Microsoft

Build and use Trustworthy Data & AI for Statistics

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Microsoft



Microsoft

"AI systems are only as trustworthy as the data they are grounded in—and NSOs are the gold standard for trusted data."

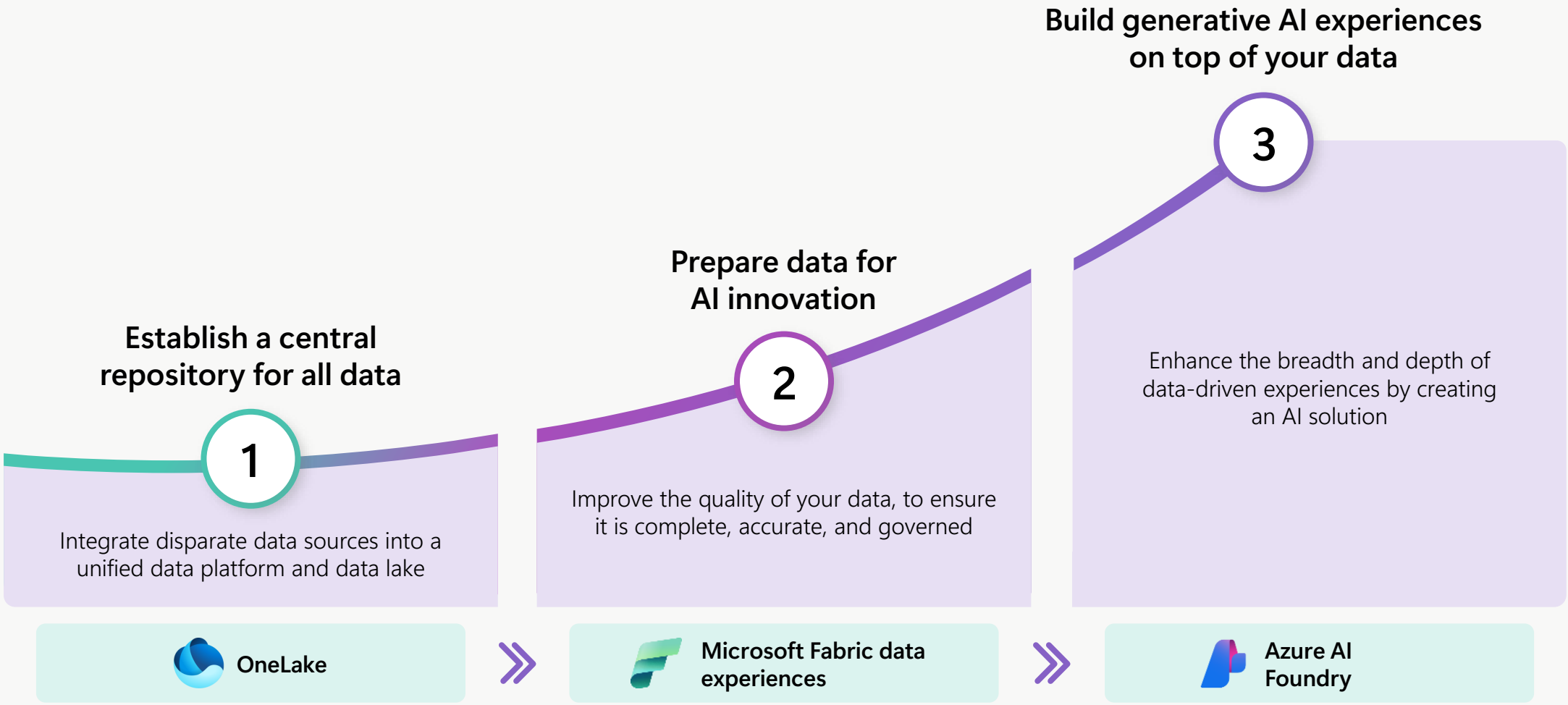
Microsoft

Making AI-Ready data a reality

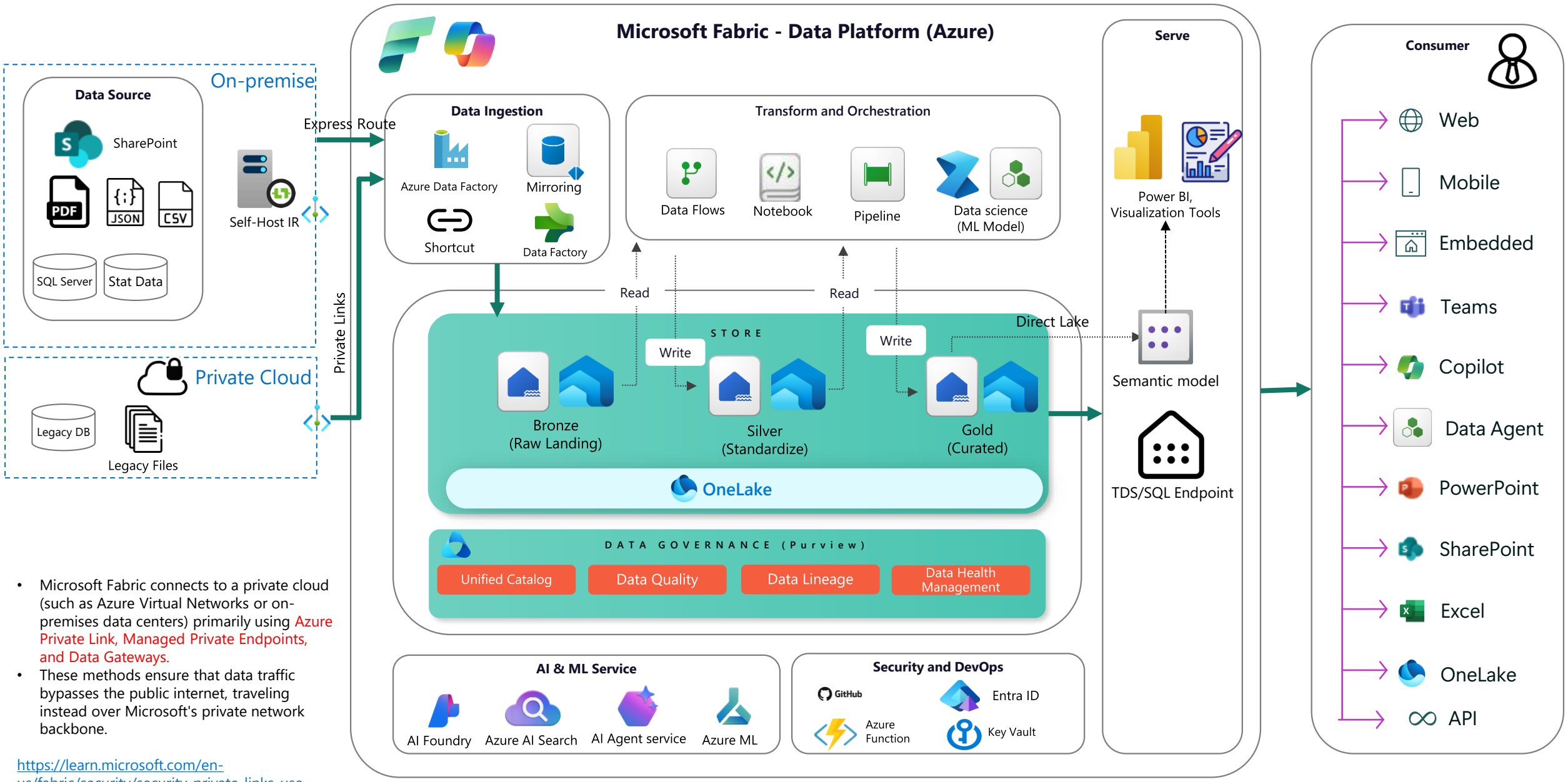
Microsoft

Foundation	What Microsoft Contributes
AI-Ready Data Systems	Scalable platforms, retrieval-based AI access, structured + unstructured data integration
High-Quality Data & Metadata	AI-assisted metadata enhancement, semantic models, explainable statistics
Governance & Partnership	Responsible AI usage, standards alignment, long-term collaboration with NSOs

Fuel your journey to AI innovation by getting your data AI ready



Data Platform Architecture



- Microsoft Fabric connects to a private cloud (such as Azure Virtual Networks or on-premises data centers) primarily using Azure Private Link, Managed Private Endpoints, and Data Gateways.
- These methods ensure that data traffic bypasses the public internet, traveling instead over Microsoft's private network backbone.

https://learn.microsoft.com/en-us/fabric/security/security-private-links-use

Microsoft Fabric

The unified data platform for the era of AI



Data Factory



Data Engineering



Data Warehouse



Data Science



Real Time Intelligence



Power BI



Operational Databases



Unified data foundation

OneLake

UNIFIED

Copilot experience  | Security and governance  | Compute and Storage | Business model

Single...

- Sign-on
- Navigation and UX model
- Data Lake and storage format
- Data copy for all engines
- Data Hub
- Governance & compliance experience
- Domains & workspace organization
- Security model
- CI/CD
- Monitoring hub



Data Engineer

- **Execute faster** with the ability to spin up a Spark VM cluster in seconds, or configure with familiar experiences like Git DevOps pipelines for data engineering artifacts
- **Streamline your work** with a single platform to build and operate real-time analytics pipelines, data lakes, lake houses, warehouses, marts, and cubes using your preferred IDE, plug-ins, and tools
- **Reduce costly data replication** and movement with the ability to produce base datasets that can serve data analysts and data scientists without needing to build pipelines

Supporting experiences

Data Factory
Data Warehouse
Data Engineering
Real-Time Intelligence

Serve data via warehouse or lakehouse



Data Scientists

- **Quickly tune a custom model** by integrating a model built and trained in Azure ML in a Spark notebook
- **Work faster** with the ability to user your preferred data science frameworks, languages, and tools
- **Bypass engineering dependencies** with the ability to use your preferred no-code ML Ops to deploy and operate models in production
- **Tap into proven-at-scale models and services** to accelerate your AI differentiation (AOAI, Cognitive Services, ONNX integration, etc.)

