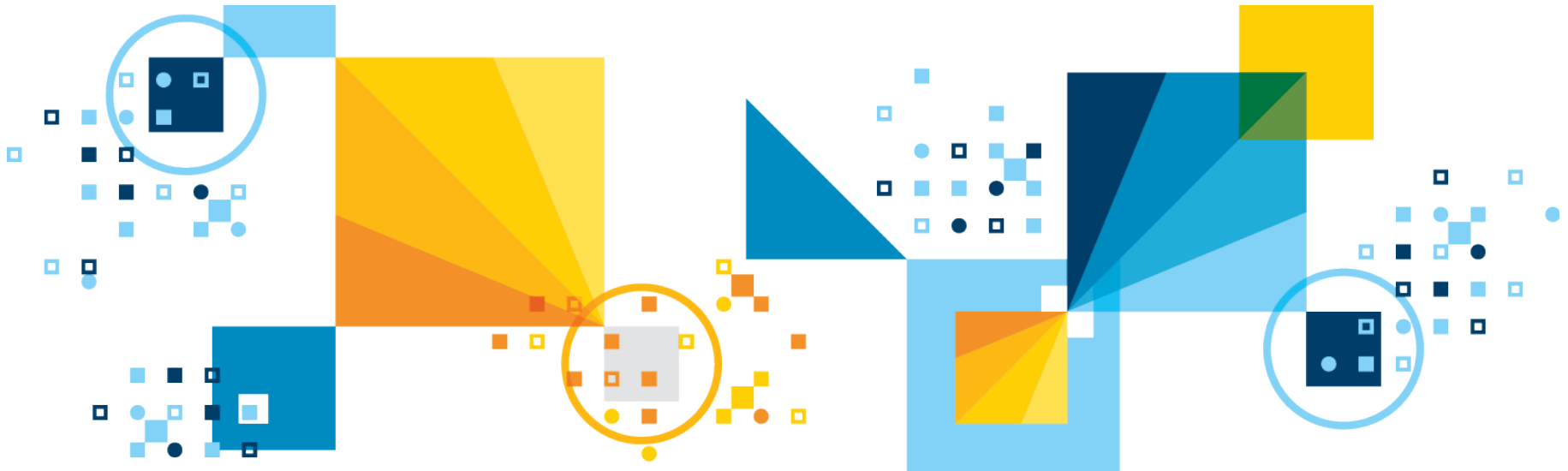


# IBM Cognos® TM1®:

## Modular TI-processing environments: Generation of TM1 Subsets, Views & other tools and utilities



## Setting the stage

This session is geared at introducing proven development practices & guidelines for building re-usable, modular TI-processes for

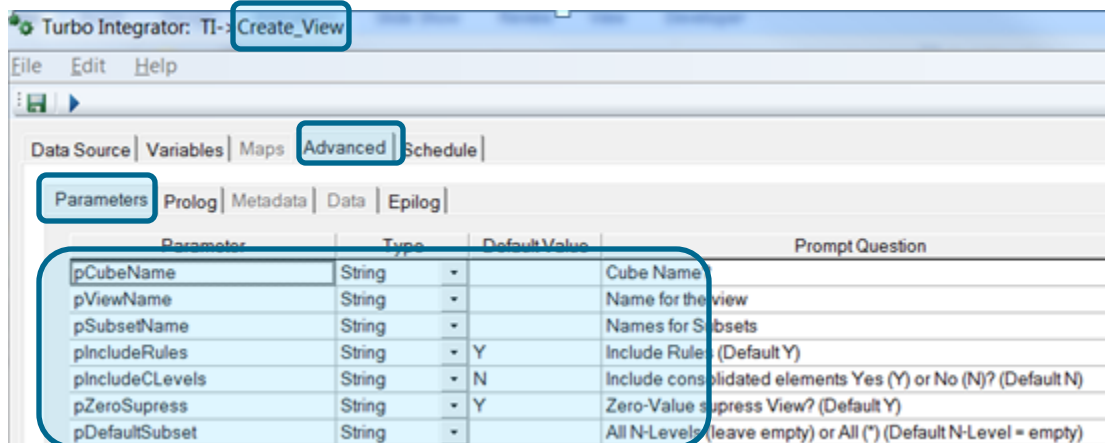
- view & subset creation & loading of cube data, &
- tools & utilities related to  
Dimension (Hierarchy) Maintenance

Employing a module-based approach to TI-process architecture & design typically provides the following advantages:

- a) Reduced development time
- b) Improved maintainability
- c) Improved ability to upgrade a model environment with new TM1 feature functionalities
- d) higher (code) transparency
- e) Higher stability/reliability (less code => fewer opportunities to make mistakes)

## Modular Code for creating Subsets and Views Advanced Tab, revisited: 'Create\_View.pro'

- pCubeName: Name of the cube for which to create the view
- pViewName: view name, if empty: ' }TEMP\_<DateTimeStamp>'
- pSubsetName: subset name, if empty, view name will be used
- plncludeRules: include rules Y/N
- plncludeCLevels: include Consolidated Levels Y/N
- pZeroSupress: zero suppress Y/N
- pDefaultSubset: if empty => all leafs, if '=' => ALL



Parameter	Type	Default Value	Prompt Question
pCubeName	String		Cube Name
pViewName	String		Name for the view
pSubsetName	String		Names for Subsets
plncludeRules	String	Y	Include Rules? (Default Y)
plncludeCLevels	String	N	Include consolidated elements Yes (Y) or No (N)? (Default N)
pZeroSupress	String	Y	Zero-Value suppress View? (Default Y)
pDefaultSubset	String		All N-Levels (leave empty) or All (*) (Default N-Level = empty)

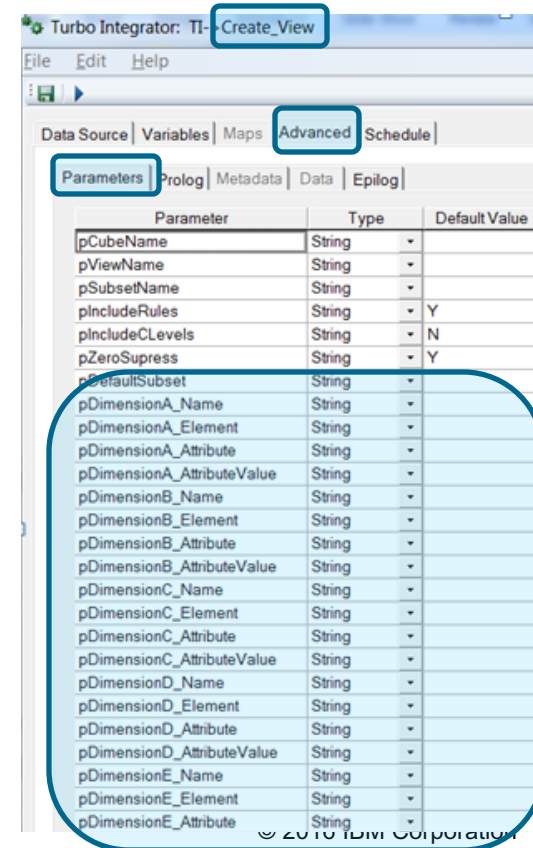
# Modular Code for creating Subsets and Views

