

The next generation CONTROL®

version 10.6

Release Announcement



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CONTROL® 10.6

A Technology Release

CONTROL® 10.6 is primarily focused on integrating two powerful technologies that are part of the Microsoft business intelligence architecture.

The first is the innovation at the heart of Power BI and the SQL Server Analysis Services (AS) tabular model – the Vertipaq database engine. In 10.5 and earlier, CONTROL could create models in AS for use in Power BI visualizations. Starting in 10.6, the information in AS and Power BI premium can be used in CONTROL views and mappings in read-only applications.

The second is Microsoft's marvelous product for accessing and manipulating source data – Power Query. With CONTROL's new Power Query data sources, you can leverage a huge range of source data both within your company and on the web, and easily transform it for use as meta-data or data in CONTROL.

We also continue to add features available through CONTROL Web and refine the Power BI integration which has proven to be of intense interest to a number of KCI's customers.

Of course, there are numerous enhancements focused on improving user experience, responding to client requests, performance improvements, and streamlining administration and maintenance.

Enhancements for the Information Navigator

Views on Power Pivot Models and AS Datasources

The integration with Analysis Services is described in detail in an accompanying document. The big news for the end-user is that data stored in AS or Power BI Premium models can now be used in standard style CONTROL views, included in custom dimensions, or mashed up as part of a flex view. (The underlying data is always read-only.)

The advantages for reporting applications is the incredible speed of queries, new computational flexibility via the powerful DAX language, and the new architectural structures that are supported in AS models.

All you need to do is create a view whose model scope is a Power Pivot model, and then design it as you would any other view! The tables of the AS model are presented as CONTROL dimensions.

Here is an example using Microsoft's sample Controso database with the filter wizard on the product dimension:

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The screenshot displays the CONTROL 10.6 software interface. The main workspace shows a data table with columns for various measures and dimensions. A filter dialog is open, showing a hierarchy of dimensions and a list of available members. The filter dialog includes a 'Filter' tab and a 'Selector' tab, with a search bar and a list of members to select from.

As part of the embrace of Analysis Services, any AS datasources can viewed, or incorporated into a source data model. Here is a source data model and view based on Contoso:

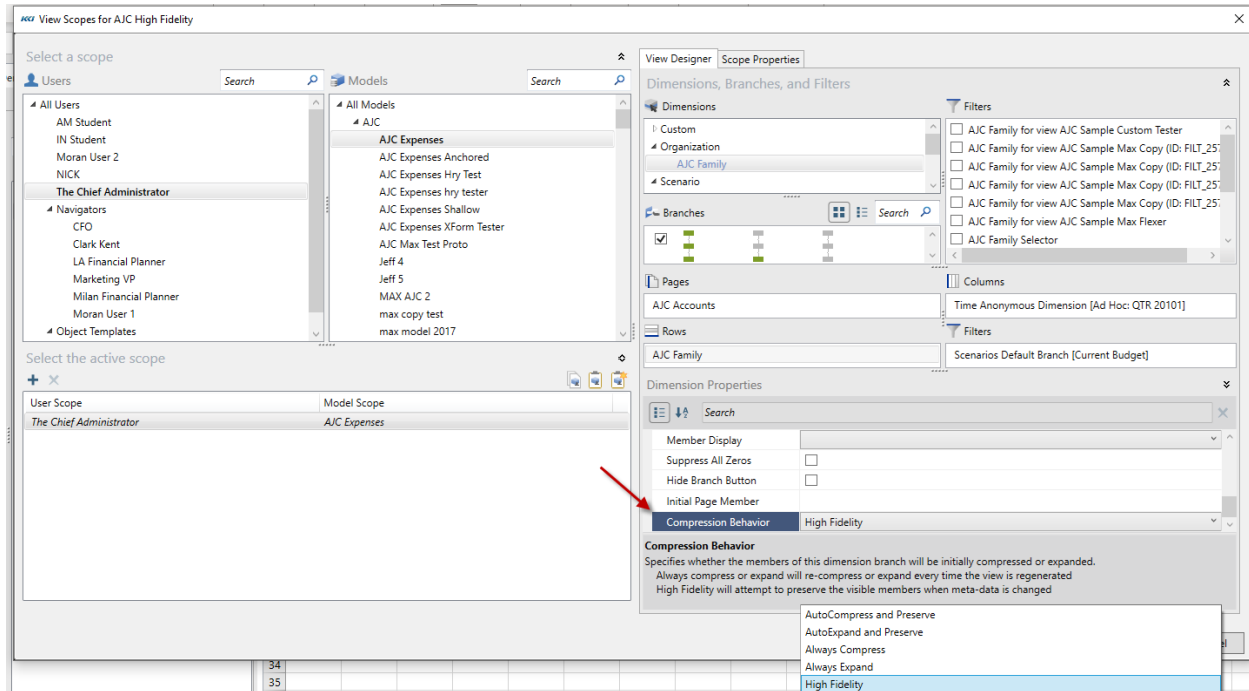
Column1	ProductKey	PromotionKey	CurrencyKey	UnitCost	UnitPrice	SalesQuantity	ReturnQuantity	ReturnAmount	DiscountQuantity	DiscountAmount	TotalCost	SalesAmount	ETLLoadID	LoadDate	UpdateDate	Margin
387	1	1	1	321	699	10	-	-	-	-	3,214	6,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
381	1	1	1	321	699	10	-	-	-	-	3,214	6,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
369	1	1	1	321	699	10	-	-	-	-	3,214	6,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
387	1	1	1	321	699	10	-	-	-	-	3,214	6,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
363	1	1	1	321	699	10	-	-	-	-	3,214	6,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
387	1	1	1	321	699	10	-	-	-	-	3,214	6,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
363	1	1	1	321	699	10	-	-	-	-	3,214	6,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
494	1	1	1	128	279	10	-	-	-	-	1,283	2,790	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,507
141	1	1	1	153	300	10	-	-	-	-	1,529	3,000	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,471
124	1	1	1	129	280	10	-	-	-	-	1,288	2,800	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,512
367	1	1	1	166	326	10	-	-	-	-	1,662	3,260	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,598
376	1	1	1	195	383	10	-	-	-	-	1,952	3,830	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,877
516	1	1	1	30	90	10	-	-	-	-	298	900	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	602
120	1	1	1	61	120	10	-	-	-	-	612	1,200	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	588
374	1	1	1	430	1,299	10	-	-	-	-	4,304	12,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	8,686
304	1	1	1	288	869	10	-	-	-	-	2,879	8,690	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	5,811
370	1	1	1	195	383	10	-	-	-	-	1,952	3,830	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,877
494	1	1	1	128	279	10	-	-	-	-	1,283	2,790	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,507
370	1	1	1	195	383	10	-	-	-	-	1,952	3,830	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,877
143	1	1	1	153	300	10	-	-	-	-	1,529	3,000	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,471
128	1	1	1	73	143	10	-	-	-	-	731	1,434	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	703
502	1	1	1	30	90	10	-	-	-	-	298	900	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	602
142	1	1	1	153	300	10	-	-	-	-	1,529	3,000	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,471
122	1	1	1	129	280	10	-	-	-	-	1,288	2,800	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,512
370	1	1	1	195	383	10	-	-	-	-	1,952	3,830	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,877
380	1	1	1	430	1,299	10	-	-	-	-	4,304	12,990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	8,686
499	1	1	1	50	99	10	-	-	-	-	505	990	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	485
123	1	1	1	129	280	10	-	-	-	-	1,288	2,800	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,512
128	1	1	1	73	143	10	-	-	-	-	731	1,434	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	703
117	1	1	1	87	170	10	-	-	-	-	867	1,700	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	833
509	1	1	1	71	139	10	-	-	-	-	709	1,390	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	681
491	1	1	1	205	619	10	-	-	-	-	2,051	6,190	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	4,139
494	1	1	1	166	326	10	-	-	-	-	1,662	3,260	1	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,598

High Fidelity Option for view dimension-branches

If you need a report to appear exactly the same way, regardless of changes to the underlying hierarchy, this can be accomplished via a new Compression Behavior option:



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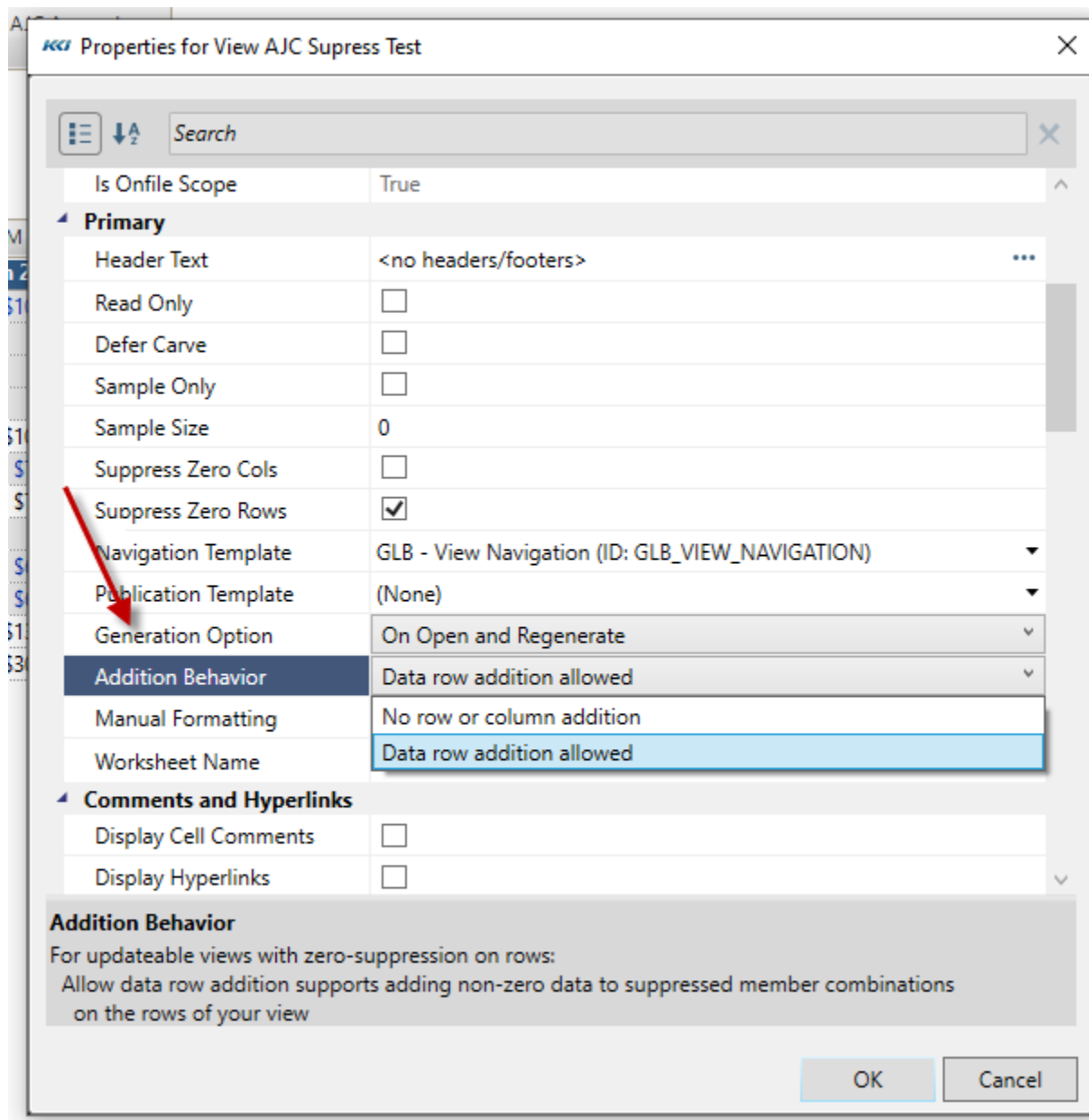
The property can be specified on a dimension-branch by dimension-branch basis of the view and is accessible in the view design pane and the view scopes dialog.

