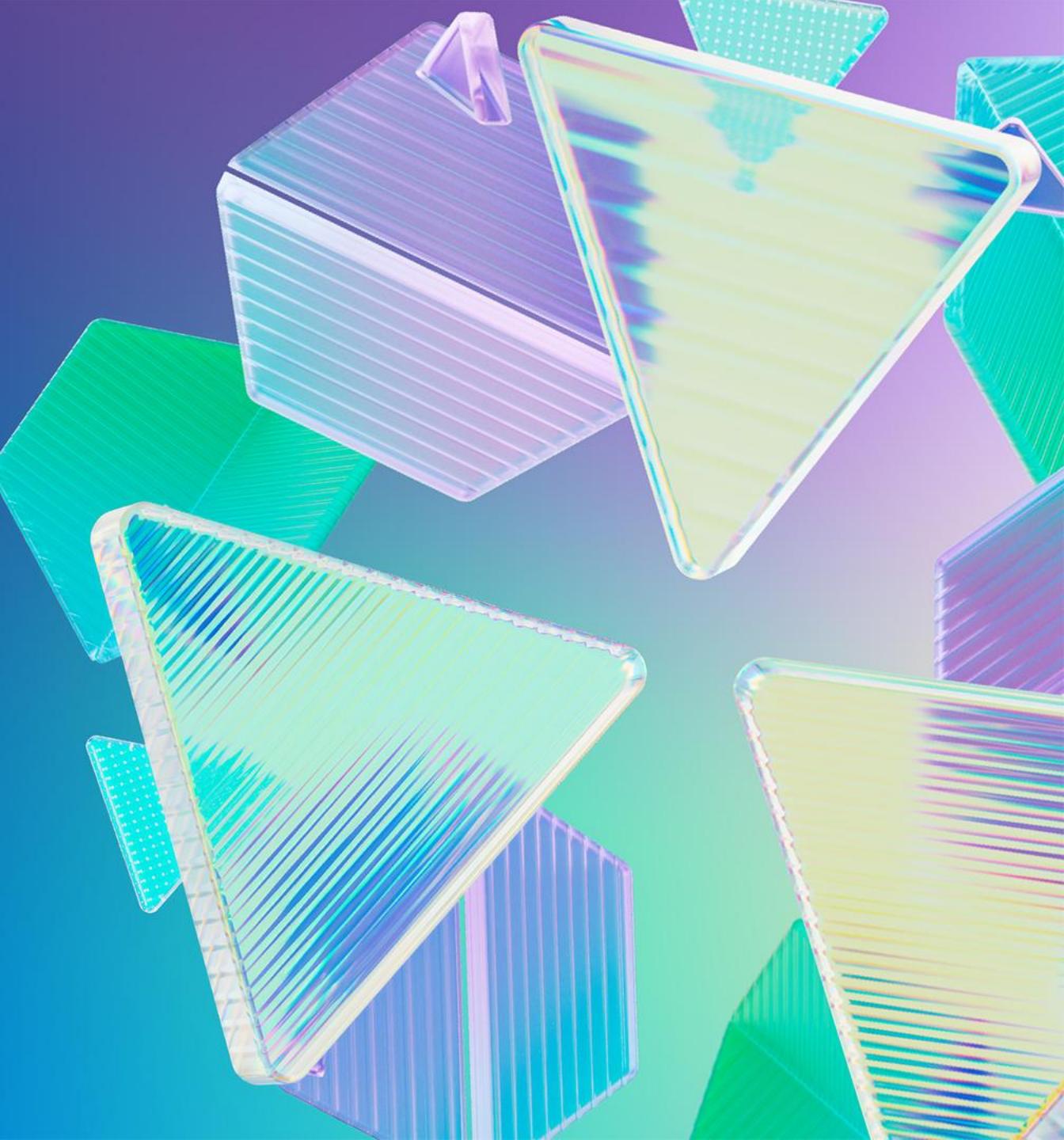




AI Foundry Agents Workshop

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Tobias Unterhauser



Agenda

01 Theorie

Einführung in AI Agents & AI Foundry

02 Hands- On

Entwicklung eigener Agenten mit AI Foundry und Agents SDK

Pause

03 Theorie

Multi Agenten
Orchestrierung und offene
Standards

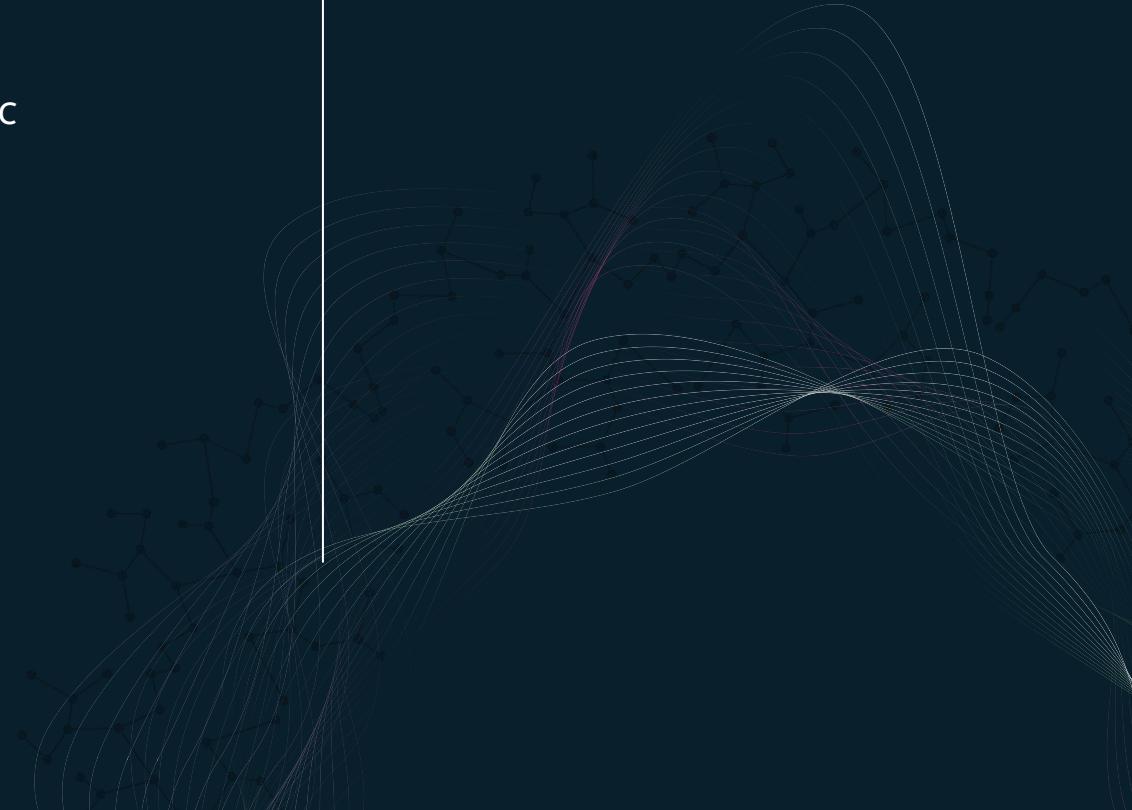
04 Hands- On

Orchestrierung in Semantic
Kernel

Pause

05 Abschluss

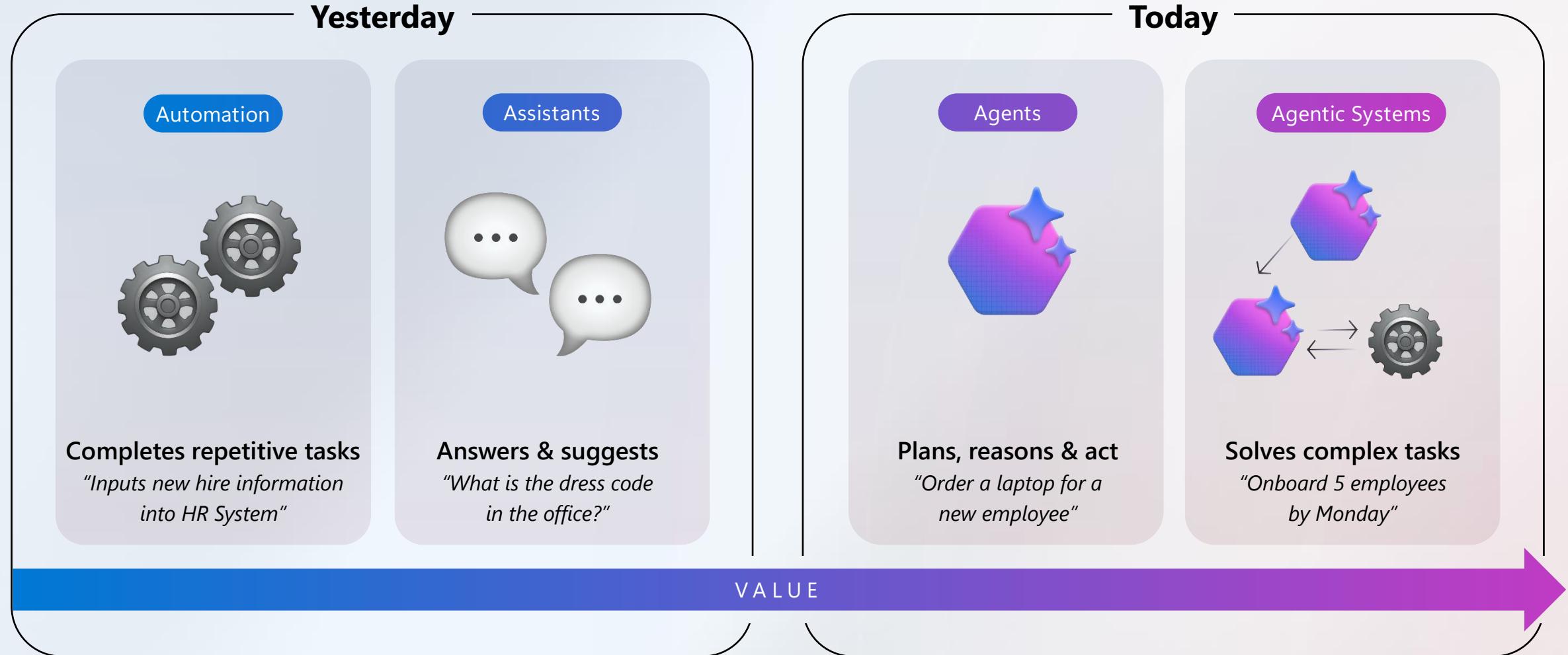
Whats coming next?