## Advanced Tab, revisited: 'Create\_View.pro'

- pDimension<X>\_Name: any dimension name, if the dimension does not exist in the cube, it will simply be ignored. It does not matter if you assign a dimension to be A or B or...
- pDimension<X>\_Element: Element(s) you may want to filter by. Options:
  - <ElementName> = single Element Name
  - All or \* = SubsetIsAllSet = all elements in dimension
  - " (empty) = all N-level Elements (DEFAULT)
  - A;<ElementName> or AD;<ElementName> = All Descendants
  - ND;<ElementName> = All N-Level Descendants (excluding Parent(s))
  - IC;<ElementName> = Immediate Children
  - CD;<ElementName> = C-Level Descendants (including Parent)
  - Multi:<ElementName1>;<ElementName2>;...;<ElementNameN>  
= Multiple Elements

The naming conventions are just examples. The idea is to use a number of prefixes/shortcuts to tell TM1 what type of subset to build. You could also use a separate parameter instead of a prefix (but one would end up with many more parameters). There's no right or wrong here, it comes down to individual preferences

- pDimension<X>\_Attribute:  
Attribute you may want to filter by
- pDimension<X>\_AttributeValue:  
Value of attribute you may want to filter by



The screenshot shows the 'Create\_View' dialog box in Turbo Integrator, with the 'Advanced' tab selected. The 'Parameters' sub-tab is active, displaying a table of parameters. A blue circle highlights the parameters from pDimensionA\_Name to pDimensionE\_Attribute.

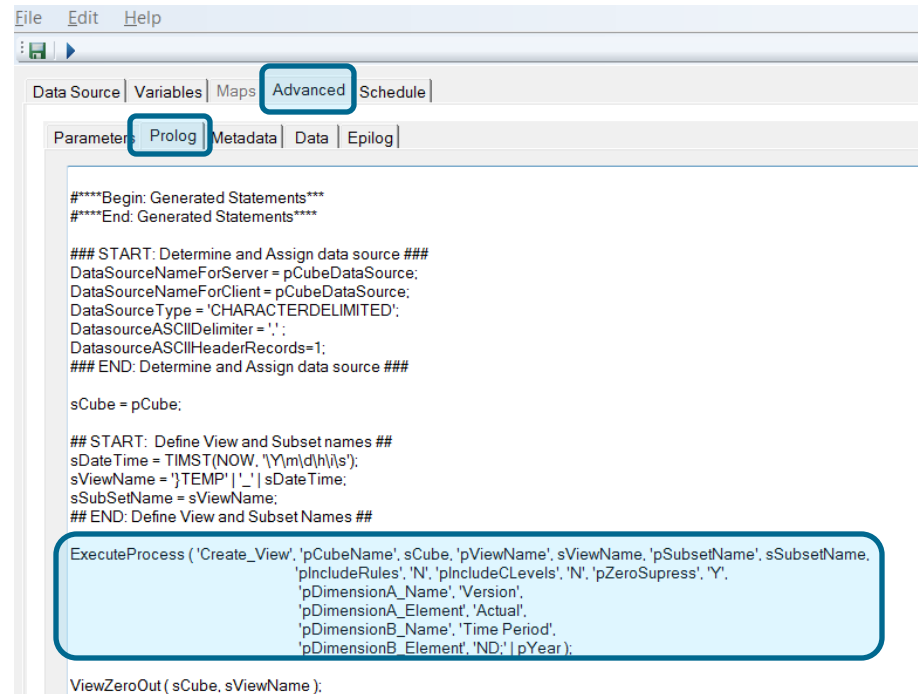
Parameter	Type	Default Value
pCubeName	String	
pViewName	String	
pSubsetName	String	
pIncludeRules	String	Y
pIncludeCLevels	String	N
pZeroSupress	String	Y
pDefaultSubset	String	
pDimensionA_Name	String	
pDimensionA_Element	String	
pDimensionA_Attribute	String	
pDimensionA_AttributeValue	String	
pDimensionB_Name	String	
pDimensionB_Element	String	
pDimensionB_Attribute	String	
pDimensionB_AttributeValue	String	
pDimensionC_Name	String	
pDimensionC_Element	String	
pDimensionC_Attribute	String	
pDimensionC_AttributeValue	String	
pDimensionD_Name	String	
pDimensionD_Element	String	
pDimensionD_Attribute	String	
pDimensionD_AttributeValue	String	
pDimensionE_Name	String	
pDimensionE_Element	String	
pDimensionE_Attribute	String	

