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#FABCONSQLCON2026

FABCON

Microsoft Fabric
COMMUNITY CONFERENCE

SQLCON

Microsoft SQL
COMMUNITY CONFERENCE

ATLANTA MARCH 16 - 20, 2026



SQL Server 2025: The AI-ready enterprise database

Kendal Van Dyke, Microsoft

Bob Ward, Microsoft

aka.ms/sqlserver2025decks
aka.ms/sqlserver2025demos

Quality, Security, & Privacy AI

Generally Available



SQL Server 2025

The AI-ready enterprise database from ground to cloud

AI built-in

Built for
developers

Mission Critical

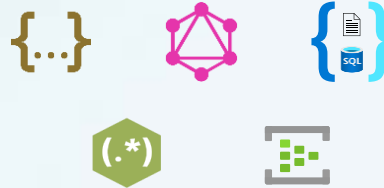
aka.ms/sqlserver2025

SQL Server 2025

The AI-ready enterprise database from ground to cloud



AI built-in



Develop modern
data applications



Integrate your data
with Fabric



Secure by default



Mission critical engine



Connected
with Arc



Managed
DR



Assisted by
Copilots



Benchmark¹
leader



Built for all
platforms

SSMS 22

aka.ms/ssms



Generally Available



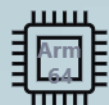
SQL Server 2025 support



Fabric integration



GitHub Copilot



Windows ARM64 support



Migration Assistant



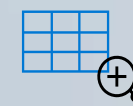
Query Hint Recommendation tool



New themes including dark



JSON viewer



Zoom results grid

AI Built-in



What problems are we trying to solve with AI?

- ✓ **Smarter searching** on your existing text data
- ✓ Bring in other documents/text for **centralized vector searching**
- ✓ Provide **building blocks** - Intelligent assistants, RAG, AI Agents
- ✓ Take advantage of AI in a **secure and scalable** fashion
- ✓ **Overcome complexity** by using the familiar T-SQL language

What are the features?

Build Agentic RAG patterns
Inside the engine



Vector Store

Native vector data type and DiskANN index*



Model Management

Secure Model definitions ground or cloud



Embeddings built-in

Text Chunking and embedding generation



Simple semantic searching with hybrid

Vector distance (KNN) and Vector search (ANN)*



Framework integration

LangChain, Semantic Kernel, EF Core, Agent Framework

*Enabled by PREVIEW_FEATURES

Security, SQL, and AI



Off by default!



You control *all access* with SQL security



You control AI models ground *or cloud isolated*



Data exchange with AI models is *encrypted*

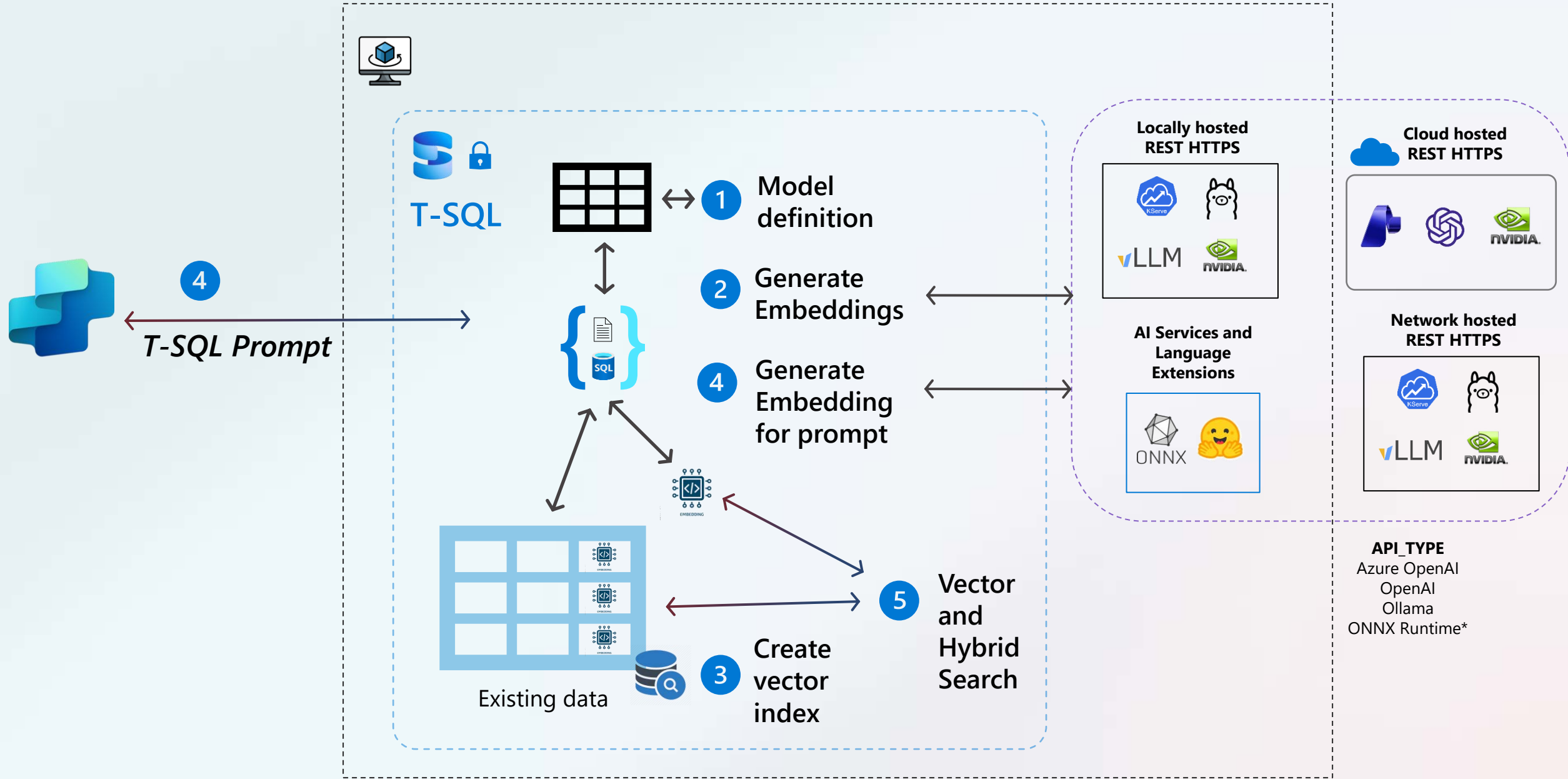


Use RLS, TDE, Dynamic Data Masking, and Auditing



Ledger for *immutable agentic operations* log

SQL Server 2025 Vector Architecture



A new way of searching with AI





AdventureWorks

Find Your Perfect Ride

English

Français



I want a gliding, pillow-y feel on battered streets, zero buzz through the hands.