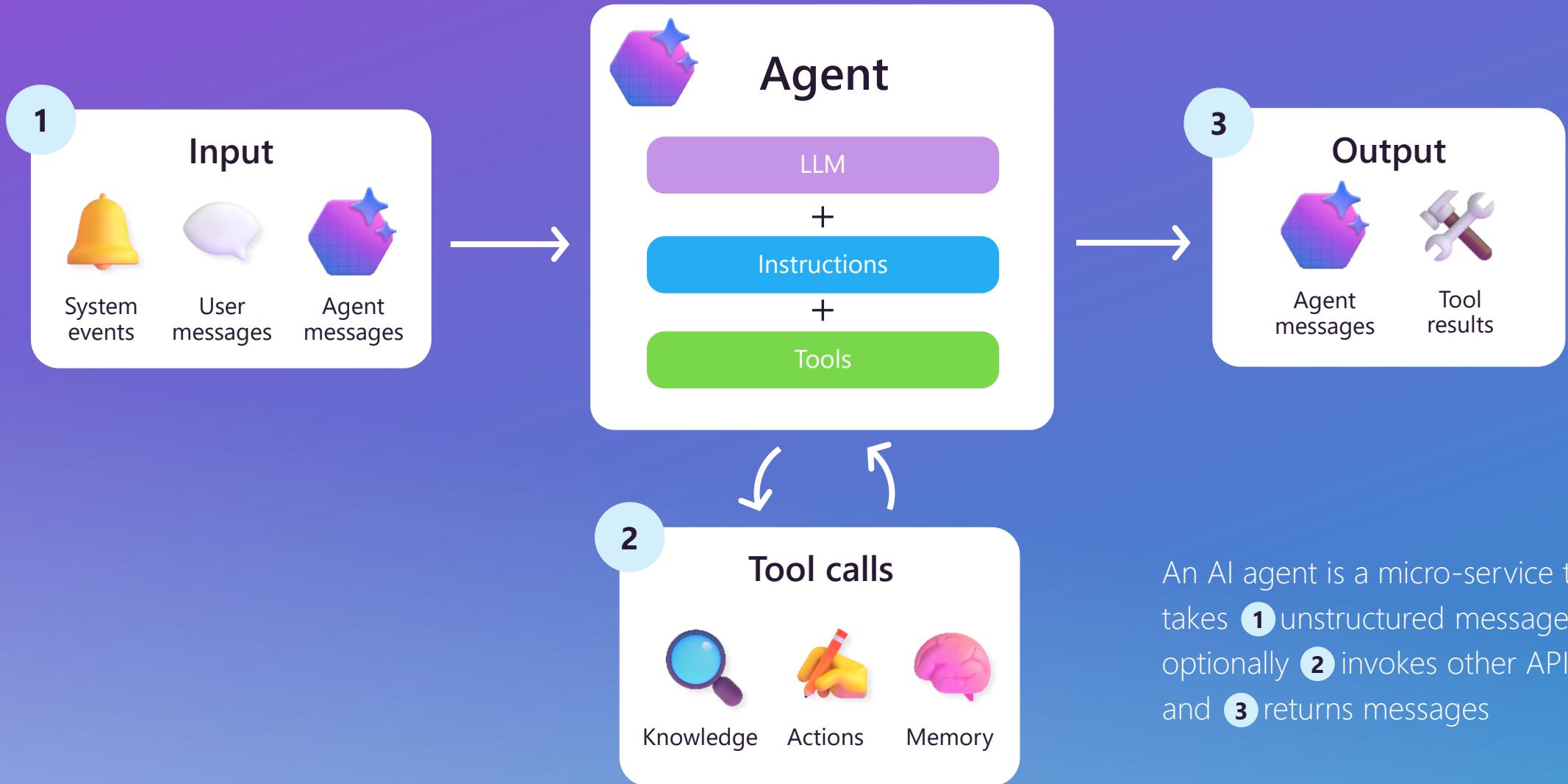


01 Einführung in AI Agents & AI Foundry

Agentic AI is the new frontier



What is an AI agent?



An AI agent is a micro-service that takes ① unstructured messages, optionally ② invokes other APIs and ③ returns messages

Agentic patterns



Reasoning aka planning

Create a JSON describing the user issues



Transcript



I'll look at the logs to see what happened



Check logs

✗ Machine is past due for maintenance



I've captured the underlying issue in the details

{

"name" : "John Clar
"issue": "Washing m

Go beyond transcriptions and slot filling by allowing agents to deduce the why



Acting aka tool calling

Fill out and submit the workorder



Populate field: name



Populate field: issue

- ✓ Name field populated
- ✓ Issue field populated



Submit form

The form has been successfully

Agents can take a simple request and chain multiple tool calls to complete the ask



Learning aka memory

Assign technician



Update work order

- ✗ Alex is already booked at this same time
+ Saved memory: Alex is OOF next week



Let me try again with an available technician.



Update work order

- ✓ Successfully assigned technician

Only make a mistake once. With memory, agents can recall prior experiences

Agents range from simple to complex

Tasks can vary in level of complexity and capabilities depending on your need

Simple



Chatbots

Answer questions for users with retrieval augmented generation

Knowledge tools



Copilots

Performs actions on-behalf-of a user with human supervision

+ Action tools



Advanced

Automated agents

Automatically complete tasks as background jobs on-behalf-of users

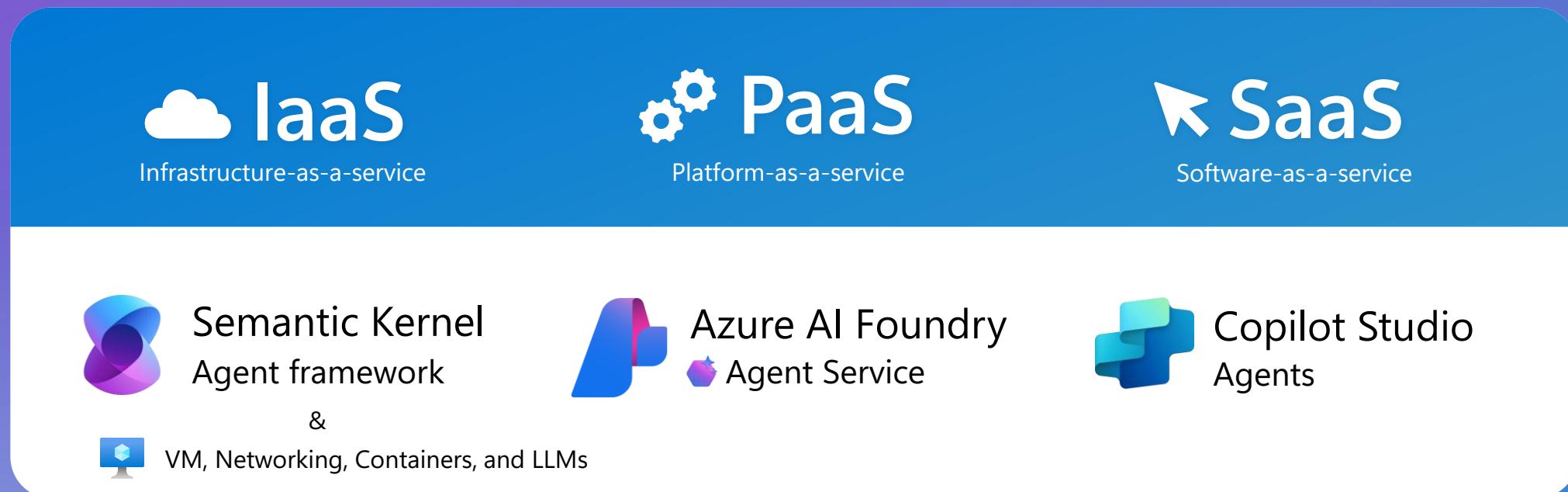
+ Triggers

The opportunity
for automated AI
is growing...

By 2028, at least **15% of day-to-day work decisions** will be made autonomously through agentic AI.

