



Microsoft 365
COMMUNITY CONFERENCE

Build AI-Ready Apps with SQL Database in Microsoft Fabric



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Microsoft SQL – Ground to Cloud to Fabric

One SQL for the era of AI

Develop once, deploy anywhere

GA



SQL Server 2025



Azure SQL

GA



SQL database in Fabric

T-SQL



Engine



Tools



Fabric



AI



Copilots

Developers

Microsoft Fabric

The unified data platform for AI transformation



Data Factory



Analytics



Databases



Real-Time
Intelligence



IQ



Power BI

Fabric Platform



Copilot



OneLake



Governance

Top Use Cases and Scenarios



Operational data
store (ODS)



Event-driven
apps



Line of business
Power apps + SQL +
Power BI



Meta-driven pipelines



Vector and AI app
dev



Reverse ETL



Power BI
writebacks



Reference
data store



Fabric Databases

Accelerate AI application innovation with a unified data platform



Simplified



Autonomous



Optimized for AI

Built upon the familiar Microsoft SQL engine, in Microsoft Fabric

Simplified

Focus on building your app

A simple, integrated developer experience



Easy provisioning



AI assistance with Copilot



T-SQL support



Unified billing with Fabric capacity model

The screenshot displays the Microsoft Fabric developer experience interface. The top navigation bar includes 'Home', 'Replication', and 'Security'. Below this is a toolbar with icons for 'Get data', 'New Query', 'Templates', 'Open in', and 'New API for GraphQ'. The main interface is divided into two panes. The left pane, titled 'Explorer', shows a tree view of the 'banking_app' database structure, including 'dbo', 'Tables', 'agent_definitions', and 'Columns'. The right pane, titled 'Data preview - chat_history', displays a table with the following data:

	ABC message...	ABC session_id	ABC trace_id
1	0ffd2a54-15c...	session_210a...	edc09217-bc
2	2e21f7d5-6d4...	session_210a...	edc09217-bc
3	5336aefa-a5f...	session_210a...	706fe84e-96
4	da9cee2a-92...	session_210a...	706fe84e-96
5	msg_9d9a348...	session_210a...	706fe84e-96
6	msg_f1fc4f31...	session_210a...	edc09217-bc

OneLake Mirroring

Near real-time replication to OneLake by default, seamless integrations with the rest of Fabric






Unified operational and analytics



Data replicated to open-source Delta



Shortcuts and SQL analytics endpoint to query data without copying it

Name	Status	Git status	Type
 banking_app		 Synced	SQL database
 banking_app		—	SQL analytics endpoint



SQL analytics endpoint ▾



SQL Database

Define, query, and update data



SQL analytics endpoint

Query data using SQL

Application lifecycle management

Every database under source control



Source control integration in the Fabric web interface (GitHub and Azure DevOps)



Database code editing in developer tooling



SQLPackage command line tool

The screenshot shows the Azure portal interface for Source control. At the top, there are navigation links: "View deployment pipeline", "Create app", "Manage access", and "Workspace settings". Below this is a "Source control" header with a search bar "Filter by keyword" and a "Filter" dropdown. A table lists tasks with columns for "Task", "Owner", "Refreshed", and "No. refs". A modal window titled "Source control" is open, showing the "Current branch: planelanding" and a list of "Changes" (8) and "Updates". The changes list includes items like "Contoso PDFs RAG", "RAG-with-resumes", "api1", "ContosoDB", "dev", and "Notebook 1", each with a checkbox and a status icon. At the bottom of the modal are "Commit" and "Undo" buttons.

Task	Owner	Refreshed	No. refs
—	Anna Ho...	—	—
—	Anna Ho...	—	—
—	Contoso...	7/22/202...	N/A
—	Anna Ho...	—	—
—	Anna Ho...	—	—
—	Contoso...	10/25/20...	N/A
—	Anna Ho...	—	—
—	Anna Ho...	—	—
—	Anna Ho...	—	—

SQL database in Fabric capacity model

Microsoft Fabric is a unified product for all your data workloads. Rather than provisioning and managing separate compute for each workload, the capacity is shared between all the workloads. With Microsoft Fabric, your bill is determined by two variables: the amount of compute you provision and the amount of storage you use.