Search



Try: "smooth ride on rough roads"



Try: "comfortable long distance"



Try: "lightweight and stable"



Welcome to AdventureWorks

Tell us what kind of riding experience you're looking for, and we'll find the perfect products for you.


```
1  USE AdventureWorks;
2  GO
3  SELECT * FROM Production.ProductDescription
4  WHERE Description LIKE '%pillow-y%'
5  GO
6  SELECT * FROM Production.ProductDescription
7  WHERE CONTAINS(Description, '"zero buzz"');
8  GO
9  SELECT * FROM Production.ProductDescription
10 WHERE FREETEXT(Description, 'I want a gliding, pillow-y feel on battered streets, zero buzz through the hands');
11 GO
12
```

ProductDescriptionID Description rowguid ModifiedDate			
ProductDescriptionID Description rowguid ModifiedDate			
ProductDescriptionID Description			
1	647	Each frame is hand-crafted in our Bothell facility to the optimum diameter and wall-thickness required of a premium mountain frame. The heat-treated welded alu	

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks
- Security
- Server Objects
- Replication
- Always On High Availability
- Management
- SQL Server Agent
- XEvent Profiler

```
1  USE [AdventureWorks];
2  GO
3
4  IF EXISTS (SELECT * FROM sys.external_models WHERE name = 'MyOllamaEmbeddingModel')
5  DROP EXTERNAL MODEL MyOllamaEmbeddingModel;
6  GO
7
8  -- Create the EXTERNAL MODEL
9  CREATE EXTERNAL MODEL MyOllamaEmbeddingModel
10 WITH (
11     LOCATION = 'https://localhost/api/embed',
12     API_FORMAT = 'Ollama',
13     MODEL_TYPE = EMBEDDINGS,
14     MODEL = 'mxbai-embed-large',
15     PARAMETERS = '{ "sql_rest_options": { "retry_count": 10 } }'
16 );
17 GO
```

100 % Lr: 19, Ch: 1 SPC CRLF Windows 1252

Results Messages

	external_model_id	name	principal_id	location	api_format	model_type_id	model_type_desc	model_desc
1	65537	MyOllamaEmbeddingModel	1	https://localhost/api/embed	Ollama	1	EMBEDDINGS	mx...

(No column name)

1 [-0.002211798,0.0017238836,0.011823236,0.0083923...

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (65) AdventureWorks 00:00:00 Row: 1, Col: 1 2 rows

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

Databases

System Databases

Database Snapshots

AdventureWorks

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XEEvent Profiler

```
9 CREATE EXTERNAL MODEL MyOllamaEmbeddingModel
10 WITH (
11     LOCATION = 'https://localhost/api/embed',
12     API_FORMAT = 'Ollama',
13     MODEL_TYPE = EMBEDDINGS,
14     MODEL = 'mxbai-embed-large',
15     PARAMETERS = '{ "sql_rest_options": { "retry_count": 10 } }'
16 );
17 GO
18
19
20 SELECT * FROM sys.external_models;
21 GO
22
23 SELECT AI_GENERATE_EMBEDDINGS(N'Hello from SQL' USE MODEL MyOllamaEmbeddingModel);
24 GO
```

100 %

Ln: 7, Ch: 1 SPC CRLF Windows 1252

Results Messages

	external_model_id	name	principal_id	location	api_format	model_type_id	model_type_desc	model_desc
1	65537	MyOllamaEmbeddingModel	1	https://localhost/api/embed	Ollama	1	EMBEDDINGS	mxb

(No column name)

1	[-0.002211798,0.0017238836,0.011823236,0.0083923...
---	---

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (65) AdventureWorks 00:00:00 Row: 1, Col: 1 2 rows

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

Databases

System Databases

Database Snapshots

AdventureWorks

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XE Event Profiler

```
24 AND pmpdc.CultureID IN ('en', 'fr')
25 JOIN Production.ProductDescription pd
26 ON pd.ProductDescriptionID = pmpdc.ProductDescriptionID
27 GO
28 -- Explore embeddings
29 SELECT p.ProductID, p.Name, pd.Description, pde.Embedding
30 FROM Production.ProductDescriptionEmbeddings pde
31 JOIN Production.Product p
32 ON pde.ProductID = p.ProductID
33 JOIN Production.ProductDescription pd
34 ON pd.ProductDescriptionID = pde.ProductDescriptionID
35 GO
```

100 %

Ln: 12, Ch: 37 TABS CRLF Windows 1252

Results Messages

	ProductID	Name	Description	Embedding
1	994	LL Bottom Bracket	Chromoly steel.	[-2.1733541e-002,-1.9877631e-002,2.2698533e-002,
2	995	ML Bottom Bracket	Aluminum alloy cups; large diameter spindle.	7.8184074e-003,1.4346291e-003,4.7225170e-002,3...
3	996	HL Bottom Bracket	Aluminum alloy cups and a hollow axle.	[-1.9594299e-002,4.9572168e-003,1.5115247e-002,4...
4	992	Mountain-500 Black, 48	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
5	993	Mountain-500 Black, 52	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
6	988	Mountain-500 Silver, 52	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
7	989	Mountain-500 Black, 40	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
8	990	Mountain-500 Black, 42	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
9	991	Mountain-500 Black, 44	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
10	984	Mountain-500 Silver, 40	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
11	985	Mountain-500 Silver, 42	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
12	986	Mountain-500 Silver, 44	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,
13	987	Mountain-500 Silver, 48	Suitable for any type of riding, on or off-road. ...	[-9.5508685e-003,1.5448580e-002,-1.7652690e-002,

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\Bobward (70) AdventureWorks 00:00:55 Row: 1, Col: 1 588 rows

Tabs

5 Tabs

Miscellaneous Files

01_create_ex...obward (65))

02_embeddi...bward (70))

03_create_ve...obward (77))

04_find_rele...bobward (79))

05_vector_se...obward (78))

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

Databases

System Databases

Database Snapshots

AdventureWorks

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XEEvent Profiler

```
1 USE [AdventureWorks];
2 GO
3 CREATE VECTOR INDEX product_vector_index
4 ON Production.ProductDescriptionEmbeddings (Embedding)
5 WITH (METRIC = 'cosine', TYPE = 'diskann', MAXDOP = 8);
6 GO
7 -- Vector index typically is only small fraction of overall table size
8 EXEC sp_spaceused 'Production.ProductDescriptionEmbeddings';
9 GO
```

100 %

Ln: 1, Ch: 1 TABS CRLF Windows 1252

Results Messages

	name	rows	reserved	data	index_size	unused
1	ProductDescriptionEmbeddings	588	5200 KB	4704 KB	200 KB	296 KB

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (77) AdventureWorks 00:00:01 Row: 1, Col: 1 1 rows

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORT)

Databases

System Databases

Database Snapshots

AdventureWorks

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XEEvent Profiler

```
23     metric = 'cosine',
24     top_n = @top
25   ) as s
26 JOIN Production.ProductDescriptionEmbeddings pe
27 ON t.ProductDescEmbeddingID = pe.ProductDescEmbeddingID
28 JOIN Production.Product p
29 ON pe.ProductID = p.ProductID
30 JOIN Production.ProductDescription pd
31 ON pd.ProductDescriptionID = pe.ProductDescriptionID
32 WHERE (1-s.distance) > @min_similarity
33 AND p.SafetyStockLevel >= @stock
34 ORDER by s.distance;
35 GO
36
```

100 %

Ln: 1, Ch: 1 TABS CRLF UTF-8 with BOM

Messages

Commands completed successfully.

