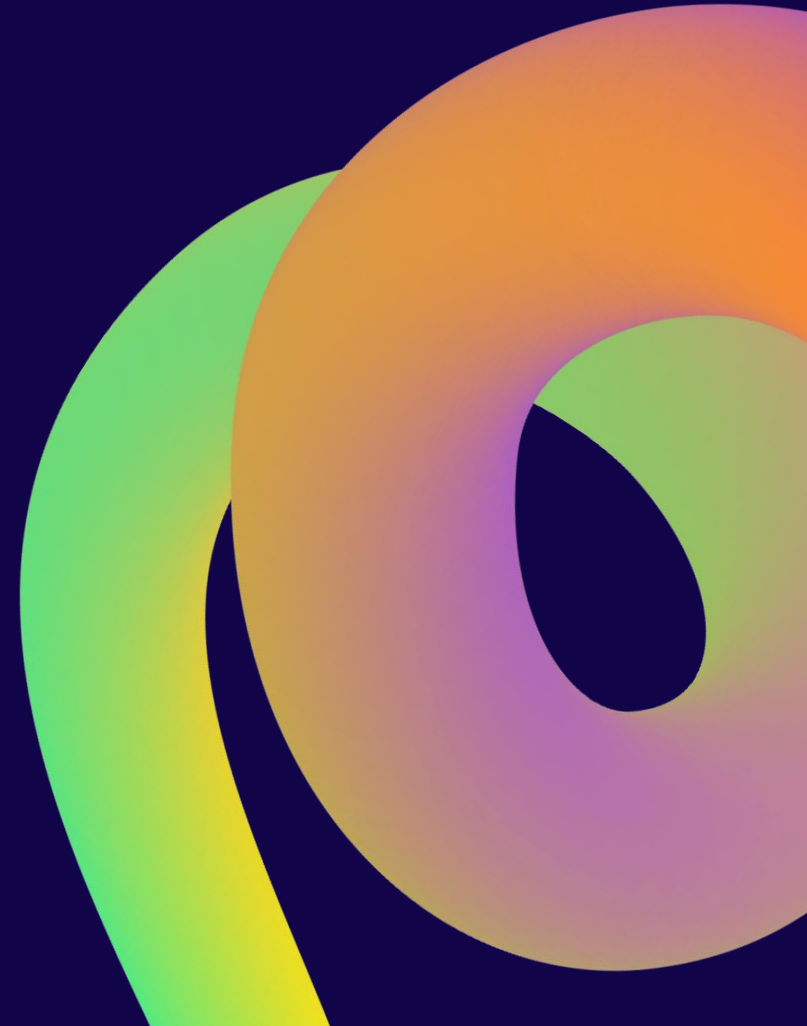


Automate, Optimize, Validate PowerShell for Power BI & SSAS Success

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- North Texas SQL Server UG Board
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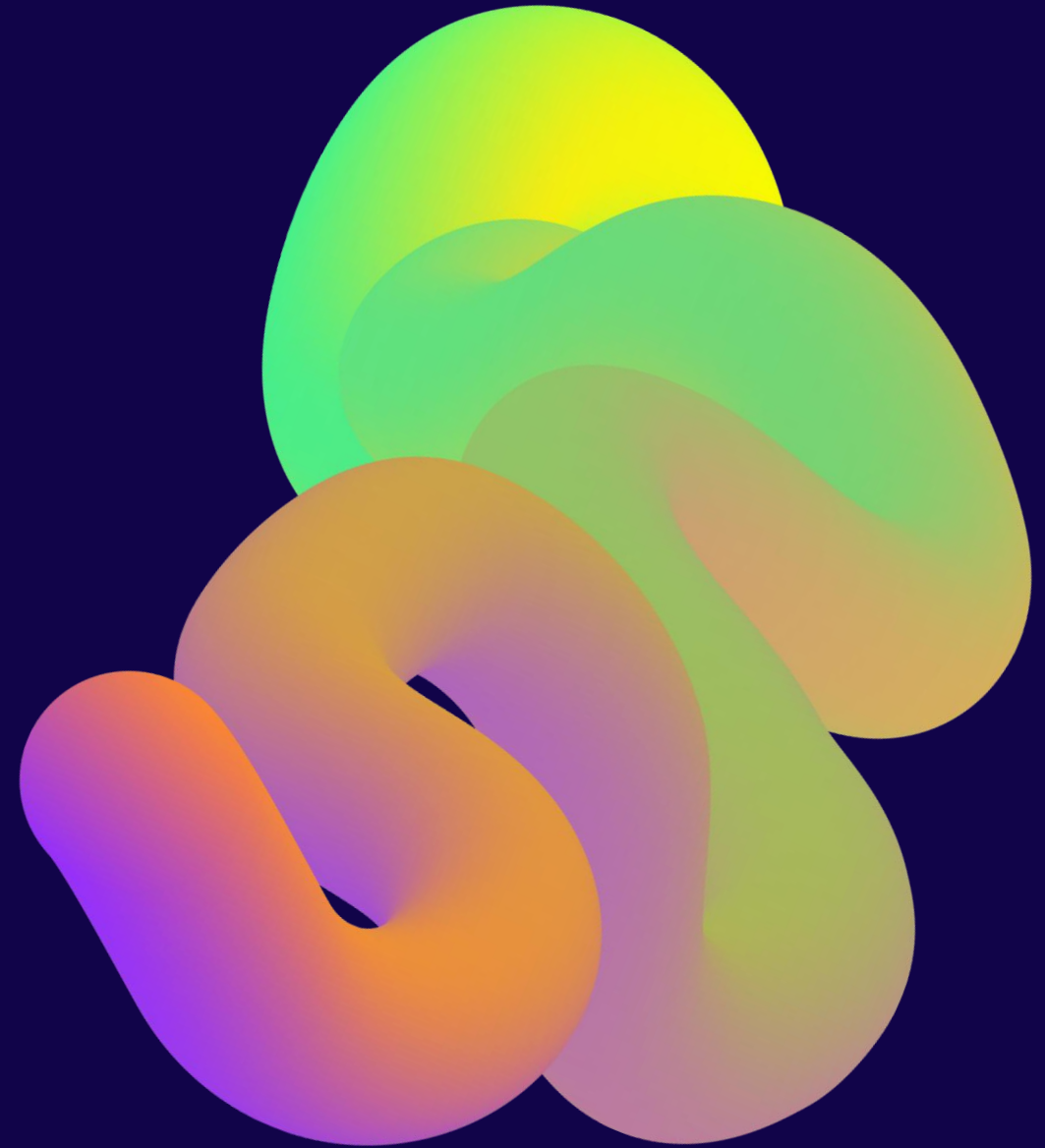
<https://www.sqlmovers.com>