Supporting experiences

Data Science
Azure ML

Serve transformed data



Analysts

- **Avoid slow, progress-stagnating data wrangling** by seamlessly triggering a workflow that can unlock data engineering tools and capabilities quickly
- **Accelerate your work** with visual and SQL based tools for self-serve data transformations and modeling as well as self-serve tools for reporting, dashboards, and data visualizations
- **Turn data into impact with industry-leading BI tools and integration with the apps your people use everyday like Microsoft 365**

Supporting experiences

Data Warehouse
Real-Time Intelligence
Power BI

Serve insights via embedding



User

- **Make more data-driven decisions** with actionable insights and intelligence in your preferred applications
- **Maintain access to all the data you need,** without being overwhelmed by data ancillary to your role thanks to fine grain data access management controls
- **Act on data, at scale and in a timely manner** by describing business conditions in a no-code experience to launch actions such as Email, Teams notifications, Power Automate flows and call into third party action systems

Supporting experiences

Power BI
Microsoft 365

Serve data via warehouse or Lakehouse



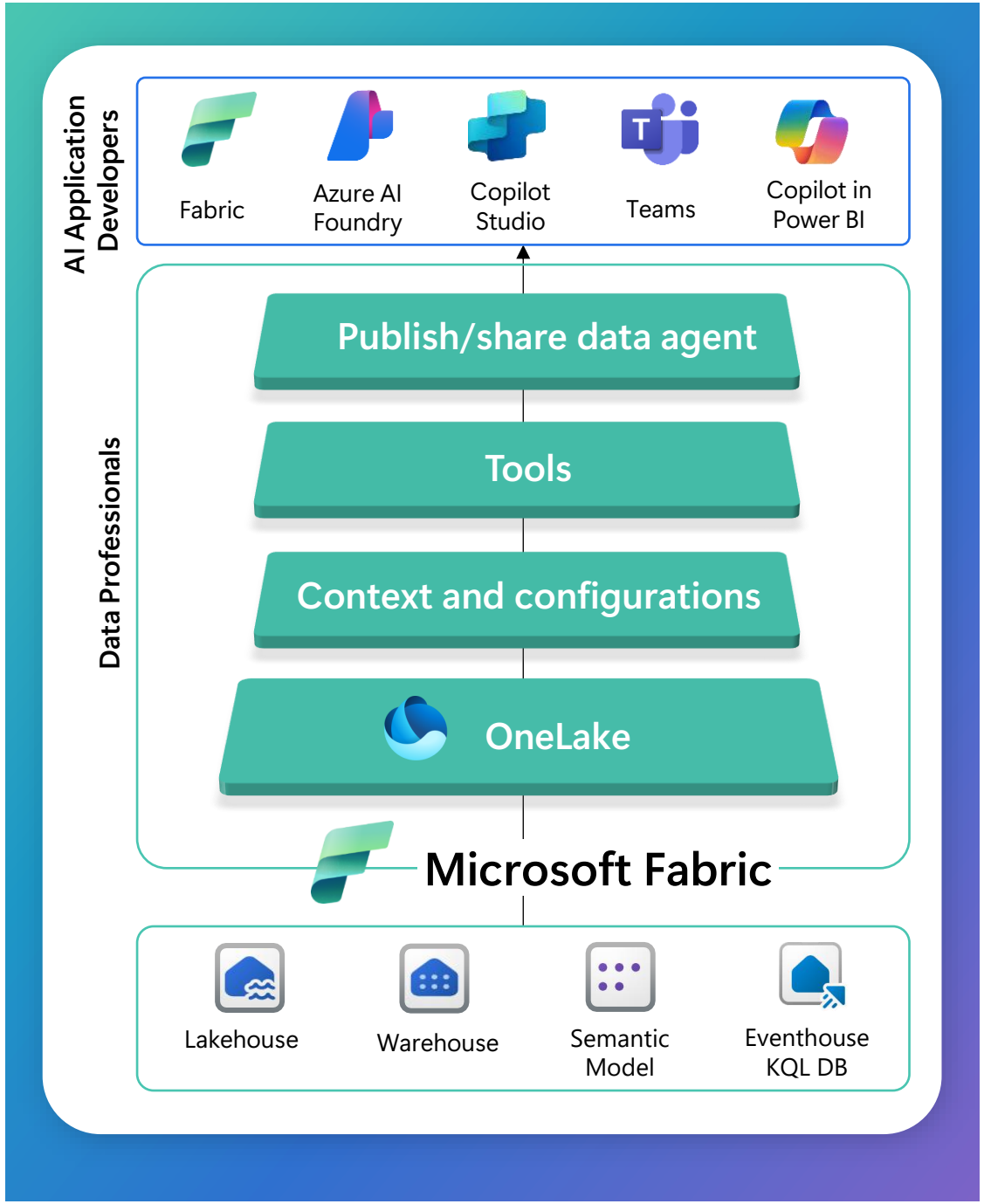
Data Stewards

- **Maintain visibility and control of costs** with a unified consumption and cost model that provides evergreen spend optics on your end-to-end data estate
- **Gain full visibility and governance** over your entire analytics estate from data sources and connections to your data lake, to users and their insights

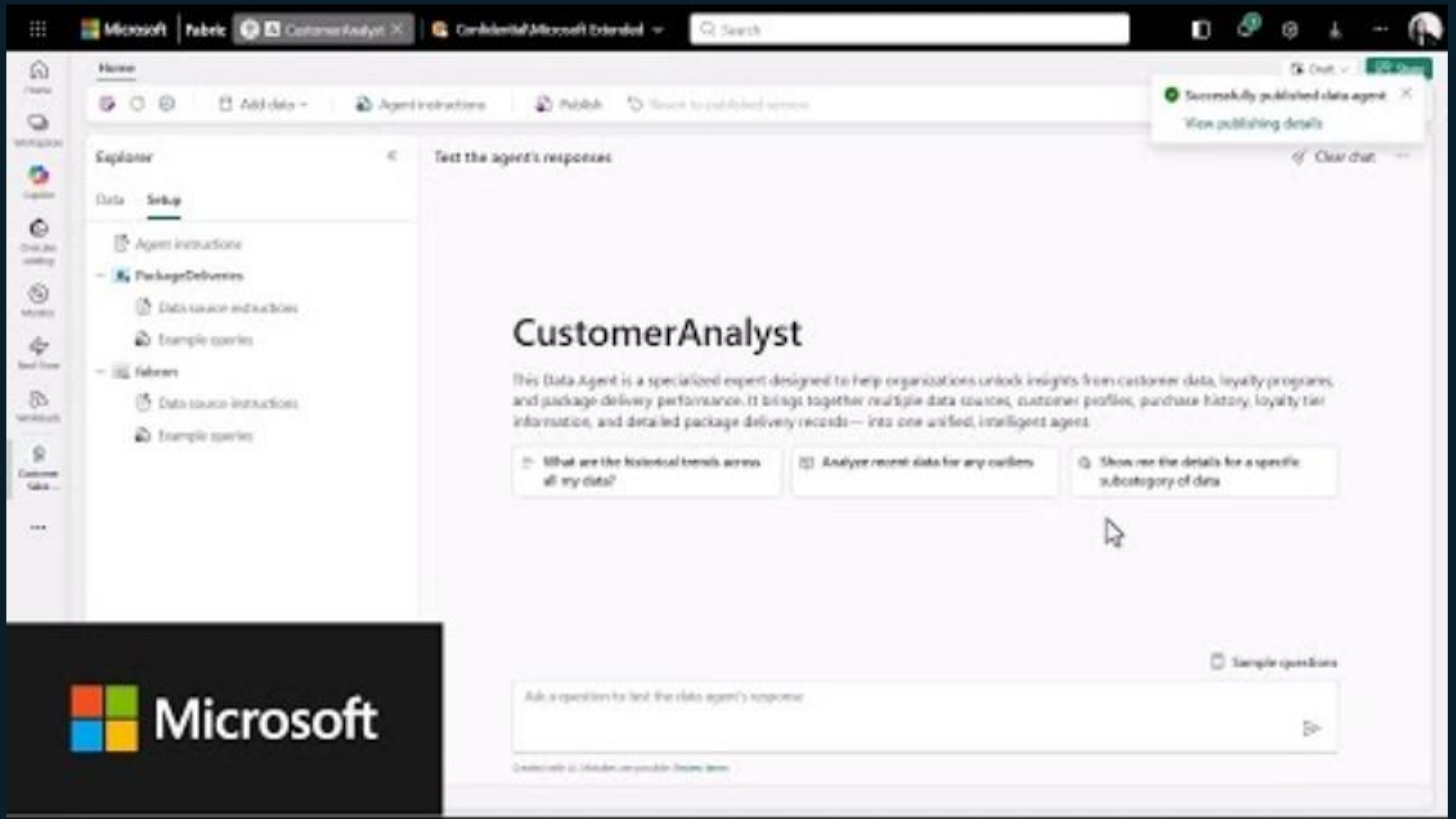
Turn questions into insights with Fabric data agents

Explore data and guide AI outputs using natural language and connected sources

- Create conversational agents that understand your domain data stored in OneLake and answer questions in natural language
- Reduce time to insight by turning plain-language questions into executable queries
- Train agents with instructions and connect up to 5 sources like lakehouses or KQL databases
- Access agents inside or outside of Fabric