Microsoft has different ways of building agents

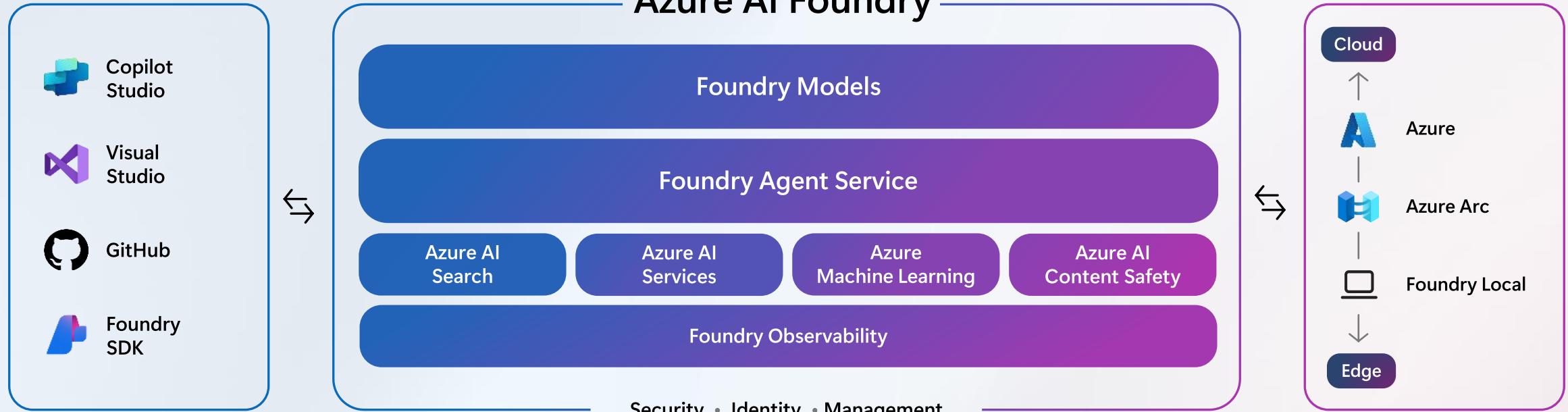
Platform Integrations, ease-of-use, and development speed



