Nutzung eigener Daten in AI und Bots

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Co-Pilot?

Jarvis is my co-pilot

It´s Copilot !

Agenda
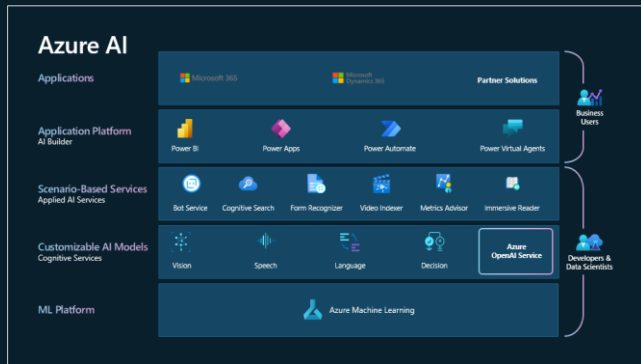
Azure AI

Applications — Microsoft 365, Microsoft Dynamics 365, Partner Solutions — Business Users

Application Platform / AI Builder — Power BI, Power Apps, Power Automate, Power Virtual Agents

Scenario-Based Services / Applied AI Services — Bot Service, Cognitive Search, Form Recognizer, Video Indexer, Metrics Advisor, Immersive Reader

Customizable AI Models / Cognitive Services — Vision, Speech, Language, Decision, Azure OpenAI Service — Developers & Data Scientists

ML Platform — Azure Machine Learning

Create your custom Copilot with your data

1. Data source - documents (PDF, Office, Web, etc.)
2. Azure AI Document Intelligence API – Get the content
3. Azure Cognitive Search API – Build Index & search
4. Open AI API – refine the search result
5. Bot API – chat with the user (in Teams, etc.)

Integration into M365 Copilot

Graph Connectors

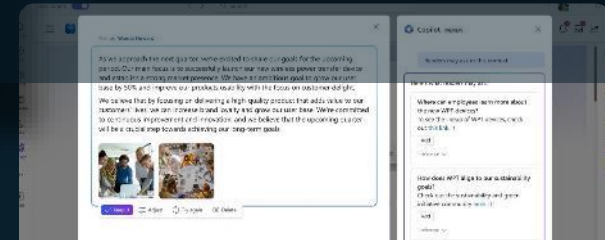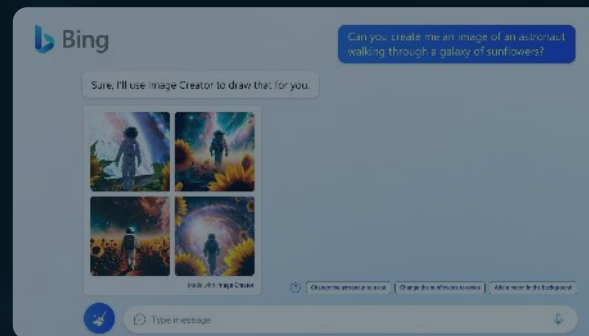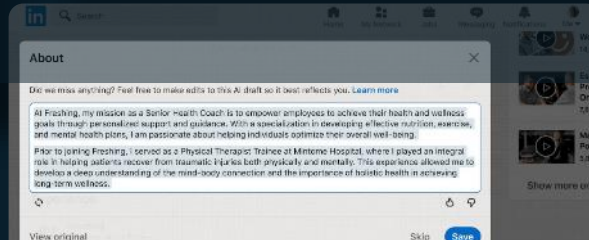Message Extensions

