AI-Powered Azure: simplifying cloud workflows with Microsoft Copilot

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CloudConf

26th March 2025

Cloud Administration Challenges

Every day you need to do more ...

...more users	...more needs	...more workloads	...more requirements	...more services
...more capabilities	...more middleware	...more platforms	...more solutions	...more devops

... more .... more ... EVERYDAY!!!

Cloud Administration Challenges

… and you need it …

- Correct
- Compliant
- Safe
- Performant
- Repeatable
- Cost Effective

… and YESTERDAY!!!

Copilot in Azure Architecture

Copilot Frontend

- Extensions
- Context & Action services
- Adaptive cards
- Chat UX

Orchestration

- Prompt & Response filtering
- Grounding
- Intent recognition
- Plugins

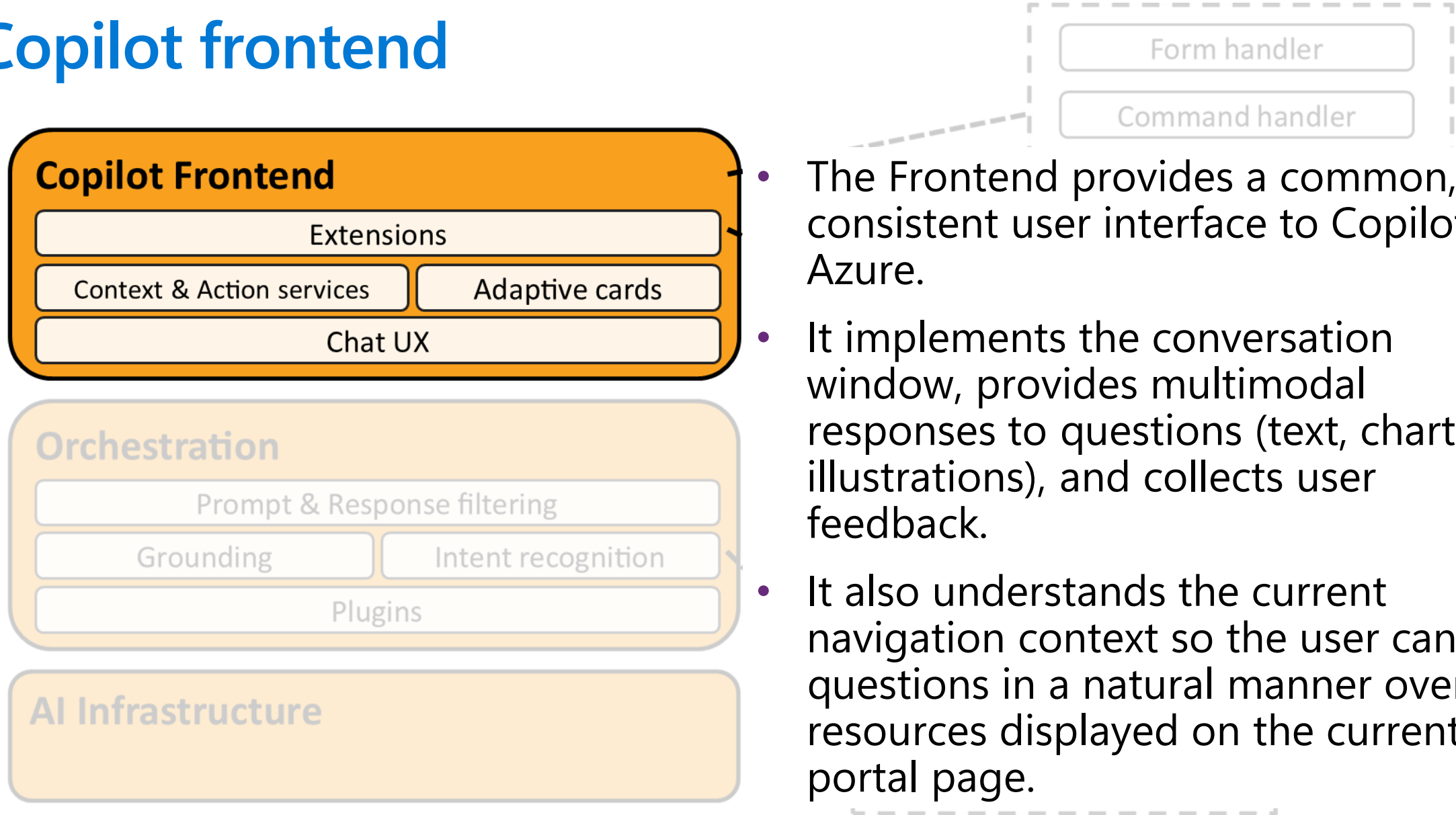
AI Infrastructure

- Form handler
- Command handler
- Shell handler

- Chat
- Code block control
- Form

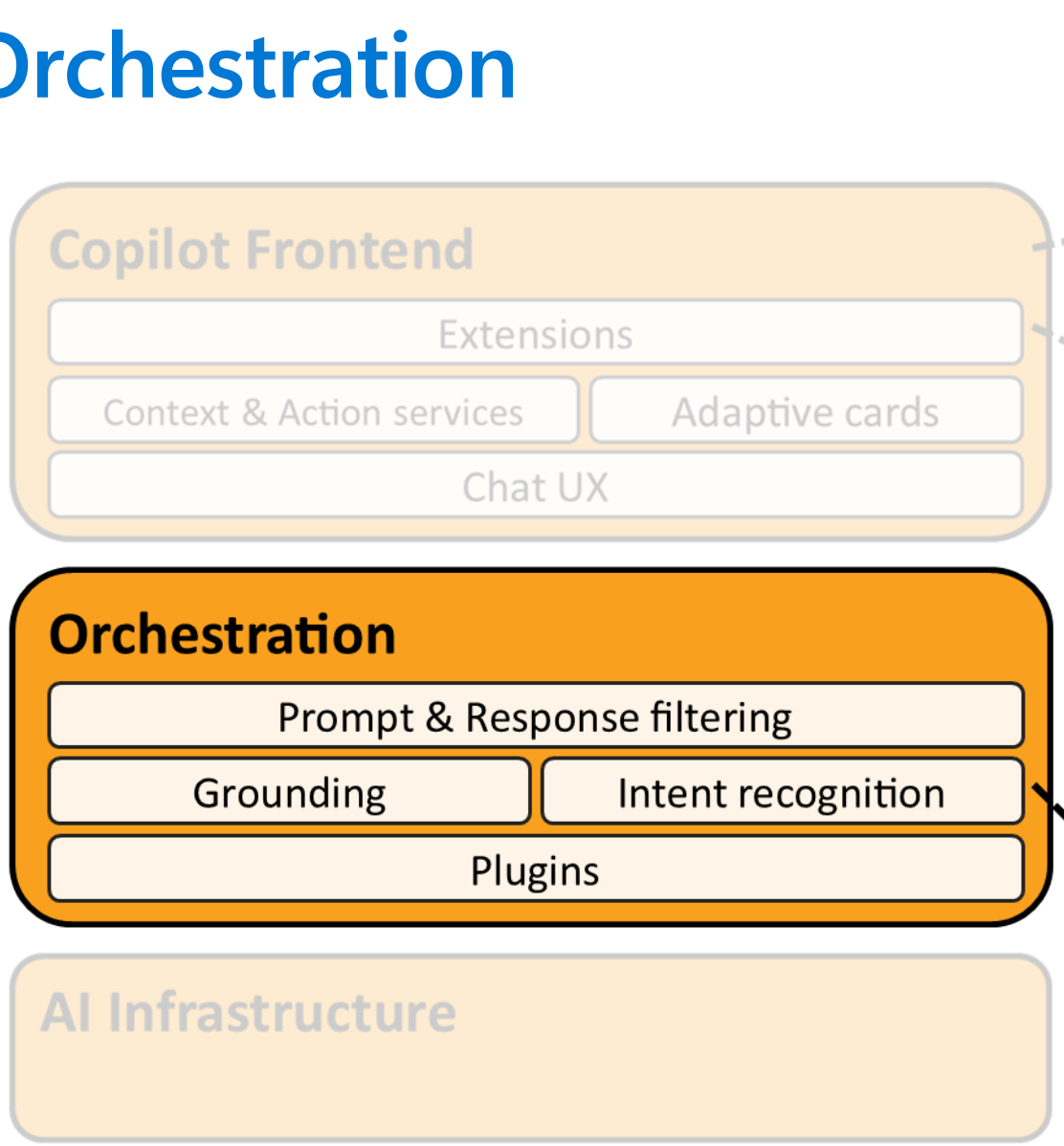
- Docs & learn
- KQL Query
- Costs
- .....