Control, visibility, and customization



Azure AI Foundry



Control

← Azure Kubernetes Service

Azure App Service

Azure Container Apps

Azure Functions

→ Serverless

Generally Available



Azure AI Foundry Agent Service

Securely customize, orchestrate, and deploy AI agents with ease

Multi-Agent
Orchestration

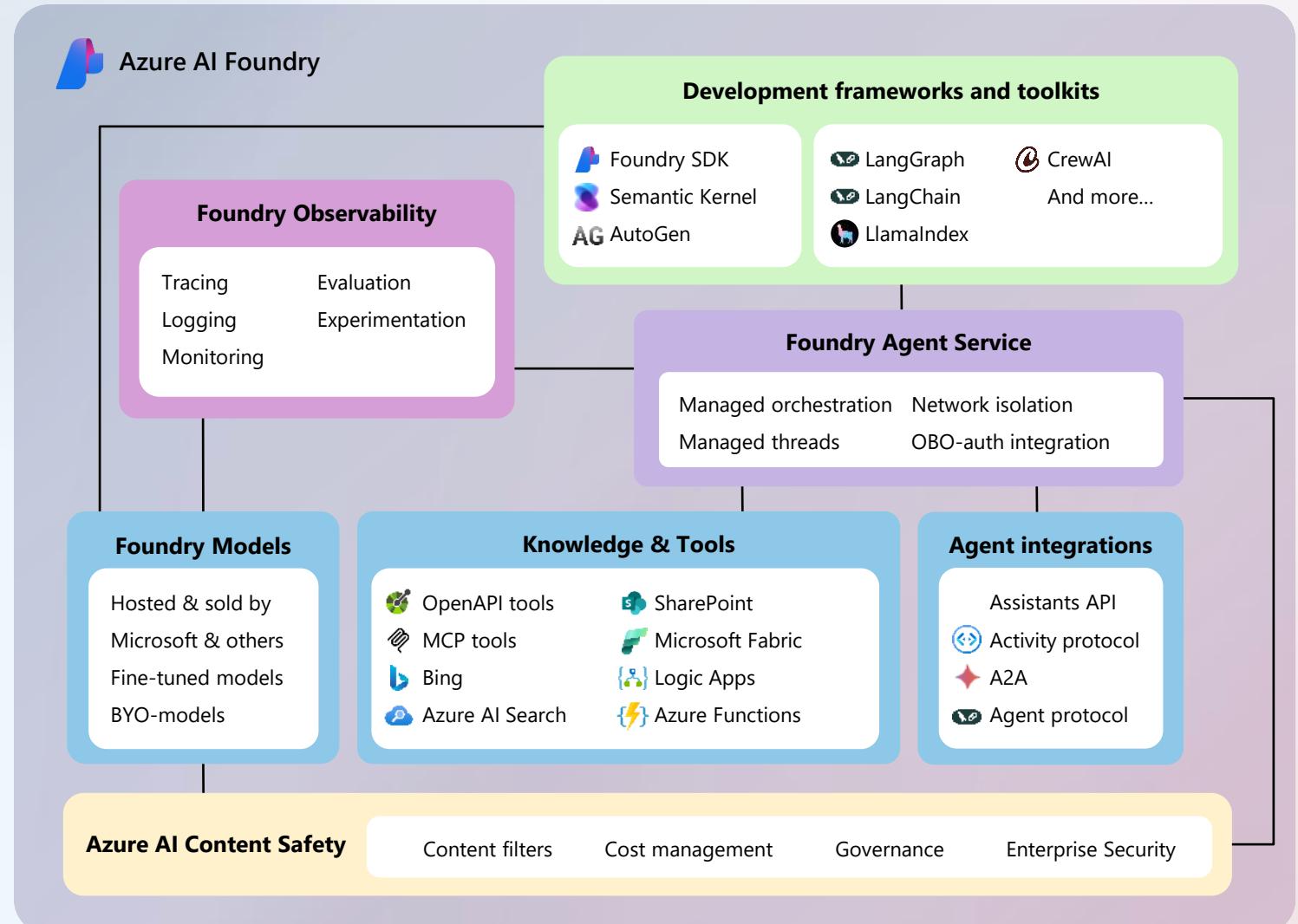
Open and
Interoperable Tools

Trust & Enterprise
Readiness

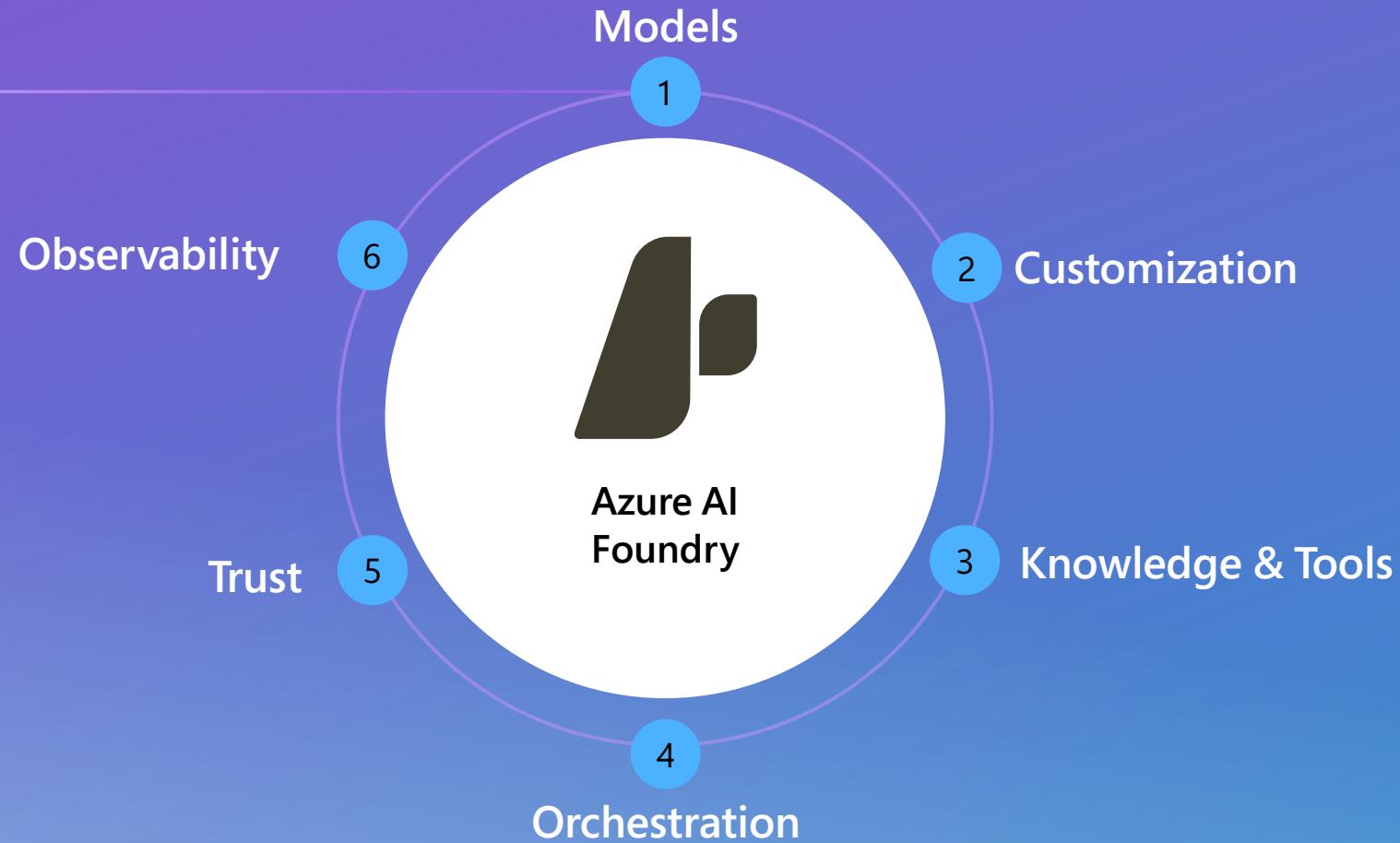
AI.Azure.com

Foundry Agent Service