Take aways to integrate your data into Copilot
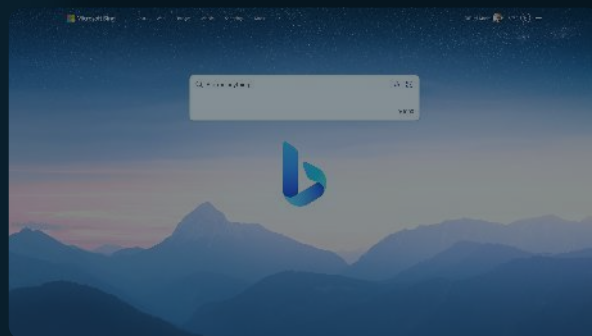
Bot + Azure Cognitive Search — Graph Connectors — Message Extensions
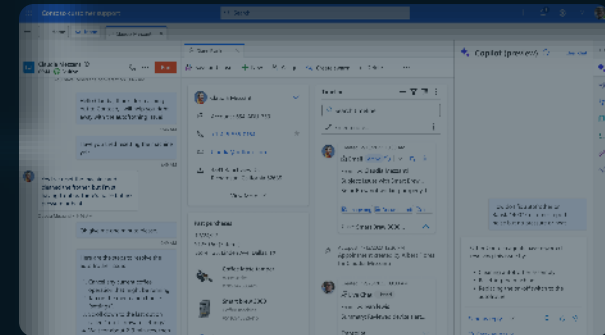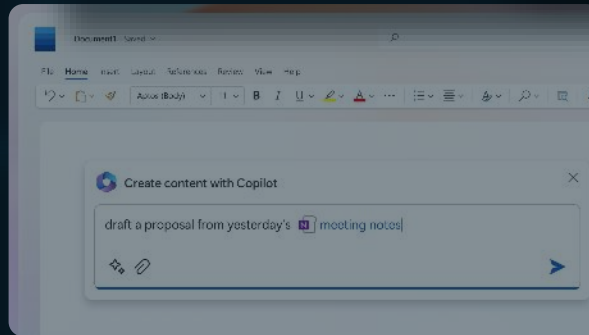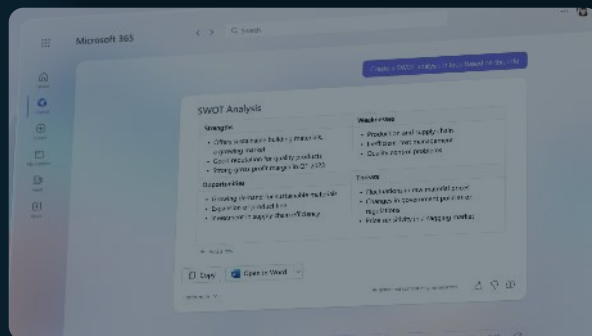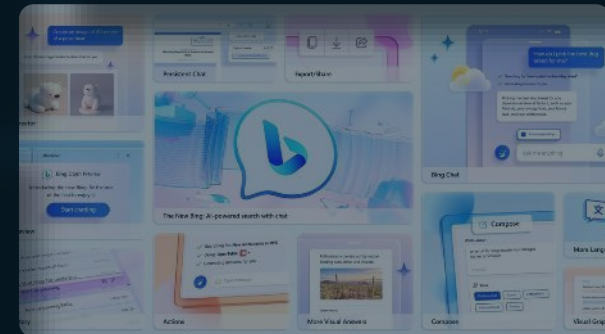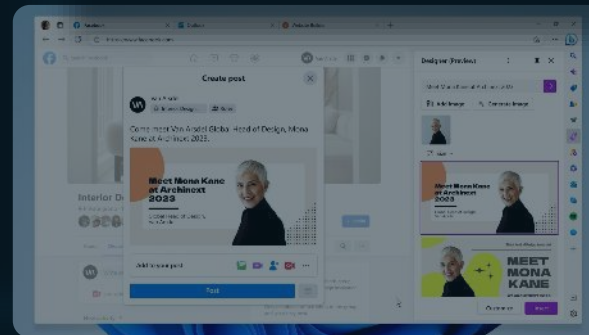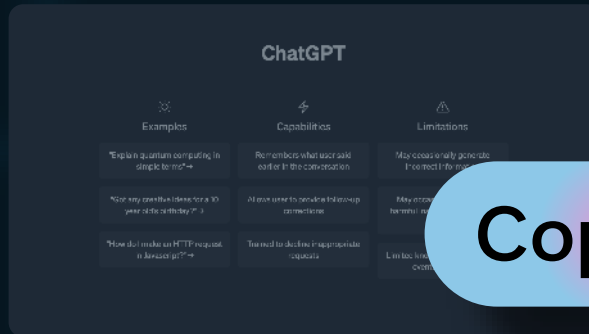
Copilots

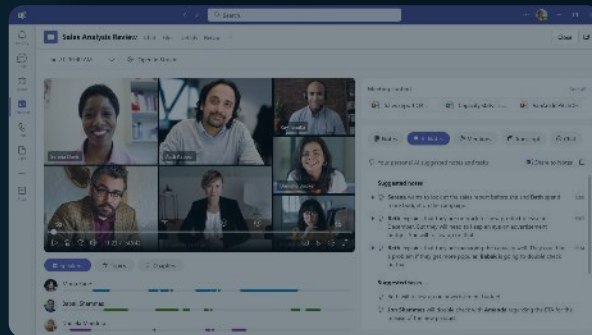|	Bing Chat	Bing Chat Enterprise	Microsoft 365 Copilot
	Personal	Work	Work
GPT Large Language Model	✔	✔	✔
AI-Powered Web Search, Answers & Content Generation	✔	✔	✔
Commercial Data Protection		✔	✔
Enterprise Security, Privacy & Compliance			✔
Microsoft 365 Graph (content & context)			✔
Microsoft 365 Apps			✔

Azure AI

Applications

Microsoft 365   Microsoft Dynamics 365   **Partner Solutions**

Application Platform
AI Builder

Power BI   Power Apps   Power Automate   Power Virtual Agents

Scenario-Based Services
Applied AI Services

Bot Service   Cognitive Search   Form Recognizer   Video Indexer   Metrics Advisor   Immersive Reader