Completion time: 2025-11-14T14:10:59.7913258-06:00

100 %

Ln: 4, Ch: 1 TABS MIXED UTF-8 with BOM

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (79) AdventureWorks 00:00:00 Row: 0, Col: 0 0 rows

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

- Databases
 - System Databases
 - Database Snapshots
- Security
- Server Objects
- Replication
- Always On High Availability
- Management
- SQL Server Agent
- XEvent Profiler

```
1 USE [AdventureWorks];
2 GO
3
4 IF EXISTS (SELECT * FROM sys.external_models WHERE name = 'MyAzureOpenAIModel')
5 DROP EXTERNAL MODEL MyAzureOpenAIModel;
6 GO
7
8 -- Create the EXTERNAL MODEL
9 CREATE EXTERNAL MODEL MyAzureOpenAIModel
10 WITH (
11     LOCATION = 'https://productsopenai.openai.azure.com/openai/deployments/text-embed
12     API_FORMAT = 'Azure OpenAI',
13     MODEL_TYPE = EMBEDDINGS,
14     MODEL = 'text-embedding-3-large',
15     CREDENTIAL = [https://productsopenai.openai.azure.com],
16     PARAMETERS = '{ "sql_rest_options": { "retry_count": 10 } }'
17 );
18 GO
```

100 %

Ln: 1, Ch: 1 SPC CRLF Windows 1252

Results Messages

	external_model_id	name	principal_id	location	api_format	model_type_id
1	65536	MyAzureOpenAIModel	1	https://productsopenai.openai.azure.com/openai/d...	Azure OpenAI	1

(No column name)

1	[-0.029200174,-0.0012893012,-0.01577545,-0.00334...
---	---

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (73) AdventureWorks 00:00:00 Row: 1, Col: 1 2 rows

Tabs

5 Tabs

Miscellaneous Files

- 01_create_e...obward (73))
- 02_embeddin...obward (81))
- 03_create_ve...obward (118))
- 04_find_rele...bobward (55))
- 05_vector_se...obward (61))

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

Databases

System Databases

Database Snapshots

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XE Event Profiler

```
1 USE [AdventureWorks];
2 GO
3
4 IF EXISTS (SELECT * FROM sys.external_models WHERE name = 'MyOpenAIModel')
5 DROP EXTERNAL MODEL MyOpenAIModel;
6 GO
7
8 -- Create the EXTERNAL MODEL
9 CREATE EXTERNAL MODEL MyOpenAIModel
10 WITH (
11     LOCATION = 'https://localhost/v1/embeddings',
12     API_FORMAT = 'OpenAI',
13     MODEL_TYPE = EMBEDDINGS,
14     MODEL = 'embeddinggemma',
15     PARAMETERS = '{ "sql_rest_options": { "retry_count": 10 } }'
16 );
17 GO
18
19 SELECT * FROM sys.external_models;
20 GO
21
22 SELECT AI_GENERATE_EMBEDDINGS(N'Hello from SQL' USE MODEL MyOpenAIModel);
23 GO
```

Tabs

7 Tabs

Miscellaneous Files

01_create_ex...obward (73))

02_embeddin...obward (81))

03_create_ve...obward (118))

04_find_rele...bobward (55))

05_vector_se...obward (61))

02_create_e...obward (92))

02_create_ex...obward (54))

100 %

Ln: 1, Ch: 1 SPC CRLF Windows 1252

Connected. (1/1)

(local) (17.0 RC2) NORTHAMERICA\bobward (92) AdventureWorks 00:00:00 Row: 0, Col: 0 0 rows

Coming Spring 2026

SQL AI Database Developer Certification



Level up and prove your skills

Building AI-powered,
LLM-integrated apps

AI-augmented SQL
development

Advanced SQL
Programming

Security, governance,
and responsible AI

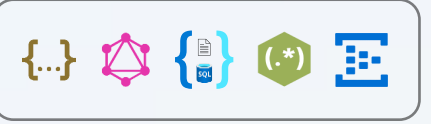
aka.ms/learnSQLAI

Developers,
Developers,
Developers



Built for developers

Develop modern data applications



Data API Builder
REST or GraphQL



JSON

JSON type, index,
and updated T-SQL
functions

Change Event Streaming*

Consume log change
events

T-SQL

RegEx and other
T-SQL functions

REST API

Connect your data
to **any** REST interface
with HTTPS



{ REST }



gpt-oss

There's more...



GitHub Copilot for MSSQL



Microsoft Python Driver
for SQL Server

* Enabled by PREVIEW_FEATURES

JSON



< SQL Server 2025

varchar/nvarchar column

Any index that supports varchar/nvarchar

Various functions for JSON



SQL Server 2025

json data type – binary storage up to **2GB**

.modify operator

json index

+ JSON_OBJECTAGG and JSON_ARRAYAGG

+ JSON_CONTAINS

+ JSON_QUERY WITH ARRAY WRAPPER

Save space with compressed storage
Less I/O and page reads

For the love of JSON



New Query

orders Execute

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

Databases

System Databases

Database Snapshots

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XEEvent Profiler

```
1  USE master;
2  GO
3  DROP DATABASE IF EXISTS orders;
4  GO
5  CREATE DATABASE orders;
6  GO
7  USE orders;
8  GO
9  DROP TABLE IF EXISTS dbo.Orders;
10 GO
11 CREATE TABLE dbo.Orders(
12  order_id int NOT NULL IDENTITY,
13  order_info json NOT NULL
14 );
15 GO
16
17 -- INSERT JSON documents directly into the JSON type
18 -- JSON now validated on INSERT
19 INSERT INTO dbo.Orders (order_info)
20 VALUES
21 (
22  '{
```

100 %

Ln: 9, Ch: 33 TABS CRLF Windows 1252

Messages

(2 rows affected)

Completion time: 2025-11-15T12:52:37.8940365-06:00

100 %

Ln: 5, Ch: 1 TABS MIXED UTF-8 with BOM

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (55) orders 00:00:00 Row: 0, Col: 0 0 rows

```
1 USE master;
2 GO
3 DROP DATABASE IF EXISTS contactsdb;
4 GO
5 CREATE DATABASE contactsdb;
6 GO
7 USE contactsdb;
8 GO
9
10 -- Create a new database with a JSON type to hold the document
11 DROP TABLE IF EXISTS contacts;
12 GO
13 CREATE TABLE contacts (id INT IDENTITY PRIMARY KEY, jdoc JSON);
14 GO
15
16 -- INSERT enough rows to ensure the index will make sense
17 INSERT INTO dbo.contacts (jdoc) VALUES
18 (N'{
```

100 %

Ln: 1, Ch: 1 SPC CRLF Windows 1252

Messages

(7 rows affected)

(50000 rows affected)

(50000 rows affected)

(50000 rows affected)