Fabric Data Agent Integrate Microsoft 365



Microsoft Purview

Integrated solutions to secure & govern your entire data estate

DATA SECURITY

Secure data across its lifecycle, wherever it lives

- Data Loss Prevention
- Insider Risk Management
- Information Protection

DATA GOVERNANCE

Confidently activate your data & accelerate time to insights

- Unified Catalog
- Data Quality
- Data Lineage
- Data Health Management

DATA COMPLIANCE

Manage critical risks and regulatory requirements

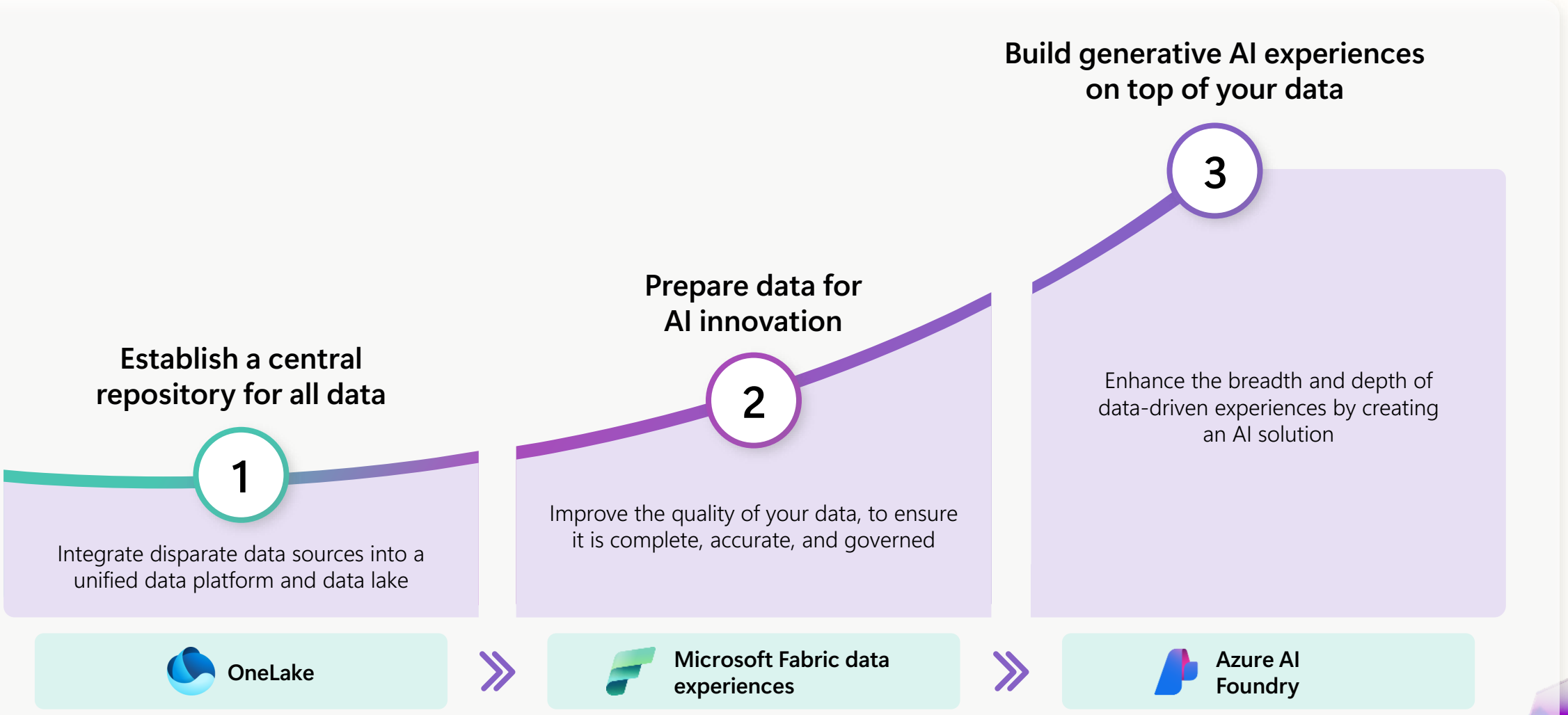
- Compliance Manager
- eDiscovery and Audit
- Communication Compliance
- Data Lifecycle Management
- Records Management

Unstructured & Structured data | Traditional and AI generated data | Microsoft and Multi-cloud

Shared platform capabilities

AI-based efficiency, Data Map, Classification, Labels, Audit Logs, Policies, Data Connectors

Fuel your journey to AI innovation by getting your data AI ready



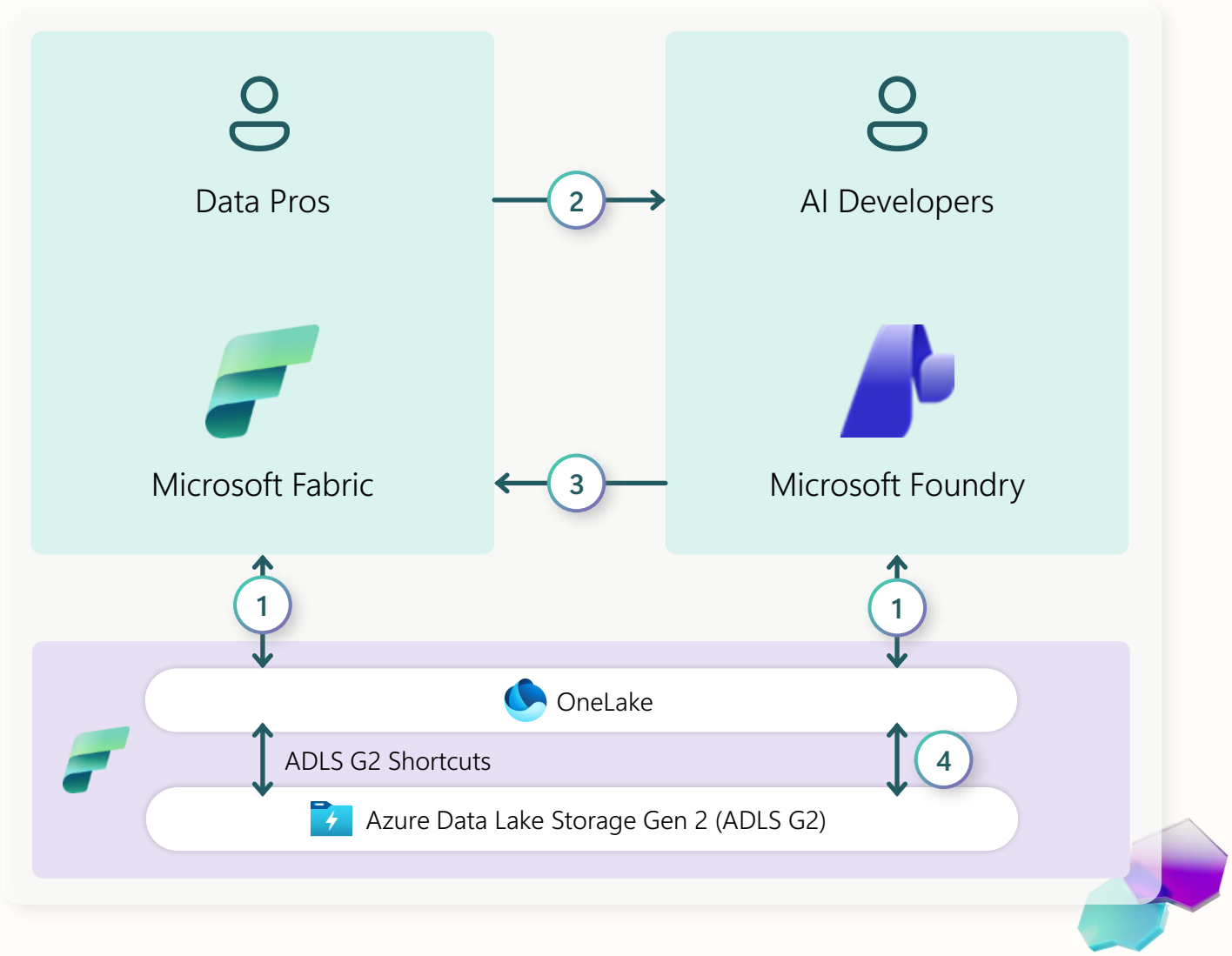
Fabric and Microsoft Foundry integration

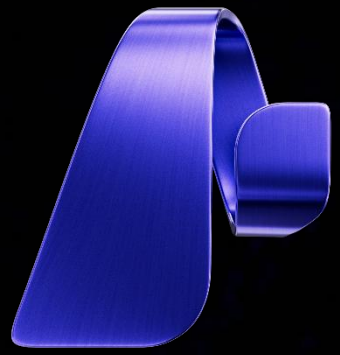
1. Data Pros and AI Pros access, use and process data across the AI lifecycle with OneLake as the connective tissue.

2. Data Pros can pre-process data and share AI-ready data with developers. Once in Microsoft Foundry, AI developers can evaluate their models and create generative AI applications and custom copilot experiences.

3. AI Pros can make their models accessible in Fabric for Data Pros to employ.

4. Data Pros can enrich their analytics workflows in their lakehouse and warehouse or serve through Power BI using Direct Lake mode.