Customizable AI Models
Cognitive Services

Vision   Speech   Language   Decision   **Azure OpenAI Service**

ML Platform

Azure Machine Learning

Business Users

Developers & Data Scientists

Copilot App Patterns

Beside
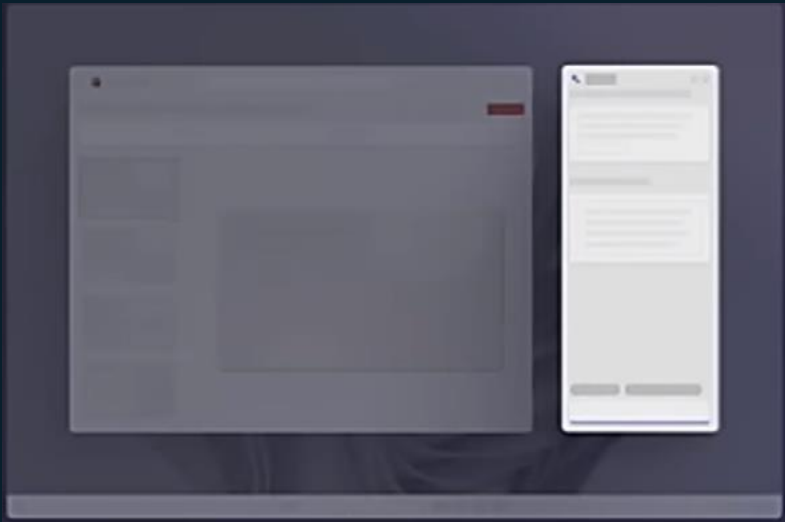
Copilot as a helper in an app

Center
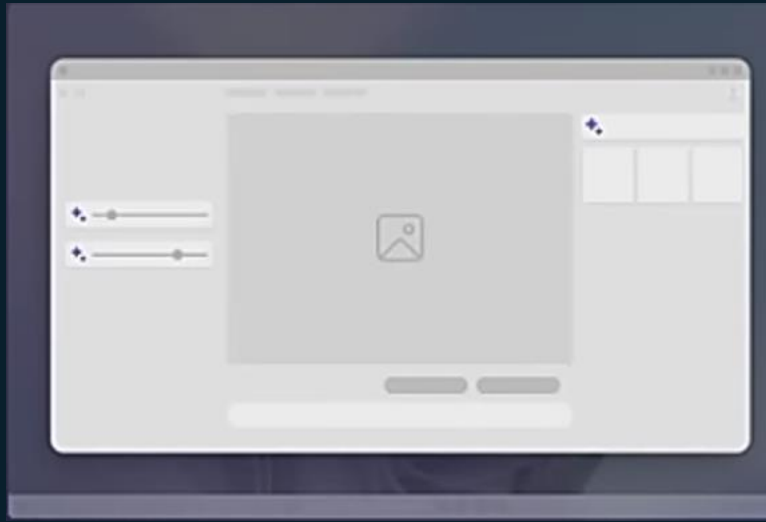
Copilot as the app foundation

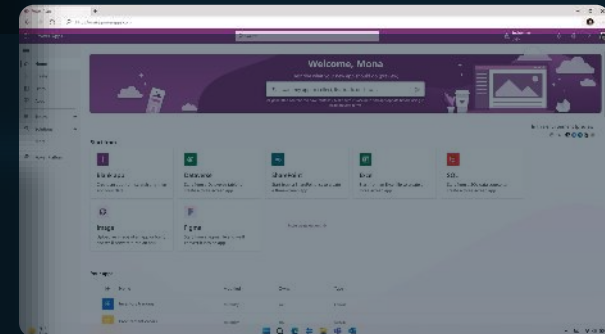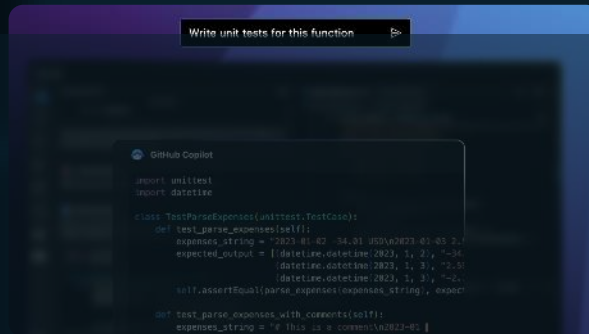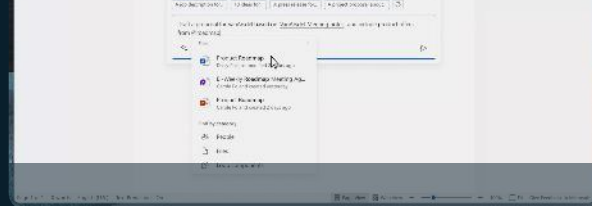## Outside

Copilot orchestrates across apps and tasks

Integrate your custom data

Bot + Azure Cognitive Search

Graph Connectors

Message Extensions

Create your custom Copilot with your data

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Sample data source for the index

Name	Size	Date modified	Type
Yesterday			
azure-governance-policy.pdf	230.946 KB	22.09.2023 12:35	Adobe Acrobat Docu...
Microsoft Azure Active Directory M365 Minimum Viable SCB Draft v0.1.pdf	725 KB	22.09.2023 12:30	Adobe Acrobat Docu...
Microsoft 365 Defender M365 Minimum Viable SCB Draft v0.1.pdf	602 KB	22.09.2023 12:28	Adobe Acrobat Docu...
Microsoft Power BI M365 Minimum Viable SCB v0.1.pdf	559 KB	22.09.2023 12:30	Adobe Acrobat Docu...
Microsoft Teams M365 Minimum Viable SCB Draft v0.1.pdf	547 KB	22.09.2023 12:30	Adobe Acrobat Docu...
Microsoft Exchange Online M365 Minimum Viable SCB Draft v0.1.pdf	530 KB	22.09.2023 12:28	Adobe Acrobat Docu...
Microsoft Power Platform M365 Minimum Viable SCB Draft v0.1.pdf	478 KB	22.09.2023 12:30	Adobe Acrobat Docu...
Microsoft OneDrive for Business M365 Minimum Viable SCB Draft v0.1.pdf	472 KB	22.09.2023 12:30	Adobe Acrobat Docu...
Microsoft SharePoint Online M365 Minimum Viable SCB Draft v0.1.pdf	459 KB	22.09.2023 12:30	Adobe Acrobat Docu...