Adding new rows to views with zero suppression

If you have an updateable view with zero suppression on the rows, there often comes a time when an account or organization that has no data needs to be updated. Previously, you would need to turn off zero suppression, find the member, enter the data, then turn back on zero suppression. For large views, this could be time consuming and tedious.

A new view option addresses this problem:

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Properties for View AJC Suppress Test

Is Onfile Scope: True

Primary

Header Text	<no headers/footers>
Read Only	<input type="checkbox"/>
Defer Curve	<input type="checkbox"/>
Sample Only	<input type="checkbox"/>
Sample Size	0
Suppress Zero Cols	<input type="checkbox"/>
Suppress Zero Rows	<input checked="" type="checkbox"/>
Navigation Template	GLB - View Navigation (ID: GLB_VIEW_NAVIGATION)
Publication Template	(None)
Generation Option	On Open and Regenerate
Addition Behavior	Data row addition allowed
Manual Formatting	No row or column addition
Worksheet Name	Data row addition allowed

Comments and Hyperlinks

Display Cell Comments	<input type="checkbox"/>
Display Hyperlinks	<input type="checkbox"/>

Addition Behavior

For updateable views with zero-suppression on rows:
Allow data row addition supports adding non-zero data to suppressed member combinations on the rows of your view

OK Cancel

The view will look like:

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	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Filters:	Scenarios (2010 Budget)											
2	Pages:												
4													
5													
7													
9													
10													
11	AJC Accounts	AJC Family	M / Y										
			Jan 2010	Feb 2010	Mar 2010	Apr 2010	May 2010	Jun 2010	Jul 2010	Aug 2010	Sep 2010	Oct 2010	Nov 2010
12	Cats	Alan B. Cutler	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00
13	Cats	Alex ddd	\$2.00										
14	Cats	Joyce	\$2.00		\$4,210.00		\$4,210.00	\$4,210.00	\$76,656.00		\$888,777.00		
15	Cats	Mommy Dearest	\$2.00						\$77,665.00				
16	Cats	Myrtle Petunia again	\$2.00	\$10,000.00		\$10,000.00		\$5,000.00	\$5,678.00				
17	Cats	-Adults	\$108.00	\$10,100.00	\$4,310.00	\$10,100.00	\$4,310.00	\$9,310.00	\$160,099.00	\$100.00	\$888,877.00	\$100.00	\$100.00
18													
19	Cats	Alan B. Cutler	\$10,000.00					\$10,000.00					
20	Cats	Alex ddd	\$978.00					\$978.00					
21	Cats	Joyce		\$1,332.00		\$1,332.00		\$1,332.00					
22	Cats	Mommy Dearest											
23	Cats	Myrtle Petunia again	\$10,978.00	\$1,332.00		\$1,332.00		\$12,310.00					
24	Cats	-Adults	\$131,602.00	\$131,602.00	\$192.00	\$131,602.00	\$192.00	\$263,396.00					
25	Cats	Fido	\$706.62	\$706.62	\$142.05	\$706.62	\$142.05	\$1,555.29	\$957.07	\$981.82	\$681.13	\$589.60	\$226.72
26	Cats	Monica	\$2,000,000.00	\$706.62	\$142.05	\$706.62	\$142.05	\$2,000,848.67	\$626.74	\$492.08	\$1,369.88	\$1,271.47	\$3.76
27	Cats	Member1	\$706.62	\$706.62	\$19,998.00	\$706.62	\$19,998.00	\$21,411.24	\$19,998.00	\$19,998.00	\$19,998.00	\$19,998.00	
28	Cats	-Children	\$2,133,015.24	\$133,721.86	\$20,474.10	\$133,721.86	\$20,474.10	\$2,287,211.19	\$21,581.81	\$21,471.90	\$22,049.01	\$21,859.07	\$230.48
29	Cats	-The Cutlers	\$2,144,101.24	\$145,153.86	\$24,784.10	\$145,153.86	\$24,784.10	\$2,308,831.19	\$181,680.81	\$21,571.90	\$910,926.01	\$21,959.07	\$330.48
30	Dogs	Alan B. Cutler	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000
	Dogs	Joyce			471.2900	367.2950	384.3050	459.5450	3,200.0000				

If data row addition is allowed:

- CONTROL will put a list style validation on all the row edge name columns. (Listing levels in the branches will not have validations.)
- If there is only branch on the row edge, the list will contain the unused members of that branch.
- If there are more than one branch on the row edge, the list will contain all members (selected by the filters) of each branch
- You can either insert rows and add non-zero data or add new rows to the bottom of the view
- To delete data, do not delete the row! Set the data values to 0 or delete the data.
- Do not change the member(s) of an existing row – this will result in an error message.
- When you refresh, the data will be validated, and any new member combination will be positioned based on the ordering rules for the dimension-branch or view sorting.

Note that you can use any view navigation function such as rotate, drill, hide, etc. to simplify the data entry process, and solve and lock are supported.

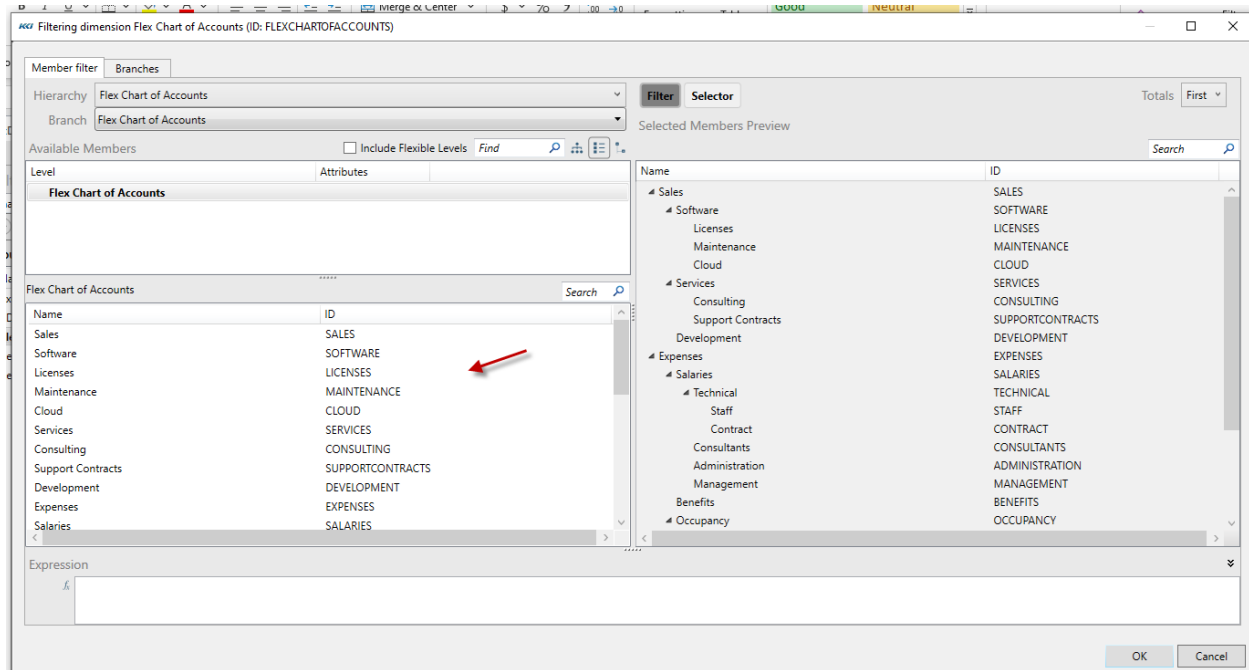
New filter and branch options for Flexible Dimensions

Flexible dimensions allow members of the dimension's root level to report to other members of the same level, up to a maximum of 20 levels deep. This style of dimension is useful in cases where members are not naturally classified into named levels, such as a work breakdown structure or chart of accounts with arbitrary groupings and subgroupings.

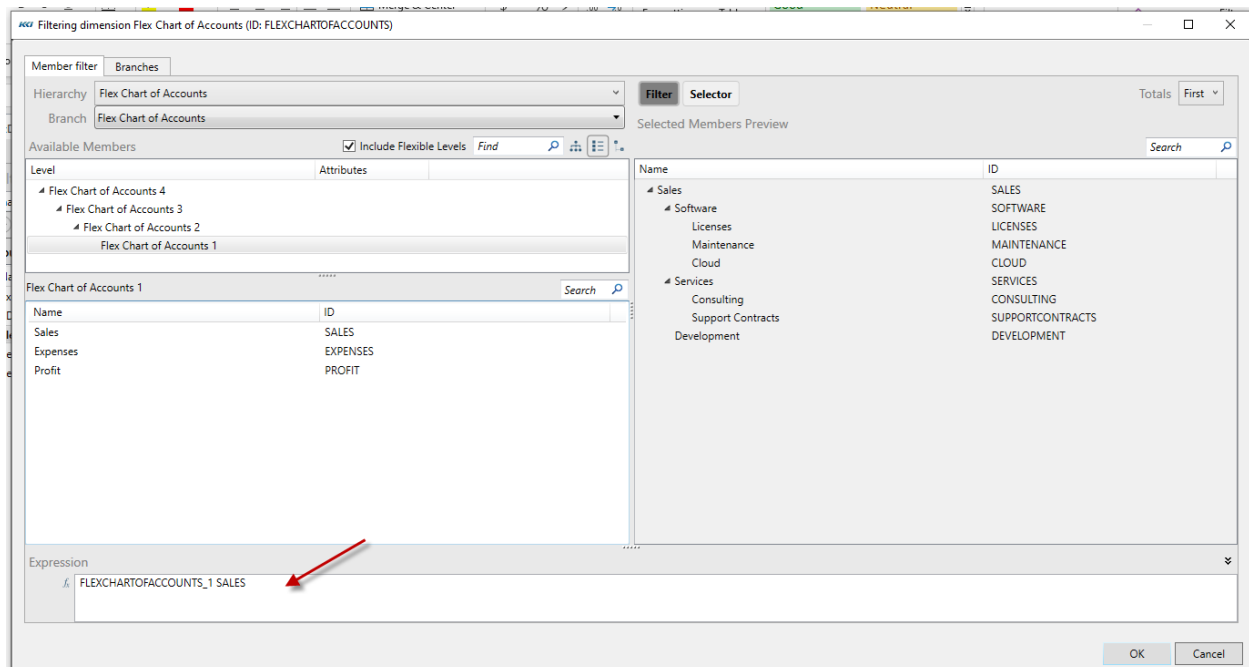
This release provides more fine-grained control over how filters and branches are defined for flexible dimensions, in that you can specify the depth of the members you want to select or summarize.