Compute

A shared pool of capacity that powers all capabilities in Microsoft Fabric

Costs can be managed by pausing and resuming capacity

Purchased as a Pay-as-you-go resource
(can apply Azure reservation)



Storage

A single place to store all data

It is tied to a capacity and continues to accrue when capacity is paused

Purchased as Pay-as-you-go resource
(no Azure reservation)

Secure and governed by default

Authentication



Microsoft Entra authentication only

- Central identity management
- Password-less authentication

Authorization



- Workspace roles and item permissions for easy management
- Proven SQL native features for granular access control

Network security



- Private link-ready
- All data encrypted in transit – TLS 1.2, 1.3

Data encryption



- All data encrypted at rest
- Customer Managed Key support

Auditing



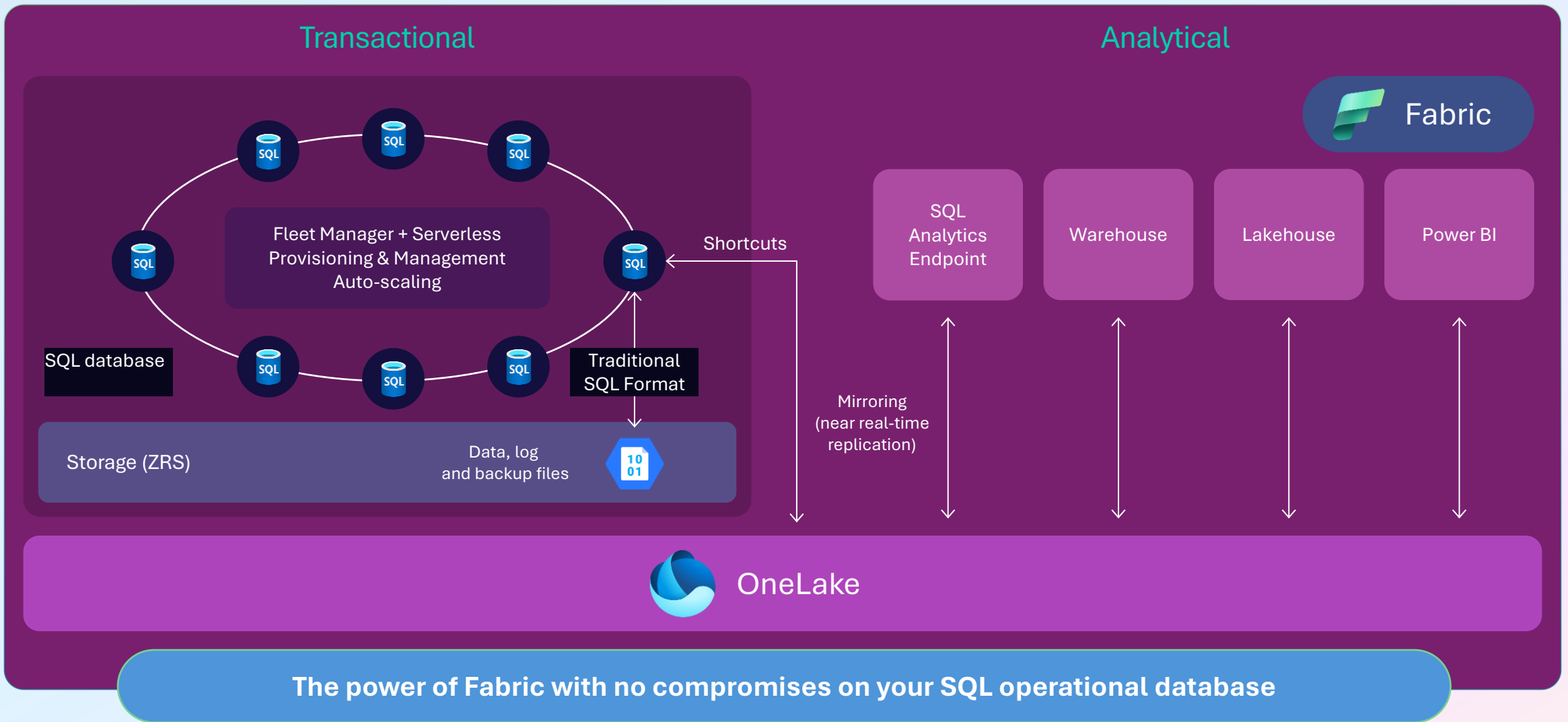
Smart defaults and customizable

Central governance



- Microsoft Purview sensitivity labels
- Centrally-managed protection policies

SQL database in Fabric Architecture





Demo



- Home
- Workspaces
- Copilot
- OneLake catalog
- Monitor
- Real-Time
- Workloads
- sukkaurTest Workspace
- My workspace
- ...
- Fabric



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

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

[Select a predesigned task flow](#) [+ Add a task](#)

→ Import a task flow

Name	Status	Type	Task	Owner	Refreshed	Next refresh
Bronze		Lakehouse	—	Sukhwant kaur	—	—
Bronze		SQL analytics end...	—	Sukhwant kaur	—	—
Bronze_to_Silver		Notebook	—	Sukhwant kaur	—	—
Gold		Lakehouse	—	Sukhwant kaur	—	—
Gold		SQL analytics end...	—	Sukhwant kaur	—	—
Silver		Lakehouse	—	Sukhwant kaur	—	—