Custom Copilot with Azure Cognitive Search

Custom Bot
[Implementation]

Open AI

Search result

Azure Cognitive
Search

Index

Microsoft Azure

Private
Data
source

Indexer

[Skills]

Demo
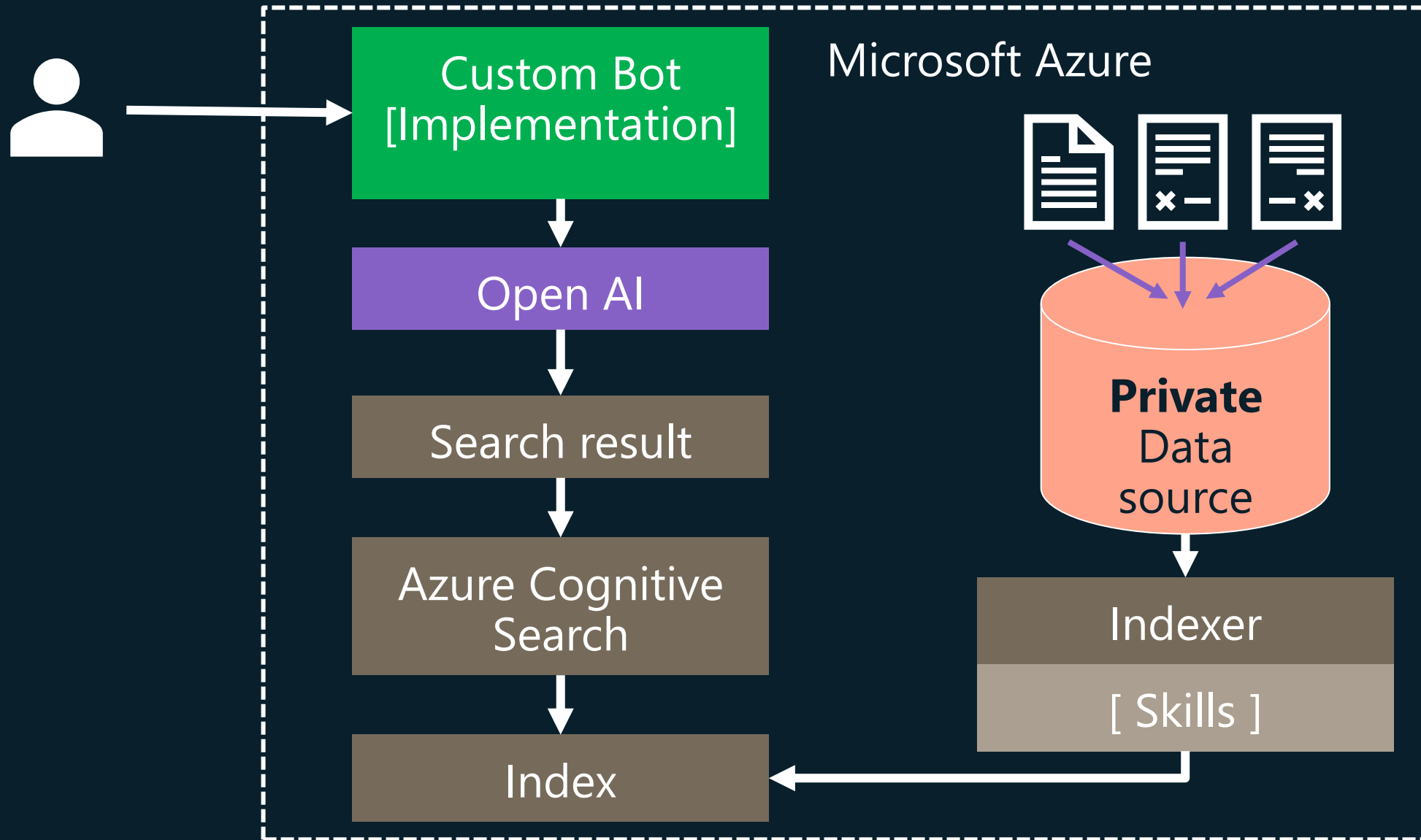
https://documentintelligence.ai.azure.com/studio/read
Azure Cognitive Search (Source, Costs, Mode, Test, ...)
Azure OpenAI

Data

The payload includes answers, plain text and highlighted captions, and retrievable fields.

@search.score
results is sorted in descending order by relevance score

@search.rerankerScore
improves search relevance by using language understanding to rerank search results. 0 to 4 (low to high)

@search.captions
An array of captions containing extracted text.

result

```
{
  "@odata.context": "https://.search.windows.net/...",
  …
},
  "value": [
    {
      "@search.score": 2.0116546,
      "@search.rerankerScore": 2.322418689727783,
      "@search.captions": [
        {
          "text": "<short>",
          "highlights": "<extract from short>"
        }
      ],
      "content": "<full text>",
      "filepath": "<document.pdf>",
      "title": "Microsoft Azure Active Directory",
      "url": "https://somestorage.blob...pdf",
      "id": "<long-id>",
      "last_updated": "20240209144034",
      "contentVector": [-0.0026608123, … ]
}
```