100 %

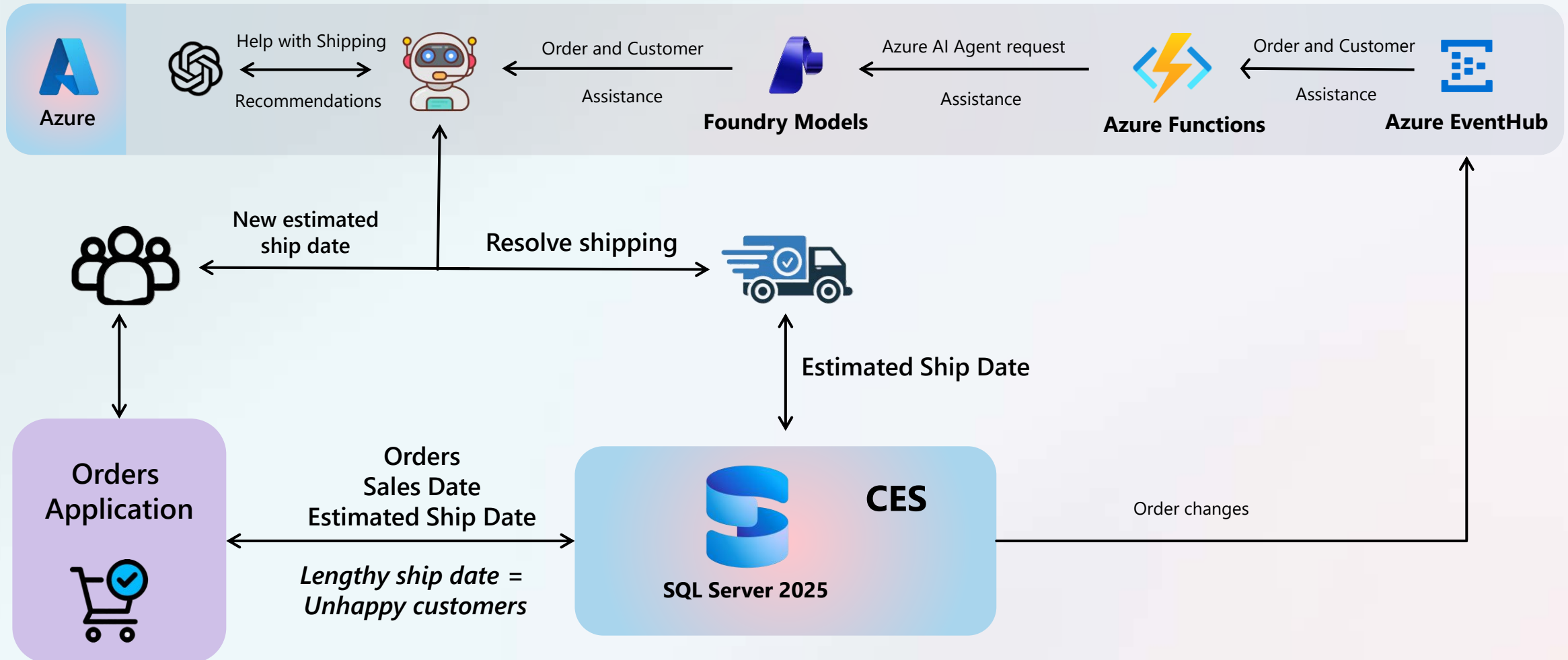
Ln: 205, Ch: 1 TABS MIXED UTF-8 with BOM

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (51) contactsdb 00:02:03 Row: 0, Col: 0 0 rows

Contoso shipping uses CES

Push vs Pull
"IOLess"
Built into the engine



{ REST } REST in the engine?

Off by default

Securely avoid roundtrips to send data to a REST endpoint

What is the REST protocol for your endpoint? curl.exe is your friend...so is Copilot

EXECUTE @returnValue = **sp_invoke_external_rest_endpoint**

[@url =] N'url'

HTTPS local or remote

[, [@payload =] N'request_payload']

JSON, XML ,TEXT from your data

[, [@headers =] N'http_headers_as_json_array']

[, [@method =] 'GET' | 'POST' | 'PUT' | 'PATCH' | 'DELETE' | 'HEAD']

[, [@timeout =] seconds]

[, [@credential =] credential]

API key, SAS token, managed identity

[, @response OUTPUT]

NVARCHAR but often JSON

[, [@retry_count =] # of retries if there are errors]

HTTP_EXTERNAL_CONNECTION wait

Secure AI Agents in the engine



**Art Vandelay**

Patient ID: PT-000182

61 years old 6'0"

215 lbs

CRITICAL **Current Vitals**Blood Pressure
186/112 mmHg
CRITICALHeart Rate
102 bpm
ELEVATEDRespiratory Rate
20 /min
NORMALSpO2
95% RA
LOWTemperature
37.0 °C
ELEVATED **Medical History****ALLERGIES** **Penicillin****Severe** **AI Care Plan Generator**

Enter patient symptoms or concerns:

Describe symptoms, observations, or care needs...

Generate Care Plan

FileEditViewQueryGitProjectToolsExtensionsWindowHelpSearch

zavacliniq

Execute

Object Explorer

Connect

(SQL Server 17.0.950.3 - zavaclinir

Databases

System Databases

Database Snapshots

zavacliniq

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

care.CarePlan

care.CarePlanItem

care.CarePlanLedger (Ap

care.CarePlanNote

care.CarePlanSignOff

content.Chunk

content.ChunkEmbeddir

content.Document

Dropped Ledger Tables

Views

External Resources

Synonyms

Programmability

Query Store

Service Broker

Storage

Security

Security

Logins

Server Roles

1CREATE OR ALTER PROCEDURE care.usp_ai_agent_care_plan

2@prompt NVARCHAR(MAX), -- free text query from user

3@patient_json JSON, -- patient context as native JSON

4@patient_id NVARCHAR(64), -- patient identifier for ledger

5@topk INT = 5,

6@raw_response JSON OUTPUT, -- REST wrapper as JSON (native)

7@careplan_json JSON OUTPUT -- extracted care plan (native)

8AS

9BEGIN

10SET NOCOUNT ON;

11

12/* =====

13STEP 0: Normalize patient JSON (keep as native JSON)

14===== */

15IF @patient_json IS NULL

16SET @patient_json = TRY_CAST(N'{}' AS JSON);

17

18/* =====

19STEP 1: VECTOR SEARCH (kept as-is; returns text evidence)

20===== */

21IF OBJECT_ID('tempdb..#search_out') IS NOT NULL DROP TABLE #search_out;

22CREATE TABLE #search_out

23(

24Title NVARCHAR(400),

25DocType NVARCHAR(50),

26ChunkText NVARCHAR(MAX),

27distance FLOAT

28);

29

30INSERT INTO #search_out (Title, DocType, ChunkText, distance)

31EXEC content.SearchChunksByPrompt_Vector

Tabs

6 Tabs

Miscellaneous Files

05_ai_agent....ladmin (59))