Autonomous and Secure

Autonomous capabilities manage your workloads



Challenge

Making the right choices and managing databases is complex



Solution

SQL database in Fabric enables you to get the best security, availability, and performance configurations

- Secure by default
- Auto-managed HADR
- Auto-scaling and auto-optimized



Autonomous



- Auto-HA with Zone Redundancy
- Auto-scaling compute and storage
- Auto-replicated to OneLake (no ETL)
- Automatic Index Compaction (preview), Auto-indexing
- Improved Intelligent Query Processing enhancements
 - Auto-backups, point-in-time restore available
 - Auto-patching



Demo



- Home
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- dp_fabric_de v_sk
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Explorer



Query, preview, or connect your data

Interact with your data by starting a query, creating database objects with a template, or connecting the database to your app with a GraphQL API. You can also preview your data by opening a table or view.

+ New

Optimized for AI

Optimized for AI

Fabric makes AI Application Development Easy

RAG Pattern

- Retrieve the most semantically relevant data from your database and use it to ground LLMs for specific scenarios

Semantic Search

- Generate embeddings with Azure Open AI
- Store vectors with data plus vector indexes
- Search for most relevant data

Fabric Integrations

- Data Science with Notebooks
- Data Agent integrations
- Data activator, real-time intelligence, IQ
- Prepare data with Data Pipelines, Data Flows
- Power BI Direct Lake mode

Vectors and Embeddings

What is vector embedding?

A **Vector Embedding** is a technique used in machine learning to transform data (text, images, etc.) into numerical representations (vectors) that capture the essential characteristics and relationships of the data.

Each number is referred to as a dimension.

dog: [0.9, 0.3, 0.2, ...]

puppy: [0.88, 0.33, 0.21, ...]

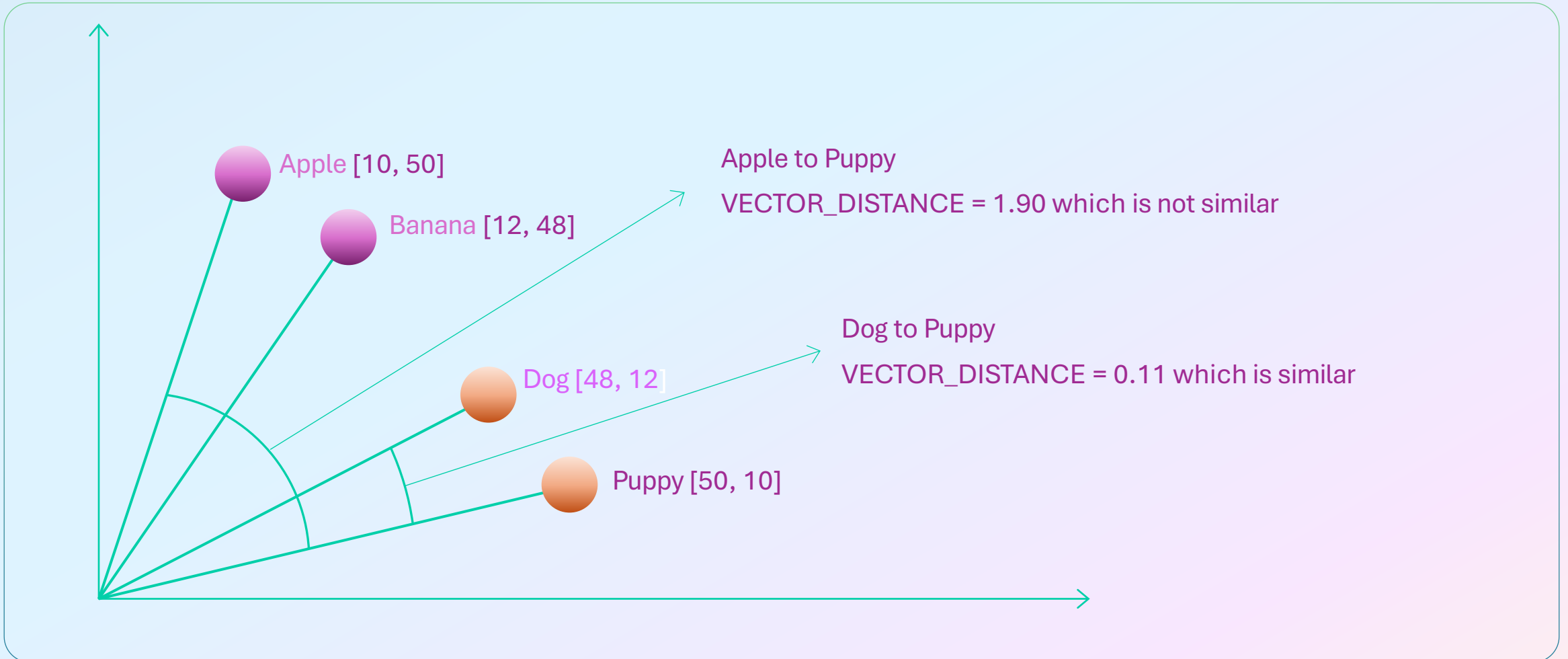
Image of a dog: [0.9, 0.3, 0.2, ...]