Integration into M365 Copilot

aka.ms/ExtendCopilotM365
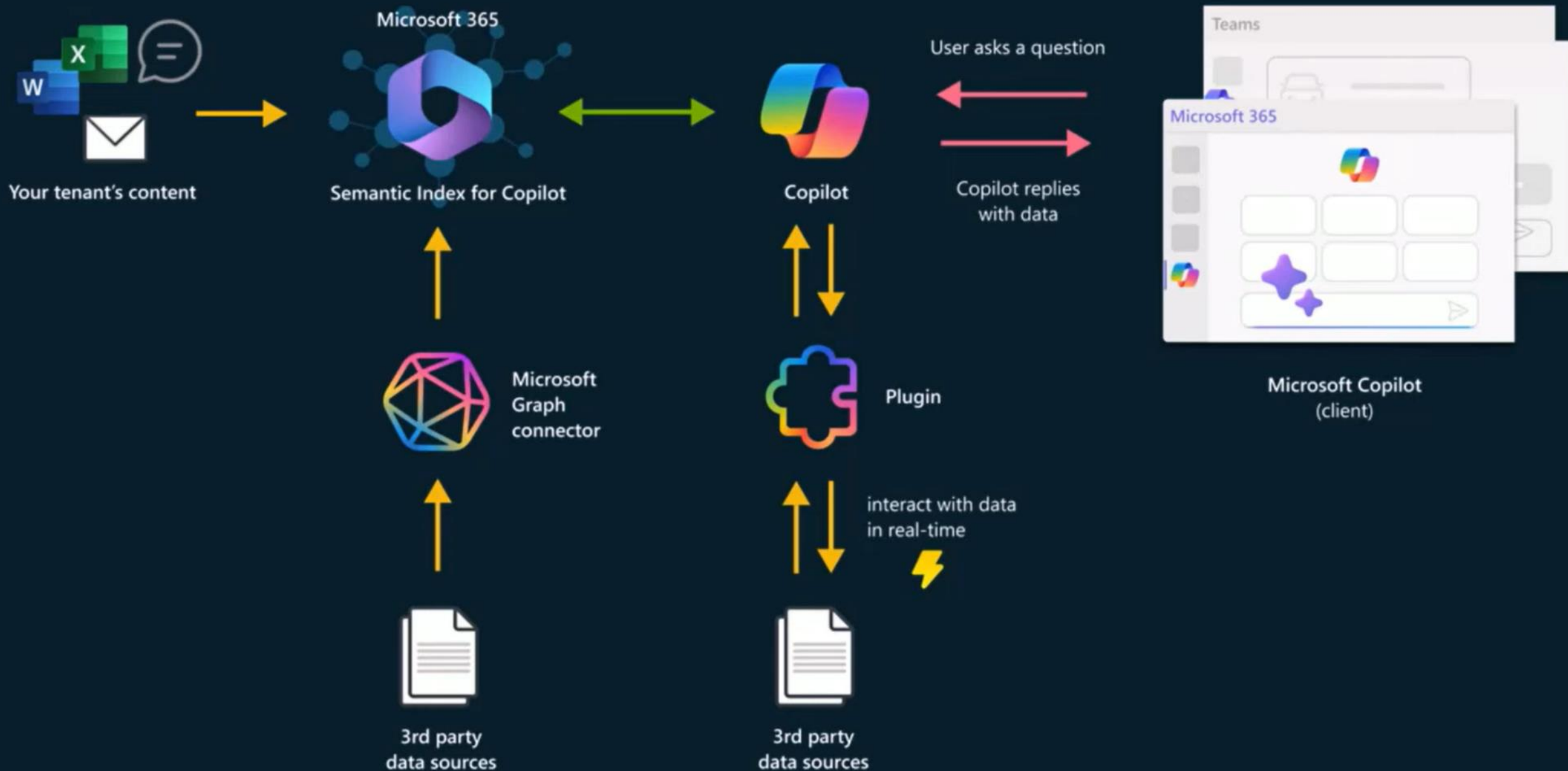
Graph Connectors

Graph ?

aka.ms/graph
aka.ms/ge

Ingesting data with the Graph Connector

Microsoft Graph connector

1. Creates external **connection**

External connection

Definition

Schema

External item

Properties (metadata)

Content

ACLs

Activities

2. Connects to external data source and **ingests content** to Microsoft 365

External content
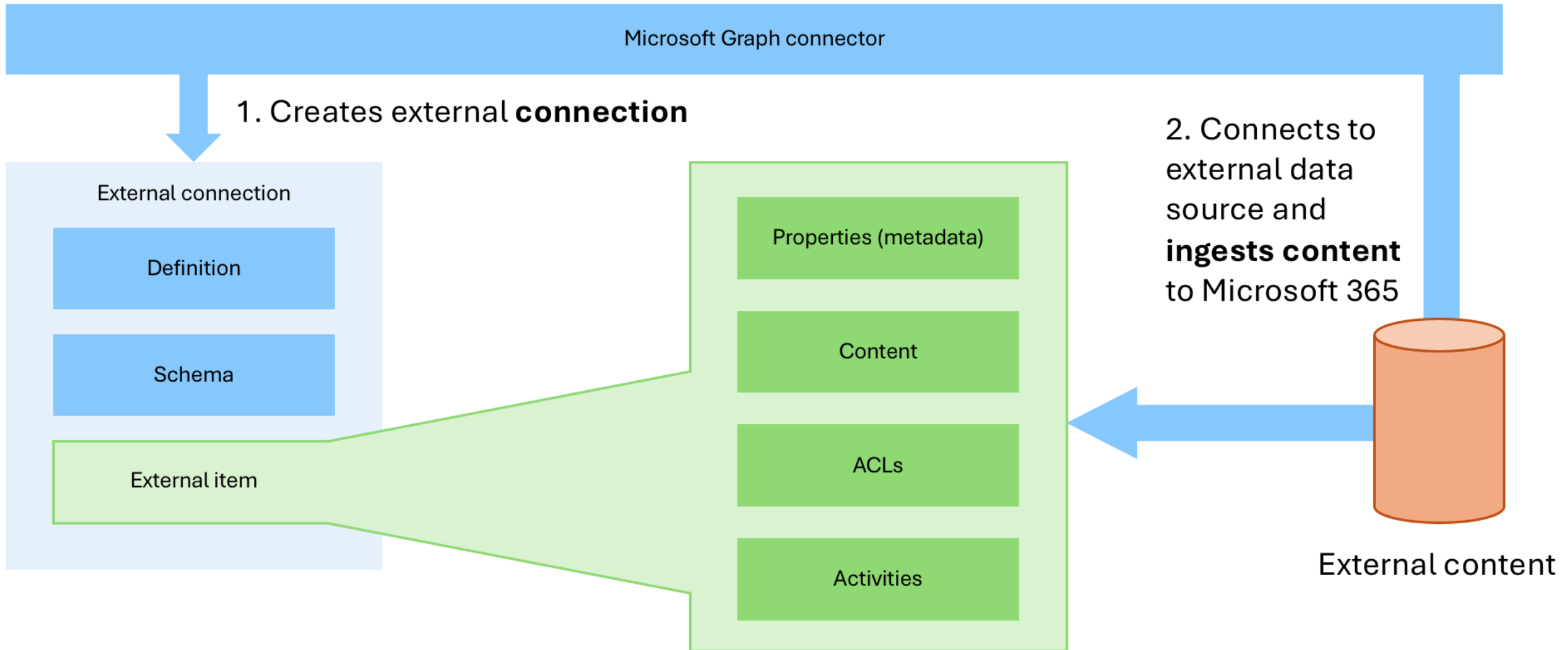
Developing a custom Graph connector