SQLQuery66....ladmin (89))*

SQLQuery67....ladmin (92))*

SQLQuery68....ladmin (97))*

SQLQuery69....ladmin (74))*

SQLQuery70....ladmin (78))*

91 %

11

0

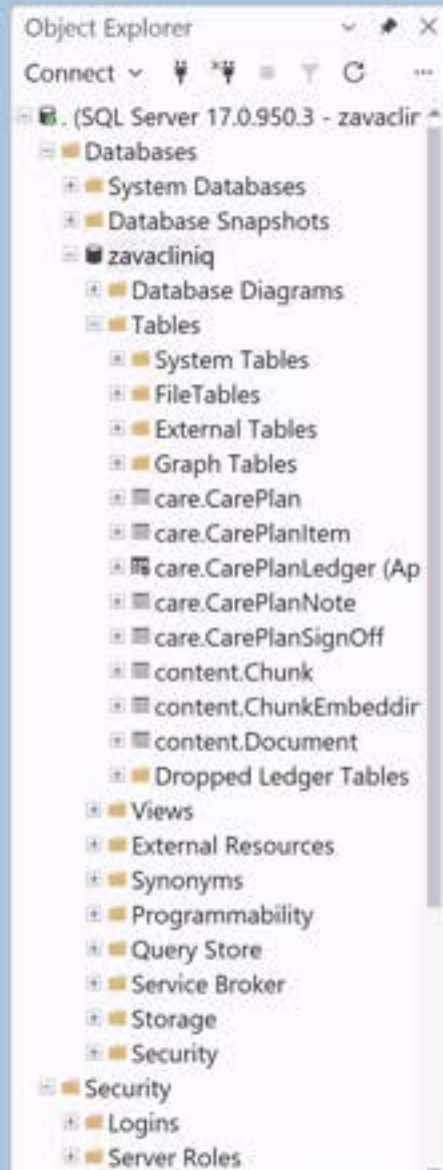
Ln: 1, Ch: 1 SPC CRLF Windows 1252

Connected. (1/1)

(local) (17.0 RC2) zavacliniq/sqladmin (59) zavacliniq 00:00:00 Row: 0, Col: 0 0 rows

Ready

zavaclinig Execute



```
29
30 INSERT INTO #search_out (Title, DocType, ChunkText, distance)
31 EXEC content.SearchChunksByPrompt_Vector
32     @Prompt = @prompt,
33     @TopK   = @topk;
34
35 IF OBJECT_ID('tempdb..#rag_topk') IS NOT NULL DROP TABLE #rag_topk;
36 CREATE TABLE #rag_topk
37 (
38     Title      NVARCHAR(400),
39     DocType    NVARCHAR(50),
40     ChunkText  NVARCHAR(MAX),
41     Score      FLOAT
42 );
43
44 INSERT INTO #rag_topk (Title, DocType, ChunkText, Score)
45 SELECT TOP (@topk)
46     Title, DocType, ChunkText, distance
47 FROM #search_out
48 ORDER BY distance ASC;
49
50 /* =====
51 STEP 2: Build prompts (convert JSON -> NVARCHAR for display)
52 ===== */
53 DECLARE @patient_json_text NVARCHAR(MAX) =
54     CONVERT(NVARCHAR(MAX), JSON_QUERY(@patient_json, '$')); -- canonical textual JSON
55
56 DECLARE @evidence NVARCHAR(MAX) =
57 (
58     SELECT STRING_AGG(
59         CONCAT('• [', ISNULL(DocType, '?'), '] ', Title, ': ', LEFT(ChunkText, 1000)),
```



91 % 11 0

Ln: 228, Ch: 3 SPC CRLF Windows 1252

Connected. (1/1)

(local) (17.0 RC2) zavaclinig/sqladmin (89) zavaclinig 00:00:00 Row: 0, Col: 0 0 rows

zavaclinig Execute

Object Explorer

Connect

SQL Server 17.0.950.3 - zavaclir

Databases

System Databases

Database Snapshots

zavaclinig

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

care.CarePlan

care.CarePlanItem

care.CarePlanLedger (Ap

care.CarePlanNote

care.CarePlanSignOff

content.Chunk

content.ChunkEmbeddir

content.Document

Dropped Ledger Tables

Views

External Resources

Synonyms

Programmability

Query Store

Service Broker

Storage

Security

Security

Logins

Server Roles

```
47 FROM #search_out
48 ORDER BY distance ASC;
49
50 /* =====
51 STEP 2: Build prompts (convert JSON -> NVARCHAR for display)
52 ===== */
53 DECLARE @patient_json_text NVARCHAR(MAX) =
54     CONVERT(NVARCHAR(MAX), JSON_QUERY(@patient_json, '$')); -- canonical textual JSON
55
56 DECLARE @evidence NVARCHAR(MAX) =
57 (
58     SELECT STRING_AGG(
59         CONCAT('• [', ISNULL(DocType, '?'), '] ', Title, ': ', LEFT(ChunkText, 1000)),
60         CHAR(10)
61     ) WITHIN GROUP (ORDER BY Score)
62 FROM #rag_topk
63 );
64
65 DECLARE @system_prompt NVARCHAR(MAX) =
66 N'You are a clinical assistant drafting a **provisional** outpatient care plan for clinician
67 Use only the provided patient context and evidence; do not invent facts. If uncertain, state
68 Adjust recommendations for age, weight (weight-based dosing), vitals, allergies, comorbiditi
69 Return STRICT JSON that matches the schema exactly, with no extra prose. This is not medical
70
71 DECLARE @user_prompt NVARCHAR(MAX) =
72     CONCAT(
73         N'Patient input (free text):', CHAR(10), ISNULL(@prompt, N''), CHAR(10), CHAR(10),
74         N'Patient context (JSON):', CHAR(10), ISNULL(@patient_json_text, N'{}'), CHAR(10),
75         N'Evidence (top K chunks):', CHAR(10), ISNULL(@evidence, N'[no evidence]'), CHAR(10),
76         N'Task:', CHAR(10),
77         N'Draft a provisional care plan using this JSON schema (return ONLY JSON):', CHAR(10),
```

91 % 11 0

Ln: 77, Ch: 39 SPC CRLF Windows 1252

Connected. (1/1)

(local) (17.0 RC2) zavaclinig/sqladmin (92) zavaclinig 00:00:00 Row: 0, Col: 0 0 rows

Tabs

8 Tabs

Miscellaneous Files

05_ai_agent.s...qladmin (59))

SQLQuery66...ladmin (89))*

03_vector_se...qladmin (91))

