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Dynamic Subset Control
IBM Planning Analytics
Accelerator
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Author:
Rick Stevenson

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1.0	06/12/2020	Rick Stevenson	Initial version

Approval history:

Name	Signature	Title	Date	Version
Rick Stevenson		Project Manager		

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1. Overview

1.1 Purpose of Document

Welcome to the **Dynamic Subset Selection** automated MDX library for creating dynamic reports and views using Planning Analytics. The purpose of this accelerator is to allow developers and users to easier create user based dynamic subsets using a pre-built library of MDX expressions and inputs. The accelerator also allows users to create their own custom MDX sets using the SET_CUSTOM subset selection element.

1.2 Benefits

1. Flexible user driven dynamic subsets for page, row and column level
2. Pre-Defined MDX standard expression per user
3. Custom MDX expressions per user
4. User level MDX expressions
5. Dimension level expressions
6. Multiple expressions per user and dimension
7. Planning Analytics Workspace Subset Selection Portal

1.3 Features

1. Subset Control cube to store Dynamic Subset Expressions
2. Subset Selection cube to store Dynamic Subset Selections
3. Subset Control cube pre-built rules engine
4. Ability within Subset Control to create static or dynamic subsets
5. Turbo Integrator process to create pre-built subsets based on subset control definitions
6. Subset Selection cube pre-built rules engine
7. Subset Selection picklist engine based dimension elements, hierarchies and subsets within each dimension
8. Automatic definition of active user

1.4 Future Capabilities

1. Add ability to Filter based on cube level data
2. Add additional subset selection rules based on specific requirements

Any questions as a result of this document should be directed to:

Rick Stevenson
Planning Analytics Architect
Phone: (908) 399-5158 (Cell)
Email: rstevenson@forquestsolutions.com

2. Subset Control

The **Subset Control** module allows users and administrators to enter dynamic subset expressions in a cube. A Turbo Integrator process runs through a parameterized dimension or all dimensions if left blank to create subsets. There is functionality to create a static or dynamic subset based on cube parameter setting.

2.1 Dimensions

2.1.1 }Dimensions

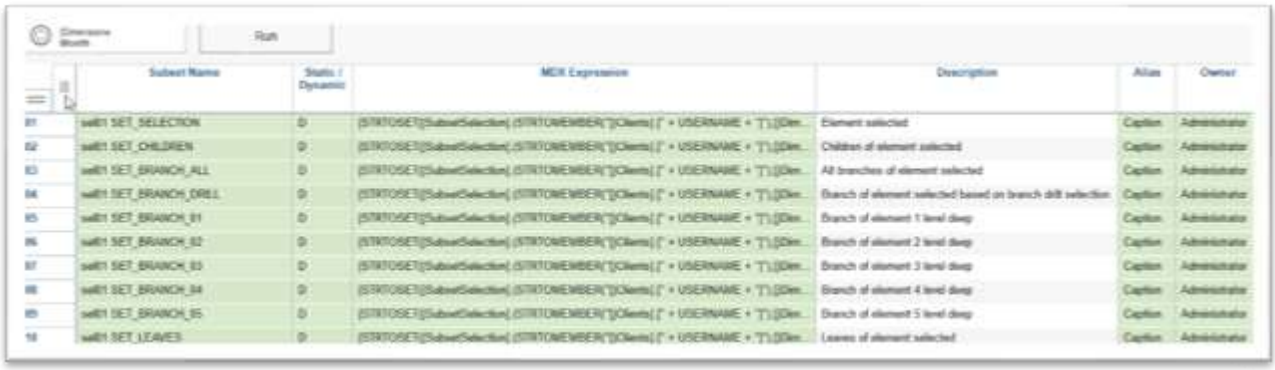
Provides ability to select all dimensions in a model and provide different MDX Expressions per dimension.

2.1.2 Index

Provides the capability to enter multiple MDX Expressions per dimension.

2.1.3 Measure

Provides functionality to define the different items in the **Subset Control** cube.



2.2 Cube Parameters

2.2.1 Subset Name

The name to identify subset in the selected dimension.

2.2.2 Static / Dynamic

A flag to define whether the Turbo Integrator (TI) process creates a static subset or dynamic (MDX) subset.

2.2.3 MDX Expression

The multi-dimensional expression definition for each index element.

2.2.4 Description

A brief description of what the MDX Expression is doing.

2.2.5 Alias

The alternate name used to define the subset

2.2.6 Owner

The person who created the original subset.

2.2.7 Status

Provides the ability to create the subset by the TI process if set to 1 or skip if set to 0.

2.2.8 Notes

Notes provides ability to add additional comments.

2.2.9 Index 01-20

The first twenty indexes (01-20) are predefined Planning Analytics rules utilized for the Subset Selection module. The Subset Selection module is defined in the next section.

