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#FABCONSQLCON2026

FABCON

Microsoft Fabric
COMMUNITY CONFERENCE

SQLCON

Microsoft SQL
COMMUNITY CONFERENCE

ATLANTA MARCH 16 - 20, 2026

Building and Deploying Smarter Data Agents in Microsoft Fabric

Misha Desai, Principal Product Manager, AI - Microsoft Fabric

Amir Jafari, Principal Product Manager, AI - Microsoft Fabric

Agenda

What are Data Agents?

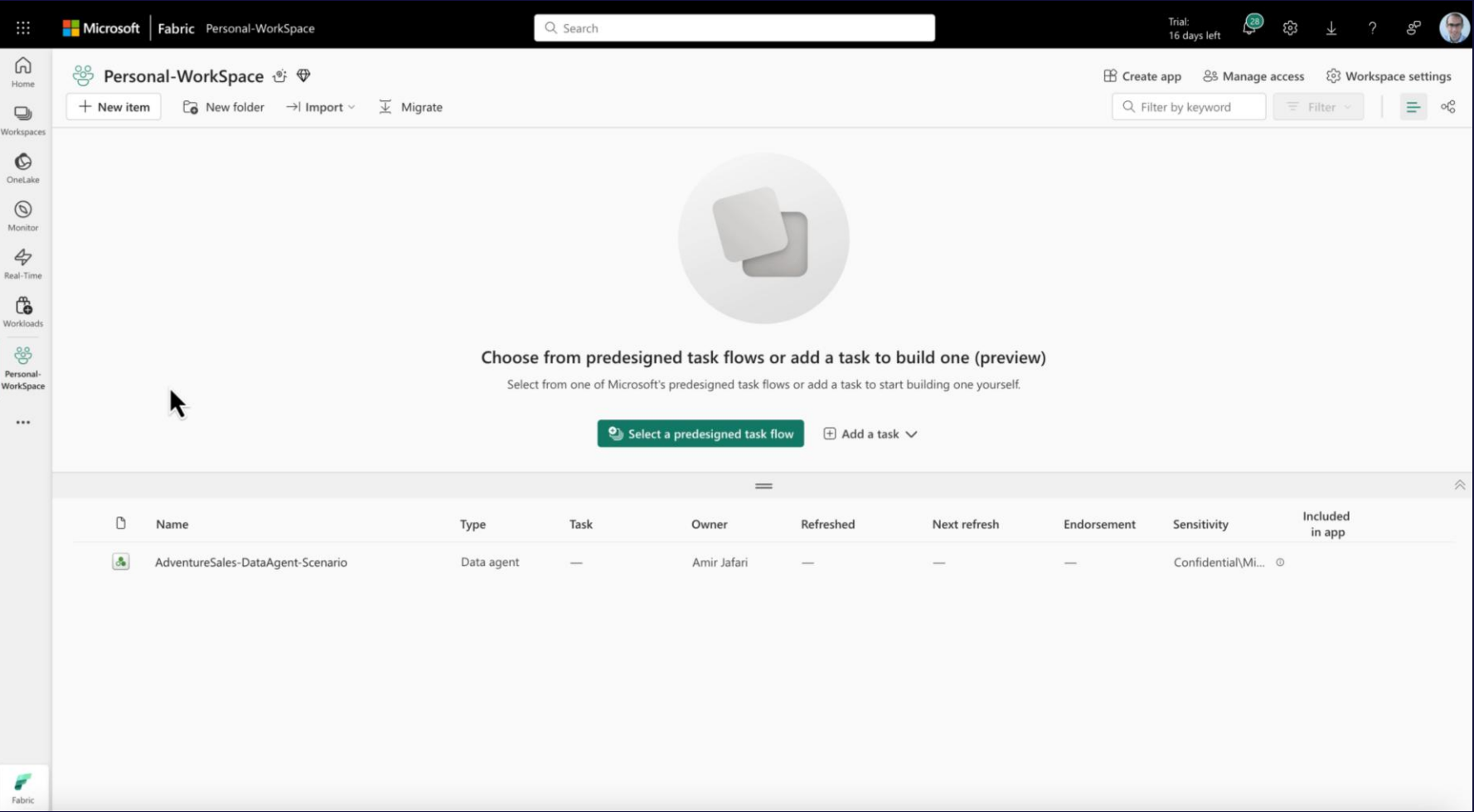
Customer story: LexisNexis

Data agents: Creator Updates

Data agents: Consumer Updates

Roadmap

Data Agent in Microsoft Fabric



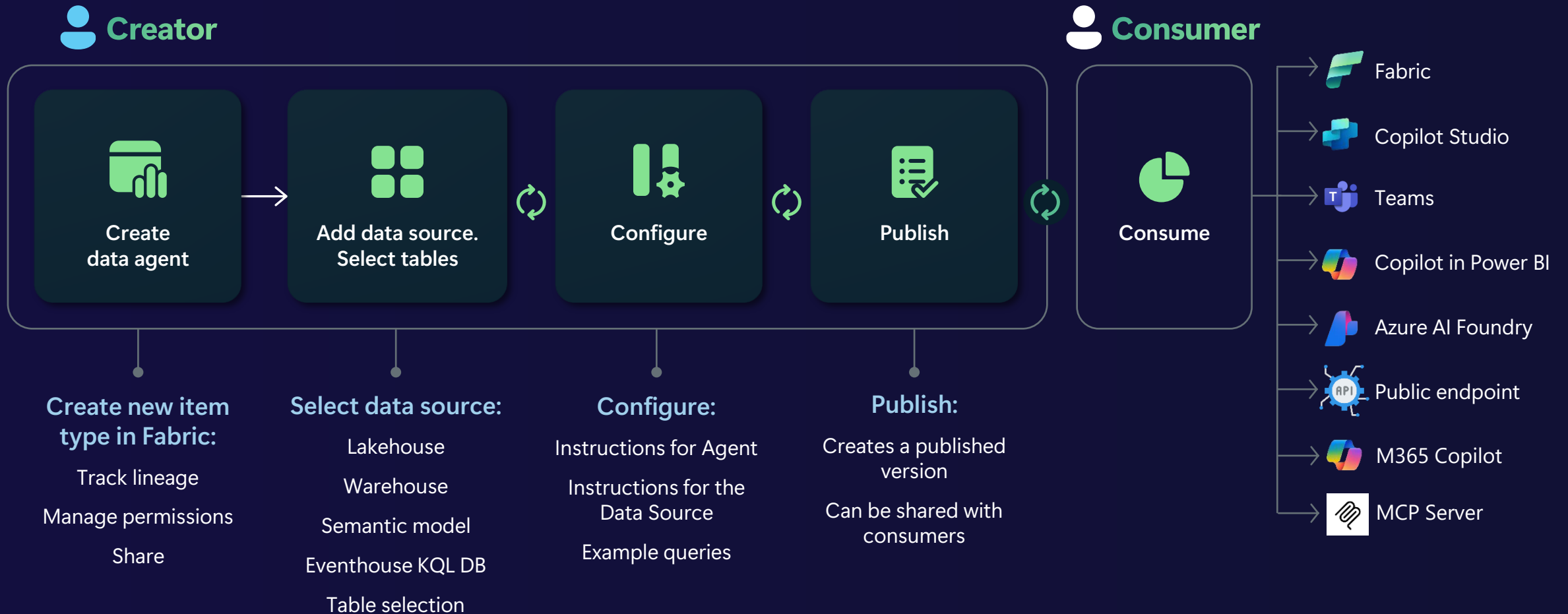
Create a powerful data expert tailored to your data domain by including data sources such as a Data Warehouse, Lakehouse, Semantic model, Eventhouse, SQL databases, Mirrored database

Configure your data expert using agent instructions, data source instructions, and example queries

Share data agents with other creators and consumers in Fabric, Foundry, M365, and more

Data Agent end-to-end flow

End-to-end scenario



What do I need to build a Data Agent?

