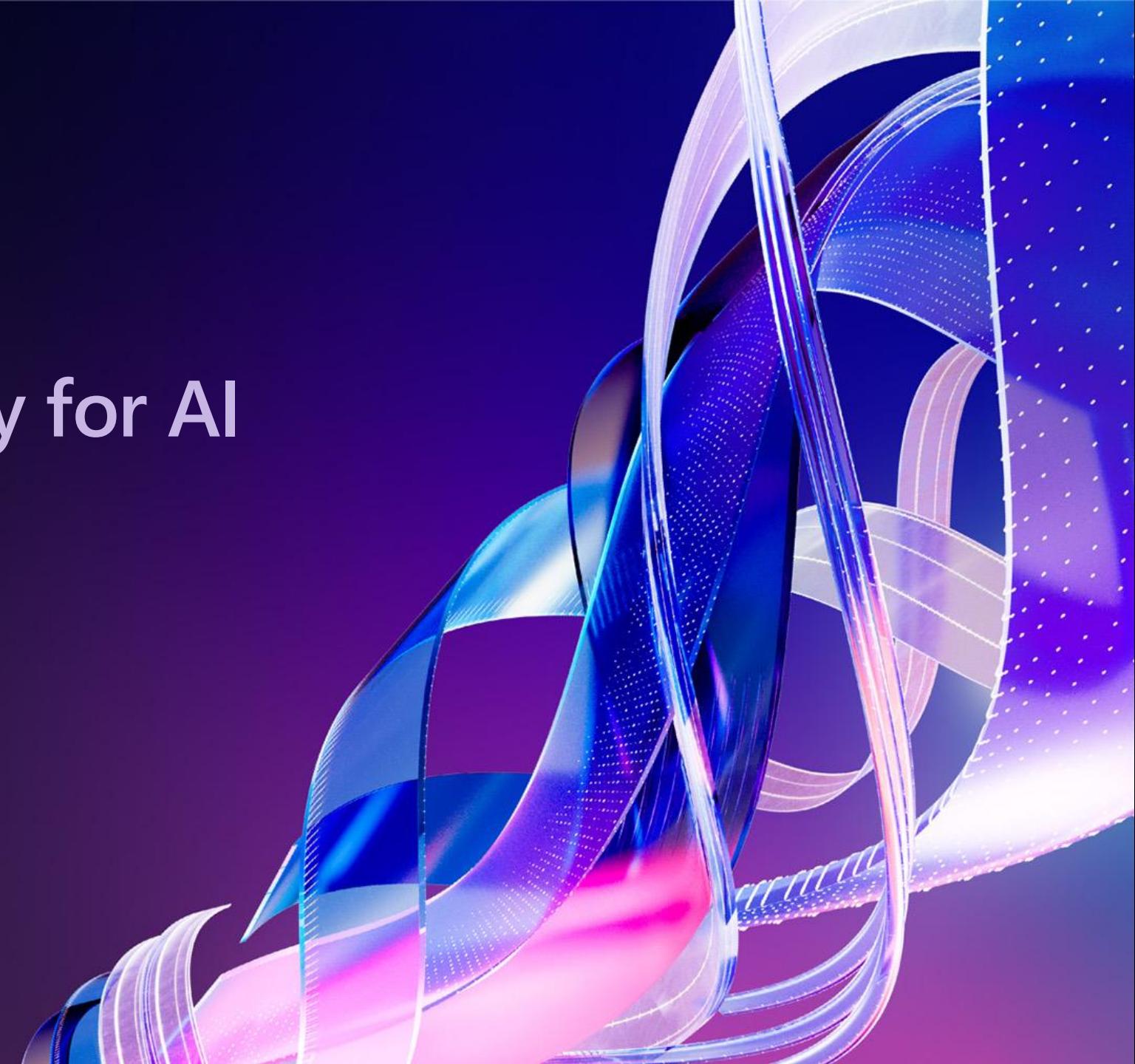
Open and AI-ready
data lake



AI-enabled
business users



Get your data ready for AI with AI Functions



AI Functions – now generally available

Transform your data with AI
with just a single line of code

- Analyze sentiment
- Classify data
- Extract information
- Answer custom prompts
- And much more!