3. Subset Selection

3.1 Subset Selection Dimensions

3.1.1 }Clients

Provides the ability for each Planning Analytics client to create their own subsets.

NOTE: Use the **selCURRENTUSER** subset for the current logged in user.

3.1.2 }Dimensions

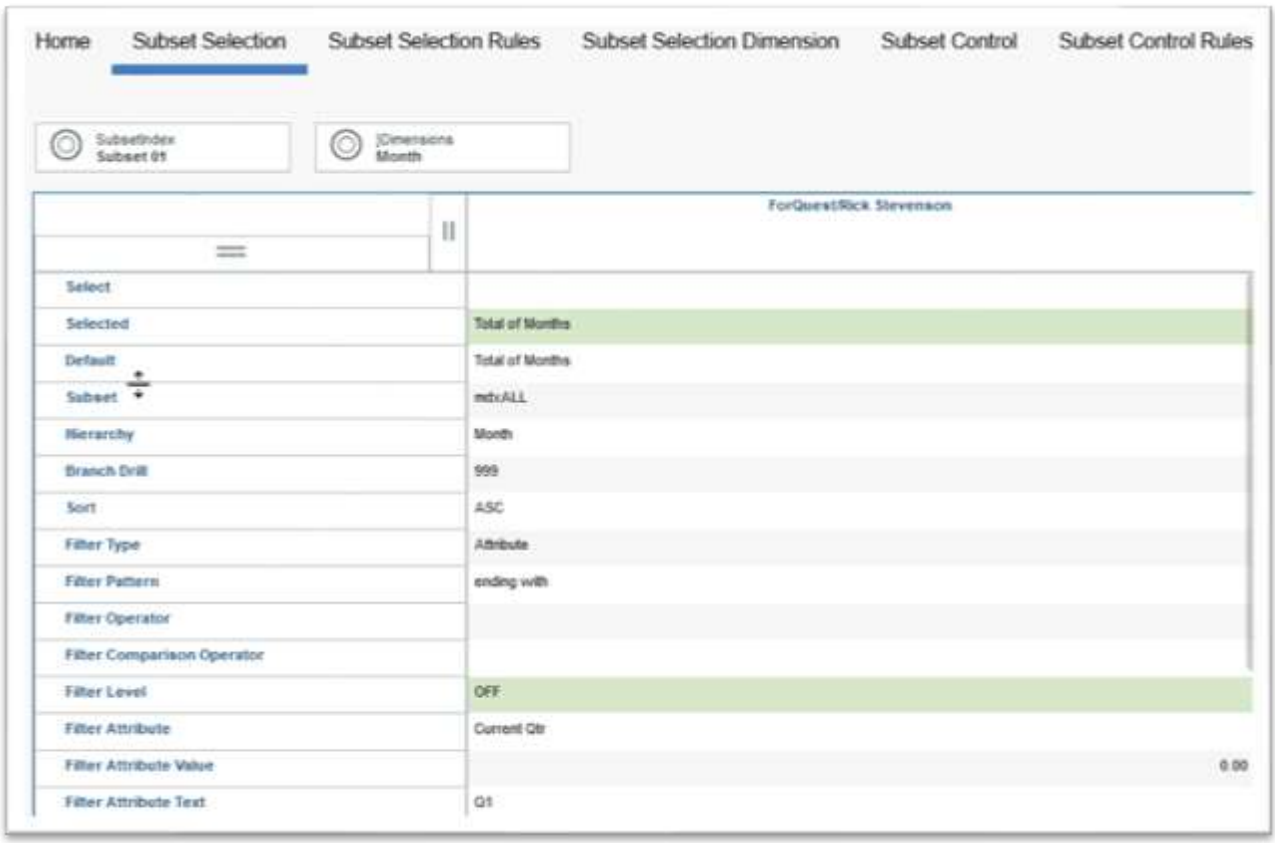
Provides the ability to create a subset for each dimension per client as well.

3.1.3 Subset Index

Provides the ability to create a subset for each client and dimension multiple selections.

3.1.4 Subset Selection Measure

Provides functionality to define the different items in the **Subset Selection** cube.



3.2 Subset Selection Measures

3.2.1 Select

Defines the element to use in the MDX Expression

3.2.2 Selected

Based on the "Select" value determines the element to use if defined. If "Select" is blank uses the "Default" value.

3.2.3 Default

The element to utilize if "Select" is not defined.

3.2.4 Subset

The subset utilized in the picklist for the "Select" and "Default" measures. The picklists available for the "Subset" measure is defined by the "}Subsets_<Dimension Name>" dimension.

3.2.5 Hierarchy

The hierarchy utilized in the picklist for the "Select" and "Default" measures. The picklists available for the "Hierarchy" measure is defined by the "}Hierarchies_<Dimension Name>" dimension.

3.2.6 Branch Drill

The number of levels to drill down in the MDX expression 999 or 1-10 levels.