Data domain knowledge

Entity relationships & business logic

Organizational terminology & semantics

Decision-making context

Data source knowledge

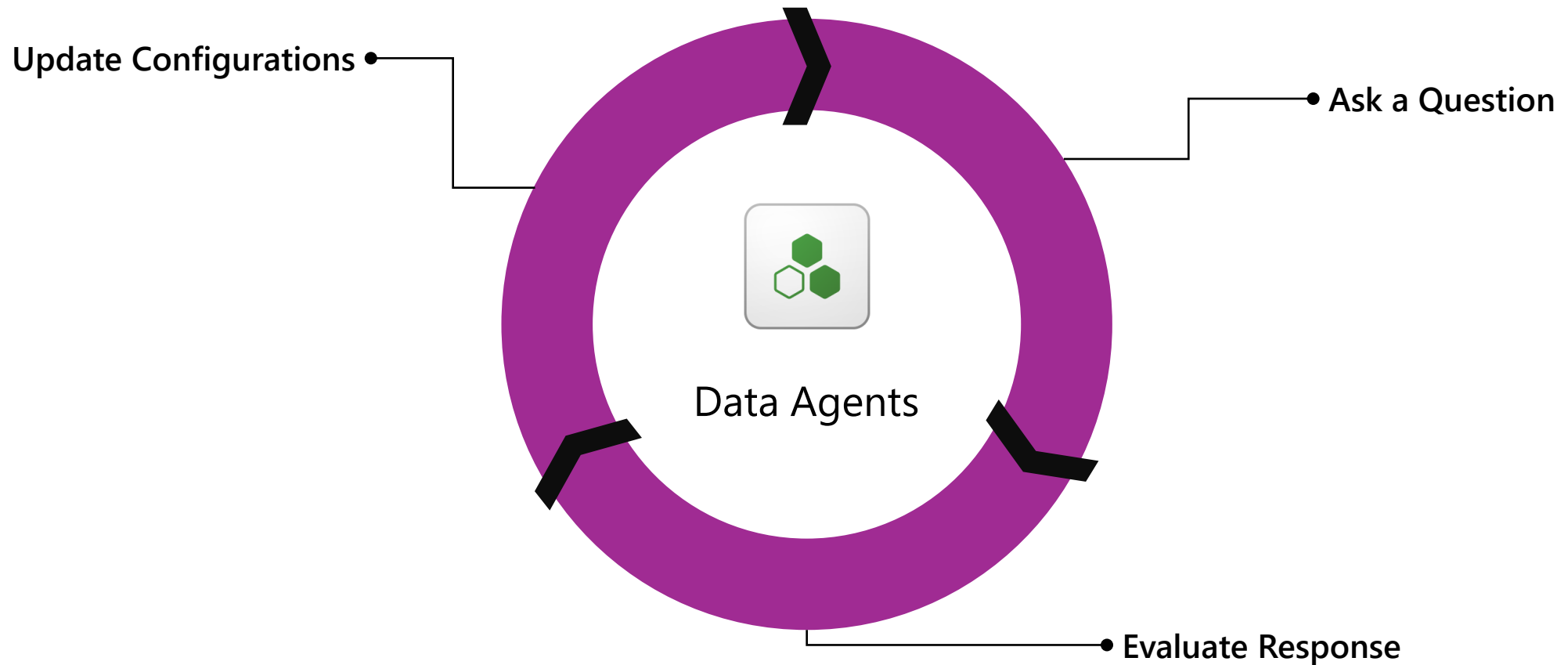
Location & access

Structure & schema

Quality & lineage

Context Engineering

Building a data agent is an iterative process

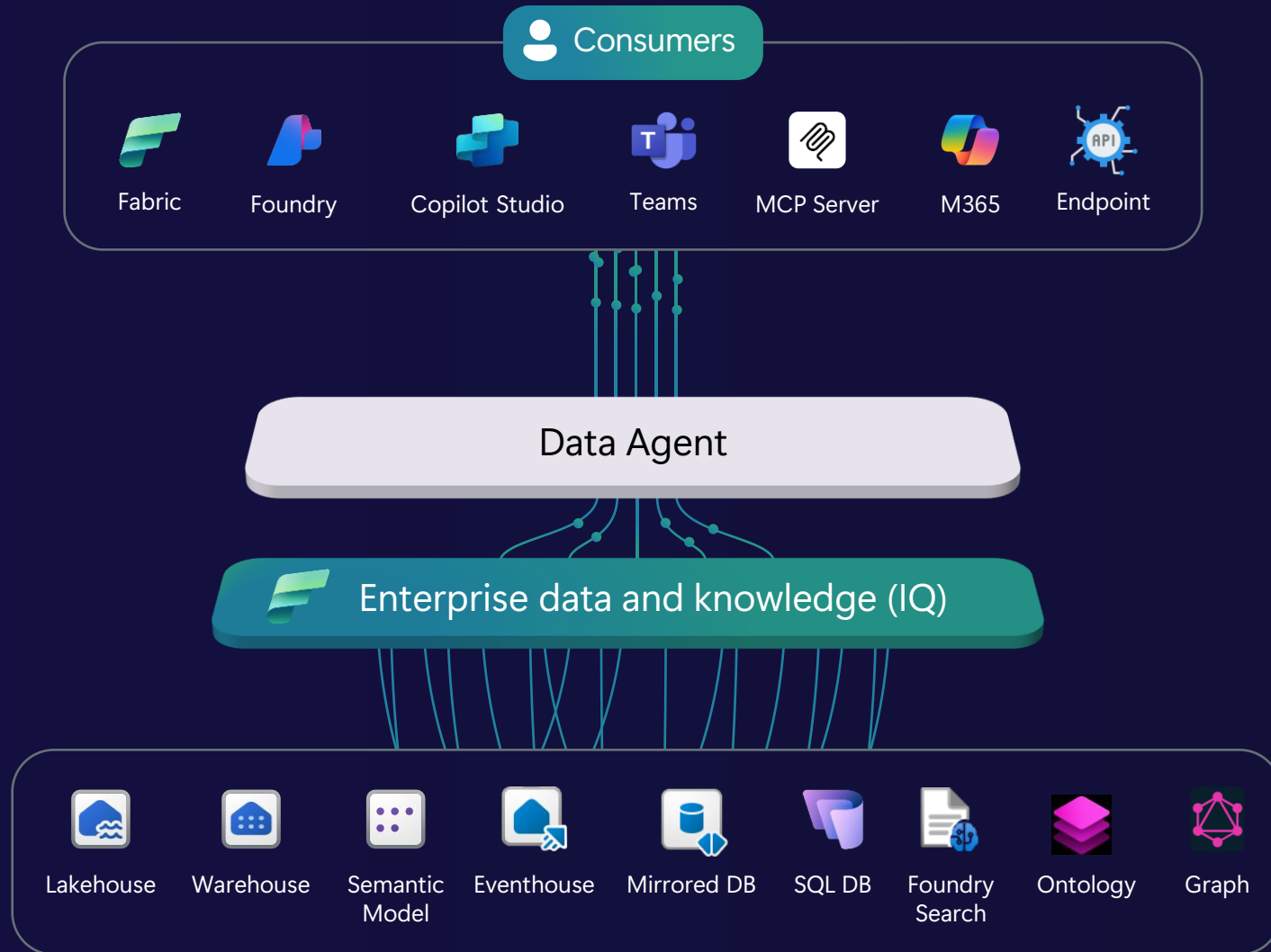


Customer Story

LexisNexis

What's new for AI Creators?

Fabric data agents



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

New

Announcing **General Availability** of Fabric data agents!

New

Data agent prompts now logged in **Purview** for **auditing and governance**

New

Graph supported as a new source for better reasoning across related entities

New

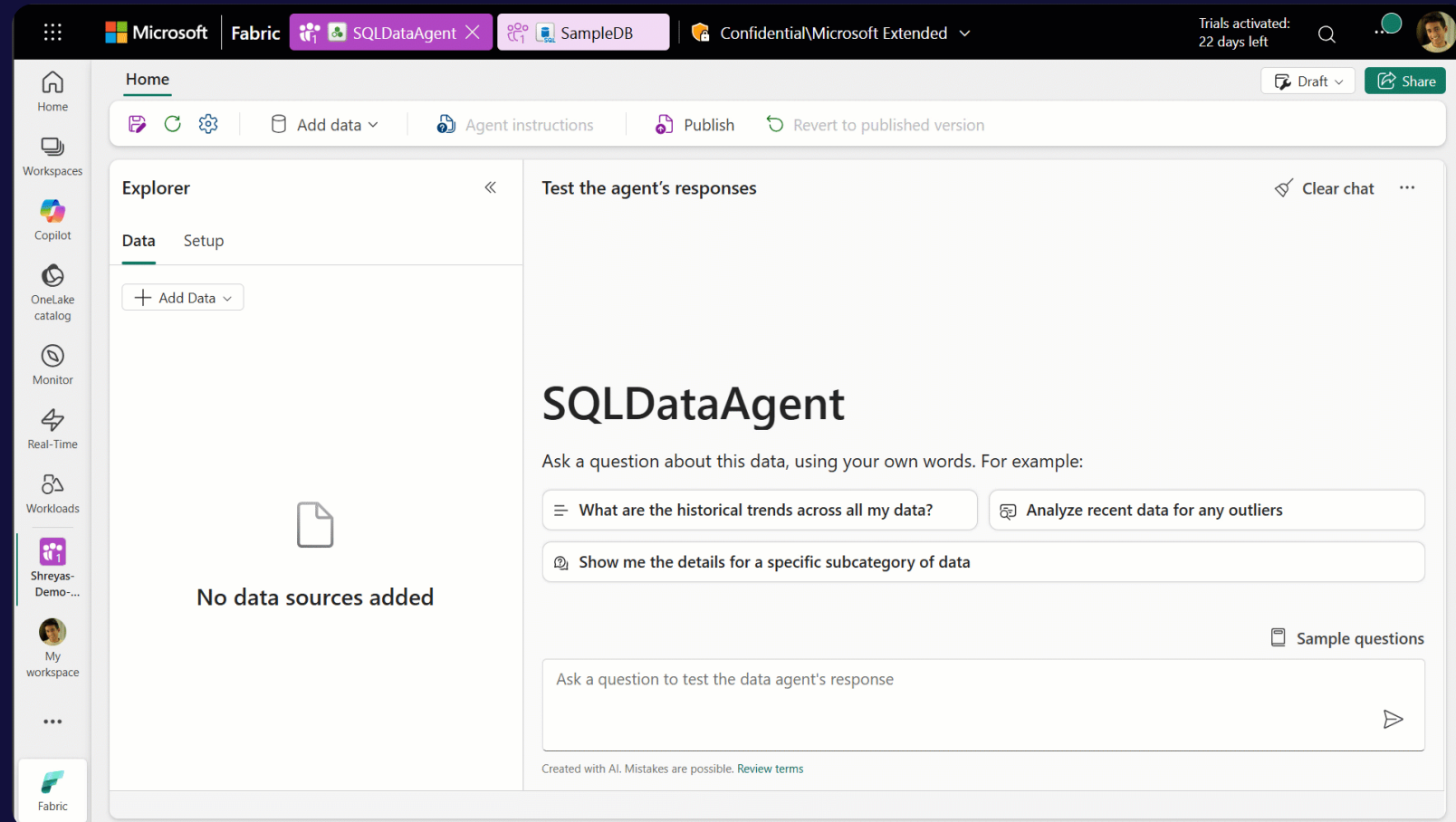
Support for **SQL Views**, and **SQL** and **KQL Functions**

Support for SQL and Mirrored Databases

Add **Mirrored DBs** as sources to data agents: Oracle, Snowflake, SQL Server, Databricks UC, and more!

Reason over your operational data by adding Fabric SQL databases to data agents

Leverage **Fabric data agent's NL2SQL capabilities** to translate natural language queries into SQL

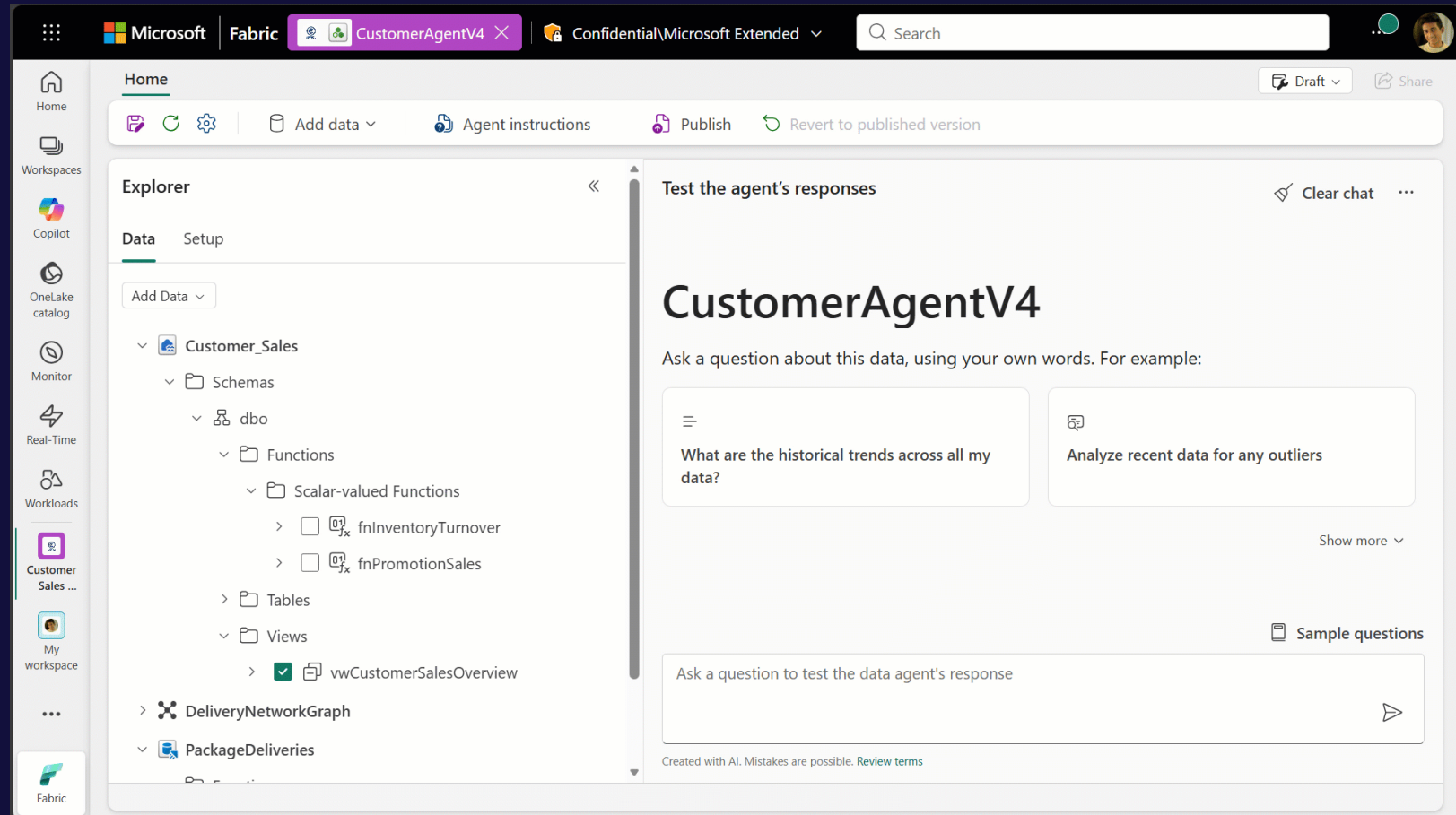


Support for SQL Views and Functions

Reuse trusted business logic, calculations, and transformations that already exist in your databases

Ensure consistent results, aligned with enterprise definitions, security rules, and governance standards that are already enforced in SQL.

