



# Performance and Learning Utility for Azure Synapse (PLUS)

Harness the power of data to gain a competitive edge.

## Business challenge

Azure® Synapse brings together enterprise data warehousing and big data analytics to provide a unified experience through which data can be ingested, prepared, managed and delivered for use with Business Intelligence (BI) and machine learning.

But while Azure Synapse SQL is based on Microsoft® SQL Server® and uses the familiar T-SQL language, the Synapse SQL has fundamental differences in how data is stored and queries are executed. Making the shift without a complete understanding of how to optimize performance can lead to reduced efficiency and an increase in hourly costs.

## Our solution

Insight's Performance and Learning Utility for Synapse (PLUS) offers an accelerated path to powerful insights with Synapse.

PLUS enables organizations to quickly and effectively analyze their Synapse database, collecting and tracking historical attributes related to primary tables, procedures and definitions. Based on the data collected, recommendations are generated in the form of a script, with details on current state and reasoning for the proposed change. This empowers database administrators to evaluate, implement or ignore recommendations — and also allows changes to be tracked and saved when a recommendation is applied.

Key features of PLUS include:

- Ongoing data tracking of table size, row count, skew indicators and delta row compression
- Data collection and change tracking of distribution type, storage type, columns, stored procedures and view definitions
- Recommendations for table type, storage type, hash column, CI column, CCI order by column, etc.
- Query history for requests and errors, configurable by time, users, procedures or objects queried

Combined with our automated testing framework, our solution empowers your team to keep Synapse SQL running at peak efficiency while scaling down compute to take advantage of lower hourly usage rates.

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## Benefits

- PLUS is easy to use for anyone **with basic SQL skills.**
- Get the guidance to make expert decisions and **learn Synapse best practices.**
- Leverage automation to identify **opportunities for database optimization.**
- Easily track, configure and **execute recommended changes.**
- Improve query performance and **reduce hourly usage costs.**

## Our partners



## Related services

Azure Synapse Fast Start  
Synapse Tuning Engagement  
with PLUS

### Get started.

For pricing and information on how to get started please contact [alliances@insight.com](mailto:alliances@insight.com).

# Powerful technologies at work

PLUS collects and tracks historical attributes related primarily to tables, as well as checks and stores any changes to procedure or view definitions. The stored procedure for tracking runs at a schema level and can be run on demand, or as scheduled, and will run automatically after a recommendation has been applied to a table.

Data tracked on a scheduled basis:	Data collected and tracked when changed:	Data collected based on recommendation type:
<ul style="list-style-type: none"> <li>• Row count</li> <li>• Table size</li> <li>• Skew indicators (min, max, avg)</li> <li>• Open delta rows</li> <li>• Compressed delta rows</li> <li>• Dates around delta row compression</li> </ul>	<ul style="list-style-type: none"> <li>• Distribution type</li> <li>• Storage type</li> <li>• HASH column</li> <li>• CI column</li> <li>• CCI column</li> <li>• Is partitioned and partition column</li> <li>• Covering indexes exist</li> <li>• Stored procedure and view definition changes</li> </ul>	<ul style="list-style-type: none"> <li>• Number occurrences of columns in “join, group, where”</li> <li>• Number unique values in column (full or partial table scan configurable)</li> <li>• Number of other large tables with same column name</li> </ul>

Recommendations are generated as a script which includes details on current state, proposed state and reason for the proposed change. The script allows the Database Administrator (DBA) to either apply or ignore recommendations as needed.

When a recommendation is applied the change is tracked and the actual change script is saved along with a rollback script. Recommendation drivers are configurable, e.g., table size determining replicate.

Types of recommendations:	Query history:	Testing framework:
<ul style="list-style-type: none"> <li>• Table type</li> <li>• Storage type</li> <li>• Hash column</li> <li>• CCI order by column</li> <li>• CI column</li> <li>• Delta row push</li> </ul>	<ul style="list-style-type: none"> <li>• Exec requests, request steps, errors kept</li> <li>• History kept configurable by:               <ul style="list-style-type: none"> <li>• A specific user’s queries</li> <li>• Specific object(s) queried</li> <li>• Stored procedure name</li> <li>• Execution time &gt; X</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Easy execution of set of queries</li> <li>• History of executions tracked</li> <li>• Metadata around execution time to identify other jobs impacting test</li> <li>• Auto detect relation of query to table objects (allowing impact reporting on recommendations to test results)</li> <li>• Auto creation of test set from long-running queries</li> </ul>

## PLUS architecture

Insight’ PLUS (Performance and Learning Utility for Synapse) can be used with any standard Azure DW architecture. PLUS is fully self contained within the Synapse Pool itself and can help optimize both loading workloads and analytic workloads.