Learn more at:

aka.ms/ai-functions

The screenshot shows a Microsoft Fabric Notebook interface. The top navigation bar includes 'Home', 'Edit', 'AI tools', 'Run', 'View', and various workspace and environment settings. The main area has a 'Home' tab selected. On the left, there's an 'Explorer' sidebar with icons for Workspaces, Copilot, OneLake catalog, Monitor, Real-Time, Workloads, and 'My workspace'. The central workspace displays a PySpark (Python) session with the following code and output:

```
27 df = pd.DataFrame(data)
28 display(df)
[4] < 1 sec - Command executed in 836 ms by Virginia Roman on 4:52:47 PM, 9/24/25
```

Below the code, a 'Table view' shows a dataset with columns: ABC Date, ABC Name, and ABC Review. The data is as follows:

	ABC Date	ABC Name	ABC Review
1	2025-09-01	Alice	La nourriture éta...
2	2025-09-02	Bernard	Le service était i...
3	2025-09-03	Camille	Super ambiance,...
4	2025-09-04	Diane	Le restaurant éta...
5	2025-09-05	Étienne	Service client exc...
6	2025-09-06	Fatima	Les plats sont arr...
7	2025-09-07	Georges	J'ai adoré la terr...
8	2025-09-08	Hélène	Le menu est trop...
9	2025-09-09	Ismael	Meilleure expéri...
10	2025-09-10	Julie	Nourriture médi...

At the bottom of the notebook, two additional lines of code are shown:

```
1 df["Translation"] = df["Review"].ai.translate("english")
2 display(df)
```

and

```
1 df["Sentiment"] = df["Review"].ai.analyze_sentiment()
2 display(df)
```

The status bar at the bottom indicates 'Session ready', 'AutoSave: On', 'Copilot completions: On', and 'Selected Cell 7 of 10 cells'.

Multimodal AI Functions (Private Preview)

Apply AI-powered enrichments on unstructured data and multimodal input, such as PDFs, images, and text file formats