Combine the best models, services, and tools in Azure AI Foundry into reusable, testable agentic components.



The Agent Factory





Azure AI Foundry Agent Service

Securely customize, orchestrate, and deploy AI agents

Model choice

Model choice and flexibility with the model catalog

 **Azure OpenAI Service**
o1, o3-mini, GPT-4.1, 4o, etc

Models-as-a-Service

 Llama 3.1-405B-Instruct

 Mistral Large

 Cohere-Command-R-Plus

AI tools

Richest set of enterprise connectivity

Knowledge



Actions

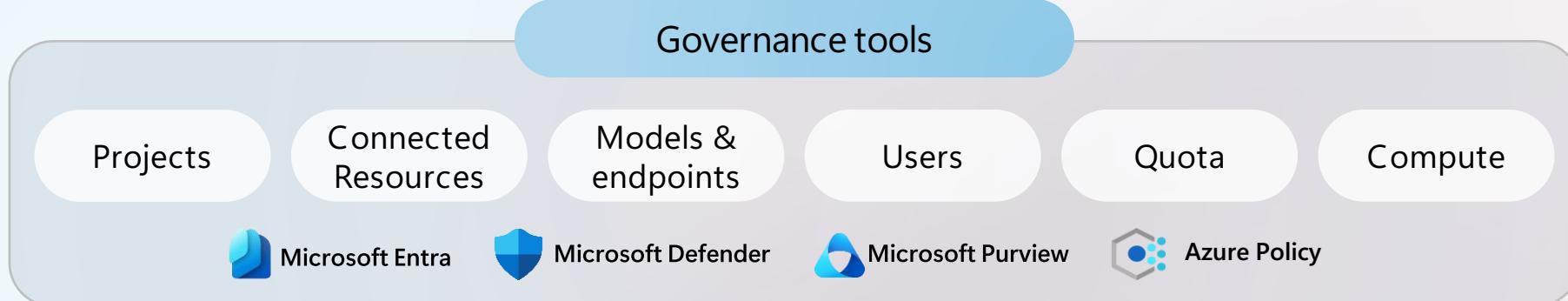
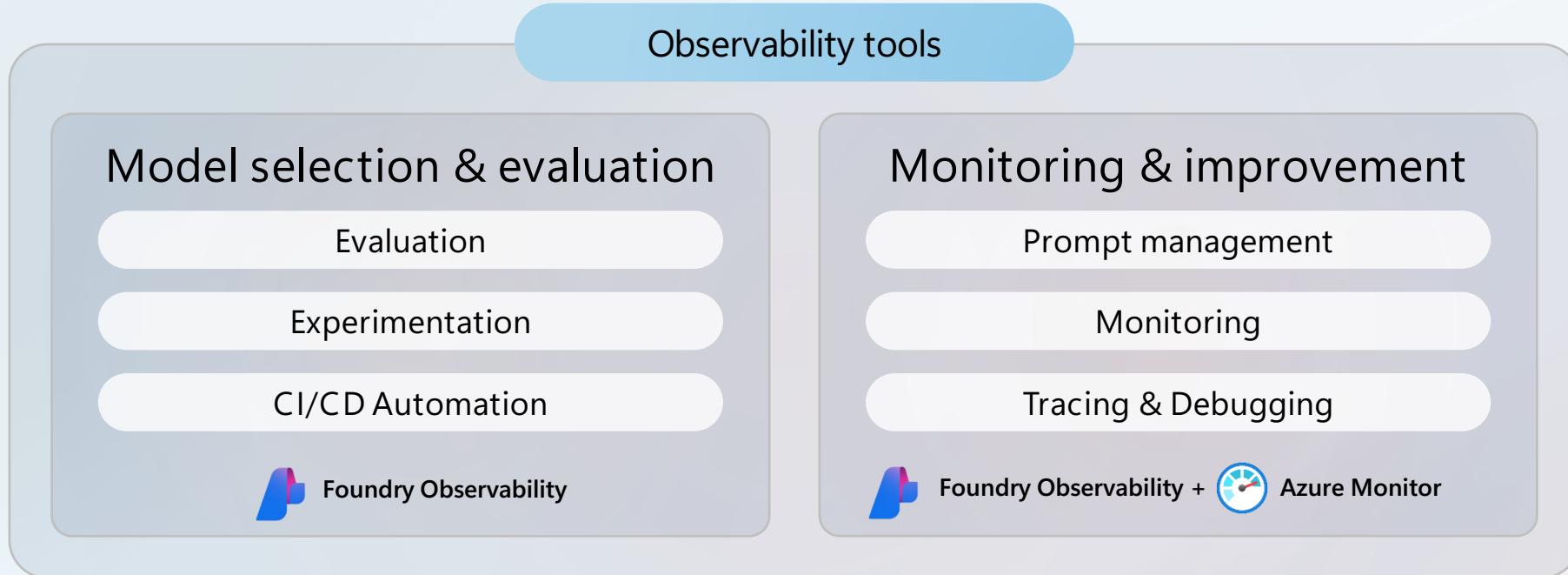


