PASS Data Community Summit

Host redgate

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

Russel Loski

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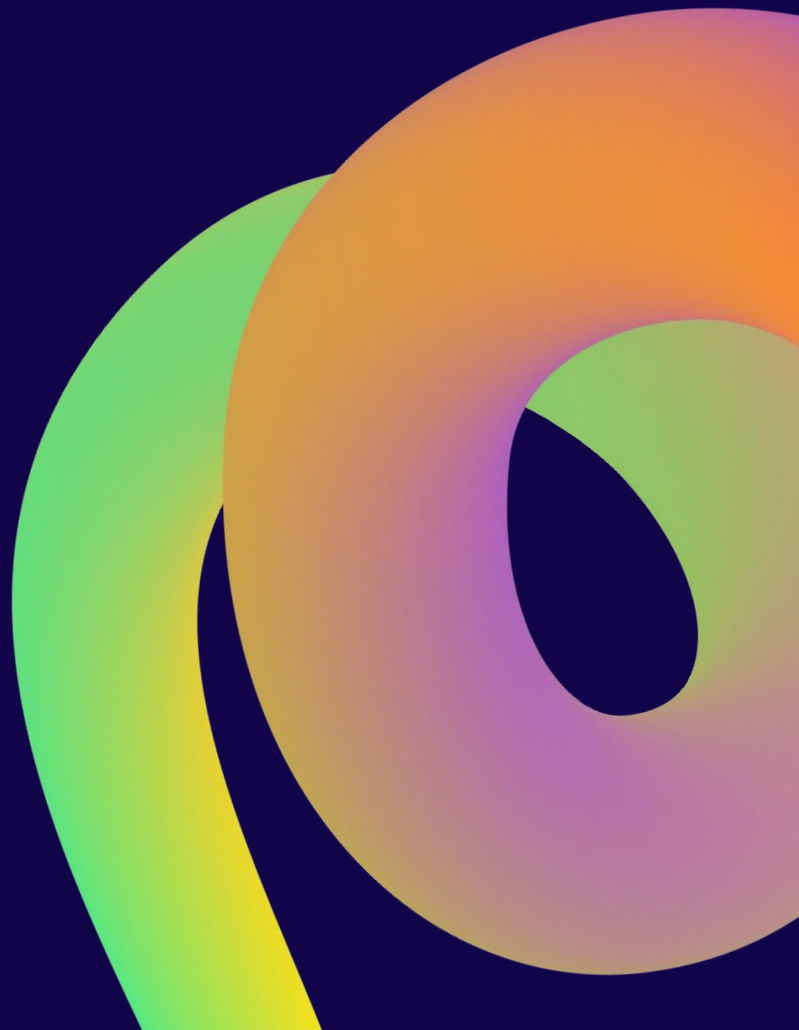

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- North Texas SQL Server UG Board
- Husband – Father – Grandfather
- Worked with SQL Server since 6.5