Improve NL2SQL accuracy while handling complex joins, filters, and calculations transparently

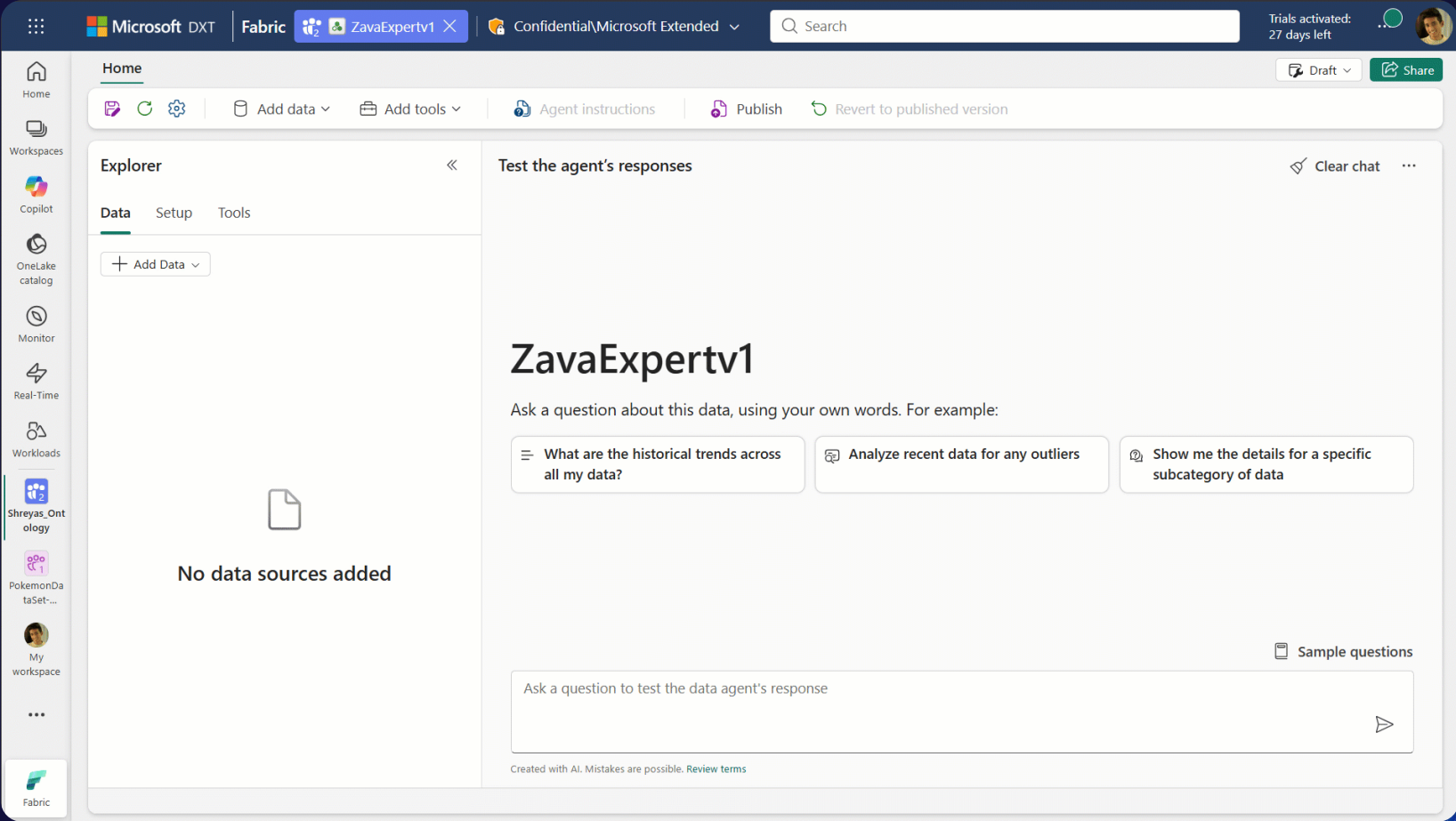


Ontology

Fabric data agents now support **Ontology**

Data agents can leverage ontology's **semantic graph** to **understand entity relationships**

Ontology enables users to **model, map, and contextualize** data, enabling rich and **context-aware insights**

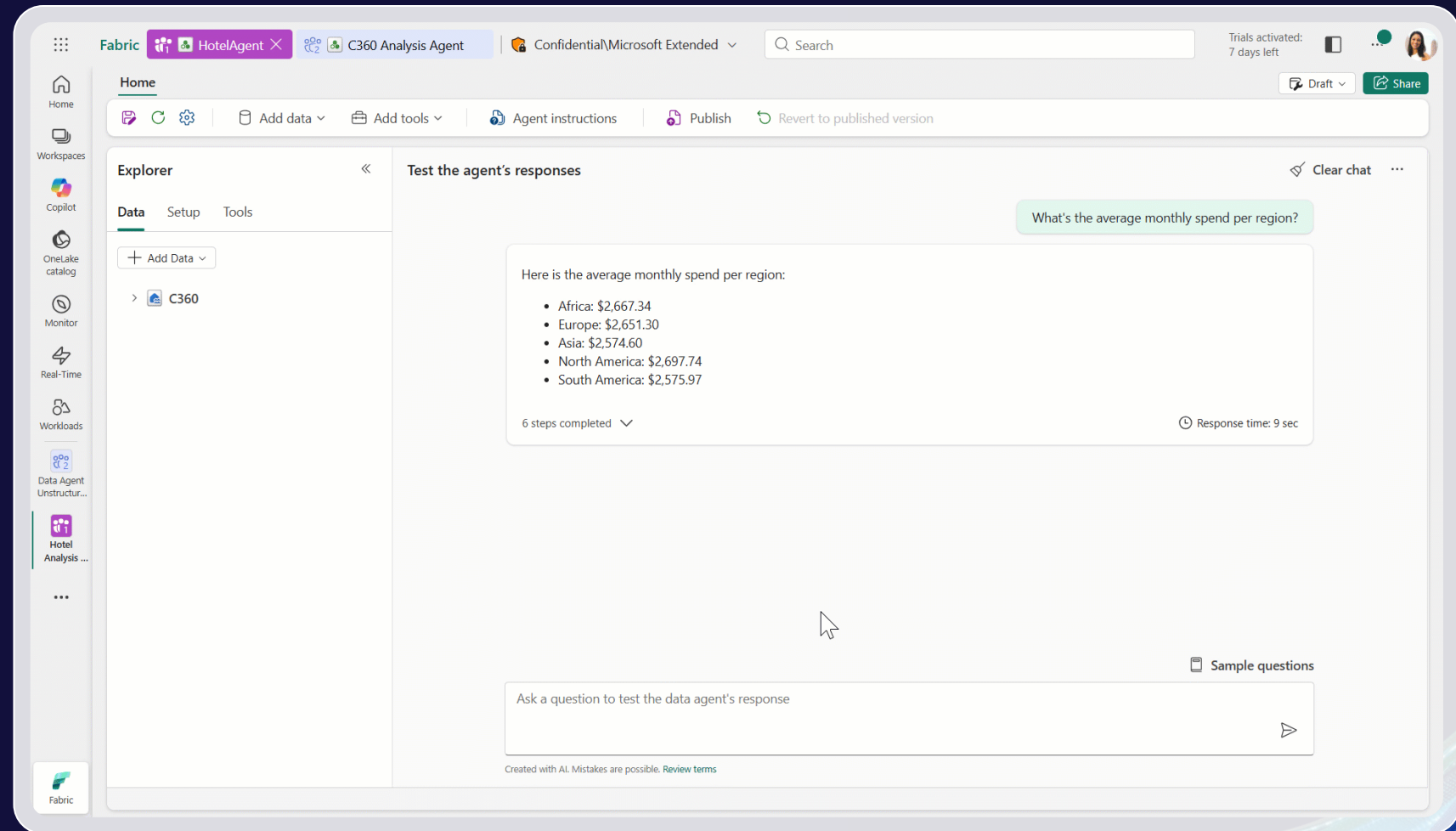


Bring your own AI Search index

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**



More Sophisticated Analysis with Code Interpreter

Data Agent **generates and executes Python** in real time to perform deeper, more flexible analysis.

All code runs in a **sandboxed environment**, isolated from your system

Tackle **complex logic, statistics, and visualizations**, while seeing the generated code and outputs for trust and reuse.

The screenshot shows the Microsoft DXT interface with the Fabrikam Logistics Agent. The main area displays a chat conversation where a user asks for a correlation matrix for customer data, broken out by loyalty tier. The agent responds with a detailed analysis, including a list of variables (lifetime spend, loyalty points, number of orders, average order value) and a summary of key relationships. A table is shown for the Gold Tier, with columns for lifetime_spend_usd, loyalty_points, lifetime_orders, and average_order_value_usd. The interface includes a sidebar with navigation options like Home, Workspaces, Copilot, OneLake catalog, Monitor, Real-Time, Workloads, and DataAgentP. The top bar shows the Microsoft DXT logo, the agent name, and a search bar. The bottom of the chat area has a prompt to ask a question to test the data agent's response.

Microsoft DXT | Fabric | Fabrikam Logistics Agent | Confidential/Microsoft Extended

Home | Add data | Add tools | Build agent with AI | Test data agent | Agent instructions | Publish | Revert to published version

Test the agent's responses

Chat | Deep thinking | Clear chat

Create a correlation matrix for our customer base — how do lifetime spend, loyalty points, number of orders, and average order value relate to each other? Break it out by loyalty tier.