Trust

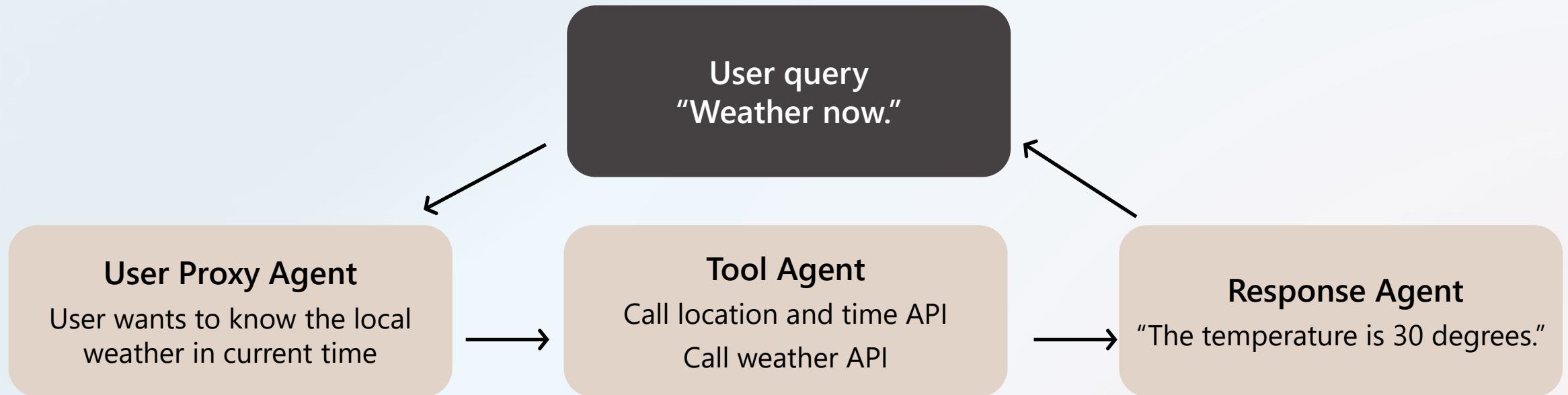
Customer control over data, networking, and security

- BYO-file storage
- BYO-search index
- BYO-virtual network
- BYO-thread storage
- OBO authentication
- Content filtering

End-to-end observability and simplified governance



Evaluations for agents



Intent resolution

Preview

- Correct intent classification
- Clarification for ambiguity
- Scope adherence

Tool calling evaluation

Preview

- Single-step call accuracy
- Parameter extraction accuracy
- Multi-step trajectory efficiency