Microsoft Foundry

The AI app and agent factory

Microsoft Foundry

Streamline development with native IDE experiences

GitHub · Visual Studio · Visual Studio Code · Copilot Studio

Models · Agent Service · IQ · Tools · Machine Learning

Build context-aware and action-oriented agents with 1,400+ pre-built connections and MCP tools

Adobe · ATLASSIAN · SAP · servicenow · UiPath · Microsoft Bing · Microsoft Fabric · Microsoft OneLake

Control Plane

Leverage a complete signals management layer with Microsoft Security integrations

Microsoft Agent 365 · Microsoft Defender · Microsoft Purview · Microsoft Entra

Security, compliance, and governance

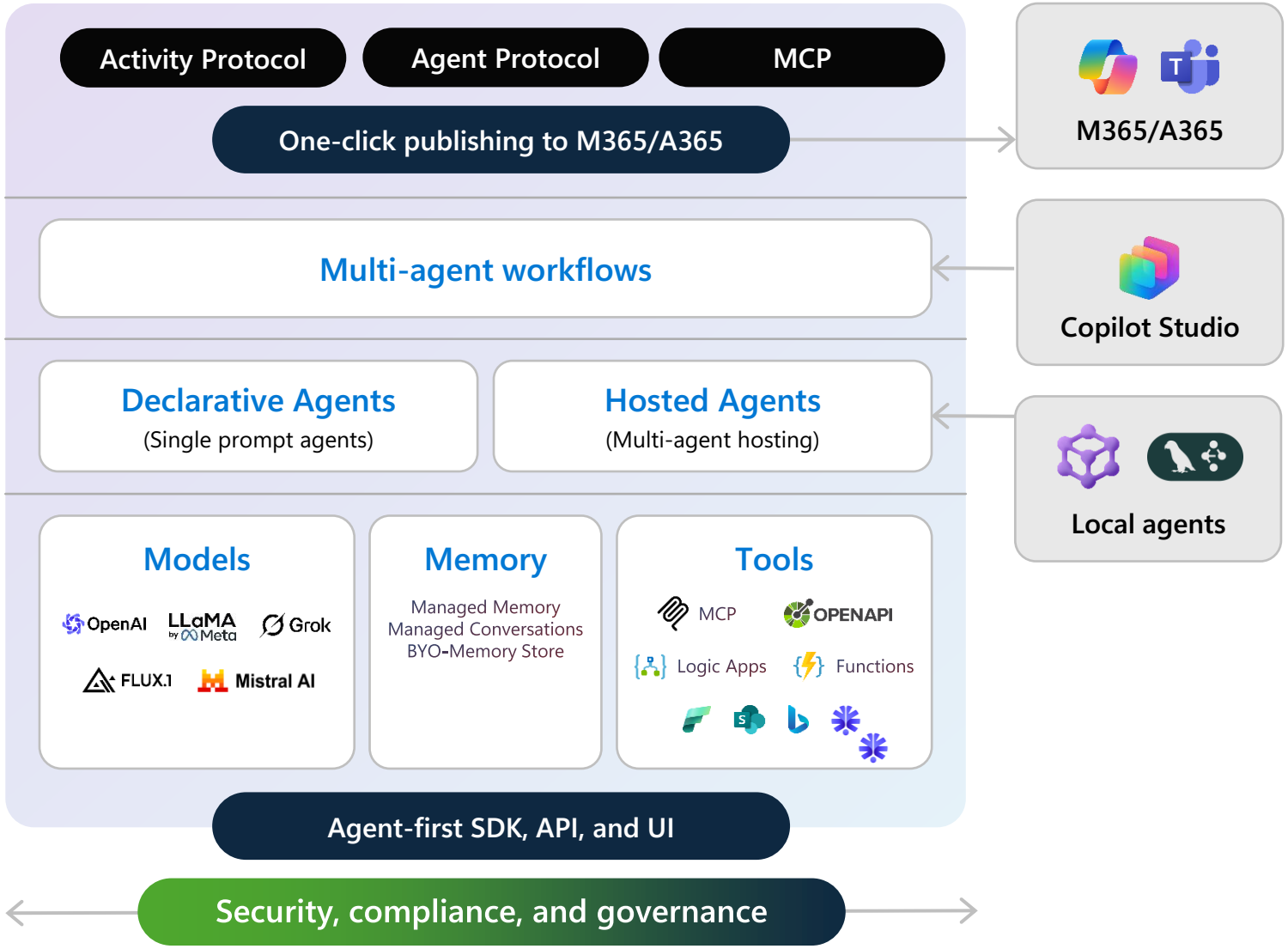
Foundry Agent Service

Open by design
Build with any framework or protocol

Connected intelligence everywhere
Empower agents with memory, knowledge, and over 1,400 MCP-enabled connectors

Enterprise-grade trust and reach
Deploy confidently and one-click publishing to Microsoft 365

Build AI apps and agents that scale



Foundry Models

Every model.
Every use case.
One platform.

Avoid model lock-in:

- Flexible model selection
- Curated for enterprise
- Explore, compare, and swap models quickly

Leverage the widest selection of models on any cloud

11,000+ foundational, open, reasoning, multimodal, and industry-specific models

Models direct from Azure

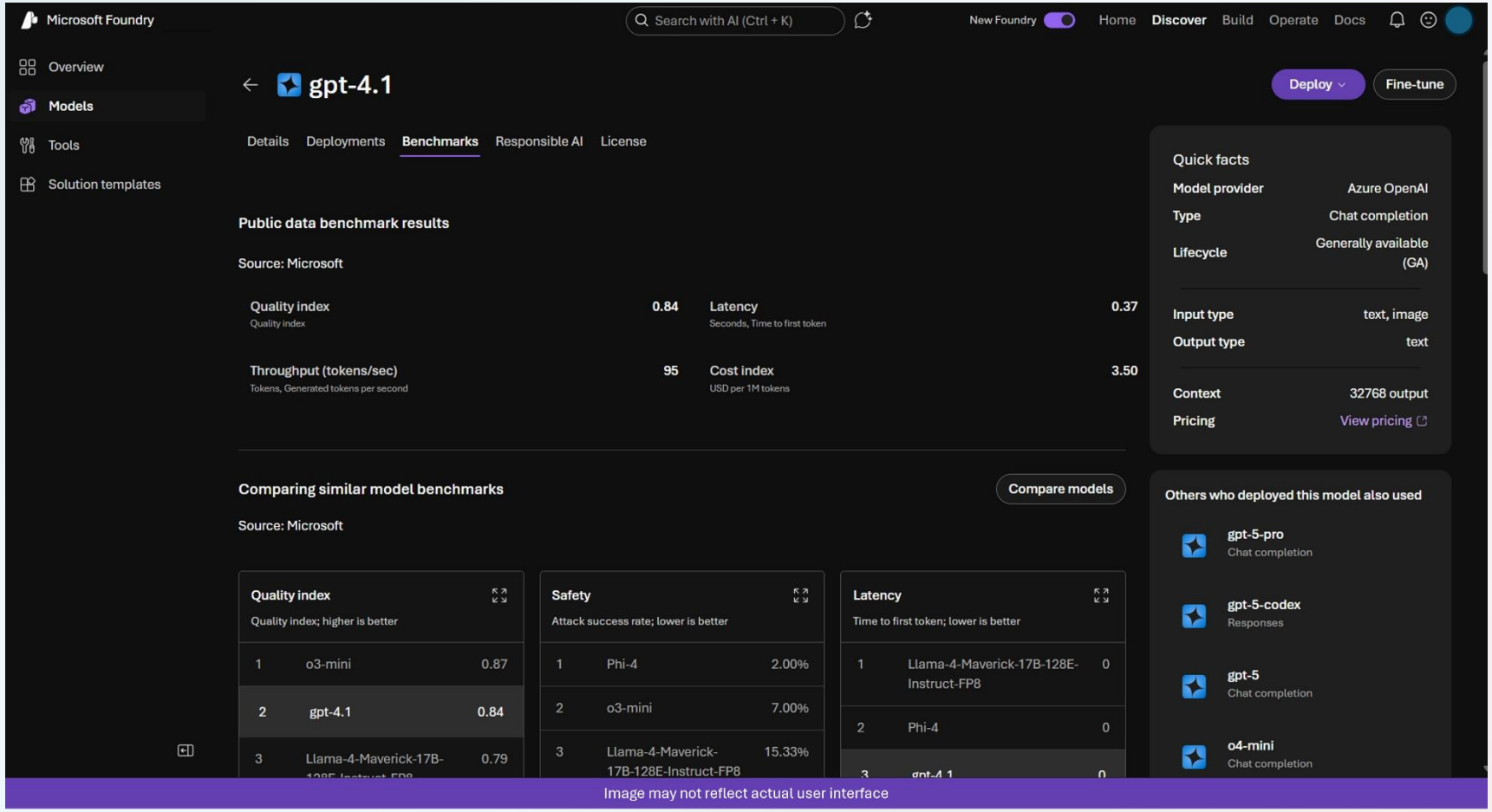
Azure OpenAI
Azure DeepSeek
Azure Mistral AI
Azure Grok
Azure Black Forest Labs
Azure Llama

Models from Partners & community

Cohere
Hugging Face
NVIDIA
Nixtla
Databricks
SIGHT MACHINE
saifr
BAYER
Rockwell Automation
Paige