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This is the filter wizard on a flexible dimension displaying only the root level of the dimension. Note that you can choose any members of that level:

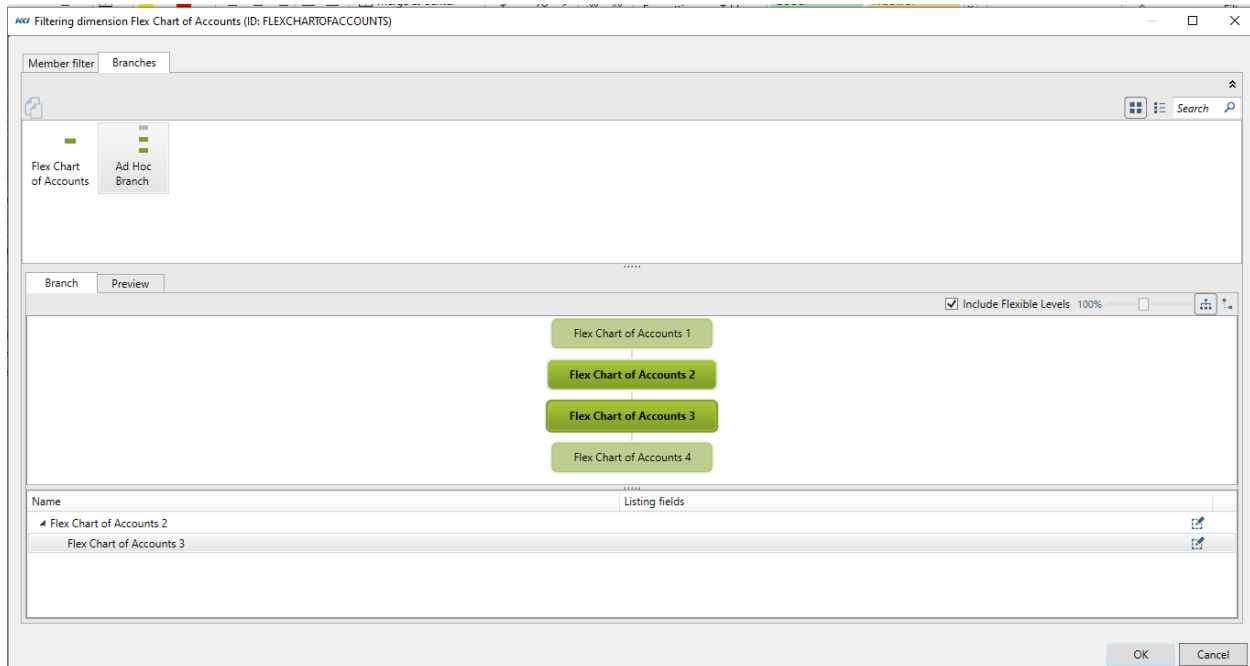


If you check "Include Flex Levels" box, the first level (Flex Chart of Accounts) is expanded to Flex Chart of Accounts 1, Flex Chart of Accounts 2, ..., Flex Chart of Accounts 4. This allows you to create filter expressions based on the members at various depths in the hierarchy. For example, you may want to see only the sales total and any subsidiary accounts:



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Similarly, on the branches tab, when you define an ad hoc branch, you can control the level of detail explicitly. In the example below, we choose to only see the accounts on levels 2 and 3:



(If you do not Include Flex Levels, filtering on the root level will find members at any depth. A branch including the flexible level will include members at all depths.)

Also see Improved support for Flexible Dimensions below.

Enhancements to Model Data object views

Model data object views were introduced in CONTROL release 9.2 to facilitate bulk data entry in Excel using a standard normalized format or a custom format defined in a CONTROL-External mapping.

While this feature has not been widely adopted, recent requests for bulk loading has led us to revisit and enhance this capability.

Here are the important properties of this type of view:

- The subclass is Object
- The model scope should be set to a computational model, a category containing computational models, or all models.
- The target object class is model, subclass is computational, and component is model data
- Since data is posted using the mapping logic, choose the desired updating behavior – clear and insert, merge, augment.
- If the view format is based on a mapping, specify the mapping and decide whether to use the view's filters or the filters in the mapping's target data access role.

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- If the view format is not based on a mapping, you can choose one of 3 options for the anchor dimension:
 - None – will provide a single data column to the right of columns for each dimension-branch
 - The model's time dimension to have the dimension-branch columns and then one column for each selected time member
 - The model's variable dimension to have the dimension-branch columns and then one column for each selected variable member

Note that if a mapping is not specified, any dimension-branch that only selects a single member will NOT have a visible column.

Here is an example of a time-anchored view on a single scenario. Note that all the model's dimensions are placed on the filter edge of the view.

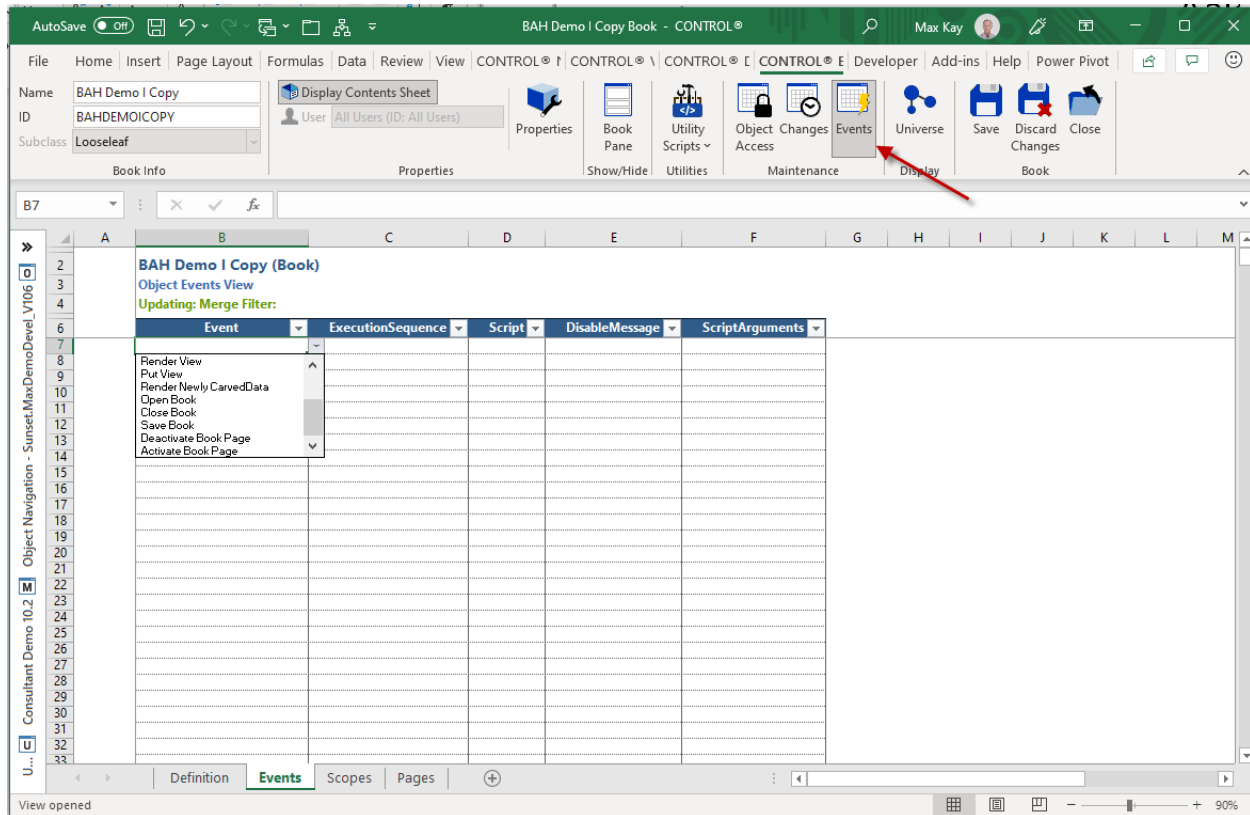
A	B	C	D	E	F	G	H	I	J	K	L
Filters:	Scenario (SCENARIOS FC)	Month (YR 2012)	A/C family (A/CGROUP AD)	A/C Accounts (A/CEXPENSES C)							
Pages:											
Properties:											
A/C family (Organization Level)		A/C Expenses (Variable Level)	Jan 2012 (Member)	Feb 2012 (Member)	Mar 2012 (Member)	Apr 2012 (Member)	May 2012 (Member)	Jun 2012 (Member)	Jul 2012 (Member)	Aug 2012 (Member)	Sep 2012 (Member)
ALAN		CATS	10	25	30	7,800	(21,373)	(42,776)	(64,180)	(85,583)	(106,987)
ALAN		DOGS	40	50	60	7,800	(21,373)	(42,776)	(64,180)	(85,583)	(106,987)
ALAN		...									
ALEX		...									
ADVICE		...									
HENRY		...									
HP		...									

Enhancements to Events

Events for Books

Events are now supported for both loose leaf and bound books. They are defined via an object view which is exposed by clicking the Events button on ribbon when a book is edited.