Copilot frontend



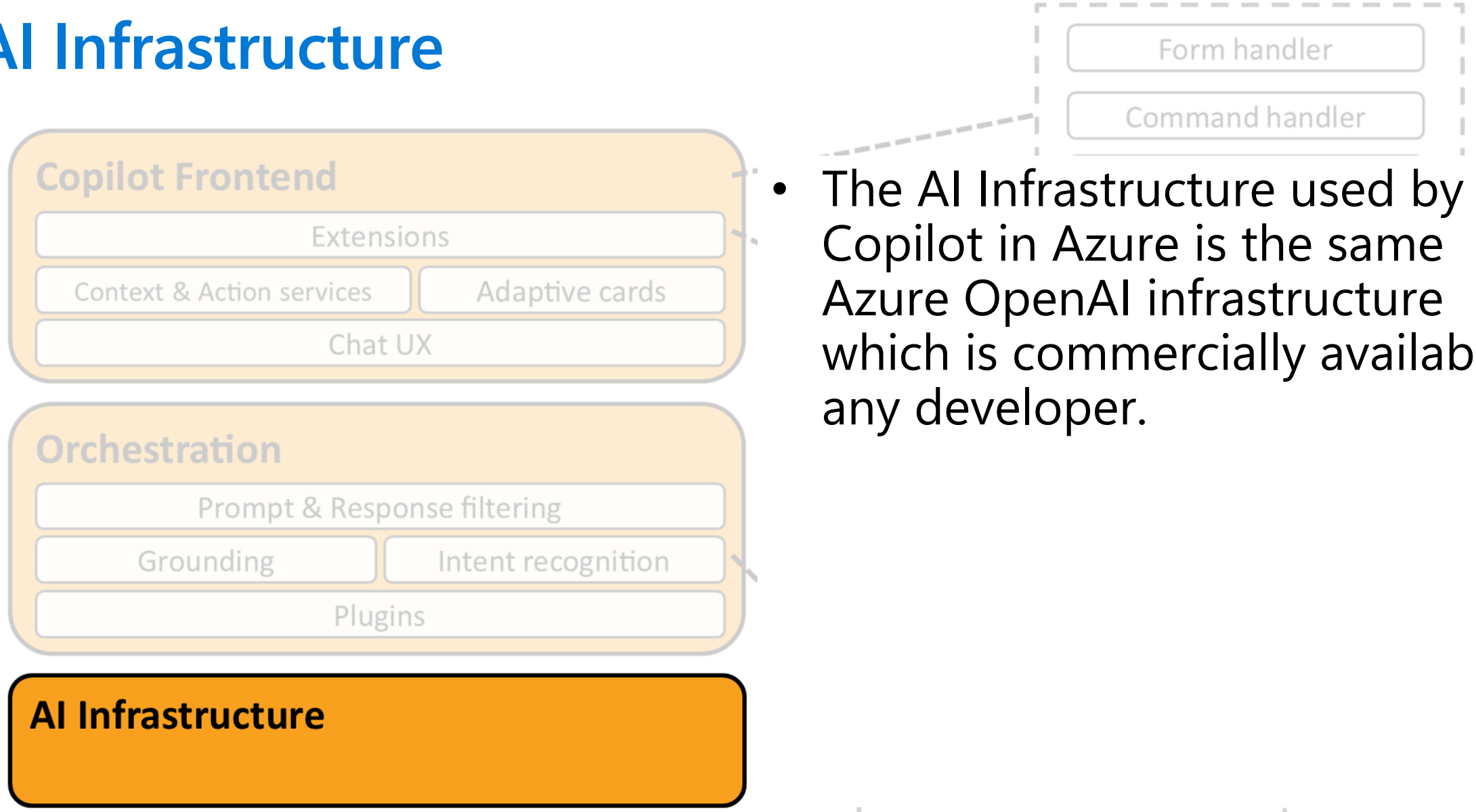
- The Frontend provides a common, consistent user interface to Copilot in Azure.
- It implements the conversation window, provides multimodal responses to questions (text, charts, illustrations), and collects user feedback.
- It also understands the current navigation context so the user can ask questions in a natural manner over the resources displayed on the current portal page.