Private Preview Signup –
Multimodal AI Functions

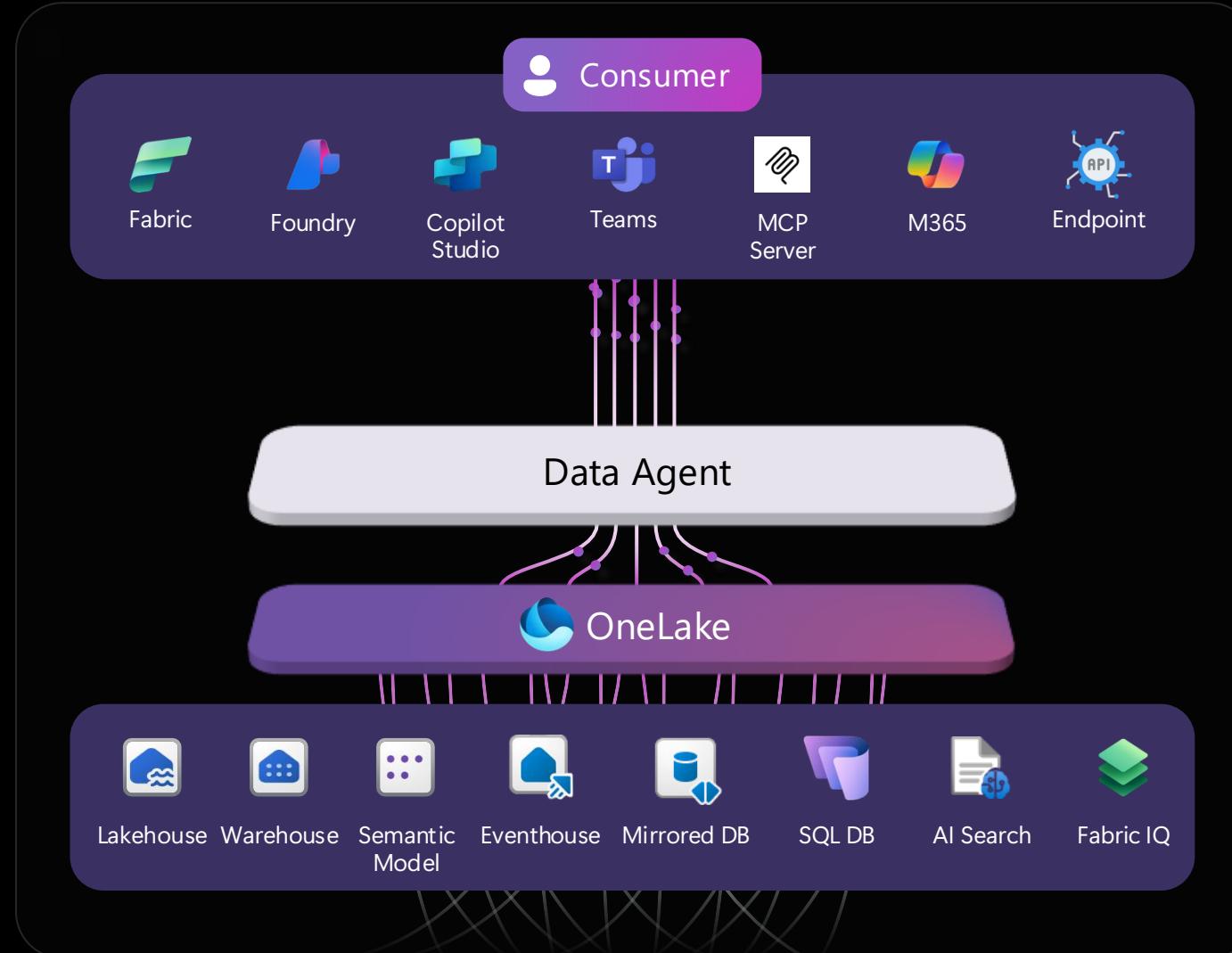




Fabric Data Agents



Fabric data agents



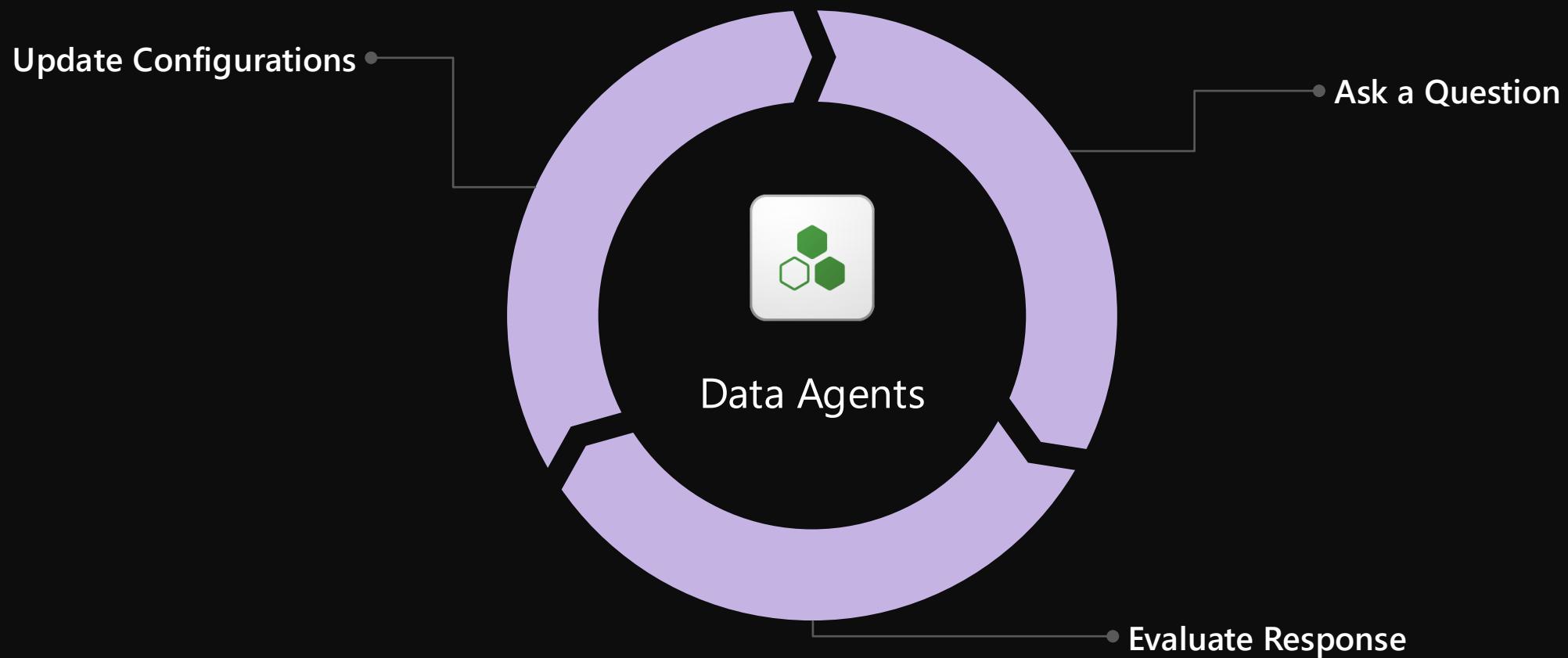
A **virtual analyst** that allows users to interact with and gain insights from enterprise data in OneLake