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New events which are specific to book actions are:

- Open Book
- Close Book
- Save Book
- Deactivate Book Page
- Activate Book Page

New view event

To support the occasion need to manually maintain data dependencies within a workbook, a Render Newly Carved Data event is now supported. For example, a workbook based dashboard might contain a power query that transforms a list style view into a format needed for a heat map. The Render Newly Carved Data event could be associated with a program script that refreshes the heat map by running the power query.

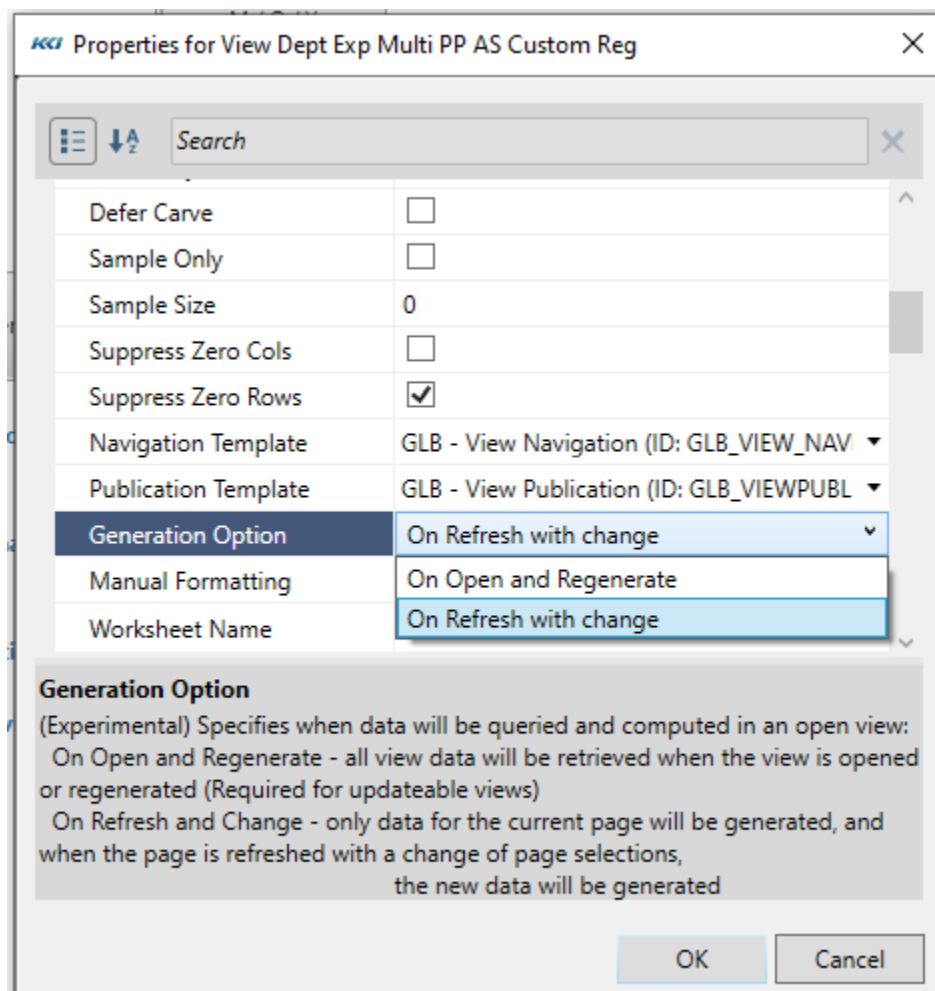
Generation Option

In all releases prior to 10.6, when a view is opened, CONTROL retrieves and computes all data specified by its filter and branch definitions. For data stored in CONTROL's relational tables this was determined to be the most efficient process.

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Based on the fundamentally different performance profile of AS queries, we have introduced the option of only retrieving the data for the visible page of the view. As you navigate the view – changing pages or rotating dimensions, the data for the new page is retrieved.

The choice is a scoped option of the view and defaults to the pre-10.6 behavior:



The advantages of “On Refresh with Change” are:

- The time to open the view is reduced.
- The memory consumed by the CONTROL engine process may be significantly smaller. This might be important if you have a lot of users running on a single, memory constrained server.

The new option is available for all computational views, irrespective of model type, with the following restrictions:

- The new option is not supported for flex views. (Flex views are not constrained to present data from the “current” page.)
- The view must have the Read Only option selected.

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- Defer carve does not work with this option, so if Defer carve is TRUE, the view is set to Sample Only, and you must unselect Sample Only on the ribbon to generate the view.

Improvement to source data views

For source data views, the dimensional zero suppression option is now respected. Note that this is only useful for source data models with additional page dimensions, and it suppresses page members which have no records in the data source. If zero suppression is turned on for the data source columns dimension, any numeric column which is identically 0 or any character column which is entirely blank will be suppressed. If the table is empty, all columns will be visible.

In the example below, only products with one or more sales records for the selected time frame appear in the member list:

The screenshot displays the CONTROL 10.6 software interface. The main window shows a data table with columns: Column1, ProductKey, PromotionKey, CurrencyKey, UnitCost, UnitPrice, SalesQuantity, LoadDate, UpdateDate, and Margin. The table is filtered by 'Product by Color' and 'AS9 Date'. A 'Select Page' dialog box is open, showing a list of page members. A red arrow points to the 'Product by Color' filter in the dialog box.

Column1	ProductKey	PromotionKey	CurrencyKey	UnitCost	UnitPrice	SalesQuantity	LoadDate	UpdateDate	Margin
150	512	1	1	393	1155	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	7,924
366	512	1	1	66	129	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	632
123	366	1	1	349	758	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	4,094
383	123	1	1	129	280	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,512
132	383	1	1	275	599	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,235
143	132	1	1	102	200	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	980
513	143	1	1	153	300	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,471
210	513	1	1	50	99	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	485
381	210	1	1	82	179	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	967
375	381	1	1	321	699	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
373	375	1	1	321	699	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,776
511	373	1	1	166	326	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	1,598
125	511	1	1	50	99	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	485
431	125	1	1	73	143	10	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	703
427	431	1	1	188	369	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,617
427	427	1	1	216	469	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	5,066
366	427	1	1	349	758	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	8,188
428	366	1	1	255	500	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	4,901
432	428	1	1	255	500	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	4,901
425	432	1	1	188	369	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,617
435	425	1	1	138	270	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	2,646
435	435	1	1	138	270	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	2,646
419	435	1	1	188	369	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,617
419	419	1	1	188	369	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,617
434	419	1	1	275	599	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	6,471
436	434	1	1	188	369	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	3,617
434	436	1	1	275	599	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	6,471
430	434	1	1	138	270	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	2,646
515	430	1	1	30	59	20	1/1/2010 12:00:00 AM	1/1/2010 12:00:00 AM	578

Note that the dimensional zero suppression is ignored for the view Generation Option = Generate on refresh, because the table is only queried a page at a time.

Autofilter template option respected for Object Views

The existing AutoFilter view template property can now be used to enable Excel auto filters for object views in addition to list style and source data views.

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122	DEFAULT PROPERTIES	PROPERTY VALUE		The default properties section of the template
123	View Area	A1		The top-left and optional bottom-right coordinates which define the view area
124	Filter Page Rows Visible	DISPLAY		Should the Filter and Page axes rows be displayed in the View? (See also Filter Row and Page Row Visible properties)
125	Filter Row Visible	DISPLAY		Should the Filter axes row be displayed in the View? (See also Filter Page Rows Visible property)
126	Page Row Visible	DISPLAY		Should the Page axes row be displayed in the View? (See also Filter Page Rows Visible property)
127	Dimension-Branch Controls Visible	TRUE		Should the command buttons for the referenced Dimension-Branched be displayed in the View?
128	Dimension-Branch Controls Print	FALSE		In case a print command is issued to print the View, should the Dimension-Branch controls in the View be printed?
129	Label Row Edge Dimensions	FALSE		Should a textual identification be placed into a cell for each Dimension-Branch on the row edge of the view?
130	Center Headings	COLUMN		Should the View's headings be centered over nested Dimension-Branched?
131	Wrap Headings	1		The character in the member heading that should be replaced by a line break.
132	Forms Print	FALSE		In case a print command is issued on an open View, should any Form associated with the View be printed? (Note: Doesn't apply to Forms without open Views)
133	AutoFit Data	UNIFORM MAX 12	CHG 2015.02	Should the Information Navigator AutoFit the View's data columns? TRUE will autofit all data columns. FALSE will not autofit the columns. For the NUMERIC option in the
134	AutoFit NonData	TRUE Min 20	CHG 2013.05	Should the Information Navigator AutoFit the View's non data columns? (e.g., the columns containing the row headings). TRUE will autofit all nondata columns. FALSE wi
135	AutoFit Row Height	TRUE		Should the Information Navigator AutoFit the row height s of all of the data rows of the View after applying other styles?
136	AutoCalculate Trigger	10 KEY ENTER	CHG 2015.02	What action will trigger AutoCalculation of the selected open View?
137	AutoCalculate Action	SOLVE	CHG 2015.02	What action will trigger AutoCalculation of the selected open View?
138	Comment Column Width	30		The number of characters wide the column containing row comments should be (overrides AutoFit data).
139	Direct Logic Column Width	30		The number of characters wide the column displaying direct logic or other formulas should be (overrides AutoFit data).
140	Show Scratchpad Metadata	FALSE		Should the metadata associated with a scratchpad be displayed?
141	Partial Total	Partial Total For &MemberTitle		The string that will be used to label partial totals in an open View. This string can include Keywords that will be resolved before the string is displayed.
142	Excel Subtotals	FALSE		Should the Information Navigator establish Excel subtotals on source data and list Views and Excel sums on subaccount Views?
143	Excel Subtotals Function	SUM		In case Excel subtotals are being established by Information Navigator, what Excel function should be used, if the Information Navigator is establishing Excel subtotals?
144	Excel Subtotals Below Data	TRUE		In case Excel subtotals are being established by Information Navigator, should the summary values appear above or below the data?
145	Excel Subtotals Page Break Between	TRUE		In case Excel subtotals are being established by Information Navigator, should the page breaks be placed between subtotaled groups?
146	AutoFilter	TRUE		Should Excel AutoFilters be created for the column headers of list Views and source data Views?
147	Excel Grouping and Outlining	FALSE		Should the Information Navigator establish Excel grouping and outlining for the open View?

This can be particularly useful when validating very large levels or hierarchies:

The screenshot shows the CONTROL 10.6 interface with a list of countries. A filter menu is open over the 'COVID19CONTINENT_Name' column. The filter menu includes options like 'Sort A to Z', 'Sort Z to A', 'Sort by Color', 'Sheet View', 'Filter by Color', 'Text Filters', and a search box. The search box is currently empty, and the filter menu is open over the 'COVID19CONTINENT_Name' column.