Contact Info

- <https://github.com/rloski-public/SSASCompare>
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Agenda

- The Problem
- Approach
- Setup
- Comparing files
- Exporting data



The problem

Change causes unexpected changes

- How do you prove that a change doesn't cause something to break?
- Changes
 - Change to the data being loaded
 - Change to the measures
 - Change to the Relationships

Approach

Approach

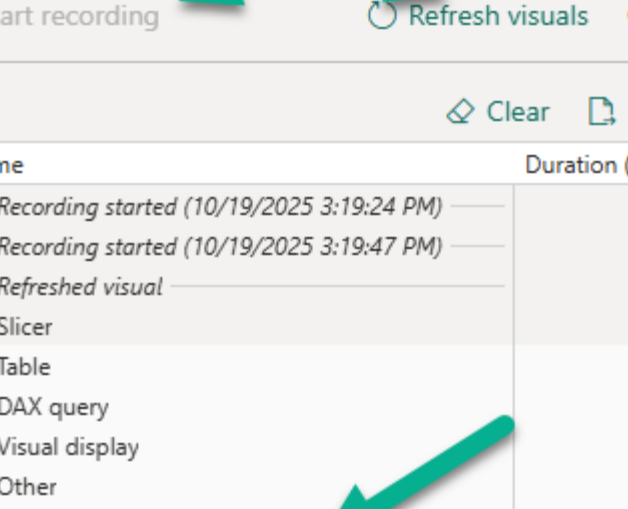
- Run DAX Queries using PowerShell
- Get DataTables from two models
- Compare the DataTables
 - Rows
 - Columns
 - Values
- Join on key columns

Getting Set Up

Prepare environment

- Install Data Component
 - <https://learn.microsoft.com/en-us/analysis-services/client-libraries>
 - Install the MSOLAP provider
- Note the SQLBI recommendation
 - <https://www.sqlbi.com/articles/execute-dax-queries-through-ole-db-and-adomd-net/>

- Use the DAX Query View



Performance analyzer

Start recording Refresh visuals Stop

Clear Export

Name	Duration (ms)
Recording started (10/19/2025 3:19:24 PM)	-
Recording started (10/19/2025 3:19:47 PM)	-
Refreshed visual	-
Slicer	102
Table	120
DAX query	18
Visual display	59
Other	43
Copy query	
Run in DAX query view	

The screenshot shows the Microsoft Power BI Desktop interface. The ribbon is set to the 'Home' tab. In the left-hand pane, the 'DAX' icon is highlighted with a red arrow. The ribbon includes sections for 'File', 'Home', and 'Insert'. The 'Home' section contains icons for 'Paste', 'Cut', 'Copy', 'Format painter', and 'Clipboard'. The left-hand pane shows icons for 'Visualizations' (bar chart), 'Tables' (grid), 'Fields' (stacked rectangles), 'DAX' (document with 'DAX' text), and 'TMDL' (document with 'TMDL' text). A dropdown menu is visible on the right, showing a list of product codes: 'ProductA', 'BC-M009', 'BC-R205', 'BK-M188', and 'BK-M189'.

Set up the PowerShell functions

- Load cmdlets used
 - Invoke-DAXQuery.ps1
 - New-DAXQueryMetaData.ps1
 - Add-DAXQueryMetaData.ps1
 - Get-DAXQueryMetaData.ps1
 - Compare-DAXQuery.ps1
 - Compare-DAXQueryDataTable.ps1

Find the connection information

- Power BI Desktop model is in a Windows Service
- Script GetPBIPort.ps1 gets the port number
- Variables
 - Set the path where you put the scripts
 - Set the Server (localhost:<portnumber>)
 - Try to determine which port goes to which server
 - I added a table with version information

Identify the keys and filters

- Results have different keys based on filters
 - IsGrandTotalRowTotal is true: no keys
 - IsDM1Total: one column key, etc.
- TestGetMetadata.ps1
 - Makes first guess at keys and filters
 - Writes to a second file
- Edit to identify different combinations

Run a test comparison on one file

Comparing files

Running a test

- Create a loop through each file

Reading results

- Number of rows/columns in each set
- Columns with mismatches
- Missing rows

Exporting data

Closing

References



Contact Info

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Thank you

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Your feedback is important to us

Evaluate this session at:

www.PASSDataCommunitySummit.com/evaluation