# Modular Code for creating Subsets and Views

## Advanced Tab, revisited: 'Create\_View.pro'

- We will now replace portions of our code by instead calling 'Create\_View.pro', using function  
ExecuteProcess (<ProcessName>, <ParameterA>, <ParameterAValue>, <ParameterB>, <ParameterBValue>, ...);
- Insert the following code after you have defined the view name and before calling function ViewZeroOut():

```
ExecuteProcess ( 'Create_View',
'pCubeName', sCube,
'pViewName', sViewName,
'pSubsetName', sSubsetName,
'pIncludeRules', 'N',
'pIncludeCLevels', 'N',
'pZeroSuppress', 'Y',
'pDimensionA_Name', 'Version',
'pDimensionA_Element', pVersion,
'pDimensionB_Name', 'Time Period',
'pDimensionB_Element', 'ND;' | pYear );
```



```
File Edit Help
Data Source Variables Maps Advanced Schedule
Parameters Prolog Metadata Data Epilog
****Begin: Generated Statements***
****End: Generated Statements****

### START: Determine and Assign data source ###
DataSourceNameForServer = pCubeDataSource;
DataSourceNameForClient = pCubeDataSource;
DataSourceType = 'CHARACTERDELIMITED';
DataSourceASCIIDelimiter = '|';
DataSourceASCIISeparatorRecords=1;
### END: Determine and Assign data source ###

sCube = pCube;

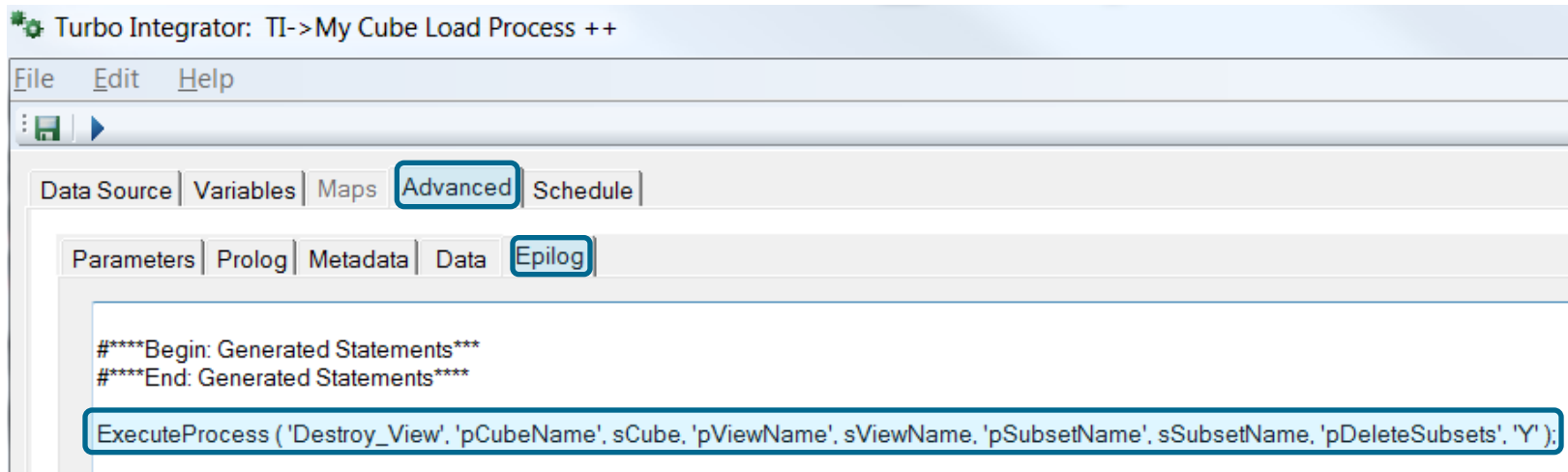
## START: Define View and Subset names ##
sDateTime = TIMST(NOW, 'Ym\dh\i\s');
sViewName = 'TEMP'| '_' | sDateTime;
sSubSetName = sViewName;
## END: Define View and Subset Names ##

ExecuteProcess ('Create_View', pCubeName', sCube, 'pViewName', sViewName, 'pSubsetName', sSubsetName,
'pIncludeRules', 'N', 'pIncludeCLevels', 'N', 'pZeroSuppress', 'Y',
'pDimensionA_Name', 'Version',
'pDimensionA_Element', 'Actual',
'pDimensionB_Name', 'Time Period',
'pDimensionB_Element', 'ND;' | pYear);

ViewZeroOut ( sCube, sViewName );
```

## Modular Code for creating Subsets and Views Advanced Tab, revisited: 'Destroy\_View.pro'

- We will also replace the housekeeping code by a generic process: The process 'Destroy\_View' will destroy any specified view and optionally its subsets:
- Replace the code in the epilog by
- `ExecuteProcess ( 'Destroy_View',  
'pCubeName', sCube,  
'pViewName', sViewName,  
'pSubsetName', sSubsetName,  
'pDeleteSubsets', 'Y' );`



The screenshot shows the Turbo Integrator interface for a process named 'TI->My Cube Load Process'. The 'Advanced' tab is selected, and within it, the 'Epilog' section is active. The code in the Epilog section is as follows:

```
#####Begin: Generated Statements###  
#####End: Generated Statements#####  
  
ExecuteProcess ( 'Destroy_View', 'pCubeName', sCube, 'pViewName', sViewName, 'pSubsetName', sSubsetName, 'pDeleteSubsets', 'Y' );
```

# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_Subset\_Create.pro'

Basics: dimension, elements, attribute, MDX, ...?

Time & Version management related Filtering

Filter by Cube/View Extract?

Turbo Integrator: Template->SYS\_IBM\_Subset\_Create

File Edit Help

Data Source | Variables | Maps | Advanced | Schedule

Parameters | Prolog | Metadata | Data | Epilog

Parameter	Type	Default Value	Prompt Question
pDimensionName	String		Dimension?
pSubsetName	String		SubSet Name?
pDestroySubset	String	Y	Destroy Subset or Rebuild only? (Default Y)
pMDX	String	Y	MDX Subsets (Default Y)
pElementName	String		<ElementName> OR */All/ND
pAttribute	String		Attribute? (for filtering by Attribute value)
pAttributeValue	String		AttributeValue?
pVersionDimension	String		Version/Scenario Dimension (for Actuals/NonActuals Time P
pVersion	String		Version?
pTimePeriodDimension	String		Version/Scenario Dimension (for Actuals/NonActuals Time P
pTimePeriodDimensionType	String		YYYYMMDD or YYYYMM
pOnlyLastActualsTimePeriod	String	N	Only Non-Actuals Time Periods?
pOnlyFirstNonActualsTimePeriod	String	N	Only the first Non-Actuals Period?
pOnlyActualsTimePeriods	String	N	Only Actuals Time Periods?
pOnlyNonActualsTimePeriods	String	N	Only Non-Actuals Time Periods?
pOnlyCurrYearActualsTimePeriods	String	N	only Current Year Actuals Time Periods? (Default N)
pOnlyCurrYearNonActualsTimePeriods	String	N	only Current Year Non-Actuals Time Periods? (Default N)
pFilterByCube	String		Enter Cube Name to create a Zero-Value suppressed subset
pDimensionA	String		DimensionA for Filter by Cube?
pDimensionA_Element	String		DimensionA Element?
pDimensionB	String		DimensionB for Filter by Cube?
pDimensionB_Element	String		DimensionB Element?
pDimensionC	String		DimensionC for Filter by Cube?
pDimensionC_Element	String		DimensionC Element?
pDimensionD	String		DimensionD for Filter by Cube?
pDimensionD_Element	String		DimensionD Element?
pDimensionE	String		DimensionE for Filter by Cube?
pDimensionE_Element	String		DimensionE Element?
pDimensionF	String		DimensionF for Filter by Cube?
pDimensionF_Element	String		DimensionF Element?
pDimensionG	String		DimensionG for Filter by Cube?
pDimensionG_Element	String		DimensionG Element?
pDimensionH	String		DimensionH for Filter by Cube?
pDimensionH_Element	String		DimensionH Element?
pDimensionI	String		DimensionI for Filter by Cube?
pDimensionI_Element	String		DimensionI Element?
pStringFilterValue	String		Enter String Filter or leave empty to filter on <-0
pLogging	String	N	Logging Y/N

# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_Subset\_Create.pro'

### Parameters:

- pDimensionName: dimension name
- pSubsetName: subset name
- pDestroySubset: set Y to destroy (existing) subset prior to rebuilding
- pMDX: use MDX Y/N (if = Y, subsets will automatically destroyed prior to build)
- pElementName:
  - <ElementName> = single Element Name
  - All or \* = SubsetIsAllSet = all elements in dimension
  - " (empty) = all N-level Elements (DEFAULT)
  - A;<ElementName> or AD;<ElementName> = All Descendants
  - ND;<ElementName> = All N-Level Descendants (excluding Parent(s))
  - IC;<ElementName> = Immediate Children
  - CD;<ElementName> = C-Level Descendants (including Parent)
  - Multi:<ElementName1>;<ElementName2>;...;<ElementNameN>  
= Multiple Elements
- pAttribute: attribute by which to filter
- pAttributeValue: value of attribute by which to filter