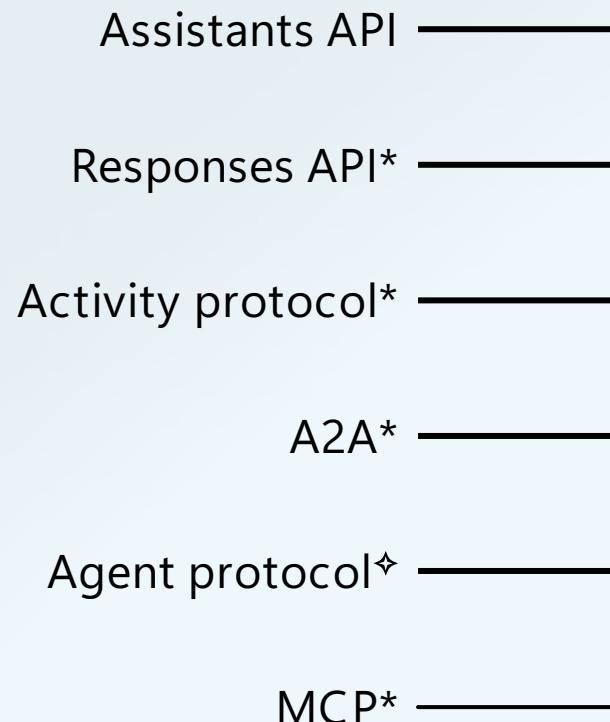
Task adherence

Preview

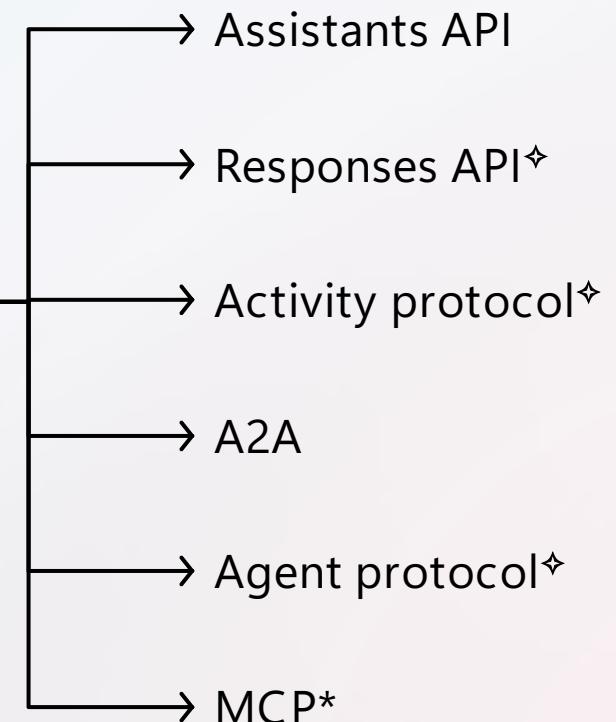
- Final response satisfaction
- Response completeness

Foundry Agent Service will work with the top agent protocols

Import external agents

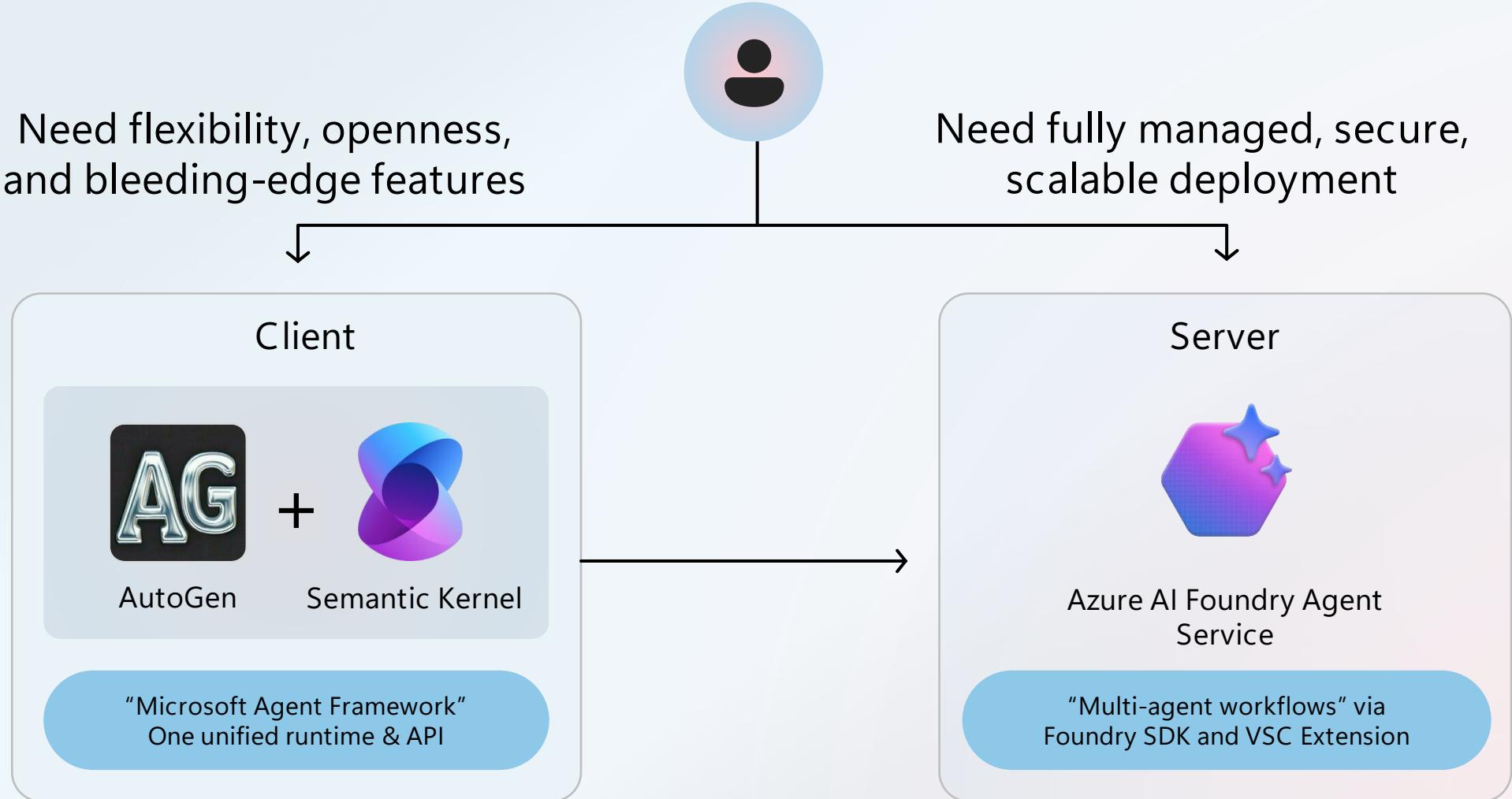


Expose your agent externally



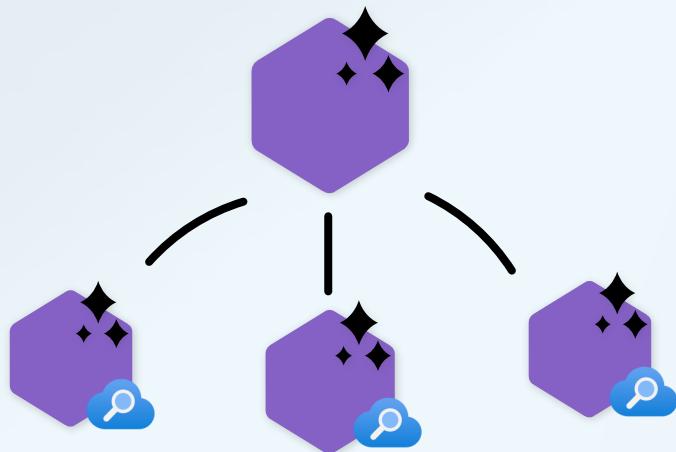
* Available with Semantic Kernel † Coming soon