Orchestration



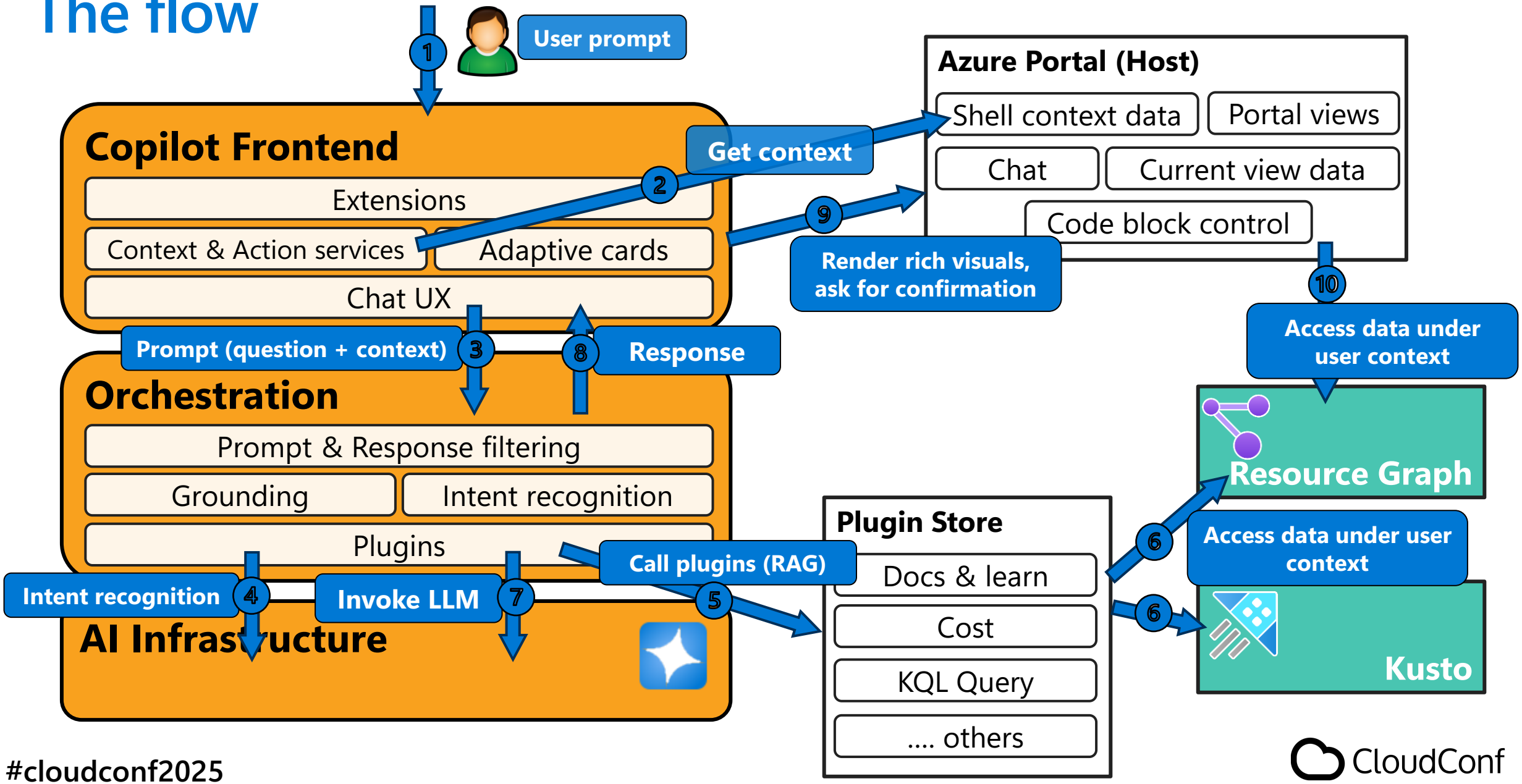
- The Orchestration layer is the heart of Copilot in Azure.
- This layer generates a deep semantic understanding of the user's question using the Large Language Model, reasons over all Azure resources and resource types, and then dispatches the question to the relevant domain-specific plugins.
- Plugins use their service-specific graph or observability data to answer the user's question.