(continued on next slide)



# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_Subset\_Create.pro'

- pVersionDimension: Version Dimension\*
- pVersion: Version\*
- pTimePeriodDimension: Time Period Dimension\*
- pTimePeriodDimensionType: YYYYMMDD or YYYYMM\*
- pOnlyLastActualsTimePeriod:  
Time period subset with last Actuals time period only Y/N?\*\*)
- pOnlyFirstNonActualsTimePeriod:  
Time period subset with First non-Actuals time period only Y/N?\*\*)
- pOnlyActualsTimePeriods:  
Time period subset with only Actuals time periods Y/N?\*\*)
- pOnlyNonActualsTimePeriods:  
Time period subset with Non-Actuals time periods only Y/N?\*\*)
- pOnlyCurrYearActualsTimePeriods:  
Time period subset with current Year Actuals time periods only Y/N?\*\*)
- pOnlyCurrYearNonActualsTimePeriods:  
Time period subset with current Year non-Actuals time periods only Y/N?\*\*)

\*: used for Version dependent Time Period Filtering,

\*\* : based on Version dimension attribute 'Actuals Through Date'

# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_Subset\_Create.pro'

- pFilterByCube: if you want to filter a subset by values in a cube (= 'Filter by View Extract'), enter the cube name here (this parameter will currently only be applied if DimensionXElement parameters are 'ND;<ParentNode>' or '\*' or 'All':
- pDimensionA: Dimension A for filter by view extract
- pDimensionA\_Element: Dimension A Element for filter by view extract
- ...
- pStringFilterValue: Enter test string if filtering by a string value, if empty => filter by non zero (<> 0)
- pLogging: Process debug logging Y/N
- pTemporaryVsPermanentSubsets: = Temporary or Permanent (Default, unless different parameter defined in SYS\_IBM\_Control cube); if = Temporary, will create a temporary subset as per <http://www-01.ibm.com/support/docview.wss?uid=swg27046436>

# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_View\_Create.pro'\*

Turbo Integrator: Template->SYS\_IBM\_View\_Create

File Edit Help

Data Source Variables Maps Advanced Schedule

Parameters Prolog Metadata Data Epilog

Parameter	Type	Default Value	Prompt Question
pCubeName	String		Cube Name?
pViewName	String		Name for the view
pSubsetName	String		Names for Subsets
pIncludeRules	String	Y	Include Rules (Default Y)
pIncludeCLevels	String	N	Include consolidated elements Yes (Y) or No (N)? (Default N)
pZeroSupress	String	Y	Zero-Value supress View? (Default Y)
pCreateMDXSubsets	String	Y	Create subsets via MDX? (Default Y)
pOnlyLastActualsTimePeriod	String	N	Only the latest Actuals Period?
pOnlyFirstNonActualsTimePeriod	String	N	Only the first Non-Actuals Period?
pOnlyActualsTimePeriods	String	N	only Actuals Periods? (Default N)
pOnlyNonActualsTimePeriods	String	N	only Non-Actuals Periods? (Default N)
pOnlyCurrYearActualsTimePeriods	String	N	only Current Year Actuals Time Periods? (Default N)
pOnlyCurrYearNonActualsTimePeriods	String	N	only Current Year Non-Actuals Time Periods? (Default N)
pLogging	String	N	Logging On (Y) or Off (N)? (Default N)
pUseExistingView	String	N	Use Existing View? (Default N)
pTimePeriodDimension	String		YYYYMM Dim
pMonthDimension	String		MM Dim
pYearDimension	String		YYYY Dim
pVersionDimension	String		needs to be specified if pOnly...TimePeriod parameter is = Y
pVersion	String		needs to be specified if pOnly...TimePeriod parameter is = Y
pDefaultSubset	String		All N-Levels (leave empty) or All (*) (Default N-Level = empty)
pDimensionA_Name	String		
pDimensionA_Element	String		
pDimensionA_Attribute	String		
pDimensionA_AttributeValue	String		
pDimensionB_Name	String		

Basics: cube, View options, MDX, ...?

Time & Version management related Filtering, Addtl. options

Subsets

\*: leverages 'SYS\_IBM\_Subset\_Create.pro'

# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_View\_Create.pro'

### Parameters:

- pCubeName
- pViewName
- pSubsetName
- pIncludeRules
- pIncludeCLevels
- pZeroSupress
- pCreateMDXSubsets
- pUseExistingView
- pDefaultSubset

(continued on next slide)

# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_View\_Create.pro'

- pVersionDimension: Version Dimension\*
- pVersion: Version\*
- pTimePeriodDimension: Name of YYYYMM dimension if applicable\*
- pMonthDimension: Name of MM dimension if applicable\*
- pYearDimension: Name of YYYY dimension if applicable\*
- pOnlyLastActualsTimePeriod:  
View/Subsets to contain last Actuals time periods only Y/N?\*\*\*
- pOnlyFirstNonActualsTimePeriod:  
View/Subsets to contain first non-Actuals time period only Y/N?\*\*\*
- pOnlyActualsTimePeriods:  
View/Subsets to contain only Actuals time periods Y/N?\*\*\*
- pOnlyNonActualsTimePeriods:  
View/Subsets to contain Non-Actuals time periods only Y/N?\*\*\*
- pOnlyCurrYearActualsTimePeriods:  
View/Subsets to contain current Year Actuals time periods only Y/N?\*\*\*
- pOnlyCurrYearNonActualsTimePeriods:  
View/Subsets to contain current Year non-Actuals time periods only Y/N?\*\*\*

\*: used for Version dependent Time Period Filtering; \*\*:based on Version dimension attribute 'Actuals Through Date'

# Modular Code for creating Subsets and Views

## Modular Design: 'SYS\_IBM\_View\_Create.pro'

- pDimensionA\_Name
- pDimensionA\_Element
  - <ElementName> = single Element Name
  - All or \* = SubsetIsAllSet = all elements in dimension
  - " (empty) = all N-level Elements (DEFAULT)
  - A;<ElementName> or AD;<ElementName> = All Descendants
  - ND;<ElementName> = All N-Level Descendants (excluding Parent(s))
  - IC;<ElementName> = Immediate Children
  - CD;<ElementName> = C-Level Descendants (including Parent)
  - Multi:<ElementName1>;<ElementName2>;...;<ElementNameN>  
= Multiple Elements
- pDimensionA\_Attribute: attribute by which to filter
- pDimensionA\_AttributeValue: value of attribute by which to filter
- ...
- pLogging: Y/N for debug logging
  
- pTemporaryVsPermanentViews: = Temporary or Permanent (Default, unless different parameter defined in SYS\_IBM\_Control cube); if = Temporary, will create a temporary subset as per <http://www-01.ibm.com/support/docview.wss?uid=swg27046436>

# Turbo Integrator

- SYS IBM Copy Dimension.pro: process to copy a dimension, including attributes and attribute values to a new or existing dimension.