ID	Name	COVID19CONTINENT_Name	COVID19REGION_Name	COVID19POPULATION_ID
1	AFGHANISTAN	AFGHANISTAN		37171921
2	ALBANIA	ALBANIA		2882740
3	ALGERIA	ALGERIA		42228408
4	ANDORRA	ANDORRA		77006
5	ANGOLA	ANGOLA		
6	ANTIGUA AND BARBUDA	ANTIGUA AND BARBUDA		
7	ARGENTINA	ARGENTINA		44361150
8	ARMENIA	ARMENIA		2951745
9	ARUBA	ARUBA	Caribbean	105845
10	AUSTRALIA	AUSTRALIA		24898152
11	AUSTRIA	AUSTRIA		8891388
12	AZERBAIJAN	AZERBAIJAN		9949537
13	BAHRAIN	BAHRAIN		1569446
14	BANGLADESH	BANGLADESH		161376708
15	BARBADOS	BARBADOS	Caribbean	286641
16	BELARUS	BELARUS		9452617
17	BELGIUM	BELGIUM		11482178
18	BENIN	BENIN		
19	BHUTAN	BHUTAN		
20	BOLIVIA	BOLIVIA		
21	BOSNIA AND HERZEGOVINA	BOSNIA AND HERZEGOVINA		
22	BRAZIL	BRAZIL		
23	BRUNEI DARUSSALAM	BRUNEI DARUSSALAM		
24	BULGARIA	BULGARIA		
25	BURKINAFASO	Burkina Faso	Africa	
26	CABOVERDE	Cabo Verde	Africa	
27	CAMBODIA	Cambodia	Asia	16249792
28	CAMEROON	Cameroon	Africa	25216267

Performance Improvements

The following features have been enhanced to reduce memory footprint and processing time:

- Views containing lookup levels on variable or custom members on the visible page
- Views containing more than 1 million potential rows with zero suppression on rows. This case can occur when there are multiple dimension-branches on the row edge of the view and the data is sparse. The improvement affects both read-only and updateable views.

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Deprecated view subclass

The Power Pivot view subclass is no longer supported. The functionality is replaced by pivot table style views on power pivot models. Existing Power Pivot views will continue to function.

Enhancements for the Administrator

Integration with Analysis Services/Power BI

With this release, the full functionality of the engine that powers Microsoft's business intelligence offering becomes available to the CONTROL application developer.

While our relational database foundation (MS SQL Server or Oracle) powers the full spectrum of data collection, manipulation, and reporting, the Vertipaq engine is purpose built for super-fast, read-only access and calculations on multi-dimensional data.

The accompanying document provides extensive detail on the new capabilities.

Here are the high points:

- Models built in Power BI or Analysis Services can be accessed in CONTROL as Power Pivot models. CONTROL will convert AS meta-data tables to dimensions, levels, attributes and hierarchies.
- Power Pivot models can be created from CONTROL computational and source data models, adding DAX formulas and calculation groups.
- Power Pivot models, either externally supplied or created from CONTROL content can be used in all styles of views, including flex views
- Data in power pivot models can be mapped on-demand or dynamically
- A query on any model in AS can become a CONTROL AS data source, and be used in a source data model

See "Analysis Services Integration 10.6" for details and examples.

Integration with Power Query

For applications which require data or meta-data from sources not in an ideal format, requiring clean up and manipulation or is coming from a web page or other esoteric source, Microsoft's Power Query is a wonderfully helpful tool.

In this release, a new subclass of data source allows you to take a Power Query script (sometimes referred to as an m-script or m-code) and create a relational table in your CONTROL database.

That data source can then be used in mappings, source data models, and views.

See the "Power Query Integration 10.6" document for details and examples.

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Power Query scripts

In addition to use of a power query to create a data source, a power query can be defined as a CONTROL script object. The script's Script property contains the power queries m-script. When the power query script is run, the m-script is loaded into the active workbook and executed. Any previous version of the script in the workbook is replaced.

The execution of the power query script could be triggered via one of the new, previously described book events.

Improved support for Flexible Dimensions

This release exposes the internal structure of a flexible dimension which identifies the members of the flexible dimension by their depth in the hierarchy. Members that report to no other member are at level 1, those that report to level 1 members are at level 2, and so on.

This supports more fine-grained control over filter and detail, which can be useful in the case of large and deep hierarchies. Examples of the use of this option are included above.

The default hierarchy object view for flexible hierarchies has been changed to present the hierarchy in a tree format for all subclasses, for a more intuitive representation of its structure:

The screenshot displays the CONTROL 10.6 interface. On the left, a table titled 'Flex Chart of Accounts (Hierarchy)' shows a list of accounts organized into columns labeled 'FLEXCHARTOFACCOUNTS_1_ID' through 'FLEXCHARTOFACCOUNTS_5_ID'. The accounts are categorized into 'SALES', 'EXPENSES', and 'PROFIT'. On the right, a 'Hierarchy - Flex Chart of Accounts' window is open, showing a tree view of the hierarchy. The tree view lists the following structure:

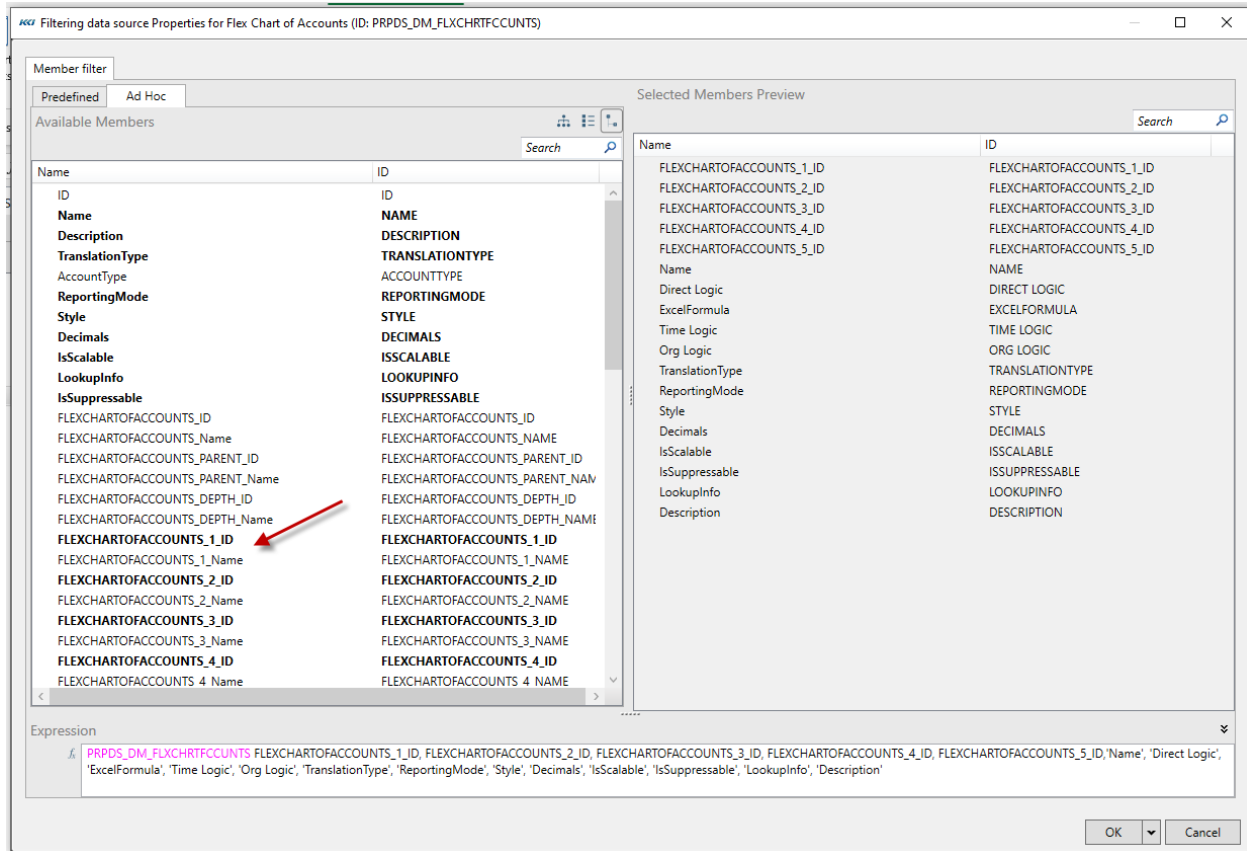
- SALES: Sales
 - SOFTWARE: Software
 - LICENSES: Licenses
 - MAINTENANCE: Maintenance
 - CLOUD: Cloud
 - SUM(LICENSES/CLOUD/Auto-Generated Formula)
- EXPENSES: Expenses
 - DEVELOPMENT: Development
 - SALARIES: Salaries
 - TECHNICAL: Technical
 - SUM(STAFF/CONTRACT)

Note that the "Totals First" property of the dimension determines whether a summary member appears above or below the detailed members that report to it. This example has the property checked.

The members of the root level (FlexChartOfAccounts) are subdivided based on their depth into "pseudo-levels" (FlexChartOfAccounts_1, FlexChartOfAccounts_2, ...).

The aspects of these pseudo-levels are now selectable in the property filter for a hierarchy object view:

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They are also available as aspects for meta-data and data mappings.