"I took the dog for a walk": [1.5, -0.8, 2.1, ...]

“AI_GENERATE_EMBEDDINGS” Function

- DECLARE @qv vector(1536) =
ai_generate_embeddings (@text USE MODEL external_model_object_name);

Similarity Searching using VECTOR_DISTANCE (cosine)



“VECTOR_DISTANCE” Function

- `Vector_distance(cosine,vector1,vector2)`
- `Vector_distance(dot,vector1,vector2)`
- `Vector_distance(euclidean,vector1,vector2)`

Similarity Searches vs Text Only Searches

“I’m looking to buy a comfy red sofa”

Text Search Results

Product Name

Red Sofa

Comfy Sofa – Red

Similarity Search Results

Product Name

Red Sofa

Comfy Sofa – Red

Soft maroon couch

Sleepy time crimson daybed

Vector/Semantic Search

Demo

Explorer

Search

- M365SQLDemoDB
- Queries
 - My queries
 - 01-DatabaseSco...
 - Shared queries

01-DatabaseSco...

Run Save as Save as view Explain query Fix query errors

Preview Copilot uses AI. Mistakes can happen. Verify code suggestions before running them. Review terms

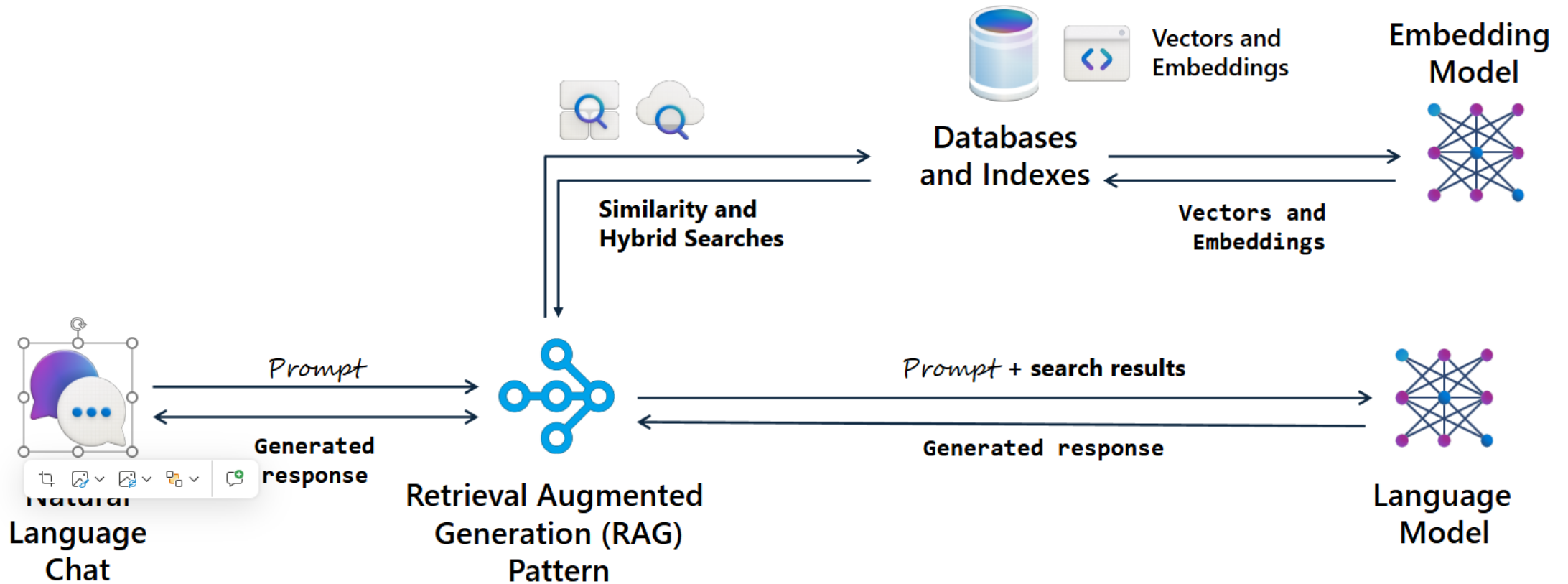
```

1 -- Create database scoped credential
2 IF not exists(SELECT * FROM sys.symmetric_keys WHERE [name] = '##MS_DatabaseMasterKey##')
3 BEGIN
4 CREATE master key encryption by password = N'V3 [REDACTED] d!';
5 END
6 GO
7 IF exists(SELECT * FROM sys.[database_scoped_credentials] WHERE name = 'https://fabricsqlai.openai.azure.com/')
8 BEGIN
9 DROP database scoped credential [https://fabricsqlai.openai.azure.com/];
10 END
11 GO
12 CREATE database scoped credential [https://fabricsqlai.openai.azure.com/]
13 with identity = 'HTTPEndpointHeaders', secret = '{"api-key": "CmbGjK [REDACTED]"}';
14 go