- Do you want to ingest content once or continuously?
- Will you run the connector manually, or will it run continuously in the cloud?
- How much content do you need to ingest? What's the necessary infrastructure to support it?
- Do you need to handle content updates and deletions automatically?

Demo Graph Connectors

Message Extensions

How do you build a plugin?

Low code

- Power Platform
- Microsoft Copilot Studio

Full code

- Microsoft 365 app
- Message extension
- Teams Toolkit
  - Visual Studio Code (JS & TS)
  - Visual Studio (C#)

Active the Teams Toolkit extension !
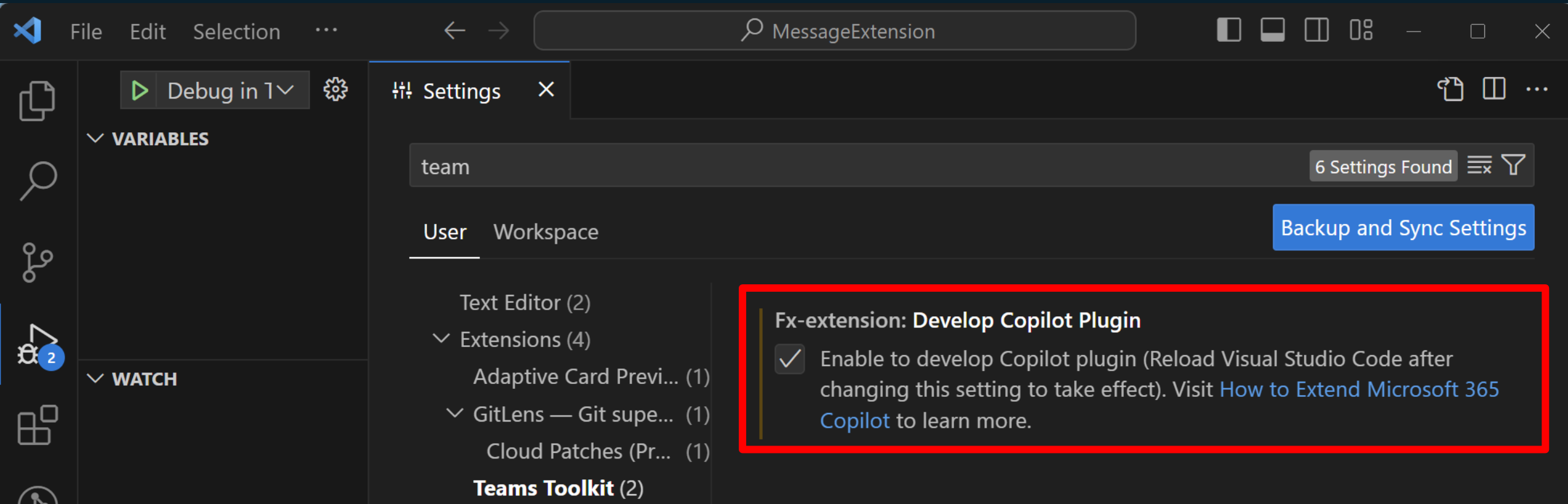
Demo Teams Toolkit