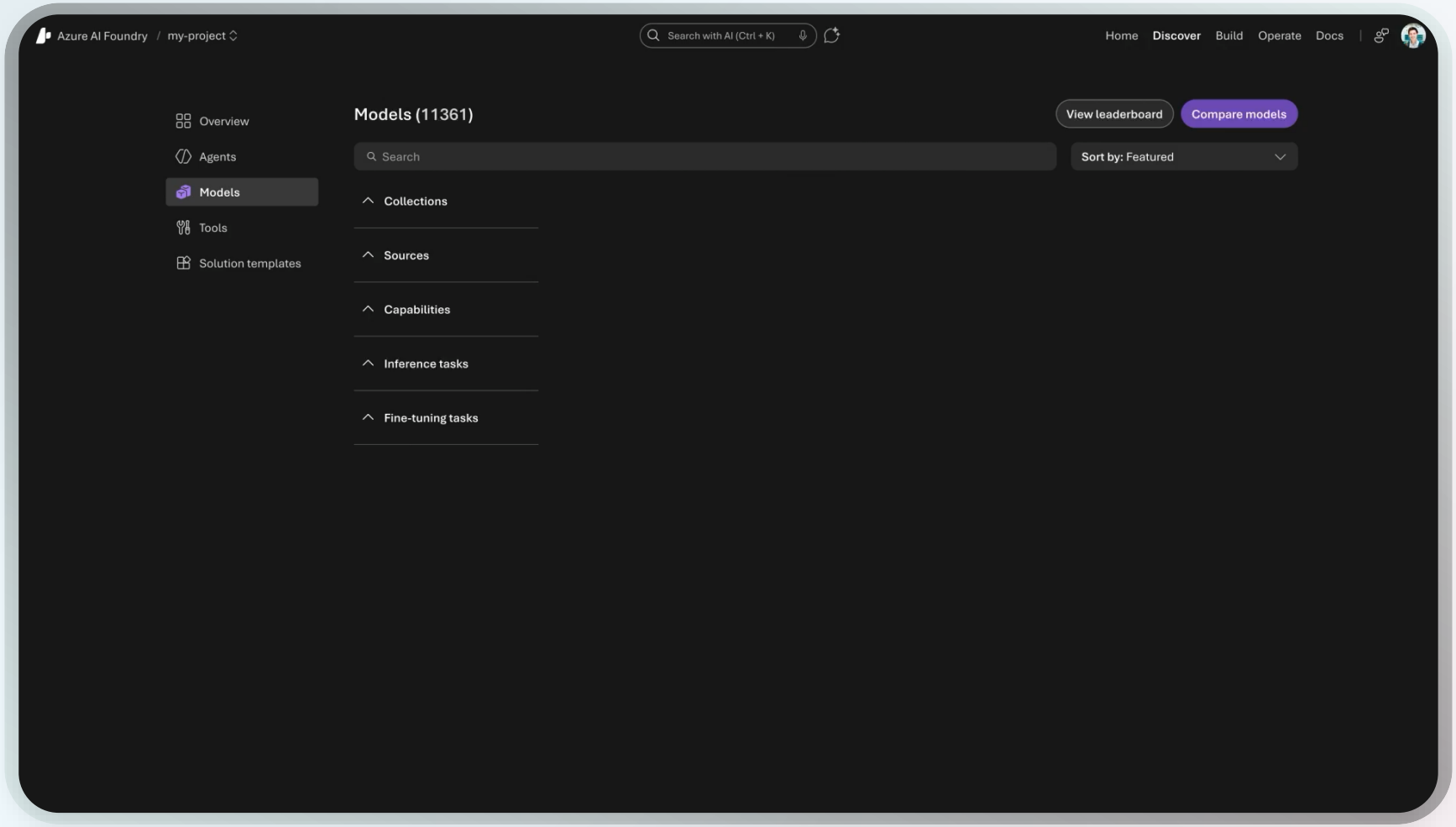
Benchmarking in Foundry Models

Simplify model selection. Review and compare the performance of AI models.

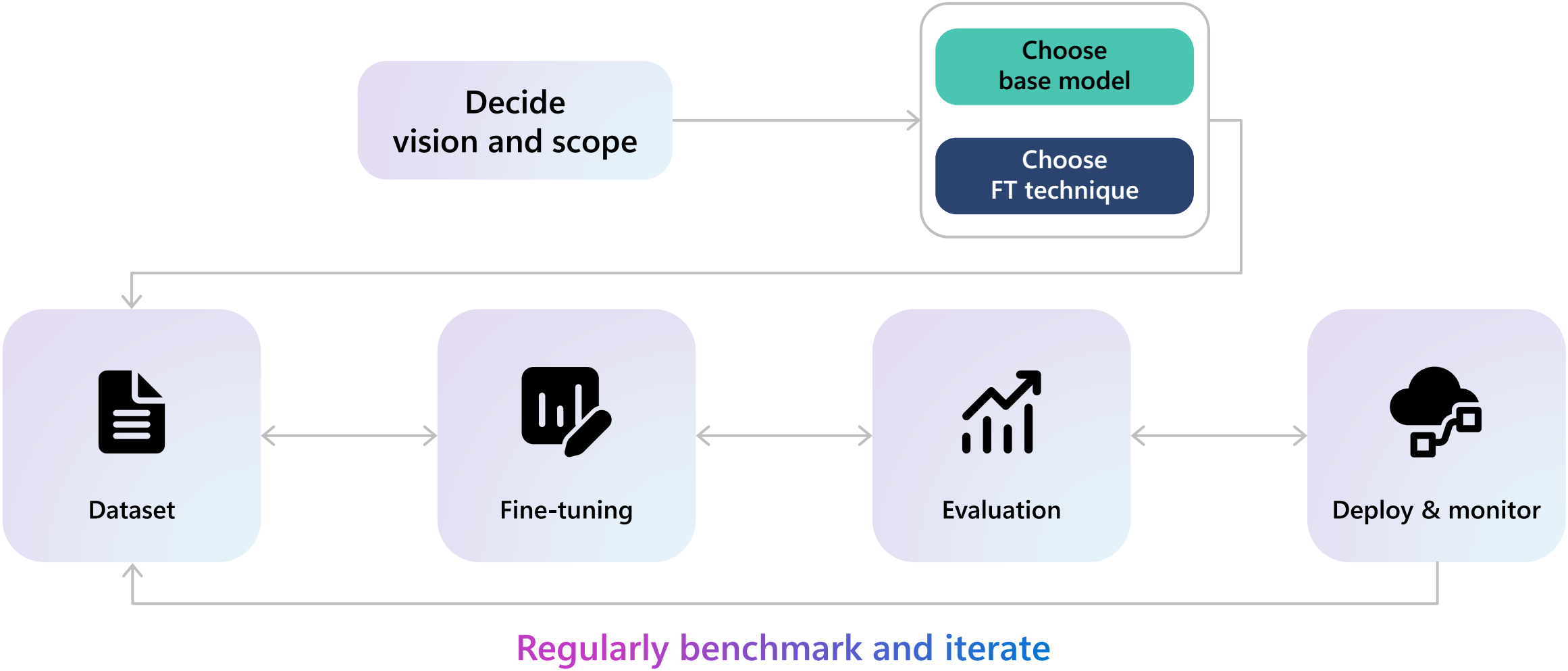


Model router in Foundry Models

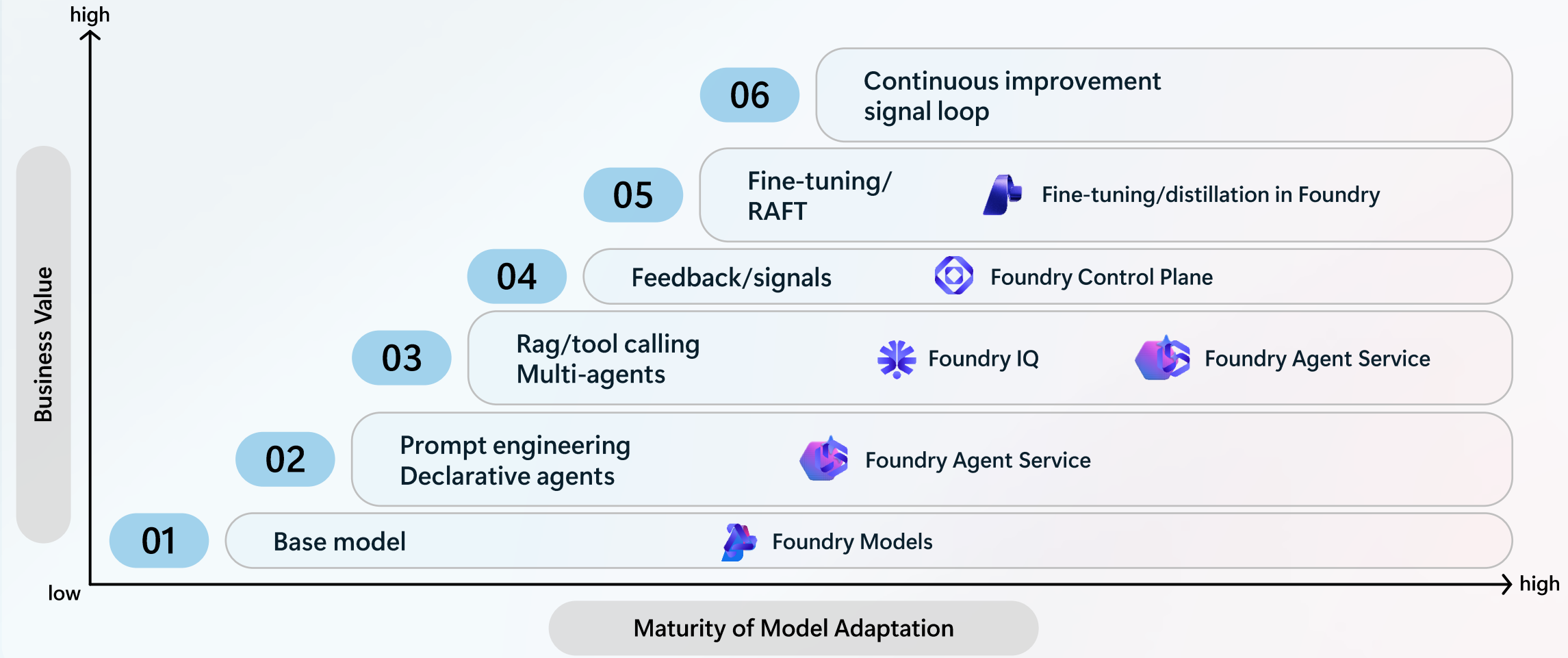
Automatically select optimal models for a specific task or query in real-time.