```



RAG Pattern



RAG Pattern



Demo

Preview Copilot uses AI. Mistakes can happen. Verify code suggestions before running them. Review terms

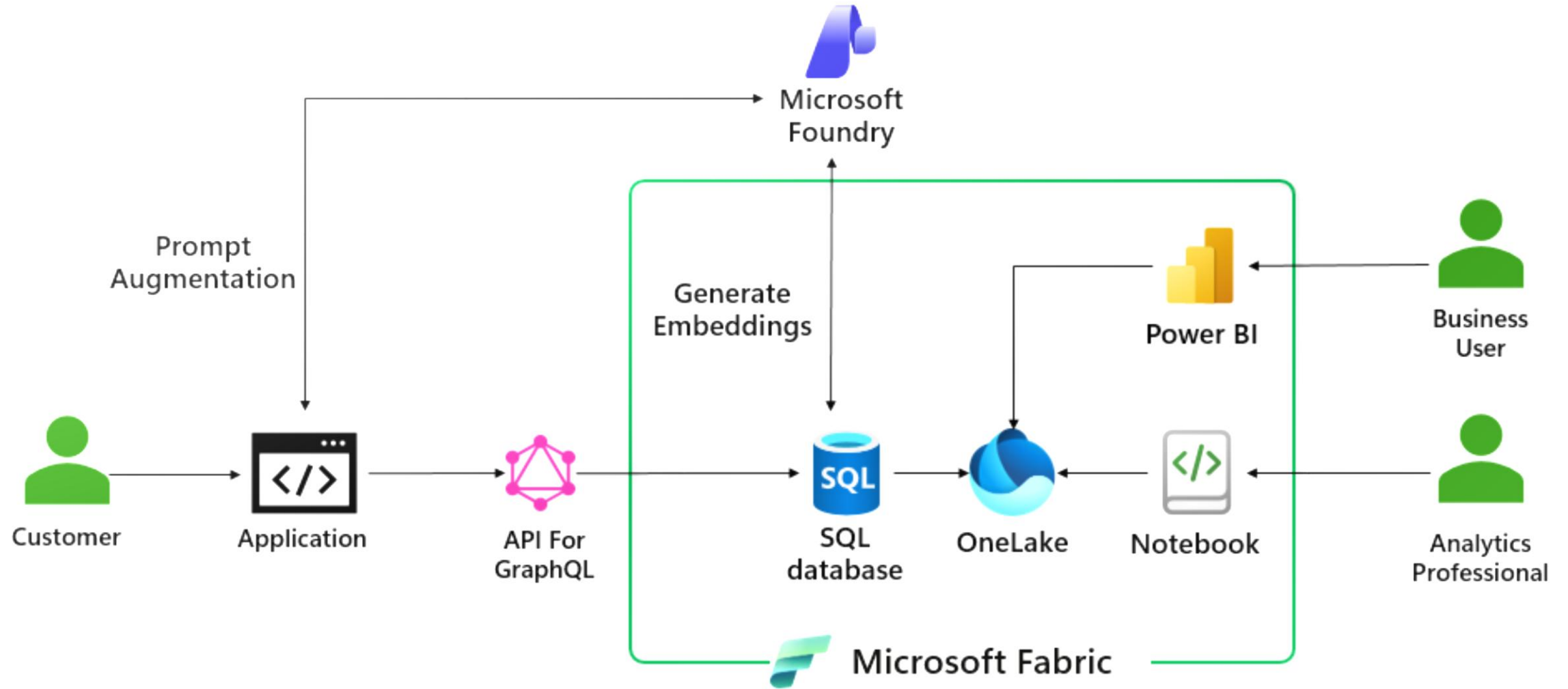
```

1 SET ANSI_NULLS ON
2 GO
3 SET QUOTED_IDENTIFIER ON
4 GO
5 CREATE or ALTER PROCEDURE [SalesLT].[prompt_answer]
6 @user_question nvarchar(max),
7 @products nvarchar(max),
8 @answer nvarchar(max) output
9
10 AS
11
12 DECLARE @url nvarchar(4000) = 'https://arunvi-demo-eu.cognitiveservices.azure.com/openai/deployments/gpt-4o/chat/completions?api-version=2025-01-01-preview';
13 DECLARE @payload nvarchar(max) = N'{
14     "messages": [
15         {
16             "role": "system",
17             "content": "You are a sales assistant who helps customers find the right products for their question and activities."
18         },
19         {
20             "role": "user",
21             "content": "The products available are the following: ' + @products + '"
22         },
23         {
24             "role": "user",
25             "content": " ' + @user_question + '"
26         }
27     ]

```

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AI-enhanced application with RAG



Thank you !!