New Consume your data agents in **M365 Copilot** and as **remote MCP Server** in VS Code

New Data agents now support unstructured data through **Azure AI Search**

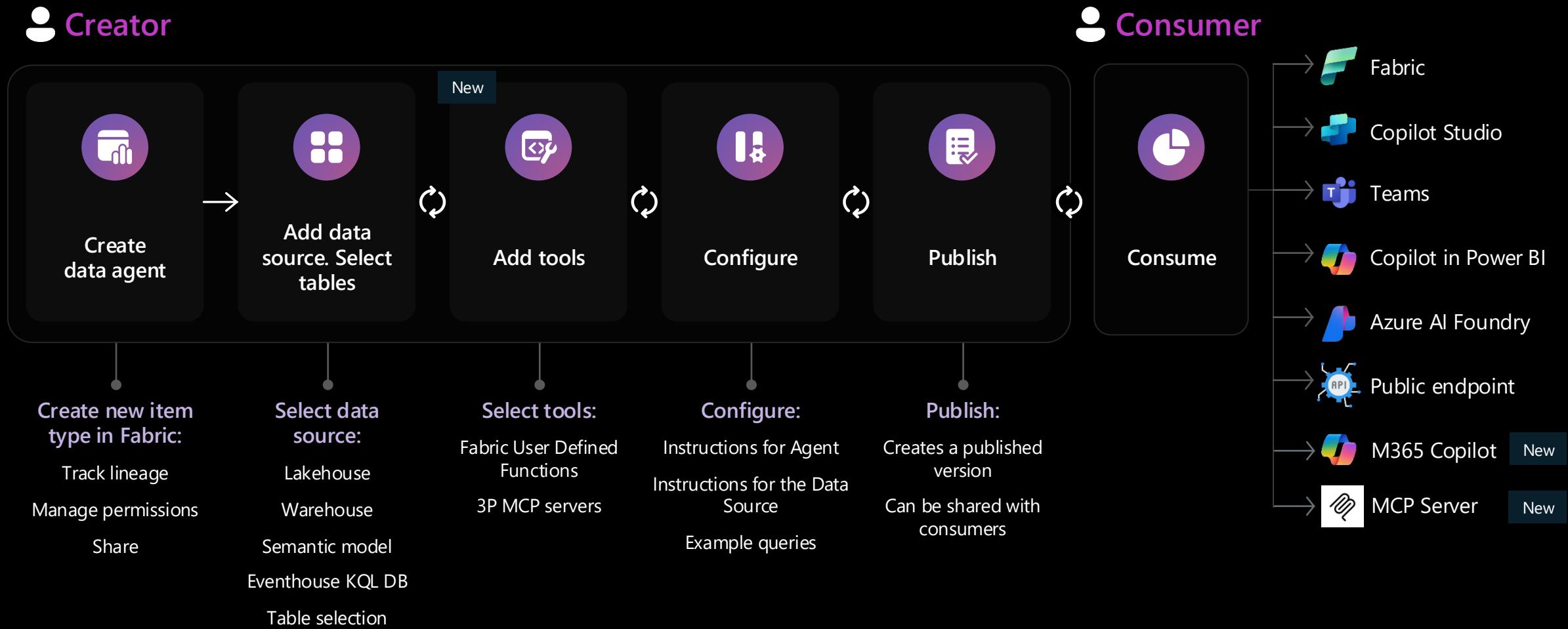
New Data agents now support **Fabric IQ Workload through Ontology**

