

#FABCONSQLCON2026

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My Favorite New T-SQL in SQL Server 2025

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Published author of:

- [Dynamic SQL: Applications, Performance, and Security, 2nd Edition](#)
- [Analytics Optimization with Columnstore Indexes in SQL Server](#)
 - *2nd edition forthcoming*
- [Expert Performance Indexing in SQL Server, 4th Edition](#)
- Published in [Expert T-SQL Functions in SQL Server, 3rd Edition](#)

Author on [Simple Talk](#).

Organizes:

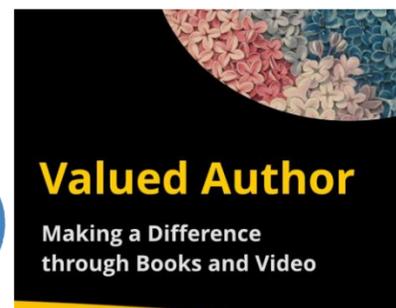
- [Day of Data Albany](#)
- [SQL Saturday New York City](#)
- [Capital Area SQL Server User Group](#)

Speaker at many data events

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 Simple Talk


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Agenda

- All about new features, versions, and compatibility levels
- New T-SQL in SQL Server 2025 & Azure SQL Database
- Many demos!
- Conclusion

Note: All demos use SQL Server 2025 CU2 (17.0.1000.7)

New Features!?

- Every major versions of SQL Server contains new T-SQL, changes, and enhancements. *Some minor releases, too!*
- **Compatibility level**
 - Guides behavior/performance
 - Does not impact features, unless they tie to performance
 - Helps facilitate smooth upgrades
 - Guaranteed with SQL Server 2016+
 - Some features are Azure-only or on-prem-only

DEMO: Compatibility levels

PRODUCT()

- Aggregate function that returns the product of a set of values
- Works like SUM, MIN, MAX, COUNT, AVG, etc...
- Great for:
 - Statistics
 - Metrics
 - Financial calculations
 - Code simplification

DEMO: PRODUCT()

Regular Expressions (REGEX)

- Provides **superior string searching/matching** than existing LIKE/NOT LIKE operators can.
- **Native support** was never available in SQL Server - until now!
- Uses any regex pattern you can dream up.
- Some functions require compatibility level 170
 - Will be specified when this is relevant.
- Think about the (*scary*) code you previously used for these applications!!!

DEMO: Native Regex in SQL Server 2025

Resource Governor for TempDB Space

- Can now **manage TempDB data space** with Resource Governor (!)
 - Log space can be managed via Accelerated Database Recovery on TempDB
- Can assign **maximum data used** by workload group
- Will **cancel queries** that would violate TempDB data space limits

```
ALTER WORKLOAD GROUP [default] WITH (GROUP_MAX_TEMPDB_DATA_MB = 20000);  
ALTER RESOURCE GOVERNOR RECONFIGURE;
```

```
ALTER WORKLOAD GROUP [default] WITH (GROUP_MAX_TEMPDB_DATA_PERCENT = 50);  
ALTER RESOURCE GOVERNOR RECONFIGURE;
```

Vector Functions

- Adds the **vector data type** and many associated functions.
- Used for mathematical and statistical analysis.
- Easily integrated into **AI-generated vector embeddings**.
- Allows for analysis/comparison of text using **any available LLM**.

DEMO: The vector data type and vector functions

JSON Functions

- JSON_OBJECTAGG()
- JSON_ARRAYAGG()
- Provide the ability to create JSON from SQL data (scalar, values, tables...)

DEMO: Two new JSON functions

String Similarity Functions

- EDIT_DISTANCE()
- EDIT_DISTANCE_SIMILARITY ()
- JARO_WINKLER_DISTANCE ()
- JARO_WINKLER_SIMILARITY ()
- Calculate **similarities/differences** between strings.
- **Deterministic**
- **Well-documented** algorithms

DEMO: String similarity functions

But Wait – There's More!

- **SUBSTRING():** The length parameter is now optional and will default to the remainder of the string. Simplifies code!
- **DATEADD():** Accepts a BIGINT as the number to add.
- **CURRENT_DATE:** Returns the current date as a DATE type.
- **BASE64ENCODE:** Converts a VARBINARY to VARCHAR
- **BASE64DECODE:** Converts a VARCHAR to VARBINARY

DEMO: Changes to existing syntax

Conclusion

- SQL Server 2025 has plenty of new T-SQL syntax.
- New features:
 - Add new **functionality**
 - Improve **performance/cost**
 - **Simplify** your code
- Upgrade...test...enjoy!
- More on the way...

Questions? Thank You!

- **Find me here:**

- [Ed Pollack | LinkedIn](#)
- [Edward Pollack | Most Valuable Professionals](#)
- <https://sessionize.com/edward-pollack/>

- **Find my content here:**

- [EdwardPollack \(Ed Pollack\) \(github.com\)](#)
- [Edward Pollack, Author at Simple Talk \(red-gate.com\)](#)
- [Ed Pollack, Author at SQL Shack - articles about database auditing, server performance, data recovery, and more](#)

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