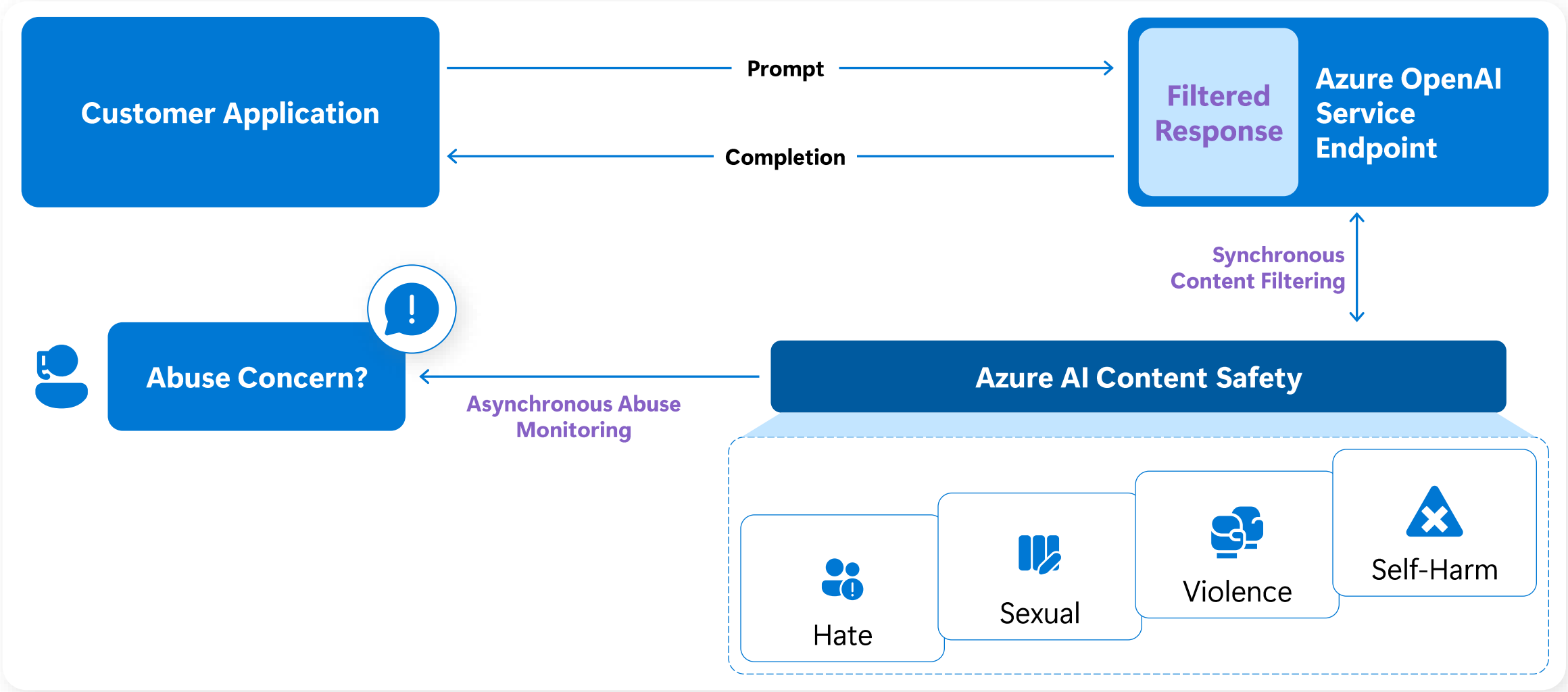
Customize and upgrade models with ease with Microsoft Foundry



Model Customization Options in Microsoft Foundry



Deploy foundation models with a built-in safety system using Azure OpenAI Service



Content Safety in Foundry Control Plane

Keep agents safe and grounded using the same customizable controls as Microsoft Copilot

Your safety system

System message

Prompt shields



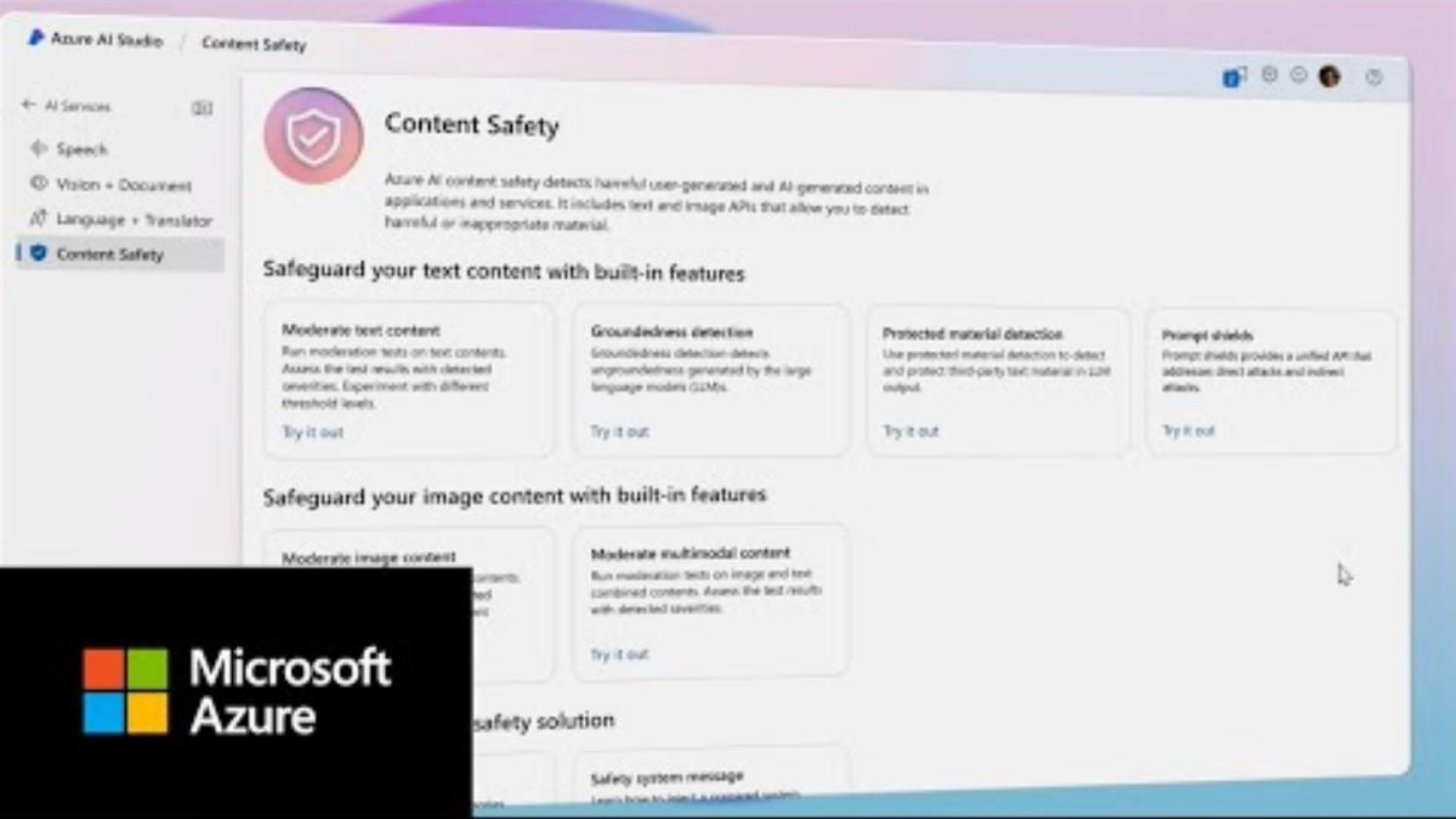
Task adherence

Custom categories & blocklists

Groundedness Detection & Correction

Microsoft Purview
Data security & governance

Microsoft Defender
Continuous threat detection & protection


Azure AI Studio / Content Safety
AI Services
Speech
Vision + Document
Language + Translator
Content Safety
Content Safety
Azure AI content safety detects harmful user-generated and AI-generated content in applications and services. It includes text and image APIs that allow you to detect harmful or inappropriate material.
Safeguard your text content with built-in features
Moderate text content
Run moderation tests on text contents. Assess the test results with detected severities. Experiment with different threshold levels.
Try it out
Groundedness detection
Groundedness detection detects ungroundedness generated by the large language models (LLMs).
Try it out
Protected material detection
Use protected material detection to detect and protect third-party text material in LLM output.
Try it out
Prompt shields
Prompt shields provides a unified API that addresses direct attacks and indirect attacks.
Try it out
Safeguard your image content with built-in features
Moderate multimodal content
Try it out
safety solution
Safety system message
Microsoft
Azure

Guardrails and controls in Azure AI Content Safety

Violent

Weapons

Bullying and intimidation

Terrorist and violet extremism

Stalking

Sexual

Vulgar content

Prostitution

Nudity and pornography

Abuse

Child exploitation, child abuse, child grooming

Hate and unfairness

Race, ethnicity, nationality

Gender identity groups and expression

Sexual orientation

Religion

Personal appearance and body size

Disability status

Harassment and bullying

Self-harm

Eating disorders

Bullying and intimidation

Protected materials

Copyrighted materials

Ungrounded attributes

Mitigate outputs that contain fabricated, inaccurate, or unsupported claims not reflected in the provided source materials.

Prompt injection

Direct attacks

Indirect attacks

Spotlighting

Agent-specific

Task adherence

Demo: secure data in AI

Contoso Hotels- Reservations Assistant

Share

Start chatting

This chatbot is configured to answer your questions

Type a new question...



COPILOT | Work | Web

AlexW@MODERNCOMMS382604.OnMicrosoft.com

New chat

Copilot

For Microsoft 365

Generate ideas

List ideas for a fun remote team building event

See what's coming up

What do I have [Monday at 3 pm] ?

Stay informed

What's the latest from person , organized by emails, chats, and files?

Find the right questions

Suggest common questions that can be asked to get a retrospective started with my colleagues.

Track your tasks

What should be on my radar from emails last week?