Here's your correlation matrix analysis for the customer base, broken out by loyalty tier (Gold, Silver, Standard, Platinum):

- The matrices show relationships between:
 - Lifetime spend
 - Loyalty points
 - Number of orders
 - Average order value

For each tier, correlations are visualized in this downloadable heatmap: [Download loyalty tier correlation heatmaps PNG](#)

Summary of Key Relationships (correlation coefficients rounded to two decimals):

Gold Tier:

	lifetime_spend_usd	loyalty_points	lifetime_orders	average_order_value_usd
lifetime_spend_usd				
loyalty_points				
lifetime_orders				
average_order_value_usd				

Sample questions

Ask a question to test the data agent's response

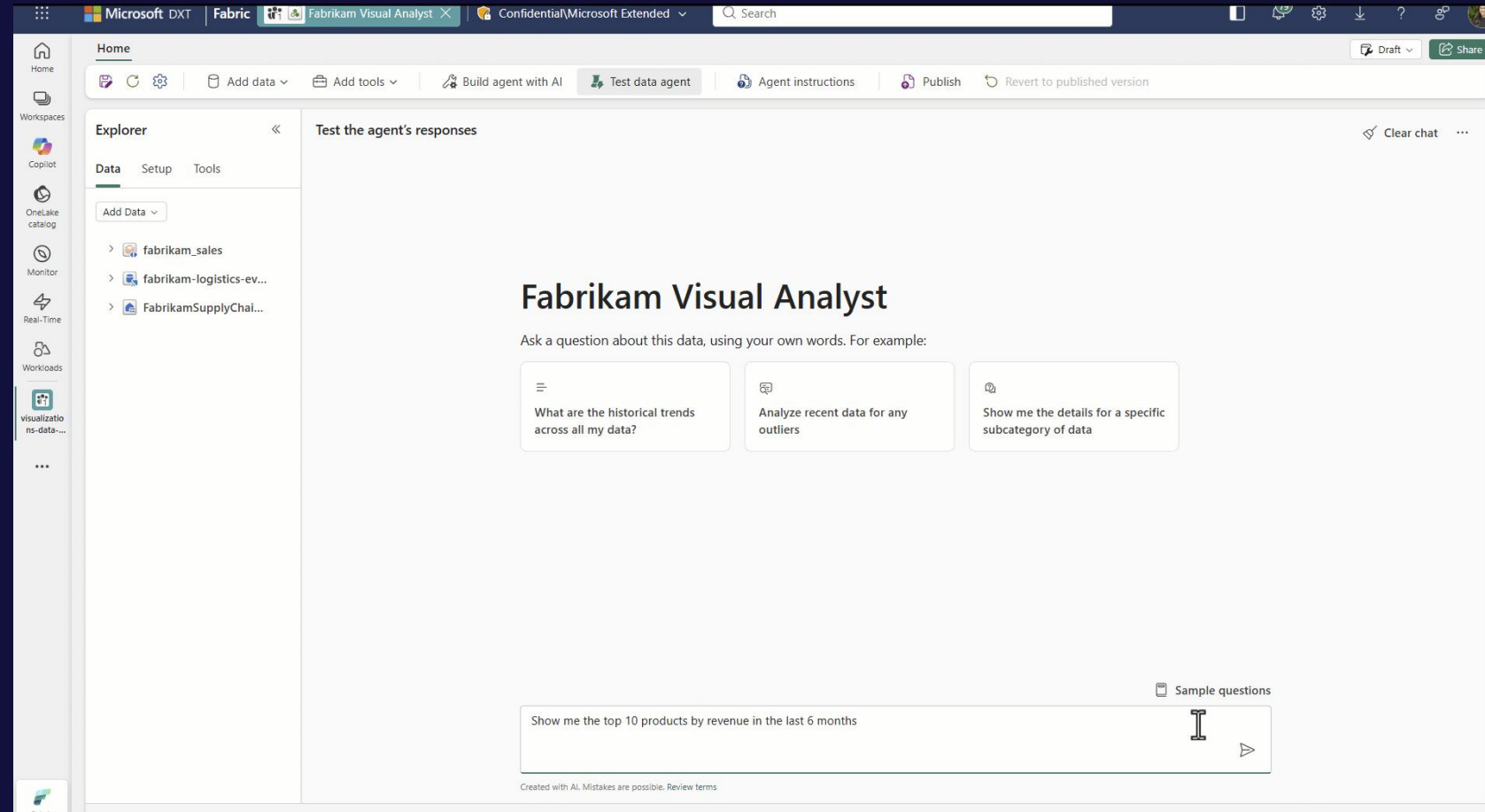
Created with AI. Mistakes are possible. [Review terms](#)

Visuals in Fabric Data Agent

Make complex data instantly understandable with **built-in visualizations** in the Data Agent

Supported visuals include **line, bar, stacked bar, pie, scatter, area, and stacked area charts**

Charts are **interactive** — hover for **tooltips** and **select/deselect series** to focus your analysis



NL2SQL Improvements

Access to **new sub-tools** to explore and generate a query

Enhanced support for **example query following** and **filter value substitution**

New **data exploration tools** to assess joins and filter values for 'novel' questions

The screenshot displays the Microsoft Fabric Customer Analysis Agent interface. The top navigation bar includes tabs for 'Fabric', 'Customer360', 'Customer Analysis Agent', and 'Confidential/Microsoft Extended'. A search bar is present on the right. The main workspace is titled 'Test the agent's responses' and shows a chat interface. A user prompt asks for the top 20 VIP customers by card-not-present spend. The agent's response provides a summary and a table of results. Below the table, a list of sub-tools is shown, including 'Analyzed Customer360 Lakehouse', 'Row Sampling', 'Value Distribution', 'Execute SQL', and 'Submit Final SQL'. A sidebar on the left contains navigation options like 'Home', 'Workspaces', 'Copilot', 'OneLake catalog', 'Monitor', 'Real-Time', and 'Workloads'. The bottom of the interface has a text input for asking questions.

Home

Customer360 Customer Analysis Agent Confidential/Microsoft Extended

Search

Trials activated: 13 days left

Home

Workspaces

Copilot

OneLake catalog

Monitor

Real-Time

Workloads

NL2SQL Agent ...

Test the agent's responses

Clear chat

Show top 20 VIP customers by card-not-present spend this year.

The top 20 VIP customers by card-not-present spend this year can be found in the file 'result_1.json'. This file includes customer ID, name, email, transaction count, and total spend.

If you would like to see the details for these customers, please let me know!

Table 1

Showing 1 of 1 rows

	ABC customer...	ABC full_name	ABC email	123 cnp_txn_co...	12f total_cnp_spend_usd
1	CUST0000158	Sanjay Garcia	sanjay.garcia4482@yahoo.com	1	31.14

Expand response

5 steps completed

Response time: 51 sec

- Analyzed Customer360 Lakehouse for: "Show the top 20 VIP customers ranked by their card-not-present spend for this year."
- Row Sampling
- Value Distribution
- Execute SQL
- Submit Final SQL

Sample questions

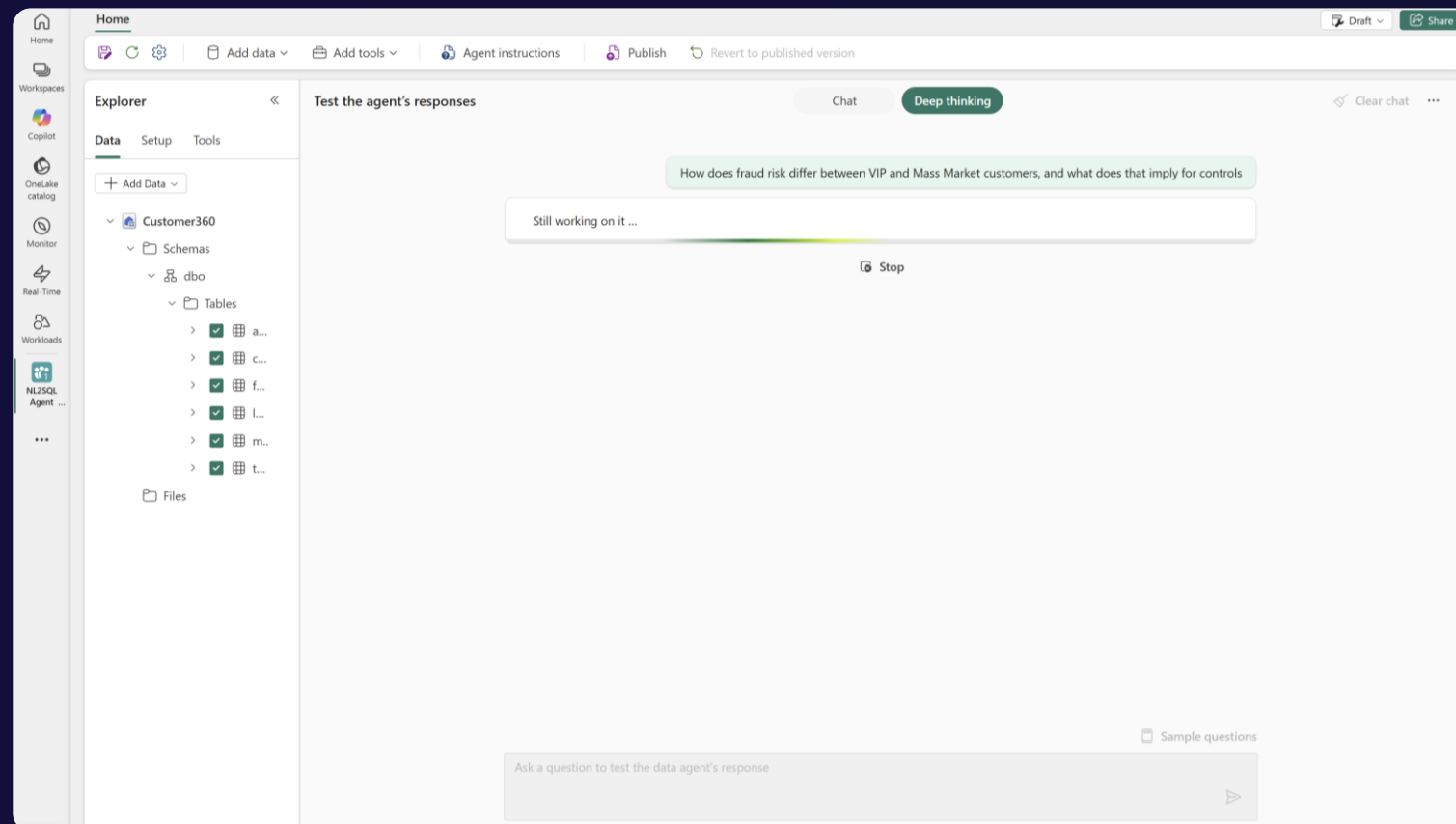
Ask a question to test the data agent's response

Deep Thinking Mode

New mode which **creates an explicit analysis plan** upfront and continuously refines it as new findings emerge

Connects context across data and , tools to produce more robust outputs

Designed for hard problems like **analysis, planning, and decision support**—trading speed for depth when it matters