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Contact Info

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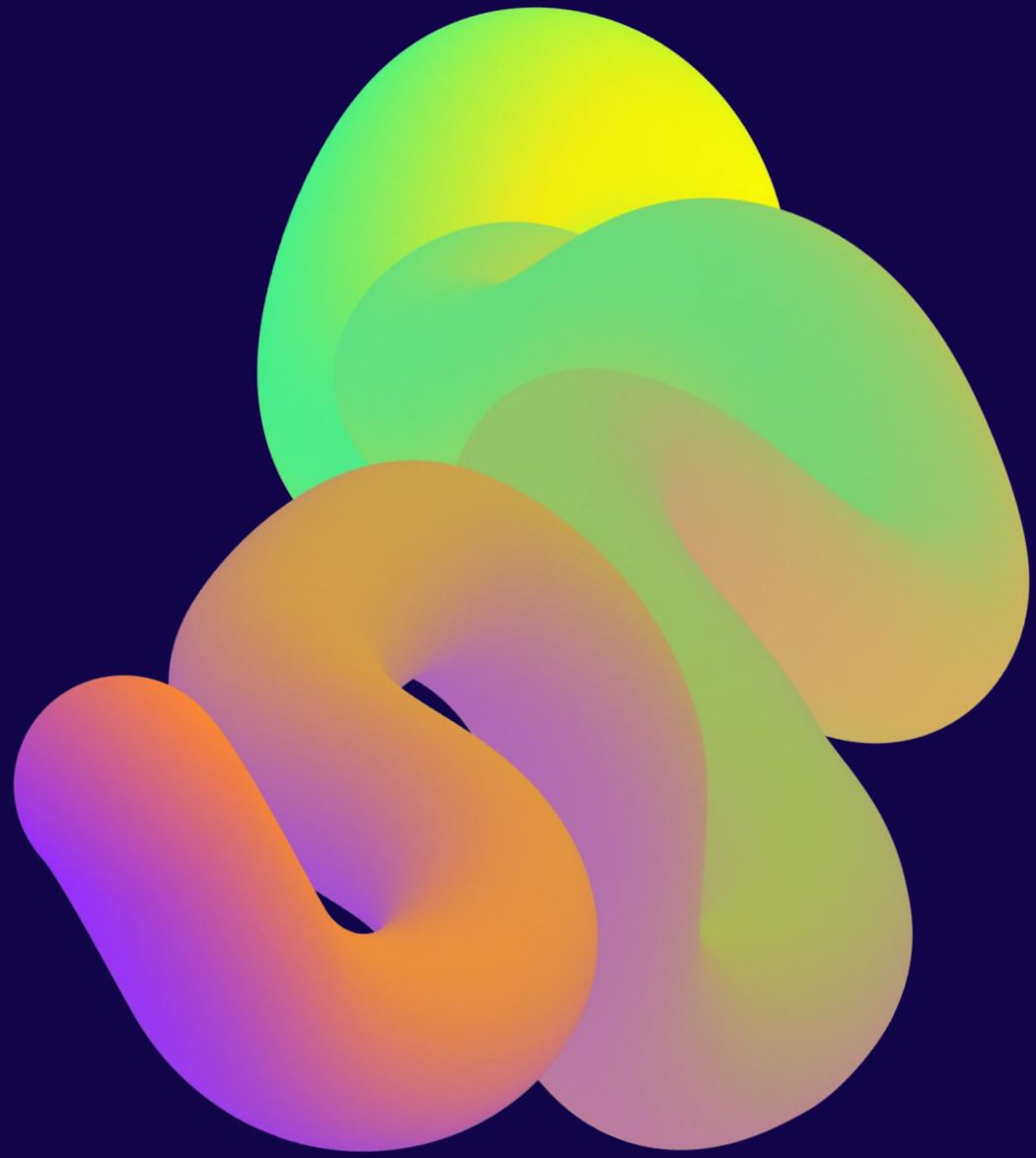
Agenda

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



Quick survey

- Competent in Power BI
- Power BI beginner
- Competent in PowerShell
- PowerShell beginner
- DAX Query

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

How to find changes?

- Clicking through reports

Approach

Approach

- Use PowerShell to compare two models
- Get DataTables from each model
  - Run same DAX Query against each model
- Compare the DataTables
  - Rows
  - Columns
  - Values
- Join on key columns

Getting Set Up

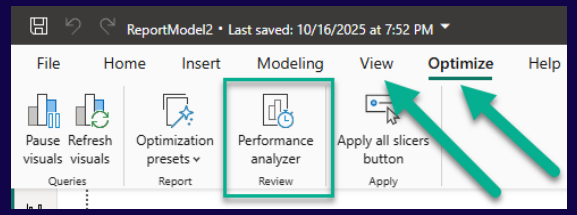
Prepare environment

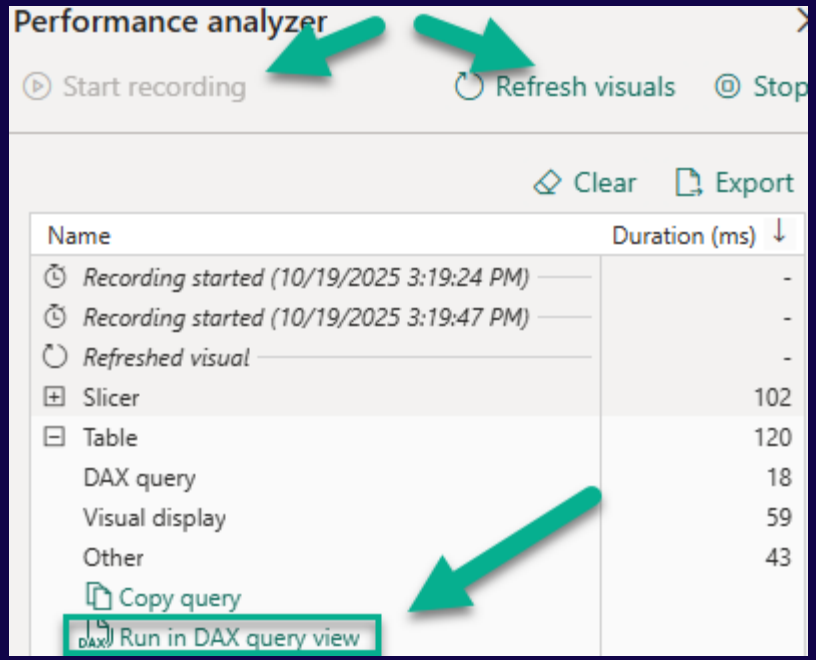
- Install Data Component
  - https://learn.microsoft.com/en-us/analysis-services/client-libraries
  - Install the MSOLAP provider
- Note the SQLBI recommendation
  - https://www.sqlbi.com/articles/execute-dax-queries-through-ole-db-and-adomd-net/