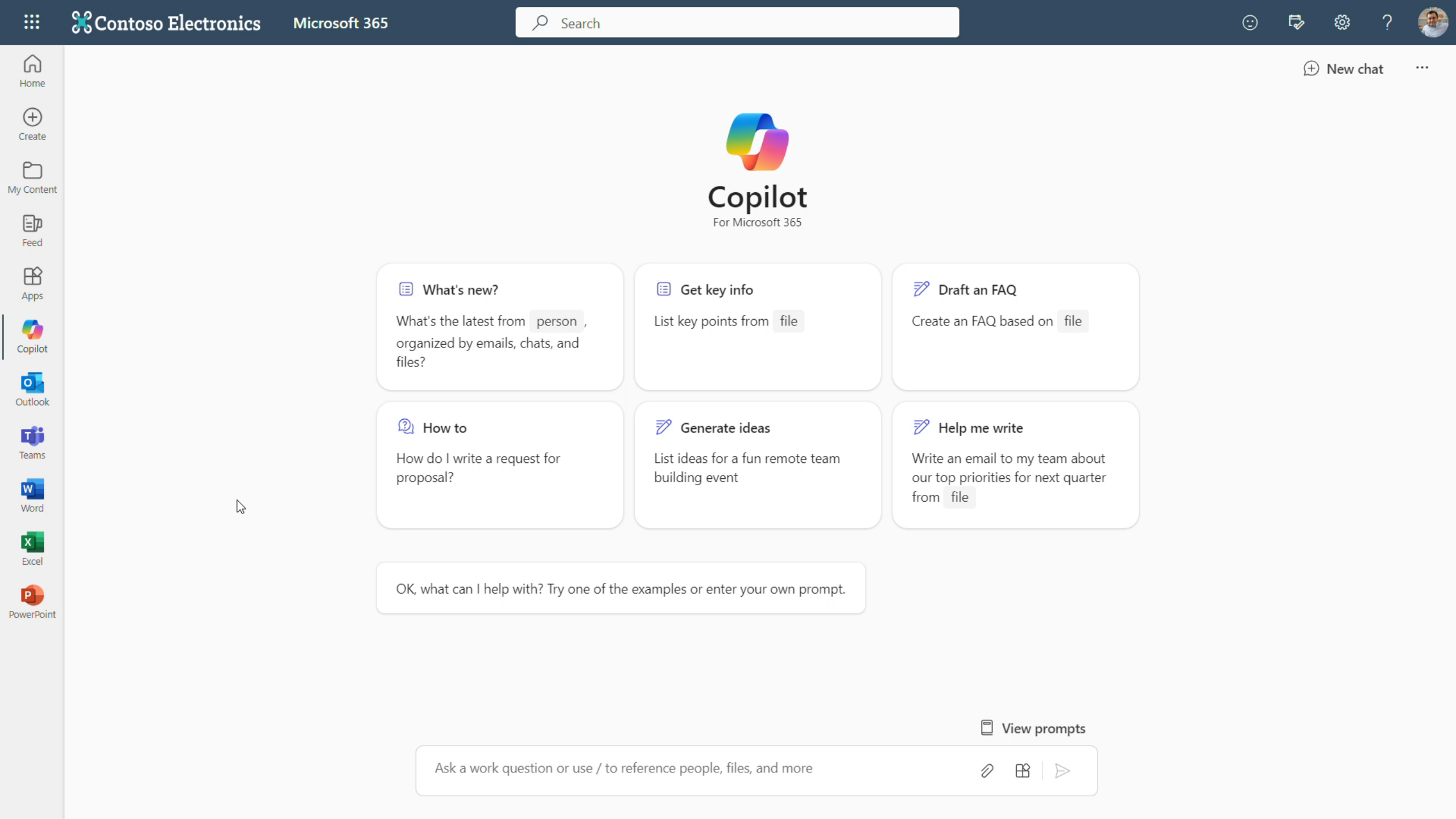
Check Teams mentions

Summarize Teams messages where I was @mentioned this week.

View prompts

What is Project Obsidian?

25 / 2000


Contoso Electronics
Microsoft 365
Search
Home
Create
My Content
Feed
Apps
Copilot
Outlook
Teams
Word
Excel
PowerPoint
New chat
Copilot
For Microsoft 365
What's new?
What's the latest from person, organized by emails, chats, and files?
Get key info
List key points from file
Draft an FAQ
Create an FAQ based on file
How to
How do I write a request for proposal?
Generate ideas
List ideas for a fun remote team building event
Help me write
Write an email to my team about our top priorities for next quarter from file
OK, what can I help with? Try one of the examples or enter your own prompt.
View prompts
Ask a work question or use / to reference people, files, and more

Microsoft Copilot: Your everyday

https://copilot.microsoft.com/#/

COPILOT | Work | Web

Copilot
What is Project Obsidian?

New chat

September 6, 2024 at 01:43 PM

What is Project Obsidian?

Project Obsidian is a collaborative initiative with multiple facets and goals. Here are some key aspects of the project:

1. **Decentralized Communication Platform:** One aspect of Project Obsidian is to develop a decentralized platform for secure and private communication. It uses a peer-to-peer network of nodes that encrypt and relay messages among users, ensuring end-to-end encryption and privacy [1].
2. **Digital Archive of Ancient Texts:** Another facet of Project Obsidian is a collaboration between the University of Oxford and the British Museum to create a digital archive of ancient Mesopotamian texts. The project aims to digitize, transcribe, translate, and annotate thousands of cuneiform tablets, making them accessible to the public through a user-friendly website and mobile app [2].
3. **Natural Language Understanding and Generation:** Project Obsidian also includes a research initiative focused on developing a novel framework for natural language understanding and generation. The project aims to create a unified model of natural language, develop new methods and tools for processing and generating natural language, and explore the cognitive and neural mechanisms underlying natural language processing [3].
4. **Interactive Storytelling Platform:** Additionally, Project Obsidian is a web-based platform that allows users to create, share, and collaborate on interactive stories. Users can choose from various genres, themes, and templates, or create their own stories from scratch. The platform provides tools for editing, publishing, and monetizing stories [4].

Overall, Project Obsidian is a multifaceted initiative with diverse goals, ranging from secure communication and digital archiving to natural language research and interactive storytelling.

Is there anything specific you would like to know more about?

1 Project Obsidian_Q1 Finan... | 2 Project Obsidian_Overview | 3 FAQ about Project Obsidian | +1

Copy

1 of 30 responses | AI-generated content may be incorrect

Ask a work question or use / to reference people, files, and more

0 / 2000

ChatGPT

https://chatgpt.com

ChatGPT 4o mini

Log in | Sign up

Suggest fun activities
to help me make friends in a new city

Make up a story
about Sharky, a tooth-brushing shark superhero

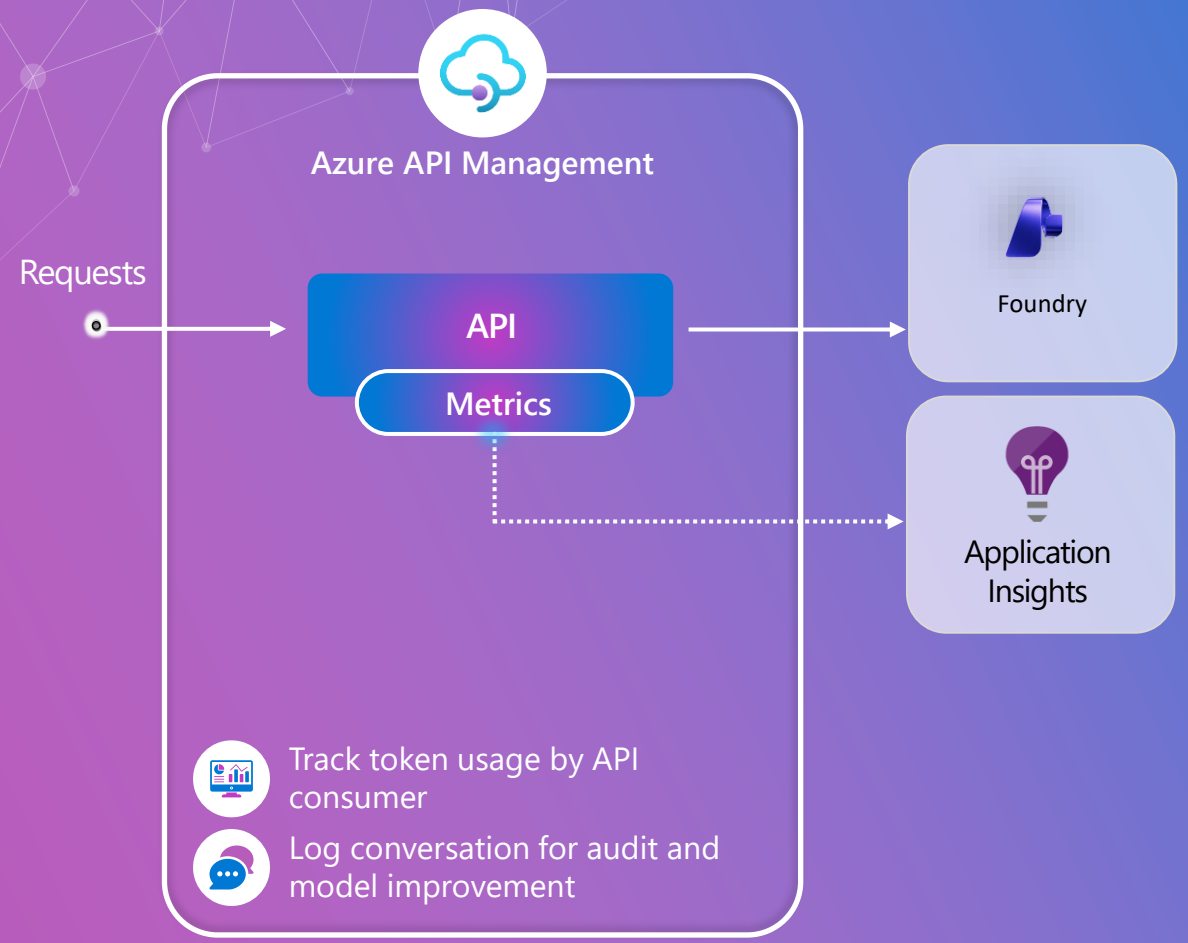
Tell me a fun fact
about the Roman Empire

Test my knowledge
on ancient civilizations

Message ChatGPT

By messaging ChatGPT, you agree to our Terms and have read our Privacy Policy.