Building a data agent is an iterative process



Data Agent End-to-End Flow

How to create and consume a Fabric data agent





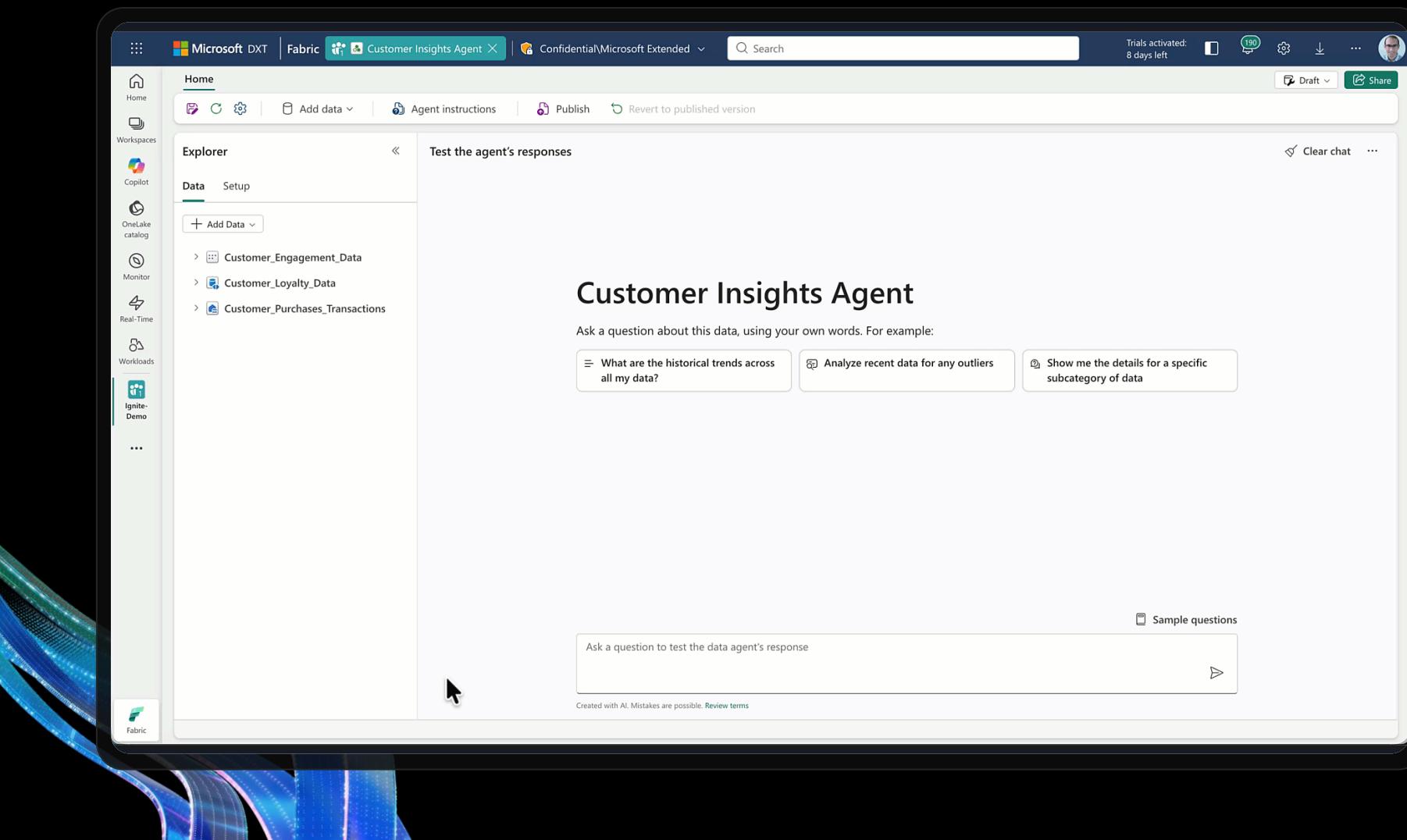
Fabric Data Agents

Demo



Fabric data agent integration with M365

Enrich Microsoft 365 agents with Fabric data intelligence



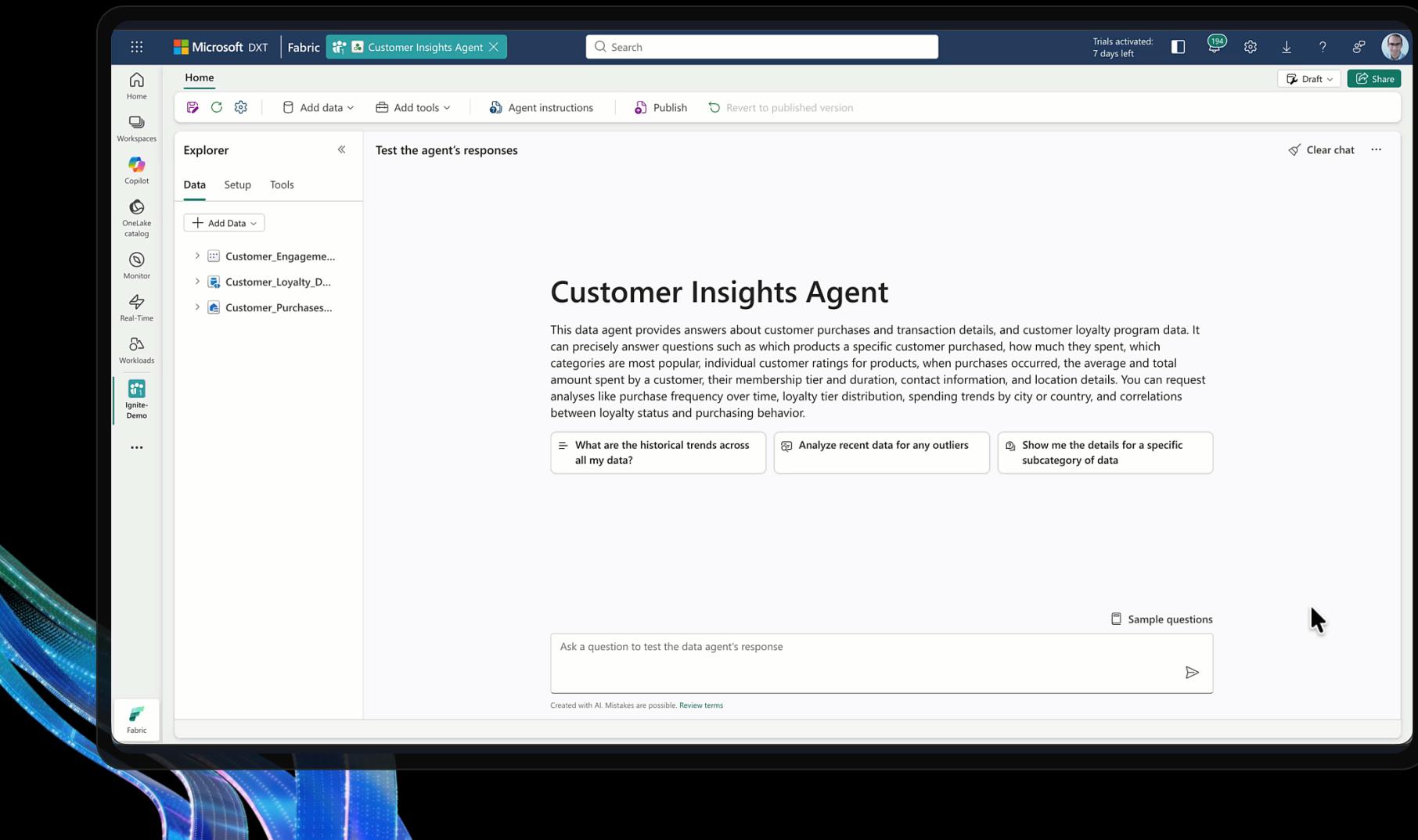
The screenshot shows the Microsoft Data Explorer (DXT) interface. On the left, there's a sidebar with icons for Home, Workspaces, Copilot, OneLake catalog, Monitor, Real-Time, Workloads, and Ignite-Demo. The main area is titled "Customer Insights Agent". It displays a list of data sources: "Customer_Engagement_Data", "Customer_Loyalty_Data", and "Customer_Purchases_Transactions". Below this, there's a section titled "Customer Insights Agent" with a placeholder text "Ask a question about this data, using your own words. For example:". Three buttons are shown: "What are the historical trends across all my data?", "Analyze recent data for any outliers", and "Show me the details for a specific subcategory of data". At the bottom, there's a text input field "Ask a question to test the data agent's response" with a "Sample questions" button and a note "Created with AI. Mistakes are possible. Review terms". A cursor is visible at the bottom left of the interface.