SQLQuery67...dmin (92))*

SQLQuery68...ladmin (97))*

SQLQuery69...ladmin (74))*

SQLQuery70...ladmin (78))*

SQLQuery71.s...ladmin (58))

zavaclinig Execute

- Object Explorer
- Connect
- (SQL Server 17.0.950.3 - zavaclinig)
- Databases
 - System Databases
 - Database Snapshots
 - zavaclinig
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - care.CarePlan
 - care.CarePlanItem
 - care.CarePlanLedger (Ap
 - care.CarePlanNote
 - care.CarePlanSignOff
 - content.Chunk
 - content.ChunkEmbeddir
 - content.Document
 - Dropped Ledger Tables
 - Views
 - External Resources
 - Synonyms
 - Programmability
 - Query Store
 - Service Broker
 - Storage
 - Security
 - Security
 - Logins
 - Server Roles

```
90      N'}';
91    );
92
93    /* =====
94    STEP 3: Build REST payload with JSON_OBJECT/JSON_ARRAY
95           (returns NVARCHAR payload; no manual escaping)
96    ===== */
97    DECLARE @MODEL NVARCHAR(200) = N'gpt-oss';
98    DECLARE @payload NVARCHAR(MAX) =
99        JSON_OBJECT(
100            'model': @MODEL,
101            'messages': JSON_ARRAY(
102                JSON_OBJECT('role': 'system', 'content': @system_prompt),
103                JSON_OBJECT('role': 'user', 'content': @user_prompt)
104            ),
105            'format': 'json',
106            'stream': CAST(0 AS bit)
107        );
108
109    DECLARE @headers NVARCHAR(MAX) = N'{"Content-Type": "application/json", "Accept": "applicatio
110
111    /* =====
112    STEP 4: Call Ollama; parse wrapper and extract care_plan
113           NOTE: Use OPENJSON WITH NVARCHAR(MAX) (NOT JSON_VALUE)
114           to avoid 4k truncation of long strings.
115    ===== */
116
117    DECLARE @OLLAMA_CHAT_URL NVARCHAR(4000) = N'https://localhost/api/chat'; -- HTTPS reverse
118    DECLARE @timeout_seconds INT = 180;
119    DECLARE @resp NVARCHAR(MAX);
120    DECLARE @rc INT;
```

- Tabs 8 Tabs
- Miscellaneous Files
- 05_ai_agents...qladmin (59))
 - SQLQuery66...ladmin (89))*
 - 03_vector_se...qladmin (91))
 - SQLQuery67...dmin (92))***
 - SQLQuery68...ladmin (97))*
 - SQLQuery69...ladmin (74))*
 - SQLQuery70...ladmin (78))*
 - SQLQuery71.s...ladmin (58))

Ln: 126, Ch: 28 SPC CRLF Windows 1252

Connected. (1/1)

(local) (17.0 RC2) zavaclinig/sqladmin (92) zavaclinig 00:00:00 Row: 0, Col: 0 0 rows

zavacliniq

Execute

```
144 SELECT @assistant_txt = content
145 FROM OPENJSON(@body_text)
146 WITH (content NVARCHAR(MAX) '$.message.content');
147
148 -- Strip markdown fences if present
149 IF @assistant_txt LIKE '%`%'
150 BEGIN
151     SET @assistant_txt = REPLACE(@assistant_txt, '`json`, ');
152     SET @assistant_txt = REPLACE(@assistant_txt, '`', '');
153 END
154
155 -- Parse the care_plan object into native JSON (NULL if not found/invalid)
156 SET @careplan_json = TRY_CAST(JSON_QUERY(@assistant_txt, '$.care_plan') AS JSON);
157
158 /* =====
159    STEP 5: Persist to NVARCHAR-based ledger (explicit converts)
160    ===== */
161 DECLARE @evidence_json_text NVARCHAR(MAX) =
162 (
163     SELECT
164         Title,
165         DocType,
166         Score,
167         ChunkPreview = LEFT(ChunkText, 400)
168     FROM #rag_topk
169     ORDER BY Score
170     FOR JSON PATH
171 );
172
173 INSERT INTO care.CarePlanLedger
174 (
```

91 % 11 0

Ln: 228, Ch: 3 SPC CRLF Windows 1252

Connected, (1/1)

(local) (17.0 RC2) zavacliniq/sqladmin (97) zavacliniq 00:00:00 Row: 0, Col: 0 0 rows

Tabs

9 Tabs

Miscellaneous Files

05_ai_agents.s...qladmin (59))

SQLQuery66....ladmin (89))*

03_vector_se...qladmin (91))

SQLQuery67....ladmin (92))*

SQLQuery68...dmin (97))*

SQLQuery73....admin (100))*

SQLQuery69....ladmin (74))*

SQLQuery70....ladmin (78))*

SQLQuery72.s...ladmin (79))

zavacliniq Execute

Object Explorer

Connect

. (SQL Server 17.0.950.3 - zavacliniq\sqladr

- Databases
 - System Databases
 - Database Snapshots
 - zavacliniq
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - care.CarePlan
 - care.CarePlanItem
 - care.CarePlanLedger (Append-On)
 - care.CarePlanNote
 - care.CarePlanSignOff
 - content.Chunk
 - content.ChunkEmbedding
 - content.Document
 - Dropped Ledger Tables
 - Views
 - External Resources
 - Synonyms
 - Programmability
 - Query Store
 - Service Broker
 - Storage
 - Security
 - Security
 - Logins
 - Server Roles

```
172
173
174 INSERT INTO care.CarePlanLedger
175 (
176     PatientId,
177     Prompt,
178     PatientJson,
179     PlanJson,
180     EvidenceJson,
181     Model,
182     OllamaUrl,
183     HttpStatus,
184     RawResponse
185 )
186 SELECT
187     @patient_id,
188     @prompt,
189     CONVERT(NVARCHAR(MAX), JSON_QUERY(@patient_json, '$')), -- JSON -> NVARCHAR
190     CONVERT(NVARCHAR(MAX), JSON_QUERY(@careplan_json, '$')), -- JSON -> NVARCHAR (NULL)
191     @evidence_json_text, -- already NVARCHAR
192     @MODEL,
193     @OLLAMA_CHAT_URL,
194     @http_code,
195     @resp; -- raw NVARCHAR wrapper
196
197 -- Optional: return provenance rows
198 /* SELECT Title, DocType, ChunkText, Score
199 FROM #rag_topk
200 ORDER BY Score; */
201
202 END
203 GO
```

Tabs 8 Tabs

Miscellaneous Files

- 05_ai_agent_s...qladmin (59))
- SQLQuery66...ladmin (89))*
- 03_vector_se...qladmin (91))
- SQLQuery67...ladmin (92))*
- SQLQuery68...ladmin (97))*
- SQLQuery73...admin (100))*
- SQLQuery69...dmin (74))*
- SQLQuery70...ladmin (78))*

Ln: 228, Ch: 3 SPC CRLF Windows 1252

Connected, (1/1)

(local) (17.0 RC2) zavacliniq/sqladmin (74) zavacliniq 00:00:00 Row: 0, Col: 0 0 rows

The core engine



Enhancing the industry proven engine



Security

- Security cache improvements
- OAEP support for encryption
- PBKDF password hashing
- Authentication using system-assigned managed identity
- Backup to URL with managed identity
- Managed identity support for EKM
- Managed identity for AI models
- Entra logins with nonunique display names
- Custom password policy on Linux
- TDS 8.0/TLS 1.3 support for tools and features



Performance

- Optimized Locking
- Tempdb space resource governance
- ADR in tempdb
- Persisted stats for readable secondaries
- Change tracking cleanup
- Columnstore index maintenance
- CE feedback for expressions
- Optional parameter plans optimization
- DOP feedback on by default
- Query store for readable secondaries
- ABORT_QUERY_EXECUTION query hint
- Optimized sp_executesql
- Batch mode optimizations
- Remove In-Memory OLTP from a database
- tmpfs support for tempdb in Linux