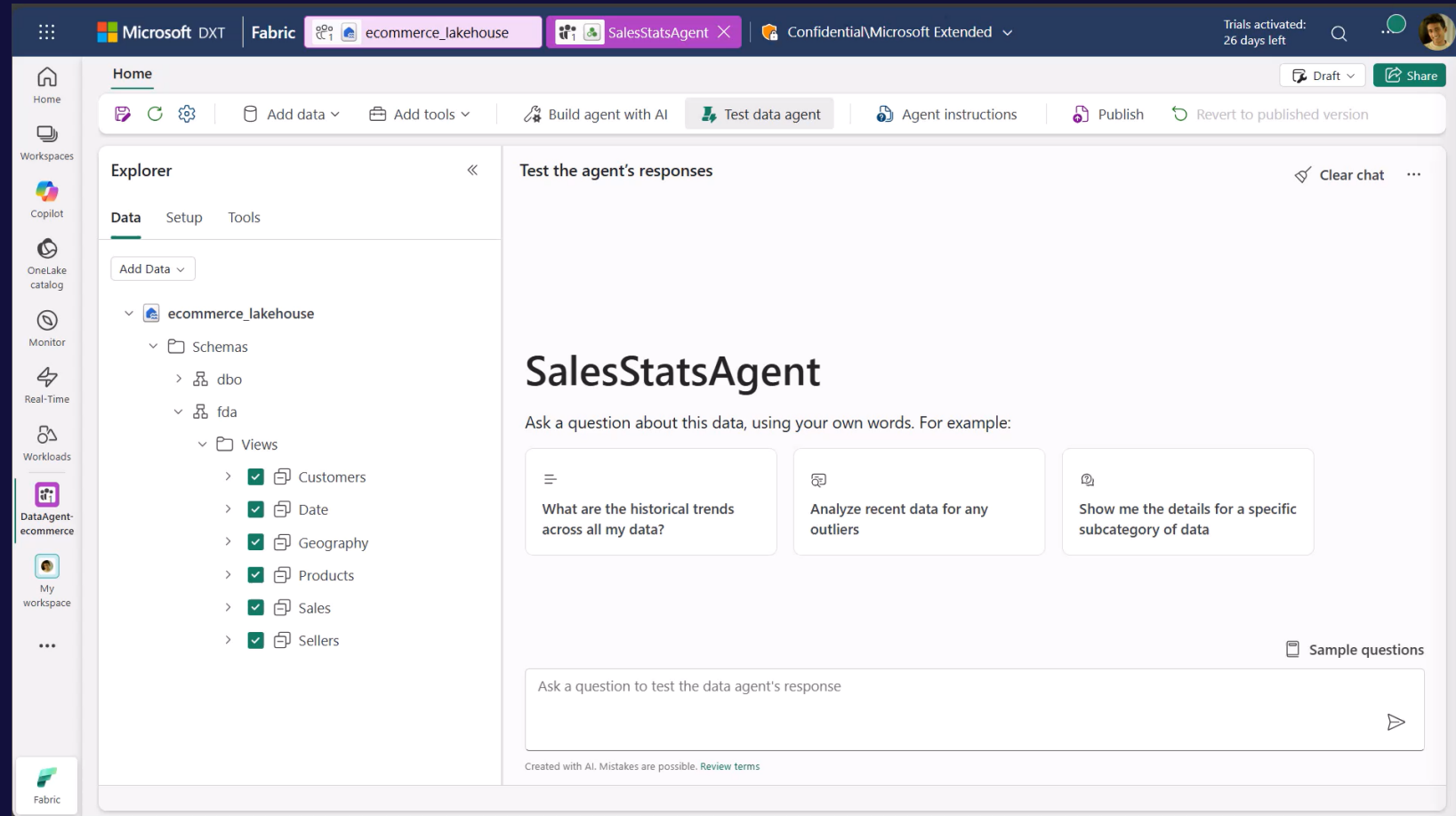


Assisted Setup Mode

Use a collaborative approach to generate contextual configurations for data agent

Improve existing data agents using an iterative approach to refine instructions and example queries

Validates configurations using creator feedback to resolve ambiguity and conflicts



Demo: Data Agent Creator Improvements

Home

Add data

Add tools

Build agent with AI

Test data agent

Agent instructions

Publish

Revert to published version

Explorer

Data

Setup

Tools

Add Data

> fabrikam_sales

> FabrikamSupplyChai...

demo-data

Test the agent's responses

Chat

Deep thinking

Clear chat

Fabrikam Logistics Agent

Ask a question about this data, using your own words. For example:

What are the historical trends across all my data?

Analyze recent data for any outliers

Show me the details for a specific subcategory of data

Ask a question to test the data agent's response

Created with AI. Mistakes are possible. [Review terms](#)

Why Data Agents?

To ground your data insights on Enterprise Knowledge

Consumers



End-users



Agents



Applications



Developers



Fabric



Copilot Studio



AI Foundry



M365



API endpoint/MCP

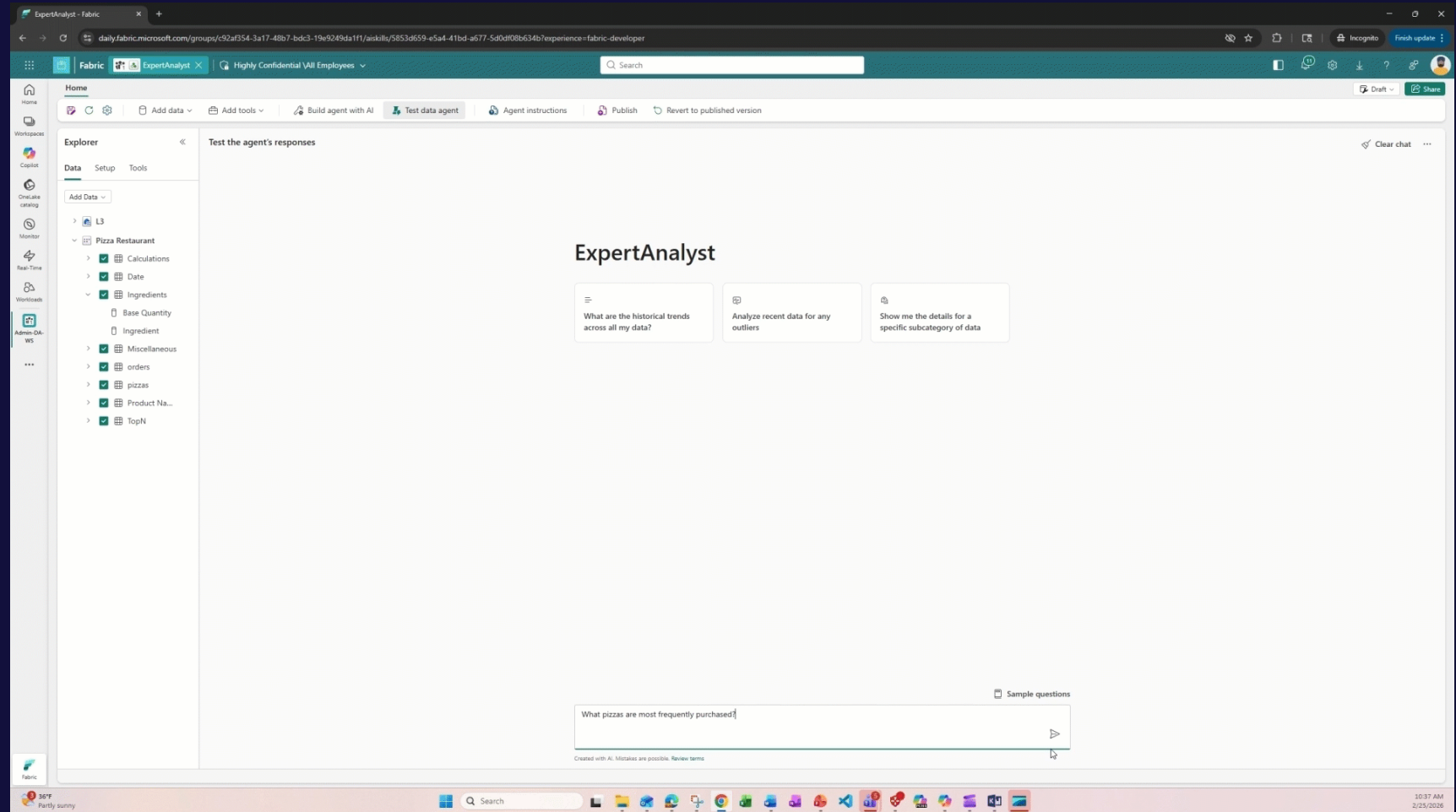
Data agents

Purview Integration: Data agent Audit Logs

As a Fabric Admin, see what users are asking Data Agent

Monitor interactions and sensitivity label references for each Data Agent

Captures user id, capacity, accessed resources, prompt, and agent response including query



Outbound Access Protection support with Data Agent

Data Exfiltration protection by blocking all outbound traffic from your Data Agent by default

Applied at the individual workspace level to enable granular control

Create exceptions to allow specific connections to access data sources outside the workspace

Power BI secure-workspace-analyst

Home Copilot Create Browse Workspaces secure-workspace-analyst OutboundSecured-DA mg_data_agent_44 mg_data_agent_44 Power BI

Recycle bin Create deployment pipeline Create app Manage access Workspace settings

+ New item New folder Import Migrate

Filter by keyword Filter

Choose from predefined task flows or add a task to build one

Select from one of Microsoft's predefined task flows or add a task to start building one yourself.

Select a predefined task flow Add a task

Import a task flow

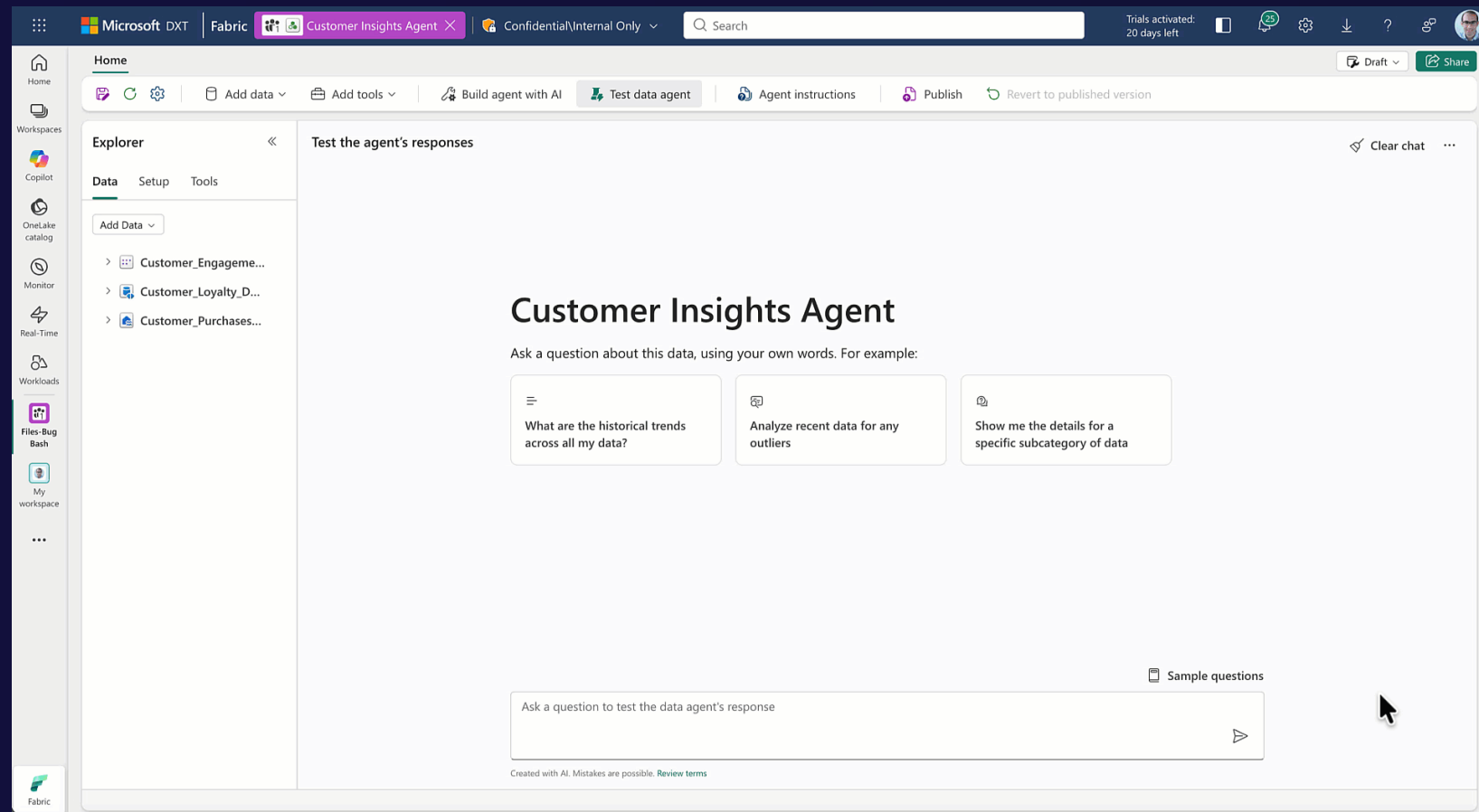
Name	Status	Type	Task	Owner	Refreshed	Next refresh
OutboundSecured-DA		Data agent	—	AdminUser01	—	—