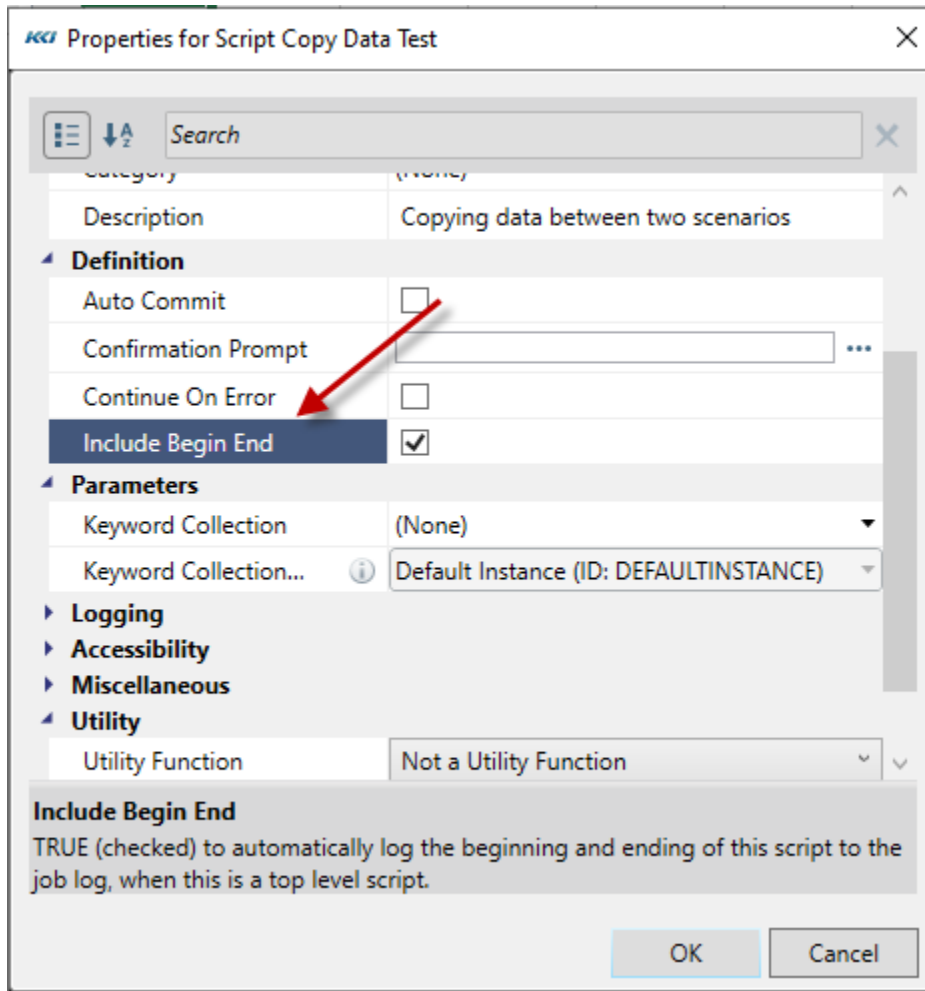
Simplification of logging for Action Scripts

For clients with numerous processes that are implemented using scripts, having access to comprehensive log information is critical to monitoring and troubleshooting.

Prior to this release, logging the beginning and end of a top-level action script required writing a program script that "wrapped" the action script and logged the start and end.

Starting with this release, you can now simply set a property of the action script and the logging will be performed automatically:

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Caching of program scripts

Some customers make such extensive use of program scripts, that the time it takes to load a program script (plus all of its called scripts) can become noticeable. Also, as the use of the so called “building block” scripts has grown, the number of scripts that need to be loaded to execute even a simple program script can be quite surprising.

To address both of these challenges, 10.6 provides a mechanism to load one or more program scripts into a program script cache. Once cached, they don't need to be reloaded and can be shared by all subsequently executed program scripts.

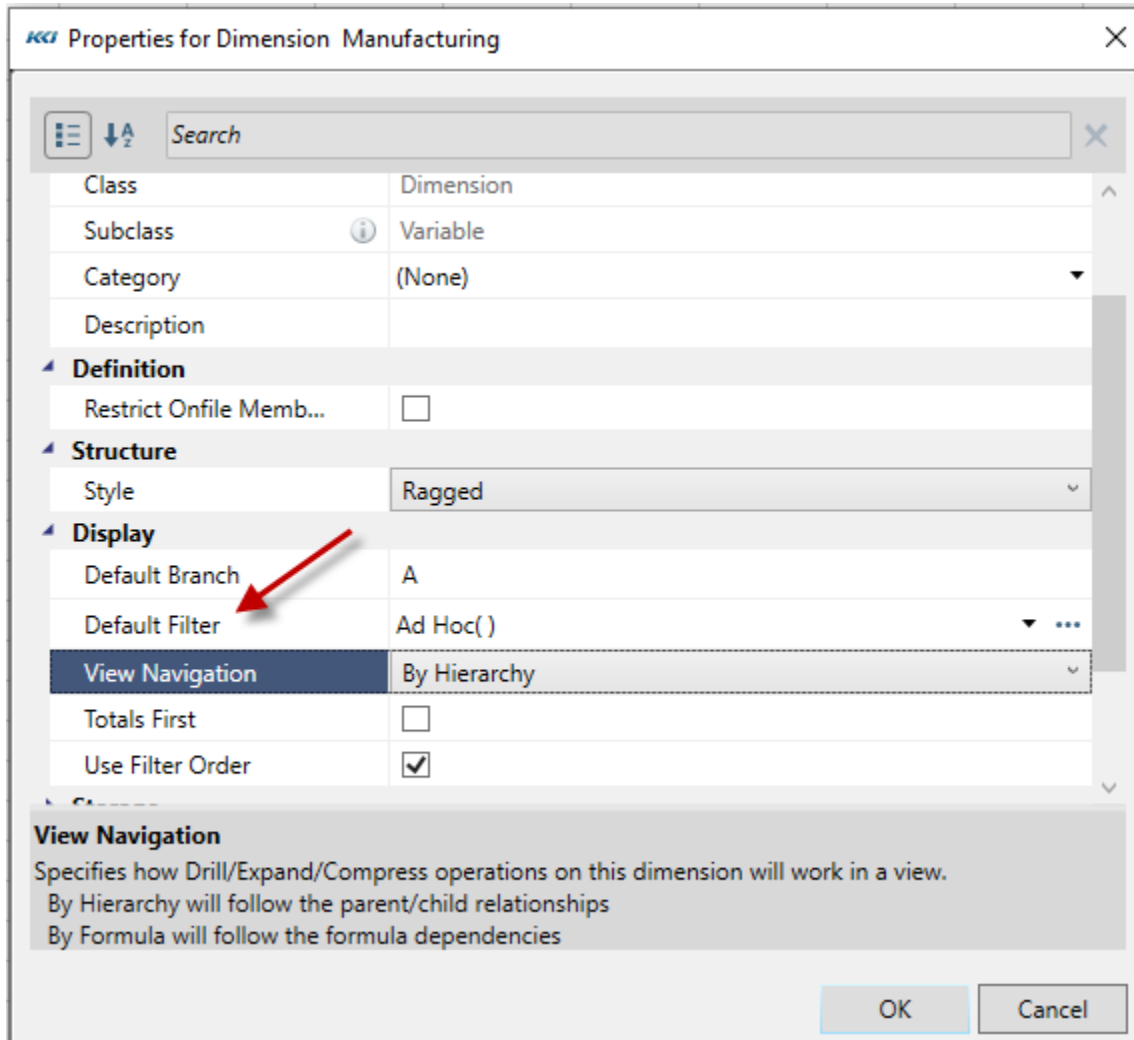
The first time a program script is run, the Information Navigator looks for a manifest with an ID of KCI_SharedProgramScripts (a keyword with the same ID can be used to specify an alternative manifest). The manifest is used to enumerate the program scripts that should be loaded into the cache. The manifest can be either list- or rule-based.

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For example, creating a manifest that enumerates all of the commonly used building block scripts would speed up the processing of all scripts that utilize the building blocks and reduce the memory footprint since only one copy of each building block will be loaded.

Improved control over view navigation

This release gives the application designer explicit control over how view navigation operations such as drill work, on a dimension-by-dimension basis:



Properties for Dimension Manufacturing

Search

Class	Dimension
Subclass	Variable
Category	(None)
Description	

Definition

Restrict Onfile Memb... ☐

Structure

Style: Ragged

Display

Default Branch: A

Default Filter: Ad Hoc()

View Navigation: By Hierarchy

Totals First: ☐

Use Filter Order: ☒

View Navigation
Specifies how Drill/Expand/Compress operations on this dimension will work in a view.
By Hierarchy will follow the parent/child relationships
By Formula will follow the formula dependencies

OK Cancel

- By Hierarchy drills from a parent member to the members that report to it. This is the preferred option for most organization and time dimensions.
- By Formula drills from a calculated member to all members that are operands in its direct formula. This is the recommended option for one level variable, scenario, and custom dimensions.

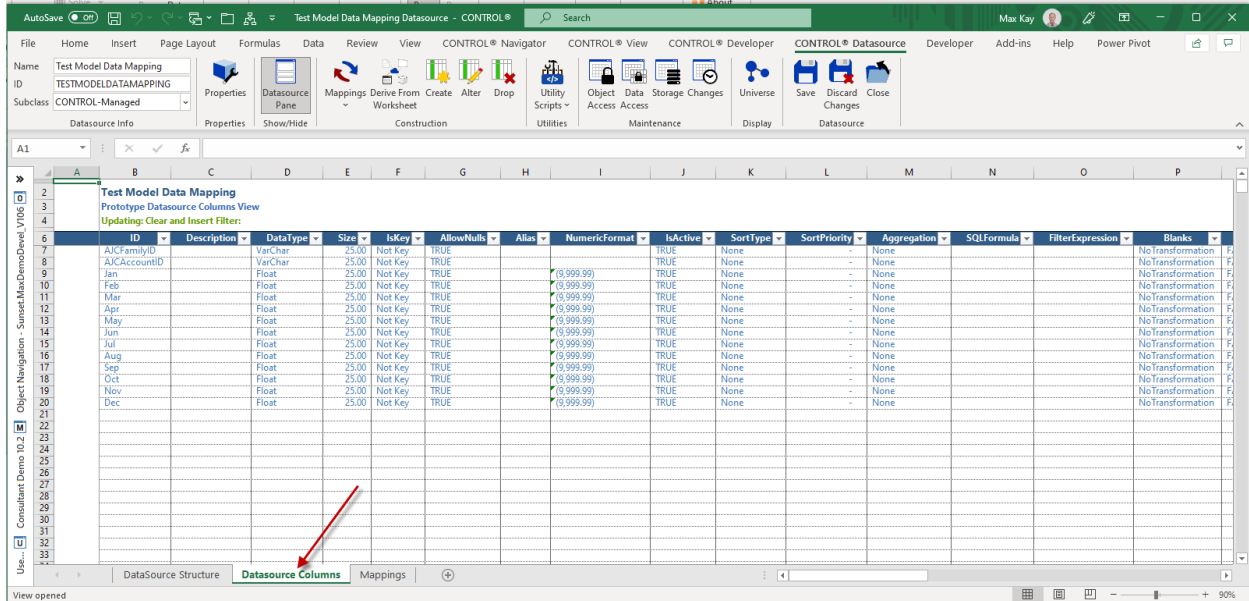
For multi-level variable dimensions and hierarchically organized custom dimensions, either option may be appropriate, and the choice should be made based on end-user utility.

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Columns object view for Control-managed datasources

If you are defining a CONTROL-managed datasource with lots of columns, it may be quicker and more convenient to fill out a spreadsheet rather than adding a column at a time in the columns task pane.