Message extension architecture
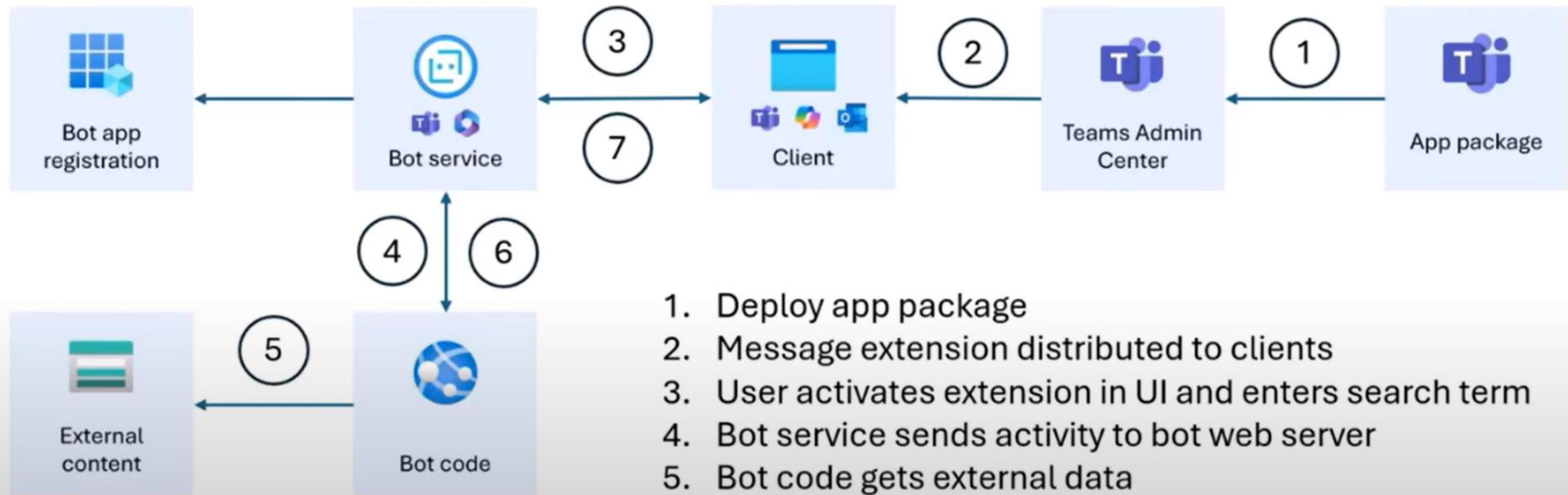
1. Deploy app package
2. Message extension distributed to clients
3. User activates extension in UI and enters search term
4. Bot service sends activity to bot web server
5. Bot code gets external data
6. Bot code returns results response to bot service (< 10s)
7. Bot service returns results to client

Demo Message Extensions

https://github.com/OfficeDev/Copilot-for-M365-Plugins-Samples/tree/main/samples/msgext-northwind-inventory-ts

Copilot Plugins

See it
https://github.com/OfficeDev/Copilot-for-M365-Plugins-Samples/blob/main/samples/msgext-northwind-inventory-ts/lab/Exercise%2003%20-%20Run%20in%20Copilot.md
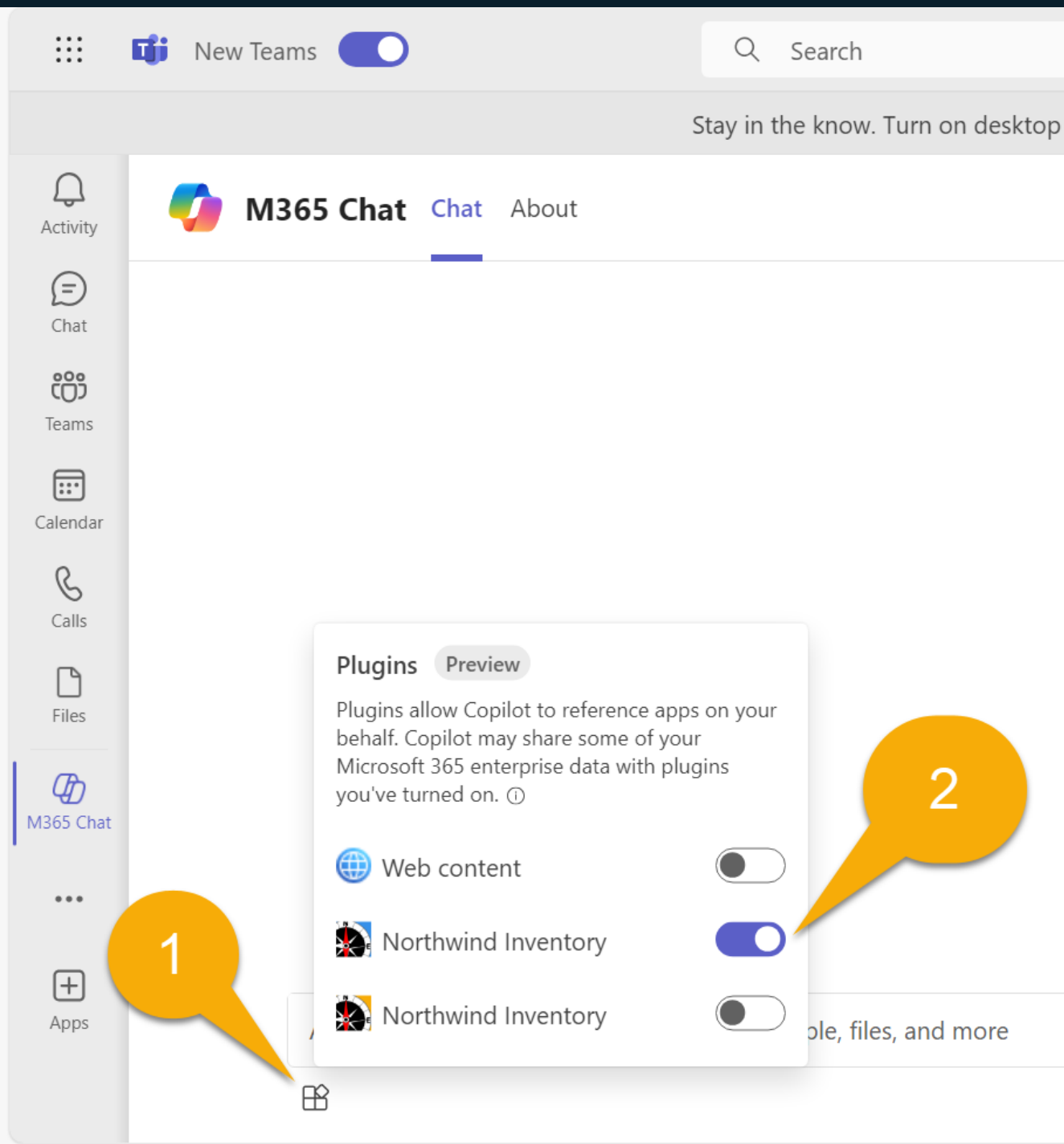
Troubleshoot your Copilot plugins with Developer Mode
https://www.youtube.com/watch?v=NwqOX_Wz024

Take aways to integrate your data into Copilot

Bot + Azure Cognitive Search

Graph Connectors

Message Extensions

Which to use when

Graph Connector

- Ingest data into Microsoft Graph
- Unstructured / flattened data
- Up to 5M items per connection
- Up to 20 requests per second
- Read-only
- Data inside M365
- SharePoint, Viva Topics, Bing work, etc.