Sneak Peek: Expand Data Agent Response

Return up to 1000 rows in a tabular preview

Search within the table preview and expand results for easier exploration

Coming soon: Enable download the full results as an Excel files

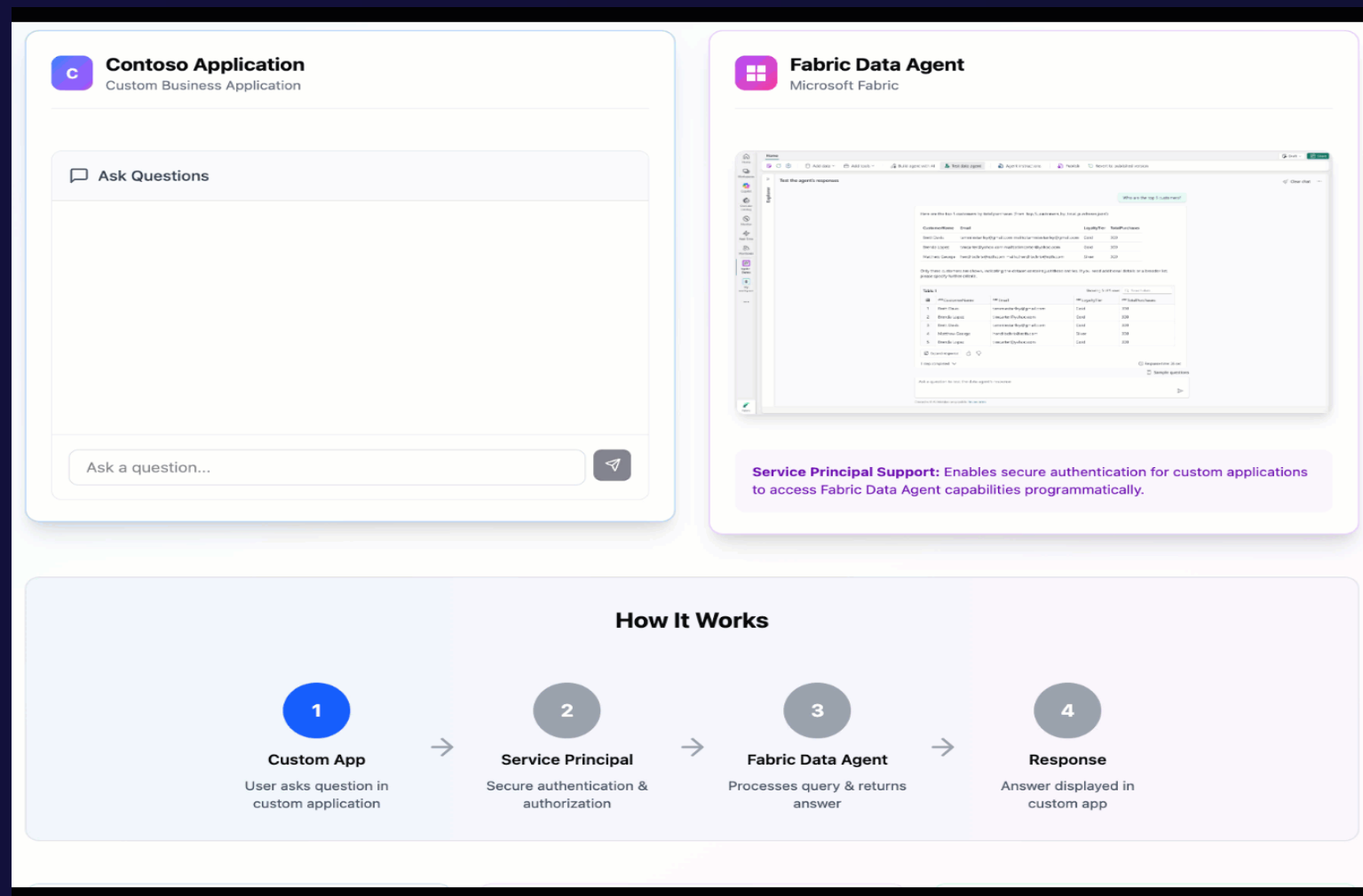


Sneak Peek: Service Principal Authentication

Enable secure, app-based access to Fabric data agents without requiring user sign-ins.

Connect other agents powered by Fabric data agents directly to your custom applications.

Use SPNs for a secure and seamless connection from your app to the Data Agent MCP server.

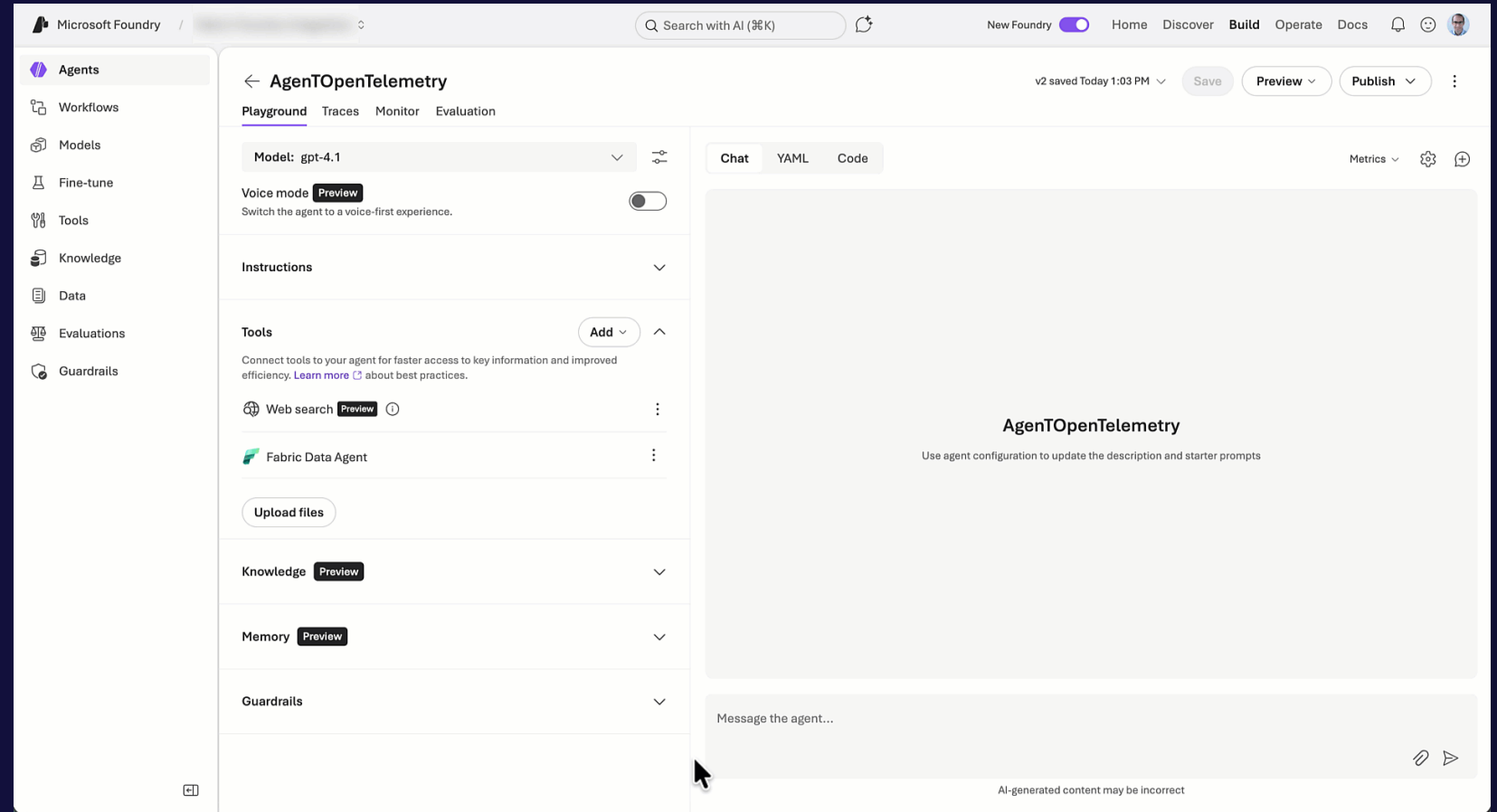


Sneak Peek: Foundry Observability

View Fabric data agent usage across production environments using a single, actionable interface.

Track agent performance with real-time metrics and alerts.

Use unified dashboards, live traffic monitoring, and end-to-end agent tracing to proactively detect drift and regressions.



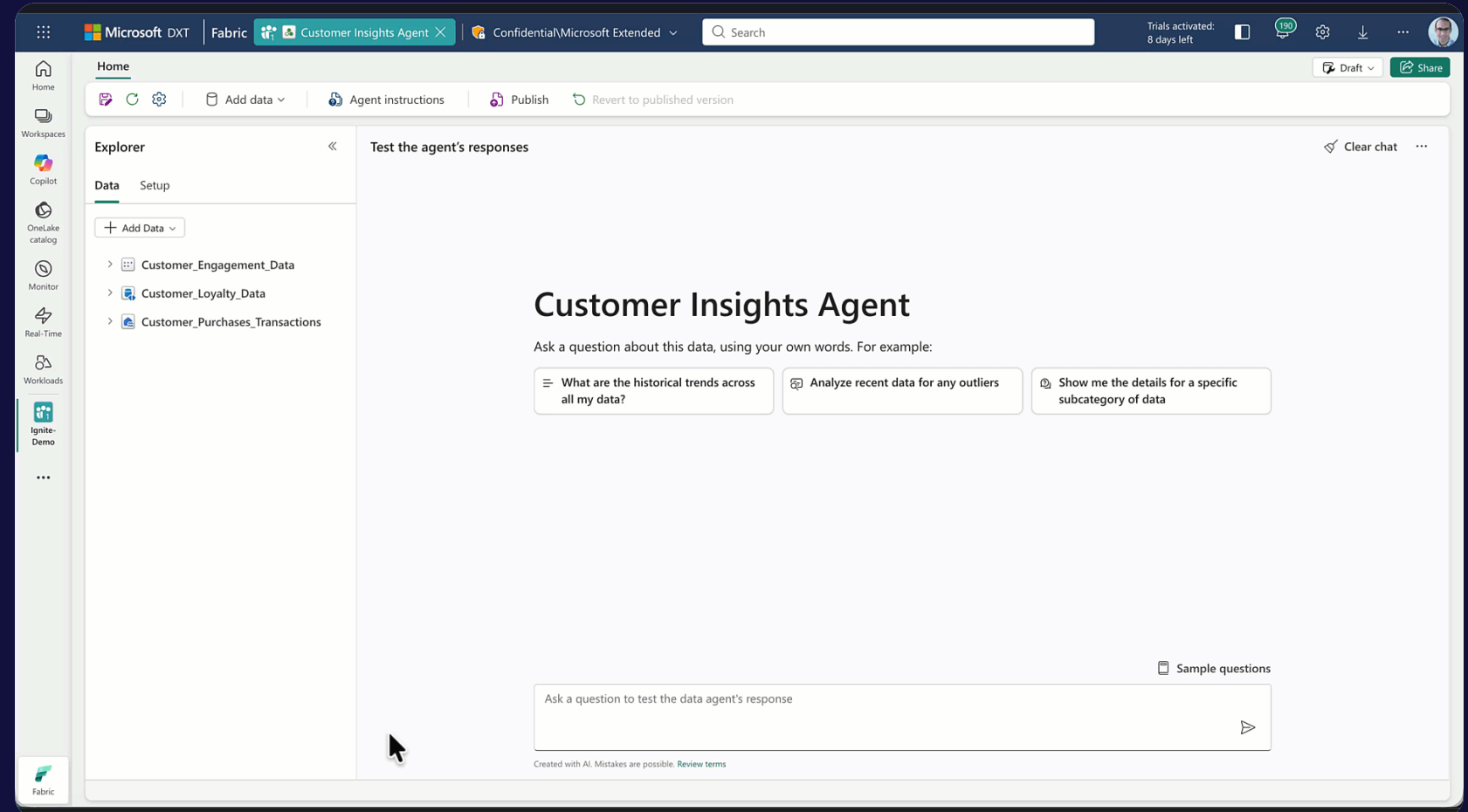
Fabric data agent integration with M365 Copilot