AI Infrastructure



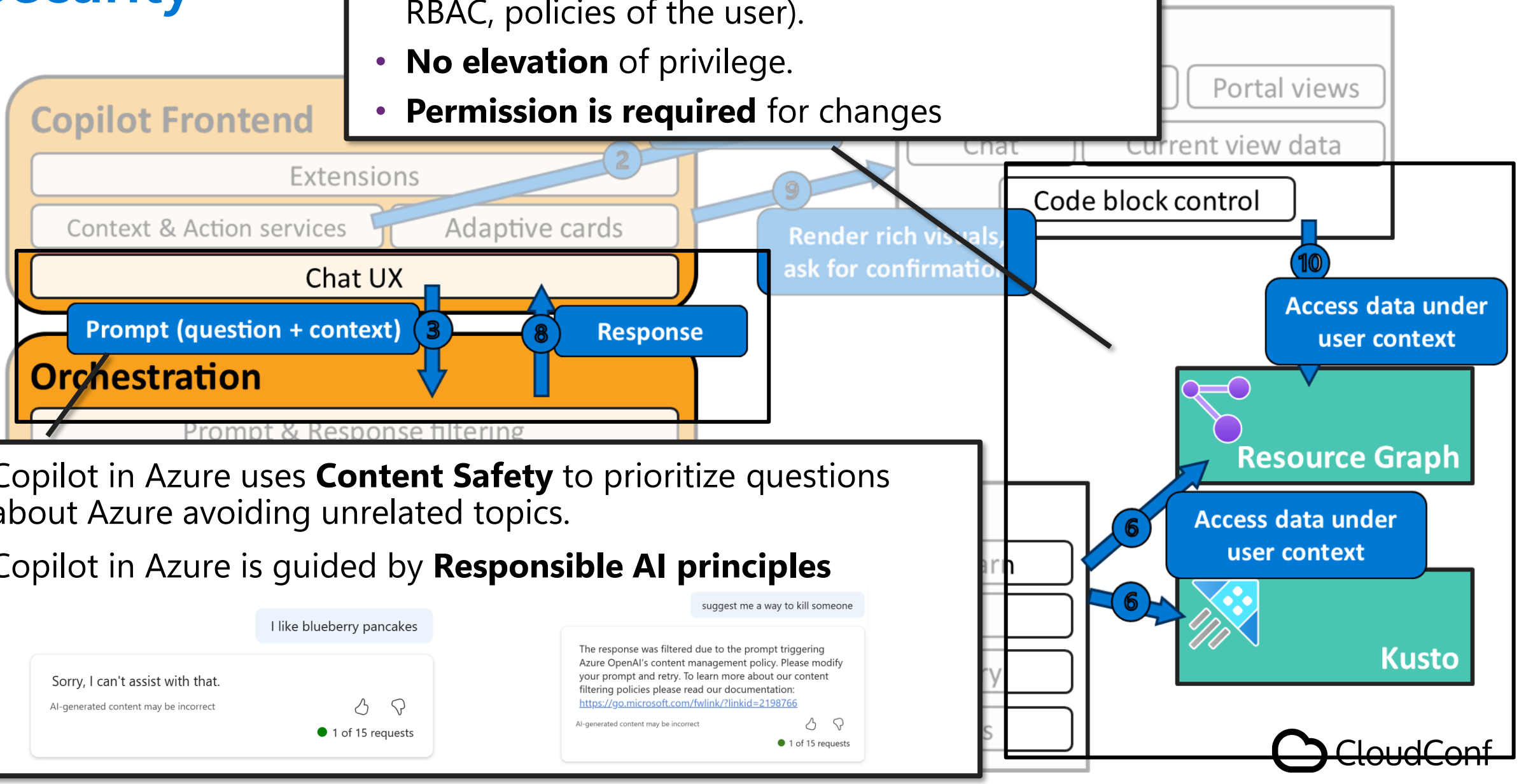
- The AI Infrastructure used by Copilot in Azure is the same Azure OpenAI infrastructure which is commercially available to any developer.

The flow


1
User prompt
Copilot Frontend
Extensions
Context & Action services
Adaptive cards
Chat UX
2
Get context
Azure Portal (Host)
Shell context data
Portal views
Chat
Current view data
Code block control
9
Render rich visuals, ask for confirmation
10
Access data under user context
Prompt (question + context)
3
8
Response
Orchestration
Prompt & Response filtering
Grounding
Intent recognition
Plugins
Intent recognition
4
Invoke LLM
7
AI Infrastructure
Call plugins (RAG)
5
Plugin Store
Docs & learn
Cost
KQL Query
.... others
6
6
Access data under user context
Resource Graph
Kusto

Security

- Copilot in Azure acts **on behalf of** the user (same RBAC, policies of the user).
- **No elevation** of privilege.
- **Permission is required** for changes



- Copilot in Azure uses **Content Safety** to prioritize questions about Azure avoiding unrelated topics.
- Copilot in Azure is guided by **Responsible AI principles**

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Demo

Prompting like there’s no tomorrow!!