Plugin

- Bot development
- Real-time data access
- Structured data
- Suitable for high volume data (over 5M)
- Suitable for high activity (over 20 req./sec.)
- Read and write
- Teams and Outlook

Information on Microsoft Copilots - 1

- Bing and Edge
  https://blogs.microsoft.com/blog/2023/07/18/furthering-our-ai-ambitions-announcing-bing-chat-enterprise-and-microsoft-365-copilot-pricing

- Microsoft 365 Copilot
  https://www.microsoft.com/en-us/microsoft-365/blog/2023/09/21/announcing-microsoft-365-copilot-general-availability-and-microsoft-365-chat

- Microsoft Copilot in Windows
  https://blogs.windows.com/windowsdeveloper/2023/05/23/bringing-the-power-of-ai-to-windows-11-unlocking-a-new-era-of-productivity-for-customers-and-developers-with-windows-copilot-and-dev-home

- Dynamics 365 Copilot
  https://cloudblogs.microsoft.com/dynamics365/bdm/2023/03/06/introducing-microsoft-dynamics-365-copilot-bringing-next-generation-ai-to-every-line-of-business

- Microsoft Fabric Copilot
  https://azure.microsoft.com/en-us/blog/introducing-microsoft-fabric-data-analytics-for-the-era-of-ai

Information on Microsoft Copilots - 2

- Microsoft Security Copilot
https://cloudblogs.microsoft.com/dynamics365/bdm/2023/03/06/introducing-microsoft-dynamics-365-copilot-bringing-next-generation-ai-to-every-line-of-business
- GitHub Copilot
https://github.com/features/preview/copilot-x
- PowerApps Copilot
https://powerapps.microsoft.com/en-us/blog/copilot-brings-the-power-of-intelligence-to-your-favorite-power-apps
- Get started with Microsoft 365 Copilot
https://learn.microsoft.com/en-us/training/paths/get-started-with-microsoft-365-copilot/?source=learn
- Microsoft 365 Copilot Adoption
https://adoption.microsoft.com/en-us/copilot
- Copilot copyright commitment
https://blogs.microsoft.com/on-the-issues/2023/09/07/copilot-copyright-commitment-ai-legal-concerns

Information on Microsoft Copilots - 3

- Worklab: the art and science working with AI
- https://www.microsoft.com/en-us/worklab
- Plugins for Microsoft 365 Copilot
  https://techcommunity.microsoft.com/t5/microsoft-teams-blog/how-to-transform-work-with-plugins-for-microsoft-365-copilot-and/ba-p/3933467
- Create Teams conversation bot
  https://learn.microsoft.com/en-us/microsoftteams/platform/sbs-teams-conversation-bot?tabs=dev
- Publish your Bot in Teams
  https://learn.microsoft.com/en-us/azure/bot-service/channel-connect-teams?view=azure-bot-service-4.0
- Connectors for Copilot apps
  https://learn.microsoft.com/en-us/connectors/connector-reference
- Azure OpenAI client library for .NET
  https://learn.microsoft.com/en-us/dotnet/api/overview/azure/ai.openai-readme?view=azure-dotnet-preview
- Azure Cognitive Search
  https://learn.microsoft.com/en-us/rest/api/searchservice/

Teams Toolkit Extension

Visual Studio Code

- https://learn.microsoft.com/en-us/microsoftteams/platform/toolkit/install-teams-toolkit?tabs=vscode&pivots=visual-studio-code-v5

Visual Studio

- https://learn.microsoft.com/en-us/microsoftteams/platform/toolkit/toolkit-v4/install-teams-toolkit-vs?pivots=visual-studio-v17-7
- https://learn.microsoft.com/en-us/microsoftteams/platform/toolkit/toolkit-v4/explore-teams-toolkit-vs?tabs=prj&pivots=visual-studio-v17-7

Extend M365 Copilot

- Start here
  https://aka.ms/ExtendCopilotM365
- Sample App Northwind Inventory step-by-step
  https://github.com/OfficeDev/Copilot-for-M365-Plugins-Samples/blob/main/samples/msgext-northwind-inventory-ts/lab/Exercise%2000%20-%20Welcome.md
- Extend Copilot for Microsoft 365 with plugins
  https://www.youtube.com/watch?v=ePLgSsje4Fw
- Sample Solution Gallery
  https://adoption.microsoft.com/en-us/sample-solution-gallery/?keyword=&sort-by=updateDateTime-true&page=1&product=Microsoft+365+Copilot&product=TeamsToolkit
- Northwind-Inventory
  https://github.com/OfficeDev/Copilot-for-M365-Plugins-Samples/tree/main/samples/msgext-northwind-inventory-ts

atwork

We get you in the cloud!

Interested?
Contact us!

www.atwork.at

office@atwork.at

THANK YOU.

https://github.com/tonipohl/CustomCopilots