HADR

- Fast failover for persistent AG Health
- Async page request dispatching
- Improved health diagnostics
- Communication control flow tuning
- Switching to resolving state
- Remove listener IP address
- NONE for routing
- AG group commit waiting tuning
- Contained AG support for DAG
- DAG sync improvements
- Backups on secondary replicas
- ZSTD Backup compression
- Backup to Azure immutable storage

Mission Critical Engine

Performance and Availability for your modern database



Improve Concurrency

Optimized Locking

Abort Query Hint

Tempdb resource governance

Accelerate Performance

IQP enhancements

Columnstore indexes

Query store on read replicas

Increase HADR

Reliable Failover for AGs

AG Tuning and diagnostics

Backup enhancements



Industry proven engine

Better concurrency = fast



New Query

Navigate Backward (Ctrl+-)

Execute

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORT

Databases

System Databases

Database Snapshots

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XEEvent Profiler

```
1 SELECT
2     blocking_session_id AS BlockingSessionID,
3     session_id AS BlockedSessionID,
4     wait_type,
5     wait_time,
6     wait_resource,
7     DB_NAME(database_id) AS DatabaseName,
8     TEXT AS BlockingQuery
9 FROM
10     sys.dm_exec_requests
11 CROSS APPLY
12     sys.dm_exec_sql_text(sql_handle)
13 WHERE
14     blocking_session_id <> 0
```

100 %

Ln: 1, Ch: 1 SPC CRLF Windows 1252

Results Messages

	BlockingSessionID	BlockedSessionID	wait_type	wait_time	wait_resource	DatabaseName	BlockingQuery
1	55	63	LCK_M_IX	3253	OBJECT: 5:1602104748:2	AdventureWorks	-- Update the highest salesorderid DECL

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (65) AdventureWorks 00:00:00 Row: 1, Col: 1 1 rows

Tabs

5 Tabs

Miscellaneous Files

01_getlocks...bobward (51))

02_updatefre...obward (54))

03_updatefre...obward (55))

04_updatefre... Executing...

05_showbloc...bward (65))

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

Databases

System Databases

Database Snapshots

Security

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XEEvent Profiler

```
1 USE MASTER;  
2 GO  
3 ALTER DATABASE [AdventureWorks]  
4 SET OPTIMIZED_LOCKING = ON  
5 WITH ROLLBACK IMMEDIATE;  
6 GO  
7
```

100 %

Ln: 7, Ch: 1 TABS CRLF Windows 1252

Messages

Commands completed successfully.

Completion time: 2025-11-15T11:49:47.6691046-06:00

100 %

Ln: 4, Ch: 1 TABS MIXED UTF-8 with BOM

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (61) master 00:00:00 Row: 0, Col: 0 0 rows

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks
- Security
- Server Objects
- Replication
- Always On High Availability
- Management
- SQL Server Agent
- XEvent Profiler

```
1 USE [master];
2 GO
3 ALTER DATABASE [AdventureWorks]
4 SET ACCELERATED_DATABASE_RECOVERY = ON
5 GO
6 ALTER DATABASE [AdventureWorks]
7 SET OPTIMIZED_LOCKING = ON
8 GO
9 ALTER DATABASE [AdventureWorks]
10 SET READ_COMMITTED_SNAPSHOT ON
11 GO
12
```

100 %

Ln: 10, Ch: 31 TABS CRLF Windows 1252

Messages

Commands completed successfully.

Completion time: 2025-11-15T12:08:13.5746193-06:00

100 %

Ln: 4, Ch: 1 TABS MIXED UTF-8 with BOM

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (96) AdventureWorks 00:00:00 Row: 0, Col: 0 0 rows

New Query

tempdb Execute

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMERICA)

Databases

System Databases

Database Snapshots

guyinacubedb

Security

Logins

##MS_PolicyEventProcessingLoginf

##MS_PolicyTsqlExecutionLogin##

NORTHAMERICA\bobward

NT AUTHORITY\SYSTEM

NT Service\MSSQLSERVER

NT SERVICE\SQLSERVERAGENT

NT SERVICE\SQLTELEMETRY

NT SERVICE\SQLWriter

NT SERVICE\Winmgmt

sa

Server Roles

Credentials

Cryptographic Providers

Audits

Server Audit Specifications

Server Objects

Replication

Always On High Availability

Management

SQL Server Agent

XEvent Profiler

(SQL Server 17.0.950.3 - guyinacube)

02_checkt...ward (56)) 05_tempdb...ward (73)) 08_guyinac...cube (75))

```
1 USE tempdb;
2 GO
3
4 -- Query to track space usage for tempdb
5 SELECT
6     name AS FileName,
7     size / 128.0 AS CurrentSizeMB,
8     size / 128.0 - CAST(FILEPROPERTY(name, 'SpaceUsed') AS INT) / 128.0 AS FreeSpaceMB,
9     CAST(FILEPROPERTY(name, 'SpaceUsed') AS INT) / 128.0 AS UsedSpaceMB,
10    physical_name AS PhysicalFileName
11 FROM
12     sys.database_files;
13 GO
```

90 %

Ln: 13, Ch: 3 SPC LF Windows 1252

Results Messages

	FileName	CurrentSizeMB	FreeSpaceMB	UsedSpaceMB	PhysicalFileName
1	tempdev	1024.000000	1021.000000	3.000000	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
2	templog	1000.000000	887.242188	112.757812	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
3	temp2	1024.000000	1023.812500	0.187500	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
4	temp3	1024.000000	1023.937500	0.062500	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
5	temp4	1024.000000	1023.625000	0.375000	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
6	temp5	1024.000000	1023.687500	0.312500	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
7	temp6	1024.000000	1023.750000	0.250000	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
8	temp7	1024.000000	1023.750000	0.250000	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...
9	temp8	1024.000000	1023.750000	0.250000	C:\Program Files\Microsoft SQL Server\MSSQL17.MSS...

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (56) tempdb 00:00:00 Row: 1, Col: 1 9 rows

Object Explorer

Connect

(SQL Server 17.0.950.3 - NORTHAMER)

- Databases
 - System Databases
 - master
 - model
 - msdb
 - tempdb
 - Database Snapshots
 - guyinacubedb
- Security
 - Logins
 - Server Roles
 - Credentials
 - Cryptographic Providers
 - Audits
 - Server Audit Specifications
- Server Objects
 - Replication
 - Always On High Availability
 - Management
 - SQL Server Agent
 - XEvent Profiler
- (SQL Server 17.0.950.3 - guyinacube)
 - Databases
 - System Databases
 - Database Snapshots
 - guyinacubedb
 - Security
 - Server Objects
 - Replication
 - Always On High Availability

09_setu...ward (93))

10_classifi...bward (95))

08_guyinac...cube (96))

05_tempdb...ard (101))

02_checkte...ward (64))

```
1  -- Enable Resource Governor if not already enabled
2  ALTER RESOURCE GOVERNOR RECONFIGURE;
3  GO
4
5  -- Create a new Workload Group with only GROUP_MAX_TEMPDB_DATA_MB option
6  CREATE WORKLOAD GROUP GroupforUsersWhoDontKnowSQL
7  WITH (GROUP_MAX_TEMPDB_DATA_MB = 100);
8  GO
9
10 -- Apply the changes
11 ALTER RESOURCE GOVERNOR RECONFIGURE;
12 GO
```

90 %

Ln: 12, Ch: 3 TABS LF Windows 1252

Messages

Commands completed successfully.