Microsoft Solutions for building Multi-Agent Systems



Multi-agent orchestration in Foundry Agent Service

Agent-as-tools

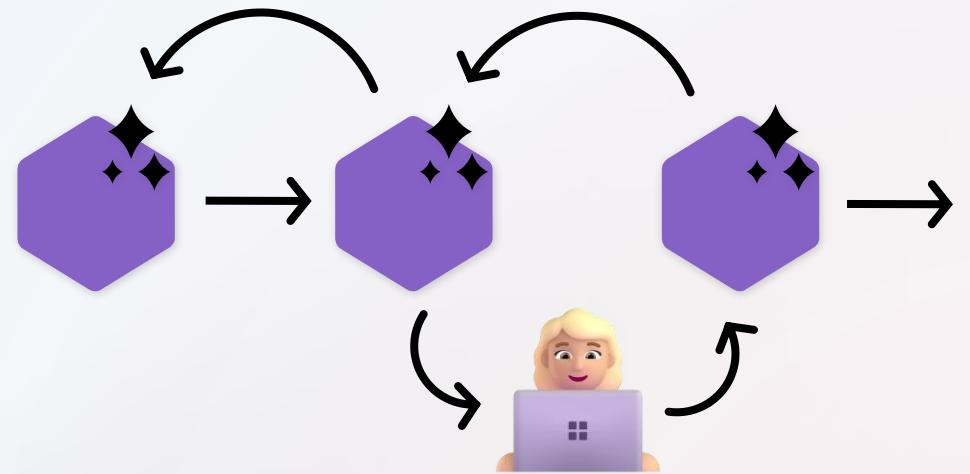


Give one agent the abilities of another...

Coming Soon

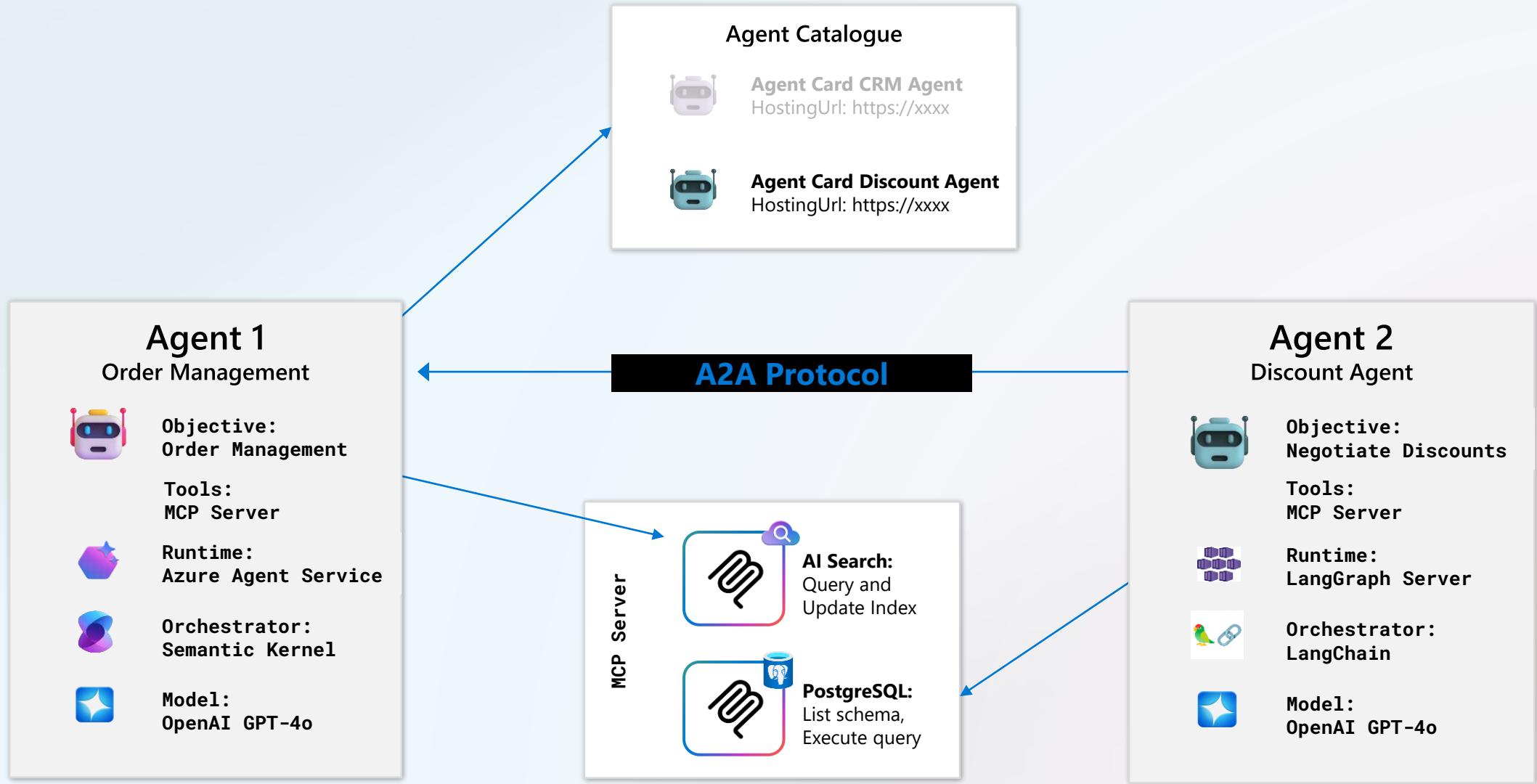
Workflow automation

Powered by AutoGen



Declaratively orchestrate multiple agents together

Open Agentic Web - Example





02 Hands-On Hack: AI Foundry & SDK

Hacking Session 1: Building Agents with AI Foundry

You're role

You are an **AI Engineer** at the **Munich Agent Factory** and you want to simplify the process of booking flights, hotels and trains for **business travel** by building an Agentic Application

What you are going to build

Agent 1 Research Agent

Sucht passende Hotels und Transportmittel aus dem Internet oder fiktivem Buchungsportal z.B. Concur

Bing Grounding

Agent 4 User Facing Orchestrator

Nimmt User Anfragen entgegen, orchestriert die restlichen Agenten und stellt eventuelle Rückfragen an den Nutzer

File in Vector

Agent 2 Policy Checker Agent

Überwacht die Einhaltung der Firmenpolicy verantwortlich für Reisebuchungen

Booking System (MCP)

Agent 3 Booking Agent

Bucht die Reise über das Firmeninterne Buchungsportal

Find all instructions in the Github Repository:

[Go to Hacking Session 1](#)



Short Break