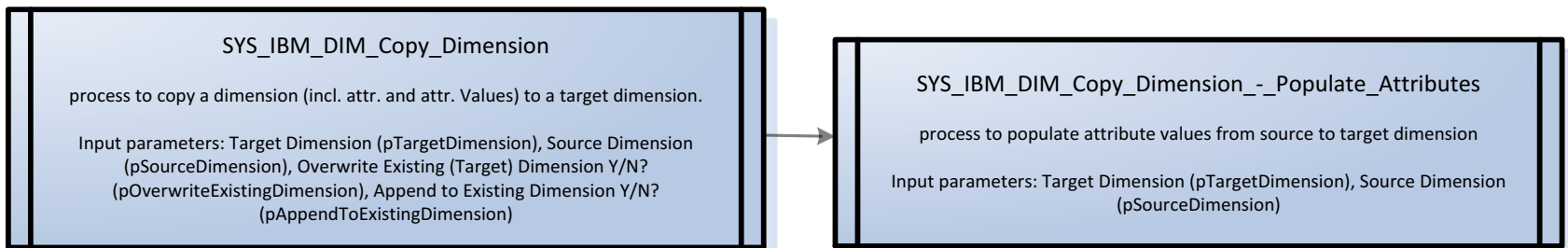
Turbo Integrator: Utilities->SYS\_IBM\_DIM\_Copy\_Dimension

File Edit Help

Data Source Variables Maps Advanced Schedule

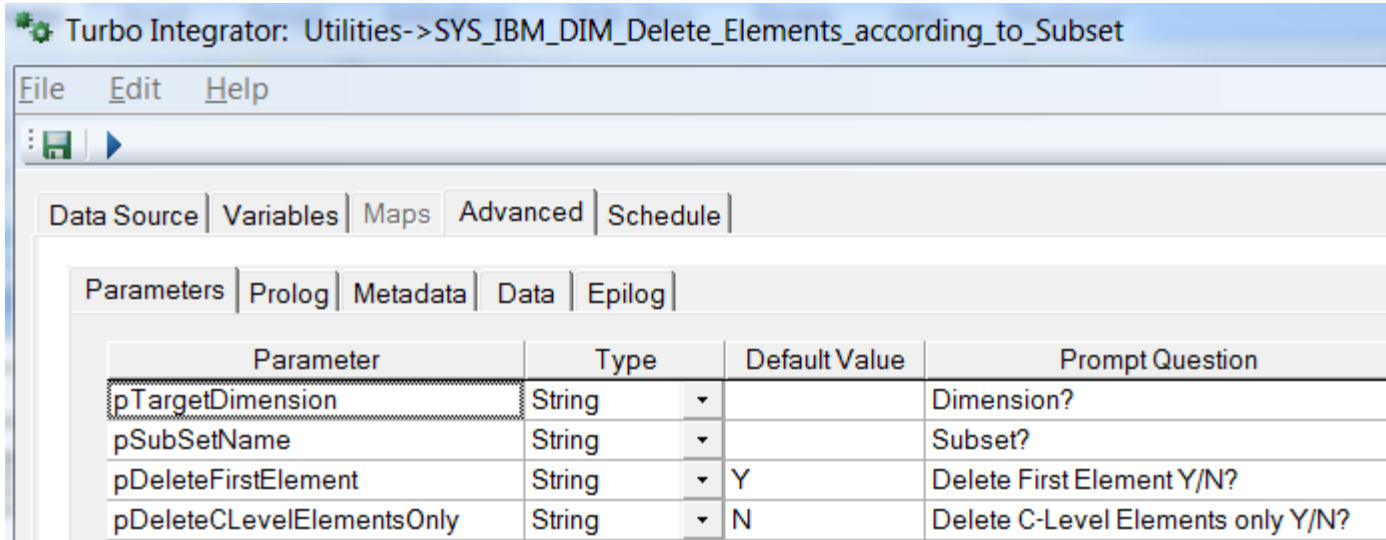
Parameters Prolog Metadata Data Epilog

Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Target Dim Name?
pSourceDimension	String		Source Dim Name?
pOverwriteExistingDimension	String	Y	Overwrite existing Dim?
pAppendToExistingDimension	String	Y	Append to Existing Dimension



# Turbo Integrator

- SYS IBM DIM Delete Elements according to Subset.pro: process to delete dimension elements based on the elements in an existing subset.



Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Dimension?
pSubSetName	String		Subset?
pDeleteFirstElement	String	Y	Delete First Element Y/N?
pDeleteCLevelElementsOnly	String	N	Delete C-Level Elements only Y/N?

### SYS\_IBM\_DIM\_Delete\_Elements\_according\_to\_Subset

Deletes element from a dimension according to the elements in a specified subset.

Input Parameters: Dimension Name (pTargetDimension), Subset Name (pSubSetName), Delete First Element Y/N (pDeleteFirstElement), Delete C-Level Elements Only Y/N (pDeleteCLevelElementsOnly).



# Turbo Integrator

- SYS IBM DIM Attribute Add Or Delete.pro: process to add or delete attributes to a dimension

Turbo Integrator: Utilities->SYS\_IBM\_DIM\_Attribute\_Add\_or\_Delete

File Edit Help

Data Source Variables Maps Advanced Schedule

Parameters Prolog Metadata Data Epilog

Parameter	Type	Default Value	Prompt Question
pDimensionName	String		Dimension?
pAttribute	String		Attribute1?
pType	String	S	Type? (N or S or A)
pAttribute2	String		Attribute2?
pAttribute3	String		Attribute3?
pAttribute4	String		Attribute4?
pAttribute5	String		Attribute5?
pAttribute6	String		Attribute6?
pAttribute7	String		Attribute7?
pAttribute8	String		Attribute8?
pAttribute9	String		Attribute9?
pAttribute10	String		Attribute10?
pAttribute11	String		Attribute11?
pAttribute12	String		Attribute12?
pAttribute13	String		Attribute13?
pAttribute14	String		Attribute14?
pAttribute15	String		Attribute15?
pAttribute16	String		Attribute16?
pAddOrDelete	String	Add	Add or Delete ?!?!

SYS\_IBM\_DIM\_Attribute\_Add\_Or\_Delete

Creates or Deletes up to 16 attributes

Input parameters:  
Dimension name (pDimensionName), Attribute Type (pType), Attribute 1 (pAttribute), Attribute 2 (pAttribute2), ..., Attribute 16 (pAttribute16), Add or Delete (pAddOrDelete)

# Turbo Integrator

- SYS IBM DIM Consolidate Element.pro: process to move data from one element to another element (incremental load).

Optionally:

- limit the data move for a specific version/scenario,
- limit the data move for a specified element from any other dimension,
- process for up to 5 cubes.

Parameter	Type	Default Value	Prompt Question
pVersionDimension	String		Version/Scenario Dimension?
pVersion	String		Version/Scenario?
pTargetDimension	String		Target Dimension?
pElementNameOld	String		Old Element Name?
pElementToConsolidateInto	String		Element to Consolidate to?
pDimension	String		OPTIONAL: Dimension of Element for Which to Consolidate?
pDimensionElementForWhichToConsolidate	String		OPTIONAL: Element for Which to Consolidate?
pCube1	String		Cube 1?
pCube2	String		Cube 2?
pCube3	String		Cube 3?
pCube4	String		Cube 4?
pCube5	String		Cube 5?