Copilot in Azure, GitHub Copilot for Azure, Security Copilot

	Copilot in Azure	GitHub Copilot for Azure	Security Copilot
Purpose	Enhances productivity in Azure by optimizing infrastructure and workflows.	Assists developers in writing code efficiently using AI-powered suggestions.	Focuses on improving cybersecurity operations and threat detection.
Primary Use Case	IT infrastructure management, deployment, and scalability in Azure.	AI-assisted coding and development within Azure environments.	Cybersecurity incident response and proactive threat management.
Key Features	Automates repetitive tasks, suggests improvements for Azure setups.	Offers real-time coding assistance and supports multiple programming languages.	Detects vulnerabilities, provides threat intelligence, and automates responses.

Copilot in Azure Limits

Any action performed on more than 10 resources must be performed outside of Microsoft Copilot in Azure

You can only make 15 requests during a given chat, and you only have 10 chats in a 24-hour period

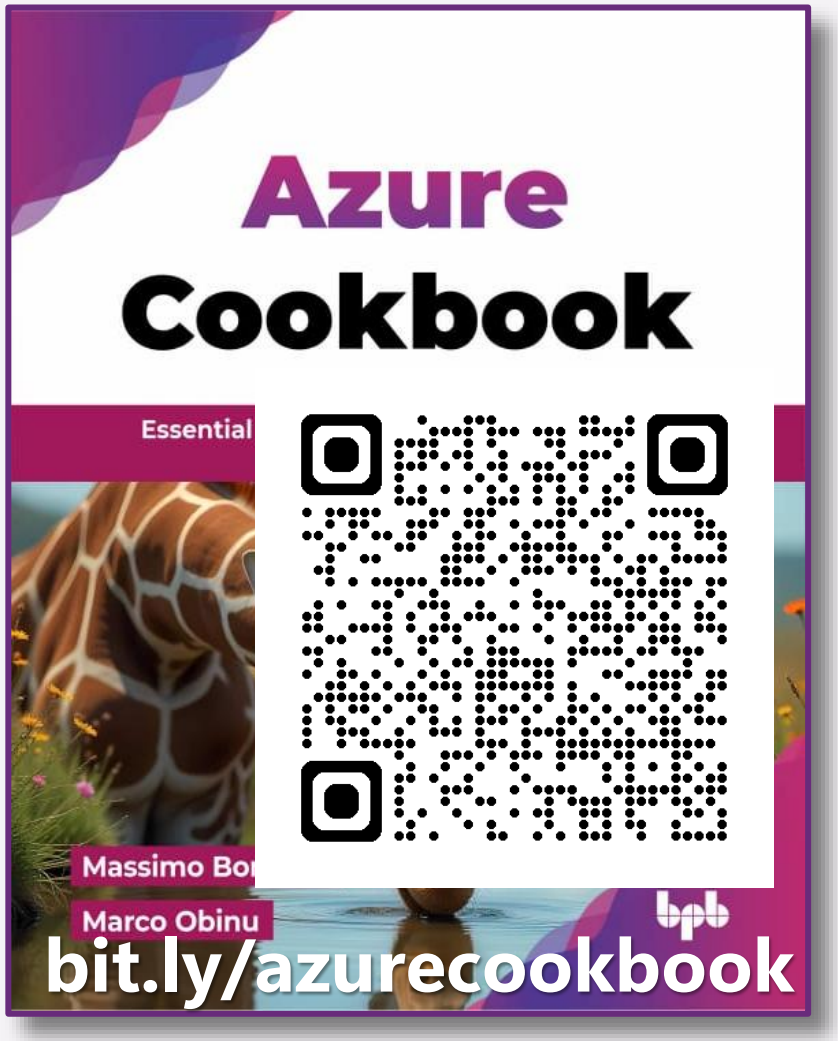
Some responses that display lists will be limited to the first five items

For some tasks and queries, using a resource name will not work, and you will need to specify the Azure resource ID

Copilot in Azure is currently only available in English (but you can try in different languages)

Takeaway

- It is in preview…it means…it is in preview!!
- Like any AI system, Microsoft Copilot in Azure's responses will not always be perfect.
- User-provided prompts and responses are not used to train, retrain, or improve Azure OpenAI Service foundation models.
- Not all Azure services have the same level of integration Copilot in Azure.
- Give your feedback to the Copilot in Azure answers…. Your feedback will improve Copilot!



Any Questions?

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References

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