Logging & Monitoring

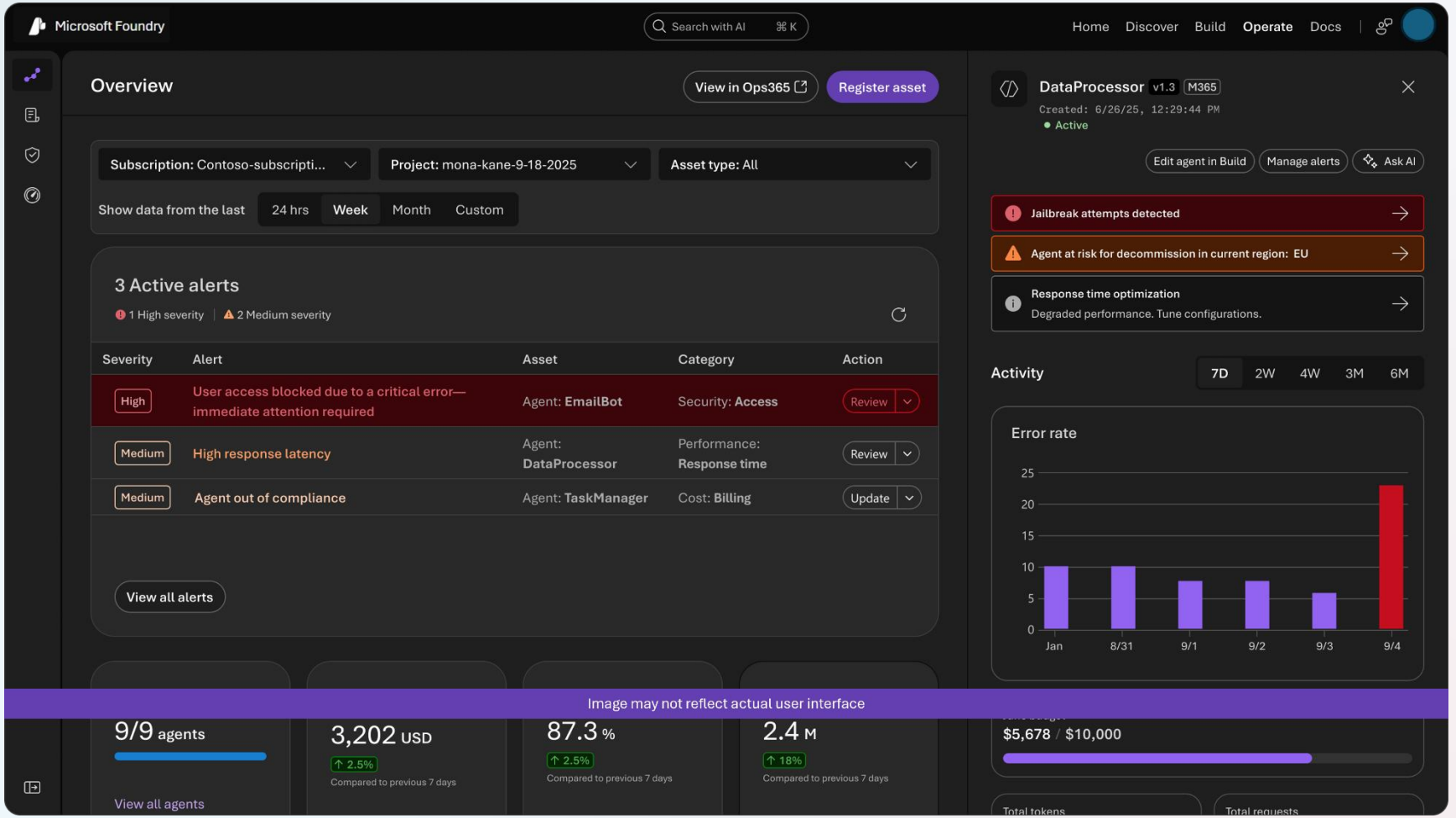


- Centralized view of all your Azure Open AI usage
- Facilitate accurate cross-charging based on token consumption
- Collect observability data for fine-tuning models

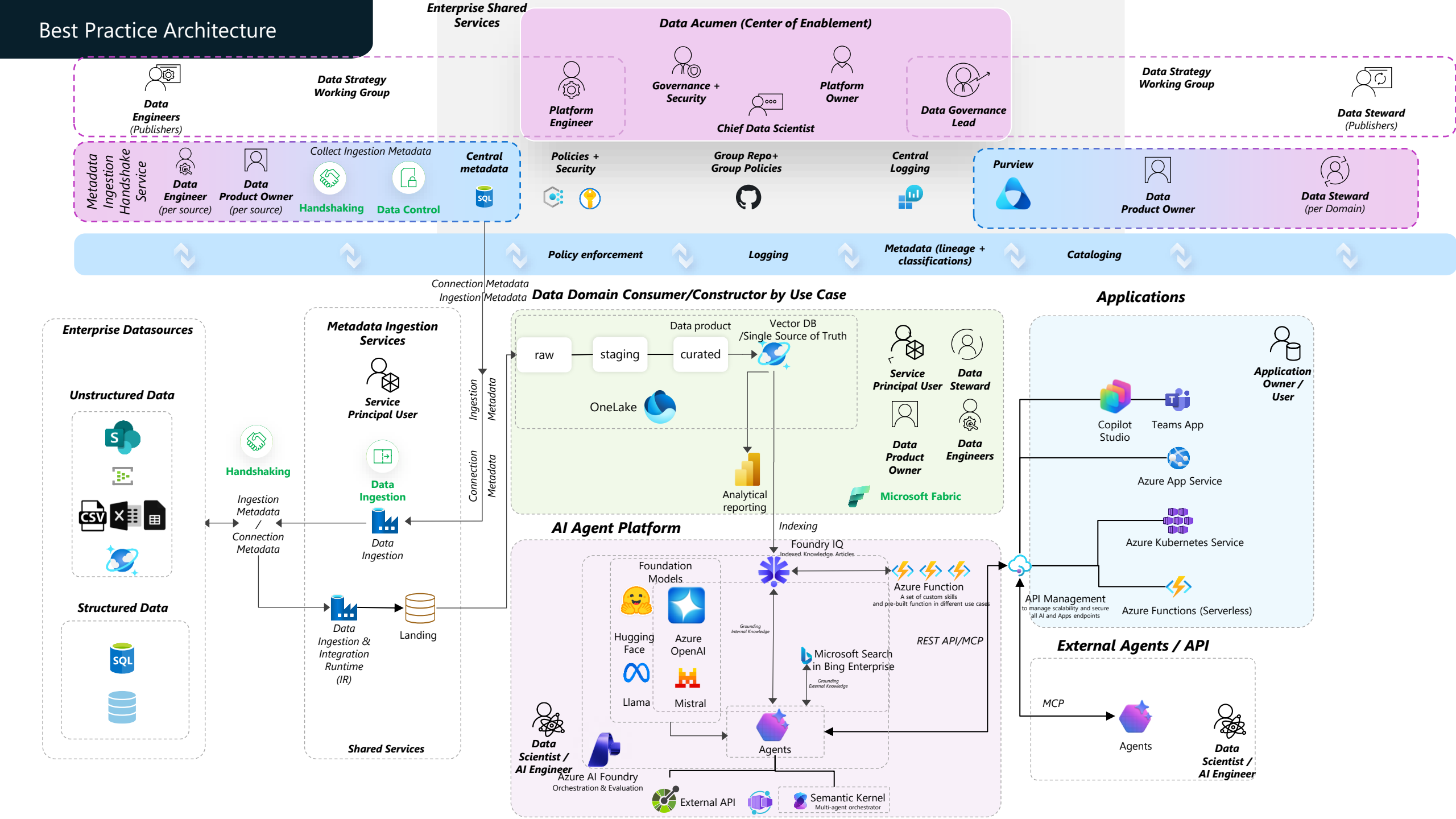
Reference solution template: Azure-Samples/AI-Gateway: APIM ❤️ AI - This repo contains experiments on Azure API Management's AI capabilities, integrating with Azure OpenAI, AI Foundry, and much more 🚀 . New workshop experience at https://aka.ms/ai-gateway/workshop

Observability in Foundry Control Plane

Evaluate and monitor agents to ensure the highest quality operation before and after deployment



Best Practice Architecture



Microsoft

Foundation	What Microsoft Contributes	Solutions
AI-Ready Data Systems	Scalable platforms, retrieval-based AI access, structured + unstructured data integration	Data lakes, APIs, AI Search, RAG via Foundation Models in Microsoft Foundry
High-Quality Data & Metadata	AI-assisted metadata enhancement, semantic models, explainable statistics	Catalogs, semantic models, AI-assisted metadata, document intelligence
Governance & Partnership	Responsible AI usage, standards alignment, long-term collaboration with NSOs	Purview governance, responsible AI practices, long-term NSO collaboration

Microsoft Cloud Services

Runs on trust

Your data is your data

- Data is stored encrypted in your Azure subscription

Your data is not used to train underlying foundation models in the model catalog, without your permission

- Azure OpenAI Service provisioned in your Azure subscription
- Model fine tuning stays in your Azure subscription

Your data is protected by the most comprehensive enterprise compliance and security controls

- Encrypted with Customer Managed Keys
- Private Virtual Networks, Role Based Access Control
- Soc2, ISO, HIPPA, CSA STAR Compliant