Completion time: 2025-11-16T12:44:15.1123402-06:00

90 %

Ln: 4, Ch: 1 TABS MIXED UTF-8 with BOM

Query executed successfully.

(local) (17.0 RC2) NORTHAMERICA\bobward (93) tempdb 00:00:00 Row: 0, Col: 0 0 rows

SQL Server 2025 editions

The AI-ready enterprise database from ground to cloud

No pricing or licensing changes



Express

Free, entry-level database for small AI, web and mobile apps

Feature highlights

- 50 GB maximum relational databases size **NEW**
- Up to 4 cores of CPU
- Up to 1410 MBs of memory
- Built-in vector search and semantic search **NEW**
- Native JSON type support **NEW**
- External REST endpoint invocation **NEW**
- Change event streaming **NEW**
- Microsoft Entra ID authentication **NEW**
- Mirroring in Fabric **NEW**



Standard

Full featured database with extensive scale for mid-tier applications

Feature highlights

+ Express features

- Up to 32 cores of CPU **NEW**
- Up to 256 GB of memory **NEW**
- Optimized locking **NEW**
- Resource Governor **NEW**
- ZSTD Backup Compression Algorithm **NEW**
- Basic Availability Groups
- Azure SQL Managed Instance link
- Accelerated Database Recovery
- Backups to S3-compatible object storage
- 524 PB maximum relational databases size



Enterprise

Highest performance and scaling for business-critical workloads

Feature highlights

+ Express and Standard features

- Highest core count supported
- Highest memory supported
- Built-in Intelligent Query Processing
- Online and Resumable Index Operations
- Availability Groups: including distributed and contained
- Query Store for readable secondaries
- Persisted Statistics for Secondary Replicas (Query store)

Developer

Free to use for dev/test in non-production environments

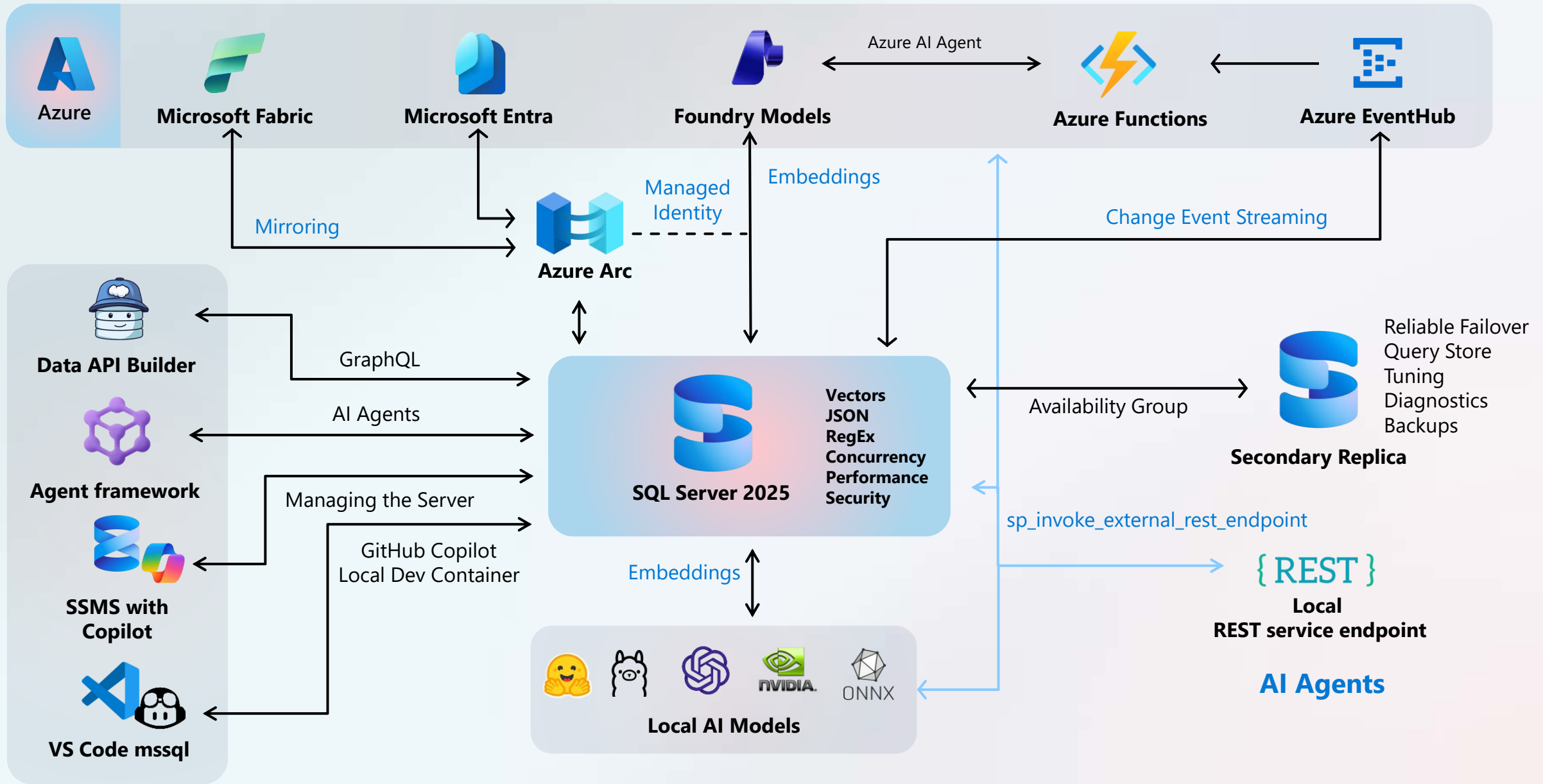


Standard Developer **NEW**



Enterprise Developer

The SQL Server 2025 Platform Architecture



Our customers and partners



Sound off.
The mic is all yours.
Influence the product roadmap.

Join the Fabric User Panel



Share your feedback directly with our
Fabric product group and researchers.

<https://aka.ms/JoinFabricUserPanel>

Join the SQL User Panel



Influence our SQL roadmap and ensure
it meets your real-life needs

<https://aka.ms/JoinSQLUserPanel>

Call to Action



aka.ms/sql2025book



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aka.ms/SQL2025videos



Take the Learn challenge

aka.ms/SS25LearnChallenge



Get SSMS 22

aka.ms/ssms

How was the session?



Complete Session Surveys in
Whova for your chance to WIN
PRIZES!