Learn more about SQL database in Fabric

Key resources about SQL database in Fabric

- Learn: aka.ms/FabricSQLdatabase
 - Blog: aka.ms/FabSQLConUSBlog
-

Explore tutorials & Build AI apps

- Tutorial: aka.ms/SQLFabric-tutorial
 - Hands-on lab: aka.ms/SQLinFabricAllab
 - Build Agentic App: aka.ms/AgenticAppFabric
-

Discover more from our YouTube channel

aka.ms/azuresqlyt

Get Involved in the Fabric Community



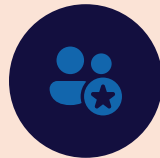
aka.ms/FabricCommunity

Connect with community members, ask questions, and learn more about Fabric



aka.ms/FabricUserGroups

Find a user group that matches your interests in your area or online



aka.ms/SuperUsers

Spread your Fabric knowledge, insights, and best practices with others



aka.ms/MVP

Technology experts that share their knowledge and passion with the community

SQL AI Database Developer Associate Certification

Empower Your Future with AI-Ready SQL Development Skills:

- AI-augmented SQL development
- Building AI-powered LLM-integrated apps
- Security, governance and responsible AI



News & community content



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aka.ms/Community/LearningChannel
Community led expert content on all your favorite Microsoft services.



Start your week with live news and event updates aka.ms/MondaysatMicrosoft
Watch live or on-demand & share our blog.

Home / Microsoft 365 Copilot

Microsoft 365 Copilot

Deliver value and employee satisfaction with our tools for Microsoft 365 Copilot deployment and adoption. This powerful technology combines the power of large language models (LLMs) with your organization's data – all in the flow of work – to turn your words into one of the most powerful productivity tools on the planet.

Microsoft 365 Copilot Chat and in-app experiences provide real-time intelligent assistance, enabling users to enhance their creativity, productivity, and skills.

[Looking for Copilot resources for Small and Medium Businesses? >](#)

Copilot Success Kit

Our Success Kit empowers you to achieve rapid value with Copilot while enabling your progressive skilling journey with AI tools.

[Download here >](#)

Copilot Chat and agent starter kit

This new kit includes guidance on IT controls, setup, and resources to help prepare your tenant and enable your users to create and use agents.

[Explore the kit >](#)

Join the Copilot community

The Microsoft 365 Copilot community is your hub for the official blog, latest news, and discussions.

[Join now >](#)

Microsoft 365 Copilot

Welcome to the Microsoft 365 Copilot community. Your hub for the latest news, live events, and discussions on Microsoft 365 Copilot. For help & learning (how-to articles and training resources), please visit [Microsoft 365 Copilot Adoption hub](#).

Search this community

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#M365Con

Microsoft 365 COMMUNITY CONFERENCE

May 6-8 Las Vegas

Your front-row seat to the future of work

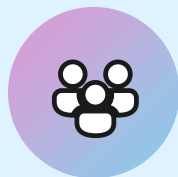
The ultimate Microsoft 365 community event

Learn directly from the experts and redefine what's possible at work—join us at the Microsoft 365 Community Conference.

[Learn more!](#)

Stay Connected!

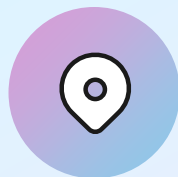
Engage with the best community in tech... There's something for everyone!



Microsoft Tech Community

The community platform for Microsoft 365 – forums, blogs, and events

<https://aka.ms/joinMTC>



CommunityDays.org

Find or host a local event in your area or to match your interests

www.communitydays.org



Microsoft Community on LinkedIn

News, announcements and training delivered to your news feed

<https://aka.ms/microsoftcommunitylinkedin>



The one stop shop for Microsoft ecosystem community events

The screenshot displays the Microsoft Community Days website interface. At the top left is the logo "Community Days Supporting the Microsoft Community". The main heading reads "Discover Community Events happening across the world." Below this is a search bar and navigation options for "WHEN" (Upcoming Events) and "VIEW AS" (Titles). A filter section includes "WHERE" (Global, Country, Region, Sub Region) and "FILTERS" (Registration Open, Call for Speakers, Call for Sponsors, Hide Paid, Hide Others). The main content area features a grid of event cards, each with a unique graphic and event details:

- FABRIC DATA DAYS**: Nov 4 - Dec 11, 2025. Location: Your city, Your country, United States. Format: Hybrid. Cost: Free.
- SMARTCLOUD 365 - 2025**: November 25, 2025. Location: Germany. Format: Virtual. Cost: Free.
- DYNUG AUTUMN CONFERENCE 2025**: November 25 - 26, 2025. Location: Oslo, Gardarmoen, Norway. Cost: Paid.
- SHIFT ENTER SUMMIT 2025**: November 26, 2025. Location: Budapest, Hungary. Cost: Paid.
- AI COMMUNITY CONFERENCE - TORONTO 2025**: November 28, 2025. Location: Toronto, Ontario, Canada. Cost: Free.
- SEASON OF AI - MCP**: November 29, 2025. Location: Gurugram, Haryana, India. Format: Hybrid. Cost: Free.
- ESPC25**: December 1 - 4, 2025. Location: Dublin, Dublin 1, Ireland. Cost: Paid.
- MSREBUILD 2025**: December 2, 2025. Location: Nantes, Pays de la Loire, France. Cost: Free.
- TECHBAYANIHAN 2025**: December 3 - 4, 2025. Location: Manila City, National Capital Region, Philippines. Cost: Free.

www.communitydays.org

SharePoint at 25 short film: *More than Code*

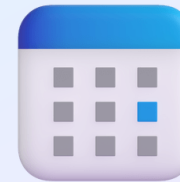
In honor of SharePoint's 25th birthday, *More Than Code* is a short film that explores the people, passion, and innovation behind one of the most transformative platforms in modern work. This film captures the stories of builders, leaders, and community champions who helped shape SharePoint into the knowledge backbone for collaboration, Copilot, and the next generation of agents.

SharePoint is more than code—it's 25 years of connection, innovation and impact.



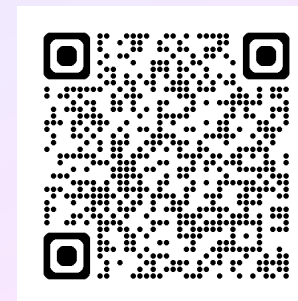
Watch the digital premiere

Stream the documentary online globally in late April and celebrate SharePoint's 25-year journey from anywhere.



Watch the SharePoint at 25 digital event

Prepare for the film with a special digital event featuring insights, stories, and what's next for SharePoint in the era of AI.



Join MGCI – Learn, Share, Grow.

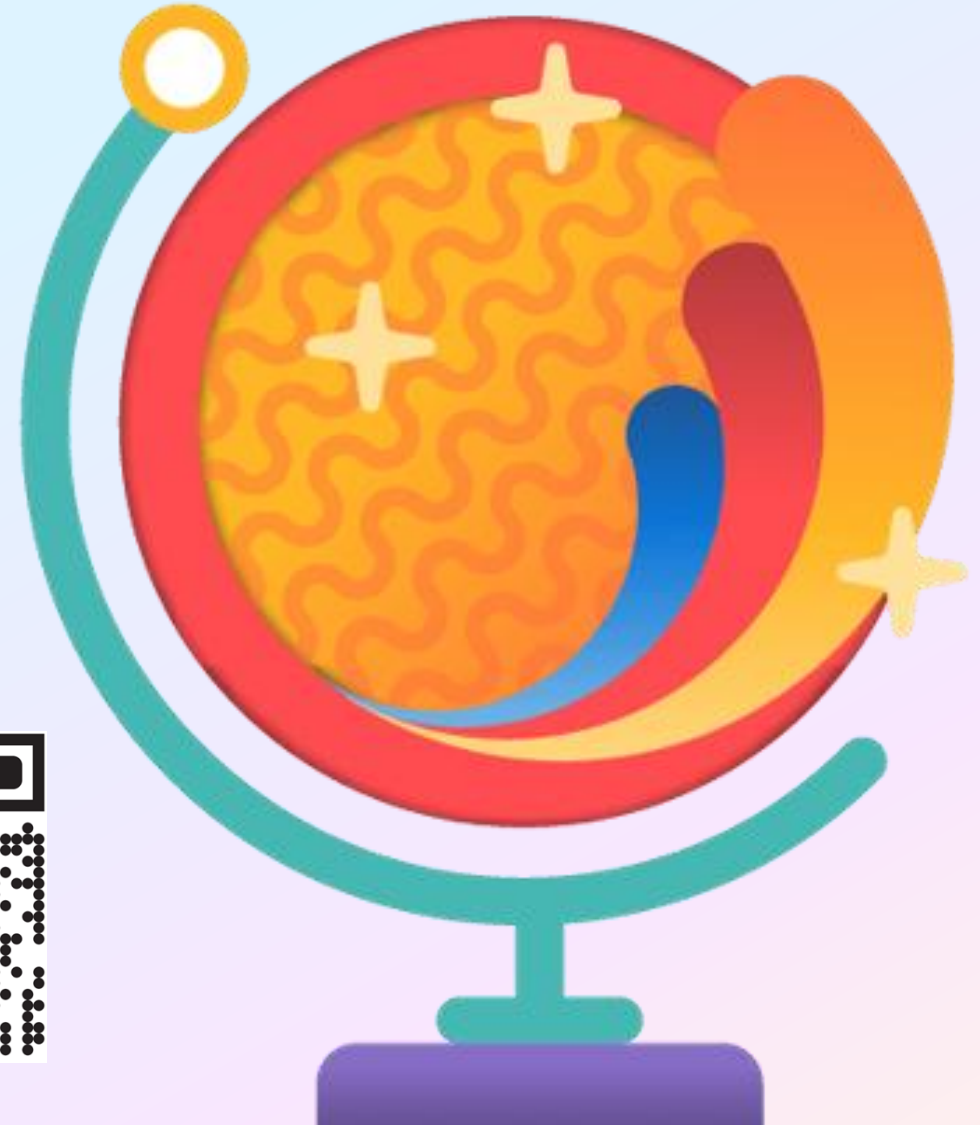
The Microsoft Global Community Initiative (MGCI) - Empowering global Microsoft communities with the tools, training, and resources to create impactful events and amplify diverse voices.