There is a new tab in the datasource edit book to accommodate this:



New Utility Methods

To facilitate creation of data sources and mappings, this release contains 3 new public methods of the Open View, View, and Library objects:

ExportViewToDatasource - Creates or updates a datasource with the contents of the view

MapToView - Creates or updates a mapping to the view

MapFromView - Creates or updates a mapping from a view

These methods are described in detail in the CONTROL property and methods documents. Examples of scripts executing these methods are included in the manifest accompanying this release.

New Functions in Analytic Custom Dimensions

CONTROL applications which link together multiple models and data sources can be opaque to a new developer who is unfamiliar with the implementation.

To clarify the objects involved in mappings to or from a computational model, release 10.6 adds 10 new functions to those available in analytic custom dimensions:

- FeedMapping – ID(s) and name(s) of Control or External feed mappings targeting the member combination

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- FeedSource – ID(s) and name(s) of the model or data source of the feed mapping(s)
- FeedRole – ID(s) and name(s) of the target data access role of the feed mapping(s)
- FeedTime – the transfer time (on-demand vs. dynamic) of the feed mapping(s)
- FeedDescription – the description property of the feed mapping(s)
- ExtractMapping – ID(s) and name(s) of Control or External Extract mappings targeting the member combination
- ExtractSource – ID(s) and name(s) of the model or data source of the Extract mapping(s)
- ExtractRole – ID(s) and name(s) of the target data access role of the Extract mapping(s)
- ExtractTime – the transfer time (on-demand vs. dynamic) of the Extract mapping(s)
- ExtractDescription – the description property of the Extract mapping(s)

Note that:

- Mappings without a target data access role will not be included
- Feed mapping definitions only apply to on-file member combinations
- The target data access role's filters are resolved using the currently set keywords and the default instance of the mappings keyword collection – if present

Here is an example of an analytic custom dimension that uses these functions:

The screenshot displays the 'Dimension - Test Mapping Analytic' window. On the left, a tree view shows 'KCI_Magic...' under 'Dimensions'. The main area is divided into two panes. The top pane, titled 'FEEDMAPPING', shows a table with columns 'ID: Name', 'KCIMagicDimension', and 'Formula'. The table lists various mappings like 'BASE: Base Data', 'FEEDFROM: FeedFrom', 'FEEDROLE: FeedRole', etc. The bottom pane, titled 'Properties', shows the 'Identification' and 'Definition' sections for the selected 'FEEDMAPPING' entry. The 'Identification' section shows 'Name: FeedMapping', 'ID: FEEDMAPPING', and 'Key: 4472495'. The 'Definition' section shows 'Formula: FEEDMAPPING', 'Model Override: (None)', 'Read Only: [checked]', and 'Lookup Level: (None)'. At the bottom left, there is an 'Immediate update' checkbox, and at the bottom right, there are 'Update' and 'Minimize' buttons.

ID: Name	KCIMagicDimension	Formula
BASE: Base Data	Base Data (ID: BASE)	
COMMENT: Comments		Comments[BASE]
FEEDMAPPING: FeedMapping		FEEDMAPPING
FEEDFROM: FeedFrom		FEEDFROM
FEEDROLE: FeedRole		FEEDROLE
FEEDTIME: FeedTime		FEEDTIME
FEEDDESCRIPTION: FeedDescription		FEEDDESCRIPTION
EXTRACTMAPPING: ExtractMapping		EXTRACTMAPPING
EXTRACTTO: ExtractTo		EXTRACTTO
EXTRACTROLE: ExtractRole		EXTRACTROLE
EXTRACTTIME: ExtractTime		EXTRACTTIME
EXTRACTDESCRIPTION: ExtractDescription		

Identification	
Name	FeedMapping
ID	FEEDMAPPING
Description	
Key	4472495
Definition	
Formula	FEEDMAPPING
Model Override	(None)
Read Only	[checked]
Lookup Level	(None)

(In this example, the custom member's ID is the same as the function used in the formula. It is the formula that determines the content of the view – NOT the member's ID.)

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This is how the view appears:

	A	B	C	D	E	F	G	H	I
2		PCA Unit Costs							
3		PCA Analytic: Mapping Base View							
4		Updating: Not Updateable Filter: ALL							
6		FY 2022							
7		Base Data	-Comments	-FeedMapping	-FeedFrom	-FeedRole	-FeedTime	-FeedDescription	-ExtractMapping
8	Time Code (UC)			MAPPCAUNITCOSTSFAMILY Map PCA Unit Costs Family MAPPCAUNITCOSTSPRODUCT Map PCA Unit Costs Product	PCAUNITCALCSFAMILY PCA Unit Calcs Family PCAUNITCALCS PCA Unit Calcs Product	TRGTOLMPPCUNTOSTSFAMILY Target Role Map PCA Unit Costs Family TRGTOLMPPCUNTOSTSPRODUCT Target Role Map PCA Unit Costs Product	OnDemand OnDemand	Unit cost data at the product family level Unit cost info at product level	
9	Time Amount (UC)			MAPPCAUNITCOSTSFAMILY Map PCA Unit Costs Family MAPPCAUNITCOSTSPRODUCT Map PCA Unit Costs Product	PCAUNITCALCSFAMILY PCA Unit Calcs Family PCAUNITCALCS PCA Unit Calcs Product	TRGTOLMPPCUNTOSTSFAMILY Target Role Map PCA Unit Costs Family TRGTOLMPPCUNTOSTSPRODUCT Target Role Map PCA Unit Costs Product	OnDemand OnDemand	Unit cost data at the product family level Unit cost info at product level	
10	Volume (Product)			MPPPCPRODUCTVOLUMNTCSTS Map PCA Product Volume to Unit Costs MPPPCPRODUCTVOLUMS_UNITCOST T Map PCA Product Volumes-Unit Cost MAPPCAUNITCOSTSPRODUCT Map PCA Unit Costs Product	PCAVOLUMEINPUTIN1 PCA Volume Input In1 PCA VOLUMES PCA Unit Calcs PCA Unit Calcs Product	TRGTOLMPPCPRDCTVLMNTCSTS Target Role Map PCA Product Volume to Unit Costs TRGTOLMPPCPRDCTVLMNTCST Target Role Map PCA Product Volumes-Unit Cost TRGTOLMPPCUNTOSTSPRODUCT Target Role Map PCA Unit Costs Product	OnDemand OnDemand	Map product volumes Map volumes for products from the volume model Unit cost info at product level	
11	Volume (Family)			MAPPCAUNITCOSTSFAMILY Map PCA Unit Costs Family MAPPCAUNITCOSTSPRODUCT Map PCA Unit Costs Product	PCAUNITCALCSFAMILY PCA Unit Calcs Family PCAUNITCALCS PCA Unit Calcs Product	TRGTOLMPPCUNTOSTSFAMILY Target Role Map PCA Unit Costs Family TRGTOLMPPCUNTOSTSPRODUCT Target Role Map PCA Unit Costs Product	OnDemand OnDemand	Unit cost data at the product family level Unit cost info at product level	
12	FTE (UC)			MAPPCAUNITCOSTSFAMILY Map PCA Unit Costs Family MAPPCAUNITCOSTSPRODUCT Map PCA Unit Costs Product	PCAUNITCALCSFAMILY PCA Unit Calcs Family PCAUNITCALCS PCA Unit Calcs Product	TRGTOLMPPCUNTOSTSFAMILY Target Role Map PCA Unit Costs Family TRGTOLMPPCUNTOSTSPRODUCT Target Role Map PCA Unit Costs Product	OnDemand OnDemand	Unit cost data at the product family level Unit cost info at product level	
13	Total Hours (Product)			MAPPCAUNITCOSTSFAMILY Map PCA Unit Costs Family MAPPCAUNITCOSTSPRODUCT Map PCA Unit Costs Product	PCAUNITCALCSFAMILY PCA Unit Calcs Family PCAUNITCALCS PCA Unit Calcs Product	TRGTOLMPPCUNTOSTSFAMILY Target Role Map PCA Unit Costs Family TRGTOLMPPCUNTOSTSPRODUCT Target Role Map PCA Unit Costs Product	OnDemand OnDemand	Unit cost data at the product family level Unit cost info at product level	
14	Total Hours (Family)			MAPPCAUNITCOSTSFAMILY Map PCA Unit Costs Family MAPPCAUNITCOSTSPRODUCT Map PCA Unit Costs Product	PCAUNITCALCSFAMILY PCA Unit Calcs Family PCAUNITCALCS PCA Unit Calcs Product	TRGTOLMPPCUNTOSTSFAMILY Target Role Map PCA Unit Costs Family TRGTOLMPPCUNTOSTSPRODUCT Target Role Map PCA Unit Costs Product	OnDemand OnDemand	Unit cost data at the product family level Unit cost info at product level	

This style of view can be very helpful in documenting complex applications.

New Object References Administrative Model and View

To help manage applications which have grown in scope and complexity, CONTROL 10.6 introduces a new administrative view which allows the exploration of relationships among objects.

For example, you may want to know all the views that reference a model or all the custom dimensions that use a certain non-custom dimension.

The object references view is automatically included in each object's edit book, except for Category, Group, and User.

Here is an example for the JumpStart expense model:

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	A	B	C	D	E	F	G
1	Filters:	Scenario (None)	Time (None)				
2	Pages:	Control Object (Expense)					
3							
4							
5							
6							
7		One Level Variable Dim					
8	Control Object References	References To Direct	References From Direct	References To All	References From All		
9	+Model	1	13	139	236		
10	-Dimension	5	220	237	1,690		
11	+Variable	1		56	99		
12	+Organization	2		99	210		
13	+Time	1		6	22		
14	+Scenario	1		7	17		
15	+Custom		146	26	426		
16	+Content Selection		74	43	915		
17	+Level			80	922		
18	+Attribute			22	172		
19	+View		242	51	1,033		
20	+Hierarchy	5		86	927		
21	+Sort				22		
22	+Filter		8	36	198		
23	+Map	2	32	48	300		
24	+Code			4	32		
25	+Role		22	43	237		
26	+User	1		2	12		
27	+Datasource	2	6	74	1,018		
28	+Keyword		7	4	172		
29	+Category	1		12	42		
30	+Script		7	2	132		
31	+Form			2	41		
32	+Book		15	1	81		
33	+Transform		25		66		
34	+Sheet		2	14	132		
35	+Workflow				13		
36	+Group			1	4		
37	+Manifest				19		
38	+Menu			8	46		
39	+Mapping	15	19	84	333		

For summary members such as class, subclass, or category – the numbers in the cells are the counts of referenced object.

The direct references to and from (the first two columns) indicate the objects that are specified as part of the definition of another object. For example, the computational model is comprised of (References To Direct) 5 dimensions.

The “All” reference columns include the objects that are both directly and *indirectly* referred to or by other objects. For example, a model references to a dimension which in turn references a level. (The administrative view limits the chain of reference to 5 steps.)