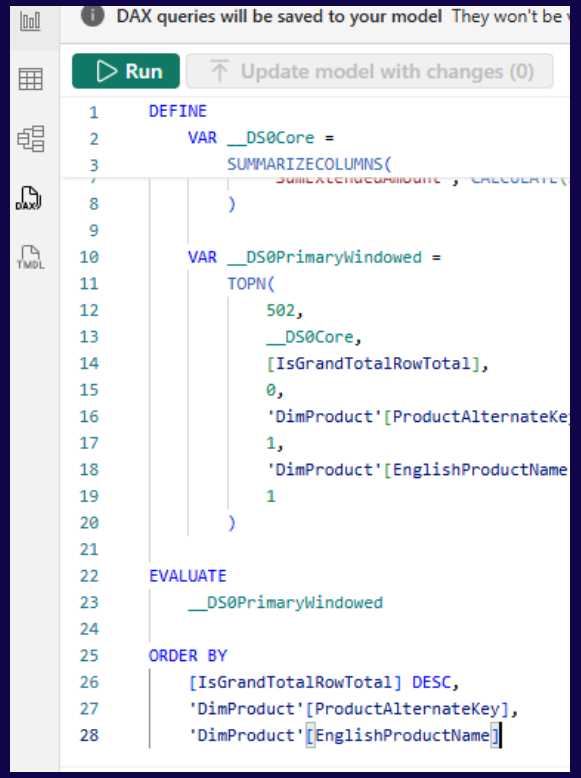
Copy PowerShell Scripts

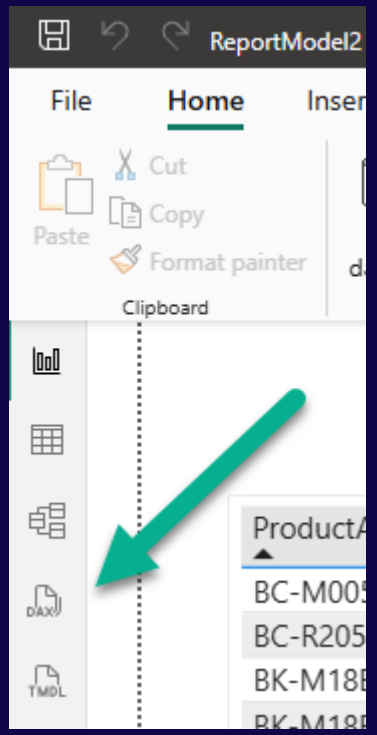
- Download scripts
  - https://github.com/rloski-public/SSASCompare
- Main folder:
  - Scripts for testing
- DAXComparison
  - The module scripts

Prepare DAX queries: DAX query view









Set up the PowerShell functions

- Import-Module `
  .\ DAXComparison\DAXComparison.psm1

Find the connection information

- Start both reports (each is different model)
- Power BI Desktop model is in a Windows Service
- Cmdlet Find-PBIPorts 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.
- Edit to identify different combinations

Comparing files

Reading Results

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

Exporting data

Exporting to CSV

- Get a table using Invoke-DAXQuery
- Pipe results to Export-CSV

Closing

References

- Client Libraries for .Net
  - https://learn.microsoft.com/en-us/analysis-services/client-libraries
- SQLBI Discussion about Client libraries
  - https://www.sqlbi.com/articles/execute-dax-queries-through-ole-db-and-adomd-net/
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Thank you

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Your feedback is important to us

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