Learn, Share, Grow.

Event producers unite!

Join MGCI today!

<https://aka.ms/MGCI>



Thank you to our
Microsoft
Most Valuable
Professionals (MVP)
and Regional Directors!



Whova

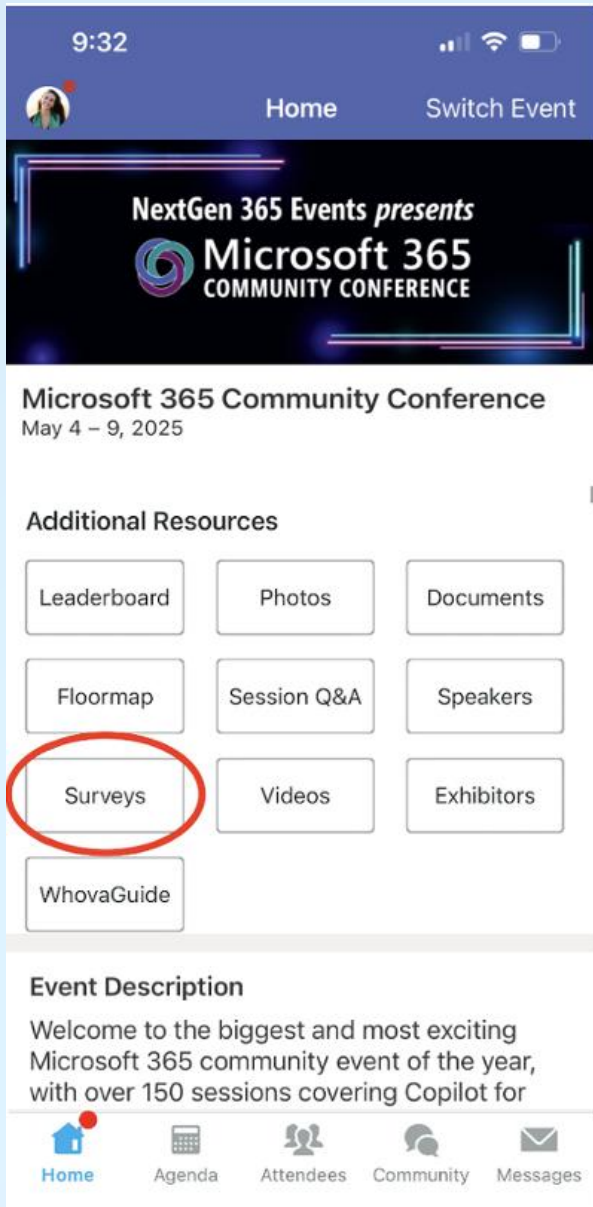


The official event app for the **Microsoft 365 Community Conference**

Event invitation code: TBA

Join the event app to access:

- ➔ Event announcements
- ➔ Personalized agenda, session details
- ➔ Speaker & attendee profiles
- ➔ Networking, meet-ups, messages
- ➔ Event documents



Session feedback surveys

We want to hear from YOU!

Share your feedback to make next years conference even better!

Here's how –

- Simply go to the Whova App on your smartphone.
- Scroll down on the M365 Community Conference Homepage to 'Additional Resources' to click "Surveys".
- Click Session Feedback.
- Scroll down to find this session title.
- Complete the session feedback survey.
- Finally, click 'Submit'.

It's just that easy!