3.2.7 Sort

Defines the way to order the subset ascending or descending.

3.2.8 Filter Type

Provides the ability to define what type of filter the MDX Expression utilizes. The following options are currently available.

- Level
- Attribute
- Text
- Value

3.2.9 Filter Pattern

Provides the ability to do different types text based pattern filtering.

- ending with
- containing
- not containing
- beginning with

3.2.10 Filter Operator

Currently not utilized, will be developed for future functionality.

- +
- -
- *
- /
- %
- ^

3.2.11 Filter Comparison Operator

Currently not utilized, will be developed for future functionality.

- =
- <=
- >=
- <>
- >
- <

3.2.12 Filter Level

Available when “Filter Type” is set to “Level”. Provides ability to filter by level 0-10 levels.

3.2.13 Filter Attribute

Available when “Filter Type” is set to “Attribute”. Provides ability to filter by attribute using the selected dimension available attributes. Attributes are populated by a picklist using the }ElementAttributes_<Dimenson Name> dimension elements.

3.2.14 Filter Attribute Value

The attribute value to utilize in the filter MDX Expression if “Filter Attribute” selection is numeric.

3.2.15 Filter Attribute Text

The attribute string to utilize in the filter MDX Expression if “Filter Attribute” selection is text.

3.2.16 Filter Value

The numeric value to utilize when the “Filter Type” is set to Value.

3.2.17 Filter Text

The string value to utilize when the “Filter Type” is set to Text.

3.2.18 Prefix

Currently not utilized, will be developed for future functionality.

3.2.19 Suffix

Currently not utilized, will be developed for future functionality.

3.2.20 Notes

3.2.21 STRTOMEMBER

Convert “Select” element to MDX.

3.2.22 SET_SELECTION

Element selected.

3.2.23 SET_CHILDREN

Children of element selected.

3.2.24 SET_BRANCH_ALL

All branches of element selected.

3.2.25 SET_BRANCH_DRILL

Branch of element selected based on branch drill selection

3.2.26 SET_BRANCH_01

Branch of element 1 level deep.

3.2.27 SET_BRANCH_02

Branch of element 2 level deep.

3.2.28 SET_BRANCH_03

Branch of element 3 level deep.

3.2.29 SET_BRANCH_04

Branch of element 4 level deep.

3.2.30 SET_BRANCH_05

Branch of element 5 level deep.

3.2.31 SET_LEAVES

Leaves of element selected

3.2.32 SET_LEAVES_AFTER_SEL

Selected element then leaves of selected element

3.2.33 SET_LEAVES_BEFORE_SEL

Leaves of selected element then selected element

3.2.34 SET_FILTER

Attribute, Level, Text or Value filters

3.2.35 SET_PREFIX_SUFFIX

Prefix or Suffix filter based on selections

3.2.36 SET_PREFIX_SUFFIX_AFTER_SEL

Prefix or Suffix filter based on selections after selected element

3.2.37 SET_PREFIX_SUFFIX_BEFORE_SEL

Prefix or Suffix filter based on selections before selected element

3.2.38 SET_CHILDREN_FILTER

Children of selected element

3.2.39 SET_LEAVES_FILTER

Leaves of filter selected element

3.2.40 SET_LEAVES_BEFORE_SEL_FILTER

Currently not utilized, will be developed for future functionality.

3.2.41 SET_LEAVES_AFTER_SEL_FILTER

Currently not utilized, will be developed for future functionality.

3.2.42 SET_CUSTOM

Allows users to create a custom MDX Expression not defined in any of the above pre-built MDX Expressions.

4. Accelerator Components

4.1 Planning Analytics Data Objects

4.1.1 Dimensions

- }Clients.dim
- }Dimensions.dim
- }Subsets_<Dimension Name>.dim
- }Hierarchies_<Dimension Name>.dim
- }ElementAttributes_<Dimension Name>.dim
- Index.dim
- }ElementAttributes_Index.dim
- }PickList.dim
- SubsetControlMeasure.dim
- SubsetIndex.dim
- SubsetSelectionMeasure.dim
- }ElementAttributes_SubsetSelection.dim

4.1.2 Cubes

- SubsetControl.cub
- SubsetSelection.cub
- }PickList_SubsetSelection.cub
- }ElementAttributes_SubsetControlMeasure.cub
- }ElementAttributes_SubsetSelectionMeasure.cub

4.1.3 Rules

- SubsetControl.rux
- SubsetSelection.rux
- }PickList_SubsetSelection.rux

4.1.4 Turbo Integration Processes

- ADMIN Subset Create Subset Control Cube Subsets.pro

4.1.5 Subsets

- SubsetControlMeasure}subs folder

4.1.6 Views

- SubsetControl}vues folder

4.2 Planning Analytics Workspace

1. Portal - PAW Subset Accelerator.gz

5. Accelerator

DynamicSubsetControl.zip