

AN ELEVATOR PITCH FOR CALCULATIONS GROUPS



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Main topics: SSAS (Multidimensional/Tabular), Power BI, MDWH Architecture, SSRS, MDS

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- What are Calculation Groups?
- How to build Calculation Groups?
- When to use Calculation Groups and when not to?

WHAT ARE CALCULATION GROUPS?

- A calculation group
 - Is represented as a table in the model
 - Containing one column for the calculation items
 - And optionally another column for the sorting of the items
- A calculation item
 - Contains an expression to define the calculation rule
 - And optionally a “dynamic format string”
 - Which is called dynamic, because it can be applied based on a DAX expression
- Calculation groups
 - Are available in Analysis Services 2019, Azure Analysis services and Power BI Datasets in Power BI Service

- You can
 - Implement several calculation groups per model
 - Define the order of execution for several calculation groups
 - Use calculation items in the expression of another calculation item (shown in demos)
- You cannot
 - Define Object Level Security on a calculation group or
 - Define Row Level Security based on a calculation group
- Calculation groups will prevent the usage of implicit measures

- Sideways recursion
 - Usage of calculation groups inside calculation groups
 - Only one calculation item per filter context
- Precedence
 - The proper order of execution
 - Applies to business logic and formatting

HOW TO BUILD CALCULATION GROUPS?

- Analysis Services on-premise / Azure Analysis Services:
 - Visual Studio
- Power BI
 - Tabular Editor

DEMO TIME

Just a very short one...

- Create a calculation group using Tabular Editor
- Create different calculation items
- Define calculation item sort order
- Define calculation rule per item
- Define dynamic format strings

WHEN TO USE CALCULATION GROUPS AND WHEN NOT TO?

- Typical use cases:
 - Re-occurring calculations
 - Currency Conversion
 - Time aggregation
 - Need for flexible formatting
 - Alternative: FORMAT function
→ returns strings, therefore no use in charts

- No use for object / row level security
- No use for Detail Rows expressions or Smart narratives
- Usage of implicit measures is prevented!
- Dynamic format strings are not applied to report-level measures in reports with LiveConnection
- Definition of helper measures might get complicated
→ use explicit limitations for applied logic
- Not as flexible as individual measures:
Arbitrary sets, Specific sorting, column orders

- Very powerful, but also “dangerous”
- Can solve a lot, but also has limitations
- Not your answer to everything:
e.g. “Arbitrary sets”
- So...
 - In the beginning, it looks like a Swiss Army knife
 - In the end it might turn into rocket science ;-)