Fabric data agents can reason over and synthesize data in OneLake for insights

AI creators can enrich M365 Copilot with Fabric data agents' data domain expertise

Security permissions, including RLS and CLS, are always respected

Data Agent MCP Server



The screenshot shows the Microsoft Data Experience Toolkit (DXT) interface. The top navigation bar includes 'Microsoft DXT' and 'Fabric' tabs, with 'Customer Insights Agent' selected. A search bar and various status indicators are also present. The left sidebar contains links for 'Home', 'Workspaces', 'Copilot', 'OneLake catalog', 'Monitor', 'Real-Time', 'Workloads', and 'Ignite-Demo'. The main content area is titled 'Customer Insights Agent' and describes its capabilities for answering questions about customer purchases and transaction details. It lists three sample questions: 'What are the historical trends across all my data?', 'Analyze recent data for any outliers', and 'Show me the details for a specific subcategory of data'. At the bottom, there's a text input field 'Ask a question to test the data agent's response' with a 'Sample questions' button and a note: 'Created with AI. Mistakes are possible. Review terms'.

A managed MCP Server for first class access to enterprise knowledge

Enables users to consume Fabric data agent from other AI systems using MCP

Gain on-demand insights on top of enterprise data in Fabric, ensuring secure, and auditable data access

Data Agent MCP Client

The screenshot shows the Microsoft DXT Fabric Data Agent MCP Client interface. The top navigation bar includes tabs for Customer Insights Agent, Email_Service, and Pricing_Promotions. The main area is titled "Test the agent's responses" and shows a step completed message. A question is asked: "What is the average purchase amount per customer in each loyalty tier?". The response provided is: "Here is the average purchase amount per customer by loyalty tier (full results are saved in 'result_1.json'):" followed by a bulleted list: • Platinum: \$1,169.19 per customer • Gold: \$1,230.36 per customer • Silver: \$1,223.64 per customer". Below this, there is a note: "Let me know if you want further breakdowns or details!". A table titled "Table 1" is displayed, showing the average purchase amount per customer for four loyalty tiers: 1. Platinum: 1169.189903846155, 2. Gold: 1230.362059620596, 3. Silver: 1223.6386206896555, 4. Bronze: 1233.6936050955405. The table has columns for LoyaltyTier and AveragePurchaseAmountPerCustomer. At the bottom, there is a text input field for "Ask a question to test the data agent's response" and a "Sample questions" button.

Fabric data agents can connect to other internal/external AI tools to enhance the quality and accuracy of answers

Fabric data agents connect to your Fabric User Data Functions (UDF)

Leverage custom business logic through the data agent and its Tools

Sign up here:
aka.ms/Fabric/DA-Tools-UDF-PrPr

Bring your own AI Search index

Bring your own AI search index to a Fabric data agents

Use the built-in AI Search tool for custom indexes

Ask natural language questions over your unstructured data and join with other data sources for deeper insights

The screenshot shows the Microsoft Fabric AI Search interface. On the left, there's a sidebar with various icons for Home, Workspaces, Copilot, OneLake catalog, Monitor, Real-Time, Workloads, Data Agent Unstructured, and Hotel Analysis. The main area has tabs for Home, Explorer, and Chat. In the Chat tab, under 'Test the agent's responses', there's a section titled 'Data' with tabs for Data, Setup, and Tools. A button '+ Add Data' is visible. Below this is a list of data sources: 'C360'. A message box contains the question 'What's the average monthly spend per region?'. The response is: 'Here is the average monthly spend per region:' followed by a bulleted list: • Africa: \$2,667.34 • Europe: \$2,651.30 • Asia: \$2,574.60 • North America: \$2,697.74 • South America: \$2,575.97. Below the response, it says '6 steps completed' and 'Response time: 9 sec'. At the bottom, there's a text input field 'Ask a question to test the data agent's response' with a 'Sample questions' link and a send button. A note at the bottom says 'Created with AI. Mistakes are possible. Review terms'.