You can expand or drill the view to show the specific objects:

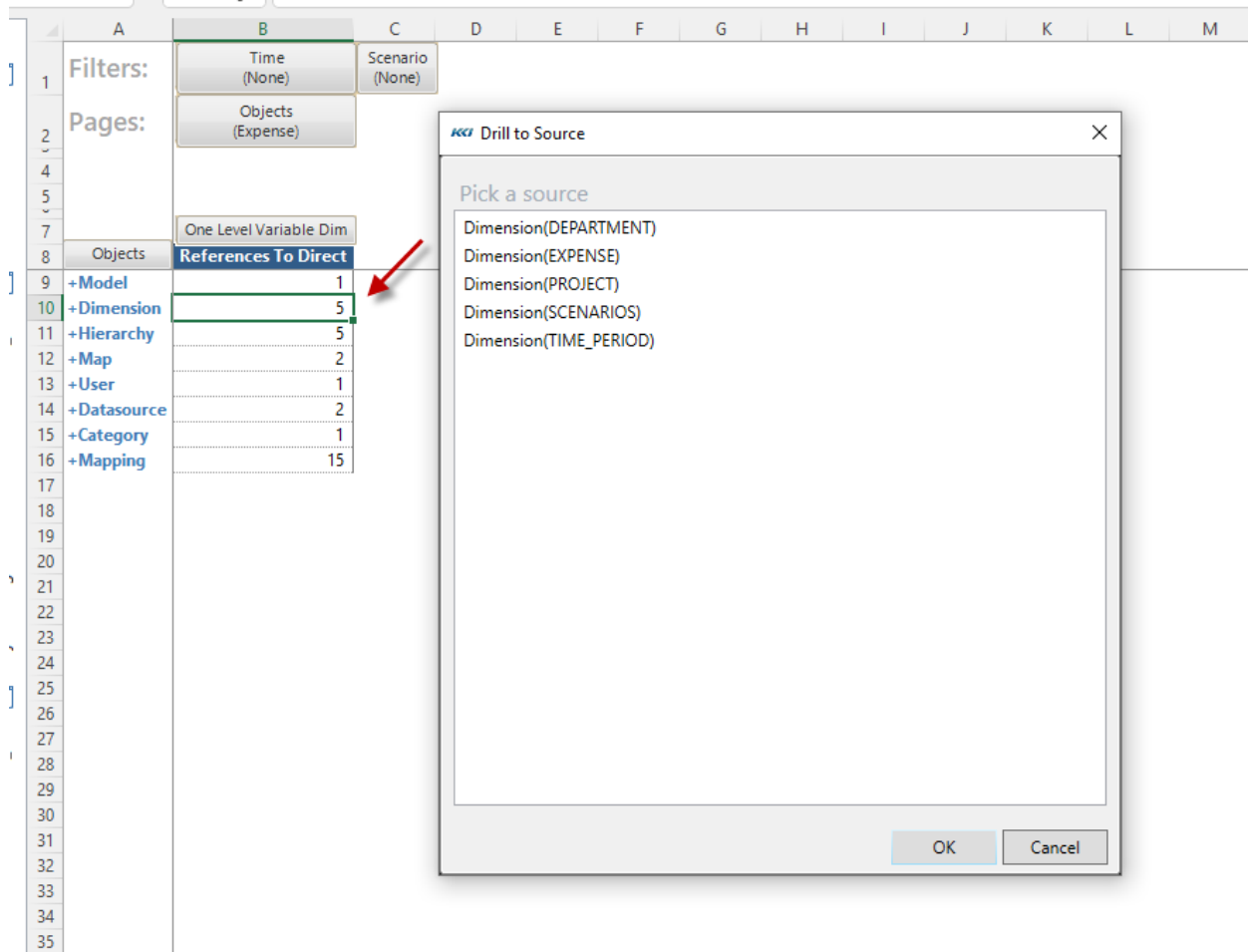
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	A	B	C	D	E
1	Filters:	Scenario (None)	Time (None)		
2	Pages:	Control Object (Expense)			
3					
4					
5					
6					
7		One Level Variable Dim			
8	Control Object References	References To Direct			
9	-Dimension	5			
10	-Variable	1			
11	-JumpStart	1			
12	-Organization	2			
13	-JumpStart	2			
14	Department	Dimension			
15	Project	Dimension			
16	-Time	1			
17	-JumpStart	1			
18	Time	Dimension			
19	-Scenario	1			
20	-JumpStart	1			
21	Scenarios	Dimension			
22					
23					

The contents of the cell for a specific object reference contains a description of the relationship.

Drill to source in this view will open the edit book of the referenced object. Drilling on a summary node will bring up a dialog that lets you pick which referenced object you want to see:

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Dynamic Hierarchy Association

To facilitate analysis of computational model data using alternate hierarchies, formulas for a derived scenario can take the form:

=baseScenarioID ' [Hierarchy= hierarchyID1, hierarchyID2,...]

- The hierarchies specified in the formula's comment will be substituted for the associated dimensional hierarchies
- If a dimensional hierarchy is omitted from the list of hierarchy overrides, the base scenario's hierarchy is used
- If a hierarchy is specified that does not belong to the one of the model's non-scenario dimensions, it is ignored
- For non-ad hoc scenarios, keywords may be used in the formula comment and they will be resolved in the current model, current user scope
- For ad hoc scenarios, keywords may be used in both the formula and the formula comment and will be resolved in the current model, current user scope

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- Unless the override it to the variable hierarchy, the storage of calculated members (Store None, Store Some, Store All) is that of the base scenario

Here is an example of an ad hoc scenario which overrides one of the model's hierarchies:

Member Editor - AdHocActual

☒ Include all members ☒ Expand All Properties

Name:

ID:

Description:

Formula: Formula...

Hierarchy

- Actual
- Actual with Hly Override
- Actual Store All Override
- Actual Store All
- Forecast 202003
- Forecast 202004
- Forecast 202005
- Forecast 202006
- Forecast 202007
- Forecast 202008
- Forecast 202009
- Forecast 202010
- Forecast 202011
- Forecast 202012
- Forecast 202101
- Forecast 202102
- Forecast 202103
- AdHocActual**

OK Cancel

Performance Improvements

The following features have been enhanced to reduce memory footprint and processing time:

- Control-External feed mappings with the "Update Only" Updating Behavior option will process queried data in larger blocks which can result in up to a 10-fold reduction in the number of iterations
- Control-Control feed mappings with the "Update Only" Updating Behavior option uses a new algorithm which dramatically reduces the memory usage in high-dimensionality, high sparsity cases

Extensible Hierarchy Change Log

For applications where the tracking of changes to hierarchy meta-data is critical, CONTROL provides the option to log additions, deletions, and changes to hierarchies. Starting in 10.6, you can now add custom fields to this log. For example, you may wish to record the number of employees hired or terminated in a given accounting period.

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Unlike data change logs which are data sources associated with each model, all hierarchy changes are logged to a common system table – typically CNTADM.HierarchyLog.

This enhancement allows custom columns to be added to the hierarchy log table, with the following behaviors:

- Each custom column is associated with a CONTROL keyword
- The custom column is populated with the current replacement value of the keyword at the time the change is logged
- The keywords must have an ID of the form “Log_{ColumnName}”, so that if the custom column name is “UpdateYearMonth” then the keyword ID would be “Log_UpdateYearMonth”
- Custom columns can have a data type of Int, Float, DateTime, Char, or VarChar
- All custom columns are required to allow null values or have a default value
- If the keyword is not present or not accessible by the executing user, the column is not posted in the change record so it's value will be null or its default
- Keywords are evaluated in the All Model scope of the executing user
- The content of the standard columns cannot be changed so if you want other information in your company's change log - you must add new columns
- If the table update fails for any reason (for example – invalid date), the change log gets posted with null/default values for the custom columns and a warning will be reported.

Note that the data source HierarchyChangeLog must be updated to reflect the custom columns for the view on the Rollup Changes tab of the hierarchy edit book to include the new columns.

Miscellaneous Enhancements

- The object's description property now permits multi-line entry for better readability
- Object descriptions appear in the pop-up tool tip in the Universe
- Default numeric formats for numeric columns in SQL Query datasources are now initialized to improve readability in data source views
- More informative result message for mappings mappings run from action scripts
- Improved initialization of menu item names for views with multi-model scope
- User interface improvements to the query tab of the task pane of SQL Query, AS Query, and Power Query datasources to permit maximizing the area for the query text

Enhancements to the Bill of Material

More efficient explosion processing

The BOM explosion process will optionally write the output of an explosion to a temporary table. This can be much faster than writing directly to the primary explosion output table.

Here are the details:



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- 1) The behavior depends on the presence of a new keyword &BOM_Output_Table_Temp. Instead of the explosion process creating the temporary table and indexes (which can have a lot of client/application specific variations), the specified table must exist. The use of the keyword will support the creation of different tables for different users if multiple users are exploding at the same time.
- 2) If the keyword has been defined and the specified table exists, the temp table will be TRUNCATED. This should be a very fast operation in both Oracle and SQL Server as it bypasses row level logging.
- 3) The temp table is NOT used with the "Unexploded Only" option.
- 4) On successful completion of the explosion using a temporary table
 - a. The target records will be deleted from the permanent explosion table
 - b. The contents of the temp table are added to the permanent explosion table using a single SQL "INSERT INTO permanentTable (SELECT * FROM tempTable)" which should be very efficient.
- 5) Finally, the permanent explosion output table will have its statistics updated via CONTROL's AnalyzeTable command. AnalyzeTable is called with default arguments resulting in a full scan for tables with less than 300,000 rows and 20% sampling for larger tables.

Automatic data source update

The explosion process now respects the keyword &BOM_UpdateDSOnExplode which can have these values:

- NONE (Default if the keyword is not defined)
- ALL
- Usage
- Scenarios
- Usage, Scenarios

Values other than NONE will run the scripts UPDATE_BOMSCENARIOS_SQL and/or UPDATE_BOMUsage_SQL after completing the explosion. Note that the explosion will be processed and committed prior to calling either script. A warning message will occur if the needed script(s) do not exist.

(These enhancements are also available in later releases of CONTROL 10.5.)

CONTROL® Web

This release continues to enhance the scope of CONTROL features available through the web interface, with no additional administrative effort.

Updateable source data views

In prior releases, all source data views were read-only. With 10.6, these views are updateable, with the same functionality and limitations as the Information Navigator.



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Flex views

While development and testing are still underway, we expect to make flex views available in CONTROL® Web in this release cycle. Flex views will be read-only and flex tables will not be supported.