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

Coming soon: Publish to Org and status updates



Clear chat

- >  Customer_Engagement_Data
- >  Customer_Loyalty_Data
- >  Customer_Purchases_Transactions

Ask a question about this data, using your own words. For example:

- What are the historical trends across all my data?

- 🔍 Analyze recent data for any outliers

🔍 Show me the details for a specific subcategory of data

 Sample questions

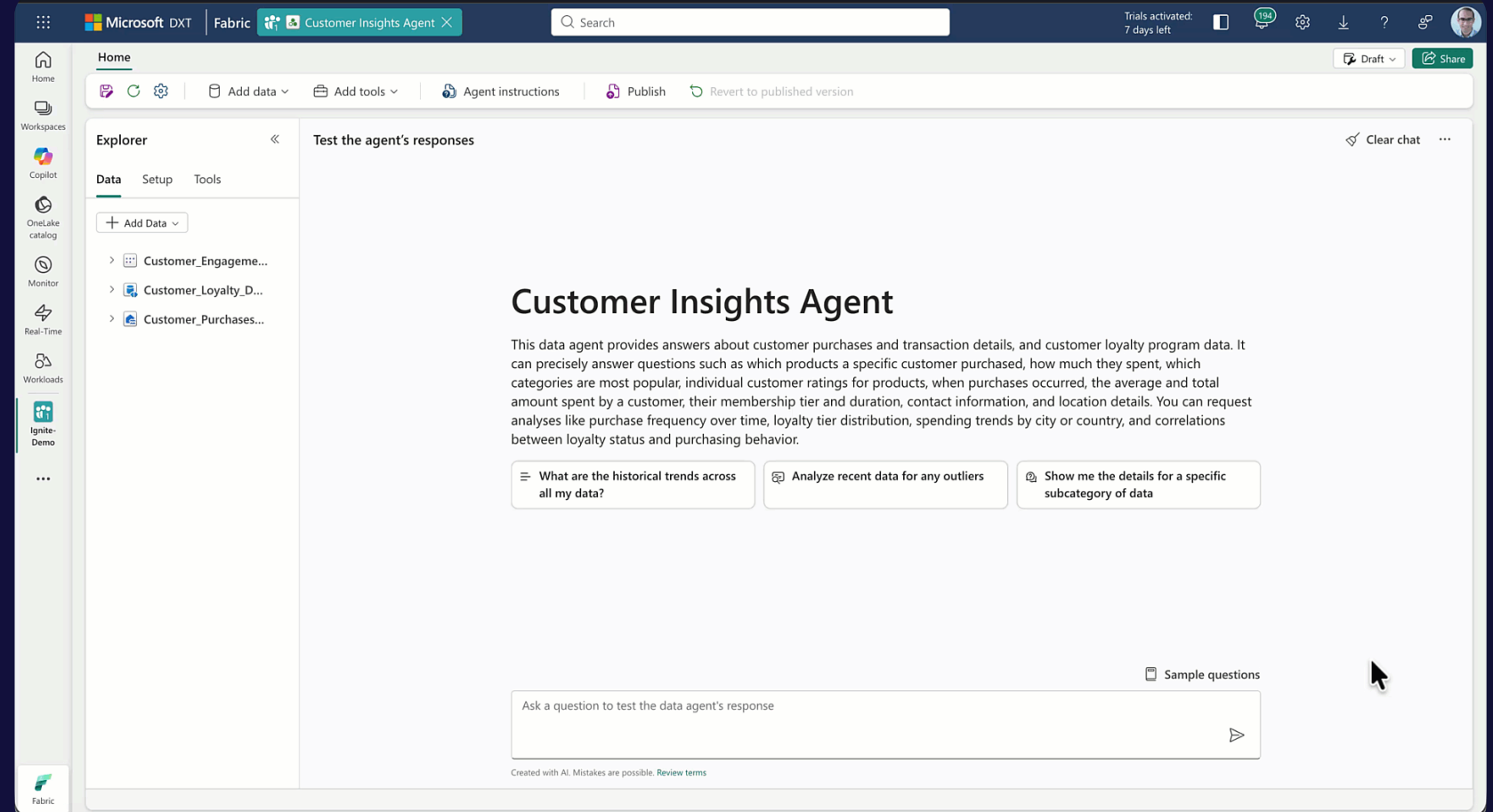
Ask a question to test the data agent's response

Data Agent MCP Server

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



Sneak Peek: Data Agent MCP Client

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

The screenshot displays the Microsoft DXT Fabric Customer Insights Agent interface. The top navigation bar includes the Microsoft DXT logo, the Fabric workspace name, and tabs for 'Customer Insights Agent', 'Email_Service', and 'Pricing_Promotions'. A search bar and a 'Trials activated: 26 days left' notification are also present. The main interface is divided into two panels. The left panel, titled 'Explorer', shows a 'Data' tab with a list of data sources: 'Customer_Engagement_Data', 'Customer_Loyalty_Data', and 'Customer_Purchases_Transactions'. The right panel, titled 'Test the agent's responses', shows a chat interface. A message from the user asks: 'What is the average purchase amount per customer in each loyalty tier?'. The agent's response states: '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', and 'Silver: \$1,223.64 per customer'. Below the list, the agent says: 'Let me know if you want further breakdowns or details!'. A table titled 'Table 1' is displayed, showing 4 rows of data. The table has two columns: 'LoyaltyTier' and 'AveragePurchaseAmountPerCustomer'. The data rows are: 1 Platinum (\$1,169.19), 2 Gold (\$1,230.36), 3 Silver (\$1,223.64), and 4 Bronze (\$1,223.64). The table is labeled 'Showing 4 of 4 rows' and has a search bar. Below the table, there is an 'Expand response' button. At the bottom of the chat interface, there is a text input field with the placeholder 'Ask a question to test the data agent's response' and a 'Sample questions' link. The bottom of the interface shows the Fabric logo and a disclaimer: 'Created with AI. Mistakes are possible. Review terms'.

Microsoft DXT | Fabric | Customer Insights Agent | Email_Service | Pricing_Promotions | Search | Trials activated: 26 days left

Home | Draft | Share

Home | Add data | Add tools | Agent instructions | Publish | Revert to published version

Explorer | Data | Setup | Tools

+ Add Data

Customer_Engagement_Data

Customer_Loyalty_Data

Customer_Purchases_Transactions

Test the agent's responses

1 step completed | Response time: 8 sec

What is the average purchase amount per customer in each loyalty tier?

Here is the average purchase amount per customer by loyalty tier (full results are saved in 'result_1.json'):

- Platinum: \$1,169.19 per customer
- Gold: \$1,230.36 per customer
- Silver: \$1,223.64 per customer

Let me know if you want further breakdowns or details!

Table 1 | Showing 4 of 4 rows | Search data...

	LoyaltyTier	AveragePurchaseAmountPerCustomer
1	Platinum	1169.189903846155
2	Gold	1230.362059620596
3	Silver	1223.6386206896555
4	Bronze	1233.6936050955405

Expand response

1 step completed | Response time: 4 sec

Sample questions

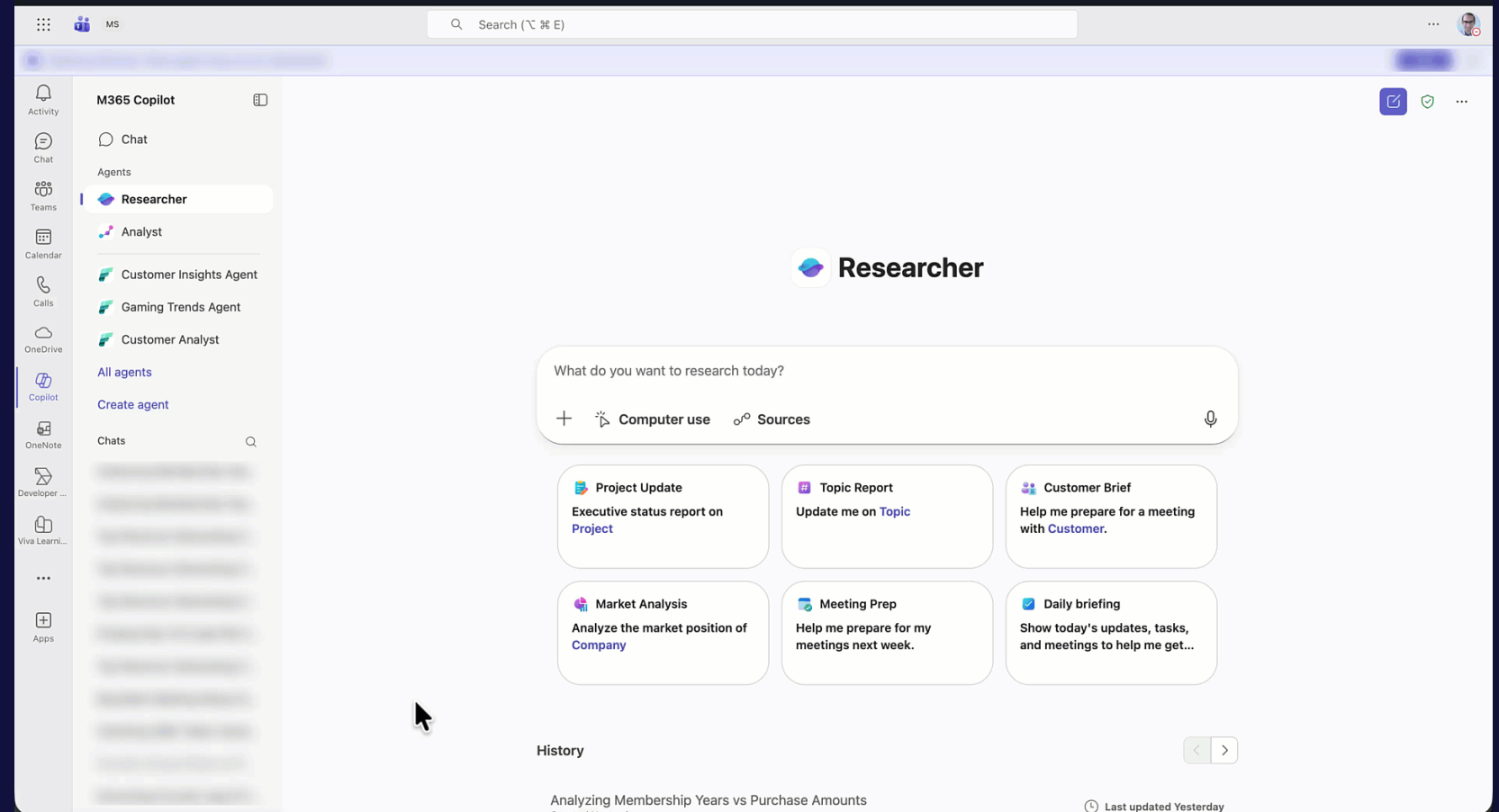
Ask a question to test the data agent's response