CI/CD and ALM for Data Agents

The screenshot displays the Fabric interface for managing Data Agent pipelines. At the top, a navigation bar includes links for Home, Workspaces, Copilot, DataLake catalog, Monitor, Real-Time, Workloads, Deployment pipelines, and Help. The main area shows a pipeline named "DA-Production-Pipeline" with three stages: Development, Test, and Production. The "Test" stage is currently selected and highlighted with a green border. Below the pipeline, a table provides lineage details for artifacts deployed from the Development stage:

Selected stage item	Type	Compared to source	Source stage item
—	Lakehouse (Preview)	+ Only in source	LHFoundry
—	Data agent (Preview)	+ Only in source	NRE-Test
—	Data agent (Preview)	+ Only in source	Test
—	Data agent (Preview)	+ Only in source	test_savedas
—	Notebook	+ Only in source	Notebook 1

Support for data agents in Git and deployment pipelines

Configuration changes tracked for development and published versions

Lineage is preserved during pipeline deployments in Git-connected workspaces

Enables Agent-Ops for more streamlined AI development

Evaluate data agents

Native support for data agent evaluation through the Fabric data agent SDK

Run structured evaluations using Python from notebooks.

Validate accuracy, tune prompts, and improve benchmarks to validate your agent's production readiness

Built-in utility to refine example queries

The screenshot shows a Jupyter Notebook interface with the following details:

- Title Bar:** Evaluation Notebook Sample | General · Saved
- Header:** Home, Edit, Run, View, Search, Trial: 19 days left, Comments, History, Develop, Share
- Sidebar (Explorer):** Home, Workspaces (Copilot, OneLake, Monitor, Real-Time, MD..., Evaluation Notebook...), ...
- Content Area:**
 - ## Evaluate a Fabric Data Agent

In this notebook, we'll walk through how to evaluate a Fabric Data Agent using the `fabric-data-agent-sdk`. We'll cover the full workflow, including:

 - Creating a new Data Agent from the SDK
 - Adding data sources and selecting relevant tables
 - Defining a ground truth dataset with questions and expected answers
 - Running an automated evaluation to compare actual vs. expected responses
 - Reviewing evaluation summaries and detailed results

This end-to-end example is designed to help you validate the accuracy of your Data Agent and iterate on improvements with structured feedback.

Let's get started!

Prerequisite: Load Sample Data into the Lakehouse

Before running this notebook, make sure you've created a Lakehouse and loaded the sample **AdventureWorks** dataset.

Follow the steps in the official guide to create the Lakehouse and populate it with sample tables: [Create a Lakehouse with AdventureWorksLH](#)

This ensures that the required tables are available for your Data Agent to access during evaluation.

 - ## Install Fabric Data Agent SDK

Before we begin, install the latest version of the `fabric-data-agent-sdk`. This SDK provides all the tools you need to create, configure, and evaluate your Data Agent programmatically.

Run the following cell to install or upgrade the SDK in your notebook environment:

```
1 %pip install -U fabric-data-agent-sdk
```

[5] Session ready 3 sec - Command executed in 3 sec 299 ms by Misha Desai on 12:57:54 PM, 5/12/25

CPU 2vCores (1.0%), RAM 16G (8.0%) AutoSave: On Copilot completions: Off Selected Cell 1 of 21 cells

Roadmap

Features



Data agents

- General Availability (GA)
- Table/Column descriptions
- Visualizations
- MCP tools
- Creator/Consumer feedback loop
- Service Principal Authentication
- Outbound Access Protection

Check out our updated
roadmap



aka.ms/Fabric-DS-roadmap

Learn more



Data agent documentation

- aka.ms/AI-Blog-Ignite25
- aka.ms/Fabric/create-data-agent
- aka.ms/Fabric/data-agent/sdk/docs
- aka.ms/data-agent-evaluation-sample



Call data agent endpoints

- aka.ms/Fabric/data-agent-python-client-sdk



Feature request?

ideas.fabric.microsoft.com



Q&A

Thank you!