**SYS IBM DIM Consolidate Element**

For a particular Version/Scenario (optional) & Dimension and for up to 5 cubes, process will consolidate values from two elements into one element (and zero-out the other element for the specified version).

Input parameters:

Version Dimension (pVersionDimension), Version (pVersion), Target Dimension (pTargetDimension), Old Element Name (pElementNameOld), Element to consolidate into (pElementToConsolidateInto), Dimension of Element for which to consolidate (parameter allows specifying another dimension outside of the version dimension to restrict the consolidation operation – corresponding element specified below) (pDimension), Dimension Element for Which to Consolidate (in conjunction with pDimension (above) specify an element to restrict the consolidation operation to only data against this element\*), (pDimensionElementForWhichToConsolidate), Cube 1 (pCube1),..., Cube 5 (pCube5)

\*Example: If one wants to consolidate Trade Sales and Interco Sales (pTargetDimension = Account Dimension) for FCST (pVersion) but for only one customer (pDimension = Customer Dim, pDimensionElementForWhichToConsolidate = Customers for which to consolidate)

**SYS IBM DIM Consolidate Element Copy Data**

For a particular view & Dimension, process will process values from one elements into another element (incrementing the value of the element for Numeric values & replacing if for String Values)

Input parameters:

Cube (pCube), View (pViewName), Old Element Name (pElementNameOld), Element to consolidate into (pElementToConsolidateInto), Target Dimension (pTargetDimension)

# Turbo Integrator

- SYS IBM DIM Rename Element.pro: process to create a new element and then to move data from one element to a new element.
  - Limit the data move for a specific version
  - For up to 5 cubes
  - The old element will not be deleted after the 'rename' operation

Turbo Integrator: Utilities->SYS\_IBM\_DIM\_Rename\_Element

File Edit Help

Data Source Variables Maps Advanced Schedule

Parameters Prolog Metadata Data Epilog

Parameter	Type	Default Value	Prompt Question
pVersionDimension	String		Version/Scenario Dimension?
pVersion	String		Version/Scenario?
pTargetDimension	String		Target Dimension?
pElementNameOld	String		Old Element Name?
pElementNameNew	String		New Element Name?
pElementType	String	N	Type N or S?
pElementWeight	Numeric	1.000000	Weight?
pCube1	String		Cube1?
pCube2	String		Cube2?
pCube3	String		Cube3?
pCube4	String		Cube4?
pCube5	String		Cube5?

**SYS\_IBM\_DIM\_Rename\_Element**

For a particular Version/Scenario (optional) & Dimension and for up to 5 cubes, process will move values from element 1 into a new Element 2 (and zero-out data for element 1)

Input parameters:  
 Version Dimension (pVersionDimension), Version (pVersion), Target Dimension (pTargetDimension), Old Element Name (pElementNameOld), New Element Name (pElementNameNew), Element Type (pElementType), ElementWeight (pElementWeight), Cube 1 (pCube1),..., Cube 5 (pCube5)

**SYS\_IBM\_DIM\_Rename\_Element\_-\_Copy\_Attribute\_Value**

For a Dimension, process will copy attribute values from one elements into another element.

Input parameters:  
 Old Element Name (pElementNameOld),  
 New Element Name (pElementNameNew),  
 Target Dimension (pTargetDimension)

**SYS\_IBM\_DIM\_Rename\_Element\_-\_Copy\_Data**

For a particular view & Dimension, process will process values from one elements into another element.

Input parameters:  
 Cube (pCube), View (pViewName), Old Element Name (pElementNameOld), New Element Name (pElementNameNew), Target Dimension (pTargetDimension)

# Turbo Integrator

- SYS IBM DIM Hierarchy Copy Or Move Element to New Parent.pro: moves or copies an (existing) element to a new parent.

Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Dimension?
pElementName	String		Element Name? (needs to exist in Dimension)
pElementParentCurrent	String		Current Parent? (needs to exist in Dimension and be a parent if the Element)
pElementParentNew	String		New parent? (needs to exist in Dimension and not be a Parent of the Element)
pElementWeight	Numeric	1.000000	Weight of Element under new Parent?
pMoveOrCopy	String	MOVE	Move (=MOVE) or Copy (=COPY) Element to New Parent?

SYS\_IBM\_DIM\_Copy\_or\_Move\_Element\_to\_new\_Parent

process to copy or move an element to a new parent

Input parameters: Target Dimension (pTargetDimension), Element Name (pElementName), Current parent (pElementParentCurrent), New parent (pElementParentNew), Weight (pElementWeight), Move or Copy? (pMoveOrCopy),

# Turbo Integrator

- SYS IBM DIM Hierarchy Detach Element From Parents and Move to Specified Parent Node.pro:  
Detaches an Element from all its existing parents and attaches as to a new specified parent node

Turbo Integrator: Utilities->SYS\_IBM\_DIM\_Hierarchy\_Detach\_Element\_from\_Parents\_and\_Move\_to\_specified\_Parent\_Node

File Edit Help

Data Source Variables Maps Advanced Schedule

Parameters Prolog Metadata Data Epilog

Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Dimension Name?
pElementName	String		Element Name?
pNewParentNode	String		node to move element to
pWeight	Numeric	1.000000	Element Weight
pExcludeParentsContainingString	String		Element will not be detached from parent containing <pExcludeParentsContainingString>

SYS\_IBM\_DIM\_Hierarchy\_Detach\_Element\_From\_Parents\_and\_move\_to\_specified\_Parent\_Node

Will detach an element from all parents and move the element to a different parent

Input parameters:  
Target Dimension (pTargetDimension), Element (pElementName), New Parent (pNewParentNode), Element Weight (pWeight)

# Turbo Integrator

- SYS IBM DIM Hierarchy Replace Parent Node.pro:  
Will replace a hierarchy parent node with a new parent node (⇔ renaming of a parent node).

Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Which Dimension?
pParent	String		Which Element?
pReplacement	String		Element to Replace with?
pWriteLogFile	String	N	Do you want a log file of changes (Y or N) ?
pBackupDimension	String	N	Do you want to backup the dimension first?

**SYS IBM DIM Hierarchy Replace Parent Node**

Will replace a hierarchy parent node with a new parent node (⇔ renaming of a parent node)

Input parameters:  
Target Dimension (pTargetDimension), Current Parent (pParent), New Parent (pReplacement), Write Log Output (pWriteLogFile), Backup Dimension Y/N (pBackUpDimension)

# Turbo Integrator

- SYS IBM DIM Hierarchy Orphan Assign to Orphans Node.pro: Will analyze a hierarchy and move any element that is not part of the hierarchy to a specified 'Orphans' node.

Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Target Dimension?
pOrphansNode	String		Orphan Parent Node? (if Element does not exist it will be created)
pHierarchyNode	String		Hierarchy Node to compare against
pExclElementsContainingString	String		Exclude Elements that contain the String...?

**SYS\_IBM\_DIM\_Hierarchy\_Orphans\_Assign\_to\_Orphans\_Node**

Will analyze a hierarchy and move any element that is not part of the hierarchy to a specified 'orphans' node

Input parameters:  
 Target Dimension (pTargetDimension), Orphans Node (pOrphansNode), Hierarchy Node/root (pHierarchyNode), Exclude Elements containing string (pExcludeElementsContainingString)

# Turbo Integrator

- SYS IBM DIM Hierarchy Remove Non-Orphans from Orphans Node.pro: Will analyze an orphans node against a hierarchy/hierarchies and move any element that is not an Orphan out of the 'Orphanage'

Turbo Integrator: Utilities->SYS\_IBM\_DIM\_Hierarchy\_Orphans\_Remove\_Non-Orphans\_from\_Orphans\_Node

File Edit Help

Data Source Variables Maps Advanced Schedule

Parameters Prolog Metadata Data Epilog

Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Dimension Name?
pOrphansNode	String	Orphans	'Orphans'/'Not Assigned' Node?
pHierarchyRootElement	String		Hierarchy Root to compare? (optional)

SYS\_IBM\_DIM\_Hierarchy\_Orphans\_Remove\_Non-Orphans\_from\_Orphans\_Node

Will analyze a the an orphans node against a hierarchy and move any element that is not not an Orphan out of the 'Orphanage'

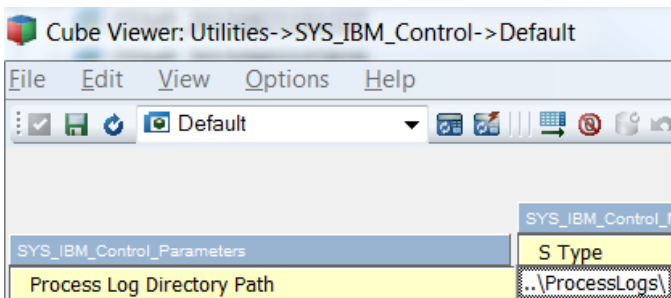
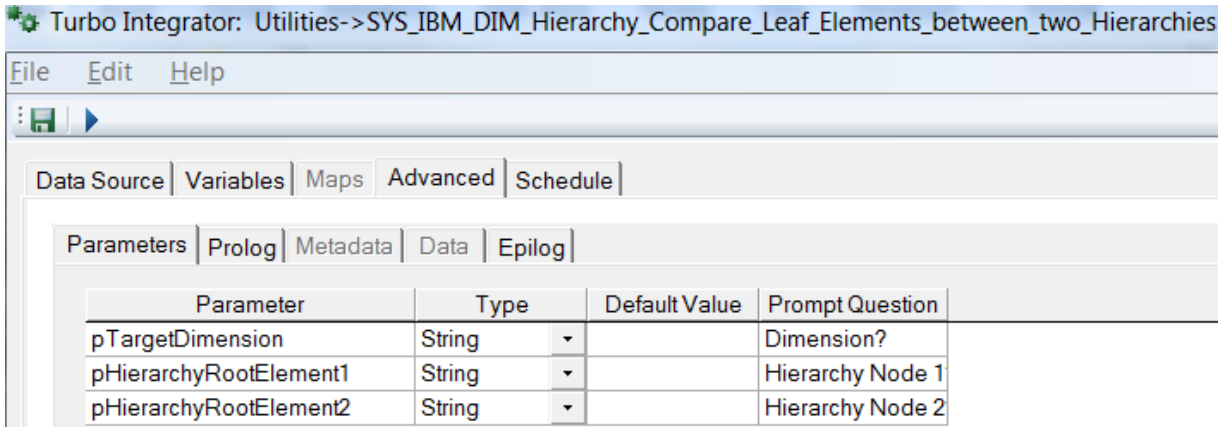
Input parameters:

Target Dimension (pTargetDimension), Orphans Node (pOrphansNode), Hierarchy Node/root (pHierarchyNode)



# Turbo Integrator

- SYS IBM DIM Hierarchy Compare Leaf Elements between two Hierarchies.pro  
 The process analyzes every N level elements in the target dimension and checks/compares for each element if the element is a descendant of hierarchy 1 and 2. Output is written to the Process Log File Directory as specified in the SYS\_IBM\_Control cube.



**SYS\_IBM\_DIM\_Hierarchy\_Compare\_Leaf\_Elements\_between\_two\_Hierarchies**

The process analyzes every N level elements in the target dimension and checks/compares for each element if the element is a descendant of hierarchy 1 and 2. Output is written to the Process Log File Directory as specified in the SYS\_IBM\_Control cube.

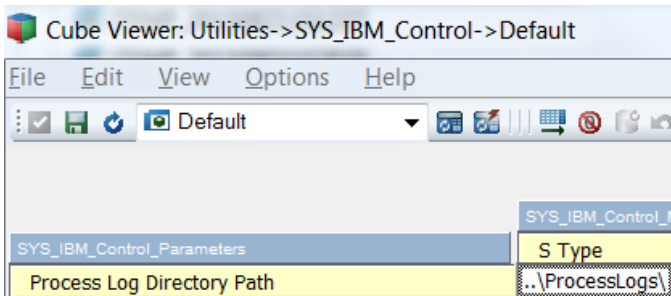
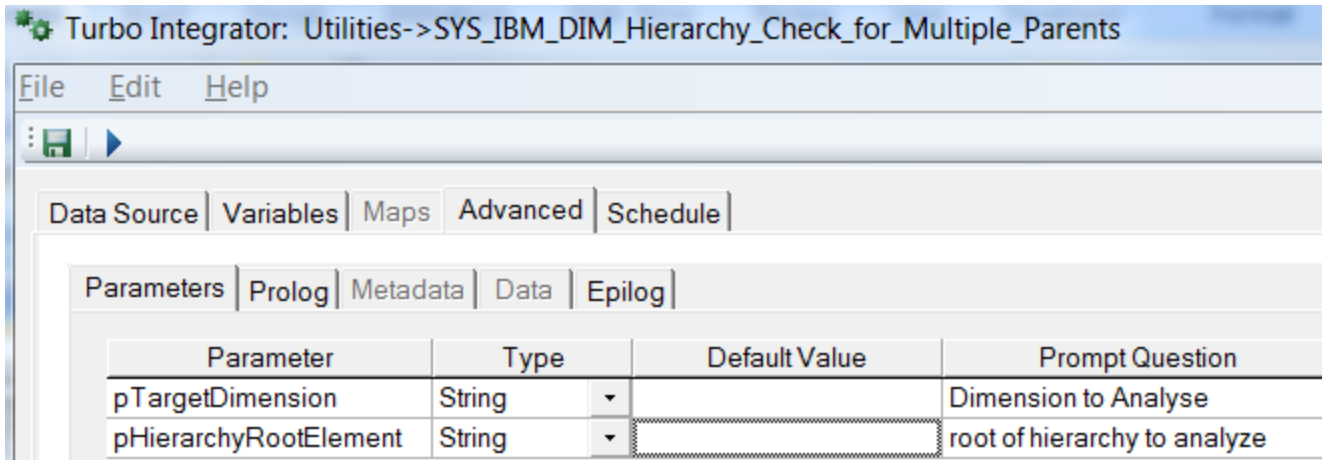
Input Parameters:

Target Dimension (pTargetDimension), Hierarchy Root Element 1 (pHierarchyRootElement1),  
Hierarchy Root Element 2 (pHierarchyRootElement2)

# Turbo Integrator

- SYS IBM DIM Hierarchy Check for Multiple Parents.pro

The process analyzes every N level elements in the target dimension and checks for each element if the element has more than one parent in the hierarchy branch. Output is written to the Process Log File Directory as specified in the SYS\_IBM\_Control cube.