Created with AI. Mistakes are possible. Review terms

Sneak Peek: Integration with Researcher in Microsoft 365 Copilot

Researcher delivers clear, evidence-based, and insightful reports by pulling and organizing information from various resources

Empower Researcher to tap into organizational data in OneLake through data agents for more in-depth, multi-step analysis

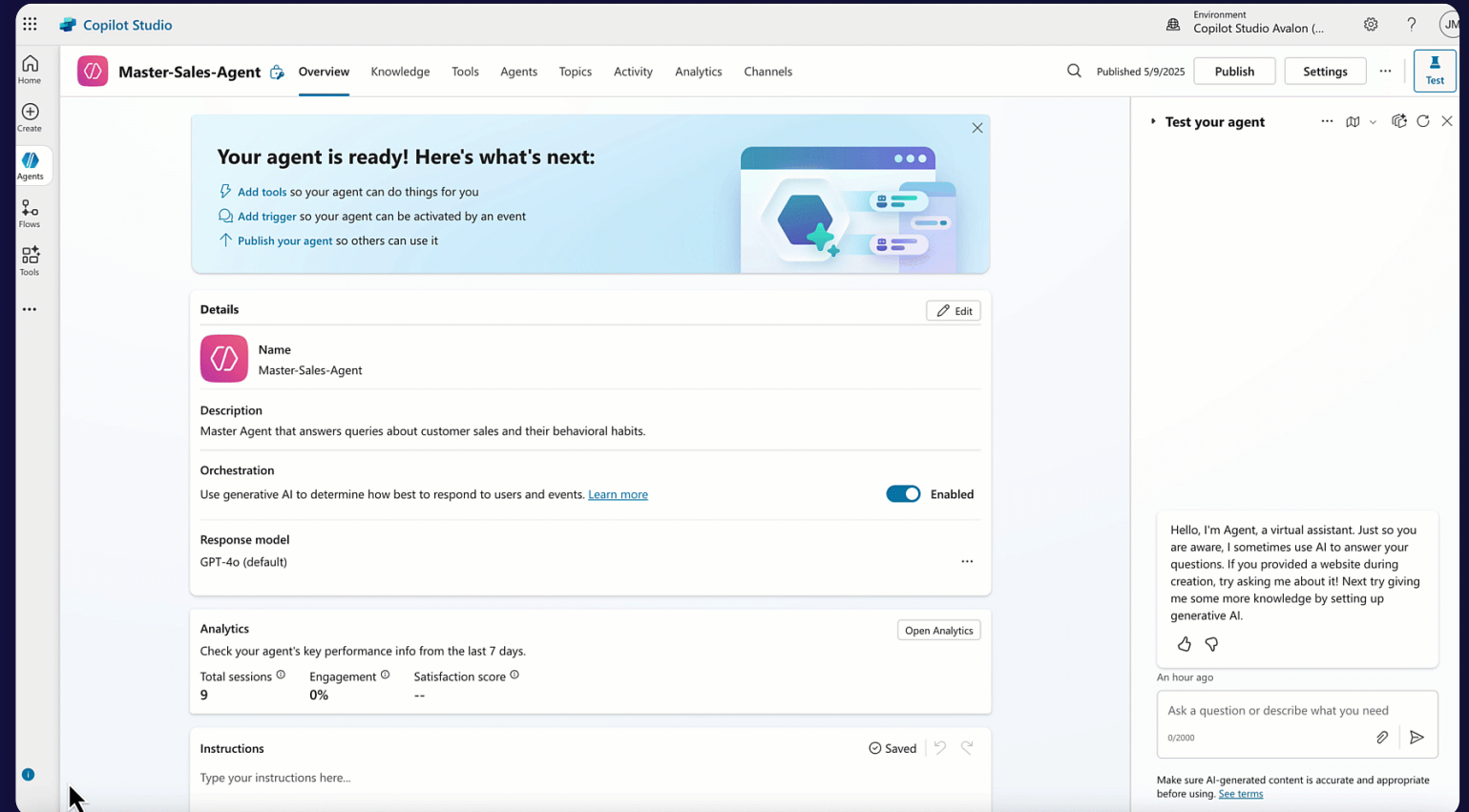


Fabric Data Agent integration with Copilot Studio

Coming soon: Support for publishing to M365 Copilot

Coming soon: Enable citing Fabric data agent in topics

Coming soon: Support for progress notification and streaming to help with perceived latency

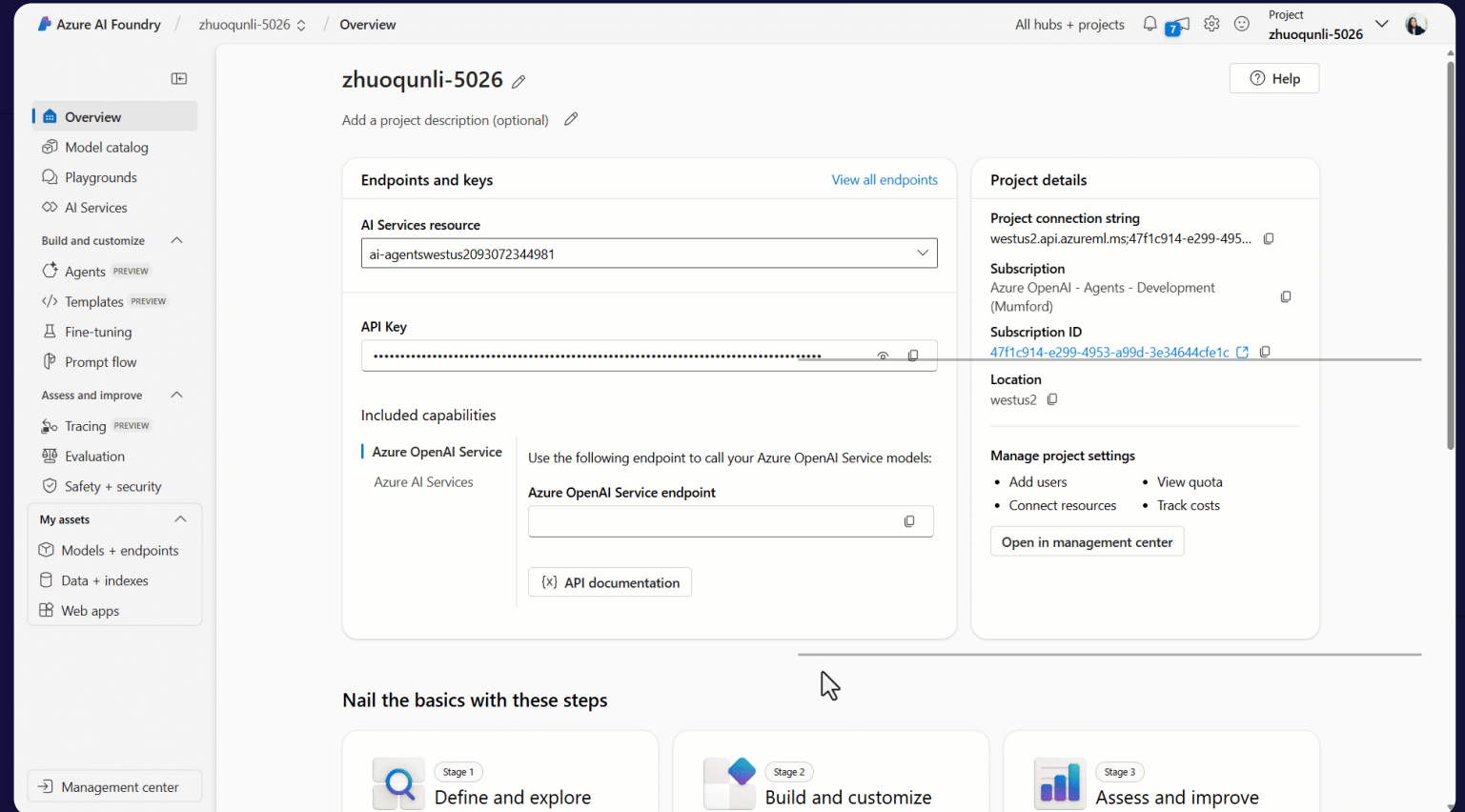


Fabric data agent integration with Microsoft Foundry

Coming soon: Support to add multiple Fabric data agents to Foundry agent

Coming soon: Enhance the experience to add Fabric data agent using OneLake catalog

Coming soon: Support for progress notification and streaming to help with perceived latency



Roadmap

Private Previews

- Visualizations & Creator Assisted Workflows
- Improved Natural Language to SQL reasoning tools

Coming soon (May 2026 onwards)

- Improved analysis tools: Code Interpreter
- Agent Observability in Foundry
- Service Principal Authentication
- Schema Descriptions
- Creator/Consumer feedback loop
- Unstructured data in OneLake

Learn more

Get started

<https://aka.ms/Fabric/create-data-agent>

<https://aka.ms/fabric/data-agent/sdk/docs>

<https://aka.ms/data-agent-evaluation-sample>

<https://aka.ms/data-agent-evaluation-sample>

Power BI Semantic Models + Data Agents

<https://aka.ms/data-agent/semantic-model/best-practices>

Call data agent endpoints

<https://aka.ms/fabric/data-agent-python-client-sdk>



Feature request?

ideas.fabric.microsoft.com

Incoming Data Agents Private Previews

Private Preview



Incoming Private Previews

- Interested in taking a first look at some of our upcoming features?
- Sign-up using the following link:
aka.ms/DA-private-preview



Data agent related sessions at FabCon

Unlocking Copilot in Fabric: Administration, governance and beyond	Wednesday March 18	3:05-4:05 PM	C108-109
AI Answers, Done Right: When to use Power BI Copilot vs. Fabric Data Agents	Thursday March 19	8:00-9:00 AM	TMB 2-3
Building and Deploying Smarter Data Agents in Microsoft Fabric	Thursday March 19	10:10-11:10 AM	TMB4
Sharing experiences: AI and Agentic Apps	Thursday March 19	10:10-11:10 AM	C105-106
Autonomous Fabric: Agentic Data Quality using Data Agents	Friday March 20	11:30 AM – 12:30 PM	C105-106
Build Smarter Analytics Assistants with Fabric Data Agents	Friday March 20	2:00-3:00 PM	C105-106