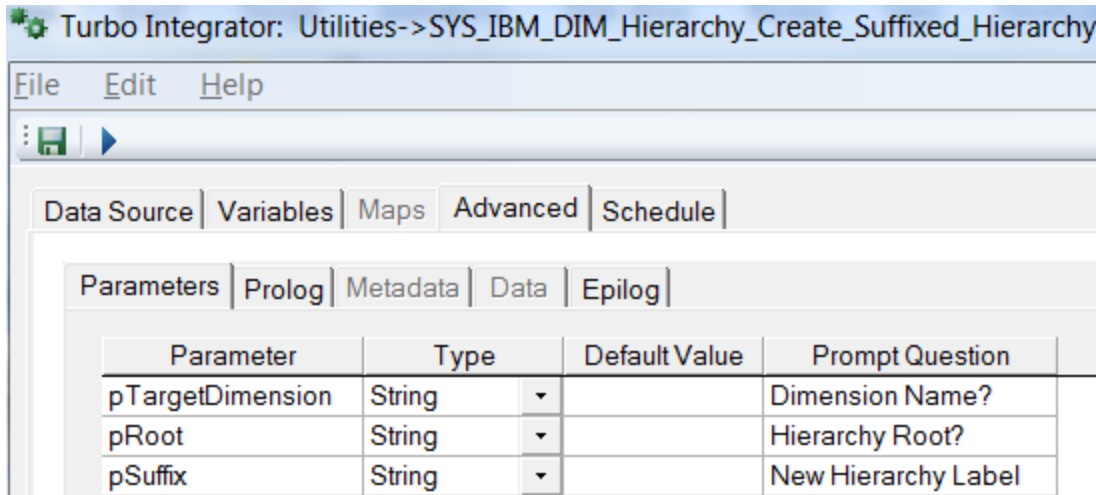
**SYS\_IBM\_DIM\_Hierarchy\_Check\_for\_Multiple\_Parents**

The process analyzes every N level elements in the target dimension and checks for each element if the element has more than one parent in the hierarchy branch. Output is written to the Process Log File Directory as specified in the SYS\_IBM\_Control cube.

Input Parameters:  
Target Dimension (pTargetDimension), Hierarchy Root Element (pHierarchyRootElement)

# Turbo Integrator

- SYS IBM DIM Hierarchy Create Suffixed Hierarchy.pro: process to create a copy/backup of an entire hierarchy branch (starting with the branch root) by suffixing the hierarchy parent nodes with a given suffix. The Parent Nodes in the suffixed hierarchy will have a name like <ParentNode>\_Suffix



Parameter	Type	Default Value	Prompt Question
pTargetDimension	String		Dimension Name?
pRoot	String		Hierarchy Root?
pSuffix	String		New Hierarchy Label

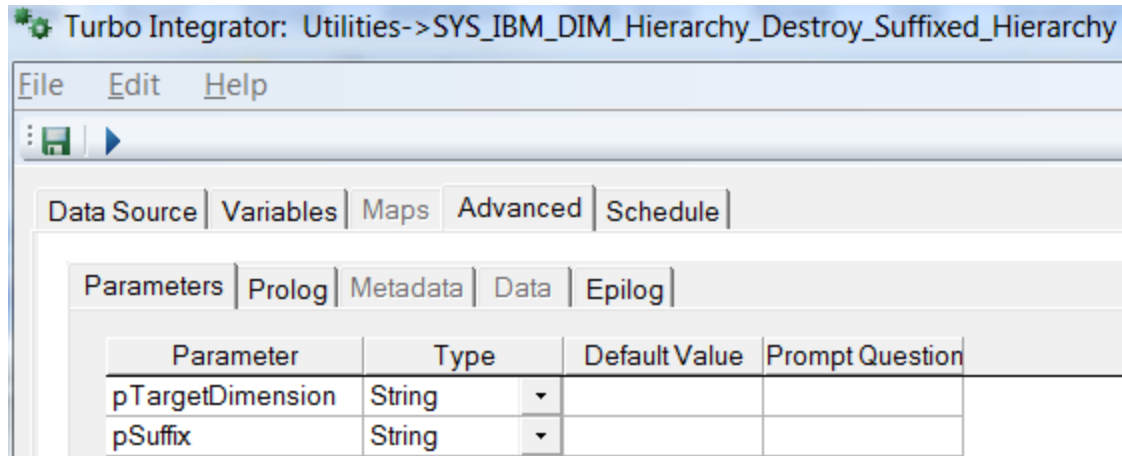
## SYS\_IBM\_DIM\_Hierarchy\_Create\_Suffixed\_Hierarchy

process to create a copy/backup of an entire hierarchy branch (starting with the branch root) by suffixing the hierarchy parent nodes with a given suffix. The Parent Nodes in the suffixed hierarchy will have a name like <ParentNode>\_Suffix

Input parameters: Target Dimension (pTargetDimension), Branch Root (pRoot), Suffix (pSuffix)

# Turbo Integrator

- SYS IBM DIM Hierarchy Destroy Suffixed Hierarchy.pro: process to destroy a copy/backup of a hierarchy branch (starting with the branch root) based on the suffix



SYS IBM DIM Hierarchy Destroy Suffixed Hierarchy  
 process to destroy a copy/backup of a hierarchy branch (starting with the branch root) based on the suffix

Input parameters: Target Dimension (pTargetDimension), Suffix (pSuffix)

## Key Takeaways

- Use modular TI-process design for frequently used TI-process tasks, such as
  - Creating views & subsets
  - Analyzing dimensions/hierarchies
  - Exporting Cube data
  - Importing Cube data from a cube export
  - Version Management (Submission of FCST/Budget, Archiving)
  - ...
- Do not call TI-processes in the Metadata or Data Tabs. You would generate a TI-process handle per source record, causing performance to deteriorate significantly.
- Calling a sub-process in the prolog or epilog does not cause a performance drop of any significance, yet often results in significantly improved maintainability and transparency of code.
- Keep in mind: a TI-process module that you re-use everywhere will only have to be maintained once 😊

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